ARE 'GREEN' LANDSCAPES ASSOCIATED WITH 'GREEN' BEHAVIOURS? A STUDY INTO THE RELATIONSHIP BETWEEN URBAN GREEN SPACE VISITATION AND PRO-ENVIRONMENTAL BEHAVIOUR IN WELLINGTON, NEW ZEALAND.

Ivana Giacon

A thesis submitted to Victoria University of Wellington in partial fulfilment of requirements for the degree of Master of Environmental Studies

School of Geography, Environment and Earth Sciences

Victoria University of Wellington

ABSTRACT

With global environmental change looming there is a call for urban societies to change behaviours and lead more sustainable lifestyles. However, behaviour change policies have mostly been ineffective with urban society's weak emotional connection to nature cited as a major barrier. Wilson's (1986) biophilia hypothesis posits humans have an innate desire to preserve and protect the natural environment programmed into our biological evolution and that exposure to nature fosters this desire. With fifty percent of the world's population now living in urban environments there is the concern that a reduced contact with nature will further reduce emotional connections to nature and acceptance of pro-environmental behaviour change. Governments worldwide have neglected to incorporate nature exposure into pro-environmental behaviour change policies highlighting the need for empirical evidence to demonstrate a positive relationship between nature exposure and pro-environmental behaviour. This study fills this literature gap. With urban green space acting as the main form of nature contact for many urban residents, urban green space visitation was used as a proxy for nature exposure. Data collected by the Wellington City Council was examined for a relationship between urban green space visitation and pro-environmental behaviour using a series of regression techniques. Regressions restricted to different types of urban green space and pro-environmental behaviours were analysed for significant correlations. Gender, age, income, pride, and quality of life were also examined for moderating effects. A statistically significant relationship was reported between urban green space visitation and pro-environmental behaviour with sports field visitation the weakest predictor. There was no evidence of significant moderation by gender, age, income, pride, or quality of life. My results provide evidence for further research into urban green space expansion and promotion as a behaviour change tool.

Keywords: Urban green space; pro-environmental behaviour; biophilia; connections to nature; behaviour change policy

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CHAPTER 1

1.0 Introduction

There is no doubt that human's contribution to global environmental change is significant (Poortinga et al., 2011). Current changes and those predicted for the future are largely driven by human behaviour, justifying the importance of behaviour change policy (Gifford et al., 2011). However, despite numerous attempts to implement such intervening policies, a widespread lack of participation in pro-environmental behaviour (PEB) remains a problematic issue (Lorenzoni et al., 2007). Lorenzoni et al. (2007) acknowledge the term 'engagement' and cite this area as a significant barrier to the efficacy of current behaviour change policy. Engagement is taken to mean a personal state of connection with an issue (Lorenzoni et al., 2007). For the purposes of my study I am referring to connections with nature. Before any behaviour change policy measures can be implemented effectively, a connection to the issue in question must exist (Gifford et al., 2011, Lorenzoni et al., 2007). It is not enough to simply 'know' about environmental issues; people must be emotionally connected to nature in order to be motivated to change behaviour (Lorenzoni et al., 2007).

Environmental psychologists have been working since the 1970s to identify factors that predict environmentally friendly actions (Gifford et al., 2011). The knowledge deficit model references the causal progression from environmental concern to proenvironmental behaviour (Gifford et al., 2011). Elucidating concern for nature can only be achieved if an individual feels suitably connected to it, justifying the importance of emotional connections to nature for pro-environmental behaviour change efficacy. Nisbet et al. (2009) posit that the necessary level of engagement with the environment is missing and is hindering positive change. There are examples beyond the environment arena where poor engagement has hindered policy implementation. Under the Obama administration, previous efforts to pass health care or immigration reforms have depended strongly on public support, when engagement was absent, the policies suffered major defeats (Nisbet, 2009).

It is clear that in order to build a sustainable future, the environmental attitudes and behaviours of society must change. Attempts to develop and implement policies designed to stimulate environmentally responsible behaviours have mostly been based on fiscal incentives, enforced environmental regulations, and provision of environmental information (Kollmuss and Agyeman, 2002, Lucas et al., 2008). While such factors do influence the environmental behaviour of society, Clowney (2013) believes these instruments to be superficial and ineffective and that 'deeper motivation could occur through cultivating innate attraction to nature' (Clowney, 2013:1). Attitudes towards pro-environmental behaviour are said to be relatively easy to modify with the introduction of new contextual surroundings and new circumstances (Gatersleben et al., 2012) and fostering attitudinal variables is posited as the most effective methodology for widespread pro-environmental behaviour uptake (Pooley and O'Connor, 2000). Exploring nature exposure as a means to foster emotional connections to nature and the necessary pro-environmental attitudes for pro-environmental behaviour change is thus of vital importance for policy makers and forms the purpose of this study.

Despite literature citing a lack of emotional connection to the natural landscape as a major reason behind low levels of pro-environmental behaviour, the role urban green space (UGS) plays in fostering such connections receives little attention from policy makers. Urban green space can be defined as outdoor places with significant amounts of vegetation, mainly existing as natural or semi-natural areas in urban centres (Yin and Kong, 2005). In Wellington, New Zealand, this definition extends to include areas of open space, for example, sports fields and parks (Greater Wellington Regional Council, 2009b). City walking tracks, botanic gardens, and town green belts are additional examples of how green landscapes can be incorporated into urban settings. Urban based water bodies, such as coasts, beaches, and harbours, termed the urban blue by Völker and Kistemann (2013), are also important 'green' spaces allowing built landscapes to retain naturalistic features. With 50% of the world's population now living within urban environments, urban expansion is encroaching further into these green areas (Mahmoudi et al., 2013). Consequently, it is now becoming common place for societies to experience nature via vicarious means rather than through direct contact, and it is this reduced contact which has been termed the 'extinction of experience' (Hinds and Sparks, 2008, Pyle, 2003). As exposure to natural landscapes becomes ever more limited, will the emotional connections to the landscape dwindle with it, thereby limiting pro-environmental behaviour? There is a need for research into the associations between urban green space experiences and pro-environmental behaviour to ascertain whether promoting urban green space development (and visitation) could lead to increased pro-environmental behaviours.

The idea that nature exposure could increase pro-environmental behaviour stems from Edward O. Wilson's (1984), biophilia hypothesis. The biophilia hypothesis puts forward that humans have an innate want to preserve and protect the natural environment, a want that is programmed into our biological evolution (Kellert, 1993b, Wilson, 1984). Direct exposure to natural surroundings is said to enhance this feeling. Those that spend more time in an urban green space have been shown to hold strong emotional ties to the area and are more likely to speak up about changes or developments affecting or relating to present or proposed urban green space (Arnberger and Eder, 2012). Additionally, green space presence has been statistically shown to decrease the amount of nights residents spend away from that area (Abkar et al., 2010), possibly indicating a sub-conscious emotional connection with their city. There is no doubt that urban green space visitation promotes positive, emotional responses within those that experience them (Aspinall et al., 2013, Kabisch and Haase, 2013, Schäffler and Swilling, 2013, Schipperijn et al., 2013, Swanwick, 2009, Watts et al., 2013, Zhou and Kim, 2013). With help from the biophilia hypothesis, it can be posited that if a person is exposed to nature (via urban green space visitation) on a frequent basis, this exposure may foster positive affections to nature and the necessary pro-environmental attitudes to be motivated to preserve it.

If a relationship can be established between urban green space visitation and proenvironmental behaviour, therein lies further evidence for the justification of urban green space expansion and protection. If local government is to justify the money spent on the creation and maintenance of such spaces, urban green space must continue to be understood and portrayed as a socially valuable landscape. While causality is unable to be proven by my research due to time restrictions preventing a longitudinal or intervention study, the theory of biophilia links emotional connection with the natural landscape to an increased tendency for pro-environmental action. On top of this, the theory of planned behaviour (TPB) states that one's emotions are central to the prediction of one's behavioural intentions and subsequent behaviour (Ajzen, 1991, Hinds and Sparks, 2008, Hinds and Sparks, 2011). Using biophilia and the theory of planned behaviour as explanatory guides, if a link is found between pro-environmental behaviour and urban green space visitation, it can be posited that exposure to the natural environment is helping to foster emotional environmental connections, manifested as pro-environmental behaviour. Additionally, if it is revealed that certain green spaces are more strongly linked to pro-environmental behaviour in general or certain types of proenvironmental behaviour, therein lies evidence to prioritise these landscapes for their potential to stimulate environmental connections.

While there is great benefit to understanding whether there is an association between urban green space visitation and pro-environmental behaviour and how biophilia may act to facilitate this association, it is also beneficial to understand how sociodemographic factors may moderate the relationship. Environmental behaviours have been shown to vary significantly across gender, age, and nature experience, with female students partaking in higher levels of nature related activities performing more environmentally responsible behaviours (Erdogan et al., 2012). Such studies are important as they allow policies to be efficiently tailored toward certain sociodemographics. While there is evidence showing socio-demographic factors to be associated with pro-environmental behaviour, there is no research looking at nature exposure and pro-environmental behaviour together with socio-demographics; something my research will address.

Along with socio-demographics, pride is a positive emotion that has been shown to help predict intentions for performing pro-environmental behaviour (Harth et al., 2013b). If policy makers are to understand how to maximise biophilia for the purposes of pro-environmental behaviour uptake, it is important that pride be investigated for how it interacts with urban green space visitation. It is likely that those with greater pride in their city are more susceptible to the positive emotional connections biophilia fosters, thus increasing the likelihood that nature exposure will manifest itself in pro-environmental behaviour.

Quality of life is another attitudinal variable that should also be examined for its moderating effect on the association between nature exposure and pro-environmental behaviour. Quality of life can be defined as referring to one's well-being or life satisfaction (Grinde and Patil, 2009). Quality of life, being positively correlated with life satisfaction, reflects well-being and the subsequent ability to focus on issues beyond one's self, following the affluence hypothesis of Givens and Jorgenson (2011) (Cervinka et al., 2012). It could be that the biophilia hypothesis is only true for those who have a high quality of life. My study will shed light on such theories.

Conducting such a study in New Zealand is pertinent considering the Ministry for the Environment's (MfE) statement of intent (SOI) 2010-2013 explicitly refers to 'behaviour change' (Ministry for the Environment, 2010). Additionally, the statement of intent alludes to pro-environmental behaviour when it states, "New Zealand's prosperity and quality of life will be enhanced if more New Zealanders adopt environmentally responsible practices" (Ministry for the Environment, 2010). Wellington city will thus

act as the case study for this project. When comparing the amount of urban green space per person between cities and regions, Wellington performs very well. The Economist Intelligence Unit (2012) produced a Green City Index which rated cities and regions on their sustainability and environmental performance. Latin America was found to have the greatest amount of green space per person, with 255 m² (Economist Intelligence Unit, 2012). Wellington city ranks better than this average, with 261m² of green space per person (Economist Intelligence Unit, 2013). With a vast array of urban green space (comprising 3,800 hectares) providing a range of opportunities for positive recreational experiences in nature, Wellington city provides the ideal setting for such a study (Greater Wellington Regional Council, 2009a).



Figure 1: Map of Wellington City (Google, 2014).

The data set being analysed for this project was sourced from the 2010, 2011, and 2012 Wellington City Council Residents' Satisfaction Survey which was conducted on Wellington city residents (copies attached in appendices). The survey sought to assess whether the council was achieving the goals laid out in their annual plan and includes questions on urban green space visitation, pro-environmental behaviour, sociodemographics, as well as pride and quality of life. The council did not look for associations between these variables nor were interactions between urban green space visitation, socio-demographics, and attitudinal variables computed for moderating effects. My study employs correlation and regression analysis to examine the data for statistically significant relationships. I was looking for evidence to support the provision and maintenance of urban green space and pave the way for future research into biophilia as a behaviour change tool.

The following research aims to determine whether pro-environmental behaviours are linked to visitation of Wellington city's urban green space. The questions and hypotheses addressed in this research are as follows:

1.1 Research Questions and Hypotheses

- 1.0 What is the relationship between urban green space visitation and proenvironmental behaviour in Wellington city?
 - 1.1 Do urban green space visitors and non-visitors exhibit a difference in their amount of pro-environmental behaviour?
 - 1.2 Does the relationship between urban green space visitation and proenvironmental behaviour change depending on the type of urban green space visited and the particular pro-environmental behaviour measured?
 - 1.3 How do socio-demographic factors moderate the relationship between urban green space visitation and pro-environmental behaviour?
 - 1.4 How does pride moderate the relationship between urban green space visitation and pro-environmental behaviour?
 - 1.5 How does quality of life moderate the relationship between urban green space visitation and pro-environmental behaviour?

Hypothesis for question 1.0:

- Those who visit urban green space will perform more pro-environmental behaviours than non- visitors.

Hypothesis for question 1.1:

- Those who visit urban green space frequently will perform more proenvironmental behaviours than those who visit urban green space less frequently.

Hypotheses for question 1.2:

- Those who visit vegetated spaces will perform more pro-environmental behaviours than those visiting less vegetated urban green space.
- Those who visit coasts frequently will perform more pro-environmental behaviours that specifically relate to water.

Hypotheses for question 1.3:

- The relationship between urban green space visitation and pro-environmental behaviour will be stronger in females than males and will be positive.
- The relationship between urban green space visitation and pro-environmental behaviour will be stronger for those living in a higher income earning household and will be positive.
- The relationship between urban green space visitation and pro-environmental behaviour will be stronger in older individuals and will be positive.

Hypothesis for question 1.4:

- The relationship between urban green space visitation and pro-environmental behaviour will be stronger for those who have more pride in their city.

Hypothesis for question 1.5:

- The relationship between urban green space visitation and pro-environmental behaviour will be stronger for those with a higher quality of life.

I begin my research with an in depth literature review of the relevant studies and theories that have shaped the development of my research questions and hypotheses. My method of analysis is then laid out followed by the results of my statistical tests. I conclude my thesis by discussing my results in relation to what was expected while providing recommendations for future research into biophilia as a behaviour change tool.

1.2 Literature Review

My research seeks to fill a literature gap by statistically assessing the extent to which pro-environmental behaviour is associated with nature exposure within an urban centre (using urban green space visitation as a proxy for urban based nature exposure). More specifically, it is envisaged that my research will provide insight into the pro-environmental behaviour patterns of urban green space visitors, using the Wellington city population as a case study. Due to the importance of nature connections for pro-environmental behaviour uptake (Lorenzoni et al., 2007), it is hypothesised that those who are more exposed to nature will subsequently participate in more pro-environmental behaviours, as well as show preference for pro-environmental behaviours that are closely related to the type of urban green space they most frequently visit (for example, water pollution minimisation is expected to positively correlate with coast visitation).

Following the work of Lucas et al. (2008), Gifford et al. (2011), Lorenzoni et al. (2007), and Joye and Van den Berg (2011), at the crux of my proposed study is the assumption that when one is exposed to the natural environment, affective connections to nature are fostered, meaning people are more likely to develop pro-environmental attitudes and express these attitudes through pro-environmental behaviour. Of course, this assumes attitude-behaviour consistency. The relationship between one's emotions and attitudes and how one physically behaves is a well-researched area of study (Ajzen, 1991, Ajzen and Fishbein, 1977, Stern, 2000). Although a meta-analysis of the researched link between verbally expressed attitudes and physical behaviours concludes the relationship to be moderate at best, (Greenwald et al., 2009), Azjen and Fishbein (1977) point out the limitations of these studies by highlighting there to be two distinct types of attitudes; general attitudes (the subject of many attitude-behaviour studies) and specific attitudes toward performing particular behaviours. Using attitudes specifically relevant to religion and the church as an example, Azjen and Fishbein (1977) found religious specific attitudes to correlate strongly with broad patterns of religious behaviour. What can be concluded here is the evident link of attitudes in one domain being consistent with behaviours in a similar domain. Weigel and Newman (1976) produced similar results by showing attitudes towards protection of the environment were accurate predictors of pro-environmental behaviours. This concept is termed the principle of compatibility (Azjen, 1991).

What should also be clarified here is the relationship between emotional connections to nature and pro-environmental attitudes, and how these factors are linked to behaviour. The theory of planned behaviour (TPB) (Azjen, 1991) can be used to explain this link. First, the reason nature exposure can be hypothesised as being associated with affective connections to nature comes from the work of Millar and Millar (1996) who state that with direct experiences, evaluations of that object tend to be affectively based, and these affective connections are enhanced with repeated exposure (Hinds and Sparks, 2008). Empirical evidence which shows emotional connections to be an important predictor of environmental attitudes is provided by Pooley and O'Conner (2000). Hinds and Sparks (2008) use the conclusions of Pooley and O'Conner (2000), as well as the work of Kals et al. (1999) (who show emotional affinity to nature to predict nature protective behaviour) when they describe the efficacy of the TPB in explaining environmentally responsible behaviour. The TPB tells us that attitudes are predictors of behaviour. Affective connections were proven by Hinds and Sparks (2008) to predict attitudes towards engaging with the natural environment.

What should be made clear is the direction of the proposed study and how it fits into the current literature. Figure two illustrates the relationship to be studied, as well as the paths that have already been addressed in the academic literature. Importantly, it depicts urban green space visitation as a form of nature exposure. While not depicted in the diagram, the relationship between urban green space and pro-environmental behaviour will be investigated further by breaking urban green space visitation down by type (e.g., coasts, botanic gardens, parks, town belt, tracks, and sports fields) and frequency of visitation, and assessing by type and amount of pro-environmental behaviour (e.g., recycling, putting rubbish in the bin, avoiding plastic). Additionally, socio-demographics may also play a role in the strength of the relationships examined. Gender, age, and income will therefore be incorporated into the statistical analysis in order to ascertain whether the associations are stronger for certain socio-demographics relative to others. Attitudinal factors (pride and quality of life) may also act as moderators and will therefore be examined for such an effect.

As illustrated in figure two, each section in the literature review is dedicated to a particular link in the flow chart. Section 1.2.2 covers emotional connections and attitudes to nature and how this relates to pro-environmental behaviour. Section 1.2.3 focuses on the way urban green space has been studied in the academic literature. An overview of how socio-demographic variables are currently understood to be associated

with urban green space visitation and pro-environmental behaviour is covered in section 1.2.5. Section 1.2.6 and 1.2.7 look into how the attitudinal variables of pride and quality of life have been addressed in relation to their effect and influence on emotional connections to nature and pro-environmental behaviour. A final section (1.2.8) summarises the main conclusions of the literature, re-states the research hypotheses, and highlights study limitations.



Figure 2: Causal diagram illustrating proposed direction of study.

Contribution to the literature

As there has not yet been an examination of the association between urban green space visitation and pro-environmental behaviour, the proposed study will fill a literature gap. By detailing the relationship across a range of pro-environmental behaviours, urban green space types, socio-demographic factors, as well as pride and quality of life variables, the results will provide policy makers with empirical evidence pertaining to how such factors moderate the relationship between urban green space visitation and pro-environmental behaviour. Within the literature, there is ample evidence to support the idea that those with greater exposure to nature hold stronger emotional connections

to the environment and pro-environmental attitudes making them more inclined to perform pro-environmental behaviour (Finger, 1994, Hinds and Sparks, 2008, Kals et al., 1999, Nisbet et al., 2009). While there is adequate literature surrounding the link between nature exposure and environmental connections, as well as environmental connections and attitudes and their role in predicting environmentally responsible behaviours, there has been no such study which looks at urban green space visitation and pro-environmental behaviour and how such a relationship is moderated.

1.2.1 Nature Exposure and Emotional Connections and Attitudes to Nature

Research has reported individuals hold stronger self-reported connections to nature rather than built stimuli (Hinds and Sparks, 2008, Schultz and Tabanico, 2007), meaning there is reason to believe that increasing the presence of nature within urban surrounds could increase societies engagement with environmental issues. There are a number of scales which have been used to measure one's connectedness to nature including the Environmental Identity Scale; Schultz's (2000) Inclusion of Nature in Self scale; Mayer and Frantz's (2004) Connection to Nature scale, and the Nature Relatedness Scale of Nisbet et al. (2009), which all focus on the cognitive aspects of the people-nature dynamic (Schultz, 2000). All scales were developed using the assumption that humans have the ability to connect to nature and consequently hold emotions and attitudes pertaining to it. Nisbet et al. (2009) used the Nature Relatedness Scale to find that time spent in nature increases one's nature connectedness, it can then be assumed that urban green space visitation, being a form of nature visitation, will be positively correlated with nature connectedness.

An additional way of thinking about and describing nature connectedness has been expressed using emotional affinity towards nature (Mayer and Frantz, 2004). Kals and colleagues (1999) concept of an emotional affinity toward nature encompasses an inclination to care and protect for the natural environment after positive nature exposure. Emotional affinity toward nature has also been statistically shown to positively correlate with present (and past) frequency of time spent in nature (Kals et al., 1999). The role of nature exposure in the development of emotional connections and pro-environmental attitudes has been addressed in the literature with research centered on childhood experiences with nature and adult environmentalism (Kals et al., 1999, Lohr and Pearson-Mims, 2005, Louv, 2008, Wells and Lekies, 2006). All studies

produced corroborating results supporting the hypothesis that nature exposure is linked to positive environmental attitudes and behaviours. Aberg and Tapsell (2013) have noted that it takes time for people to build up a caring and emotional connection to local green spaces, suggesting frequency of visits could increase emotional connection. Evidence confirming the ability of repeated exposure to enforce positive affective connections is presented by an additional array of authors (Finger, 1994, Hinds and Sparks, 2008, Nord et al., 1998, Teisl and O'Brien, 2003).

Importantly, it is acknowledged that nature based experiences must be positive to fuel emotional affinity (Kals et al., 1999). As it is the direct experience with an object or setting which tend to have the greatest impacts on affectively based evaluations (Hinds and Sparks, 2008, Millar and Millar, 1996), when these experiences are positive, affections and subsequent attitudes pertaining to that setting are likely to also be positive. Promoting positive experiences with the natural environment has been suggested as a possible means of mitigating the cycle of apathy and poor engagement with ecological issues (Hinds and Sparks, 2008:109). Biophilia is a theory which can help explain the findings linking nature exposure to positive environmental attitudes, as well as the emotional connections discussed earlier.

The biophilia hypothesis suggests humans have an evolutionary based affiliation with the natural environment which is enhanced through repeated exposure (Kahn Jr, 1997). The theory states that those with greater nature based experiences develop greater affective connections to nature. Theoretical underpinning for the proposed study is provided by the biophilia concept as it justifies the hypothesis that urban green space visitation is positively correlated with pro-environmental behaviour. Kellert (1993) posits that due to the relatively short period of time humans have begun living in urban environments, the value of nature for survival hardwired into human biology has not had time to be erased. Biophilia is thus a part of evolutionary development. The popularity of outdoor activities and natural scenery, as well as the positive emotional responses people gain from being in and around nature reported by psychologists worldwide is testament to Kellert's theory (Gatersleben, 2008, Hinds and Sparks, 2008, Kals et al., 1999, Millar and Millar, 1996, Nisbet et al., 2009). Ultimately, there is strong evidence supporting the statement that being exposed to nature predisposes an individual to feel positively towards it. Whether other literature agrees that holding positive affective connections and attitudes to nature then predisposes someone to perform pro-environmental behaviour is covered next.

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1.2.2 Emotional Connections to Nature, Pro-environmental Attitudes and Pro-Environmental Behaviour

Repeated exposure to nature fosters affective connections to nature (Hinds and Sparks, 2008, Hinds and Sparks, 2011), and a number of scholars have agreed that as empathy with a natural setting increases, so too does the likelihood emotional affinity will be reflected in behaviour (Kals et al., 1999, Kaplan and Kaplan, 1989, Schultz, 2000). Psychologists have held great interest in the connection between environmental attitudes and pro-environmental behaviour (Nisbet et al., 2009). Tarrant and Green (1999) posited that if one is emotionally attached to a physical landscape they are more likely to seek its preservation (requiring participation in pro-environmental behaviours). Empirical evidence to support Tarrant and Green's (1999) statement comes from the 2010 work of Gosling and Williams who showed that people who feel stronger connections to nature more often participate in pro-environmental behaviours.

Holding an emotional connection to nature is crucial in the fostering of proenvironmental behaviour and has been documented in the literature (Mayer and Frantz, 2004, Schultz, 2002). The concept even has its own measurement scale, the connection to nature scale (CNS) developed and applied by Schultz (2002) to show a significant correlation between connectedness to nature and self-reported pro-environmental behaviour. Nature relatedness, a similar measurement tool to Schultz' CNS, was developed in order to understand the role of connectedness to nature in predicting environmentally responsible behaviour (ERB) (Nisbet et al., 2009). It was ultimately concluded that spending more time in nature and partaking in ERB¹ was positively correlated with 'nature relatedness'.

While attitudes towards nature protection are ultimately shaped by one's emotional connections to the natural environment (Hinds and Sparks, 2011), it is the concept of attitudes, as opposed to emotions, which has received greater attention in the environmental psychology literature, appearing in nearly two-thirds of publications (Kaiser et al., 1999). Attitudes have been tested for their predictive validity on proenvironmental behaviour with previous investigations into the relationship between environmental attitudes and ecological behaviour consistently achieving moderate support (Hines et al., 1987). Attitudes are complex constructs and can be conceptualised in various ways, with one description referring to attitudes as the inclination for an

¹In this case, pro-environmental behaviour was measured by respondent's involvement in environmental organisations (Nisbet et al., 2009).

individual to evaluate aspects in a particular manner (be it favourable or unfavourable) (Balram and Dragićević, 2005). As a number of authors have concluded, attitudes are powerful predictors of behaviour and distinct environmental influences (such as nature exposure) can potentially reveal distinct clusters of the population who share similar attitudes (such as those which are pro-environmental) (Ajzen, 1991, Balram and Dragićević, 2005, Kaiser et al., 1999). Using the principle of compatibility (which explains the phenomenon whereby specific attitudes are predictors of related behaviours); it is thus likely that those clusters of people exhibiting pro-environmental behaviour are doing so due to their pro-environmental attitudes. Whether these clusters of pro-environmental behaviour actors also share similar rates of 'green' experiences remains an important literature gap.

With biophilia providing supporting theory for the link between nature exposure and pro-environmental attitudes, the link between pro-environmental attitudes and proenvironmental behaviour is supported by the theory of planned behaviour (TPB). The TPB is the most common model appearing within the environmental attitudes and behaviour literature. Developed by Azjen (1991), the TPB posits that people behave in a way that reflects their intentions regarding a particular action, which is in turn governed by attitudes, habits, and perceived behavioural control (how much control they perceive themselves to have over the behaviour) (Hinds and Sparks, 2008, Kaiser et al., 1999). With pro-environmental behaviour being action taken with the intent to ameliorate or prevent environmental degradation (Blake, 2001), the TPB uses measures of environmental attitudes to ascertain the extent to which pro-environmental behaviour may be performed. Kaiser et al. (1999) unified measures of environmental values and knowledge to represent environmental attitudes (using Azjen's (1991) TPB) and subsequently showed environmental attitudes to explain 40% of the variance in proenvironmental behaviour intention (motivation and willingness to perform proenvironmental behaviour). Pro-environmental behaviour intention subsequently explained 75% of the variance in pro-environmental behaviour itself (Kaiser et al., 1999). Such evidence proves that pro-environmental behaviour is strongly influenced by one's environmental attitudes. If the link between attitude and behaviour was weak or non-existent, it would have been inappropriate to hypothesise that urban green space visitation is associated with pro-environmental behaviour. My study covers the missing link in the chain, the statistical association between urban green space visitation (nature exposure) and pro-environmental behaviour.

The theories presented so far (biophilia, principle of compatibility, TPB) suggest emotive variables, including attitudes and emotional connections to nature, are stimulated by nature exposure and are important in the prediction of pro-environmental behaviour. However, there is still debate in the literature pertaining to the significance of such emotive variables in behaviour change. Thogerson and Olander (2006) and Pooley and O'Connor (2012) state such variables to be the dominant motivation behind pro-environmental behaviours, yet other authors believe structural factors and sociodemographics to be more important (Bamberg et al., 2003, Jackson, 2005, Kollmuss and Agyeman, 2002). There is, however, ample theory and empirical evidence overall to support the causal progression from pro-environmental attitudes to pro-environmental behaviour. Unfortunately, current policy does not recognise the potential of promoting nature exposure to foster pro-environmental attitudes to increase pro-environmental behaviour. With urban green space visitation being a form of nature exposure within an urban setting, examining the relationship between urban green space visitation and proenvironmental behaviour is a justified research direction.

1.2.3 Urban Green Space in the Literature

While town planners have always recognised the importance of allowing for urban green space, the motivations behind their inclusion have shifted over the past few decades (Carpenter, 2013). The original purpose of urban green space was to provide visual enjoyment, while their current importance is based upon the ecological functions they provide, as well as their contributions to physical health and fitness (Bingley, 2013, Cariñanos and Casares-Porcel, 2011, Lee and Maheswaran, 2011). The direct ecological benefits of urban green space, as habitat and ecosystem service providers, rainwater-runoff reducers, and urban heat distributors, is addressed within the ecology based scientific literature (Bolund and Hunhammar, 1999, Choi and Lee, 2011). The ability of urban green space to act as carbon sinks and provide additional ecosystem services such as habitat corridors is also strongly supported (Holt et al., 2012, Schäffler and Swilling, 2013, Sushinsky et al., 2013).

Within the social science and public health literature there is little debate surrounding the role of urban green space for the improved health (weight loss, stress reduction, improved fitness) of those who visit such areas. Empirical evidence shows stress levels, fitness, and blood pressure of individuals exposed to forested areas around a townscape (e.g., a town belt) to be, on average, superior to that of urban workers (Beil and Hanes, 2013, Bingley, 2013, Tsunetsugu et al., 2013). Additionally, the significant benefits of living close to urban green space for residents emotional and psychological well-being has been widely acknowledged (Aspinall et al., 2013, Swanwick, 2009, Tzoulas and James, 2010, Völker and Kistemann, 2013). A study measuring the emotional experience of walkers in three types of urban environments (including one urban green space) reported urban green space to be associated with the greatest level of mood-enhancing stimuli (Aspinall et al., 2013). It is clear that urban green space has many positive impacts for urban centres, in terms of both ecological and public health. With urban green space able to take a variety of forms (from parks to sports fields) it would be beneficial to determine which forms show a stronger relationship between visitation and pro-environmental behaviour, possibly indicating a stronger effect of biophilia.

1.2.4 Emotional Connections to Nature, Pro-environmental Attitudes, Urban Green Space Types, and Pro-environmental Behaviours

An important aspect of my study is the opportunity to examine urban green space visitation and pro-environmental behaviour relationships broken down by urban green space and pro-environmental behaviour type. Different types of urban green space include the predominantly man-made sports fields, more 'natural' and more 'vegetated' walking tracks and town belt, and water based harbours and coastal zones. There is also the distinction between the typical urban green (i.e., terrestrial urban green space) and the urban blue (i.e., water based urban green space, for example, coasts and harbours). A tendency of society to value² environments with greater vegetative cover (for example, city walking tracks or the town belt) was reported by Jim and Chen (2006). Volker and Kistemann (2013) and Walker and Ryan (2008) showed some landscape types are more inclined to promote emotional connections than others. Walker and Ryan (2008) produced a study which showed that water scenes induced the highest selfreported scores for place attachment³ (over vegetative, land based scenes). Place attachment is an important concept to mention here as it speaks to the emotional connections people develop with their surroundings (Vaske and Donnelly, 1999). People have been shown to prefer certain natural surroundings over others with an array of authors reporting a preference for waterscapes (Chiesura, 2004, Han, 2007, Kaplan

 $^{^{2}}$ Value here is to do with the perceived worth an individual places on a particular natural setting relative to another (Jim and Chen, 2006).

³ Place attachment refers to the bonding that occurs between an individual and their environment (Scannell and Gifford, 2010) and was the proxy used by the authors to measure emotional connection to the landscape (Walker and Ryan, 2008).

and Kaplan, 1989, Walker and Ryan, 2008) and others citing a preference for vegetated (Jim and Chen, 2006). Gordon Orian's 'Savannah hypothesis' states the opposite by positing that humans have a subconscious attachment to half-open, park-like spaces, such as savannahs, as this is the habitat humans evolved from (Wilson, 1984). The Savannah hypothesis contradicts the findings and theories of authors listed above, but is useful to be aware of in the process of discussing and interpreting results as it may be the case that one theory is found to be supported more so than another.

It is not just variance in urban green space type that could potentially reveal differences in relationship strength. Tarrant and Green (1999) have noted that individuals are more likely to partake in pro-environmental behaviours which directly benefit the green space they are most emotionally connected to and visit most. In other words, people are more likely to engage in pro-environmental behaviours which preserve or maintain the space where they gain the most positive, emotive responses. For example, pro-environmental behaviour related to responsible disposal of paints and chemicals (rather than disposing down household sinks) may be performed more by those who more frequently visit coasts. Using such evidence, I have hypothesised that those who visit coasts will perform more pro-environmental behaviours related to water pollution minimisation. The data set employed for the proposed study allows this hypothesis to be statistically tested, thus contributing new empirical evidence to the academic literature.

1.2.5 Socio-demographics, Urban Green Space and Pro-environmental Behaviour

With the overarching research aim of my study being to better understand the association between urban green space visitation and pro-environmental behaviour, research question 1.3 seeks to understand how socio-demographic factors moderate this particular relationship. Although biophilia and the theory of planned behaviour are employed to back up the role of emotions and attitudes to nature in pro-environmental behaviour participation, it would be ignorant to assume that these work independently of socio-demographics. The data employed for the proposed study allows the relationship between urban green space visitation and pro-environmental behaviour to be examined by gender, age, and income.

Literature which speaks to the socio-demographic characteristics of those exhibiting pro-environmental behaviour is strong (Barbosa et al., 2007, Barr, 2003, Barr, 2007, Barr et al., 2011, Cottrell, 2003, Cottrell and Graefe, 1997, Dahlstrand and Biel, 1997, Diamantopoulos et al., 2003, Diekmann and Preisendörfer, 2003, Dupont, 2004,

Guagnano and Markee, 1995, Torgler and Garcia-Valiñas, 2007). As policy makers seek to promote more sustainable and energy efficient cities and citizens, research has turned to the socio-demographic makeup of those who perform pro-environmental behaviour in order to create a profile of the environmentally friendly citizen (Barr, 2003, Barr, 2007, Teisl and O'Brien, 2003). An in-depth review of the literature pertaining to the associations between socio-demographics, pro-environmental behaviour and environmental knowledge, behaviour, and attitudes was performed by Diamantopolous et al. (2003). The significance, strength and direction of associations between select socio-demographic variables and environmental consciousness was then examined. On the whole, associations between socio-demographic variables and environmental consciousness⁴ were not as consistent as would be expected (i.e., it was not confirmed that females participate in more pro-environmental behaviour than males, or that high earners participate in more pro-environmental behaviour than low earners) and this has been attributed to the effect of geographic region, more specifically, the difference in environmental legislation and infrastructure that exist in different political zones (Guagnano and Markee, 1995, Diamantopoulos et al., 2003). Such contextual differences may enable certain socio-demographic groups to be more or less influenced to engage in pro-environmental behaviour than others (Diamantopoulos et al., 2003). Despite the inconsistencies, patterns are also obvious, particularly relating to gender, income, and age. The following section outlines how such socio-demographics have been studied in conjunction with pro-environmental behaviour and urban green space, and puts forward a series of testable hypotheses.

Gender

Diamantopoulos et al. (2003) found females held stronger attitudes to environmental quality relative to men and were more likely to participate in recycling or green consumerist behaviour. Similarly, Steel (1996) produced results indicating that women were more likely than men to engage in pro-environmental behaviour. Dupont (2004) found support for their hypothesis that gender differences exist in the willingness to pay (WTP) for environmental improvements (a pro-environmental behaviour), with women showing a stronger willingness to pay. Dupont (2004) also predicted the genders to express different values regarding the environment. Different values were predicted to be expressed through a greater willingness to pay for action that will benefit one's

⁴ Environmental knowledge, behaviour, and attitudes was collectively termed environmental consciousness in this study (Diamantopolous et al., 2003).

children in women - cited by Blocker and Eckberg (1989) as the "mother effect" (Dupont, 2004). The "mother effect" posits that women with children express relatively more concern for local environmental problems than non-mothers, with the "father effect" manifesting itself as a greater concern for the material well-being of the family. Similarly, Bord and O'Connor (1997) used risk valuation gap analysis to explain why there might be a difference between men and women with children. Mothers were more likely to perceive vulnerability than non-mothers as they are said to be more sensitive to environmental quality (Bord and O'Connor, 1997). Stern et al. (1993) state that, compared to men, women (regardless of whether they are mothers or not) are more attentive to the links between the environment and the things that they value (recall valuation to be how much worth someone places on an object/setting relative to another object/setting). Huddart and Kennedy (2013) also reported a significant positive correlation between females and environmental concern. It may therefore be the case that females are more sensitive to environmental needs and may show a stronger relationship between urban green space visitation and pro-environmental behaviour. Torgler and Garcia-Valiñas (2007) also found reported differences in charitable giving between the genders and it is argued that traditional gender norms and stereotyping mould females to be more concerned for the lives of others and the environment. Gender is clearly an important variable to be aware of when examining the relationships in question and is potentially a significant interaction term in equation building.

Age

Age has been shown to be significantly correlated with environmental attitudes and willingness to pay for environmental improvements, with some evidence to support the hypothesis that the older generation partake in more pro-environmental behaviour (Dupont, 2004). Additionally, a recent study by Huddart and Kennedy (2013) showed age to be insignificantly associated with environmental concern. After examining the effect of age on environmental protection, Torgler and Garcia-Valiñas (2007) found two types of age effects to be present. The most relevant to my study being the aging effect which refers to the tendency for older individuals to experience natural settings differently to younger respondents due to an expectation of a lower return from investment in environmental preservation (Torgler and Garcia-Valiñas, 2007). It could therefore be possible that older individuals will show a weaker relationship between urban green space visitation and pro-environmental behaviour relative to those that are

younger, as they are less motivated to invest in environmental protection. It may alternatively be that those who are older have had more time to visit and be exposed to natural spaces and thus be more likely to hold stronger emotional connections to such settings. Those who are younger, but visit just as frequently, may not have had the lengthy exposure required for biophilia to manifest as pro-environmental behaviour. If this is the case, my study will reveal a stronger association between urban green space visitation and pro-environmental behaviour in older individuals.

Age also has a strong influence on one's lifestyles, social norms and habits, and their ability to perform pro-environmental behaviour. It may be that older individuals, may visit urban green space more and perform more pro-environmental behaviours. However, older people may also be physically restricted from visiting the less accessible urban green spaces and performing pro-environmental behaviours requiring a greater level of mobility, such as taking recycling to the recycling station. Ultimately, the research from Torgler and Garcia-Valiñas (2007) leads me to hypothesise that there will be a stronger relationship between urban green space visitation and pro-environmental behaviour in the older demographic, who have potentially been visiting urban green space for many years, enhancing emotional connections to nature.

Income

When it comes to pro-environmental behaviour change, fiscal instruments have been the first point of call for many policymakers, particularly in Europe (Lorenzoni et al., 2007, Lucas et al., 2008). As outlined earlier, without an emotional connection to environmental issues, people are less willing to co-operate with market-based and/or economic incentives for pro-environmental behaviour change (Lorenzoni et al., 2007). There is a hypothesis related to environmental concern and pro-environmental behaviour which suggests that with increasing cost (meaning negative impacts of the activity, including time cost, monetary cost, and impact on convenience) of a pro-environmental behaviour, the association with environmental concern decreases (Diekmann and Preisendörfer, 2003). Diekmann and Preisendörfer's (2003) hypothesis suggests that the interaction term differs depending on the cost intensity of the behaviour. In other words, the amount of environmental concern and the strength of its effect on behaviour changes in accordance with behaviour cost. Applying such a hypothesis to my study allows me to posit there will be a stronger association between urban green space visitation and low cost forms of pro-environmental behaviour

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(putting rubbish in the bin). The socio-demographic of income is a useful variable to include in my examination as it could account for some of the variance in proenvironmental behaviour performance not explained by urban green space visitation. Using the hypothesis of Diekmann and Preseindörfer (2003), it is likely that those respondents in living in a higher earning household may find it less costly to make proenvironmental behaviour changes and may therefore show a stronger association between urban green space visitation and pro-environmental behaviour.

Figure three illustrates the hypothesis of Diekmann and Preseindörfer (2003). As the cost of pro-environmental behaviour increases, the effect of environmental concern decreases, making way for factors such as socio-demographic variables to play a greater role in the decision to pursue such pro-environmental behaviour. Diekmann and Preseindörfer (2003) developed the illustration in figure four to conceptualise the cost differences between two types of pro-environmental behaviour, recycling and public transportation to work. Figure four illustrates that the cost difference between recycling and not recycling is small for most people, while the difference is large for the pro-environmental behaviour of using public transportation. People will be more willing to take up behaviours that are less costly to them. For someone that is more financially stable, the risks and costs involved in changing to more costly behaviours is less, supporting the hypothesis that those who earn more will perform more pro-environmental behaviour (as they will be more likely to perform those pro-environmental behaviours that are more costly).



Figure 3: The low-cost hypothesis of environmental behaviour (Diekmann and Preseindörfer, 2003).



Figure 4: Low-cost and high-cost situations and the role of environmental concern (Diekmann and Preseindörfer, 2003).

Income has always been acknowledged as having some bearing on environmental protection and willingness to pay for environmental protection programs (Torgler and Garcia-Valiñas, 2007). With fewer economic concerns, individuals are more willing to think about issues beyond their personal situation and are more capable of making lifestyle changes for the benefit of the environment (Torgler and Garcia-Valiñas, 2007). This phenomenon has been termed the affluence hypothesis (Givens and Jorgenson, 2011). Diekmann and Preisendörfer's (2003) study showed that low-cost pro-environmental behaviours, including recycling, switching off lights, and buying refills, were significantly correlated with environmental concern, whereas the higher cost pro-environmental behaviour changes such as shopping without a car, weekend trips without a car, and no car in the household, were not significantly correlated. My study will determine whether income moderates how urban green space visitation explains pro-environmental behaviour.

1.2.6 Pride, Connections to Nature, and Pro-environmental Behaviour

Along with socio-demographic variables it is possible that attitudinal variables such as pride may moderate the relationship between urban green space visitation and proenvironmental behaviour. Emotions and their influence on three intentions for proenvironmental behaviour were explored by Harth et al. (2013b). It was concluded that pride helped predict intentions for favouring environmental protection (Harth et al., 2013a). Intentions here do not represent one's pro-environmental behaviour, but do indicate one's desire to engage in a more sustainable lifestyle. Ultimately, Harth et al. (2013b), along with Ferguson and Branscombe (2010) found that positive emotions such as pride can motivate pro-environmental behaviour. Ferguson and Branscombe (2010) mirror the work of Tracy and Robins (2007), when they state that positive emotions (e.g., pride) may motivate pro-environmental behaviour. Importantly, it has not been assessed whether someone's level of pride moderates the association. With empirical evidence suggesting a link between place attachment and pride (Brown et al., 2003, Scannell and Gifford, 2010), and with place attachment linked to urban green space visitation (Budruk et al., 2009) it is expected that those who have higher levels of pride will be more responsive to the effects of biophilia as they are more likely to want to preserve the source of their pride – the urban green space.

1.2.7 Quality of life, Connections to Nature, and Pro-environmental Behaviour.

Research question 1.5 seeks to ascertain how quality of life moderates the relationship between urban green space visitation and pro-environmental behaviour. From the literature, it is clear that such a question has not yet been addressed. There is plenty of evidence linking nature exposure to enhanced quality of life (which can also be referred to as well being or life satisfaction) (Cervinka et al., 2012, Grinde and Patil, 2009, Özgüner et al., 2012). Cervinka et al. (2012) reported nature connectedness to not only predict pro-environmental behaviour but also predict well-being. Well-being has been used as a proxy for quality of life and it has been suggested these two concepts to be synonymous and interchangeable with each other (Cervinka et al., 2012).

In the past, pro-environmental behaviour has been seen as a threat to one's quality of life due to the associated costs and indirect benefits associated with such behaviour (Venhoeven et al., 2013). Recently, it has been shown that pro-environmental behaviour is positively correlated with life satisfaction (Venhoeven et al., 2013). I therefore
expected those with a high quality of life would show a stronger association between urban green space visitation and pro-environmental behaviour.

1.2.8 Overall Conclusions from the Literature.

An illustrated theoretical progression from nature exposure (urban green space visitation) to pro-environmental behaviour, incorporating biophilia and the theory of planned behaviour (TPB) is depicted in figure five, below.



Figure 5: Theoretical progression illustrating the hypothesised relationship between urban green space (UGS) visitation, emotional connections to nature, and pro-environmental behaviour (PEB), using biophilia and the theory of planned behaviour (TPB) as supporting arguments.

After canvassing the literature for supporting theory and evidence to back up assumptions underpinning my proposed direction of study, the following conclusions can be made.

- Humans hold stronger associations to natural as opposed to built stimuli.
- Nature exposure has the ability to foster emotional affinity towards the natural environment and repeated exposure to nature based experiences increases the likelihood a person will hold emotional connections to nature.
- The theory of planned behaviour posits the importance of attitudes in predicting behaviour.
- The principle of compatibility puts forward that those holding proenvironmental attitudes are likely to perform pro-environmental behaviours.
- Urban green space visitation has not been examined for a relationship with proenvironmental behaviour despite being a form of nature exposure.

- Different types of urban green space entail different levels of emotional response. Water based scenes and vegetative scenes are reported to have stronger positive impacts and are the landscape types humans prefer.
- When people gain positive emotions (enjoyment) from a particular landscape they are more likely to seek its preservation.
- The biophilia hypothesis is a theoretical explanation for the above patterns and conclusions which puts human's affiliation for the natural environment as an evolutionary trait written into our biological makeup. It is argued that whilst being an innate phenomenon, affiliation to nature must be nurtured for it to be manifested in pro-environmental behaviour. It is exposure to nature which provides the necessary stimuli for biophilia to be developed.
- Socio-demographic factors (gender, age, and income), as well as attitudinal factors (pride and quality of life) could moderate the relationship between urban green space visitation and pro-environmental behaviour. Studies have shown positive correlations to exist between pro-environmental behaviour, quality of life, pride, emotional connections to nature and certain socio-demographic characteristics. As yet, there has not been a study explicitly investigating how such factors influence biophilia.

One of the major limitations of my study is the inability to prove causality. Without a longitudinal or intervention study, I am unable to conclusively state that the proenvironmental behaviour individuals are reporting is due to their urban green space visitation. However, with the application of the biophilia hypothesis, these limitations are reduced.

Thus far, the majority of environmental psychology research has looked into the cognitive aspects of human-nature interactions with limited analysis of how behaviours in one domain (urban green space visitation) are reflected in other physical expressions of internal values and attitudes (e.g., pro-environmental behaviour). While researchers have delved into the area of attitude-behaviour consistency, as well as green landscape perceptions, a common theme in these studies is an obvious irregularity in the proxies used. Values, attitudes, concern and place attachment indices have all been used to assess the role of green landscapes on the cognitive makeup of individuals with no one variable exclusively prioritised over another. Herein lies the issue within the current literature. Without an in-depth source of research which consistently applies one method

of measurement, it is difficult to accurately ascertain the extent to which these studies support each other. It is clear that emotional connections are crucial in the performance of pro-environmental behaviour, but due to difficulties in their measurement it would be ideal to find a more tangibly measurable option for predicting pro-environmental behaviour. Whether urban green space visitation has the potential to serve this role remains to be seen.

CHAPTER 2

2.0 Methods

The purpose of my study was to examine the relationship between urban green space visitation and pro-environmental behaviour to ascertain whether there was a statistically significant correlation. I also wanted to test whether there were any differences in the presence or strength of correlation in accordance with different urban green space types and different types of pro-environmental behaviour. Socio-demographic characteristics were also examined with the aim of finding those socio-demographics which were statistically significant moderators. I used regression techniques to produce statistical equations illustrating how urban green space visitation is associated with pro-environmental behaviour and whether the association was stronger for certain socio-demographic groups. Cross-tabulations and odds ratios also aided in the examination of the relationship.

The purpose of this methods chapter is to (1) describe the research methodology, (2) explain the sample selection, (3) describe the procedure used in designing the instrument and collecting the data, (4) provide an explanation of the statistical procedures used to analyse the data, and (5) outline limitations of the data and methods as well as recommendations for future surveys.

Research Methodology

A positivist quantitative research methodology was chosen for this study based on the research questions, which are as follows:

- 1.0 What is the relationship between urban green space visitation and proenvironmental behaviour in Wellington city?
 - 1.1 Do urban green space visitors and non-visitors exhibit a difference in their amount of pro-environmental behaviour?
 - 1.2 Does the relationship between urban green space visitation and proenvironmental behaviour change depending on the type of urban green space visited and the particular pro-environmental behaviour measured?

- 1.3 How do socio-demographic factors moderate the relationship between urban green space visitation and pro-environmental behaviour?
- 1.4 How does pride moderate the relationship between urban green space visitation and pro-environmental behaviour?
- 1.5 How does quality of life moderate the relationship between urban green space visitation and pro-environmental behaviour?

As the research questions sought to determine whether a statistically significant relationship between urban green space visitation and pro-environmental behaviour existed, a large sample size was required. While a survey to gather my own data was initially proposed, due to time constraints for the study, developing and piloting a survey dedicated to answering the research questions would have been time consuming, expensive, and run the risk of returning an insufficient number of responses for robust statistical analysis. However, it became apparent that there was an option for using three pre-administered surveys where data had already been collected and was ready to be analysed.

Background to the Survey

The Wellington City Council (WCC) runs an annual Residents' Satisfaction Survey (RSS) to gather information pertaining to residents' satisfaction with council services (see appendices). In February and May each year, Wellington City Council contracts Nielson New Zealand (an independent market research company) to conduct the surveys which are designed to assess whether the council is achieving the goals laid out in their annual plan. Results are presented in the Annual Report with highlights found in the Topline Report of the respective year's survey. Wellington City Council compare the answers to survey questions across the years (i.e., 2010, 2011, and 2012) to determine whether there have been changes in satisfaction or service use from one year to the next. Due to the length of the interview (taking, on average, 23 minutes) the surveys were designed to be administered in two parts. At the halfway mark, respondents were given the option of continuing on with the remaining questions (which may be part one or part two, determined by the interviewer), to be called back at another time, or to end the interview at that point. Only those who answered both parts of the questionnaire were useful for my study as questions relating to urban green space

visitation were found in part one, whereas the questions relating to pro-environmental behaviour were located in part two. Socio-demographic questions were asked in both sections.

Research Question Methodology

The research questions were developed from hypotheses which were guided by a review of relevant literature. A hypo-deductive method was employed which meant I took a hypothesis and tested it using statistical means. Using biophilia and the theory of planned behaviour, my primary hypothesis was that nature exposure builds stronger nature connections, resulting in a greater likelihood one holds the attitudes necessary for pro-environmental behaviour. The survey design did not allow for emotional connections to nature to be measured or tested and, therefore, significant theoretical assumptions were applied here. As pro-environmental attitudes were not measured in the survey, pro-environmental behaviour was taken to be a physical expression of one's pro-environmental attitudes and emotional connections to nature. Urban green space visitation and pro-environmental behaviour were thus used as proxies for nature exposure and environmental attitudes, respectively.

Research question 1.3 sought to determine the role of socio-demographics in the relationship between urban green space visitation and pro-environmental behaviour. The variables used included gender, age, and income. It was hypothesised that different socio-demographic groups would be influenced differently by nature exposure and their subsequent likelihood to perform pro-environmental behaviour would vary. The influence of each socio-demographic variable on the relationship between urban green space visitation and pro-environmental behaviour was examined using statistical techniques. A large sample size was imperative, especially as analysis was broken down by each socio-demographic variable, further decreasing the amount of responses.

Sample Selection

The Resident's Satisfaction Survey from the years 2010 through 2012 provided the data required to answer the research questions set out in my study. The sample was restricted to Wellington city residents who were over the age of 15. As the survey was developed and commissioned by the Wellington City Council to measure resident's satisfaction with council performance and services, the sample included only those who physically resided in Wellington city. As mentioned earlier, only those respondents who elected to

complete both parts of the survey were of use for my study. Survey responses across the years are detailed in table one.

Year	Total	Part One only	Part Two only	Both Parts
2010	881	280	275	326
2011	871	266	268	337
2012	894	294	294	306
Total				969

Table 1: Survey responses per year for each of the three Wellington City Council Residents Satisfaction Surveys, 2010 – 2012.

The cocatenated sample size of 969 was a sufficient number for reliable statistical tests. While one survey alone presented over 300 responses (deemed a substantial sample size in many instances), upon disaggregation by socio-demographic and visitation frequency, some of the cross tabulation tables reported insufficient values to render chi-square tests valid (i.e., the statistical assumption of a chi-square test that each cell must have a value greater than or equal to five was violated in some instances). Pooling the survey responses together prevented such an issue.

Along with gaining a suitable sample size, gaining a representative sample was an equally important aspect of the study design. Nielson New Zealand ensured their sample accurately represented the makeup of Wellington city residents. Soft quotas (approximately 5% above the known makeup of the population) were thus employed in accordance with ward of residence, age, and gender.

Data Collection

The process of collecting the data was performed by fully trained staff at Neilson New Zealand who used telephones from the Oceanic Customer Interaction Services Ltd (OCIS) Computer Assisted Telephone Interviewing (CATI) facility in Auckland. Only fully trained field staff were used to carry out the interviews using a questionnaire programmed into the computer to allow control over the order of questions and ensure

consistency, as well as allowing for monitoring of interviewing standards (see appendices).

Data was collected between 5:00pm and 9:00pm weekdays, 11:00am - 3:00pm and 3:30pm - 7:30pm Saturday, as well as 11:30am - 3:30pm and 4:00pm - 8:00pm Sunday. Such times were chosen to ensure a representative sample of both working and non-working individuals. Each survey was conducted over the month of March in their respective years with 10 pilot surveys administered in the week preceding. When collecting the data, a random digit dialling (RDD) process was used to select household phone numbers from the council databank and interviewers asked to speak to the person in that household who most recently had a birthday. In the 2012 survey, up to five call backs were made until that house was abandoned, while three call backs was the limit in 2010 and 2011. Only those over the age of 15 were eligible for the survey. Response rates varied from 42% in 2010, 36% in 2011 and 32% 2012. A recent marketing study in the United States reported telephone survey response rates have decreased from 25% in 2000 to 9% in 2012 meaning the response rates for the Resident's Satisfaction Survey were greater than the United States average (Marketing Charts, 2012). In regards to confidentiality of answers, Neilson New Zealand made clear to the respondent that their answers would remain confidential. Access to the raw data necessary for the proposed study required the consent of the Wellington City Council. Raw data was sent through in SPSS format via email and required pooling together into one SPSS file for analysis of a grouped sample.

Pooling

The Resident's Satisfaction Survey is an annual survey that changes little across the years. Having continuity in the questions allowed the responses to be pooled together, creating a larger sample size – important for quantitative robustness. However, as the designers of the survey did not foresee the need to pool the data together, there were several inconsistencies in variable labelling, with some new questions added in the 2012 version which required relabeling. The data was transformed into an excel file in order for changes to be made to ensure there were no discrepancies in variable labelling, ensuring a seamless merge. Years 2010, 2011, and 2012 were the surveys chosen to be pooled; these were the most recent and temporally relevant surveys which differed least in their order and form of questions.

Statistical Analysis

The statistical package used for analysing the data was SPSS (Statistical Package for Social Sciences). Using SPSS, the following statistical procedures were conducted in order to help answer the research questions.

- 1. A series of cross tabulations were examined to determine whether urban green space visitation was statistically associated with pro-environmental behaviour.
- 2. Scatterplots of Total UGS visitation versus Total PEB were created to produce trend lines illustrating the direction and slope of the relationship, fitted to subgroups of gender, age, income, pride, and quality of life.
- Linear regression of Total UGS versus Total PEB was conducted to determine slope and strength of statistical association.
- 4. A logarithmic model was tested for its ability to predict Total PEB from Total UGS (recoded for linearity), relative to the linear model.
- 5. Binary logistic regression was used where the variables for urban green space visitation and pro-environmental behaviour were in a binary form. Resulting odds ratios were used to describe the associations.
- 6. Linear regression (broken down by urban green space type) was performed with 95% confidence intervals for respective R^2 values included. R^2 values and β coefficients were compared to determine which were statistically different and conclude whether there was one type of urban green space better suited to predicting Total PEB than the others.
- 7. I conducted a correlation matrix for visitation to the six different urban green space types to determine whether people who visit one type of urban green space also visit another just as frequently.
- Principle component analysis was performed to find those urban green spaces where significant statistical correlation allowed for merging and dimension reduction.
- 9. To see if vegetated or water based urban green spaces were better predictors of Total PEB than sports fields, three linear regressions were conducted, each incorporating one of the three explanatory variables. R^2 values and β coefficients were then compared.
- 10. With one of my research questions seeking to determine whether certain types of urban green space visitation are better at explaining certain types of proenvironmental behaviour, linear regression was performed using each urban

green space type separately and regressing with pro-environmental behaviours, grouped in accordance with their similarities. Dimensionality reduction was performed to find those pro-environmental behaviours that loaded highly onto each other and were able to be used as one 'form' of pro-environmental behaviour.

- 11. Binary logistic regression and odds ratios were used to describe the relationship between urban green space visitation (at two levels) and each of the 14 proenvironmental behaviours.
- 12. Linear and/or binary logistic regressions were performed to determine whether gender, age, income, pride, and quality of life moderated the relationship between urban green space visitation and pro-environmental behaviour.

Note: In order for 'Total PEB' to be assessed, a new variable had to be created. Using the 'recode into different variables' tool in SPSS, question 51 and 54 were grouped together and labelled 'Total PEB', which represented the total amount of pro-environmental behaviour performed. Similarly, urban green space visitation was recoded to create a variable (Total UGS) which gave a score representing total urban green space visitation (irrespective of urban green space type).

Limitations of the Data and Recommendations

Perhaps the greatest limitation of the data was the inability to determine causation. While the research questions sought to identify the strength and direction (positive or negative) of the relationship, regression and correlation analysis could not determine whether it was urban green space visitation *causing* the result in pro-environmental behaviour, or vice versa, or whether it was another covariate entirely. As mentioned earlier, such a conclusion requires an intervention or longitudinal study.

Additionally, due to the nature of the survey's original purpose, pro-environmental behaviour performance was limited to the areas of resources and waste and storm water pollution. There were no questions asking about green consumerism, membership to conservation groups, alliance with green politics, or green advocacy. Without a detailed range of pro-environmental behaviours to choose from the results neglect behaviours that may require a greater level of environmental commitment, for example, green advocacy.

The questions pertaining to respondent's pro-environmental behaviour also failed to account for frequency of participation. While the questions on urban green space visitation used an 8 item Likert scale to assess the extent of one's visitation (from most days to never in the last 12 months), pro-environmental behaviour was recorded as either 'yes' or 'no'. While there are statistical methods that can work with bivariate data (chi-square), to determine how the amount of urban green space visitation correlated with a particular pro-environmental behaviour would have yielded further beneficial results. For example, it would have been useful to detect whether someone that visits urban green space more frequently is more consistent in their pro-environmental behaviour. 'Yes-no' answers do not indicate whether that individual recycles more frequently than someone else who may also indicate 'yes'. Using a Likert scale to measure pro-environmental behaviour participation is thus a recommendation for future editions of the survey.

What must be taken into account is the way the Likert scale was laid out. The unequal distance between Likert items used to record urban green space visitation (most days, once a week, once every 2-3 weeks, once a month, once every 2-3 months, once every 4-5 months, once every 6 months or less, never in the past 12 months) meant a linear relationship may not fit as well as an exponential curve. It may be that the linear regression used in my study is not an accurate measure of the relationship.

There is also the caveat that it is a specific group of people that are willing to cooperate with telephone surveys, only those that have a home phone for example, and those who are not particularly busy and are willing to give up 30 minutes of their time to complete the entire survey. Also, the fact that it is a survey measuring the performance of the Wellington City Council may motivate those who feel strongly for or against the council's performance to participate. All such factors must be taken into account when analysing the results and drawing conclusions.

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CHAPTER 3

3.0 Results

I used quantitative methods to analyse the data set and address the research questions listed. It should be noted that there are at least four possible sources of 'error' (variance unaccounted for) associated with such analysis:

- I. Measurement error (as I am unable to measure pro-environmental behaviour or urban green space visitation exactly).
 - In order to try account for this discrepancy, I tried different measures of urban green space visitation and pro-environmental behaviour. I assessed non-visitors versus visitors, and those who visit once a month or more versus those who visit less than once a month. Urban green space visitation was also measured by type, as well as in 'total' form. Proenvironmental behaviour was aggregated to form the variable, Total PEB.
- II. Aggregation of the various 'types' of both urban green space and proenvironmental behaviour.
 - Different types of aggregations were used. To help answer the research questions most effectively, urban green space types that shared similar characteristics were aggregated to form a new, combined variable. For example, town belt, walking tracks, parks, and botanic gardens were aggregated to create the variable, Vegetated UGS. Additionally, responses for Total PEB and Total UGS were aggregated to form binary variables for analysis via binary logistic regression.
- III. Missing variables as arguments
 - The missing variables refer to those who answered as 'don't know' or 'refused to answer', or that provided an answer different to the options laid out in the survey (in the case of questions 51 and 54, where respondents were allowed to cite 'other' and give examples of the type of pro-environmental behaviour they performed). With these responses set as system missing I removed these individual responses from the random sample.
- IV. Non-linearity in the linear model.

- While linear regression was the primary statistical test to analyse the relationship between urban green space visitation and pro-environmental behaviour, it is possible that the relationship is non-linear with each successive increase in urban green space visitation having less of an influence on pro-environmental behaviour (i.e., it may be a log linear relationship). Fitting a semi-log plot (with the log of the 'Total UGS recoded for linearity' variable taken) was conducted to test whether such a model proved to be a better predictor of 'Total PEB'.

3.1 Urban Green Space Visitation and Pro-environmental Behaviour

"Do urban green space visitors and non-visitors exhibit a difference in their amount of pro-environmental behaviour?"

Research question 1.1 asked whether those who visit urban green space perform more or less pro-environmental behaviour relative to those who do not. The question also sought to determine whether frequent urban green space visitation correlates with a greater likelihood to perform more types of pro-environmental behaviour. Using biophilia, my analysis assumed urban green space visitation to be the explanatory variable and proenvironmental behaviour to be the dependent variable.

Note: The Resident's Satisfaction Survey measured urban green space visitation on an 8 item Likert scale, ranging from 'most days' to 'never in the past 12 months'. For ease of reading of resulting equations and graphs, the variable for urban green space visitation was recoded so a score of 0 was the equivalent of 'never in the past 12 months', while a score of 7 represented a visitation frequency of 'most days'. Pro-environmental behaviour, however, was measured in a binary fashion with respondents given the option of answering 'yes' or 'no' to whether they performed a selection of 14 pro-environmental behaviours. A 'high' score for Total PEB meant the respondent answered, 'yes' to seven or more of the 14 pro-environmental behaviours. A high score for urban green space visitation was hypothesised to positively correlate with a high score for pro-environmental behaviour.

In order to use linear regression to determine whether a linear pattern existed between urban green space visitation and pro-environmental behaviour the data was recoded to create two new variables, 'Total UGS' and 'Total PEB'. Responses from each individual for the six types of urban green space were added together to create an

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overall value of urban green space visitation, irrespective of type. For example, an individual who visited all six urban green space types once every 2-3 months (with a corresponding score of 3) received a total score of 18. Another individual who visited the town belt and city walking tracks most days (corresponding score of 7), but visited the four other types less than once every six months (corresponding score of 1) would also end up with a Total UGS score of 18. If someone indicated they visited all forms of urban green space most days their Total UGS score would be 42.

Computing the variable, 'Total PEB' required a similar process whereby the respondents answers for whether they performed the pro-environmental behaviours listed in question 51 were added to the pro-environmental behaviours in question 54. A value of 1 was attributed to a 'yes' response with 0 equating to 'no'.

		Total PEB	Total UGS
N	Valid	969	969
N	Missing	0	0
Mean	1	9.3168	17.6275
Mode	e	9.00 ^a	6.00
Std. Deviation		2.34691	7.44543
Minimum		.00	6.00
Maxi	mum	14.00	41.00

Table 2: Descriptive statistics for Total PEB and Total UGS using the concatenated sample.

a. Multiple modes exist. The smallest value is shown.

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
	.00	1	.1	.1	.1
	1.00	3	.3	.3	.4
	2.00	5	.5	.5	.9
	3.00	8	.8	.8	1.8
	4.00	12	1.2	1.2	3.0
	5.00	29	3.0	3.0	6.0
	6.00	59	6.1	6.1	12.1
Valid	7.00	76	7.8	7.8	19.9
vanu	8.00	123	12.7	12.7	32.6
	9.00	170	17.5	17.5	50.2
	10.00	170	17.5	17.5	67.7
	11.00	144	14.9	14.9	82.6
	12.00	99	10.2	10.2	92.8
	13.00	54	5.6	5.6	98.3
	14.00	16	1.7	1.7	100.0
	Total	969	100.0	100.0	

Table 3: Frequency table for Total PEB using the concatenated sample.

	Frequency	Percent	Valid Percent	Cumulative
				Percent
.00	21	2.2	2.3	2.3
1.00	26	2.7	2.8	5.1
2.00	12	1.2	1.3	6.4
3.00	18	1.9	2.0	8.4
4.00	24	2.5	2.6	11.0
5.00	22	2.3	2.4	13.4
6.00	23	2.4	2.5	15.9
7.00	33	3.4	3.6	19.5
8.00	27	2.8	2.9	22.4
9.00	40	4.1	4.4	26.8
Valid 10.00	34	3.5	3.7	30.5
11.00	35	3.6	3.8	34.3
12.00	30	3.1	3.3	37.6
13.00	38	3.9	4.1	41.7
14.00	42	4.3	4.6	46.3
15.00	47	4.9	5.1	51.4
16.00	53	5.5	5.8	57.2
17.00	25	2.6	2.7	59.9
18.00	31	3.2	3.4	63.3
19.00	23	2.4	2.5	65.8
20.00	40	4.1	4.4	70.2
Total	918	94.7	100.0	
Missing System	51	5.3		
Total	969	100		

Table 4: Frequency table for Total UGS using the concatenated sample. Values .00 through20.00 only shown (values 21.00 through 41.00 continued in table 5).

		Frequency	Percent	Valid	Cumulative
				Percent	Percent
	21.00	31	3.2	3.4	73.5
	22.00	30	3.1	3.3	76.8
	23.00	22	2.3	2.4	79.2
	24.00	24	2.5	2.6	81.8
	25.00	19	2.0	2.1	83.9
	26.00	35	3.6	3.8	87.7
	27.00	20	2.1	2.2	89.9
	28.00	19	2.0	2.1	91.9
	29.00	22	2.3	2.4	94.3
Valid	30.00	17	1.8	1.9	96.2
	31.00	6	.6	.7	96.8
	32.00	4	.4	.4	97.3
	33.00	5	.5	.5	97.8
	34.00	5	.5	.5	98.4
	35.00	7	.7	.8	99.1
	36.00	3	.3	.3	99.5
	37.00	1	.1	.1	99.6
	38.00	3	.3	.3	99.9
	41.00	1	.1	.1	100.0
	Total	918	94.7	100.0	
N	lissing System	51	5.3		
	1 otal	969	100.0		

Table 5: Frequency table for Total UGS using the concatenated sample. Values 21.00 through 41.00 only shown. (See table 4 for values 0.00 through 20.00).

Linear regression was performed using 'Total PEB' as the dependent variable and 'Total UGS' as the independent (Equation 1).

Equation 1

Total
$$PEB_i = 8.116 + 0.079$$
 Total UGS_i $R = 0.289; R^2 = 0.084; N = 918.$
(52.562) (9.152)

An R^2 value of 0.084 was returned meaning only 8.4% of the variance in Total PEB was explained by the predictor, Total UGS visitation. Such a low value was to be expected with micro data, such as that being used in my study, indicating there are various other factors contributing to the relationship. A p value of 0.000 was encouraging as it allowed me to reject the null hypothesis that Total UGS visitation and Total PEB are independent of one another (at the 1% significance level). A coefficient of 0.079 means for every one unit increase in urban green space visitation, the amount of proenvironmental behaviour for the *ith* person randomly selected from the concatenated sample, rises by 0.079.

To illustrate the association between urban green space visitation and pro-environmental behaviour, an X-Y scatterplot was produced (see figure six). A fitted trend line illustrates the model in equation one. What can be gathered from the graph and accompanying equation is an estimate of pro-environmental behaviour for a certain amount of urban green space visitation. Someone who returns a score of 40 for Total UGS is predicted to perform 11.276 pro-environmental behaviours. Of course there are issues here pertaining to the ordinal nature of Total PEB, however, the graph and equation is useful in that it depicts a statistically significant, positive association – a result I had expected.



Figure 6: Linear relationship between pro-environmental behaviour (measured as a score out of 14) as a function of urban green space visitation (measured as a combined score for visitation to six urban green space types).

An issue with equation one and the scatterplot (figure six) should be noted. The x-axis of the scatterplot in figure six suggests visitation is measured in a linear fashion. This is not the case. Question 39 (urban green space visitation) recorded visitation in a categorical manner. The distance between visitation 'most days' and 'once or twice a week' is not equal to the distance between visitation 'once every 6 months or less' and 'never in the last 12 months', despite the corresponding values (0 through 7) suggesting otherwise. When recoded so urban green space visitation scores were represented as daily visitations⁵, a different x-axis scale was produced (see figure seven). Descriptive statistics are listed in table six.

Table 6: Descriptive statistics detailing the minimum, maximum and mean values for total time's urban green space was visited over a twelve month period.

	N	Minimum	Maximum	Mean	Std.
					Deviation
Total urban green space visitation (recoded for linearity)	918	.00	1378.00	147.1460	184.93811
Valid N (list wise)	918				

The minimum amount of times urban green space was reportedly visited in a year was zero. The maximum amount of times urban green space was visited in a year was 1378, with the average being 147. The reason the maximum value is so high is due to the way the daily visitation scores for each urban green space were added together For example, an individual who reportedly visited coasts, walking tracks, town belt, botanic gardens, and parks most days, and sports fields once or twice a week would receive a score of 1378 (260 + 260 + 260 + 260 + 260 + 78). Obviously, it cannot be said that that individual visits urban green space 1378 days per year, instead, the value refers to the amount of times urban green space was visited over a 12 month period. The scatterplot in figure seven used this recoded variable to allow the x-axis to represent number of times urban green space was visited. The recoding more accurately reflects the relative distances between each category in question 39.

⁵ Note: Question 39 was recoded so the corresponding value reflected the amount of times per year that answer suggested the person visited urban green space. With 'most days' taken to mean 5 out of the 7 days per week, 260 was the value attributed to an answer of 'most days'. Once or twice a week was taken as 1.5 days a week, therefore a corresponding value of 78 was given. Once every 2 - 3 weeks was represented by 21 (52 weeks/2.5 = 20.8). 12 = once a month. 5 was used to represent visitation once every 2 - 3 months (12 months / 2.5 = 4.8). 3 represented once every 4 - 5 months (12 months / 4.5 = 2.67). Values of 2 and 0 were used to logically represent the final two categories of once every 6 months or less often and never in the last 12 months, respectively. The values for each UGS were collated together to create a Total UGS variable (recoded for linearity).



Figure 7: Linear relationship between pro-environmental behaviour (measured as a score out of 14) as a function of urban green space visitation (measured as number of times over a 12 month period urban green space was visited for six urban green space types).

I applied both a linear (equation two) and log-linear (equation three) model to the data with the semi-log plot (equation three) reporting a stronger co-efficient (9.303 > 5.086).

Equation 2

Total PEB_i = 9.041 + 0.002 Total UGS_i
(91.945)(5.086)
$$R = 0.166; R^2 = 0.027; N = 917.$$

Equation 3
Total PEB_i = 4.835 + 1.515 ln Total UGS_i $R = 0.294; R^2 = 0.086; N = 917.$

(9.839) (9.303)

Equation two shows that for each additional visit to urban green space per year, the amount of pro-environmental behaviour one performs rises by 0.002. The p value (0.000) tells me that there is a statistically significant association here, meaning there is evidence to reject the null hypothesis that pro-environmental behaviour is independent of urban green space visitation.

Importantly, the t statistic for the co-efficient for Total UGS is more significant in the logarithmic model compared with the linear (9.303 > 5.086). The stronger significance of the co-efficient for *ln Total UGS* tells me that the log-linear relationship is a better fit for the data (when the data is recoded for linearity). While both models are statistically significant, it appears that the log-linear model is a more accurate portrayal of the relationship. My results suggest that changing someone's visitation habits from 'nothing' to 'something' is potentially more beneficial than increasing urban green space visitation for those who already visit urban green spaces many times per year. When the model is plotted on the graph I can see that there is a greater influence of increases in urban green space visitation on pro-environmental behaviour at the lower end of the x-axis. Such a conclusion is crucial for policy makers as it suggests that proenvironmental behaviour could improve if urban green space visitation is increased from once or twice a year to once a week. Equation three suggests that someone who increases their urban green space visitation from twice a year (2.00) to once a week (52.00) would show an increase in pro-environmental behaviour of 4.92. For someone who increases their urban green space visitation from once a month (12) to once a day (365), the associated increase in pro-environmental behaviour, as predicted by the loglinear model in equation three, is 2.95. There may be greater benefit in fostering urban green space visitations amongst those who do not currently visit green spaces at all for the purposes of achieving pro-environmental behaviour change.

Question 1.1 sought to determine whether there was a difference in the amount of proenvironmental behaviour performed by frequent urban green space visitors versus less frequent visitors. A statistically significant positive relationship allows me to conclude that higher urban green space visitation is associated with a higher score for proenvironmental behaviour.

Linear regression analysis allowed me to illustrate the statistically significant positive association between Total UGS and Total PEB. There are alternative methods of answering question 1.1 such as binary logistic regression and the use of cross tabulation analysis. Such methods allow for easier interpretation of the relationship between the two variables (pro-environmental behaviour and urban green space visitation) and more appropriately illustrate whether there is a difference in pro-environmental behaviour performance between those who never visit urban green space and those who do. Three new variables were created; Total UGS binary, Total PEB binary, and Total UGS Yes or No. Total UGS binary collated Total UGS visitation into two categories, visitation

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once a month or more (1.00) or less than once a month (.00). Total PEB binary collated Total PEB visitation into two categories, more than seven pro-environmental behaviours (1.00) or seven or less pro-environmental behaviours (.00).

Table 7: Frequency table showing distribution of responses for Total UGS binary using the concatenated sample.

Total UGS		Frequency	Percent	Valid Percent	Cumulative
binary					Percent
	.00	727	75.0	75.0	75.0
Valid	1.00	242	25.0	25.0	100.0
	Total	969	100.0	100.0	

Table 8: Frequency table showing distribution of responses for Total PEB binary using the concatenated sample.

Total PEB		Frequency	Percent	Valid Percent	Cumulative
binary					Percent
	.00	193	19.9	19.9	19.9
Valid	1.00	776	80.1	80.1	100.0
	Total	969	100.0	100.0	

Table 9: Frequency table showing distribution of responses for Total UGS Yes or No using the concatenated sample.

Total UGS Yes		Frequency	Percent	Valid Percent	Cumulative
or No visitation					Percent
	.00	21	2.2	2.2	2.2
Valid	1.00	948	97.8	97.8	100.0
	Total	969	100.0	100.0	

Cross tabulation analysis (see table ten) revealed those who visited urban green space at least once a year were 18.6% more likely to perform more than seven proenvironmental behaviours relative to someone who had never visited urban green space in the past 12 months. Pearson chi square statistic (4.447) was significant at the 5% level (0.035) and the odds of someone performing more than seven types of proenvironmental behaviour increased 2.538 times if they visited urban green space (relative to if they did not visit at all) (Wald = 4.158; p = 0.041). **Table 10:** Cross tabulation of Total UGS Yes or No and Total PEB binary showing conditional probabilities of performing more than seven pro-environmental behaviours. Total UGS Yes or No represented by .00 indicating no visitation and 1.00 indicating visitation at least once in 12 months. Total PEB binary represented by .00 indicating seven or less of the 14 pro-environmental behaviours were performed and 1.00 indicating more than seven pro-environmental behaviours were performed.

			Total UGS Yes or No		Total
			.00	1.00	
Total PEB binary	.00	Count	8	185	193
		% within Total UGS Yes or No	38.1%	19.5%	19.9%
	0	Count	13	763	776
	1.00	% within Total UGS Yes or No	61.9%	80.5%	80.1%

Further cross tabulation analysis (see table 11) showed the conditional probability that an individual who visits urban green space (on average) more than once a month performs more than seven pro-environmental behaviours to be 0.872, compared to 0.777 if the individual visits less than once a month (on average). There was thus a 9.5% greater likelihood that an individual performs more than seven pro-environmental behaviours if they visited urban green space once a month or more. The result was significant at the 1% level (Pearson chi square = 10.216; p = 0.001). Both cross tabulations suggest that there is a greater probability of performing more proenvironmental behaviour if someone also visits urban green space. The difference in probability is greater across non-visitors and visitors, supporting the notion that increasing visitation from 'nothing' to 'something' could lead to the greatest changes in pro-environmental behaviour uptake. Again, such results support my original hypothesis and give support to the theory of biophilia. Nature exposure does appear to be positively associated with pro-environmental behaviour. **Table 11:** Cross tabulation of Total UGS binary and Total PEB binary showing conditional probabilities of performing more than seven pro-environmental behaviours. Total UGS binary represented by .00 indicating visitation less than once a month and 1.00 indicating visitation once a month or more. Total PEB binary represented by .00 indicating seven or less of the 14 pro-environmental behaviours were performed and 1.00 indicating more than seven pro-environmental behaviours were performed.

			Total UGS binary		Total
			.00	1.00	
		Count	162	31	193
	.00	% within Total UGS binary	22.3%	12.8%	19.9%
		% of Total	16.7%	3.2%	19.9%
Total PEB binary	1.00	Count	565	211	776
		% within Total UGS binary	77.7%	87.2%	80.1%
		% of Total	58.3%	21.8%	80.1%

Through the creation of two new binary variables for Total UGS and Total PEB I was able to perform binary logistic regression, a form of regression on limited dependent variables as in the binary case (see equation 4).

Equation 4

Total PEB binary_i = 1.249 + 0.669 Total UGS binary_i $R^2 = 0.011$; N = 969. (196.478)(9.948)

Such analysis produced an odds ratio for pro-environmental behaviour performance. The odds ratio is a useful way of representing the association between urban green space visitation and pro-environmental behaviour. If the odds ratio is equal to 1, urban green space visitation does not affect the odds of performing pro-environmental behaviour. If the odds ratio is greater than 1, urban green space visitation once a month or more is associated with higher odds of performing more than seven proenvironmental behaviours. Odds ratios are different to probabilities so the interpretation is different to that used for analysing the results in cross tabulations. For example, P is the probability of something happening (performing a pro-environmental behaviour) and the odds can be considered as the number of 'successes' ('yes' to proenvironmental behaviour) for every 'failure' ('no' to pro-environmental behaviour) on average. High odds correspond to high probabilities. The ratio of two odds is termed the odds ratio and is useful for explaining how much more likely one event is relative to another. My results here show the odds of an individual performing more than seven types of pro-environmental behaviour almost doubles (odds ratio = 1.95) if they visit urban green space more than once a month. The result was significant at the 1% level (Wald = 9.948; p = 0.002). In order to determine the difference in odds of performing more than seven pro-environmental behaviours between visitors and non-visitors, logistic regression using Total UGS Yes or No (as opposed to Total UGS binary) was used. The result was significant (p = 0.041) with the odds of performing more than seven pro-environmental behaviours increasing 2.538 times if a person visits urban green space (compared to no visitation at all). People who visit urban green space more often perform more pro-environmental behaviour and the difference is greatest between those who don't visit at all and those who do.

The preceding analysis focused solely on Total UGS and Total PEB meaning particular types of pro-environmental behaviour and urban green space were not separately accounted for in the conclusions reached. Therefore, while it was concluded that there was a statistically significant, positive association, these results may hide some important patterns and trends with respect to specific pro-environmental behaviour and urban green space types.

3.2 Analysis by Urban Green Space Type

"Does the relationship between urban green space visitation and pro-environmental behaviour change depending on the type of urban green space visited?"

Table 12: Frequency table showing distribution of responses for each urban green space type using the concatenated sample.

		Coasts	Botanic Gardens	Parks	Town Belt	Tracks	Sports Fields
N	Valid	969	969	961	935	960	962
IN	Missing	0	0	8	34	9	7

Question 1.2 specifically asked whether the relationship between urban green space visitation and pro-environmental behaviour differs depending on the type of urban green space visited. In order to determine whether the statistically significant relationship between Total UGS and Total PEB is also present when Total UGS is broken down by urban green space type, two methods were used. First, the sample was partitioned into the particular urban green space types and linear regressions were conducted in order to compare the significance of the coefficients. Tables 13 through 18 show frequency distributions for responses. Table 19 displays the regression output.

Table 13: Frequency table showing distribution of responses for visitation to Wellington city's coastal areas, harbours, and beaches using the concatenated sample. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	83	8.6	8.6	8.6
1.00 2.00 3.00	1.00	102	10.5	10.5	19.1
	50	5.2	5.2	24.3	
	3.00	140	14.4	14.4	38.7
Valid	4.00	154	15.9	15.9	54.6
	5.00	203	20.9	20.9	75.5
	6.00	182	18.8	18.8	94.3
	7.00	55	5.7	5.7	100.0
	Total	969	100.0	100.0	

Table 14: Frequency table showing distribution of responses for visitation to botanic gardens using the concatenated sample. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	227	23.4	23.4	23.4
1.0 2.0 3.0	1.00	233	24.0	24.0	47.5
	2.00	77	7.9	7.9	55.4
	3.00	195	20.1	20.1	75.5
Valid	4.00	113	11.7	11.7	87.2
	5.00	64	6.6	6.6	93.8
	6.00	40	4.1	4.1	97.9
	7.00	20	2.1	2.1	100.0
	Total	969	100.0	100.0	

Table 15: Frequency table showing distribution of responses for visitation to parks. Categories span from .00 indicating no visitation to 7.00 indicating visitation most days. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

Parks		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	151	15.6	15.7	15.7
	1.00	102	10.5	10.6	26.3
	2.00	56	5.8	5.8	32.2
	3.00	122	12.6	12.7	44.8
Valid	4.00	124	12.8	12.9	57.8
	5.00	158	16.3	16.4	74.2
	6.00	192	19.8	20.0	94.2
	7.00	56	5.8	5.8	100.0
	Total	961	99.2	100.0	
Missing	System	8	.8		
То	tal	969	100.0		

Table 16: Frequency table for visitation to the town belt or outer green belt using the concatenated sample. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	384	39.6	41.1	41.1
	1.00	125	12.9	13.4	54.4
	2.00	52	5.4	5.6	60.0
	3.00	89	9.2	9.5	69.5
Valid	4.00	93	9.6	9.9	79.5
	5.00	66	6.8	7.1	86.5
	6.00	90	9.3	9.6	96.1
	7.00	36	3.7	3.9	100.0
	Total	935	96.5	100.0	
Missing	System	34	3.5		
Total		969	100.0		

Table 17: Frequency table for visitation to city walking tracks using the concatenated sample. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	333	34.4	34.7	34.7
	1.00	154	15.9	16.0	50.7
	2.00	49	5.1	5.1	55.8
	3.00	108	11.1	11.3	67.1
Valid	4.00	95	9.8	9.9	77.0
	5.00	78	8.0	8.1	85.1
	6.00	94	9.7	9.8	94.9
	7.00	49	5.1	5.1	100.0
	Total	960	99.1	100.0	
Missing	System	9	.9		
То	tal	969	100.0		

Table 18: Frequency table for visitation to Wellington city council outdoor grass sports fields using the concatenated sample. (0.00 = most days, 1.00 = once a week, 2.00 = once every 2-3 weeks, 3.00 = once a month, 4.00 = once every 2-3 months, 5.00 = once every 4-5 months, 6.00 = once every 6 months or less, 7.00 = never in the past 12 months).

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	557	57.5	57.9	57.9
	1.00	87	9.0	9.0	66.9
	2.00	24	2.5	2.5	69.4
	3.00	62	6.4	6.4	75.9
Valid	4.00	50	5.2	5.2	81.1
	5.00	64	6.6	6.7	87.7
	6.00	106	10.9	11.0	98.8
	7.00	12	1.2	1.2	100.0
	Total	962	99.3	100.0	
Missing	System	7	.7		
То	tal	969	100.0		

Table 19: Results of regression analysis of Total PEB as a function of Total UGS across each urban green space type, separately. 95% confidence intervals for R^2 values included for comparison.

UGS	Ν	\mathbb{R}^2	R ² 95% C.I	P value	Equation
Coasts	969	0.043	0.01807 $\leq R2 \leq$ 0.06793	.000	Total $PEB_i = 8.389 + 0.241$ Coasts (53.029) (6.626)
Botanic	969	.044	0.01881 $\leq R2 \leq$ 0.06919	.000	Total $PEB_i = 8.745 + 0.261$ Botanic (77.482) (6.695)
Parks	961	0.043	$0.01870 \le R2 \le 0.06930$.000	Total $PEB_i = 8.552 + 0.216 Parks$ (62.007)(6.588)
Town Belt	935	0.029	$0.00785 \le R2 \le 0.05015$.000	Total $PEB_i = 8.980 + 0.172$ Town Belt (87.141) (5.260)
Tracks	960	0.048	$0.02168 \le R2 \le 0.07432$.000	Total $PEB_i = 8.816 + 0.218$ Tracks (84.203)(6.915)
Sports Fields	962	0.016	0.00031 $\leq R2 \leq$ 0.03169	.000	Total $PEB_i = 9.117 + 0.129$ Sports Fields (98.868) (3.909)

There was a significant association between urban green space visitation and Total PEB for all urban green space types (p < 0.01). None of the urban green spaces alone were strong predictors of Total PEB. The lowest R² values derived from sports field and town belt visitors (0.016 and 0.029, respectively), suggesting these areas in particular are less effective at predicting pro-environmental behaviour relative to the other urban green space types. When looking at the 95% confidence interval for R², there is overlap for all regressions. Tracks and sports fields showed the greatest difference, with only a slight overlap between 0.02168 (tracks minimum R²) and 0.03169 (sports fields maximum R²).

I hypothesised that sports fields would have less predictive power than urban green spaces such as walking tracks following literature which states vegetation to be a strong indicator of how connected to nature one will become through increased exposure (Jim and Chen, 2006). Sports fields, in this instance, consist of open grass land with little vegetative cover. My results showed those who visited such spaces were still performing more pro-environmental behaviours than those who did not. Gordan Orian's Savannah hypothesis can possibly explain such a result. The Savannah hypothesis posits that humans have a subconscious attachment to half-open, park-like spaces, such as savannahs, as this is the habitat humans evolved from (Wilson, 1984). All spaces appear to be significantly associated (positively) with pro-environmental behaviour. There could be issues with multicollinearity here. Perhaps, those who are visiting one type of urban green space are also visiting another just as frequently.

A correlation matrix (table 20) displays which of the urban green space types are highly correlated. All urban green space types were significantly correlated at the 1% level, with the exception of botanic gardens and sports fields, which were correlated at the 5% level (correlation of 0.081). The strongest correlation (0.639) occurred between tracks and the town belt, likely due to the surrounding belt being home to many of the city's walking tracks. All correlations were positive meaning that individuals who visited one type of urban green space frequently were likely to frequently visit another type of urban green space. What such a pattern suggests is that those who visit urban green space hold characteristics and/or personality traits consistent with an interest in the outdoors. Azjen's (1991) principle of compatibility supports such an assumption as it states that behaviours that are similar are often positively correlated because they derive from similar attitudes.

Table 20: Correlation matrix showing Pearson correlation coefficients and associated p values for all list wise comparisons of visitation to urban green space. Visitation was measured retaining the eight categories of visitation frequency, from never to most days.

		Coasts	Botanic	Parks	Town Belt	Tracks	Sports Fields
	Pearson Correlation	1					
Coasts	Sig. (2-tailed)						
	Ν	969					
	Pearson Correlation	.268**	1				
Botanic	Sig. (2-tailed)	.000					
	Ν	969	969				
	Pearson Correlation	.347**	.322**	1			
Parks	Sig. (2-tailed)	.000	.000				
	Ν	961	961	961			
	Pearson Correlation	.362**	.333**	.347**	1		
Town Belt	Sig. (2-tailed)	.000	.000	.000			
	Ν	935	935	928	935		
	Pearson Correlation	.352**	.342**	.371**	.639**	1	
Tracks	Sig. (2-tailed)	.000	.000	.000	.000		
	Ν	960	960	954	927	960	
a .	Pearson Correlation	.180**	$.081^{*}$.356**	.172**	.178**	1
Sports	Sig. (2-tailed)	.000	.012	.000	.000	.000	
rielus	Ν	962	962	956	930	955	962

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Principle components analysis

Principal component analysis is a technique which allows the dimensionality of data to be reduced. Due to the presence of statistically significant correlations (see table 20), it is possible that the number of urban green space variables could be reduced to a few *principle components*. First, Bartlett's test was performed which tests the null hypothesis that, in the correlation matrix, the diagonal elements are 1 and the off diagonal elements are 0. Bartlett's test was significant, meaning there was evidence to accept the alternative hypothesis that there is some correlation between visitation rates to the different urban green space types. The Kaiser-Meyer-Olkin measure of sampling adequacy tests the data for its suitability to be subjected to factor analysis. Values closer to 1 are better with 0.6 being a minimum value. The value returned was 0.761 meaning analysis was OK to continue.

Table 21 displays the total variance explained from principle components analysis. Eigenvalues are the variances of the principal components. As principal component analysis was conducted on the correlation matrix, the variables are standardized, which means each variable has a variance of one, and the total variance is equal to the number of variables used in the analysis, in this case, six. There are only two rows reproduced in the 'extraction sums of squared loadings' columns representing the principal components where the eigenvalues are greater than or equal to one. Those components with an eigenvalue of less than one account for less variance than did the original variable.

Table 21: Table of total variance explained after principle components analysis on six urban green space types. Component values greater than one account for more variance than did the original variable.

Component	Ι	nitial Eigenvalu	ies	Extraction	Sums of Squa	red Loadings
	Total	% of	Cumulative	Total	% of	Cumulative %
		Variance	%		Variance	
1	2.637	43.955	43.955	2.637	43.955	43.955
2	1.006	16.775	60.730	1.006	16.775	60.730
3	.747	12.457	73.187			
4	.702	11.705	84.892			
5	.545	9.078	93.970			
6	.362	6.030	100.000			

Extraction Method: Principal Component Analysis.

Table 22 shows there were two components extracted. There was strong correlation amongst the urban green space types in component one (all types) and similarly amongst those listed under component two, parks and sports fields. Sports field visitation was most strongly associated with the second component. Principal component analysis allowed me to identify two components from the six variables pertaining to urban green space visitation. One component, consisting of only the variable for sports field visitation and the other component consisting of the remaining five variables (there is stronger support for 'parks' to be part of component one (0.696 > 0.359). Such results are consistent with the principle of compatibility which suggests that behaviours of a similar domain will be highly correlated (positively). Visitation to sports fields (being the least natural of the urban green space types) is better suited to being a variable of its own, whilst the remaining five suitably act as one variable. Such

an outcome is not entirely surprising given the obvious differences in form and function existing between spaces such as the botanic gardens and sports fields.

 Table 22: Component matrix of urban green space visitation variables using principle component analysis. Two components are shown.

	Component		
	1	2	
Coasts	.641		
Botanic	.600		
Parks	.696	.359	
Town Belt	.768		
Tracks	.777		
Sports Fields	.435	.805	

Extraction Method: Principal Component Analysis.

2 components extracted.

I next tested whether the association between pro-environmental behaviour and urban green space visitation was stronger when only the variable for coasts visitation was included in the model relative to if vegetated urban green spaces or sports fields were only included. By comparing the resulting t statistics for the β coefficient across the three equations (see equation five through seven) I was able to posit which equation better explained pro-environmental behaviour.⁶

When compared to the β coefficients in the regressions with coasts and sports fields alone, the β coefficient for the regression with the vegetated variable was smaller suggesting there is a smaller influence of urban green space on predicted proenvironmental behaviour, i.e., for every one unit increase in Vegetated UGS, the associated rise in Total PEB is less than what is predicted for visits to coasts or sports fields. With the most significant coefficient associated with Vegetated UGS, it suggests vegetated spaces better explain pro-environmental behaviour (8.522 > 6.262 > 3.909). The coefficient for coast visitation was more significant than that for sports fields, suggesting that sport field visitation is the least likely to accurately predict proenvironmental behaviour. Such a result is supported by the literature. I found

⁶ While visitation to coasts correlated strongly with the variables in component one of the principle components analysis (see table 21), characteristic differences between terrestrial urban green and urban blue spaces (e.g., the latter space is water based the former is heavily vegetated) accompanied with literature stating water based scenes to illicit greater positive emotional responses, I chose to regress 'coasts' with Total PEB separately.

considerable evidence indicating that vegetation induces stronger connections to nature, as well as evidence supporting waterscapes as the landscape evoking the most positive, emotional responses in visitors (which biophilia suggests leads to a greater want to preserve the environment). Such a result highlights that it is perhaps vegetated urban green spaces and coasts that should be prioritised for their potential to foster proenvironmental behaviour.

Equation 5

Total PEB_i =
$$8.364 + 0.097$$
 Vegetated UGS_i R = 0.271 ; R² = 0.073 ; N = 921 .
(60.532) (8.522)

Equation 6

Total $PEB_i = 9.117 + 0.129$ Sports Fields UGS_i R = 0.126; R² = 0.016; N = 962. (98.868) (3.909)

Equation 7

Total PEB_i = 8.389 + 0.241 Coastal UGS_i
$$R = 0.207; R^2 = 0.043; N = 969.$$

(53.029) (6.626)

I thought it would be interesting to ascertain whether the amount of vegetated urban green spaces visited once a month or more changes the conditional probability of performing more than seven pro-environmental behaviours. Table 23 outlines the percentage of respondents who visited one, two, three, or all four types of vegetated urban green space once a month or more (8.9%) versus those who visited only one type (25.7%). Sixty eight percent of Wellington city residents are visiting one or more types of vegetated urban green spaces at least once a month – possibly indicating why the variable for Total UGS visitation is still a better predictor of pro-environmental behaviour relative to when coast or vegetated urban green space is used alone.

Table 23: Frequency table showing distribution of responses for visitation to Vegetated urban green space using the concatenated sample. With there being four types of vegetated urban green space (botanics, parks, town belt, and tracks) each value represents how many of the vegetated urban green spaces were visited once a month or more. The value, .00 indicates visitation to none of the vegetated spaces once a month or more, 1.00 indicates visitation to one, 2.00 indicates visitation to two, 3.00 indicates visitation to three, and 4.00 indicates all four vegetates spaces were visited once a month or more.

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	.00	295	30.4	32.0	32.0
	1.00	249	25.7	27.0	59.1
X7.1'1	2.00	158	16.3	17.2	76.2
valid	3.00	133	13.7	14.4	90.7
	4.00	86	8.9	9.3	100.0
	Total	921	95.0	100.0	
Missing	System	48	5.0		
Total		969	100.0		

In order to perform cross tabulation analysis and binary logistic regression, a new variable, 'vegetated visitation once a month or more' was computed and labelled Vegetated binary. All those individuals who indicated they visited at least one of the four types of vegetated urban green space at least once a month or more were coded, one. Cross tabulation of this new variable with the binary form of Total PEB (performing more than seven pro-environmental behaviours (1.00) or performing less than seven (0.00)) was conducted in order to assess the extent visiting more types of vegetated urban green space increases the likelihood of performing more than seven pro-environmental behaviours (ase table 24). Similar cross tabs were performed for coast visitation and sports field visitation (table 25 and table 26, respectively) in order to compare likelihoods.

An individual who visited vegetated urban green space once a month or more was 8.5% more likely to perform more than seven pro-environmental behaviours relative to someone who visited less. There was an 83.1% chance a 'once a month or more' visitor performed more than seven pro-environmental behaviours, dropping to 74.6% if they visited less than once a month. When the cross tab was restricted to coast visitation, there was a 10% difference in probability. The likelihood of performing more than seven pro-environmental behaviours was 84.3% if the individual visited coasts once a month or more, compared to 73.3% if they visited less. For sports field visitation, performing more than seven pro-environmental behaviours was 9.6% more likely for

those who visited sports fields once a month or more (87.5 - 77.9). All cross tabs reported a statistically significant Pearson chi-square at the 1% significance level (p = 0.002, 0.000, 0.001, for tables 24, 25, and 26, respectively).

Table 24: Cross tabulation table displaying conditional probabilities of performing more than seven pro-environmental behaviours (1.00) or seven or less pro-environmental behaviours (.00) and visiting Vegetated urban green spaces once a month or more (1.00) or less than once a month (.00).

			Vegetate	m 1	
			.00	1.00	Total
Total PEB binary		Count	75	106	181
	.00 % within Vegetated binary		25.4%	16.9%	19.7%
		Count	220	520	740
	1.00 % within Vegetated binary		74.6%	83.1%	80.3%

Table 25: Cross tabulation table displaying conditional probabilities of performing more than seven pro-environmental behaviours (1.00) or seven or less pro-environmental behaviours (.00) and visiting Coastal urban green spaces once a month or more (1.00) or less than once a month (.00).

			Coasts binary		_
			.00	1.00	Total
Total PEB binary	.00	Count	100	93	193
		% within Coasts binary	26.7%	15.7%	19.9%
	1.00	Count	275	501	776
		% within Coasts binary	73.3%	84.3%	80.1%

Table 26: Cross tabulation table displaying conditional probabilities of performing more than seven pro-environmental behaviours (1.00) or seven or less pro-environmental behaviours (.00) and visiting sports field urban green spaces once a month or more (1.00) or less than once a month (.00).

			Sports Fields binary		m 1
			.00	1.00	Total
Total PEB binary	.00	Count	161	29	190
		% within Sports Fields binary	22.1%	12.5%	19.8%
	1.00	Count	569	203	772
		% within Sports Fields binary	77.9%	87.5%	80.2%
Dummy variable analysis

Next I used dummy variables to determine what levels of urban green space visitation (between coastal, vegetated, and sports fields) were statistically different from novisitation when it came to predicting the odds of someone performing more than seven pro-environmental behaviours. Table 27 shows the odds of performing more than seven pro-environmental behaviours increases 2.553 times if vegetated spaces are visited once every 2-3 months (relative to no visitation). It appears the greatest increase in odds (also accompanying the strongest statistical significance) occurs between no visitation to vegetated urban green spaces and visitation once every 2-3 weeks (odds ratio 5.020). The odds of performing more than seven pro-environmental behaviours increases five times if vegetative urban green spaces are visited once every 2-3 weeks relative to no visitation. Again, this result supports earlier conclusions that the likelihood of performing more pro-environmental behaviours increases if vegetated urban green space visitation is increased. Interestingly, the increase in odds is not significant between vegetated urban green space visitation 'most days' and 'never'. As concluded earlier, there is evidence here to suggest that there is greater benefit in achieving increases from 'nothing' to 'something', in terms of pro-environmental behaviour change.

Table 27: Table of coefficients from binary logistic regression of vegetated UGS visitation and Total PEB binary using the concatenated sample. No visitation to coasts set as base. Vegetated(1) = visitation once every six months or less, Vegetated(2) = visitation once every 4-5 months, Vegetated(3) = visitation once every 2-3 months, Vegetated(4) = visitation once a month, Vegetated(5) = visitation once every 2-3 weeks, Vegetated(6) = visitation once or twice a week, Vegetated(7) = visitation most days.

		В	S.E.	Wald	df	Sig.	Exp(B)
	vegetated			29.310	7	.000	
	vegetated(1)	.057	.349	.027	1	.870	1.059
	vegetated(2)	.524	.339	2.395	1	.122	1.689
	vegetated(3)	.937	.357	6.871	1	.009**	2.553
G. 1	vegetated(4)	1.133	.387	8.592	1	.003**	3.106
Step 1a	vegetated(5)	1.613	.524	9.493	1	.002**	5.020
	vegetated(6)	1.549	.801	3.737	1	.053	4.706
	vegetated(7)	20.449	28420.722	.000	1	.999	76022346 5.590
	Constant	.754	.303	6.182	1	.013	2.125

Variable(s) entered on step 1: vegetated.

* Significance at 5% level; ** Significance at 1% level.

Unlike visitation to vegetated spaces, the coefficient for no coastal visitation is statistically different for all categories (except visitation once every 4-5 months). Table 28 shows the odds of performing more than seven pro-environmental behaviours for an individual who visits coasts most days to be 2.640 times the odds of a non-visitor, a statistically significant difference. Coast visitation as little as once every six months was statistically different from no-visitation in terms of the odds of performing more than seven pro-environmental behaviours. When sports field visitation was broken down by visitation level, only visiting once every 2-3 weeks or once or twice a week was statistically different to no-visitation (table 29). It seems that sports field visitation must be increased substantially more in order to achieve statistically different changes in pro-environmental behaviour performance.

Table 28: Table of coefficients from binary logistic regression of coast visitation and Total PEB binary using the concatenated sample. No-visitation to coasts set as base. Coasts(1) = visitation once every six months or less, Coasts(2) = visitation once every 4-5 months, Coasts(3) = visitation once every 2-3 months, Coasts(4) = visitation once a month, Coasts(5) = visitation once every 2-3 weeks, Coasts(6) = visitation once or twice a week, Coasts(7) = visitation most days.

		В	S.E.	Wald	df	Sig.	Exp(B)
	Coasts			31.040	7	.000	
	Coasts(1)	.818	.326	6.293	1	.012*	2.267
	Coasts(2)	.737	.400	3.397	1	.065	2.090
	Coasts(3)	.801	.301	7.063	1	.008**	2.228
Step 1a	Coasts(4)	.963	.301	10.219	1	.001**	2.619
	Coasts(5)	1.376	.301	20.921	1	.000**	3.960
	Coasts(6)	1.569	.319	24.121	1	.000**	4.800
	Coasts(7)	.971	.405	5.749	1	.017*	2.640
	Constant	.416	.224	3.432	1	.064	1.515

Variable(s) entered on step 1: Coasts.

* Significance at 5% level; ** Significance at 1% level.

Table 29: Table of coefficients from binary logistic regression of sports field visitation and Total PEB binary using the concatenated sample. No visitation to coasts set as base. Sports Fields(1) = visitation once every six months or less, Sports Fields (2) = visitation once every 4-5 months, Sports Fields (3) = visitation once every 2-3 months, Sports Fields (4) = visitation once a month, Sports Fields (5) = visitation once every 2-3 weeks, Sports Fields (6) = visitation once or twice a week, Sports Fields (7) = visitation most days.

		В	S.E.	Wald	df	Sig.	Exp(B)
	Sports Fields			15.015	7	.036	
	Sports Fields(1)	.196	.289	.460	1	.498	1.216
	Sports Fields(2)	1.916	1.026	3.484	1	.062	6.793
	Sports Fields(3)	164	.307	.283	1	.595	.849
Step 1a	Sports Fields(4)	.773	.447	2.992	1	.084	2.166
	Sports Fields(5)	.878	.413	4.514	1	.034*	2.405
	Sports Fields(6)	.663	.304	4.754	1	.029*	1.941
	Sports Fields(7)	.390	.781	.249	1	.618	1.477
	Constant	1.220	.101	145.831	1	.000	3.386

Variable(s) entered on step 1: Sports Fields.

* Significance at 5% level; ** Significance at 1% level.

Stepwise linear regression – forward selection

With dummy variable analysis indicating that vegetated and coastal visitation is better than sports field visitation when it comes to increasing pro-environmental behaviour, I next wanted to find out if visitation to vegetated urban green space contributed more to the prediction of pro-environmental behaviour than coast visitation. To answer this, a stepwise linear regression was performed with forward selection used to find the model that best predicted Total PEB. In forward selection, at each step, the variable not yet in the equation with the smallest p value is entered. The method terminates when no more variables are eligible for inclusion, i.e., the inclusion of the next variable results in the p value for another increasing above the threshold. In this case, that threshold was set at 0.05. For predicting Total PEB, forward selection terminated after the inclusion of variables, Vegetated, Coasts and Town Belt. The best model for predicting Total PEB (when vegetated was included) was thus as follows:

Total
$$PEB_i = 7.980 + 0.112$$
 Vegetated $+ 0.123$ Coasts $- 0.115$ Town Belt
(45.538) (5.692) (2.970) (-2.147)

$$R = 0.294$$
; $R^2 = 0.086$; Adj. $R^2 = 0.083$; $P < 0.01$; $N = 918$

Equation eight is potentially problematic as the three variables included are highly correlated meaning the standard error could be unstable. To check if addition of a new variable affected the estimate of the variable that remained in the equation, a model was run with Vegetated added first, then Coasts, then the rest. When Coasts was added to the model, the estimate for Vegetated decreased from 0.097 (t = 8.499) to 0.080 (t = 6.255). When Town Belt was then added, the Vegetated coefficient estimate rose to 0.112 (t = 5.692). Coasts exhibited a minor increase of 0.002 when Town Belt was included and a minor decrease of 0.004 when remaining variables were included.

When the aggregated variable for Vegetated was broken back down into its component parts, town belt visitation became insignificant in the model. The urban green spaces that were significant in the prediction of Total PEB are shown in equation nine.

Equation 9

Total $PEB_i = 7.977 + 0.106$ Tracks + 0.111 Parks + 0.123 Coasts + 0.120 Botanic (44.643) (2.195) (2.951) (3.001) (2.753)

 $R^2 = 0.086$; Adj. $R^2 = 0.082$; P < 0.01; N = 918.

Sports fields and town belt visitation did not significantly contribute to the prediction of Total PEB. Stepwise regression produced the most efficient model for prediction using the least number of parameters. It is likely that due to the high correlation between town belt visitation and visitation to city walking tracks, only one of these variables was included. Sports field visitation, as predicted by the literature, was the weakest contributor and thus excluded from the model. Table 30 summarises the models tested, with four steps of inclusion occurring before termination.

Model		Unstandardize	d Coefficients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	8.840	.108		82.143	.000
1	Tracks	.218	.032	.218	6.745	.000
	(Constant)	8.409	.144		58.436	.000
2	Tracks	.160	.035	.160	4.637	.000
	Parks	.161	.036	.153	4.455	.000
	(Constant)	8.064	.177		45.683	.000
2	Tracks	.129	.036	.129	3.629	.000
3	Parks	.131	.037	.125	3.532	.000
	Coasts	.136	.041	.117	3.341	.001
	(Constant)	7.977	.179		44.643	.000
	Tracks	.106	.036	.106	2.915	.004
4	Parks	.111	.038	.106	2.951	.003
	Coasts	.123	.041	.106	3.001	.003
	Botanic	.120	.044	.096	2.753	.006

Table 30: Output table from forward selection linear regression with Total PEB as the dependent and the six urban green space variables as predictors. Four steps are shown before termination.

a. Dependent Variable: Total PEB

In summary, I can conclude there is a relationship between urban green space visitation and pro-environmental behaviour. After breaking down the variable, Total UGS, into its six separate types and combining those urban green spaces with similar physical characteristics, vegetated spaces (botanic gardens, city walking tracks, town belt, parks) showed the strongest t statistic for the β coefficient and the greatest R², suggesting these urban green spaces to be the most effective predictors of pro-environmental behaviour relative to coasts and harbours, and sports fields. The best combination of urban green space variables for pro-environmental behaviour prediction omits visitation to sports fields and the town belt.

3.3 Analysis by Urban Green Space Type and Pro-Environmental Behaviour Type

"Does the relationship between urban green space visitation and pro-environmental behaviour change depending on the type of urban green space and the type of pro-environmental behaviour measured?"

Section 3.2 sought to determine whether visitation to certain urban green spaces was more strongly correlated with certain forms of pro-environmental behaviour relative to others. The literature lead me to hypothesise that frequent visits to the coasts would be more strongly correlated with pro-environmental behaviours related to water pollution (e.g., washing paint/chemicals down household sinks), compared to pro-environmental behaviours with a more terrestrial impact (e.g., putting litter in the bin, recycling). Cross tabulation analysis was first performed (table 31). The Total UGS binary variable (1 = visitation once a month or less, 0 = visitation less than once a month) was used to determine the conditional probabilities of performing each pro-environmental behaviour.

Table	31:	Cross	tabulation	table	displaying	conditional	l probabilities	of	performing	home
compos	sting	(1.00)	or not (.00) and	visiting the	town belt	once a month	or r	nore (1.00)	or less
than on	nce a	month	(.00).							

			Town Belt	Visitation	
			.00	1.00	Total
		Count	345	118	463
	.00	% within Town Belt visitation	53.1%	41.4%	49.5%
Home		% of Total	36.9%	12.6%	49.5%
Composting		Count	305	167	472
	1.00	% within Town Belt visitation	46.9%	58.6%	50.5%
		% of Total	32.6%	17.9%	50.5%

The conditional probability that an individual performed home composting and visited the town belt once a month or more was 11.7% higher than the conditional probability of performing home composting and visiting the town belt less than once a month (58.6 – 46.9). The association was statistically significant. People are more likely to perform home composting if they visit the town belt at least once a month. From all cross tabulations, those returning a p value of <0.05 were subjected to binary logistic regression with the odds ratios presented in table 32.

Table 32: Table of statistically significant odds ratios from independent binary logistic regression of pro-environmental behaviour and urban green space visitation. A binary variable for urban green space was used (.00 indicating visitation less than once a month, 1.00 indicating visitation once a month or more). Statistically significant odds ratios are denoted by * and ** in accordance with significance level. Odds ratios interpreted as the increase in odds of pro-environmental associated with urban green space visitation once a month or more. Blank cells indicate no statistical association.

	Coasts	Botanic Gardens	Parks	Town Belt	Tracks	Sports fields
Home composting		1.429*	1.419**	1.601**	1.415*	
Using Council's kerbside recycling service		1.742	1.700*		1.980**	
Taking things to the recycling stations	1.618**	1.627**	1.661**	1.467**	1.862**	1.854**
Donating things to 2nd hand shops or charities	1.555*	1.816*	1.554*			1.916*
Buying refills	1.425*		1.440*	1.481*		
Avoiding using plastic bottles or bags			1.375*	1.543**		
Reusing plastic containers	1.720**					
Responsible disposal of oil, paint or chemicals	1.401*	1.434*			1.455*	
Washing paint brushes inside		1.388*	1.403**		1.421*	1.486*
Pouring household waste down inside sinks etc.	1.609**		1.558**			
Put litter in bin	No statisti	cally signific	cant associat	ions.		
Pick up dog droppings			1.340*	1.515**	1.675**	1.073*
Put sweepings out with rubbish or compost					1.394*	
Wash car on lawn or at carwash		1.413*				

** Significance at 0.01 level

* Significance at 0.05 level

When cross tabulations were performed without recoding of urban green space visitation to represent two categories (i.e., the original eight categories were retained), the significant Pearson chi squares returned are denoted in table 33, below. The issue with such a disaggregation is that some of the cells have insufficient values (<5) meaning an assumption of the chi-square test is violated. For the associations listed in table 33 regarding home composting, home composting is statistically significant for its association with visitation to botanic gardens, town belt, and tracks (p = 0.01, 0.003, 0.000, respectively). The likelihood that someone performs home composting differs depending on the level at which that individual visits botanic gardens, town belt, and tracks.

The calculations in table 33 described whether a particular urban green space was statistically associated with a particular type of pro-environmental behaviour. I predicted that for the water pollution minimisation behaviours (right hand column) there would be a statistically significant association with visitation to coasts. I also predicted the resource and waste consumption based behaviours (left hand column) would be more associated with vegetated urban green space visitation (botanics, parks, town belt, tracks). While there was statistical association between coast visitation and water pollution minimisation behaviours, the association was not exclusive meaning there was also statistical association present between water based pro-environmental behaviours and vegetated urban green space visitation (e.g., washing a car at a carwash or on the lawn and visitation to parks).

Table 33: Significant Pearson chi squares from cross-tabulation analysis using urban green space visitation (with eight visitation categories retained) and pro-environmental behaviour. Each cross-tabulation compared one urban green space type with one pro-environmental behaviour. Statistically significant associations are indicated *.

Home Composting	P value	Ν	P value	Resp. chem. disposal
Coasts	0.09	969	0.019*	Coasts
Botanic	0.01**	969	0.000**	Botanic
Parks Town Belt	0.157	901	0.030*	Parks Town Belt
Tracks	0.000**	960	0.035*	Tracks
Sports Fields	0.261	962	0.209	Sports Fields
Kerbside Recycling	P value	Ν	P value	Wash paint in inside sink
Coasts	0.141	969	0.024*	Coasts
Botanic	0.002**	969	0.329	Botanic
Parks Town Balt	0.374	961	0.002*	Parks Town Balt
Tracks	0.007	933 960	0.022	Tracks
Sports Fields	0.906	962	0.040*	Sports Fields
Using recycling stations	P value	Ν	P value	Liquid waste inside sink
Coasts	0.002**	969	0.006**	Coasts
Botanic	0.015**	969	0.764	Botanic
Parks	0.000**	961	0.008**	Parks
Town Belt	0.004**	935	0.157	Town Belt
Tracks Sports Fields	0.000**	960 962	0.062	1 racks Sports Fields
Donating	P value	N	P value	Litter in bin
Coasts	0.146	969	0.826	Coasts
Botanic	0.085	969	0.125	Botanic
Parks	0.106	961	0.622	Parks
Town Belt	0.047*	935	0.989	Town Belt
Tracks	0.675	960	0.831	Tracks
Sports Fields	0.343	962	0.491	Sports Fields
Buying Refills	P value	N OCO	P value	Pick up dog droppings
Coasts	0.050	969 969	0.831	Coasts
Parks	0.001	909 961	0.725	Parks
Town Belt	0.125	935	0.022*	Town Belt
Tracks	0.006**	960	0.025*	Tracks
Sports Fields	0.905	962	0.322	Sports Fields
Avoiding plastic	P value	Ν	P value	Collect sweepings
Coasts	0.062	969	0.059	Coasts
Botanic	0.025	969	0.323	Botanic
raiks Town Belt	0.108	901	0.274	Parks Town Belt
Tracks	0.062	960	0.335	Tracks
Sports Fields	0.556	962	0.613	Sports Fields
Reusing plastic	P value	Ν	P value	Wash car on lawn
Coasts	0.001**	969	0.040*	Coasts
Botanic	0.000**	969	0.267	Botanic
Parks	0.202	961 025	0.038*	Parks
10wn Belt Tracks	0.575	933 960	0.582	10wn Belt Tracks
Sports Fields	0.853	962	0.599	Sports Fields

** Significance at the 1% level.

* Significance at the 5% level.

Binary logistic regression

Binary logistic regression, with the urban green space types included as categorical variables, was next performed. Visitation was measured in binary form, with .00 indicating visitation less than once a month, and 1.00 indicating visitation once a month or more. It was highly likely that there was multicollinearity here, i.e., the visits are correlated. A correlation matrix was thus produced, see table 34, to show such correlation for the right hand variables. Visitation was statistically correlated in all comparisons and all were positive correlations. Therefore, people who visited one type of urban green space once a month or more were also visiting other types once a month or more. Presence of correlation should be kept in mind when interpreting the results of binary logistic regression, which is performed next.

Table 34: Correlation matrix showing Pearson correlation coefficients for all pairwise comparisons of urban green space visitation variables.

Urbaı	n Green Space Type	Coasts	Botanic	Parks	Town Belt	Tracks	Sports Fields
	Pearson Correlation	1					
Coasts	Sig. (2-tailed)						
	Ν	969					
	Pearson Correlation	.268**	1				
Botanic	Sig. (2-tailed)	.000					
	Ν	969	969				
	Pearson Correlation	.347**	.322**	1			
Parks	Sig. (2-tailed)	.000	.000				
	Ν	961	961	961			
T	Pearson Correlation	.362**	.333**	.347**	1		
Town	Sig. (2-tailed)	.000	.000	.000			
Belt	Ν	935	935	928	935		
	Pearson Correlation	.352**	.342**	.371**	.639**	1	
Tracks	Sig. (2-tailed)	.000	.000	.000	.000		
	Ν	960	960	954	927	960	
	Pearson Correlation	.180**	.081*	.356**	.172**	.178**	1
Sports Fields	Sig. (2-tailed)	.000	.012	.000	.000	.000	
Tielus	Ν	962	962	956	930	955	962

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

While cross tabulations have provided useful information regarding the conditional probabilities of performing a pro-environmental behaviour, logistic regression allows all the urban green space visitation variables to be included in a model and controlled for

which minimises their effect on the result of the test. For example, controlling for the effects of visitation to coasts, parks, town belt, sports fields, and botanic gardens allows the influence of track visitation on a pro-environmental behaviour (e.g., home composting) to be more accurately represented by the odds ratio. Recall that the odds ratio represents the odds an individual will perform pro-environmental behaviour if they visit urban green space once a month or more, compared to the odds of performing pro-environmental behaviour if they do not visit once a month or more.

I next describe the relationship between visitation to urban green space (by type) and each of the fourteen pro-environmental behaviours measured.

- Taking things to the recycling station

Controlling for visitation to all other urban green space types, visitation to city walking tracks and sports fields once a month or more were the only statistically significant contributors to the model predicting the pro-environmental behaviour, taking things to the recycling station (p <0.05 and <0.01, respectively). Visiting city walking tracks once a month or more increased the odds an individual takes things to the recycling station by 56.7%. Visiting sports fields once a month or more increased the odds an individual takes things to recycling stations by 55.9%. Biophilia theory lead me to predict there to be a positive association between urban green space visitation and pro-environmental behaviour, so it was not surprising visitation to tracks increased the odds someone takes things to recycling stations. However, it was surprising that visiting sports fields contributed more to the prediction of taking things to recycling stations than more vegetated spaces, such as the town belt or botanic gardens. The results tell me that visiting sports fields, despite their relative lack of vegetated characteristics, still increases the odds of an individual taking things to recycling stations.

Using the principle of compatibility, it was posited that visitation to sports fields was picking up on the all-round visitation habits of respondents as the principle allows me to assume those active in sport are also active in the outdoors, with sports field visitation picking up on such a correlation. However, the correlation matrix (see table 34) reported a weak correlation between sports field visitation and all urban green space types (there is the exception of park visitation, expected with sports fields potentially being interpreted as parks). Perhaps the nature of taking things to recycling stations, involving physical movement is biased towards those who are more mobile and active, and possibly younger; hence the association with sports field visitors.

- Avoiding using plastic bottles or bags

Controlling for visitation to all other urban green spaces, only visitation to the town belt once a month or more was a statistically significant contributor to the model predicting the pro-environmental behaviour, avoiding using plastic bottles or bags. The odds that someone avoids using plastic bottles or bags increased by 45.7% if they visited the town belt once a month or more. Literature lead me to posit that with greater exposure to vegetation, connection to nature would increase, manifesting in more pro-environmental behaviour. Avoiding plastic bottles or bags is a behaviour requiring minimal effort and financial cost. Biophilia lead me to expect an increase in the odds of avoiding plastic bottles or bags if an individual visited vegetated spaces more frequently, with this expectation supported by my results.

- Pouring all household liquid wastes down an inside sink, toilet or gully trap

Controlling for visitation to all other urban green spaces, visitation to parks once a month or more was a statistically significant contributor to the model predicting pouring household liquid wastes down an inside sink, toilet, or gully trap. If someone visited parks once a month or more the odds that they performed this pro-environmental behaviour increased by 43.7%. With literature stating people are most likely to want to preserve and protect spaces where they feel most strongly connected to, and the principle of compatibility citing behaviours to be strongly correlated within similar domains (i.e., visitation to coasts and water conservation), it was predicted that coastal visitation would be the most significant contributor in the model predicting the performance of this water based pro-environmental behaviour (Tarrant and Green 1999; Azjen 1991). However, it was visitation to parks that turned out to be the best explanatory factor. While the increase in odds of performing this pro-environmental behaviour (from low to high visitation) supports the overarching hypothesis of biophilia, the hypothesis that water based pro-environmental behaviours would be most associated with coastal visitation was not supported.

- Pick up droppings left by dogs:

Controlling for visitation to all other urban green spaces, visitation to city walking tracks once a month or more was the only statistically significant contributor in the model predicting the pro-environmental behaviour, picking up dog droppings. If someone visited city walking tracks once a month or more the odds that they picked up dog droppings increased by 51.8%. Such a result is expected as the odds of 'success'

(here meaning responding 'yes' to the question, 'do you pick up dog droppings?') are going to be much greater if an individual has more opportunity to do so. Visiting parks increases the likelihood that someone will be in the position to pick up dog droppings (as they would likely walk dogs here) thereby skewing the odds of success to be greater for those that visit parks more often. I have to be careful here to not make the conclusion that visitation to parks is associated with the behaviour of picking up dog droppings due to biophilia, but more so that picking up after dogs is a responsibility associated with being a dog walking, park user.

Stepwise logistic regression – forward selection

Stepwise logistic regression (forward selection) was performed separately for each of the 14 pro-environmental behaviours (14 dependent variables were tested). Similar to the way that forward selection produced the equation for those urban green spaces that best predicted Total PEB, forward selection was used here to find the urban green spaces that best predicted each of the 14 pro-environmental behaviours. While the preceding odds ratio analysis used the binary variables for urban green space visitation, the following analysis used Total UGS.

I hypothesised that coasts would be the best predictor of water based pro-environmental behaviours. For the more terrestrial based pro-environmental behaviours of recycling and avoiding plastic, I predicted vegetated urban green spaces would be better explanatory variables.

Equation 10

Logit(Home composting_i) = -0.363 + 0.092 Town Belt + 0.084 Botanic (11.153) (8.962) (4.992)

 $R^2 = 0.023; N = 918.$

Equation 11

Logit(Using Council's kerbside recycling service_i) = 1.763 + 0.237 Botanic (131.177)(12.328)

 $R^2 = 0.015; N = 918.$

Equation 12

Logit(Taking things to the recycling station_i) = -0.652 + 0.090 Coasts + 0.079 Botanic (17.558) (4.609) (4.067) + 0.101 Tracks + 0.103 Sports Fields (6.573) (10.984) $R^2 = 0.053; N = 918.$

Logit(Donating things to 2nd hand shops or charities_{*i*}) = 1.779 + 0.148 Parks (93.407)(8.855)

 $R^2 = 0.010; N = 918.$

Equation 14

Logit(Buying refills_{*i*}) = 0.921 + 0.112 Botanic (64.502) (6.943)

 $R^2 = 0.008; N = 918.$

Equation 15

Logit(Avoiding using plastic bottles or $bags_i$) = 0.075 + 0.093 Town Belt (0.707) (9.959)

 $R^2 = 0.011; N = 918.$

Equation 16

Logit(Reusing plastic containers such as food containers_i) = 1.504 + 0.154 Coasts (58.297) (9.540)

 $R^2 = 0.010; N = 918.$

Equation 17

Logit(Disposing of oil, paint or chemicals by putting them out with your household rubbish or taking them for recycling_i) = 0.426 + 0.110 Botanic + 0.089 Coasts (7.210) (6.591) (5.643)

$$R^2 = 0.019; N = 918.$$

Equation 18

Logit(Washing paint brushes in an inside $sink_i$) = -0.289 + 0.077 Parks + 0.062 Tracks (5.153) (5.825) (4.102)

 $R^2 = 0.017; N = 918.$

Equation 19

Logit(Pouring all household liquid wastes down an inside sink, toilet or gully trap_i) = 0.526 + 0.127 Coasts (12.104)(12.208) $R^2 = 0.013$; N = 918.

Equation 20

Logit(Pick up droppings left by $dogs_i$) = -1.201 + 0.110 Tracks (121.939)(12.836)

 $R^2 = 0.014; N = 918.$

Equation 21

Logit(Collect sweepings from your driveway, paths, or yards for composting or for disposal with your household rubbish_i) = 0.382 + 0.074 Coasts (6.829) (4.718)

 $R^2 = 0.005; N = 918.$

Logit(Wash the car at a carwash or on the lawn_i) = -0.368 + 0.098 Botanic (12.997) (7.769)

 $R^2 = 0.008; N = 918.$

Coasts was either the best predictor or one of the included predictors for the proenvironmental behaviours, 'responsible disposal of household waste, oil, paint and chemicals down inside sinks, toilets or gully traps', and 'collecting sweepings from property for disposal with household rubbish' (behaviours that prevent pollution entering the storm water system). Furthermore, vegetated urban green spaces (botanics, town belt, and tracks) were retained in the models best predicting the more terrestrial based pro-environmental behaviours of buying refills, avoiding plastic, donating to 2nd hand shops/charities, using council's kerbside recycling service, and home composting.

What I then looked for was a correlation amongst the pro-environmental behaviours themselves. Azjen's (1991) principle of compatibility, which speaks to the findings of Weigel and Newman (1976) where attitudes towards protection of the environment were found to be accurate predictors of pro-environmental behaviours, lead me to expect a positive correlation between those pro-environmental behaviours similar in characteristic. If an individual has an attitude supportive of protecting water quality it is likely they will perform pro-environmental behaviours related to water pollution minimisation (e.g., washing paintbrushes in an inside sink). Is it then true that those pro-environmental behaviours specific to water pollution show equal rates of participation and those to do with waste reduction and resource consumption are also internally correlated? A correlation matrix addresses this question and is displayed below (table 35).

Table 35: Pearson Correlation Coefficients (P) between fourteen pro-environmental behaviours using the concatenated sample. Significance denoted by * for significance at 1% level and ** for significance at 5% level.

		Home Compost	Council recycling	Recycle station	Donating	Buying refills	Avoiding plastic	Reusing plastic	Dispose chemicals	Paint inside sink	Liquid wastes	Put litter in the bin	Pick up droppings	Collect sweepings	Wash car on lawn
Home Compost	P N	1 969													
1 Jg	Р	.180**	1												
unci yclii		.000													
Col	Ν	969	969												
le 1	Р	.106**	.085**	1											
ecycation		.001	.008												
St R	Ν	969	969	969											
ing	Р	.075*	.189**	.159**	1										
onat		.020	.000	.000											
Ď	Ν	969	969	969	969										
60	Р	.087**	.152**	.076*	.135**	1									
uyin fills		.007	.000	.019	.000										
Bur	Ν	969	969	969	969	969									
ing	Р	.096**	.091**	.094**	.143**	.142**	1								
void astic		.003	.005	.003	.000	.000									
A pl	N	969	969	969	969	969	969								
38	Р	.122**	.223**	.119**	.187**	.210**	.107**	1							
eusii astic		.000	.000	.000	.000	.000	.001								
pl	Ν	969	969	969	969	969	969	969							
se cals	Р	.070*	.077*	.179**	.107**	.111**	.047	.076*	1						
ispo emi		.029	.017	.000	.001	.001	.141	.019							
CP D	Ν	969	969	969	969	969	969	969	969						
	Р	.075*	.079*	.111**	.027	.055	.053	.008	.265**	1					
uint side nk	1	.019	.014	.001	.399	.086	.099	.792	.000						
P ³ si	N	969	969	969	969	969	969	969	969	969					
71 00	Р	.066*	.076*	.011	.091**	.101**	.027	.098**	.160**	.336**	1				
iquid aste		.040	.018	.721	.005	.002	.407	.002	.000	.000					
κ Γ΄	N	969	969	969	969	969	969	969	969	969	969				
tter	Р	.042	.041	.024	.079*	.055	.023	.088**	.074*	.051	.066*	1			
ut lii bin		.190	.201	.460	.014	.086	.478	.006	.020	.112	.039	0.00			
Ë. Đ	N	969	969	969	969	969	969	969	969	969	969	969			
dr ings	Р	.036	.074*	.028	.092**	.028	049	.018	.086	.094	.091	.044	1		
ick 1		.267	.020	.392	.004	.384	.126	.576	.007	.003	.005	.168			
P dı	N	969	969	969	969	969	969	969	969	969	969	969	969	1	
ct ving	Р	.197**	.107**	.179**	.145**	.104**	.072*	.057	.166**	.013	.034	.018	.085**	1	
olle veef		.000	.001	.000	.000	.001	.025	.076	.000	.684	.292	.579	.008	0.00	
SV SV	N	969	969	969	969	969	969	969	969	969	969	969	969	969	
ı car vn	Р	.016	.030	.118	.069	.046	.063	.015	.058	.024	.018	.042	.091	.125	1
/ash n lav		.621	.358	.000	.032	.152	.051	.639	.073	.465	.586	.196	.005	.000	
N 10	Ν	969	969	969	969	969	969	969	969	969	969	969	969	969	969

Upon examination of the correlation matrix, the majority of comparisons were significant at either the 1% or 5% significance level. All significant correlations were positive, supporting the principle of compatibility. Such a result is encouraging for the biophilia theory as a tool for promoting environmental behaviour change as it suggests that as nature exposure stimulates engagement in one specific pro-environmental behaviour.

Additional support for the principle of compatibility is found in the results which show all pro-environmental behaviours relating to resources and waste (first seven listed) are correlated with each other. Similarly, all behaviours relating to water pollution minimisation (last seven listed) are correlated with each other. However, for the proenvironmental behaviours as a whole, there are a number of pairwise correlations that are not significant meaning that the performance rates of one have no correlation with the performance rates of another, i.e., they are independent. Most noticeably, 'avoiding using plastic bottles or bags' was not significantly correlated to water pollution minimisation behaviours (with the exception of 'collecting sweepings and placing with compost or with household rubbish for disposal'). Reusing plastic containers was also not significantly correlated with the majority of the water pollution based behaviours, with the exception of 'pouring household liquid wastes down sink or gully trap', and 'putting litter in the bin rather than dropping it on the street or gutter'.

Pro-environmental behaviour is positively associated with urban green space visitation. While vegetated spaces and coasts are better than sports fields at predicting proenvironmental behaviour, there is not one type of urban green space that is obviously better at predicting pro-environmental behaviour on its own. While there was correlation found amongst pro-environmental behaviours of similar types, this correlation was not mirrored by a stronger association between water based proenvironmental behaviours and coast visitation.

The next step was to include socio-demographic variables in order to ascertain whether such factors moderate how urban green space visitation predicts pro-environmental behaviour and whether there exists any significant interactions.

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3.4 Analysis by Socio-Demographic Variables

"How do socio-demographic factors (gender, age, household income) moderate the relationship between urban green space visitation and pro-environmental behaviour?"

There is evidence in the literature highlighting the influence of socio-demographics on pro-environmental behaviour performance (Diamantopoulos et al., 2003, Torgler and Garcia-Valiñas, 2007). What is lacking, however, is research outlining how the sociodemographic characteristics of people could moderate biophilia. I hypothesised that females would show a stronger and steeper association between urban green space visitation and pro-environmental behaviour due to literature suggesting females to be more susceptible to the emotional responses being in nature evokes (Millar and Millar, 1996). I also posited that older individuals would show a stronger relationship between urban green space visitation and pro-environmental behaviour due to having less external commitments (such as children and a job) making them more able to acknowledge and act on the emotional responses being in nature instils. Additionally, I expected those on a higher income would show a stronger association between urban green space visitation and pro-environmental behaviour as they are less financially stressed and have a greater opportunity to act on any biophilic reactions gained from nature exposure – following the predictions of the affluence hypothesis (Givens and Jorgenson, 2011).

In addition to socio-demographic variables I also introduced an attitudinal variable, pride. It has been shown that pride helps predict intentions for favouring environmental protection (Harth et al., 2013b) and can motivate pro-environmental behaviour (Ferguson and Branscombe, 2010). It may be the case that the association between urban green space visitation and pro-environmental behaviour is stronger in those that hold more pride in the way the city looks and feels, as behaviour change to protect and preserve the environment works more effectively when attitudes in line with such behaviour are present. It was thus predicted that pride would act as a moderator. Additionally, similar to the role of income and following the affluence hypothesis, quality of life was predicted to act as a moderator, with those with a greater quality of life being more likely to respond to biophilia.

3.4.1 Gender

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	Male	431	44.5	44.5	44.5
Valid	Female	538	55.5	55.5	100.0
	Total	969	100.0	100.0	

 Table 36: Frequency table showing distribution of male and female respondents using the concatenated sample.

When I restricted the sample to females, cross tabulation analysis (see table 37, below) showed a female who visited urban green space at least once a year was 23.9% more likely to perform more than seven pro-environmental behaviours relative to a female who did not visit urban green space at all. When the analysis was restricted to males only, the increase in likelihood of performing more than seven pro-environmental behaviours from non-visitors to visitors was only 9.5%. There appears to be a significant difference in the influence of urban green space visitation on pro-environmental behaviour between male and females, corroborated by evidence in the literature pertaining to females being more emotionally influenced by nature exposure.

Table 37: Cross tabulation table displaying conditional probabilities of performing more than seven pro-environmental behaviours (Total PEB binary = 1.00) and visiting urban green space at least once a year (Total UGS Yes or No = 1.00) for male and female respondents separately.

Candan				Total UGS	Yes or No	Total
Gender			.00	1.00	Total	
Male			Count	2	101	103
	Total PEB binary	.00	% within Total UGS Yes or No	33.3%	23.8%	23.9%
		1.00	Count	4	324	328
			% within Total UGS Yes or No	66.7%	76.2%	76.1%
			Count	6	84	90
Fomala	Total PEB	.00	% within Total UGS Yes or No	40.0%	16.1%	16.7%
Female	binary		Count	9	439	448
		1.00	% within Total UGS Yes or No	60.0%	83.9%	83.3%

After performing binary logistic regression I found a female who visited urban green space at least once a year was 3.484 times more likely to perform more than seven proenvironmental behaviours than a female who did not visit urban green space at all (Wald = 5.336; p 0.021; N = 538). Visitation to urban green space at least once a year was a non-significant predictor for the male sample (p = 0.589).

Equation 23

Logit (More than 7 PEBs_{i female}) = 0.405 + 1.248 Total UGS Yes or No (0.592) (0.021) $R^2 = 0.009$; Odds Ratio = 3.484; N = 538.

Equation 24

Logit (More than 7 PEBs_{i male}) = 0.693 + 0.472 Total UGS Yes or No (0.641) (0.293) $R^2 = 0.001$; Odds Ratio = 1.604; N = 431.

Importantly, when I used the binary variable, Total UGS Yes or No, there were few responses for no visitation (six males, 15 females). Using the binary variable for visitation (Total UGS binary) increased these numbers to avoid violation of assumptions of the chi square test (cells must have a minimum value of five). The resulting cross tabulation is shown in table 38 with equations 25 - 26, displaying the results of logistic regression. Males who visited urban green space once a month or more were 8.9% more likely to perform more than seven pro-environmental behaviours. Females were 11.5% more likely. Binary logistic regression reported when urban green space visitation was held constant; being female was still a significant predictor of whether an individual performs more than once a month were 2.859 times more likely to perform more than seven pro-environmental behaviours. Females (Wald = 8.133; P 0.004; N = 538) (equation 25). The odds of a male who visits urban green space once a month or more performing more than seven pro-environmental behaviours was 1.685 times the odds of a male who visited less (equation 26).

Table 38: Cross tabulation table displaying conditional probabilities of performing more than seven pro-environmental behaviours (Total PEB binary = 1.00) and visiting urban green space once a month or more (Total UGS binary = 1.00) for male and female respondents separately.

Gender				Total UGS	Tatal	
				.00	1.00	Total
		00	Count	81	22	103
Mala	Total PEB	.00	% within Total UGS binary	26.5%	17.6%	23.9%
Male	binary	1.00	Count	225	103	328
			% within Total UGS binary	73.5%	82.4%	76.1%
		1 PEB .00	Count	81	9	90
Female	Total PEB binary		% within Total UGS binary	19.2%	7.7%	16.7%
		ary 1.00	Count	340	108	448
		1.00	% within Total UGS binary	80.8%	92.3%	83.3%

Logit (More than seven $PEBs_{i female}$) = 1.434 + 1.050 Total UGS binary (134.611)(8.133)

 $R^2 = 0.019; N = 538$

Odds Ratio = 2.859 (the odds that a female who visits urban green space once a month or more performs more than seven pro-environmental behaviours is 2.859 times the odds of a female who visits UGS less than once a month).

Equation 26

Logit (More than seven $PEBs_{i male}$) = 1.022 + 0.522 Total UGS binary (62.166) (3.787)

 $R^2 = 0.009; N = 431$

Odds Ratio = 1.685 (the odds that a male who visits urban green space once a month or more performs more than seven pro-environmental behaviours is 1.685 times the odds of a male who visits less than once a month)

With evidence to suggest females are more likely to be influenced into proenvironmental behaviour through nature exposure, a scatterplot of Total PEB by Total UGS was produced to illustrate how the relationship differs between men and women (see figure 8). Linear regression equations were also conducted to report the relative coefficients in order to determine whether being female means urban green space visitation has a different influence on pro-environmental behaviour (equations 27 and 28).



Figure 8: Linear relationship between pro-environmental behaviour (measured as a score out of 14) as a function of urban green space visitation (measured as a combined score for visitation to six urban green space types). Linear trend lines fitted for the subgroups of gender.

Total PEB_i (Female) = 8.254 + 0.089 Total UGS $R^2 = 0.109$; N = 507 (43.135) (7.868)

Equation 28

Total
$$PEB_i$$
 (Male) = 7.797 + 0.077 Total UGS $R^2 = 0.076; N = 409$
(30.902) (5.808)

The t statistic for the β coefficient associated with Total UGS was slightly larger in the female sample suggesting this linear model may more accurately account for variance in Total PEB relative to males. The slightly larger coefficient for urban green space visitation for the female sample suggests that for every one unit increase in urban green

space visitation, females exhibit a stronger increase in pro-environmental behaviour (0.089 > 0.077). Urban green space visitation was a significant variable for both samples (p < 0.01).

There is an alternative way of looking at the influence of gender. While my preceding analysis did produce useful results, the partitioning of the data reduced the sample size and resulted in a different sample size for the male and female tests. Dummy variables and interaction terms were used to overcome this issue and determine whether gender moderated the relationship.

Dummy variable analysis

When the gender variable was included in the model, the model was more accurate at predicting Total PEB. The equation below sets out the gender difference in probability of performing more than seven pro-environmental behaviours (if someone visited urban green space once a month or more).

Equation 29

More than seven $PEBs_i = 0.107 + 0.071$ Total UGS + 0.560 Female (0.297)(42.362) (10.440) $R^2 = 0.056$; N = 918.

By incorporating gender as a dummy variable I was able to infer whether, after controlling for urban green space visitation, being a female influenced the likelihood of performing more than seven pro-environmental behaviours. The β coefficient was 0.560 meaning that being female increased the likelihood of a 'success' (performing more than seven pro-environmental behaviours) by 0.56. Controlling for urban green space visitation, the odds of a female performing more than seven pro-environmental behaviours are than seven pro-environmental behaviours are than seven pro-environmental behaviours by 0.56. Controlling for urban green space visitation, the odds of a female performing more than seven pro-environmental behaviours was 1.75 times the odds of a male. Both gender and urban green space visitation were significant in the model. Such a result was to be expected with the literature stating females to be more likely to perform pro-environmental behaviour.

However, such equations do not tell me whether being a female actually changes the influence of urban green space on pro-environmental behaviour. To test this, an interaction term (UGS*Female) was created. Logistic regression was again performed with the equation as follows.

More than seven $PEBs_i = 0.198 + 0.064$ Total UGS + 0.381 Female + 0.014 Total (0.667) (19.234) (1.352) (0.411) UGS*Gender $R^2 = 0.056$; N = 918.

When main effects of Total UGS and gender were include, as well as the interaction term, both gender and the interaction term were shown to be insignificant in the model predicting more than seven pro-environmental behaviours (p = 0.245 and 0.522, respectively). Therefore, there was no significant interaction between gender and urban green space visitation in predicting pro-environmental behaviour; therefore there is no statistically significant moderation.

3.4.2 Age

Table 39: Frequency table showing the distribution of responses using the concatenated sample across the five categories of age.

		Frequency	Percent	Valid Percent	Cumulative
					Percent
	15 - 24	121	12.5	12.5	12.5
	25 - 39	250	25.8	25.8	38.3
Valid	40 - 59	375	38.7	38.7	77.0
valid	60 - 64	77	7.9	7.9	84.9
	65 +	146	15.1	15.1	100.0
	Total	969	100.0	100.0	

There is evidence in the literature suggesting older individuals perform more proenvironmental behaviour. Additionally, there is evidence illustrating how children who have had more nature exposure are more emotionally attached to the environment, with those growing up in rural areas more likely to perform pro-environmental behaviour as adults. Is it then true that older individuals show a stronger relationship between urban green space visitation and pro-environmental behaviour as they may have had more nature exposure over time to foster biophilia? To gain a better understanding of how urban green space visitation influences pro-environmental behaviour across the older and younger age groups, I first conducted cross tabulation analysis (see table 40) to outline the conditional probabilities of performing more than seven pro-environmental behaviours for under and over 40 year olds.⁷

⁷ Such a division reflects a categorical split whereby two categories (15-24, 25-39) were aggregated to represent those under 40 years of age and the remaining three categories aggregated to represent those 40 years or over (40-59, 60-64, 65 year and over).

The conditional probability that an individual under the age of 40 visited urban green space more than once a month and performed more than seven pro-environmental behaviours was 86.8% (11.7% greater than if they visited less than once a month). The result was significant at the 5% level (p = 0.013; N = 371). For those 40 or over, the conditional probability of performing more than seven pro-environmental behaviours if they visited more than once a month was 87.5% (8.3% greater than if they visited urban green space less than once a month) (p = 0.03; N = 598). However, such results did not tell me whether there was a difference between the age groups. With age being significantly associated with urban green space visitation and pro-environmental behaviour using the binary form of under and over 40, the next step was to look at how each age range compared to the reference category (65 years or over) and whether the interaction term was significant in the model.

Table 40: Conditional probabilities of performing more than seven pro-environmental behaviours (Total PEB binary = 1.00) if urban green space is visited once a month or more (Total UGS binary = 1.00) and the individual is over 40 years of age using the concatenated sample.

Age				Total UC	SS binary	Total
					1.00	Total
		00	Count	66	14	80
Under 40	Total PEB	.00	% within Total UGS binary	24.9%	13.2%	21.6%
Under 40	binary	1.00	Count	199	92	291
		1.00	% within Total UGS binary	75.1%	86.8%	78.4%
		00	Count	96	17	113
40 or	Total PEB	.00	% within Total UGS binary	20.8%	12.5%	18.9%
over	binary	1.00	Count	366	119	485
		1.00	% within Total UGS binary	<u>79.2%</u>	<u>87.5%</u>	81.1%

Table 41: Regression output displaying coefficients and significance of age, urban green space visitation, and Age-UGS interaction variables for the prediction of Total PEB using the concatenated sample. Age is categorised using dummy variables with 65 years or over acting as the base variable. The associated significance denotes whether the age category significantly alters the prediction of Total UGS relative to the base, 65 years or over.

		В	S.E.	Wald	df	Sig.	Exp(B)
	Age			9.001	4	.061	
	15-24(1)	940	.534	3.096	1	.078	.391
	25-39(2)	670	.413	2.636	1	.104	.512
Stop 18	40-59(3)	069	.314	.049	1	.825	.933
Step 1	60-64(4)	.288	.376	.587	1	.443	1.334
	Total UGS	.126	.030	18.219	1	.000	1.134
	Age UGS interaction	020	.009	5.105	1	.024	.980
	Constant	.709	.297	5.712	1	.017	2.032

a. Variable(s) entered on step 1: Age, Total UGS, Age UGS interaction.

Equation 31

Looking at table 41, there was no statistically significant main effect of age on predicting performance of more than seven pro-environmental behaviours when controlling for urban green space visitation and the interaction term, Age*UGS. However, there was statistically significant interaction between age and Total UGS (p = 0.024). The interaction between age and Total UGS was negative meaning when age increased, the effect of urban green space visitation on pro-environmental behaviour decreased. The older an individual, urban green space visitation had a lower influence on pro-environmental behaviour (relative to the same amount of visitation at a younger age). When the relationship is plotted, the steeper slope for younger respondents (see figure nine) suggests that with greater urban green space visitation, there will be a greater increase in pro-environmental behaviour relative to older respondents who may visit urban green space just as often.



Figure 9: Linear relationship between pro-environmental behaviour (measured as a score out of 14) as a function of urban green space visitation (measured as a combined score for visitation to six urban green space types). Linear trend lines fitted for the subgroups of age.

There is some obvious lifestyle differences that exist across the categories of age used in my analysis. Dependents and students are likely to be part of the 15-24 age range, young, childless professionals likely comprise the 25 - 39 category, middle age (40 - 59) most likely holds those with children living at home, and the elderly and retired make up the 60-64 and 65 years and over category. When the data was aggregated to create those four age categories, linear regression (using Total PEB) revealed the following. After I compared the R² values I found the middle aged category (40 - 59) returned the linear model which explained the most variance in Total PEB. The model specific to the older age category (60 years and over) provided the poorest linear fit (0.126 > 0.081 > 0.076 > 0.019).

```
Total PEB<sub>i15 - 24 year olds = 7.955 + 0.080 Total UGS<sub>i</sub> (15.445) (2.902)</sub>
```

$$R = 0.276; R^2 = 0.076; N = 103.$$

Equation 33

Total $PEB_{i\,25-39 \text{ year olds}} = 7.990 + 0.082$ Total UGS_i (24.224) (4.557)

 $R = 0.285; R^2 = 0.081; N = 236.$

Equation 34

Total PEB_{*i* 40 – 59 year olds = 8.159 + 0.089 Total UGS_{*i*} (34.970) (7.226)}

$$R = 0.355; R^2 = 0.126; N = 363.$$

Equation 35

Total PEB_{i 60 years and over} = 8.370 + 0.042 Total UGS_i (26.563)(1.995) R = 0.136; R² = 0.019; N = 212

All coefficients were significant at the 5% level.

I then performed a linear regression with an interaction term to test whether there was a significant change in the effect of urban green space visitation on pro-environmental behaviour across the four age groups. Table 42, presents the results of the regression. The interaction term (Age*UGS visitation) was not significant in the model predicting Total PEB (p = 0.310), a different result to when the binary form of pro-environmental behaviour and urban green space visitation was used.

Model		Unstan Coeft	dardized ficients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	8.116	.154		52.562	.000
1	Total UGS Visitation	.079	.009	.289	9.152	.000
	(Constant)	8.212	.261		31.448	.000
2	Total UGS Visitation	.078	.009	.287	8.931	.000
	Age	029	.064	015	457	.648
	(Constant)	7.876	.422		18.674	.000
3	Total UGS Visitation	.101	.024	.370	4.207	.000
	Age	.079	.125	.040	.635	.526
	AgeUGSinteraction	008	.008	097	-1.015	.310

Table 42: Regression output after testing for significance of main effects of Age and Total UGS visitation and the interaction term, Age*UGS using the concatenated sample.

I concluded from my results that restricting the sample to middle age respondents improves the predictive ability of the linear model (relative to the total sample). The theory of biophilia appears to be better supported by middle aged respondents. Such a result is perhaps due to this generation possibly raising children and therefore has more to gain from preserving the environment. An internal want for a better future for family members, coupled with financial stability, may all be working together to help middle aged people respond to biophilia. Financial stability is an important factor to address. Whether there is any truth to the Givens and Jorgensen's (2011) affluence hypothesis which posits wealthier people will have fewer financial worries and an ability to focus on issues beyond their immediate self was next tested.

3.4.3 Income

		Frequency	Percent	Valid Percent	Cumulative Percent
	\$20,000 or less a year	36	3.7	6.3	6.3
	\$20,001 - \$30,000	37	3.8	6.4	12.7
	\$30,001 - \$50,000	67	6.9	11.7	24.3
Valid	\$50,001 - \$70,000	71	7.3	12.3	36.7
	\$70,000 - \$100,000	117	12.1	20.3	57.0
	More than \$100,000	247	25.5	43.0	100.0
	Total	575	59.3	100.0	
Missing	g System	394	40.7		
Total		969	100.0		

Table 43: Frequency table showing distribution of responses for the six categories of income using the concatenated sample.

There is evidence in the literature suggesting that individuals with fewer financial worries are more likely to perform more pro-environmental behaviour (Givens and Jorgenson, 2011, Torgler and Garcia-Valiñas, 2007). Such a theory resonates with biophilia as it may be that those on a higher income have the financial comfort to focus on improvements outside of their immediate situation. Nature connectedness, as explained in the literature, requires more than 'nature exposure'. Individuals must be aware of their natural surrounds, in a position to appreciate such states and, most importantly, enjoy positive experiences within these natural areas. Financially stressed individuals may be unlikely to be focused on much more than making a living. Is it then true that those who live in wealthier households show a different relationship between

urban green space visitation and pro-environmental behaviour relative to less wealthy households?

Cross tabulation analysis (see table 44) was first performed to illustrate the conditional probabilities of performing more than seven pro-environmental behaviours for three categories of income. What must be noted here is that the questionnaire specifically asked the respondent to indicate the total household income. Had income been restricted to the individual, a younger person living with an affluent family would have returned a low income score despite living in a financially stable environment. However, it must be kept in mind that the survey's measure of income runs the risk of a household with many low income earners being represented by a high income score.

There were six income categories listed in the questionnaire but in order to prevent the sample size from being excessively reduced, my cross tabulation analysis used four categories; \$20,000 - \$30,000, \$30,001 - \$70,000, \$70,000 - \$100,000, and more than \$100,000. Such a division reflects the median income in New Zealand for June 2012 until June 2013 being \$44,000 (Statistics New Zealand 2013). Categories thus reflect low earning, median earning, above median earning, and high earning, respectively.

For those living in high earning households, the probability of performing more than seven pro-environmental behaviours for a person visiting urban green space once a month or more was 13% higher than if they visited less than once a month. There was a 10% and 10.6% difference in such a probability for above median and median earning households, respectively. Those living in low earning households showed a reversed trend, with a 50% chance of performing more than seven pro-environmental behaviours if they visited urban green space once a month or more and a 72.3% chance if they visited less. However, despite income in aggregate being statistically significant (p = 0.007) only the results for high earners were statistically significant in the disaggregated case (p = 0.014).

Table 44: Cross tabulation analysis showing conditional probabilities of performing more than seven pro-environmental behaviours (Total PEB binary = 1.00) and visiting urban green space once a month or more Total UGS binary = 1.00) for four levels of income (.00 = \$20,000 - \$30,000, 1.00 = \$30,001 - \$70,000, 2.00 = \$70,000 - \$100,000, 3.00 = more than \$100,000) using the concatenated sample.

Income	Income				Total UGS binary	
						Total
				.00	1.00	
		00	Count	18	4	22
00	Total PEB	.00	% within Total UGS binary	27.7%	50.0%	30.1%
.00	binary	1.00	Count	47	4	51
		1.00	% within Total UGS binary	72.3%	50.0%	69.9%
		otal PEB .00	Count	24	4	28
1.00	Total PEB		% within Total UGS binary	22.9%	12.1%	20.3%
1.00	binary	1.00	Count	81	29	110
			% within Total UGS binary	77.1%	87.9%	79.7%
		.00	Count	14	1	15
2.00	Total PEB		% within Total UGS binary	14.9%	4.3%	12.8%
2.00	binary	1.00	Count	80	22	102
		1.00	% within Total UGS binary	85.1%	95.7%	87.2%
		00	Count	38	8	46
2.00	Total PEB	.00	% within Total UGS binary	22.9%	9.9%	18.6%
5.00	binary	1.00	Count	128	73	201
		1.00	% within Total UGS binary	77.1%	90.1%	81.4%

As some cells contained fewer than five counts, some assumptions of the chi-square test performed above were violated. To address this issue, income was recoded to represent two categories, income approximately equal to median or under (\$50,000 or less) and income greater than median (\$50,001 or over). Such a division collates the first three categories together and the last three categories together representing a more equal aggregation. The cross tabulation for such a division is illustrated in table 45, below.

Table 45: Cross tabulation analysis showing conditional probabilities of performing more than seven pro-environmental behaviours (Total PEB binary = 1.00) and visiting urban green space once a month or more (Total UGS binary = 1.00) for two levels of income (less than the New Zealand median and more than New Zealand median).

Income	Income			Total UC	Total	
				.00	1.00	
	00		Count	32	5	37
< madian	Total PEB binary	.00	% within Total UGS binary	27.1%	22.7%	26.4%
< median		1.00	Count	86	17	103
		1.00	% within Total UGS binary	72.9%	77.3%	73.6%
	Total PEB .00	Count	62	12	74	
> median		.00	% within Total UGS binary	19.9%	9.8%	17.0%
	binary	1 00	Count	250	111	361
		1.00	% within Total UGS binary	80.1%	90.2%	83.0%

Again, only the results for above median income earning households were significant (p = 0.011). There was thus only a statistical association between urban green space visitation and pro-environmental behaviour for individuals who resided in households earning above the median annual income of New Zealand. Such a result is consistent with the literature. An individual who visits urban green space once a month or more was 10.2% more likely to perform more than seven pro-environmental behaviours if they resided in a high earning household. The difference in probability was only 4.4% when restricted to lower income households and was not statistically significant.

Figure 10 displays an X-Y scatterplot illustrating the difference in trend lines for each category of income. There appears to be a distinct difference in the way urban green space explains pro-environmental behaviour across the six income categories. The two lower income categories return negative coefficients suggesting that with increasing urban green space visitation, pro-environmental behaviour decreases. In order to determine whether there was statistically significant difference and moderation, I conducted logistic regression including the main effects of each income bracket as dummy variables (with six figure earning households as the base), as well as an interaction term (equation 36 and table 46).

Equation 36

Logit (More than seven PEBs_i) = -0.048 + 0.579 very low income + 1.248 low income (0.021) (0.832) (4.194) + 0.815 median income + 0.667 high income + 1.041 very high income - 0.024 Total (2.925) (2.398) (8.116) (0.445) UGS_i + 0.020 income*UGS (6.482) R² = 0.067: N = 545

Table 46: Regression coefficients from logistic regression of Total PEB binary with the main effects of Total UGS visitation and the income-UGS interaction term with the main effect of income included as dummy variables using the concatenated sample.

		В	S.E.	Wald	df	Sig.	Exp(B)
	Total UGS	024	.036	.445	1	.505	.976
	Income UGS interaction	.020	.008	6.482	1	.011	1.020
	Income			10.629	5	.059	
	Income(1)	.579	.635	.832	1	.362	1.784
Step 1 ^a	Income(2)	1.248	.610	4.194	1	.041	3.485
	Income(3)	.815	.477	2.925	1	.087	2.260
	Income(4)	.667	.431	2.398	1	.121	1.949
	Income(5)	1.041	.365	8.116	1	.004	2.831
	Constant	048	.333	.021	1	.884	.953

a. Variable(s) entered on step 1: TotalUGS, IncomeUGSinteraction, Income.



Figure 10: Linear relationship between pro-environmental behaviour (measured as a score out of 14) and urban green space visitation (measured as a combined score for visitation to six urban green space types). Linear trend lines are fitted for the six subgroups of household income.

From the logistic regression I found that, controlling for income, urban green space visitation was not statistically significant in predicting more than seven proenvironmental behaviours (p = 0.505). The effect of low income earning households on pro-environmental behaviour was statistically different to six figure earning households. The interaction term was statistically significant at the 5% level (p = 0.011). The interaction term coefficient was positive suggesting that with increasing income, the influence of urban green space visitation on pro-environmental behaviour increases. The odds of performing more than seven pro-environmental behaviours for low income households was 3.485 times that for six figure households suggesting the relationship may be non-linear.

When linear regression (for Total PEB) was conducted for each of the six income categories included in the questionnaire, equations 37 through 42 were returned. There was no statistically significant association between Total UGS and Total PEB in cases where the respondent's household income was less than \$20,000 a year (equation 37). Such a result was expected as it is likely that these individuals are unable to focus on issues beyond their immediate financial situation. Urban green space visitation was statistically significant in the model predicting Total PEB when restricted to household annual incomes between \$20,001 and \$30,000. However, the relationship was negative with one of the strongest \mathbb{R}^2 values of relationships tested (equation 38). In equation 39, urban green space visitation was a significant predictor for pro-environmental behaviour. It is from this point that the relationship begins to change from non-existent or negative, to positive, suggesting that one's household income does have a role in determining how urban green space visitation is associated with pro-environmental behaviour. As financial situations become more 'comfortable', the relationship appears to strengthen and become positive. A strong R^2 and t statistic for the Total UGS β coefficient was returned for the above median income households with the equation significant at the 1% level.

Equation 37

Total PEB_{i \$20,000 or less} = 7.980 - 0.006 Total UGS_i $R = 0.00; R^2 = 0.000; N = 33$ (9.476) (-0.104)

Equation 38

Total PEB_{i \$20,001 - \$30,000} = 10.291 - 0.121 Total UGS_i $R = 0.391; R^2 = 0.153; N = 34$ (15.118) (-2.443)

Equation 39

Total PEB_{i \$30,001 - \$50,000} = 8.190 + 0.073 Total UGS_i
$$R = 0.268; R^2 = 0.072; N = 62$$
 (14.528)(2.174)

Equation 40

Total PEB_i
$$_{370,001 - $100,000} = 8.764 + 0.071$$
 Total UGS_i R = 0.300; R² = 0.090; N = 113 (24.263) (3.323)

Equation 42

Total PEB_{i \$100,001 or more} =
$$8.240 + 0.073$$
 Total UGS_i R = 0.270 ; R² = 0.073 ; N = 236 (24.389)(4.304)

The income category showing the greatest support for biophilia was households that earn between \$20,001 and \$30,000 a year ($R^2 = 0.159$) with those living in households earning over \$100,000 returning a weak R^2 despite literature suggesting high earners would be more able to respond to biophilia. Although, households earning around the median New Zealand salary also returned a relatively high R^2 (0.123). There was no documented relationship between urban green space visitation and pro-environmental behaviours for households falling in the lowest income bracket.

However, linear regression testing whether income moderates the relationship between urban green space visitation and pro-environmental behaviour returned a statistically insignificant result. There was no evidence of moderation. While the scatter plot suggests there is a difference, this is not enough to be statistically significant (see table 47).

using the concatenated sample. Main	effects of UGS vi	sitation and income	e and the	interaction
term are shown.				
Model	Unstandardized	Standardized	t	Sig.

Table 47: Table of coefficients and significance for the regression of Total PEB and Total UGS

Model		Unstand Coeff	dardized icients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	8.347	.204		40.941	.000
1	Total UGS Visitation	.067	.011	.246	5.904	.000
	(Constant)	7.691	.324		23.756	.000
2	Total UGS Visitation	.060	.012	.221	5.190	.000
	Income	.164	.063	.111	2.601	.010
	(Constant)	8.389	.552		15.184	.000
3	Total UGS Visitation	.009	.035	.032	.246	.806
	Income	.008	.119	.005	.067	.947
	Income UGS interaction	.011	.007	.245	1.559	.120

3.5 Pride

Literature suggests pride to be positively associated with environmentally friendly attitudes and behaviours as well as being positively linked to the amount of nature present in one's place of residence. Pride refers to the positive connections one feels about a particular object, location, person, or themselves. Brown et al. (2003) used pride as a measure of place attachment, describing the latter as a positive bond between an individual and the physical and social setting. There has been a great deal of work into the role of nature in place attachment and pride has similarly been investigated for links with one's attachment to place. It would seem that there may be a moderating effect of one's level of pride on their ability to respond to the effects of biophilia. With biophilia revolving around nature exposure, as well as positive emotional responses to nature, I hypothesised someone who holds more pride in their city will be experiencing more positive responses from nature exposure and expressing biophilia induced behaviours, e.g., pro-environmental behaviour. With evidence to support the link between pride and connections to natural settings, as well to pro-environmental behaviour, how then does one's level of pride moderate the extent to which visitations to nature correlate with proenvironmental behaviour?

Pride was measured in question 16 of the Wellington City Council's Residents Satisfaction Survey which asked, "How strongly do you agree or disagree with the statement, 'I feel a sense of pride in the way Wellington looks and feels'?". A five item Likert scale was used to record answers (1 =strongly disagree, 2 =disagree, 3 =neither agree nor disagree, 4 =agree, 5 =strongly agree). Those that answered 'don't know' were recoded as system missing. Over half of respondents agreed that they held pride in the city (see table 48).
Table 48: Frequency table showing the distribution of responses across the five categories of pride using the concatenated sample. Pride represented by five categories pertaining to how much a respondent agrees or disagrees with the statement, 'I feel a sense of pride in the way the city looks and feels' (1.00 = strongly disagree, 2.00 = disagree, 3.00 = neither agree nor disagree, 4.00 = agree, 5.00 = strongly agree).

Pride		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	1.00	4	.4	.4	.4
	2.00	19	2.0	2.0	2.4
	3.00	75	7.7	7.8	10.1
	4.00	444	45.8	45.9	56.0
	5.00	425	43.9	44.0	100.0
	Total	967	99.8	100.0	
Missing	System	2	.2		
Total		969	100.0		

As I wanted to assess whether one's level of pride moderated the association between urban green space visitation and pro-environmental behaviour, a new variable, PrideUGSvisitation, was computed by multiplying pride by urban green space visitation to create an interaction term. Linear regression was then conducted with equations listed below (equation 43 and 44).

Equation 43

Model 2:

```
Total PEB_i = 6.752 + 0.074 Total UGS + 0.337 Pride
(14.718)(8.513) (3.243)
R^2 = 0.091; N = 916
```

Equation 44

Model 3:

Total PEB_i = 6.192 + 0.115 Total UGS + 0.468 Pride - 0.010 Pride*UGS visitation (7.567) (2.268) (2.466) (0.409) $R^2 = 0.092; N = 916$

When Pride was included with Total UGS visitation as a main effect, both were statistically significant in the model predicting Total PEB, with an R^2 of 0.091 (a statistically significant improvement on model one which only included Total UGS as the explanatory variable (F change = 10.517; Sig F change = 0.001). However, when the interaction term was included, there was no significant improvement in the F (p =

0.409). Also, model three returned an insignificant coefficient for the interaction term (p = 0.409) while Pride and Total UGS visitation remained significant (p = 0.014 and 0.024, respectively). I thus concluded that while pride does assist in explaining Total PEB, it does not moderate the relationship. While someone with more pride does perform more pro-environmental, this association does not change with urban green space visitation (or vice versa).

A logistic regression analysis was next conducted to determine whether there was a difference in how pride influenced pro-environmental behaviour (controlling for urban green space visitation) (equation 45).

Equation 45

More than seven $PEBs_i = 0.476 + 0.062$ Total UGS - 0.416 disagree in having pride - (0.149) (33.088) (0.097) (0.573) neither agree nor disagree in having pride + (0.096) agree in having pride + (0.205) (0.006) (0.157)Strongly agree in having pride. (0.016) $R^2 = 0.049$; N = 916

Pride was an insignificant contributor to the prediction of more than seven proenvironmental behaviours (p = 0.149). A one way ANOVA, however, indicated there was a statistically significant difference in whether someone performs more than seven pro-environmental behaviours across the five categories of pride (p = 0.048). When the dependent variable was changed to Total PEB, the result was even more significant (p =0.000). There was also a statistically significant difference in the mean amount of Total UGS visitation across the five levels of pride (p = 0.001). The mean level of urban green space visitation and pro-environmental behaviour was not equal across the five levels of pride, suggesting there was perhaps a level of pride which correlated with a greater amount of pro-environmental behaviour and urban green space visitation. A two-way ANOVA was thus performed and the results are shown in table 49. There was no statistically significant interaction between pride and urban green space visitation once a month or more (p = 0.995). Therefore, the slopes of the regression lines do not differ significantly across the five levels of pride. However, it may be that some slopes are negative and some are positive, thereby cancelling each other out. Figure 11 illustrates the regression slopes across the five levels of pride.

Table 49: Two way-ANOVA testing the presence of an interaction between Total UGS and pride on the prediction of Total PEB.

Source	Type III Sum of	df	Mean Square	F	Sig.
	Squares				
Corrected Model	1049.579ª	120	8.746	1.737	.000
Intercept	5799.861	1	5799.861	1151.963	.000
Total UGS	371.139	39	9.516	1.890	.001
Pride	79.607	4	19.902	3.953	.003
Total UGS * Pride	423.734	77	5.503	1.093	.281
Error	4002.635	795	5.035		
Total	85382.000	916			
Corrected Total	5052.214	915			

Dependent Variable: Total PEB

a. R Squared = .208 (Adjusted R Squared = .088)



Figure 11: Linear relationship between pro-environmental behaviour (measured as a score out of 14) as a function of urban green space visitation (measured as a combined score for visitation to six urban green space types). Linear trend lines fitted for the subgroups of gender. Pride categories denoted by five values pertaining to how strongly they agree or disagree with the statement, 'I feel a sense of pride in the way the city looks and feels' (1.00 = strongly disagree, 2.00 =dis agree, 3.00 = neither agree nor disagree, 4.00 = agree, 5.00 = strongly agree).

The trend line for the points reflecting those neither agreeing nor disagreeing with holding pride in the city was very similar to the trend line for agreeing they hold pride in the city. Those who disagree with holding pride reported the poorest fit, indicated by the smallest R^2 value. I hypothesised someone with more pride would be more susceptible to biophilia and be more likely to express nature connections through proenvironmental behaviour. However, I found there to be no interaction between pride and urban green space visitation on pro-environmental behaviour. Dummy variable analysis reported there to be no significant difference in the association between pride and pro-environmental behaviour across the five categories of pride. Therefore, my hypothesis was rejected in the case of the Wellington sample. There was one additional variable I chose to examine for a possible role in moderating the relationship between urban green space visitation and pro-environmental behaviour. This variable was quality of life and was analysed next.

3.6 Quality of Life

When I applied the affluence hypothesis of Givens and Jorgenson (2011) in the development of my hypothesis suggesting those living in higher income earning households would show a stronger relationship between urban green space visitation and pro-environmental behaviour I was assuming these households allow respondents to focus on issues beyond their immediate situation. What if someone lives in a high earning household but is still subjected to associated stresses and competing priorities reducing this ability? The affluence hypothesis suggests those on a lower income have priorities of simply making ends meet which override any feelings for environmental preservation, a primarily altruistic action. Income as an explanatory variable has its caveats. Just because someone lives in a high earning household does not automatically mean they follow a lifestyle conducive to biophilia and pro-environmental behaviour. The affluence hypothesis does not take into account the amount of hour's one works (restricting their ability to visit urban green space or perform pro-environmental behaviour) or that high earning households may be very career oriented, thus emotional connections to nature may not be so easily fostered. There is the possibility that quality of life could thus be a better measure of one's ability to respond to biophilia and act on the emotional connections that being in nature instils. While the Wellington City Council's Residents Satisfaction Survey did not provide a definition for quality of life, quality of life has been defined as referring to ones well-being or life satisfaction (Grinde and Patil, 2009). Quality of life has also been used to reflect well-being and the subsequent ability to focus on issues beyond one's self (Cervinka et al., 2012, Givens and Jorgenson, 2011).

I hypothesised that those with a high quality of life would show a stronger relationship between urban green space visitation and pro-environmental behaviour. I predicted an interaction would exist, with regression slopes being different depending on the level of quality of life. Individuals with a higher quality of life are less likely to be striving to improve their own living situation, thus making them more able to act on biophilic responses gained from urban green space visitation. Simply promoting urban green space visitation to aide pro-environmental behaviour change may be ineffective if the quality of life of individuals is not at a level high enough to allow a positive association to exist.

The following analysis used question 10 of the Wellington City Council Residents Satisfaction Survey which asked, 'Would you say that overall your quality of life is...', with five categories to choose from; extremely poor, poor, neither good nor poor, good, extremely good (see table 50). Each category was attributed a value from one to five, respectively, with those answering 'don't know' set as system missing. To test for moderation, an interaction term was computed by multiplying the quality of life variable with Total UGS visitation. Linear regression was first performed with the model including Total UGS and Quality of life as main effects, as well as the Total UGS*Quality of life interaction term displayed in equation 50.

Quality of life		Frequency	Percent	Valid Percent	Cumulative
					Percent
Valid	1.00	3	.3	.3	.3
	2.00	14	1.4	1.5	1.8
	3.00	58	6.0	6.0	7.8
	4.00	544	56.1	56.6	64.4
	5.00	342	35.3	35.6	100.0
	Total	961	99.2	100.0	
Missing	System	8	.8		
Total		969	100.0		

Table 50: Frequency table for distribution of responses across the five categories of quality of life using the concatenated sample. Quality of life depicted by 1.00 = extremely poor, 2.00 = poor, 3.00 = neither poor nor good, 4.00 = good, 5.00 = extremely good.

There was a statistically significant improvement in \mathbb{R}^2 between model one, which only included Total UGS, and model two which included both Total UGS and quality of life (p = 0.001). However, there was no statistical change between model two and model three (which included the interaction term) (p = 0.443) (see equation 46). There was no statistically significant interaction between quality of life and urban green space visitation when it came to the prediction of Total PEB.

Equation 46

Model 3:

 $\begin{array}{ll} Total \ PEB_i = & 5.945 + 0.117 \ Total \ UGS + 0.532 \ Quality \ of \ Life - \\ & (6.442) \ (2.026) \ & (2.453) \end{array}$

The scatterplot of Total PEB by Total UGS with trend lines fitted for the sub groups of quality of life is shown in figure 12, below. There appears to be little difference in the regression lines across the five quality of life categories. The lack of data points for those that report poor or extremely poor quality of life skews the results of the R^2 values, however, their placement in the bottom left of the plot suggests that these groups visit urban green space rarely and perform only a small number of pro-environmental behaviours.



Figure 12: Linear relationship between Total PEB (number of pro-environmental behaviours performed) as a function of Total UGS visitation (combined score from all six urban green space types) for each of the five subgroups of Quality of Life. Quality of life depicted by five categories (1.00 = extremely poor, 2.00 = poor, 3.00 = neither poor nor good, 4.00 = good, 5.00 = extremely good.

To determine whether there were significant differences between the coefficients for each level of quality of life relative to the base value of having an extremely good quality of life, dummy variables were used. The categories for poor and extremely poor were collated together to increase the sample size. A scatterplot was produced to illustrate the regression lines for each of the four categories of quality of life (figure 13).



Figure 13 Linear relationship between Total PEB (number of pro-environmental behaviours performed) and Total UGS visitation (combined score from all six urban green space types). Trend lines fitted for four subgroups of Quality of Life. Quality of life depicted by four categories, .00 = neither good nor poor quality of life, 1.00 = extremely poor or poor, 2.00 = good, 3.00 = extremely good.

It appears that there is an obvious difference between category one, poor/extremely poor quality of life with the remaining three categories, evidenced by the steeper trend line and stronger R^2 value. The next test, statistically assesses whether there is a significant difference between the four categories using logistic regression (equation 47).

Equation 47

 $\label{eq:model} \begin{array}{ll} \mbox{More than seven PEBs}_i = 0.433 + 0.063 \mbox{ Total UGS} - 0.350 \mbox{ neither poor nor good} \\ (1.595)(33.900) & (0.917) \end{array}$ quality of life - 0.330 poor/extremely poor quality of life - 0.414 good quality of life \\ (0.285) & (4.598) \end{array}

 $R^2 = 0.049; N = 911.$

Dummy coding allowed each of the four categories to be tested for their relative influence on Total PEB (controlling for urban green space visitation). Overall, quality of life was not a statistically significant contributor to the prediction of performing more than seven pro-environmental behaviours (p = 0.201). When broken down by category, the only category that returned a significant result was that for 'good quality of life'. If someone reported having a good quality of life, the odds that they performed more than seven pro-environmental behaviours was 0.661 times the odds of those that reported an extremely good quality of life. It does seem that if you have an 'extremely' good quality of life relative to 'good' you will be more likely to perform pro-environmental behaviour. However, lack of statistical interaction meant I thus concluded that quality of life does not moderate the relationship between urban green space visitation and pro-environmental behaviour.

3.7 Summary of Results

Results from the preceding quantitative analysis can be summarised using the original research questions.

1.0 What is the relationship between urban green space visitations and proenvironmental behaviour in Wellington city?

There is a statistically significant positive relationship existing here. While both the linear and log-linear models were significant, the log-linear model returned a stronger t statistic for the Total UGS β coefficient when fitted on the data which was recoded for linearity.

1.1 Do urban green space visitors and non-visitors exhibit a difference in their amount of pro-environmental behaviour?

The odds of a monthly urban green space visitor performing more than seven pro-environmental behaviours is 1.95 times the odds of a less than monthly visitor.

The odds of an urban green space visitor performing more than seven proenvironmental behaviours is 2.538 times the odds of a non-visitor.

1.2 Does the strength and statistical significance of the relationship between urban green space visitation and pro-environmental behaviour change depending on the type of urban green space visited and the type of proenvironmental behaviour measured? All types of urban green space show a significant, positive association with pro-environmental behaviour.

Sports fields is the weakest predictor. The best model for explaining proenvironmental behaviour omits town belt and sports field variables

Putting litter in the bin was the only pro-environmental behaviour not statistically associated with urban green space visitation.

Water based pro-environmental behaviours were not better explained by visitation to coastal urban green spaces relative to terrestrial urban green spaces.

1.3 How do socio-demographic factors of gender, age, and household income moderate the relationship between urban green space visitation and proenvironmental behaviour?

The odds of females who visit urban green space performing more than seven pro-environmental behaviours is 3.484 times the odds of non-visitors. For males, the increase in odds was only 1.604.

Being female increases the likelihood of performing more than seven proenvironmental behaviours by 56 percent (controlling for urban green space visitation).

Gender was not a statistically significant moderator.

Middle aged respondents returned the best fitting linear model. The oldest age category returned the weakest fit.

Age was not a statistically significant predictor when controlling for the main effects of urban green space visitation and age.

The odds of those who lived in low income households performing more than seven pro-environmental behaviours and visiting urban green space monthly was 3.485 times the odds for six figure households.

Respondents living in households earning between \$20,001 and \$30,000 a year returned the best fitting linear model.

Income was not a statistically significant moderator.

1.4 Does the relationship between urban green space visitation and proenvironmental behaviour vary across people with different levels of pride in the city?

Pride was not a statistically significant moderator.

1.5 Does the relationship between urban green space visitation and proenvironmental behaviour vary across people with different levels of quality of life?

Quality of life was not a statistically significant moderator.

CHAPTER 4

4.0 Conclusions and Discussion

Urban green spaces are crucial to the well-being of societies. However, there has been limited recognition of such spaces for their ability to foster connections with nature and build a more environmentally conscious urban population. Urban expansion is seeing more and more people choose to live in cities. Direct contact with nature is thus diminishing to the point where the media is often the only form of nature experience for many and a lack of exposure to nature is posited as a reason behind a poor emotional engagement with environmental issues. Such a claim is supported by Wilson's (1984) biophilia hypothesis. Biophilia underpinned my research and provided the theoretical evidence with which I developed my hypotheses and interpreted the results. Despite its prominence in my study, biophilia does not receive great recognition in the literature. It is hoped my study can start the ball rolling and bring biophilia to the forefront of pro-environmental behaviour change.

Biophilia is an interesting theory which posits humans have not been around long enough for the evolution based tendency to favour living things to be erased from our biological make-up. Humans are programmed to gain pleasurable and positive physiological responses from being in and around nature, a response which is enhanced with direct nature exposure. Biophilia is a relatively new construct within the environment and behaviour literature but has been used more frequently within environmental psychology. Biophilia explains that humans evoke positive emotional and physiological reactions when experiencing nature because the body has evolved an innate inclination to favour living things (Lee, 2012). My study is not the first to investigate such a phenomenon, with Nelson and Shaw (2013) and Nicol (2013) having examined the use of natural areas to enhance pro-environmental attitudes and proenvironmental behaviour. Nelson and Shaw (2013), rather than using urban green space, used natural schoolyards⁸ with school students as the sample population. Nelson and Shaw (2013) predicted that natural schoolyards could provide children with the nature exposure necessary to develop pro-environmental attitudes and, consequently, proenvironmental behaviours. Interestingly, their results did not support their assumptions. While there are differences between ecological sanctuaries confined to the school grounds and the green spaces existing within and around the urban landscape, Freeman

⁸ Native ecological communities on school grounds to provide a space for students to interact with their natural environment (Nelson and Shaw 2013).

et al. (2012), who looked at the relationship between people and their household gardens, found gardens to also play a role building connections with nature. Interestingly, biophilia was not discussed by any of these authors despite the crux of their research being nature exposure and pro-environmental attitudes. Biophilia deserves greater recognition in the literature and my results give much needed exposure to an undervalued theory.

Policy makers striving to develop pro-environmental behaviour change policies have struggled with a lack of engagement in environmental issues and such a barrier has been attributed to a weak emotional connection with nature. Fostering an emotional connection with nature could aide in pro-environmental behaviour change efforts yet it has not been addressed for such a purpose in the current literature. If biophilia can be fostered through nature exposure therein lies a possible solution for poor engagement in pro-environmental behaviour change policies. There have been findings indicating that children who have grown up in rural relative to urban environments perform more proenvironmental behaviour in adulthood with nature exposure additionally positively linked to pro-environmental attitudes and nature connectedness (Kals et al., 1999, Lohr and Pearson-Mims, 2005, Louv, 2008, Wells and Lekies, 2006). However, urban green space has not specifically been used as a proxy for nature exposure, nor has urban green space visitation been assessed for possible links to pro-environmental behaviour. In order for policy makers to give nature connectedness the attention it deserves in behaviour change policy they require empirical evidence proving an association between nature exposure and pro-environmental behaviour. My study provides such evidence.

Using data collected by the Wellington City Council for their annual Residents Satisfaction Survey, data from the years 2010 through 2012 was collated together to provide a sample size large enough for robust quantitative analysis. Each respondent was asked to indicate their level of visitation across six types of urban green space. In an additional section, respondents were asked to indicate whether or not they performed a pro-environmental behaviour. Fourteen pro-environmental behaviours were included in the survey categorised into two sub groups; resource use and waste reduction, and water pollution minimisation. With two separate types of pro-environmental behaviour measured I was able to address whether visitation to water based nature spaces was more associated with water based pro-environmental behaviours. With literature suggesting that humans gain more positive experiences and develop stronger

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connections to water based spaces, I sought out to determine whether there was indeed potential for water based urban green space to be prioritised for its role in fostering biophilia. However, there was also considerable literature citing the benefits of vegetated spaces on the well-being of visitors and the presence of being around vegetation for nature connectedness. The Wellington City Council data set allowed me to look at the association between visitation to vegetated spaces and pro-environmental behaviour and compare with the association found for the non-vegetated spaces. It is important that the urban green spaces most associated with pro-environmental behaviour be determined if green space marketing is to be used for pro-environmental behaviour change purposes.

Regression techniques were used to provide the necessary R^2 values and β coefficients and to provide the p values to determine level of significance. Cross tabulation analysis provided the conditional probabilities of performing pro-environmental behaviour across urban green space visitors and non-visitors. Odds ratio analysis was conducted using binary logistic regression as a useful way of communicating how visitation to urban green space could increase the odds of performing pro-environmental behaviour.

When looking at the current literature surrounding pro-environmental behaviour there is great attention placed on what types of people are more likely to be environmentally friendly. Females, the affluent, the well-educated, and the older, have been reported as the socio-demographic categories most likely to perform pro-environmental behaviours. With the Wellington City Council survey recording gender, age, and household income, I was able to use this data to test for moderation. There is obviously far more to the explanation of pro-environmental behaviour than nature exposure alone. However, my study was simply looking to support biophilia by providing statistical evidence of a significant positive association between urban green space visitation and proenvironmental behaviour. Along with this, I wished to determine whether the association differed in accordance with ones gender, age, and income. With females shown to gain more positive experiences from being in nature it was hypothesised that biophilia may be stronger in women. The older, due to having more time to visit nature and perform pro-environmental behaviour, were also assumed to show a stronger presence of biophilia. The affluence hypothesis suggests that those earning more have the ability to focus on issues beyond their immediate selves, suggesting a greater ability to act on biophilic feelings of protecting nature (Givens and Jorgenson, 2011, Cervinka et al., 2012). I was able to create an interaction term and test for moderation using regression. If moderation did exist then there is reason to believe that nature exposure as a behaviour change tool is better suited to certain demographics. Moderation means that the relationship is different across the categories included in the test. For example, if there was statistical interaction between gender and urban green space visitation on the prediction of pro-environmental behaviour then the slope of the relationship is significantly different between men and women. While I expect the slope to be steeper for women, the absence of significant interaction meant my hypothesis was rejected.

On top of the socio-demographics included in my analysis, the survey I used also allowed me to investigate pride and quality of life for any statistical moderation. With pride and quality of life both factors that have previously been proven to be associated with nature exposure and pro-environmental attitudes it was predicted that those who held more pride in Wellington city or who scored highly for quality of life, would show a steeper slope in the urban green space visitation – pro-environmental behaviour relationship. If people are living a high quality of life, similar to the affluence hypothesis, they likely have the ability to focus on issues beyond themselves, resulting in a greater chance these individuals can respond to biophilia (more pro-environmental behaviour). Those that have a high sense of pride were expected to be more likely to want to preserve their pride in the city and take action (pro-environmental behaviour) to preserve such a feeling. Despite the evidence suggesting otherwise, my results did not report any statistical moderation of such factors when it came to predicting proenvironmental behaviour through urban green space visitation.

As I conducted my analysis, I continually referenced back to the biophilia hypothesis, the theory of planned behaviour, and the principle of compatibility. All are theories which provide the underpinning evidence for the assumptions I make in the direction of causality (pro-environmental behaviour as the dependent, left hand term and urban green space visitation as the predictor on the right hand side of my regression equations). Throughout my study, I have used evidence from the literature to make the following assumptions; pro-environmental attitudes are positively linked to pro-environmental behaviour, pro-environmental attitudes are linked to emotional connections to nature, and exposure to nature reinforces emotional connections to nature via biophilia. Recall the diagram in figure one illustrating where my study sits in relation to previous research. Through my statistical analysis I have come to a series of conclusions regarding the association between urban green space visitation and pro-environmental behaviour. I next summarise these findings and discuss how such

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findings relate to my original hypotheses. I also outline how my findings contribute to the ultimate aim of my research which was to provide policy makers with evidence supporting nature exposure as a tool for pro-environmental behaviour change.

My overarching hypothesis posited that with more frequent urban green space visitation an individual would be more likely to perform pro-environmental behaviour. My results supported such an assumption with a statistically significant positive association detected. Additionally, the odds of performing more than seven types of proenvironmental behaviour almost doubles if the individual visited urban green space once a month or more. With literature showing nature exposure to be correlated with nature connectedness, it is likely that when an individual is exposed to urban green space they become more connected to nature and develop pro-environmental attitudes conducive to pro-environmental behaviour. Kovacs et al. (2014) concluded there to exist a positive relationship between pro-environmental attitudes and pro-environmental behaviour, which supports my results.

There is research which suggests that the more one is exposed to environmental issues via the media, the more likely they are to be involved in everyday pro-environmental behaviour (Östman, 2013). Biophilia explicitly revolves around physical exposure to nature while Östman's (2013) research focuses on media exposure, i.e., conversations about environmental issues with peers, use of news media, and how such actions promote pro-environmental behaviour by raising awareness of environmental issues. If I am making the conclusion that exposure to nature increases the likelihood that one will perform pro-environmental behaviour, what is the difference to saying that one can also experience nature through the media and feel a similar motivation to act? Policy makers could look to my research and compare it to the conclusions of researchers such as Östman (2013) and decide it is easier to simply advertise environmental issues rather than spend money on promoting and providing for nature participation in the city. However, biophilia works on an engrained biological makeup of human beings and acts to reinforce emotions and motivations for nature preservation that are said to be already coded into our DNA (Wilson, 1984). Experiencing nature through technological and indirect means does not impact on the human body in the same way as physical interaction. There has been research into the physiological reactions the human body evokes with nature exposure and biophilia has been claimed to be most effective when people are physically experiencing nature (as opposed to observing it) (Millar and Millar, 1996). There is no reason to doubt that being in nature has the ability to stir up personalised, emotional connections to nature, but whether these emotions are then manifested as pro-environmental behaviour has not been addressed. Until policy makers are provided with empirical evidence which supports the link between urban green space visitation and pro-environmental behaviour, it is unlikely that such a direction will be pursued as a tool for pro-environmental behaviour change. My results provide the starting point for further investigations into urban green space visitation as a proenvironmental behaviour change tool. However, issues surrounding the interpretation of terms such as 'emotional connections' and 'nature connectedness' remain problematic barriers to the successful understanding and acceptance of empirical studies such as my own.

Connections to nature is a broad term and is alternatively referred to as 'nature relatedness' by Zelenski and Nisbet (2014). Many nature connectedness studies (as well as biophilia) focus on the emotional connections developed through nature exposure. Emotional connections are complex, developing from positive responses such as happiness, pride, and pleasure, and can manifest into feelings of responsibility, obligation to care, and altruism (Freeman et al., 2012). All such factors are cognitive and have been shown to positively correlate with intentions to perform proenvironmental behaviour. When Azeem et al. (2013) used an economic lens to investigate the determinants of pro-environmental behaviour they concluded that only hedonic motives, which related to those which are considered in terms of pleasant sensations, significantly explained pro-environmental behaviour. Therefore, Azeem et al. (2013) concluded that people will perform pro-environmental behaviour if they receive positive emotions from doing so. Chen et al. (2013) believe that biophilia as a leisure tool (working off humans' tendency to affiliate with nature and enjoy it) has the potential to benefit both human well-being and the natural environment. Biophilia encourages someone to want to preserve the environment as they receive pleasant experiences (biologically) from being in nature, add this to the pleasant experiences derived from recreation performed within the green space itself and urban green space visitation becomes a highly positive practise. Protecting nature is therefore preserving the source of this positive feeling. Azeem et al. (2013) did not come to this conclusion in their discussion highlighting the lack of acknowledgement for biophilia in the economic based sphere. If biophilia is to become mainstream it needs to be considered outside of the environmental psychology discipline.

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Perhaps the biggest caveat of my study is the inability to prove causality and the myriad of factors involved in one's decision to both visit urban green space and perform proenvironmental behaviour. I have concluded that there is an association and posited the direction of association to run from nature exposure to pro-environmental behaviour. Van der Werff et al. (2013) are unknowingly supporting biophilia when they state that some people act in pro-environmental ways because they are intrinsically motivated to do so. However, the authors here link this intrinsic (as opposed to external motivation) to an environmental self-identity. If someone views themselves as an environmentally conscious individual they may be visiting urban green space more often in order to reinforce this identity. Here I end up in full circle. Whether one's predisposed environmental identity means they are both performing pro-environmental behaviour and visiting urban green space in order to remain in line with such an identity, or whether biophilia is the catalyst creating the association between urban green space visitation and pro-environmental behaviour is unable to be proven. Van der Werff et al. (2013) also highlight that obligation-based intrinsic motivation mediates the relationship between environmental self-identity and environmentally friendly behaviour. Mediation means that there is only a relationship between environmental identity and proenvironmental behaviour if there is also present an internal desire to be environmentally friendly. Therefore, biophilia could potentially provide the internal desire necessary for environmental identity to be associated with pro-environmental behaviour.

When mentioning environmental identity, it is important to mention the role of place attachment and how this is related to my findings. Evidence from Folmer et al. (2013) shows place attachment to protected areas is associated with pro-environmental behaviour. What the authors noted, which is important for my study, is that visitors to the wildlife park in question were visiting such a place with the intention of seeing wildlife. Therefore, when results reported an interest in guided wildlife encounters to be significant in predicting emotional attachment to the area of visitation, it was posited that the wildlife experiences were reinforcing rather than creating emotional attachment. Biophilia does not advocate for the creation of emotional bonds but simply the fostering of innate emotions that have been supressed over time, described by Pyle (2002) as the 'extinction of experience'. Even if urban green space visitation is simply acting to reinforce behavioural intentions already present (rather than creating them), it still certifies urban green space visitation as a useful tool for fostering pro-environmental behaviour.

When discussing why biophilia is so important in fostering pro-environmental behaviour intentions, it is useful to mention the work of Grinde and Patil (2009) who talk of 'discords'. Discords represent any mismatch between a present living condition and the type of environment that the human body was evolutionarily adapted for. For example, a discord has been described as a lack of nature exposure and, more specifically, the visual presence of plants (Grinde and Patil, 2009). Humans subconsciously prefer those environments which we have evolved in. Urban green space visitations as a form of nature exposure are able to provide the necessary stimulation for biophilia to function, which has been suggested by my results. My results showed that that visitation to vegetated urban green spaces better explained pro-environmental behaviour using the least amount of parameters omitted town belt and sports field visitation. It was likely that town belt was not included due to its high correlation with other urban green spaces such as tracks.

Hinds and Sparks (2011) found that people experienced different types of positive emotions in different nature settings (e.g., mountain, forest, beach, river, garden, parks, and farmland fields). Those visiting natural environments more often reported a greater level of positive emotional response in general (Hinds and Sparks, 2011). De Groot et al. (2003) explain how people prefer certain landscapes over other forms when categorised on their level of 'wildness' with Purcell and Lamb (1998) confirming that people prefer more natural landscapes. Robinson (2001) similarly outlined how nature spaces can be categorised according to their relative level of naturalness. I hypothesised that those who visited the more natural forms of urban green space (coasts, walking tracks, town belt) would show a stronger connection between their visitation levels and their level of pro-environmental behaviour due to biophilia working stronger in the more natural settings. While this hypothesis was only partially supported, with parks showing the strongest connection despite this category encompassing many man-made spaces such as playgrounds, there was a weaker connection between pro-environmental behaviour and sports fields (a non-vegetated space). While De Groot et al. (2003) found their sample population to prefer those landscapes that were more 'wild', Hinds and Sparks (2011) showed how more wild spaces also entail higher levels of negative emotions such as isolation and loneliness. My study did not include spaces as 'wild' as those employed by other authors, and by using urban green space, my choice of nature exposure runs the risk of being labelled too commercialised or more cultural rather than

natural. For the purposes of biophilia, however, all living things are viewed in an equal hierarchy. Pyle (2003) even emphasises that even small spaces of nature in urban settings can be just as effective as big wildlife reserves in awakening biophilia.

Interestingly, as mentioned above, those spaces considered comparatively more natural (e.g., forests and mountains) elicited more negative feelings such as isolation and apprehension, with the most positive responses (fun, relaxation) coming from waterscapes and parks (Hinds and Sparks, 2011). It has been shown that humans prefer water based landscapes due to the evolutionary based need for water for survival (Hartmann and Apaolaza-Ibáñez, 2010). However, my model using coasts as the explanatory variable for pro-environmental behaviour showed an R² lower than that for visitation to vegetated spaces. I found that visitation to vegetated spaces was more strongly associated with pro-environmental behaviour relative to coast visitation. It is likely that vegetative spaces showed a stronger association with pro-environmental behaviour as biophilia does put forward that human's gain positive reactions from the presence of 'living' things (Lee, 2012). Coasts and harbours are possibly not visibly 'living'. While water based scenes may have been shown to evoke positive emotions, it could be that the positive feelings necessary for pro-environmental orientations are better stimulated in 'living' spaces (e.g., vegetation). Future research should aim to distinguish the type of emotions water based versus terrestrial spaces. It could also be that sports fields attract a different type of individual. Perhaps those holding competitive values are more likely to participate in sport and be less altruistic (a precursor of proenvironmental behaviour) (Tapia-Fonllem et al., 2013). Also, with pleasurable experiences being linked to stronger connections to nature, vegetated spaces could represent those spaces where relaxation and enjoyment is most experienced (Hinds and Sparks, 2011). While it was predicted that there would exist differences between the urban green space types in relation to the strength of the association with proenvironmental behaviour, I found that using the combined variable, Total UGS visitation, returned the strongest R^2 . It seems that it does not matter which type of urban green space is being experienced, with any form of nature exposure positively associated with pro-environmental behaviour.

There is evidence which suggests that, in many instances, urban green spaces are primarily used as a means of access to a destination or as a thoroughfare (Tzoulas and James, 2010). In other cases, they are sources of recreation and relaxation (Tarrant and Green, 1999). Perelman et al. (2013) confirmed that all visitors to an urban nature

reserve in Buenos Aires rated the value of nature for enhancing the quality of human life over the value of nature for biodiversity. It would be useful to determine whether the *reason* one visits urban green space moderates the relationship between visitation and pro-environmental behaviour. It may be that those who visit urban green space for the biodiversity aspect or to specifically experience plants and wildlife may already hold pro-environmental attitudes and a stronger inclination to perform pro-environmental behaviour. It may be that those who visit urban green space for recreational purposes or as thoroughfares are less likely to be responsive to the effects of biophilia. My data set does not allow for the reasoning behind visitation to be determined, with such intentions remaining as a possible explanatory factor in the association between urban green space and pro-environmental behaviour. If people are visiting urban green space more often because they already hold a predisposed appreciation for nature, then it cannot be concluded that nature visitation is increasing their positive environmental attitudes and pro-environmental behaviour intentions. Including questions relating to motivations for visiting UGS would be beneficial and should be noted for future studies.

The second major component of my study, following urban green space visitation, is pro-environmental behaviour. Pro-environmental behaviour is a heavily researched topic within the environmental planning and social psychology discipline and has been approached in different ways. In my case, the pro-environmental behaviours measured were restricted to those chosen by the Wellington City Council. There were 14 proenvironmental behaviours analysed in my study which were organised into two categories, resource use and waste reduction, and water pollution minimisation. Such categories were chosen because the survey was designed to measure the effectiveness of council services. Inconsistency in the measurement of pro-environmental behaviour has been regularly reported in the literature, and my study runs the risk of producing results that are unable to be compared to other studies due to the specific nature of the proenvironmental behaviours included in the survey as well as my method of reporting level of pro-environmental behaviour. There have been studies where different measures of pro-environmental behaviour have been tested for consistency (Stern et al., 1999, Stets and Biga, 2003). Consistency results ranged from low to high indicating that there is considerable difference in how authors are measuring this variable. Future research should aim to employ a widely used and acknowledged method for measuring pro-environmental behaviour to enable accurate comparison of results.

Importantly, the environmental impact of the behaviours measured in my study were not outlined in detail. There were also some questionable pro-environmental behaviours included in the analysis, such as washing a car at a carwash or on the lawn. While washing a car on a lawn does prevent pollution entering the storm water system (a proenvironmental behaviour), owning a car and using water to wash it seem to be actions contradictory to environmental preservation. Markle (2013) also highlights that people differ in their degree of engagement in environmentally significant behaviour, meaning they may perform a behaviour often or rarely. In my study, pro-environmental behaviour was recorded through a series of 'yes' or 'no' questions. An individual that always recycles will therefore indicate 'yes' on the survey, as would an individual that only recycles occasionally. Without the ability to distinguish between the frequencies of pro-environmental behaviour, I was unable to determine whether there was a stronger correlation between urban green space visitation and frequent pro-environmental behaviour performance. In effect, the conclusions that are made in my analysis potentially hide the presence of stronger associations. Again, it is important that future studies into the relationship between urban green space visitation and proenvironmental behaviour use a pro-environmental behaviour measure that has been reviewed and tested by authors elsewhere.

While there appears to be great support for the hypotheses proposed for research question 1.1 and 1.2, support for hypotheses regarding question 1.3 was varied. Hartig et al. (2007a) have shown women, more so than men, perceive being in nature as a positive experience. Hinds and Sparks (2011) research, which supported the correlation between nature exposure and pro-environmental intentions, had a disproportionately female sample. Therefore, their conclusions were likely only reporting on the association between nature exposure and pro-environmental attitudes provided by the high proportion of females in their sample. Using an unbiased sample of men and women, my results did show that being a female increases the likelihood that someone would perform more pro-environmental behaviours. I cannot say that this difference is due to females being more emotionally responsive to nature exposure, as it may be the function of lifestyle factors associated with being female. I found no interaction between gender and urban green space visitation on the prediction of pro-environmental behaviour, suggesting that being female does not change the relationship. I simply found that females are more likely to perform pro-environmental behaviour, irrespective of urban green space visitation.

Torgler and Garcia-Valiñas (2007) stated that age effects the way that people experience nature, with older individuals expecting a lower return from investment in proenvironmental behaviour. With that being said, due to a greater array of evidence supporting time spent in nature to be most effective at building nature connections, I predicted older people to be more responsive to the effects of biophilia as they have had more time to develop connections with nature (Åberg and Tapsell, 2013, Arnberger, 2012, Kals et al., 1999, Nisbet et al., 2009). My results did show a statistically significant interaction between age and urban green space visitation on the prediction of pro-environmental behaviour; however, not supporting the hypothesis. I had predicted as age increased, urban green space visitation would be associated with more proenvironmental behaviour. However, my results showed as age increased, the effect of urban green space visitation on pro-environmental behaviour decreased. For the same level of urban green space visitation, a younger person performs more proenvironmental behaviour. It is thus likely that older people are less responsive to biophilia because they see a lower return on investment from their pro-environmental behaviour or they are physically less able to perform the pro-environmental behaviours I examined.

As a person ages, they likely experience a great array of lifestyle changes surrounding their income, spare time for recreation, priorities, and issue awareness. It could be that it is one of these lifestyle differences between the older and younger that is restricting biophilia in older people. The difficulty lies in deciphering which factors are simply covariates, and which are the significant explanatory factors for pro-environmental behaviour. While my hypothesis centred on older individuals being more susceptible to biophilia, there are those who posit that such pre-programmed affiliation is most easily fostered in children. There have been studies showing children who grew up in rural locations hold a greater affiliation to nature when they are older (Wells and Lekie, 2006). A longitudinal study into urban green space visitation and pro-environmental behaviour would be more accurate at determining whether biophilia functions better across certain age groups (e.g., childhood years, teenage years, or middle age, retired).

Applying the affluence hypothesis of Givens and Jorgensen (2011), I expected those with a higher income would be more able to act on the emotional connections to nature fostered through urban green space visitation as they have fewer financial worries. As well as this, the ability to focus on issues beyond one's self has been attributed to income (Cervinka et al., 2012, Givens and Jorgenson, 2011). However, my results did

not show this to be the case. While arguments regarding the cost of performing some pro-environmental behaviours led me to assume such behaviours are a luxury for the wealthy, my results showed that income does not play a statistically significant role in how pro-environmental behaviour is associated with nature exposure. It could be that those earning more have more demanding jobs and less time for urban green space visitation. While these individuals may be more susceptible to the calming and positive benefits of nature exposure, even if this is reflected in a higher amount of proenvironmental behaviour, their lower rates of urban green space visitation lowers the presence of a positive correlation between urban green space visitation and proenvironmental behaviour.

Venhoeven et al. (2013) reference the role of pro-environmental behaviour on one's well-being (with well-being synonymous with quality of life). I predicted that those with a higher score for quality of life would in turn show correlating scores for high amounts of pro-environmental behaviour. The World Happiness Report claimed that the quest for happiness is intimately linked to the quest for sustainable development, suggesting that those who are happier or have a higher quality of life, may also perform more PEB (Venhoeven et al., 2013). Some studies have shown pro-environmental behaviour to be positively correlated with well-being (Brown and Kasser, 2005), life-satisfaction (Xiao and Li, 2011), and happiness (Kasser and Sheldon, 2002). Despite such studies, my results failed to return a statistically significant moderating effect of quality of life. The data I used showed limited variation across responses, with the majority reporting a 'good' quality of life. Had I had access to a sample that held a wide variation in perceived quality of life, I may have detected a significant result.

When considering how my results could benefit the behaviour change policy arena, I can look to the work of Fink (2011) who explores biophilia as one of five key elements for contributing to behaviour change towards lower energy consumption. Fink puts forward that biophilia, through instilling an environmental consciousness, is able to foster behaviour change towards a low carbon lifestyle. Emotional connections to environmental issues are necessary for engagement in behaviour change (Lorenzoni et al., 2007). When people feel emotionally connected to an issue they are more likely make more drastic changes to their lifestyles (Lorenzoni et al., 2007). Couple this with those who have concluded the link between nature connectedness and nature visitation (Kals et al., 1999, Nisbet et al., 2009), as well as the documented association between nature exposure and pro-environmental attitudes (Schultz et al., 2004), my research has

added to the literature calling for an investigation into how visitation to urban green space could promote sustainable behaviour change in an urban population.

There is not going to be a one-size-fits-all solution to pro-environmental behaviour change. The more that can be understood about the possible relationships between environmental attitudes, urban green space visitation and pro-environmental behaviour, and how these are moderated by socio-demographics, is crucial to developing tailored, cost-effective environmental interventions. Simply establishing emotional connections to nature may not be enough to gain widespread change in environmental behaviours, however, I strongly believe it to be the first step.

APPENDICES

Copies of the 2010, 2011, and 2012 Wellington City Council Residents Satisfaction Surveys are attached at end of document.

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2010 WELLINGTON CITY COUNCIL RESIDENTS SATISFACTION SURVEY

Study ID	FEB10-RSS	Resp. No.	
Interviewer No.		Interview Length	
No. Of Queries		Reference No.	

Wellington City Council

Resident Satisfaction Survey

This Questionnaire is split into two parts at question 46. Ask Part A and Part B Demographic Questions.

Good morning/afternoon/evening.

My name is <name> calling from OCIS on behalf of Nielsen the market research company.

We are conducting a survey for Wellington City Council about the services they provide to the people of Wellington. To help me select the right person for this survey, I need to speak to:

- A person living in this household who is 15-24 years of age

- The person living in this household **15 years of age or over**, who had the **last** birthday (**or person to fill quotas**).

CHECK QUOTAS

IF NOT AVAILABLE ARRANGE CALLBACK

REINTRODUCE IF NECESSARY

The interview will take about 20 minutes of your time. Everything you say will be confidential and the results of the survey will help the Council improve the services it provides to the people of Wellington.

Is it convenient for you now, or shall I make an appointment to call you back at a better time for you.

IF NECESSARY ARRANGE CALLBACK

**** IF ASKED ABOUT WHAT IS THE SURVEY ABOUT **** The survey covers a range of topics about services the council currently provides.

Q95	For quality control and training purposes, this call will be recorded and may also be monitored however your answers are confidential and can not be traced back to you personally. Is this ok with you?	Code	Route
	Yes	1	
	No	2	

Q1	Do not read out	Code	Route
	If no, close with thanks		
	Firstly, can I just check that you actually live in Wellington City, that is, the area extending as far north as Tawa but not including Porirua, Petone or the Hutt Valley?		

Yes	1	Q2
No	2	CLOSE

I'm sorry but for this survey we need to speak to people that live in Wellington City,

Thank you for your time.

Should you have any queries about this interview my name is <> calling on behalf of Nielsen

Q2	If yes, close with thanks Are you by any chance an employee of, or contractor to the Wellington City Council, or are you an elected representative or a member of a community board?	Code	Route
	Yes	1	CLOSE
	No	2	Q3

I'm sorry but we cannot speak to employees or contractors for the Wellington City Council, or elected members of community boards.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q3	<u>Check ward quota</u> <u>*****if not on list probe for closest suburb on list</u> ************************************	Code	Route
	Aro Valley	01	
	Berhampore	02	
	Breaker Bay	03	
	Broadmeadows	04	
	Brooklyn	05	
	Chartwell	06	
	Central City	07	
	Churton Park	08	
	Crofton Downs	09	
	Glenside	10	
	Grenada North	11	
	Grenada Village	12	
	Hataitai	13	

Happy Valley	14
Highbury	15
Horokiwi	16
Houghton Bay	17
Island Bay	18
Johnsonville	19
Kaiwharawhara	20
Karaka Bays	21
Karori	22
Kelburn	23
Khandallah	24
Kilbirnie	25
Kingston	26
Kowhai Park	27
Linden	28
Lyall Bay	29
Makara	30
Makara Beach	31
Maupuia	32
Melrose (west - city side)	33
Melrose (east - airport side - View Road/Hornsey Road)	34
Miramar	35
Mitchelltown	36
Moa Point	37
Mornington	38
Mount Cook	39
Mount Victoria	40
Newlands	41
Newtown	42
Ngaio	43
Ngauranga	44
Northland	45
Ohariu Valley	46
Oriental Bay	47
Owhiro Bay	48

		1
Paparangi	49	
Pipitea	50	
Raroa	51	
Rongotai	52	
Roseneath	53	
Seatoun	54	
Seatoun Bays/Karaka Bays	55	
Southgate	56	
Strathmore Park	57	
Takapu Valley	58	
Tawa	59	
Te Aro	60	
Thorndon	61	
Vogeltown	62	
Wadestown	63	
Wilton	64	
Woodridge	65	
(Do not read) Refused	97	CLOSE
(Do not read) None of these	98	CLOSE
(Do not read) Don't Know	99	CLOSE

CLOSE FOR Q3 SUBURB

I'm sorry but for this survey we need to know which suburb you live in.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q4	This question is set from Q3 <u>Don't need to ask, record only from Q3</u> Ward	Code	Route
	Northern	1	
	Onslow-Western	2	
	Lambton	3	
	Southern	4	
	Eastern	5	
Q5	Code Gender	Code	Route

	Gender		
	Male	1	
	Female	2	
Q6	If answered 1 terminate Read out - code one only Which age group do you fit into?	Code	Route
	Under 15 years	1	CLOSE
	15-24 years	2	
	25-39 years	3	
	40-59 years	4	
	60-64 years	5	
	65 years and over	6	
	(Do not read out) Refused	9	CLOSE

CLOSE FOR Q6 age IF Q6=1

I'm sorry but for this survey we need to speak to people aged 15 or over.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

ELSE

I'm sorry but for this survey we need your age.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q7	Read out - code one only Which of the following best describes your household?	Code	Route
	Young couple without children	01	
	Household with youngest child under 5	02	
	Household with youngest child 5 to 13	03	
	Household with youngest child 14 or over	04	

Older couple - no children or none living at home	05	
Single/one person household	06	
Flat - not a family home	07	
Other - specify	98	
(Do not read) Refused	99	

Q8	Display codes in reverse order 5-4-3-2-1 <u>Read out - code one only</u> First of all, i'd like you to think about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides. Overall, how would you rate the performance of Wellington City Council over the last 12 months? Would you say it was	Code	Route
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very good	5	
	(Do not read) Don't know	9	

Q112 If Q8 code 5 then ask Q112

Why do you say the council's performance is very good? **PROBE** *Fully*

Q113

If Q8 *code 4, 3, 2, or 1 ask* Q113 What could the council do for you to give them a higher rating? PROBE Fully

Q88	Read out in reverse order 5-4-3-2-1	Code	Route
Q88	Read out in reverse order 5-4-3-2-1 Read out, code one only	Code	Rou

Thinking about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides, overall, how would you rate the value for money from all the services the Council provides?		
Very Poor	1	
Poor	2	
Neither good nor poor	3	
Good	4	
Very Good	5	
(Do not read out) Don't know	9	

Q10	Read out in reverse order 5-4-3-2-1 <u>Read out, code one only</u> The next question concerns your overall quality of life.	Code	Route
	Would you say that overall your quality of life is		
	Extremely poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Extremely good	5	
	(Do not read) Don't know	9	

Urban Development

Q11	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree**********	Code	Route
	The next questions cover such things as the design and layout of Wellington. Generally speaking, do you agree or disagree that Wellington is a great place to live?		
	PROBE Probe: Is that strongly agree/disagree or just agree/disagree		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q12	Read out in reverse order 5-4-3-2-1 <u>***Probe: Is that strongly agree/disagree or just agree/disagree</u> ********* And do you agree or disagree that the different suburbs and communities in Wellington provide a good <i>variety</i> of places to live in? PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q13	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree***********************************	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q14	Read out in reverse order 5-4-3-2-1 <u>***Probe: Is that strongly agree/disagree or just agree/disagree********</u> And do you agree or disagree that there is a good <i>variety</i> of <i>leisure activities and</i> <i>opportunities to socialise</i> in Wellington? PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q15	Rotate statements		

Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u>

Probe: Is that strongly agree/disagree or just agree/disagree******

I am going to read you some statements about Wellington and would like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement.... **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Heritage buildings, areas, trees and objects contribute to the city's unique character	1	2	3	4	5	9
(R2) Heritage buildings, areas, trees and objects contribute to your community's unique character	1	2	3	4	5	9
(R3) The city centre is lively and attractive	1	2	3	4	5	9
(R4) My local suburban centre is lively and attractive	1	2	3	4	5	9
takes into account its unique urban character and natural environment	1	2	3	4	5	9

Q114 Rotate statements

Read out in reverse 5,4,3,2,1

In general, how strongly do you agree or disagree that...

PROBE Is that strongly agree/disagree or just agree/disagree

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Heritage buildings, areas, trees and objects are appropriately valued and protected in the central city	1	2	3	4	5	9
(R2) Heritage buildings, areas trees and objects are appropriately valued and protected in your local/suburban						
area	1	2	3	4	5	9

Q16	Read out in reverse order 5-4-3-2-1 Read out - code one only How strongly do you agree or disagree with the statement, 'I feel a sense of pride in the way Wellington looks and feels'? PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read) Don't know	9	

Social and Recreation / Environmental

Q17 Read out scale in order: very safe to very unsafe <u>Read out - code one only</u> The next few questions are about safety.

Thinking of your overall sense of freedom from crime, how safe or unsafe do you feel in the following situations. Would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...?

....and would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...?

	Very unsafe	Somewhat unsafe	Reasonabl y safe	Very safe	(Do not read out) Not applicable: Don't come into city centre	(Do not read) Don't know
(R1) In your neighbourhood during the day	1	2	3	4	7	9
(R2) In your neighbourhood after dark	1	2	3	4	7	9
(R3) In your city centre during the day	1	2	3	4	7	9
(R4) In your city centre after dark	1	2	3	4	7	9

Q18	Note for post-coding and analysis: Listing of new codes to be approved by WCC before back coding. All new codes to be grouped into broad themes in parenthesis below and nets of themes to be included in data tabulations.	Code	Route
	Ask Question 19 if more than one coded Read in rotated order - code each mention **Probe: What else*******		
	The following list I am about to read identifies things that might make people feel unsafe in their neighbourhoods or city. Which of the following, if any, are particularly concerning in Wellington at present?		
	PROBE What else?		
	Poorly lit or dark public areas such as streets, paths and parks		
	Vandalism such as broken windows in shops and public buildings	01	
	Graffiti	02	
		03	
	Poorly maintained or dangerous public areas such as streets, paths and parks		
	Traffic, including busy roads and lack of pedestrian facilities	04	
		05	

Dangerous driving including speeding, drunk drivers and so on		
Alcohol and drug problems	06	
	07	
Car theft or vandalism, and theft from cars Threatening people and/or people behaving dangerously	08	
	09	
(Do not read out) None of these	97	
Other (specify)	98	
(Do not read out) Don't know	99	
Note for post-coding and analysis: Listing of new codes to be approved by WCC before back coding. All new codes to be grouped into broad themes in parenthesis below and nets of themes to be included in data tabulations. <ask 18="" coded="" if="" in="" more="" one="" question="" than=""> <u>Read in rotated order - code only one</u></ask>	Code	Route
And which of these is of most concern to you at present in Wellington?		
Poorly lit or dark public areas such as streets, paths and parks	01	
Vandalism such as broken windows in shops and public buildings	01	
Graffiti	02	
	03	
Poorly maintained or dangerous public areas such as streets, paths and parks	04	
Traffic, including busy roads and lack of pedestrian facilities		
Dangerous driving including speeding, drunk drivers and so on	05	
	06	
Alcohol and drug problems	07	
Car theft or vandalism, and theft from cars	08	
······································	09	
(Do not read out) None of these	97	
Other (specify)	98	
(Do not read out) Don't know	99	
Read out in reverse order 5-4-3-2-1 Read out - code one only Wellington City is becoming home for an increasing number of people with different lifestyles and cultures and from different countries. Overall do you think this makes the city?	Code	Route

A much worse place to live	. 1	
A worse place to live	. 2	
Makes no difference	. 3	
A better place to live	. 4	
A much better place to live	. 5	
(Do not read out) Don't know	. 9	

Q21	Read out in reverse order 5-4-3-2-1 ***********************************	Code	Route
	agree/disagree***********************************		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q22	51. Community advocacy	Code	Route
	Read out in reverse order 5-4-3-2-1 <u>Read out - code one only</u> Wellington City Council works to help ensure Wellington is made up of strong and thriving communities. How satisfied or dissatisfied are you that the Council provides appropriate services and resources to ensure strong and thriving communities?		
	Would you say you are		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	

Q115 Ask all Rotate Do Not Read Out

As far as you are aware, which of the following community support services are provided by the Wellington City Council?

	Yes	N	C	Don't know	
^(R1) Grants (e.g. social and recreation, and education)	1	2		9	
(R2) Provide support networks for various groups (e.g. Pacific	1	2		9	
(R3) (R3)	1	2		0	
(R4) Provide advocacy services for various groups (if necessary:	1	2)	
that is the Council would act as a go between for services such as public health and various community groups)	1	2		9	
^(R5) Support for homeless	1	2		9	
	-				
Q24 Do not read - code only one Have you used a Wellington City Council public toilet in the las	t 12 months?		Code	Route	
Yes			1		
No			2	Q26	
Don't Know			9	Q26	
		-	Codo	Douto	_
Read out in reverse order 5-4-3-2-1 Read out - code one only			Code	Roule	
And how satisfied or dissatisfied are you with the cleanliness o Council public toilets?	f Wellington C	ity			
Would you say you are?					
Very dissatisfied			1		
Quite dissatisfied			2		
Neither satisfied nor dissatisfied			3		
Quite satisfied			4		
Very satisfied			5		
(Do not read out) Don't know			9		
Q26 Do not read out - code one only		Γ	Code	Route	٦
Do you have essential emergency items in your home? By eme	ergency items				
emergency occurs.		an			
Yes	••••••	•••••	1		
No			2	Q28	
Don't know			9	Q28	
Q27 Code None of these as 97		Γ	Code	Route	٦
Code Don't know as 99					
As I read out this list please tell me which, if any, of these you	would easily b	e able			

to find in the event of an emergency		
Ten litres of bottled water per person in your household	01	
Canned food	02	
Can opener	03	
Other non-perishable food	04	
First aid kit	06	
A battery operated radio	07	
Spare batteries	08	
A plastic bucket	09	
Plastic bags	10	
Toilet paper	11	
Soap	12	
Disinfectant	13	
A primus or gas barbeque to cook on	14	
Waterproof torches	15	
Other essential medication	16	
Pet supplies	17	
Blankets, towels, sleeping bags	18	
Sturdy footwear	19	
Baby/infant supplies	20	
Essential documents (birth/marriage certificates, insurance policies)	21	
Family photos	22	
None of these	97	
(Do not read out) Don't know	99	
Ask all respondents	Code	Route
Do not read out - code one only		
will do if a significant emergency occurs?		
Yes	1	
No	2	
Don't know	9	
Check Q7 - if school age children (code 2,3 or 4) in household ask all statements	Code	Route
in Q29 , otherwise omit statement 3 and ask all other statements Ask all respondents		
Read out - code all that apply		

Q28

Q29

Discussed ways to get in touch with other family members when an emergency occurs	01	
Made plans for re-uniting with family members when an emergency occurs Arranged for authorised people to collect children from school, and provided the	02	
school with a list of these people for when an emergency occurs	03	
members are separated when an emergency occurs	04	
or checking with neighbours	05	
Completed a first aid course	06	
Found out where your nearest Civil Defence Centre is	07	
(Do not read out) None of these	98	
(Do not read out) Don't know	99	

Q30	Allow entry up to 2 decimal places	Code	Route	
	Type 000 for zero/none Type 999 for Don't know IE 2 HOURS = 002.0, 10.5 HOURS = 010.5			
	Thinking now about recreational opportunities in Wellington			
	How many hours would you spend in some form of regular physical activity in an average week?			
	Type in number (use decimal places)	1		
	(Do not read) Don't know	9		
Q31	Check Q7 - if children aged 13 and under in household (code $2/3$) ask Q31 , otherwise skip to Q34 Do not read out Have any of the children aged 13 or under in your household used a Council playground or skate park in the last 12 months?	Code	Route	
	Yes	1		
	No	2	Q33	
	(Do not read out) Don't know	9	Q33	

Q32	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How satisfied or dissatisfied were you with the playground or skate park you visited most recently?		
	Very dissatisfied	1	

	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q33	ASK of those with school aged children (Q7=code 2 or 3) Read out - code only one	Code	Route
	On average, How often do the children aged 13 or under in your household walk to and from school?		
	Everyday	1	
	3-4 days a week	2	
	1-2 days a week	3	
	Less often	4	
	Never	5	
	No school aged children	6	
	(Do not read out) Don't know	9	
Q34	Read out - code all that apply Have you used any of the following Wellington City Council recreation facilities in the last 12 months?	Code	Route
	A Council Recreation Centre	1	
	A Council Swimming Pool	2	
	A Council skate park	3	
	The Mountain Bike Park in Karori	4	
	A Council Playground	5	
	(Do not read out) None of these	8	
	(Do not read out) Don't know	9	
Q35	Ask Q35 if Q34 code = 1 Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How satisfied or dissatisfied were you with the Wellington City Council's recreation centre you visited most recently?		

				i i
	Very dissatisfied	1		
	Quite dissatisfied	2		
	Neither satisfied nor dissatisfied	3		
	Quite satisfied	4		
	Very satisfied	5		
	(Do not read out) Don't know	9		
Q36	Ask Q36 if Q34 code = 2	Code	Route	
	Read out in reverse order 5-4-3-2-1 Read out - code one only And how satisfied or dissatisfied were you with the Wellington City Council's swimming pool you visited most recently?			
	Very dissatisfied	1		
	Quite dissatisfied	2		
	Neither satisfied nor dissatisfied	3		
	Quite satisfied	4		
	Very satisfied	5		
	(Do not read out) Don't know	9		
Q42	Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) *******Probe: is that strongly agree/disagree or just agree/disagree***********************************	Code	Route	
	Strongly disagree	1		
	Disagree	2		
	Neither agree nor disagree	3		
	Agree	4		
	Strongly agree	5		
	(Do not read out) Don't know	9		
Q45	Please code others as 99 and don't know as 99	Code	Route	
	Do not read out - code all that apply What, if anything, makes it difficult for you to take part in these recreational activities?			
	Too busy	01		
	Poor health	02		
	Activity costs too much	03		

	Activity too far away	04	
	No facilities for child care	05	
	Weather	06	
	Not at a convenient time	07	
	Shift work	08	
	Lack of motivation	09	
	No facilities exist	10	
	Tiredness	11	
	Lack of knowledge about how to do it	12	
	Environmental factors (eg road conditions, pollution)	13	
	Lack of parking/public transport/transport	14	
	None/nothing/not interested	97	
	Other (specify)	98	
	Don't know	99	
Q103	Ask all Read out scale 5.4.3.2.1	Code	Route
	Read out		
	In general, how easy is it to access Wellington City Council's recreation facilities and programmes?		
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	
	Quite easy	4	
	Very easy	5	
	(Do not read out) Don't know	9	
0104	Scale to be read in reverse $5.4.3.2.1$	Code	Route
Q104	To provide recreation services and facilities it costs, on average, \$135.12 per	Code	Noule
	resident per year (or \$0.37 per day). How strongly do you agree or disagree this is		
	good value for money?		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
	(
Q37	Read out - code all that apply	Code	Route

Have you used any of the following Wellington City Council community facilities in the last 12 months?		
A public library	. 1	
A Community Centre	. 2	
A Community Hall	. 3	
(Do not read out) None of these	. 7	
(Do not read out) Don't know	. 9	
if Q37 code = 1 then ask Q97	Code	Route
Read out		
How often on average would you use, or visit a Wellington City Council library?		

Q97

More than once a week	1	
Once a week	2	
Once every 2-3 weeks	3	
Once a month	4	
Once every 2-3 months	5	
Once every 4-6 months	6	
Less often than once every 6 months	7	
(Do Not Read Out) Don't Know	9	

v	with the range and variety of the items available?		
١	Very dissatisfied	1	
C	Quite dissatisfied	2	
1	Neither satisfied nor dissatisfied	3	
(Quite satisfied	4	
١	Very satisfied	5	
((Do not read out) Don't know	9	

Q38	If Q37 code = 1, then ask Q38	Code	Route
	Read out in reverse order 5-4-3-2-1 Read out - code one only Thinking about all the libraries and library services you've used over the last 12 months, how satisfied or dissatisfied are you with the library services overall?		
	Very dissatisfied	1	
	Quite dissatisfied	2	

	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q99	Scale to be read out in reverse To provide library services it costs, on average, \$115.61 per resident per year (or \$0.32 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q39 Ask of all

29, 31 & 33. New & existing (how often used...) DO NOT ROTATE

Read out - code one only

In the last twelve months, how often on average have you used ...?

.....And in the last 12 months how often have you used?

	Most days	Once or twice a week	Once every 2- 3 weeks	Once a month	Once every 2- 3 months	Once every 4- 5 months	Once every 6 months or less often	Never in the last 12 months	(Do not read) Don't know
(R1) Wellington City's coastal									
areas or beaches	01	02	03	04	05	06	07	08	99
(R2) Botanic gardens, including Otari/Wiltons									
Bush Nalive Bolanic Reserve	01	02	03	04	05	06	07	08	00
(R3) Wellington City Council	01	02	05	04	05	00	07	00	,,,
parks	01	02	03	04	05	06	07	08	99
(R4) Town Belt or Outer Green	01		00	0.	00	00	0,	00	
Belt	01	02	03	04	05	06	07	08	99
$^{(R5)}\ensuremath{The city's}\xspace$ walking tracks	01	02	03	04	05	06	07	08	99
(R6) Wellington City Council	01	02	03	04	05	06	07	08	00
outdoor sports fields	01	02	03	04	05	06	07	08	99

Q40 30 & 33. New (rate quality and maintenance)

Rotate

Ask this question, Q40R1 if Q39 R3 = code 1,2,3,4,5,6 or 7 (have used WCC park in the last 12 months) Ask this question, Q40 R2 if Q39 R5 =code 1,2,3,4,5,6 or 7 (have used walkways and tracks in the last 12 months) Ask this question, **Q40 R3** if **Q39 R6** = code 1,2,3,4,5,6 or 7 (have used WCC outdoor sports field in the last 12 months)

Read out in reverse order 5-4-3-2-1 Read out - code one only

Overall, how satisfied or dissatisfied are you with the quality and maintenance of...

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) Wellington City Council parks, excluding the Botanic Gardens	1	2	3	4	5	9
(R2) The city's walking tracks	1	2	3	4	5	9
sports fields	1	2	3	4	5	9

Q41 31 & 32. New (cleanliness & maintenance)

Ask this question, **Q41 R1** if **Q39 R4** = code 1,2,3,4,5,6 or 7 (have used Town Belt or Outer Green Belt in the last 12 months)

Ask this question, **Q41 R2** if **Q39 R1** = code 1,2,3,4,5,6 or 7 (have used coastline or beaches in the last 12 months)

Ask this question, **Q41 R3** if **Q39 R2** = code 1,2,3,4,5,6 or 7 (have used botanic gardens in the last 12 months)

And, overall, how satisfied or dissatisfied are you with the quality and maintenance of...

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) The Town Belt or Outer Green Belt	1	2	3	4	5	9
(R2) Wellington City's coastal areas or beaches	1	2	3	4	5	9
(R3) The botanic gardens, including Otari-Wilton's bush	1	2	3	4	5	9

Q100 Ask all

Do not rotate order

Read out

In general, how easy or difficult is it to access...

	Very difficult	quite difficult	Neither easy nor difficult	Quite easy	Very easy	(Do not read) Don't know
(R1) Your local park	1	2	3	4	5	9
beaches	1	2	3	4	5	9

(R3)	Green open spaces (such as sports fields, town belts, gardens and parks etc.)	1	2	3	4	5	9
		1	2	5	т	5	,
Q101	To provide garden (botanic gardens costs, on average, \$62.37 per reside do you agree or disagree this is goo	Code	Route				
	Strongly disagree	1					
	Disagree	2					
	Neither agree nor disagree	•••••				3	
	Agree						
	Strongly agree	•••••			••••••	5	
	(Do not read out) Don't know					9	
Q102	Read out scale in reverse To provide green open spaces (e.g. costs, on average, \$67.49 per reside do you agree or disagree this is goo	sports field ent per yea d value for	ls, town belt r (or \$0.18 p money?	s, parks and er day). Ho	d gardens) i w strongly	t Code	Route
	Strongly disagree					1	
	Disagree					2	
	Neither agree nor disagree					3	
	Agree						
	Strongly agree					5	
	(Do not read out) Don't know	•••••			••••••	9	
Q43	Read out scale 5-4-3-2-1, stron <u>Read out - code one only</u>	gly agree	(5) to stro	ngly disa	gree (1)	Code	Route
	<u>*******Probe: is that strongly agree</u>	e/disagree	or just agr	ee/disagree	e**********	*	
	Thinking about Wellington's natural that it is appropriately managed and	environmer protected?	nt overall, do) you agree	or disagree		
	PROBE Probe: Is that strongly	agree/dis	agree or j	ust agree,	/disagree		
	Strongly disagree					1	
	Disagree					2	
	Neither agree nor disagree					3	
	Agree					4	
	Strongly agree					5	
	(Do not read out) Don't know	•••••	••••••	•••••	•••••		

******This is the text used to ask respondents if they want to continue on to part 2**********

Only included so interviewers know what this text is when reading the questionnaire. It should come after

Part 1 demos as in surveycraft script

There is more text before this in surveycraft informing respondents what the second part of the survey is about etc.

Is it convenient for you to continue now, or shall I make an appointment to call you back at a more convenient time.

Continue.....1 Make appointment.....2

Split Questionnaire at this point.

Cultural Wellbeing

Q46 Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u>

Probe: Is that strongly agree/disagree or just agree/disagree*****

Thinking about the community involvement in arts and culture in Wellington, I am going to read you some statements and I'd like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement...

...And do you agree or disagree with the statement...... **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Wellington has a culturally rich and diverse arts scene	1	2	3	4	5	9
(R2) Wellington is the events capital of New Zealand	1	2	3	4	5	9
(R3) Wellington is the arts capital of New Zealand	1	2	3	4	5	9

Q96	Read out - code only one How frequently do you attend, or participate in cultural and arts activities in Wellington?	Code	Route
	At least once a week	1	
	At least once a month	2	
	Once every six months	3	
	At least once a year	4	
	Less often	5	
	(DO NOT READ) Never	7	
	(DO NOT READ) Don't know	9	

Q48	<u>Do not read out</u> Wellington City Council is associated with events and festivals such as community festivals, sports events and arts and cultural events. Have you attended any of these types of events and festivals in the last 12 months?	Code	Route
	Yes	1	
	No	2	Q50
	Don't Know	9	Q50
Q49	28. New (Events & Festivals) Read out in reverse order 5-4-3-2-1 <u>Read out - code one only</u> Overall, how satisfied or dissatisfied are you with these types of events and festivals?	Code	Route
	Would you say you are		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q50	36. New Read out in reverse order 5,4,3,2,1 Read out - code one only **** Probe: is that strongly agree/disagree or just agree/disagree ******* Do you agree or disagree that Wellington's distinct local identity, its sense of place, is appropriately valued and protected? PROBE <i>Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Resources and Waste

Q51	Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The next couple of questions are about waste reduction and rubbish collection.		

	Which, if any, of the following things are you doing to try and reduce the amount of waste from your home?		
	Home composting	01	Q90
	Using the Council's kerbside recycling service	02	Q52
	Taking things to the recycling stations	03	Q90
	Donating things to 2nd hand shops or charities	04	Q90
	Buying refills	05	Q90
	Avoiding using plastic bottles or bags	06	Q90
	Reusing plastic containers such as food containers	07	Q90
	Anything else (specify)	98	Q90
	(Do not read out) None of these	99	Q90
052	Check 051 if 2 coded ask 052 otherwise skip to 090	Code	Route
C.	Read out - code one only		
	On average, how often do you put out recycling for WCC kerbside collection?"		
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q90
Q53	Ask Q53 if Q52 = code 1,2,3,4 or 5 (ie. know how often on average they put out recycling - <u>doesn't</u> have to be in the last month) Read out 5,4,3,2,1 Read out - code one only	Code	Route
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside recycling?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q90	Does your household ever use the official Wellington City Council rubbish bags, the	Code	Route

	yellow coloured bags that can be brought at the supermarket, some dairies or from the Council?		
	Yes	1	
	No	2	Q105
	Don't know	9	Q105
Q91	Check Q90, if 1 coded ask otherwise skip to Q54 Read out - code one only On average, how often do you put out yellow plastic Council rubbish bags for WCC kerbside collection?	Code	Route
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q105
Q92	Ask Q92 if Q91 = code 1,2,3,4 or 5 (ie. know how often on average they put out rubbish bags - <u>doesn't</u> have to be in the last month) Read out 5,4,3,2,1 Read out - code one only	Code	Route
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside rubbish collection?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q105	Ask all Scale to be read out in reverse To provide waste management services it costs, on average, \$49.40 per resident per year (or \$0.14 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	

	Strongly agree	5	
	(Do not read out) Don't know	9	
Q54	Rotate statements Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The storm water system collects rainwater from your roof and yard and transfers it to local streams or to the seashore.		
	Thinking now about the storm water system, which, if any, of the following things are you doing to try and reduce the amount of pollution entering the storm water system?		
	Dispose of oil, paint or chemicals by putting them out with your household rubbish or taking them for recycling	01	
	Washing paint brushes in an inside sink	02	
	Pouring all household liquid wastes down an inside sink, toilet or gully trap	03	
	Put your litter in a rubbish bin rather than drop it in the street or in the gutter	04	
	Pick up droppings left by dogs	05	
	Collect sweepings from your driveway, paths, or yard for composting or for disposal with your household rubbish	06	
	Wash the car at a carwash or on the lawn	07	
	Anything else (specify)	98	
	None of these	99	
Q106	Scale to be read out in reverse To provide wastewater and storm water services it costs, on average, \$248.71 per resident per year (or \$0.68 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q107	Scale to be read in reverse To provide water services it costs, on average, \$171.09 per resident per year (or \$0.47 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	

Agree	4	
Strongly agree	5	
(Do not read out) Don't know	9	

Transport

Q55	Read out in reverse order 5-4-3-2-1 Read out - code one only I'd now like to ask you about city traffic and the public transport system.	Code	Route
	Thinking about moving around the city, how easy is it to drive about in the city?		
	Would you say it is		
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	
	Quite easy	4	
	Very easy	5	
	(Do not read out) Never drive/drive in a car	7	
	(Do not read out) Don't know	9	
Q56	Read out in reverse order 5-4-3-2-1 Read out - code one only And how would you rate how easy it is to walk around the city? Would you say it is	Code	Route
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	
	Quite easy	4	
	Very easy	5	
	(Do not read out) Don't know	9	
Q60	Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u> Do you agree or disagree that public transport in Wellington is		

And do you agree or disagree that public transport in Wellington is....

PROBE Probe: Is that strongly agree/disagree or just agree/disagree

Strongly	Disagree	Neither	Agree	Strongly	(Do not

	disagree		agree nor disagree		agree	read out) Don't know
^(R1) Convenient	1	2	3	4	5	9
^(R2) Affordable	1	2	3	4	5	9

Q108 If code 7 in Q55 do not ask this question Read scale 5,4,3,2,1

Read out

How satisfied or dissatisfied are you with the availability of on-street parking during the

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
^(R1) week	1	2	3	4	5	9
(R2) weekend	1	2	3	4	5	9

out in reverse order 5-4-3-2-1	Code	Route
out - code one only		
be: is that strongly agree/disagree, or just agree/disagree*******		
u agree or disagree that the city's transport system, that is the roads and the		
transport, allows easy access from the suburbs to the city?		
BE Probe: Is that strongly agree/disagree or just agree/disagree		
gly disagree	1	
ree	2	
er agree nor disagree	3	
	4	
gly agree	5	
ot read out) Don't know	9	
Г	<u> </u>	
read out in reverse	Code	Route
by de transport network services it costs, on average, \$186.35 per resident		
for monov?		
	l out in reverse order 5-4-3-2-1 out - code one only be: is that strongly agree/disagree, or just agree/disagree******* u agree or disagree that the city's transport system, that is the roads and the transport, allows easy access from the suburbs to the city? BE Probe: Is that strongly agree/disagree or just agree/disagree gly disagree ree er agree nor disagree ot read out in reverse povide transport network services it costs, on average, \$186.35 per resident ear (or \$0.51 per day). How strongly do you agree or disagree this is good for money?	I out in reverse order 5-4-3-2-1 Code out - code one only Example: is that strongly agree/disagree, or just agree/disagree******* u agree or disagree that the city's transport system, that is the roads and the city? Image: transport, allows easy access from the suburbs to the city? BE Probe: Is that strongly agree/disagree or just agree/disagree 1 gly disagree 1 ree 2 er agree nor disagree 3 et read out in reverse 4 by dive transport network services it costs, on average, \$186.35 per resident tar (or \$0.51 per day). How strongly do you agree or disagree this is good for money? Code

	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q63	<u>Do not read - code one only</u> Do you travel into central Wellington most weekdays?	Code	Route

FEB10-RSS RSS February 2010 (2 March, 2010)

Yes	1	
No	2	Q68
Don't know	9	Q68
Code other 98	Code	Route
Code don't know 99		
Do not read out - Code one only What is your main method of travelling to Wellington on these occasions?		
Car	01	
Motorbike	02	
Bus	03	
Train	05	
Bicycle	07	
Walk	08	
Scooter	09	
Other (specify)	98	
Don't know	99	
Do not read out - Code one only Is there anything that prevents you from using your preferred method of transport?	Code	Route
Yes	1	
No	2	Q68
Don't know	9	Q68
Code other 98	Code	Route
Code don't know 99		
Do not read out - Code one only How would you prefer to travel into Central Wellington most weekdays?		
PROBE If say public transport, ask: What type of public transport?		
Car	01	
Motorbike	02	
Bus	03	
Taxi	04	
Train	05	

	Bicycle	07	
	Walk	08	
	Scooter	09	
	Skateboard	10	
	Public transport non-specific	11	
	Other (specify)	98	
	Don't know	99	Q68
Q67	Code Other as 98 Code Don't know as 99 <u>Do not read out - code all that apply Probe fully</u> What stops you travelling by <i><insert from<="" i="" response=""> Q66> into Central Wellington</insert></i>	Code	Route
	most weekdays? PROBE Probe fully		
	Very heavy/heavy traffic	01	
	Buses infrequent/overcrowded	02	
	Roadworks	03	
	Parking	04	
	Train problems/line signal problems/running late	05	
	Bus drivers/bus breakdowns/trolley lines down	06	
	Roads too narrow/lane markings/no room for bikes/bike lanes	07	
	Other (specify)	98	
	Don't know	99	
Q68	Do not read out - Code one only Do you travel into or through central Wellington during weekday peak traffic times, that is between 7 and 9 in the morning or 4 and 6 in the evening?	Code	Route
	Yes	1	
	No	2	Q70
	Don't know	9	Q70
Q69	<u>Do not read out - Code one only</u> Do you believe peak traffic volumes are acceptable?	Code	Route
	Yes	1	
	No	2	
	Don't know	9	
Q70	Read out - code one only Now I'd like you to think about the on road cycleways. Have you used any of Wellington city's on road cycleways in the last 12 months?	Code	Route

Yes	1	
No	2	Q72
(Do not read out) Don't know	9	Q72

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Q71 Read out scale in order: very satisfied to very dissatisfied Read out - code one only

How satisfied or dissatisfied are you with Wellington City's cycleways for....

And how satisfied or dissatisfied are you with Wellington City's cycleways for....

	Very dissatisfie d	Quite dissatisfie d	Neither satisfied nor dissatisfie d	Quite satisfied	Very satisfied	(Do not read out) Not applicable :Don't use cycleway s or public transport	(Do not read) Don't know
(R1) (R2)	1	2	3	4	5	7	9
(K2) How well they are maintained	1	2	3	4	5	7	9

Q72	Read out in reverse order 5-4-3-2-1 <u>Read out - code one only</u> How would you rate the condition of the city's roads?	Code	Route
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	
	(Do not read out) Don't know	9	

Q110	<i>Read out in reverse order 5,4,3,2,1</i> Read out	Code	Route
	And how would you rate the condition of the city's footpaths?		
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	

	(Do not read out) Don't know	9	
Q73	Read out in reverse order 5-4-3-2-1 Read out - code one only How satisfied or dissatisfied are you with the quality of the street cleaning in central Wellington?	Code	Route
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q74	Read out in reverse order 5-4-3-2-1	Code	Route
	<u>Read out - code one only</u> How satisfied or dissatisfied are you with the quality and maintenance of road side vegetation? By maintenance I mean kept free of weeds and trimmed back to be clear of the edges of the road. Are you		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	

Q75 Read out in reverse order 5-4-3-2-1

Read out - code one only Now thinking about street lighting, how satisfied or dissatisfied are you with...?

Would you say you are ...?

...and how satisfied or dissatisfied are you with......

would you say you are?

	Very	Quite	Neither	Quite	Very	(Do not
	dissatisfie	dissatisfie	satisfied	satisfied	satisfied	read out)
	d	d	nor			Don't know
			dissatisfie			
			d			
^(R1) Street lighting in the central city	1	2	3	4	5	9

^(R2) Street lighting in your suburban area	1	2	3	4	5	9
---	---	---	---	---	---	---

Governance and citizen information

Q76	Rotate codes 1 and 3, do not re Read out - code one only We just have a few more questions have with Wellington City Council ar decision-making. In your view, does the Council const	otate 2 to go. I'd lik nd the involv ult you?	e you to thir vement of th	nk about the	e contact yo ty in Counc	u il	Route
	Not enough					1	
	The right amount					2	
	Too much					3	
	(Do not read out) Don't know					9	
Q77	Read out in reverse order 5-4- Read out - code one only And how satisfied or dissatisfied are in decision-making?	3-2-1 9 you with th	e way the C	Council invo	lves people	Code	Route
	Would you say you are?						
	Very dissatisfied					1	
	Quite dissatisfied					2	
	Neither satisfied nor dissatisfied					3	
	Quite satisfied					4	
	Very satisfied					5	
	(Do not read out) Don't know					9	
Q78	63/64/65 New Rotate statements Read out scale 5-4-3-2-1, strong Read out - code one only	ly agree (S	5) to stron	gly disagı	ree (1)		
	Probe: is that strongly agree/disa	<u>gree or jus</u>	t agree/dis	agree**			
	In general, do you agree or disagree v	vith the stat	ement				
	and do you agree or disagree with the PROBE <i>Probe: Is that strongly a</i>	statement. gree/disa	 gree or jus	st agree/d	lisagree		
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1	¹⁾ I understand how Wellington City	1	2	3	4	5	9

Council makes decisions						
 (R2) Wellington City Council makes decisions that are in the best interests of the city	1	2	3	4	5	9
Council is easy to access	1	2	3	4	5	9
- -						
Q79 <u>Read out - code one only</u>				Code	Route	
Wellington City Council makes? Wo	uld you say	the public h	ne decision nas	is the		
		·				
No influence					1	
Small influence					2	
Some influence					3	
Large influence					4	
(Do not read out) Don't know					9	

Ask Part A and Part B Demographics Demographics

Q80	Code other 98	Code	Route
	Code don't know 99		
	Read out - code all that apply		
	Finally just a few questions about yourself and your household, to make sure we		
	have talked to a good cross-section of Wellingtonians.		
	Which ethnic group or groups do you belong to?		
	NZ European	01	
	Maori	02	
	Samoan	03	
	Cook Island Maori	04	
	Tongan	05	
	Niuean	06	
	Chinese	07	
	Indian	08	
	Other (specify)	98	
	(Do not read out) Refused	99	
Q89	Read out code only one	Code	Route
·	What type of home internet connection do you have?		
	Dial-up modem or regular connection	1	
		-	
	Broadband	2	
(Do not read out) Don't have a home internet connection	7		
--	------------	-------	
(Do not read out) Don't know	9		
Q111 <u>Read out</u> Do you	Code	Route	
Own your home	1		
Rent	2		
Live with parents/other relatives/caregivers	3		
Other (specify)	4		
(Do not read out) Don't know	9		
Q82 Read out - code one only Approximately, what is your total household income (that is, from all income earners in your household as well as income from other sources, before tax)?	Code	Route	
\$20,000 or less a year	1		
\$20,001 - \$30,000	2		
\$30,001 - \$50,000	3		
\$50,001 - \$70,000	4		
\$70,000 - \$100,000	5		
More than \$100,000	6		
(Do not read out) Refused or don't know	9		
Q83 Do not read out - Code one only From time to time, Wellington City Council undertakes specific research about topics of current interest. Would you be willing for us to call you again in the future to see if you are interested in taking part in such research for the Wellington City Council?	Code	Route	
Yes	1		
No	2		
Don't know	9		
If respondent agrees Can you let me have your contact details please, so that if we call you back we can ask for you Record contact details	ı by name?		

Name:	
Phone Number:	

Thanks, that's all the questions I have for you. Should you have any queries about this interview my name is..... calling on behalf of Nielsen

As this is market research, it is carried out in compliance with the Privacy act and the information you provided will be used only for research purposes. Under the Privacy Act, you have the right to request access to the information you have provided.

Interviewer name: Date: Interviewer pay number: Interview Time

Start Time: Finish Time: Duration of Interview:

2011 WELLINGTON CITY COUNCIL RESIDENTS SATISFACTION SURVEY

Study ID	FEB11-RSS	Resp. No.	
Interviewer No.		Interview Length	
No. Of Queries		Reference No.	

Wellington City Council

Resident Satisfaction Survey

This Questionnaire is split into two parts at question 46. Ask Part A and Part B Demographic Questions.

Good morning/afternoon/evening.

My name is <name> calling from OCIS on behalf of Nielsen the market research company.

We are conducting a survey for Wellington City Council about the services they provide to the people of Wellington. To help me select the right person for this survey, I need to speak to:

- A person living in this household who is 15-24 years of age

- The person living in this household **15 years of age or over**, who had the **last** birthday (**or person to fill quotas**).

CHECK QUOTAS

IF NOT AVAILABLE ARRANGE CALLBACK

REINTRODUCE IF NECESSARY

The interview will take about 20 minutes of your time. Everything you say will be confidential and the results of the survey will help the Council improve the services it provides to the people of Wellington.

Is it convenient for you now, or shall I make an appointment to call you back at a better time for you.

IF NECESSARY ARRANGE CALLBACK

**** IF ASKED ABOUT WHAT IS THE SURVEY ABOUT **** The survey covers a range of topics about services the council currently provides.

Q95	For quality control and training purposes, this call will be recorded and may also be monitored however your answers are confidential and can not be traced back to you personally. Is this ok with you?	Code	Route
	Yes	1	
	No	2	
Q1	<u>Do not read out</u> <u>If no, close with thanks</u> Firstly, can I just check that you actually live in Wellington City, that is, the area	Code	Route

Valley?		
Yes	1	Q2
No	2	CLOSE

I'm sorry but for this survey we need to speak to people that live in Wellington City,

Thank you for your time.

Should you have any queries about this interview my name is <> calling on behalf of Nielsen

Q2	If yes, close with thanks Are you by any chance an employee of, or contractor to the Wellington City Council, or are you an elected representative or a member of a community board?	Code	Route
	Yes	1	CLOSE
	No	2	Q3

I'm sorry but we cannot speak to employees or contractors for the Wellington City Council, or elected members of community boards.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q3	<u>Check ward quota</u>	Code	Route
	Which suburb of Wellington do you live in?		
	Aro Valley	01	
	Berhampore	02	
	Breaker Bay	03	
	Broadmeadows	04	
	Brooklyn	05	
	Chartwell	06	
	Central City	07	
	Churton Park	08	
	Crofton Downs	09	
	Glenside	10	
	Grenada North	11	
	Grenada Village	12	
	Hataitai	13	
	Happy Valley	14	
	Highbury	15	
	Horokiwi	16	
	Houghton Bay	17	
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Island Bay 18	3
Johnsonville)
Kajwharawhara)
Karaka Bays	1
Karori 22	2
Kelburn 23	3
Khandallah 24	1
Kilhimia	5
Kingston 26	, 5
Kowhoj Park	, 7
	2
Linden)
Lyan bay	,
)
Makara Beach	1
Maupula	2
Melrose (west - city side)	3
Melrose (east - airport side - View Road/Hornsey Road) 34	1
Miramar	5
Mitchelltown	5
Moa Point	7
Mornington	3
Mount Cook	¢
Mount Victoria)
Newlands	1
Newtown	2
Ngaio	3
Ngauranga 44	1
Northland 45	5
Ohariu Valley 46	5
Oriental Bay 47	7
Owhiro Bay 48	3
Paparangi 49	¢
Pipitea)
Raroa	1
Rongotai 52	2
Roseneath	3
Seatoun	1

Seatoun Bays/Karaka Bays	55	
Southgate	56	
Strathmore Park	57	
Takapu Valley	58	
Tawa	59	
Te Aro	60	
Thorndon	61	
Vogeltown	62	
Wadestown	63	
Wilton	64	
Woodridge	65	
(Do not read) Refused		CLOSE
(Do not read) None of these		CLOSE
(Do not read) Don't Know	99	CLOSE

CLOSE FOR Q3 SUBURB

I'm sorry but for this survey we need to know which suburb you live in.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

********Give Nielsen phone number if requested 04 978 6700***********************

Q4	This question is set from Q3 <u>Don't need to ask, record only from Q3</u> Ward	Code	Route
	Northern	1	
	Onslow-Western	2	
	Lambton	3	
	Southern	4	
	Eastern	5	
Q5	<u>Code Gender</u> Gender	Code	Route
	Male	1	
	Female	2	
Q6	If answered 1 terminate Read out - code one only Which age group do you fit into?	Code	Route
	Under 15 years	1	CLOSE

15-24 years	2	
25-39 years	3	
40-59 years	4	
60-64 years	5	
65 years and over	6	
(Do not read out) Refused	9	CLOSE

CLOSE FOR Q6 age IF Q6=1

I'm sorry but for this survey we need to speak to people aged 15 or over.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

ELSE

I'm sorry but for this survey we need your age.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q7	Read out - code one only Which of the following best describes your bousehold?	Code	Route
	which of the following best describes your household?		
		0.1	
	Young couple without children	01	
	Household with youngest child under 5	02	
	Household with youngest child 5 to 13	03	
	Household with youngest child 14 or over	04	
	Older couple - no children or none living at home	05	
	Single/one person household	06	
	Flat - not a family home	07	
	Other - specify	98	
	(Do not read) Refused	99	
~		Codo	Douto
V٥	Display codes in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only First of all i'd like you to think about all the dealings you've had with Wellington City		
	i not of an, i a nice you to think about an the dealings you ve had with weinington only		

First of all, i'd like you to think about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides. Overall, how would you rate the performance of Wellington City Council over the last 12 months? Would you say it was....

Very poor	1	
Poor	2	
Neither good nor poor	3	
Good	4	
Very good	5	
(Do not read) Don't know	9	

Q112 If Q8 code 5 then ask Q112

Why do you say the council's performance is very good? **PROBE** *Fully*

Q113 If Q8 code 4, 3, 2, or 1 ask Q113

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What could the council do for you to give them a higher rating? **PROBE** *Fully*

Q88	Read out in reverse order 5-4-3-2-1 Read out, code one only Thinking about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides, overall, how would you rate the value for money from all the services the Council provides?	Code	Route
	Very Poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	
	(Do not read out) Don't know	9	
Q10	Read out in reverse order 5-4-3-2-1 Read out, code one only	Code	Route

Would you say that overall your quality of life is		
Extremely poor	1	
Poor	2	
Neither good nor poor	3	
Good	4	
Extremely good	5	
(Do not read) Don't know	9	

Urban Development

Q11	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree********* The next questions cover such things as the design and layout of Wellington. Generally speaking, do you agree or disagree that Wellington is a great place to live? PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q12	Read out in reverse order 5-4-3-2-1 <u>***Probe: Is that strongly agree/disagree or just agree/disagree</u> ********* And do you agree or disagree that the different suburbs and communities in Wellington provide a good <i>variety</i> of places to live in? PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q13	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree********* And do you agree or disagree that there is a <i>variety</i> of opportunities and places to <i>work</i> in Wellington in your occupation, or for someone with your experience and/or qualifications? PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route

Strongly disagree	1	
Disagree	2	
Neither agree nor disagree	3	
Agree	4	
Strongly agree	5	
(Do not read out) Don't know	9	

Q14	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree******** And do you agree or disagree that there is a good variety of leisure activities and opportunities to socialise in Wellington? PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q15

Rotate statements

Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) Read out - code one only ***Probe: Is that strongly agree/disagree or just agree/disagree

I am going to read you some statements about Wellington and would like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement.... PROBE Probe: Is that strongly agree/disagree or just agree/disagree

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
 (R1) Heritage buildings, areas, trees and objects contribute to the city's unique character	1	2	3	4	5	9
community's unique character	1	2	3	4	5	9
(R3) The city centre is lively and attractive(R4) My local suburban centre is lively	1	2	3	4	5	9
and attractive	1	2	3	4	5	9
(R5) The city is developing in a way that takes into account its unique urban character and natural environment	1	2	3	4	5	9

Q114 Rotate statements

Read out in reverse 5,4,3,2,1 In general, how strongly do you agree or disagree that...

PROBE Is that strongly agree/disagree or just agree/disagree

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
 (R1) Heritage buildings, areas, trees and objects are appropriately valued and protected in the central city	1	2	3	4	5	9
area	1	2	3	4	5	9
Q16 Read out in reverse order 5-4- Read out - code one only How strongly do you agree or disag in the way Wellington looks and feel PROBE Probe: Is that strongly	3-2-1 ree with the s'? agree/dis	statement, agree or j	'l feel a ser ust agree/	use of pride /disagree	Code	Route
Strongly disagree			•••••		1	
Disagree			•••••		2	
Neither agree nor disagree			•••••		3	
Agree			•••••		4	
Strongly agree			•••••		5	
(Do not read) Don't know			•••••		9	

Social and Recreation / Environmental

Q17 Read out scale in order: very safe to very unsafe Read out - code one only

The next few questions are about safety.

Thinking of your overall sense of freedom from crime, how safe or unsafe do you feel in the following situations. Would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...?

....and would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...?

	Very unsafe	Somewhat unsafe	Reasonabl y safe	Very safe	(Do not read out) Not applicable: Don't come into city centre	(Do not read) Don't know
(R1) In your neighbourhood during the day	1	2	3	4	7	9
(R2) In your neighbourhood after dark	1	2	3	4	7	9
(R3) In your city centre during the day	1	2	3	4	7	9
^(R4) In your city centre after dark	1	2	3	4	7	9

Q18 Note for post-coding and analysis: Listing of new codes to be approved by WCC Code

Route

before back coding. All new codes to be grouped into broad themes in parenthesis below and nets of themes to be included in data tabulations.		
Ask Question 19 if more than one coded Read in rotated order - code each mention **Probe: What else******		
The following list I am about to read identifies things that might make people feel unsafe in their neighbourhoods or city. Which of the following, if any, are particularly concerning in Wellington at present?		
PROBE What else?		
Poorly lit or dark public areas such as streets, paths and parks	01	
Vandalism such as broken windows in shops and public buildings	01	
Graffiti	02	
Poorly maintained or dangerous public areas such as streets, paths and parks	03	
	04	
I raffic, including busy roads and lack of pedestrian facilities	05	
Dangerous driving including speeding, drunk drivers and so on	06	
Alcohol and drug problems	00	
	07	
Car theft or vandalism, and theft from cars Threatening people and/or people behaving dangerously	08	
	09	
(Do not read out) None of these	97	
Other (specify)	98	
(Do not read out) Don't know	99	
Note for post-coding and analysis: Listing of new codes to be approved by WCC before back coding. All new codes to be grouped into broad themes in parenthesis below and nets of themes to be included in data tabulations. <ask 18="" coded="" if="" in="" more="" one="" question="" than=""> Read in rotated order - code only one</ask>	Code	Route
And which of these is of most concern to you at present in Wellington?		

And which of these is of most concern to you at present in Wellington?		
Poorly lit or dark public areas such as streets, paths and parks	01	
Vandalism such as broken windows in shops and public buildings		
Graffiti	02	
Poorly maintained or dangerous public areas such as streets, paths and	l parks 04	
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Q19

Traffic, including busy roads and lack of pedestrian facilities			
Dengerous driving including speeding, drively drivers and so an		05	
		06	
Alcohol and drug problems			
	••••••	07	
Car theft or vandalism, and theft from cars		08	
		09	
(Do not read out) None of these		97	
Other (specify)		98	
(Do not road out) Don't know		00	
(Do not read out) Don't know	······	99	
Read out in reverse order 5-4-3-2-1		Code	Rou
Read out - code one only Wellington City is becoming home for an increasing number of t	noonlo with difforent		
lifestyles and cultures and from different countries. Overall do v	ou think this makes		
the city?			
A much worse place to live		1	
A worse place to live		2	
Makes no difference		3	
A better place to live		4	
A much better place to live		5	
(Do not read out) Don't know		9	
Road out in novemen order 5 4 2 2 1	Г	Code	Rou
**********Probe: Is that strongly agree/disagree or just		Oouc	
agree/disagree*****************			
We want to find out about the sense of community strength and In general, do you agree or disagree with the statementThe	spirit in Wellington.		
together and people support each other?	community worke		
PROBE Probe: Is that strongly agree/disagree or just a	agree/disagree		
Strongly disagree		1	
Disagrap		2	

Strongly agree	. 5	
(Do not read out) Don't know	. 9	
51. Community advocacy	Code	Route
Read out in reverse order 5-4-3-2-1		
Read out - code one only		
Wellington City Council works to help ensure Wellington is made up of strong and		
thriving communities. How satisfied or dissatisfied are you that the Council		
provides appropriate services and resources to ensure strong and thriving		

Neither agree nor disagree

Agree

Q22

3

communities?

Would you say you are ...

Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know		

Q115 Ask all

Rotate Do Not Read Out

As far as you are aware, which of the following community support services are provided by the Wellington City Council?

	Ĩ	Yes	N	0	Do	on't know
(R1	^(R1) Grants (e.g. social and recreation, and education) 1		2	2		9
(R2) Provide support networks for various groups (e.g. Pacific people, young people, senior citizens etc.)	1	2	2		9
(R3	⁾ Organising community events	1	2	2		9
(R4) Provide advocacy services for various groups (if necessary: that is the Council would act as a go between for services such	1				0
(R5	as public nealth and various community groups)	1	2	;		9
(KJ	[′] Support for homeless	1	2	2		9
Q24	<u>Do not read - code only one</u> Have you used a Wellington City Council public toilet in the last	12 months?		Code	e	Route
	Yes			1		
	No			2		Q26
	Don't Know			9		Q26
Q25	Read out in reverse order 5-4-3-2-1 Read out - code one only And how satisfied or dissatisfied are you with the cleanliness of Council public toilets?	Wellington C	ity	Code	e	Route
	Would you say you are?					
	Very dissatisfied			1		
	Quite dissatisfied			2		
	Neither satisfied nor dissatisfied			3		
	Quite satisfied			4		

Very satisfied.....

	(Do not read out) Don't know	9	
Q26	Do not read out - code one only Do you have essential emergency items in your home? By emergency items I mean a supply of everyday use items that you can easily find and use when an emergency occurs.	Code	Route
	Yes	1	
	No	2	Q28
	Don't know	9	Q28
Q27	Code None of these as 97 Code Don't know as 99 Read out - code all that apply As I read out this list please tell me which, if any, of these you would easily be able to find in the event of an emergency	Code	Route
	Ten litres of bottled water per person in your household	01	
	Canned food	02	
	Can opener	03	
	Other non-perishable food	04	
	First aid kit	06	
	A battery operated radio	07	
	Spare batteries	08	
	A plastic bucket	09	
	Plastic bags	10	
	Toilet paper	11	
	Soap	12	
	Disinfectant	13	
	A primus or gas barbeque to cook on	14	
	Waterproof torches	15	
	Other essential medication	16	
	Pet supplies	17	
	Blankets, towels, sleeping bags	18	
	Sturdy footwear	19	
	Baby/infant supplies	20	
	Essential documents (birth/marriage certificates, insurance policies)	21	
	Family photos	22	
	None of these	97	
	(Do not read out) Don't know	99	
Q28	Ask all respondents Do not read out - code one only	Code	Route

	Do you have an emergency plan for your family or your household about what they will do if a significant emergency occurs?		
	Yes	1	
	No	2	
	Don't know	9	
229	Check Q7 - if school age children (code 2,3 or 4) in household ask all statements in Q29 , otherwise omit statement 3 and ask all other statements Ask all respondents <u>Read out - code all that apply</u>	Code	Route
	which of the following have you done. Have you?		
	Discussed ways to get in touch with other family members when an emergency occurs	01	
	Made plans for re-uniting with family members when an emergency occurs	02	
	Arranged for authorised people to collect children from school, and provided the school with a list of these people for when an emergency occurs	03	
	Established a meeting place in the event your house becomes unusable or if family members are separated when an emergency occurs	04	
	or checking with neighbours	05	
	Completed a first aid course	06	
	Found out where your nearest Civil Defence Centre is	07	
	(Do not read out) None of these	98	
	(Do not read out) Don't know	99	
Q30	Allow entry up to 2 decimal places	Code	Route
	Type 000 for zero/none Type 999 for Don't know <u>IE 2 HOURS = 002.0, 10.5 HOURS = 010.5</u>		
	Thinking now about recreational opportunities in Wellington		
	How many hours would you spend in some form of regular physical activity in an average week?		
	Type in number (use decimal places)	1	
	(Do not read) Don't know	9	
231	Check Q7 - if children aged 13 and under in household (code 2/3) ask Q31 , otherwise skip to Q34 <u>Do not read out</u> Have any of the children aged 13 or under in your household used a Council playground or skate park in the last 12 months?	Code	Route
	Vaa	1	
	Y es	1	000
	NO	2	Q33
		9	Q33

Q32	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How satisfied or dissatisfied were you with the playground or skate park you visited most recently?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
033	ASK of those with school aged children $(07-code 2 \text{ or } 3)$	Code	Pouto
Q33	Read out - code only one On average, How often do the children aged 13 or under in your household walk to and from school?	Code	Roule
	Everyday	1	
	3-4 days a week	2	
	1-2 days a week	3	
	Less often	4	
	Never	5	
	No school aged children	6	
	(Do not read out) Don't know	9	
Q34	Read out - code all that apply Have you used any of the following Wellington City Council recreation facilities in the last 12 months?	Code	Route
	A Council Recreation Centre	1	
	A Council Swimming Pool	2	
	A Council skate park	3	
	The Mountain Bike Park in Karori	4	
	A Council Playground	5	
	(Do not read out) None of these	8	
	(Do not read out) Don't know	9	

Q35 Ask Q35 if Q34 code = 1 Read out in reverse order 5-4-3-2-1

Q36	Ask Q36 if Q34 code = 2	Code	Route
	Read out in reverse order 5-4-3-2-1 Read out - code one only And how satisfied or dissatisfied were you with the Wellington City Council's swimming pool you visited most recently?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	

242	Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1)	Code	Route
	In general do you agree or disagree that Wellington city offers a wide range of recreational activities?		
PROBE is that strongly agree/disagree or just agree/disagree	PROBE is that strongly agree/disagree or just agree/disagree		
Strongly disagree		1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
)45	Please code others as 99 and don't know as 99	Code	Route

Please code others as 99 and don't know as 99		Code	Route
o not read out - coc /hat, if anything, mak ctivities?	de all that apply tes it difficult for you to take part in these recreational		
oo busy		01	
oor health		02	

			1	L
	Activity costs too much	03		
	Activity too far away	04		
	No facilities for child care	05		
	Weather	06		
	Not at a convenient time	07		
	Shift work	08		
	Lack of motivation	09		
	No facilities exist	10		
	Tiredness	11		
	Lack of knowledge about how to do it	12		
	Environmental factors (eg road conditions, pollution)	13		
	Lack of parking/public transport/transport	14		
	None/nothing/not interested	97		
	Other (specify)	98		
	Don't know	99		
0103	Askall	Code	Route	1
	Read out scale 5,4,3,2,1			
	Read out			
	In general, how easy is it to access Wellington City Council's recreation facilities and programmes?			
	Very difficult	1		
	Quite difficult	2		
	Neither easy nor difficult	3		
	Quite easy	4		
	Very easy	5		

Q104	Scale to be read in reverse 5,4,3,2,1 To provide recreation services and facilities it costs, on average, \$147.58 per resident per year (or \$0.40 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

(Do not read out) Don't know

Q37	Read out - code all that apply	Code	Route
	Have you used any of the following Wellington City Council community facilities in the last 12 months?		

Q98	if Q37 code = 1 then ask Q98	Code	Route
	(Do Not Read Out) Don't Know	9	
	Less often than once every 6 months	7	
	Once every 4-6 months	6	
	Once every 2-3 months	5	
	Once a month	4	
	Once every 2-3 weeks	3	
	Once a week	2	
	More than once a week	1	
	Read out How often on average would you use, or visit a Wellington City Council library?		
Q97	if Q37 code = 1 then ask Q97	Code	Route
	(Do not read out) Don't know	9	
	(Do not read out) None of these	7	
	A Community Hall	3	
	A Community Centre	2	
	A public library	1	

if Q37 code = 1 then ask Q98 Read out	Code	Route
Thinking about the library items that you use, how satisfied or dissatisfied are you with the range and variety of the items available?		
Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Q38	If Q37 code = 1, then ask Q38	Code	Route
	Read out in reverse order 5-4-3-2-1 Read out - code one only Thinking about all the libraries and library services you've used over the last 12 months, how satisfied or dissatisfied are you with the library services overall?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
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	(Do not read out) Don't know	9	
Q99	Scale to be read out in reverse To provide library services it costs, on average, \$109.01 per resident per year (or \$0.30 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q39 Ask of all

29, 31 & 33. New & existing (how often used...) DO NOT ROTATE

Read out - code one only

In the last twelve months, how often on average have you used ...?

.....And in the last 12 months how often have you used....?

	Most days	Once or twice a week	Once every 2- 3 weeks	Once a month	Once every 2- 3 months	Once every 4- 5 months	Once every 6 months or less often	Never in the last 12 months	(Do not read) Don't know
(R1) Wellington City's coastal	01	02	03	04	05	06	07	08	00
(R2) Botanic gardens, including Otari/Wiltons Bush Native Botanic	01	02	03	04	03	00	07	08	99
Reserve	01	02	03	04	05	06	07	08	99
(R3) Wellington City Council parks	01	02	03	04	05	06	07	08	99
(R4) Town Belt or Outer Green							. –		
Belt	01	02	03	04	05	06	07	08	99
(R5) The city's walking tracks	01	02	03	04	05	06	07	08	99
(R6) Wellington City Council outdoor sports fields	01	02	03	04	05	06	07	08	99

Q40 30 & 33. New (rate quality and maintenance)

Rotate

Ask this question, **Q40R1** if **Q39 R3** = code 1,2,3,4,5,6 or 7 (have used WCC park in the last 12 months) Ask this question, **Q40 R2** if **Q39 R5** =code 1,2,3,4,5,6 or 7 (have used walkways and tracks in the last 12 months)

Ask this question, **Q40 R3** if **Q39 R6** = code 1,2,3,4,5,6 or 7 (have used WCC outdoor sports field in the last 12 months)

Read out in reverse order 5-4-3-2-1 Read out - code one only

Overall, how satisfied or dissatisfied are you with the quality and maintenance of...

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) Wellington City Council parks, excluding the Botanic Gardens	1	2	3	4	5	9
(R2) (R3) Wellington City Council outdoor	1	2	3	4	5	9
sports fields	1	2	3	4	5	9

Q41 31 & 32. New (cleanliness & maintenance)

Ask this question, **Q41 R1** if **Q39 R4** = code 1,2,3,4,5,6 or 7 (have used Town Belt or Outer Green Belt in the last 12 months)

Ask this question, **Q41 R2** if **Q39 R1** = code 1,2,3,4,5,6 or 7 (have used coastline or beaches in the last 12 months)

Ask this question, **Q41 R3** if **Q39 R2** = code 1,2,3,4,5,6 or 7 (have used botanic gardens in the last 12 months)

Read out in reverse order 5-4-3-2-1

***********READ OUT ***************

And, overall, how satisfied or dissatisfied are you with the quality and maintenance of...

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) The Town Belt or Outer Green Belt	1	2	3	4	5	9
(R2) Wellington City's coastal areas or beaches	1	2	3	4	5	9
(R3) The botanic gardens, including Otari-Wilton's bush	1	2	3	4	5	9

Q100 Ask all

Do not rotate order

Read out

In general, how easy or difficult is it to access...

	Very difficult	quite difficult	Neither easy nor difficult	Quite easy	Very easy	(Do not read) Don't know
^(R1) Your local park	1	2	3	4	5	9
(R2) Wellington City's coastal areas or beaches	1	2	3	4	5	9
(R3) Green open spaces (such as sports fields, town belts, gardens and parks etc.)	1	2	3	4	5	9
Q101 To provide garden (botanic gardens costs, on average, \$65.71 per reside do you agree or disagree this is goo	Code	Route				
Strongly disagree					1	
Disagree					2	

Neither agree nor disagree	3	
Agree	4	
Strongly agree	5	
(Do not read out) Don't know	9	

Q102	Read out scale in reverse To provide green open spaces (e.g. sports fields, town belts, parks and gardens) it costs, on average, \$78.26 per resident per year (or \$0.21 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q43	Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u>	Code	Route
	******* Probe: is that strongly agree/disagree or just agree/disagree *********** Thinking about Wellington's natural environment overall, do you agree or disagree that it is appropriately managed and protected?		
	PROBE Probe: Is that strongly agree/disagree or just agree/disagree		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

*******This is the text used to ask respondents if they want to continue on to part 2**********

Only included so interviewers know what this text is when reading the questionnaire. It should come after Part 1 demos as in surveycraft script

There is more text before this in surveycraft informing respondents what the second part of the survey is about etc.

Is it convenient for you to continue now, or shall I make an appointment to call you back at a more convenient time.

Continue.....1 Make appointment.....2

Split Questionnaire at this point.

Cultural Wellbeing

Q46 Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) Read out - code one only

Probe: Is that strongly agree/disagree or just agree/disagree*****

Thinking about the community involvement in arts and culture in Wellington, I am going to read you some statements and I'd like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement...

...And do you agree or disagree with the statement...... **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) V	Vellington has a culturally rich and		_	_		_	_
d	liverse arts scene	1	2	3	4	5	9
(R2)V N	Vellington is the events capital of New Zealand	1	2	3	4	5	9
(R3) V	Vellington is the arts capital of New						
Z	Zealand	1	2	3	4	5	9
Q96	<u>Read out - code only one</u> How frequently do you attend, or pa Wellington?	rticipate in o	cultural and	arts activitie	es in	Code	Route
	At least once a week					1	
	At least once a month	•••••				2	
	Once every six months					3	
	At least once a year					4	
	Less often	•••••		•••••		5	
	(DO NOT READ) Never					7	
	(DO NOT READ) Don't know					9	
Q48	Do not read out Wellington City Council is associated festivals, sports events and arts and these types of events and festivals in	d with even cultural ev n the last 12	ts and festivents. Have 2 2 months?	vals such as you attende	community d any of	, Code	Route
	Yes	••••••				1	
	No					2	Q50
	Don't Know	•••••				9	Q50
Q49	28. New (Events & Festivals) Read out in reverse order 5-4-3 <u>Read out - code one only</u> Overall, how satisfied or dissatisfied festivals?	3-2-1 are you wit	th these typ	es of events	sand	Code	Route
	Would you say you are						

Very dissatisfied	. 1	
Quite dissatisfied	. 2	
Neither satisfied nor dissatisfied	. 3	
Quite satisfied	. 4	
Very satisfied	. 5	
(Do not read out) Don't know	. 9	

Q50	36. New Read out in reverse order 5,4,3,2,1 Read out - code one only ***** Probe: is that strongly agree/disagree or just agree/disagree ****** Do you agree or disagree that Wellington's distinct local identity, its sense of place, is appropriately valued and protected? PROBE <i>Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Resources and Waste

Q51	Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The next couple of questions are about waste reduction and rubbish collection.		
	Which, if any, of the following things are you doing to try and reduce the amount of waste from your home?		
	Home composting	01	Q90
	Using the Council's kerbside recycling service	02	Q52
	Taking things to the recycling stations	03	Q90
	Donating things to 2nd hand shops or charities	04	Q90
	Buying refills	05	Q90
	Avoiding using plastic bottles or bags	06	Q90
	Reusing plastic containers such as food containers	07	Q90
	Anything else (specify)	98	Q90
	(Do not read out) None of these	99	Q90

Q52	Check Q51 , if 2 coded ask Q52 otherwise skip to Q90 Read out - code one only On average, how often do you put out recycling for WCC kerbside collection?"	Code	Route
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q90
Q53	Ask Q53 if Q52 = code 1,2,3,4 or 5 (ie. know how often on average they put out recycling - <u>doesn't</u> have to be in the last month) Read out 5,4,3,2,1 Read out - code one only	Code	Route
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside recycling?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q90	Does your household ever use the official Wellington City Council rubbish bags, the yellow coloured bags that can be brought at the supermarket, some dairies or from the Council?	Code	Route
	Vos	1	
	No	2	0105
		2	Q105
		9	Q105
Q91	Check Q90, if 1 coded ask otherwise skip to Q54 Read out - code one only On average, how often do you put out yellow plastic Council rubbish bags for WCC kerbside collection?	Code	Route
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q105

Q92	Ask Q92 if Q91 = code 1,2,3,4 or 5 (ie. know how often on average they put out rubbish bags - <u>doesn't</u> have to be in the last month) Read out 5,4,3,2,1 Read out - code one only		Route
	Read out - code one only		
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside rubbish collection?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q105	Askall	Code	Route
	Scale to be read out in reverse To provide waste management services it costs, on average, \$42.91 per resident per year (or \$0.12 per day). How strongly do you agree or disagree this is good value for money?		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q54	Rotate statements Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The storm water system collects rainwater from your roof and yard and transfers it to local streams or to the seashore.		
	Thinking now about the storm water system, which, if any, of the following things are you doing to try and reduce the amount of pollution entering the storm water system?		
	Dispose of oil, paint or chemicals by putting them out with your household rubbish or taking them for recycling	01	
	Washing paint brushes in an inside sink	02	
	Pouring all household liquid wastes down an inside sink, toilet or gully trap	03	
	Put your litter in a rubbish bin rather than drop it in the street or in the gutter	04	
	Pick up droppings left by dogs Collect sweepings from your driveway, paths, or yard for composting or for disposal with your household rubbish	05 06	
	Wash the car at a carwash or on the lawn	07	
	Anything else (specify)	98	
		20	

	None of these	99	
Q106	Scale to be read out in reverse To provide wastewater and storm water services it costs, on average, \$244.55 per resident per year (or \$0.67 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q107	Scale to be read in reverse To provide water services it costs, on average, \$170.57per resident per year (or \$0.47per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Transport

Q55	Read out in reverse order 5-4-3-2-1 Read out - code one only I'd now like to ask you about city traffic and the public transport system. Thinking about moving around the city, how easy is it to drive about in the city?	Code	Route
	Would you say it is		
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	
	Quite easy	4	
	Very easy	5	
	(Do not read out) Never drive/drive in a car	7	
	(Do not read out) Don't know	9	
Q56	Read out in reverse order 5-4-3-2-1 Read out - code one only And how would you rate how easy it is to walk around the city?	Code	Route
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Would you say it is		
Very difficult	1	
Quite difficult	2	
Neither easy nor difficult	3	
Quite easy	4	
Very easy	5	
(Do not read out) Don't know	9	

Q60 Rotate statements

Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u> Do you agree or disagree that public transport in Wellington is...

And do you agree or disagree that public transport in Wellington is....

PROBE Probe: Is that strongly agree/disagree or just agree/disagree

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Convenient	1	2	3	4	5	9
(K2) Affordable	1	2	3	4	5	9

Q108 If code 7 in Q55 do not ask this question Read scale 5,4,3,2,1 Read out

How satisfied or dissatisfied are you with the availability of on-street parking during the

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
^(R1) week	1	2	3	4	5	9
^(R2) weekend	1	2	3	4	5	9

Q62	Read out in reverse order 5-4-3-2-1	Code	Route
	<u>Read out - code one only</u> <u>**Probe: is that strongly agree/disagree, or just agree/disagree</u> ****** Do you agree or disagree that the city's transport system, that is the roads and the public transport, allows easy access from the suburbs to the city? PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
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	(Do not read out) Don't know	9	
Q109	<i>Scale read out in reverse</i> To provide transport network services it costs, on average, \$191.20 per resident per year (or \$0.52 per day). How strongly do you agree or disagree this is good value for money?	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q63	<u>Do not read - code one only</u> Do you travel into central Wellington most weekdays?	Code	Route
	Yes	1	
	No	2	Q68
	Don't know	9	Q68
Q64	Code other 98 Code don't know 99 <u>Do not read out - Code one only</u> What is your main method of travelling to Wellington on these occasions?	Code	Route
	Car	01	
	Bus	02	
	Train	05	
	Bicvcle	07	
	Valk	08	
	Scooter	09	
	Other (specify)	98	
	Don't know	99	
Q65	Do not read out - Code one only Is there anything that prevents you from using your preferred method of transport?	Code	Route
	Yes	1	
	No	2	Q68
	Don't know	9	Q68
Q66	Code other 98	Code	Route

	Code don't know 99 Do not read out - Code one only How would you prefer to travel into Central Wellington most weekdays?		
	PROBE If say public transport, ask: What type of public transport?		
	Car	01	
	Motorbike	02	
	Bus	03	
	Taxi	04	
	Train	05	
	Cable Car	06	
	Bicycle	07	
	Walk	08	
	Scooter	09	
	Skateboard	10	
	Public transport non-specific	11	
	Other (specify)	98	
	Don't know	99	Q68
067	Carda Othar as 08	Code	Route
QUI	Code Other as 98 Code Don't know as 99	Coue	Noute
	Do not read out - code all that apply Probe fully		
	What stops you travelling by <insert from="" q66="" response=""> into Central Wellington most weekdays?</insert>		
	PROBE Probe fully		
	Very heavy/heavy traffic	01	
	Buses infrequent/overcrowded	02	
	Poadworks	02	
	Parking	04	
	Train problems/line signal problems/gunning late	04	
	Presidente de la construction de la constru	05	
	Bus drivers/bus breakdowns/trolley lines down	06	
	Roads too narrow/lane markings/no room for bikes/bike lanes	07	
	Other (specify)	98	
	Don't know	99	
Q68	Do not read out - Code one only Do you travel into or through central Wellington during weekday peak traffic times,	Code	Route
	Yes	1	
	No	2	Q70

	Don't know	9	Q70
Q69	Do not read out - Code one only Do you believe peak traffic volumes are acceptable?	Code	Route
	Yes	1	
	No Don't know	2 9	
Q70	Read out - code one only Now I'd like you to think about the on road cycleways. Have you used any of Wellington city's on road cycleways in the last 12 months?	Code	Route
	Yes	1	
	No	2	Q72
	(Do not read out) Don't know	9	Q72

Q71 Read out scale in order: very satisfied to very dissatisfied Read out - code one only

How satisfied or dissatisfied are you with Wellington City's cycleways for....

And how satisfied or dissatisfied are you with Wellington City's cycleways for....

	Very dissatisfie d	Quite dissatisfie d	Neither satisfied nor dissatisfie d	Quite satisfied	Very satisfied	(Do not read out) Not applicable :Don't use cycleway s or public	(Do not read) Don't know
						transport	
^(R1) Safety	1	2	3	4	5	7	9
^(R2) How well they are maintained	1	2	3	4	5	7	9

Q72	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How would you rate the condition of the city's roads?		
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	
	(Do not read out) Don't know	9	

Q110 Read out in reverse order 5,4,3,2,1 Read out Code

Very poor	1	
Poor	2	
Neither good nor poor	3	
Good	4	
Very Good	5	
(Do not read out) Don't know	9	
Read out in reverse order 5-4-3-2-1 Read out - code one only How satisfied or dissatisfied are you with the quality of the street cleaning in central Wellington?	Code	Rou
Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	
Read out in reverse order 5-4-3-2-1	Code	Ro
Read out - code one only How satisfied or dissatisfied are you with the quality and maintenance of road side vegetation? By maintenance I mean kept free of weeds and trimmed back to be clear of the edges of the road. Are you		
Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Now thinking about street lighting, how satisfied or dissatisfied are you with...?

Would you say you are ...?

...and how satisfied or dissatisfied are you with......

would you say you are?

	Very dissatisfie d	Quite dissatisfie d	Neither satisfied nor dissatisfie d	Quite satisfied	Very satisfied	(Do not read out) Don't know
^(R1) Street lighting in the central city	1	2	3	4	5	9
^(R2) Street lighting in your suburban area.	1	2	3	4	5	9

Governance and citizen information

Q76	Rotate codes 1 and 3, do not rotate 2 Read out - code one only We just have a few more questions to go. I'd like you to think about the contact you have with Wellington City Council and the involvement of the community in Council decision-making.	Code	Route
	In your view, does the Council consult you?		
	Not enough	1	
	The right amount	2	
	Too much	3	
	(Do not read out) Don't know	9	
Q77	Read out in reverse order 5-4-3-2-1 Read out - code one only And how satisfied or dissatisfied are you with the way the Council involves people in decision-making? Would you say you are?	Code	Route
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q78	63/64/65 New Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u> **Probe: is that strongly agree/disagree or just agree/disagree****		

In general, do you agree or disagree with the statement....

and do you agree or disagree with the statement.... **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

Strongly Disagree Neither Agree Strongly (Do not

	disagree		agree nor disagree		agree	read out) Don't know
(R1) I understand how Wellington City Council makes decisions (R2) Wellington City Council makes	1	2	3	4	5	9
decisions that are in the best interests of the city (R3) Information from Wellington City	1	2	3	4	5	9
Council is easy to access	1	2	3	4	5	9
Q79 Read out - code one only Overall, how much influence do you Wellington City Council makes? Wo	feel the pu uld you say	blic has on ⁻ the public l	the decisior has	is the	Code	Route
No influence				•••••	1	
Small influence					2	
Some influence					3	
Large influence					4	
(Do not read out) Don't know					9	

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Ask Part A and Part B Demographics Demographics

Q80	Code other 98 Code don't know 99 Read out - code all that apply Finally just a few questions about yourself and your household, to make sure we have talked to a good cross-section of Wellingtonians. Which ethnic group or groups do you belong to?	Code	Route
	NZ European	01	
	Maori	02	
	Samoan	03	
	Cook Island Maori	04	
	Tongan	05	
	Niuean	06	
	Chinese	07	
	Indian	08	
	Other (specify)	98	
	(Do not read out) Refused	99	
Q89	Read out code only one What type of home internet connection do you have?	Code	Route
	Dial-up modem or regular connection	1	
	Broadband	2	
	(Do not read out) Don't have a home internet connection	7	

	(Do not read out) Don't know	9	
Q111	Read out Do you	Code	Route
	Own your home	1	
	Rent	2	
	Live with parents/other relatives/caregivers	3	
	Other (specify)	4	
	(Do not read out) Don't know	9	
Q82	Read out - code one only Approximately, what is your total household income (that is, from all income earners in your household as well as income from other sources, before tax)?	Code	Route
	\$20,000 or less a year	1	
	\$20,001 - \$30,000	2	
	\$30,001 - \$50,000	3	
	\$50,001 - \$70,000	4	
	\$70,000 - \$100,000	5	
	More than \$100,000	6	
	(Do not read out) Refused or don't know	9	
Q83	Do not read out - Code one only From time to time, Wellington City Council undertakes specific research about topics of current interest. Would you be willing for us to call you again in the future to see if you are interested in taking part in such research for the Wellington City Council?	Code	Route
	Yes	1	
	No	2	
	Don't know	9	
If respo Can you	ndent agrees let me have your contact details please, so that if we call you back we can ask for you	ı by name?	

Record contact details

Name:	
Phone Number:	

Thanks, that's all the questions I have for you. Should you have any queries about this interview my name is..... calling on behalf of Nielsen

As this is market research, it is carried out in compliance with the Privacy act and the information you provided will be used only for research purposes. Under the Privacy Act, you have the right to request access to the information you have provided.
Interviewer name: Date: Interviewer pay number: Interview Time

Start Time: Finish Time: Duration of Interview:

2012 WELLINGTON CITY COUNCIL RESIDENTS SATISFACTION SURVEY

Study ID	FEB12-RSS	Resp. No.	
Interviewer No.		Interview Length	
No. Of Queries		Reference No.	

Wellington City Council

Resident Satisfaction Survey

This Questionnaire is split into two parts at question 46. Ask Part A and Part B Demographic Questions.

Good morning/afternoon/evening.

My name is <name> calling from OCIS on behalf of Nielsen the market research company.

We are conducting a survey on behalf of Wellington City Council about the services they provide to the people of Wellington. To help me select the right person for this survey, I need to speak to:

- A person living in this household who is 15-24 years of age

- The person living in this household **15 years of age or over**, who had the **last** birthday (**or person to fill quotas**).

CHECK QUOTAS

IF NOT AVAILABLE ARRANGE CALLBACK

REINTRODUCE IF NECESSARY

The interview will take about 20 minutes of your time. Everything you say will be confidential and the results of the survey will help the Council improve the services it provides to the people of Wellington.

Is it convenient for you now, or shall I make an appointment to call you back at a better time for you.

IF NECESSARY ARRANGE CALLBACK

**** IF ASKED ABOUT WHAT IS THE SURVEY ABOUT **** The survey covers a range of topics about services the council currently provides.

Q95	For quality control and training purposes, this call will be recorded and may also be monitored however your answers are confidential and can not be traced back to you personally. Is this ok with you? [SA]	Code	Route
	Yes	1	
	No	2	

Q1	<u>Do not read out</u> If no. close with thanks	Code	Route
	Firstly, can I just check that you actually live in Wellington City, that is, the area extending as far north as Tawa but not including Porirua, Petone or the Hutt Valley? [SA]		
	Yes	1	Q2

|--|

I'm sorry but for this survey we need to speak to people that live in Wellington City,

Thank you for your time.

Should you have any queries about this interview my name is <> calling on behalf of Nielsen

Q2	If yes, close with thanks Are you by any chance an employee of, or contractor to the Wellington City Council, or are you an elected representative or a member of a community board?[SA]	Code	Route
	Yes	1	CLOSE
	No	2	Q3

I'm sorry but we cannot speak to employees or contractors for the Wellington City Council, or elected members of community boards.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q3	Check ward quota	Code	Route
	Which suburb of Wellington do you live in?		
	[SA]		
	Aro Valley	. 01	
	Berhampore	02	
	Breaker Bay	. 03	
	Broadmeadows	. 04	
	Brooklyn	. 05	
	Chartwell	. 06	
	Central City	. 07	
	Churton Park	. 08	
	Crofton Downs	. 09	
	Glenside	. 10	
	Grenada North	. 11	
	Grenada Village	. 12	
	Hataitai	. 13	
	Happy Valley	. 14	
	Highbury	. 15	

Horokiwi
Karaka Bays
Karori
Kelburn
Khandallah
Kilbirnie
Kingston
Kowhai Park
Linden
Lyall Bay
Makara
Makara Beach
Maupuia
Melrose (west - city side)
Melrose (east - airport side - View Road/Hornsey Road)
Miramar
Mitchelltown
Moa Point
Mornington
Mount Cook
Mount Victoria
Newlands
Newtown
Ngaio
Ngauranga
Northland
Ohariu Valley
Oriental Bay
Owhiro Bay
Paparangi
Pipitea
Raroa
Pongotoj
I Voligolai

Roseneath	53	
Seatoun	54	
Seatoun Bays/Karaka Bays	55	
Southgate	56	
Strathmore Park	57	
Takapu Valley	58	
Tawa	59	
Te Aro	60	
Thorndon	61	
Vogeltown	62	
Wadestown	63	
Wilton	64	
Woodridge	65	
(Do not read) Refused	97	CLOSE
(Do not read) None of these	98	CLOSE
(Do not read) Don't Know	99	CLOSE

CLOSE FOR Q3 SUBURB

I'm sorry but for this survey we need to know which suburb you live in.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q4	This question is set from Q3 Don't need to ask, record only from Q3	Code	Route
	CHECK WARD DEFINITIONS WITH WCC Ward[SA]		
	Northern	1	
	Onslow-Western	2	
	Lambton	3	
	Southern	4	
	Eastern	5	
Q5	<u>Code Gender</u> Gender[SA]	Code	Route
	Male	1	
	Female	2	
Q6	If answered 1 terminate	Code	Route
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Read out - code one only Which age group do you fit into? [SA]		
Under 15 years	1	CLOSE
15-24 years	2	
25-39 years	3	
40-59 years	4	
60-64 years	5	
65 years and over	6	
(Do not read out) Refused	9	CLOSE

CLOSE FOR Q6 age IF Q6=1

I'm sorry but for this survey we need to speak to people aged 15 or over.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

ELSE

I'm sorry but for this survey we need your age.

Thank you for your time.

Should you have any queries about this interview, my name is <> calling on behalf of Nielsen.

Q7	Read out - code one only Which of the following best describes your household? [SA]	Code	Route
	Young couple without children	01	
	Household with youngest child under 5	02	
	Household with youngest child 5 to 13	03	
	Household with youngest child 14 or over	04	
	Older couple - no children or none living at home	05	
	Single/one person household	06	
	Flat - not a family home	07	
	Other - specify	98	
	(Do not read) Refused	99	
Q8	Display codes in reverse order 5-4-3-2-1 Read out - code one only	Code	Route

First of all, i'd like you to think about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides. Overall, how would you rate the performance of Wellington City Council over the last 12 months? Would you say it was [SA]		
Very poor	1	
Poor	2	
Neither good nor poor	3	
Good	4	
Very good	5	
(Do not read) Don't know	9	

Q112 If Q8 code 5 then ask Q112

Why do you say the council's performance is very good? **PROBE** *Fully*

Q113 If Q8 code 4, 3, 2, or 1 ask Q113

What could the council do for you to give them a higher rating? **PROBE** *Fully*

Q88	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out, code one only Thinking about all the dealings you've had with Wellington City Council; all the things it has done over the last 12 months; and all the services and facilities that Wellington City Council provides, overall, how would you rate the value for money from all the services the Council provides? [SA]		
	Very Poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	

	(Do not read out) Don't know	9	
Q10	Read out in reverse order 5-4-3-2-1 <u>Read out, code one only</u> The next question concerns your overall quality of life. Would you say that overall your quality of life is [SA]	Code	Route
	Extremely poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Extremely good	5	
	(Do not read) Don't know	9	

Urban Development

Q11	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree******** The next questions cover such things as the design and layout of Wellington. Generally speaking, do you agree or disagree that Wellington is a great place to live? [SA] PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q12	Read out in reverse order 5-4-3-2-1 <u>***Probe: Is that strongly agree/disagree or just agree/disagree</u> ******** And do you agree or disagree that the different suburbs and communities in Wellington provide a good <i>variety</i> of places to live in? [SA] PROBE Probe: Is that strongly agree/disagree or just agree/disagree	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q13	Read out in reverse order 5-4-3-2-1 ***Probe: Is that strongly agree/disagree or just agree/disagree********* And do you agree or disagree that there is a <i>variety</i> of opportunities and places to <i>work</i> in Wellington in your occupation, or for someone with your experience and/or qualifications? [SA] PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q14	Read out in reverse order 5-4-3-2-1 <u>***Probe: Is that strongly agree/disagree or just agree/disagree</u> And do you agree or disagree that there is a good <i>variety</i> of <i>leisure activities and</i> <i>opportunities to socialise</i> in Wellington? [SA] PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q15

Rotate statements

Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1)

Read out - code one only

Probe: Is that strongly agree/disagree or just agree/disagree******

I am going to read you some statements about Wellington and would like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement.... [SA]

PROBE Probe: Is that strongly agree/disagree or just agree/disagree

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
. 1	2	3	4	5	9
. 1	2	3	4	5	9
. 1	2	3	4	5	9
. 1	2	3	4	5	9
	Strongly disagree	Strongly disagreeDisagree1212121212	Strongly disagreeDisagreeNeither agree nor disagree123123123123123	Strongly disagreeDisagreeNeither agree nor disagreeAgree12341234123412341234	Strongly disagreeDisagreeNeither agree nor disagreeAgreeStrongly agree1234512345123451234512345

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(R5) The city is developing in a way that						
takes into account its unique urban						
character and natural environment	1	2	3	4	5	9

Q114 Rotate statements

Read out in reverse 5,4,3,2,1

In general, how strongly do you agree or disagree that...[SA] **PROBE** *Is that strongly agree/disagree or just agree/disagree*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Heritage buildings, areas, trees and objects are appropriately valued and protected in the central city	1	2	3	4	5	9
(R2) Heritage buildings, areas trees and objects are appropriately valued and protected in your local/suburban						
area	1	2	3	4	5	9

Q16	Read out in reverse order 5-4-3-2-1 Read out - code one only How strongly do you agree or disagree with the statement, 'I feel a sense of pride in the way Wellington looks and feels'? [SA] PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read) Don't know	9	

Social and Recreation / Environmental

Q17 Read out scale in order: very safe to very unsafe <u>Read out - code one only</u> The next few questions are about safety.

Thinking of your overall sense of freedom from crime, how safe or unsafe do you feel in the following situations. Would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...?

....and would you say that you were very safe, reasonably safe, somewhat unsafe or very unsafe...? [SA]

	Very unsafe	Somewhat unsafe	Reasonabl y safe	Very safe	(Do not read out) Not applicable: Don't come into city centre	(Do not read) Don't know
(R1) In your neighbourhood during the day	1	2	3	4	7	9

(R.	²⁾ In your neighbourhood after dark 1	2	3	4	7	9
(R.	³⁾ In your city centre during the day 1	2	3	4	7	9
(R4	⁴⁾ In your city centre after dark	2	3	4	7	9
Q18	Note for post-coding and analysis: Listing of n before back coding. All new codes to be grou below and nets of themes to be included in da	ew codes to ped into broa ata tabulation	be approve ad themes in s.	d by WCC n parenthes	Code is	Route
	Ask Question 19 if more than one coded Read in rotated order - code each mention	**Probe: Wh	nat else****	***		
	The following list I am about to read identifies unsafe in their neighbourhoods or city. Which particularly concerning in Wellington at preser	things that m of the followi ht?	iight make p ng, if any, a	people feel re		
	[MA] PROBE What else?					
	Poorly lit or dark public areas such as streets,	paths and pa	arks			
	Vandalism such as broken windows in shops	and public bu	uildings		01	
	Graffiti				02	
	Poorly maintained or dangerous public areas	such as stree	ets, paths ar	nd parks	03	
	Traffic, including busy roads and lack of pede	strian facilitie	s		04	
	Dangerous driving including speeding, drunk	drivers and se	o on		05	
	Alcohol and drug problems	•••••	•••••	••••••	06	
		•••••	•••••	••••••	07	
	Car theft or vandalism, and theft from cars	angerously			08	
					09	
	(Do not read out) None of these				97	
	Other (specify)				98	
	(Do not read out) Don't know				99	
Q19	Note for post-coding and analysis: Listing of n before back coding. All new codes to be grou below and nets of themes to be included in da <ask 1<br="" coded="" if="" in="" more="" one="" question="" than=""><u>Read in rotated order - code only one</u></ask>	ew codes to ped into broa ata tabulation 8 >	be approve ad themes in s.	d by WCC n parenthes	Code	Route

And which of these is of most concern to you at present in Wellington? [MA]

	Poorly lit or dark public areas such as streets, paths and parks		
	Vandalism such as broken windows in shops and public buildings	01	
	Graffiti	02	
	Dearly maintained at dengaraya public areas such as streets, nothe and notice	03	
	Poorly maintained or dangerous public areas such as streets, paths and parks	04	
	Traffic, including busy roads and lack of pedestrian facilities	05	
	Dangerous driving including speeding, drunk drivers and so on	0.0	
	Alcohol and drug problems	06	
		07	
	Car theft or vandalism, and theft from cars Threatening people and/or people behaving dangerously	08	
		09	
	(Do not read out) None of these	97	
	Other (specify)	98	
	(Do not read out) Don't know	99	
Q20	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only Wellington City is becoming home for an increasing number of people with different lifestyles and cultures and from different countries. Overall do you think this makes the city? [SA]		
	A much worse place to live	1	
	A worse place to live	2	
	Makes no difference	3	
	A better place to live	4	
	A much better place to live	5	
	(Do not read out) Don't know	9	
Q21	Read out in reverse order 5-4-3-2-1 ********* Probe: Is that strongly agree/disagree or just	Code	Route
	We want to find out about the sense of community strength and spirit in Wellington. In general, do you agree or disagree with the statementThe community works together and people support each other? [SA] PROBE <i>Probe: Is that strongly agree/disagree or just agree/disagree</i>		
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q22	51. Community advocacy	Code	Route
	Read out in reverse order 5-4-3-2-1 <u>Read out - code one only</u> Wellington City Council works to help ensure Wellington is made up of strong and thriving communities. How satisfied or dissatisfied are you that the Council provides appropriate services and resources to ensure strong and thriving communities?		
	Would you say you are		
	[SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	

Q115 Ask all

Rotate

Do Not Read Out

As far as you are aware, which of the following community support services are provided by the Wellington City Council?[SA]

	Yes	N	0	Don't kr	now
(R1) Grants (e.g. social and recreation, and education)	. 1	2		9	
(R2) Provide support networks for various groups (e.g. Pacific people, young people, senior citizens etc.)	. 1	2	2	9	
(R3) Organising community events	. 1	2		9	
(R4) Provide advocacy services for various groups (if necessary: that is the Council would act as a go between for services such as public health and various community groups)	1	2	,	9	
(R5)	1	2		0	
Support for homeless	. 1	2		9	
Q24 Do not read - code only one Have you used a Wellington City Council public toilet in the las	st 12 months?[SA]	Code	e Ro	ute
Yes			1		
No	••••••		2	Q2	26
Don't Know			9	Qź	26
Q25 Read out in reverse order 5-4-3-2-1 Read out - code one only			Code	e Ro	ute
And how satisfied or dissatisfied are you with the cleanliness of Council public toilets?	of Wellington C	ity			
Would you say you are? [SA]					
Very dissatisfied			1		
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			l I
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q26	Do not read out - code one only Do you have essential emergency items in your home? By emergency items I mean a supply of everyday use items that you can easily find and use when an emergency occurs. [SA]	Code	Route
	Yes	1	
	No	2	Q28
	Don't know	9	Q28
Q27	Code None of these as 97 Code Don't know as 99 Read out - code all that apply As I read out this list please tell me which, if any, of these you would easily be able to find in the event of an emergency [MA]	Code	Route
	Ten litres of bottled water per person in your household	01	
	Canned food	02	
	Can opener	03	
	Other non-perishable food	04	
	First aid kit	06	
	A battery operated radio	07	
	Spare batteries	08	
	A plastic bucket	09	
	Plastic bags	10	
	Toilet paper	11	
	Soap	12	
	Disinfectant	13	
	A primus or gas barbeque to cook on	14	
	Waterproof torches	15	
	Other essential medication	16	
	Pet supplies	17	
	Blankets, towels, sleeping bags	18	
	Sturdy footwear	19	
	Baby/infant supplies	20	
	Essential documents (birth/marriage certificates, insurance policies)	21	
	Family photos	22	

	None of these	97	
	(Do not read out) Don't know	99	
Q28	Ask all respondents Do not read out - code one only	Code	Route
	Do you have an emergency plan for your family or your household about what they will do if a significant emergency occurs?[SA]		
	Yes	1	
	No	2	
	Don't know	9	
Q29	Check Q7 - if school age children (code 2,3 or 4) in household ask all statements in Q29 , otherwise omit statement 3 and ask all other statements Ask all respondents <u>Read out - code all that apply</u> Which of the following have you done. Have you? [MA]	Code	Route
	Discussed ways to get in touch with other family members when an emergency occurs	01	
	Made plans for re-uniting with family members when an emergency occurs	02	
	Arranged for authorised people to collect children from school, and provided the school with a list of these people for when an emergency occurs	03	
	Established a meeting place in the event your house becomes unusable or if family members are separated when an emergency occurs	04	
	or checking with neighbours	05	
	Completed a first aid course	06	
	Found out where your nearest Civil Defence Centre is	07	
	(Do not read out) None of these	98	
	(Do not read out) Don't know	99	
Q30	Allow entry up to 2 decimal places	Code	Route
	Type 000 for zero/none Type 999 for Don't know IE 2 HOURS = 002.0, 10.5 HOURS = 010.5		
	Thinking now about recreational opportunities in Wellington		
	How many hours would you spend in some form of regular physical activity in an average week? [MA]		
	Type in number (use decimal places)	1	
	(Do not read) Don't know	9	
Q31	Check Q7 - if children aged 13 and under in household (code 2/3) ask Q31 , otherwise skip to Q34 <u>Do not read out</u>	Code	Route
	Have any of the children aged 13 or under in your household used a Councilplayground or skate park in the last 12 months? [SA]FEB12-RSS RSS February 2012 (23 February, 2012)Page 14 of 36		

Yes	1	
No	2	Q33
(Do not read out) Don't know	9	Q33
Read out in reverse order 5-4-3-2-1	Code	Route
Read out - code one only		
How satisfied or dissatisfied were you with the playground or skate park you visited most recently?[SA]		
Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	
ASK of those with school aged children (Q7=code 2 or 3) Read out - code only one On average, How often do the children aged 13 or under in your household walk to and from school?	Code	Route
[MA]		
Everyday	1	
3-4 days a week	2	
1-2 days a week	3	
Less often	4	
Never	5	
No school aged children	6	
(Do not read out) Don't know	9	
Read out - code all that apply Have you used any of the following Wellington City Council recreation facilities in the last 12 months?	Code	Route
[MA]		
A Council Recreation Centre	1	
A Council Swimming Pool	2	
A Council skate park	3	
The Mountain Bike Park in Karori	4	
A Council Playground	5	
(Do not read out) None of these	8	
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	(Do not read out) Don't know	9	
Q35	Ask Q35 if Q34 code = 1 Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How satisfied or dissatisfied were you with the Wellington City Council's recreation centre you visited most recently? [SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
036	Ask $\mathbf{O36}$ if $\mathbf{O34}$ code = 2	Code	Pouto
Q30		Code	Route
	Read out in reverse order 5-4-3-2-1 Read out - code one only And how satisfied or dissatisfied were you with the Wellington City Council's swimming pool you visited most recently? [SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q42	Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) *******Probe: is that strongly agree/disagree or just agree/disagree***********************************	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q45	Please code others as 99 and don't know as 99	Code	Route

Do not read out - code all that apply		
What, if anything, makes it difficult for you to take part in these recreational activities? [MA]		
Too busy	01	
Poor health	02	
Activity costs too much	03	
Activity too far away	04	
No facilities for child care	05	
Weather	06	
Not at a convenient time	07	
Shift work	08	
Lack of motivation	09	
No facilities exist	10	
Tiredness	11	
Lack of knowledge about how to do it	12	
Environmental factors (eg road conditions, pollution)	13	
Lack of parking/public transport/transport	14	
None/nothing/not interested	97	
Other (specify)	98	
Don't know	99	
Ask all Read out scale 5,4,3,2,1	Code	Route
<u>Read out</u> In general, how easy is it to access Wellington City Council's recreation facilities and programmes?[SA]		
Very difficult	1	
Quite difficult	2	
Neither easy nor difficult	3	
Quite easy	4	
Verv easv	5	
(Do not read out) Don't know	9	
Scale to be read in reverse 5,4,3,2,1 To provide recreation services and facilities it costs, on average, <mark>\$168.70</mark> per	Code	Route
resident per year (or <mark>\$0.46</mark> per day). How strongly do you agree or disagree this is good value for money? [SA]		
resident per year (or <mark>\$0.46</mark> per day). How strongly do you agree or disagree this is good value for money? [SA] Strongly disagree	1	
resident per year (or \$0.46 per day). How strongly do you agree or disagree this is good value for money? [SA] Strongly disagree Disagree	1 2	
resident per year (or \$0.46 per day). How strongly do you agree or disagree this is good value for money? [SA] Strongly disagree Disagree Neither agree nor disagree	1 2 3	

	Strongly agree	5	
	(Do not read out) Don't know	9	
Q37	Read out - code all that apply Have you used any of the following Wellington City Council community facilities in the last 12 months?	Code	Route
	[MA]		
	A public library	1	
	A Community Centre	2	
	A Community Hall	3	
	(Do not read out) None of these	7	
	(Do not read out) Don't know	9	
Q97	<i>if</i> Q37 <i>code</i> = 1 <i>then ask</i> Q97 <u>Read out</u> How often on average would you use, or visit a Wellington City Council library?[SA]	Code	Route
	More than once a week	1	
	Once a week	2	
	Once every 2-3 weeks	3	
	Once a month	4	
	Once every 2-3 months	5	
	Once every 4-6 months	6	
	Less often than once every 6 months	7	
	(Do Not Read Out) Don't Know	9	
Q98	<i>if</i> Q37 <i>code = 1 then ask</i> Q98 <u>Read out</u>	Code	Route

Thinking about the library items that you use, how satisfied or dissatisfied are you with the range and variety of the items available?[SA]		
Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Q38	If Q37 code = 1, then ask Q38	Code	Route
	Read out in reverse order 5-4-3-2-1 Read out - code one only Thinking about all the libraries and library services you've used over the last 12 months, how satisfied or dissatisfied are you with the library services overall? [SA]		

Very dissatisfied	1	
Quite dissatisfied	2	
Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Q99 Scale to be read out in reverse Code Route To provide library services it costs, on average, \$106.65 per resident per year (or \$0.29 per day). How strongly do you agree or disagree this is good value for money? [SA] Strongly disagree..... 1 Disagree 2 3 Neither agree nor disagree Agree..... 4 5 Strongly agree 9 (Do not read out) Don't know

Q39 Ask of all

29, 31 & 33. New & existing (how often used...) DO NOT ROTATE

Read out - code one only

In the last twelve months, how often on average have you used ...?

.....And in the last 12 months how often have you used? [SA]

	Most days	Once or twice a week	Once every 2- 3 weeks	Once a month	Once every 2- 3	Once every 4- 5	Once every 6 months	Never in the last 12	(Do not read) Don't
					months	months	or less often	months	know
(R1) Wellington City's coastal areas or beaches	01	02	03	04	05	06	07	08	99
(R2) Botanic gardens, including Otari/Wiltons Bush Native Botanic									
Reserve	01	02	03	04	05	06	07	08	99
parks	01	02	03	04	05	06	07	08	99
Belt	01	02	03	04	05	06	07	08	99
(KS) The city's walking tracks (R6) Wellington City Council	01	02	03	04	05	06	07	08	99
outdoor grass sports fields	01	02	03	04	05	06	07	08	99
(R7) A Wellington City Council sports field which has									
artificial turf	01	02	03	04	05	06	07	08	99

Q40 30 & 33. New (rate quality and maintenance)

Rotate

Ask this question, Q40R1 if Q39 R3 = code 1,2,3,4,5,6 or 7 (have used WCC park in the last 12 months) Ask this question, Q40 R2 if Q39 R5 =code 1,2,3,4,5,6 or 7 (have used walkways and tracks in the last 12 months) Ask this question, Q40 R3 if Q39 R6 = code 1,2,3,4,5,6 or 7 (have used WCC outdoor grass sports field in the last 12 months) Ask this question, Q40 R4 if Q39 R7 = code 1,2,3,4,5,6 or 7 (have used WCC sports field which have artificial turf in the last 12 months)

Read out in reverse order 5-4-3-2-1 Read out - code one only

Overall, how satisfied or dissatisfied are you with the quality and maintenance of...

[SA]

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) Wellington City Council parks, excluding the Botanic Gardens	1	2	3	4	5	9
(R2) The city's walking tracks	1	2	3	4	5	9
(R3) Wellington City Council outdoor grass sports fields	1	2	3	4	5	9
which have artificial turf	1	2	3	4	5	9

Q41 31 & 32. New (cleanliness & maintenance)

Ask this question, **Q41 R1** if **Q39 R4** = code 1,2,3,4,5,6 or 7 (have used Town Belt or Outer Green Belt in the last 12 months)

Ask this question, Q41 R2 if Q39 R1 = code 1,2,3,4,5,6 or 7 (have used coastline or beaches in the last 12 months)

Ask this question, **Q41 R3 if Q39 R2** = code 1,2,3,4,5,6 or 7 (have used botanic gardens in the last 12 months)

And, overall, how satisfied or dissatisfied are you with the quality and maintenance of...[SA]

	Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
(R1) The Town Belt or Outer Green Belt (R2) Wellington City's coastal areas or	1	2	3	4	5	9
beaches	1	2	3	4	5	9
(R3) The botanic gardens, including Otari-Wilton's bush	1	2	3	4	5	9

Q100 Ask all

Do not rotate order

Read out

In general, how easy or difficult is it to access... [SA]

Very	quite	Neither	Quite easy	Very easy	(Do not
difficult	difficult	easy nor			read) Don't

			difficult			know
(R1) Your local park	1	2	3	4	5	9
(R2) Wellington City's coastal areas or beaches	1	2	3	4	5	9
(R3) Green open spaces (such as spor fields, town belts, gardens and par	s ks					
etc.)	1	2	3	4	5	9
Q101 To provide garden (botanic garder costs, on average, \$66.19 per res do you agree or disagree this is g	ns and parks) sident per yea ood value for) and beach r (or \$0.18 p money? [SA	and coasta per day). Ho A]	l services it w strongly	Code	Route
Strongly disagree					1	
Disagree				•••••	2	
Neither agree nor disagree					3	
Agree					4	
Strongly agree					5	
(Do not read out) Don't know					9	
Q102 Read out scale in reverse To provide green open spaces (e costs, on average, \$80.58 per res do you agree or disagree this is g	.g. sports field sident per yea ood value for	ds, town belt r (or <mark>\$0.22</mark> p money? [SA	s, parks an ber day). Ho A]	d gardens) i ow strongly	t	Route
Strongly disagree					1	
Disagree					2	
Neither agree nor disagree					3	
Agree					4	
Strongly agree					5	
(Do not read out) Don't know					9	
Q43 Read out scale 5-4-3-2-1, str <u>Read out - code one only</u>	ongly agree	e (5) to stro	ongly disa	gree (1)	Code	Route
****** Probe: is that strongly ag Thinking about Wellington's nature that it is appropriately managed a [SA] PROBE <i>Probe: Is that strong</i>	ree/disagree al environme nd protected? Iy agree/dis	or just agr nt overall, do agree or j	ee/disagree b you agree dust agree	e ^{************************************}	*;	
Strongly disagree					1	
Disagree					2	
Neither agree nor disagree					3	
Agree					4	
Strongly agree			•••••		5	
(Do not read out) Don't know		•••••			9	

******This is the text used to ask respondents if they want to continue on to part 2*********

Only included so interviewers know what this text is when reading the questionnaire. It should come after Part 1 demos as in surveycraft script

There is more text before this in surveycraft informing respondents what the second part of the survey is about etc.

Is it convenient for you to continue now, or shall I make an appointment to call you back at a more convenient time.

Continue.....1 Make appointment.....2

Split Questionnaire at this point.

Cultural Wellbeing

Q46 Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u>

Probe: Is that strongly agree/disagree or just agree/disagree*****

Thinking about the community involvement in arts and culture in Wellington, I am going to read you some statements and I'd like you to tell me if you agree or disagree with each statement.

In general, do you agree or disagree with the statement...

...And do you agree or disagree with the statement........[SA] **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
(R1) Wellington has a culturally rich and diverse arts scene	. 1	2	3	4	5	9
(R2) Wellington is the events capital of New Zealand	. 1	2	3	4	5	9
(R3) Wellington is the arts capital of New Zealand	. 1	2	3	4	5	9
How frequently do you attend, or pa Wellington?[SA]	articipate in	cultural and	arts activitie	es in	1	
At least once a week					1 2	
Once every six months					3	
At least once a year					4	
Less often		•••••			5	
(DO NOT READ) Never					7	
(DO NOT READ) Don't know					9	
O48 Do not read out					Code	Route

Q48 Do not read out Wellington City Council is associated with events and festivals such as community Code FEB12-RSS RSS February 2012 (23 February, 2012) Page 22 of 36

	festivals, sports events and arts and cultural events. Have you attended any of these types of events and festivals in the last 12 months?[SA]		
	Yes	1	
	No	2	Q50
	Don't Know	9	Q50
Q49	 28. New (Events & Festivals) Read out in reverse order 5-4-3-2-1 Read out - code one only Overall, how satisfied or dissatisfied are you with these types of events and festivals? Would you say you are [SA] 	Code	Route
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q50	36. New Read out in reverse order 5,4,3,2,1 Read out - code one only **** Probe: is that strongly agree/disagree or just agree/disagree ****** Do you agree or disagree that Wellington's distinct local identity, its sense of place, is appropriately valued and protected? [SA] PROBE <i>Is that strongly agree/disagree or just agree/disagree</i>	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Resources and Waste

Q51	Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The next couple of questions are about waste reduction and rubbish collection.		
	Which, if any, of the following things are you doing to try and reduce the amount of waste from your home?		

	[MA]		
	Home composting	01	Q90
	Using the Council's kerbside recycling service	02	Q52
	Taking things to the recycling stations	03	Q90
	Donating things to 2nd hand shops or charities	04	Q90
	Buying refills	05	Q90
	Avoiding using plastic bottles or bags	06	Q90
	Reusing plastic containers such as food containers	07	Q90
	Anything else (specify)	98	Q90
	(Do not read out) None of these	99	Q90
Q52	Check Q51 , if 2 coded ask Q52 otherwise skip to Q90 Read out - code one only	Code	Route
	On average, how often do you put out recycling for WCC kerbside collection?" [SA]		
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q90
Q53	Ask Q53 if Q52 = code 1,2,3,4 or 5 (ie. know how often on average they put out recycling - $\frac{\text{doesn't}}{\text{have to be in the last month}}$ Read out 5,4,3,2,1 Read out - code one only	Code	Route
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside recycling?[SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q90	Does your household ever use the official Wellington City Council rubbish bags, the yellow coloured bags that can be brought at the supermarket, some dairies or from the Council? [SA]	Code	Route
	Yes	1	
	No	2	Q105
	Don't know	9	Q105
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Q91	Check Q90, if 1 coded ask otherwise skip to Q54 Read out - code one only On average, how often do you put out yellow plastic Council rubbish bags for WCC kerbside collection? [SA]	Code	Route
	Every week	1	
	Once every two weeks	2	
	Once every three weeks	3	
	Once a month	4	
	Less often than once a month	5	
	(Do not read out) Don't know	9	Q105
Q92	Ask Q92 if Q91 = code 1,2,3,4 or 5 (ie. know how often on average they put out rubbish bags - <u>doesn't</u> have to be in the last month) Read out 5,4,3,2,1 Read out - code one only	Code	Route
	How satisfied or dissatisfied are you with the Wellington City Council's kerbside rubbish collection?[SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q105	Ask all Scale to be read out in reverse To provide waste management services it costs, on average, \$50.31 per resident per year (or \$0.14 per day). How strongly do you agree or disagree this is good value for money? [SA]	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	
Q54	Rotate statements Read out - code all that apply	Code	Route
	If <u>asked</u> question relates to <u>households</u> behaviour not individual The storm water system collects rainwater from your roof and yard and transfers it to local streams or to the seashore.		
	Thinking now about the storm water system, which, if any, of the following thingsFEB12-RSS RSS February 2012 (23 February, 2012)Page 25 of 36		

are you doing to try and reduce the amount of pollution entering the storm water system? [MA]		
Dispose of oil, paint or chemicals by putting them out with your household rubbish or taking them for recycling	01	
Washing paint brushes in an inside sink	02	
Pouring all household liquid wastes down an inside sink, toilet or gully trap	03	
Put your litter in a rubbish bin rather than drop it in the street or in the gutter	04	
Pick up droppings left by dogs Collect sweepings from your driveway, paths, or yard for composting or for disposal	05	
with your household rubbish	06	
Wash the car at a carwash or on the lawn	07	
Anything else (specify)	98	
None of these	99	

Q106	Scale to be read out in reverse To provide wastewater and storm water services it costs, on average, \$262.16 per resident per year (or \$0.72 per day). How strongly do you agree or disagree this is good value for money? [SA]	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Q107	Scale to be read in reverse To provide water services it costs, on average, \$180.00 per resident per year (or \$0.49 per day). How strongly do you agree or disagree this is good value for money? [SA]	Code	Route
	Strongly disagree	1	
	Disagree	2	
	Neither agree nor disagree	3	
	Agree	4	
	Strongly agree	5	
	(Do not read out) Don't know	9	

Transport

Q55Read out in reverse order 5-4-3-2-1Read out - code one onlyI'd now like to ask you about city traffic and the public transport systemThinking about moving around the city, how easy is it to drive about in	Code em. in the city?	Route
---	-----------------------------	-------

	Would you say it is [SA]		
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	
	Quite easy	4	
	Very easy	5	
	(Do not read out) Never drive/drive in a car	7	
	(Do not read out) Don't know	9	
Q56	Read out in reverse order 5-4-3-2-1 Read out - code one only And how would you rate how easy it is to walk around the city?	Code	Route
	Would you say it is [SA]		
	Very difficult	1	
	Quite difficult	2	
	Neither easy nor difficult	3	

And do you agree or disagree that public transport in Wellington is.... [SA] PROBE Probe: Is that strongly agree/disagree or just agree/disagree

Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1)

Do you agree or disagree that public transport in Wellington is...

Quite easy.....

Very easy.....

(Do not read out) Don't know

	Strongly	Disagree	Neither	Agree	Strongly	(Do not
	disagree		agree nor		agree	read out)
			uisagiee			DOITT KIIOW
^(R1) Convenient	1	2	3	4	5	9
^(R2) Affordable	1	2	3	4	5	9

Q108 If code 7 in Q55 do not ask this question Read scale 5,4,3,2,1

Read out

Rotate statements

Read out - code one only

Q60

How satisfied or dissatisfied are you with the availability of on-street parking during the [SA]

^(R1) week		Very dissatisfie d	dissatisfie d	Neither satisfied nor dissatisfie d	satisfied	Very satisfied	(Do not read) Don't know
	(R1) week	1	2	3	4	5	9

4

5

(R2)	(R2) weekend		2	3	4	5	9
Q62	Read out in reverse order 5-4- Read out - code one only	3-2-1		liooc	****	Code	Route
	Do you agree or disagree that the c public transport, allows easy access PROBE <i>Probe:</i> Is that strongly	sagree, or j ity's transpo from the su agree/dis	rt system, t iburbs to th agree or j	hat is the ro e city?[SA] ust agree,	ads and the		
	Strongly disagree					1	
	Disagree					2	
	Neither agree nor disagree					3	
	Agree						
	Strongly agree					5	
	(Do not read out) Don't know					9	
Q109	Scale read out in reverse To provide transport network service per year (or \$0.56 per day). How str value for money? [SA]	es it costs, c ongly do yo	on average, u agree or	<mark>\$204.65</mark> pe disagree thi	er resident s is good	Code	Route
	Strongly disagree					1	
	Disagree					2	
	Neither agree nor disagree					3	
	Agree					4	
	Strongly agree					5	
	(Do not read out) Don't know					9	
Q63	Do not read - code one only Do you travel into central Wellingtor	n most week	days?[SA]			Code	Route
	Yes					1	
	No					2	Q68
	Don't know					9	Q68
Q64	Code other 98 Code don't know 99 <u>Do not read out - Code one only</u>					Code	Route
	What is your main method of travell [SA]	ling to Wellir	ngton on the	ese occasio	ns?		
	Car					01	
	Motorbike					02	
	Bus					03	
	Train	••••••	•••••	•••••		05	
	Bicycle FEB12-RSS RSS Februar	ry 2012 (23 F	ebruary. 201		Page 28 of 3	07 66	

	Walk	08	
	Scooter	09	
	Other (specify)	98	
	Don't know	99	
Q65	<u>Do not read out - Code one only</u> Is there anything that prevents you from using your preferred method of transport? [SA]	Code	Route
	Yes	1	
	No	2	Q68
	Don't know	9	Q68
0((Codo	Deute
Q66	Code other 98 Code don't know 99 Do not read out - Code one only How would you prefer to travel into Central Wellington most weekdays?	Code	Route
	[SA] PROBE If say public transport, ask: What type of public transport?		
	Car	01	
	Motorbike	02	
	Bus	03	
	Taxi	04	
	Train	05	
	Cable Car	06	
	Bicycle	07	
	Walk	08	
	Scooter	09	
	Skateboard	10	
	Public transport non-specific	11	
	Other (specify)	98	
	Don't know	99	Q68
Q67	Code Other as 98 Code Don't know as 99	Code	Route
	Do not read out - code all that apply Probe fully What stops you travelling by <i><insert from<="" i="" response=""> Q66> into Central Wellington most weekdays? [MA] PROBE Probe fully</insert></i>		
	Very heavy/heavy traffic	01	
	Buses infrequent/overcrowded	02	
	Roadworks	03	
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			1
	Parking	04	
	Train problems/line signal problems/running late	05	
	Bus drivers/bus breakdowns/trolley lines down	06	
	Roads too narrow/lane markings/no room for bikes/bike lanes	07	
	Other (specify)	98	
	Don't know	99	
Q68	Do not read out - Code one only Do you travel into or through central Wellington during weekday peak traffic times, that is between 7 and 9 in the morning or 4 and 6 in the evening?[SA]	Code	Route
	Yes	1	
	No	2	Q70
	Don't know	9	Q70
Q69	Do not read out - Code one only Do you believe peak traffic volumes are acceptable? [SA]	Code	Route
	Yes	1	
	No	2	
	Don't know	9	
Q70	Read out - code one only Now I'd like you to think about the on road cycleways. Have you used any of Wellington city's on road cycleways in the last 12 months? [SA]	Code	Route
	Yes	1	
	No	2	Q72

Q71 Read out scale in order: very satisfied to very dissatisfied Read out - code one only

How satisfied or dissatisfied are you with Wellington City's cycleways for....

And how satisfied or dissatisfied are you with Wellington City's cycleways for.... [SA]

(Do not read out) Don't know

	Very	Quite	Neither	Quite	Very	(Do not	(Do not
	dissatisfie	dissatisfie	satisfied	satisfied	satisfied	read out)	read)
	d	d	nor			Not	Don't
			dissatisfie			applicable	know
			d			:Don't use	
						cycleway	
						s or	
						public	
						transport	
^(R1) Safety	1	2	3	4	5	7	9
(R2) How well they are maintained	1	2	3	4	5	7	9

9

Q72

Q72	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only How would you rate the condition of the city's roads?		
	[SA]		
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	
	(Do not read out) Don't know	9	
Q110	Read out in reverse order 5,4,3,2,1	Code	Route
-	Read out		
	And now would you rate the condition of the city's footpaths?[SA]		
	Very poor	1	
	Poor	2	
	Neither good nor poor	3	
	Good	4	
	Very Good	5	
	(Do not read out) Don't know	9	
		-	
Q73	Read out in reverse order 5-4-3-2-1	Code	Route
	How satisfied or dissatisfied are you with the quality of the street cleaning in central		
	Wellington?		
	Very dissatisfied	1	
	Quite dissatisfied	2	
	Neither satisfied nor dissatisfied	3	
	Quite satisfied	4	
	Very satisfied	5	
	(Do not read out) Don't know	9	
Q74	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only		
	How satisfied or dissatisfied are you with the quality and maintenance of road side		
	vegetation? By maintenance I mean kept free of weeds and trimmed back to be clear of the edges of the road. Are you		
	[SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	

Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Q75 Read out in reverse order 5-4-3-2-1

Read out - code one only Now thinking about street lighting, how satisfied or dissatisfied are you with...?

Would you say you are ...?

...and how satisfied or dissatisfied are you with......

would you say you are? [SA]

	Very dissatisfie d	Quite dissatisfie d	Neither satisfied nor dissatisfie d	Quite satisfied	Very satisfied	(Do not read out) Don't know
^(R1) Street lighting in the central city	1	2	3	4	5	9
^(R2) Street lighting in your suburban area.	1	2	3	4	5	9

<mark>5</mark>	Ask all If respondent is unsure mention the website address www.wellington.govt.nz Now we have some questions about the Council's website (www.wellington.govt.nz).	Code	Route
	Have you visited the Council's website in the last 12 months?[SA]		
	Yes	1	
	No	<mark>2</mark>	<mark>Q119</mark>
7	Asked if visited website in last 12 months $Q116 = code 1$	Codo	Route
<u>/</u>	During any of your visits to the Council's website in the last 12 months, was there anything you looked for but could not find?[SA]	Code	Noule

<u>119</u>	Ask all Read out, probe for answer to each service Which of the following online services would you use if they were on the Council's website[MA] PROBE Would you use this service?	Code	Route
	Online payments (e.g. paying for dog registration)	<mark>01</mark>	
	Online bookings (e.g. booking a Council venue)	<mark>02</mark>	
	Online applications (e.g. applying for a Land Information Memorandum)	<mark>03</mark>	
	Requesting repairs to Council property (e.g. a broken drain)	<mark>04</mark>	
	I racking a service request (e.g. seeing the status of the response from the Council)	<mark>05</mark>	
	None of these	<mark>97</mark>	

Q120 Ask all

Is there anything else you would like to see offered on the Council's website? PROBE Clarify response

Governance and citizen information

Q76	Rotate codes 1 and 3, do not rotate 2 Read out - code one only	Code	Route
	We just have a few more questions to go. I'd like you to think about the contact you have with Wellington City Council and the involvement of the community in Council decision-making.		
	In your view, does the Council consult you? [SA]		
	Not enough	1	
	The right amount	2	
	Too much	3	
	(Do not read out) Don't know	9	
Q77	Read out in reverse order 5-4-3-2-1	Code	Route
	Read out - code one only And how satisfied or dissatisfied are you with the way the Council involves people in decision-making?		
	Would you say you are? [SA]		
	Very dissatisfied	1	
	Quite dissatisfied	2	
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Neither satisfied nor dissatisfied	3	
Quite satisfied	4	
Very satisfied	5	
(Do not read out) Don't know	9	

Q78 63/64/65 New

Rotate statements Read out scale 5-4-3-2-1, strongly agree (5) to strongly disagree (1) <u>Read out - code one only</u>

Probe: is that strongly agree/disagree or just agree/disagree**

In general, do you agree or disagree with the statement....

and do you agree or disagree with the statement....[SA] **PROBE** *Probe: Is that strongly agree/disagree or just agree/disagree*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	(Do not read out) Don't know
 (R1) I understand how Wellington City Council makes decisions (R2) Wellington City Council makes 	1	2	3	4	5	9
interests of the city	1	2	3	4	5	9
(R3) Information from Wellington City Council is easy to access	1	2	3	4	5	9

Q79	Read out - code one only Overall, how much influence do you feel the public has on the decisions the Wellington City Council makes? Would you say the public has[SA]	Code	Route
	No influence	1	
	Small influence	2	
	Some influence	3	
	Large influence	4	
	(Do not read out) Don't know	9	

Ask Part A and Part B Demographics Demographics

Q80	Code other 98	Code	Route
	Code don't know 99		
	Read out - code all that apply		
	Finally just a few questions about yourself and your household, to make sure we have talked to a good cross-section of Wellingtonians.		
	Which ethnic group or groups do you belong to? [MA]		
	NZ European	01	
	Maori	02	

	Samoan	03	
	Cook Island Maori	04	
	Tongan	05	
	Niuean	06	
	Chinese	07	
	Indian	08	
		98	
	(Do not read out) Pofused	00	
	(Do not read out) Relased		
Q89	Read out code only one What type of home internet connection do you have? [SA]	Code	Route
	Dial-up modem or regular connection	1	
	Broadband	2	
	(Do not read out) Don't have a home internet connection	7	
	(Do not read out) Don't know	9	
Q111	<u>Read out</u> Do you[SA]	Code	Route
	Own your home	1	
	Rent	2	
	Live with parents/other relatives/caregivers	3	
	Other (specify)	4	
	(Do not read out) Don't know	9	
Q82	Read out - code one only Approximately, what is your total household income (that is, from all income earners in your household as well as income from other sources, before tax)? [SA]	Code	Route
	\$20,000 or less a year	1	
	\$20,001 - \$30,000	2	
	\$30,001 - \$50,000	3	
	\$50,001 - \$70,000	4	
	\$70,000 - \$100,000	5	
	More than \$100,000	6	
	(Do not read out) Refused or don't know	9	
Q83	Do not read out - Code one only From time to time, Wellington City Council undertakes specific research about topics of current interest. Would you be willing for us to call you again in the future to see if you are interested in taking part in such research for the Wellington City Council? [SA]	Code	Route
Yes	1		
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No	2		
Don't know	9		

If respondent agrees

Can you let me have your contact details please, so that if we call you back we can ask for you by name?

Record contact details

Name:	 	 	
Phone Number:	 	 	
Email:			

Thanks, that's all the questions I have for you. Should you have any queries about this interview my name is..... calling on behalf of Nielsen

As this is market research, it is carried out in compliance with the Privacy act and the information you provided will be used only for research purposes. Under the Privacy Act, you have the right to request access to the information you have provided.

Interviewer name: Date: Interviewer pay number: Interview Time

Start Time: Finish Time: Duration of Interview: