Sound Behavior Index – 2013 Survey Report

PUGET SOUND PARTNERSHIP

Prepared by PRR Inc.

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INTRODUCTION

I. Background and Purpose

The Puget Sound Partnership (PSP) is a small state agency leading a regional effort by citizens, private organizations, governments, tribes, scientists and businesses working together to restore and protect Puget Sound. In 2007, PSP was charged by the Governor and the Washington State Legislature to create an Action Agenda as a roadmap leading to the recovery of Puget Sound

Through its Stewardship Program, PSP supports regional and local citizen-based stewardship initiatives. The primary goal is to foster long-term changes in public attitudes and behavior as they relate to the health of Puget Sound waterways.

The program focuses on three primary objectives:

- To significantly advance public awareness and understanding of the issues facing Puget Sound, individual and cumulative impacts on the Sound's resources, and the public's ability to contribute to a sustained recovery effort.
- To cultivate broad-scale practices among Puget Sound residents that benefit Puget Sound and work to promote such behavior changes.
- To build social and institutional infrastructure to support broad-scale public engagement, foster stewardship, and advance specific beneficial practices and behaviors.

PRR was tasked with creating a Sound Behavior Index (SBI) that will serve as an ongoing measure for public adoption of a variety of practices that affect water quality and aquatic habitat and for informing PSP program development and to assess program outcomes. The SBI measures include behaviors pertaining to yard and garden care, motor vehicle maintenance, home maintenance, pet waste disposal, septic system maintenance, livestock practices and recreational vehicle maintenance.

The SBI survey was first conducted in 2012. This report presents the results of the second wave of the SBI survey in 2013, as well as comparisons to the 2012 survey.

II. Methodology Overview

PRR, in collaboration with PSP staff, worked to create the overall SBI survey instrument in 2011, which contained the SBI items and respondent demographics.

The 2013 survey was fielded between November 7th and December 27th among a random sample of residents from all 12 counties in the Puget Sound region. The sample was drawn from Random Digit Dialing, including both listed and unlisted landline phone numbers, and cell phones, including both cell-only and cell-mostly households. When it became evident that some younger age ranges (20-34) were

underrepresented, a listed sample targeted to 20-34 year olds was also used. In 2013, we had a minimum quota of 250 respondents per county. The final sample size was 3,131 respondents.

For analysis purposes, the data were weighted to match Census 2010 adult population age categories. We calculated two weights; one to adjust the data to report results broken out by county and the other to adjust the data to report results for all counties combined.

See Appendix A for full methodology details.

III. Sample Demographics Overview

Following are key sample demographics (see Appendix C for more detail):

- About half were male (49%) and half were female (51%), identical to Census 2010 data.
- Age distribution of respondents within counties and combined matched the census age demographics (when the data was weighted).
- Nine percent reported being Hispanic or Latino and a majority (84%) reported being White/Caucasian (including Hispanic/Latino), similar to Census 2010 data.
- Four fifths (82%) reported income above $35,000, similar to Census 2010.
- Political affiliation was evenly spread with the largest group being liberals (32%), followed by moderates (28%), and then conservatives (22%).
- Two thirds (67%) reported that they had lived in the Puget Sound region more than 20 years.
- More than three quarters (77%) reported owing their home, while about a fifth (23%) reported renting, similar to Census 2010 data.
- Over two fifths (42%) lived in 'suburban' areas, more than one quarter (26%) lived in 'urban' areas, one fifth (20%) lived in 'rural' areas, and a little under one tenth (9%) lived in 'rural changing to suburban' areas.

INDIVIDUAL BEHAVIOR RESULTS

In this section we present the results for each of the individual behaviors from the 2013 index for all twelve counties combined. Results for each behavior, broken out by county, can be found in Appendix D. In addition, comparison to the 2102 results are shown in each of the charts and any statistically significant differences between 2012 and 2013 are discussed in the body of the report.

Both positive and negative behaviors were assessed. Positive behaviors were practices that have a positive impact on water quality and aquatic habitat such as 'planting native plants in your lawn or garden' and behaviors that negatively impact water quality and aquatic habitat such as 'using weed and feed on your lawn.' We have identified the negative behaviors with an asterisk in each of the charts in this section of the report.

Yard and garden maintenance behaviors

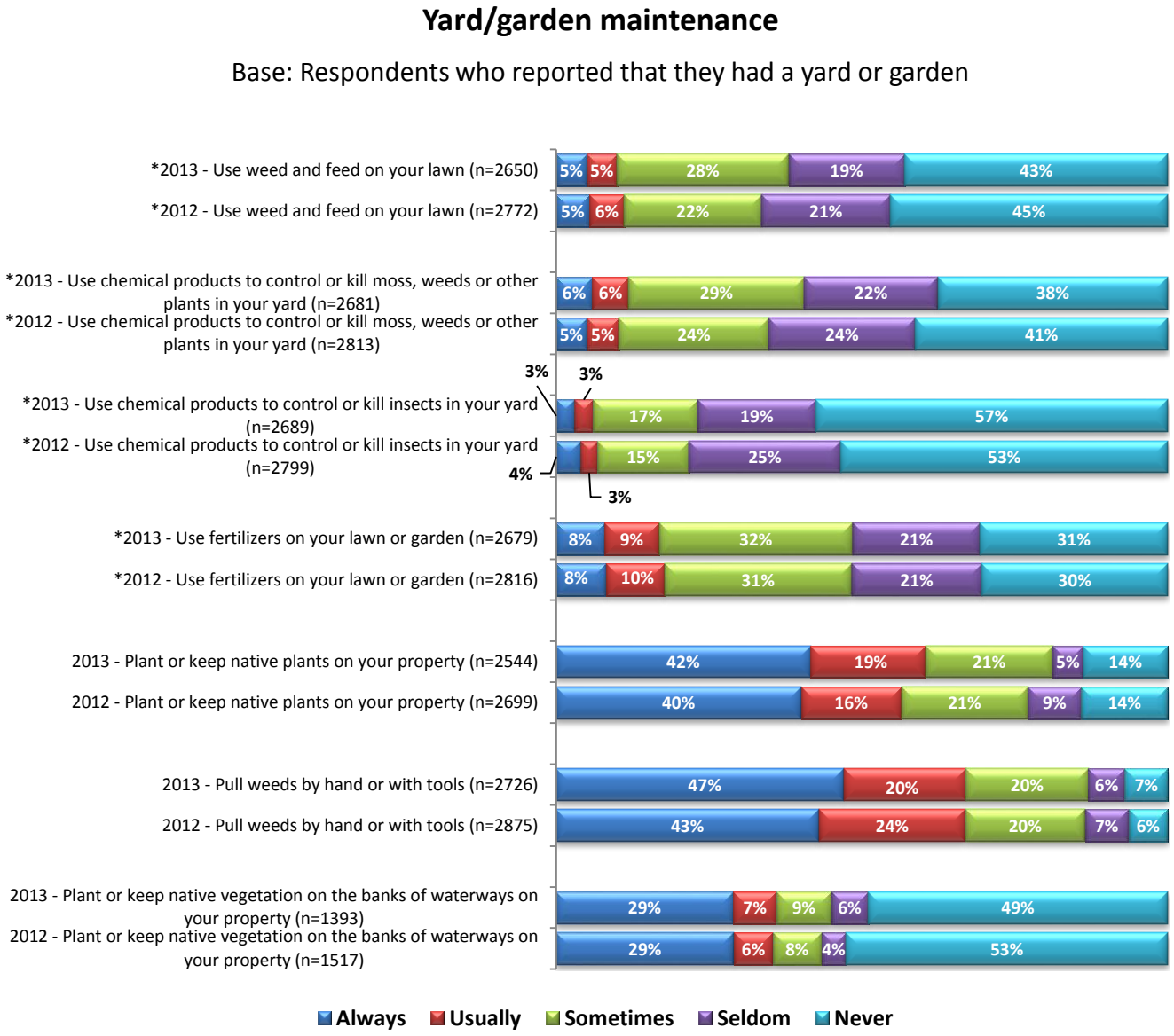
About three fifths (62%) reported that they never or seldom used weed and feed on their lawn nor used chemical products to kill moss, weeds or other plants (60%). Over three quarters (76%) reported that they never or seldom used chemical products to control or kill insects in their yard and over half (52%) reported that they never or seldom used fertilizers on their lawn or garden.

About three fifths (61%) reported that they always or usually planted or kept native plants on their property and two thirds (67%) always or usually pulled weeds by hand or used tools. For those with shoreline property, just over one third (36%) reported that they always or usually planted or kept native vegetation on the banks of waterways on their property.

Statistically significant changes from 2012 to 2013 included:

- An increase in the reported frequency of pulling weeds by hand.[1]

Figure 1: Yard/garden maintenance



Those who were more likely to report that they never or seldom used weed and feed were:

- Renters (72%) compared to homeowners (58%).[2]
- Residents who expected to be living in their community 5 years from now (62%) compared to those who do not (55%).[3]
- Residents who self-identified as very liberal (75%) or somewhat liberal (70%) compared to those who reported they were moderate (56%), very conservative (56%), or somewhat conservative (50%).[4]

- Residents who were Native Hawaiian or other Pacific Islander (66%), Black/African Americans (65%), White/Caucasians (63%), or American Indian or Alaska Natives (53%) compared to Asians (19%).[5]

Those who were more likely to report that they never or seldom used chemical products to control or kill moss, weeds or other plants in their yard were:

- Females (65%) compared to males (54%).[6]
- Renters (68%) compared to homeowners (58%).[7]
- Residents who self-identified as very liberal (77%) or somewhat liberal (68%) compared to those who reported they were somewhat conservative (60%), moderate (53%), or very conservative (51%).[8]
- Residents who were Black/African Americans (67%), White/Caucasians (61%), or Native Hawaiian or other Pacific Islanders (61%) compared to American Indian or Alaska Natives (39%) or Asians (34%).[9]
- Residents whose reported income was below $35,000 (79%) compared to those whose income was above $35,000 (59%).[10]

Those who were more likely to report that they never or seldom used fertilizers on their lawn or garden were:

- Residents from a Hispanic, Latino, or Spanish-speaking background (80%) compared to those who were not (75%).[11]
- Residents who were Black/African Americans (78%), White/Caucasians (78%), or American Indian or Alaska Natives (68%) compared to Asians (37%) or Native Hawaiian or other Pacific Islanders (25%).[12]

Those who were more likely to report that they never or seldom used fertilizers on their lawn or garden were:

- Renters (65%) compared to homeowners (48%).[13]
- Residents who did not expect to be living in their community 5 years from now (58%) compared to those who did (50%).[14]
- Residents from a Hispanic, Latino, or Spanish-speaking background (64%) compared to those who were not (50%).[15]
- Residents who were White/Caucasians (52%), Black/African Americans (48%), or American Indian or Alaska Natives (41%), compared to Native Hawaiian or other Pacific Islanders (29%) or Asians (22%).[16]
- Residents whose reported income was below $35,000 (68%) compared to those whose income was above $35,000 (50%).[17]

Those who were more likely to report that they always or usually planted or kept native vegetation on their property were:

- Females (62%) compared to males (59%).[18]
- Homeowners (64%) compared to renters (32%).[19]
- Residents with three-quarters of an acre or more (74%) compared to those with less than three-quarters of an acre (55%).[20]
- Residents whose reported income was above $35,000 (65%) compared to those whose income was below $35,000 (44%).[21]

Those who were more likely to report that they always or usually pulled weeds by hand or with tools were:

- Homeowners (69%) compared to renters (52%).[22]
- Residents who were Native Hawaiian or other Pacific Islanders (71%), White/Caucasians (67%), or Black/African Americans (64%) compared to American Indians or Alaska Natives (51%), or Asians (48%).[23]

Those who were more likely to report that they always or usually planted or kept native vegetation on the banks of waterways on their property were:

- Residents in San Juan (83%), Mason (56%), and Eastern Jefferson (56%) counties compared to residents in Whatcom (47%), Kitsap (42%), Clallam (41%), Skagit (39%), Snohomish (39%), Thurston (38%), King (34%), Pierce (28%), and Island (23%) counties.[24]
- Residents in rural changing to suburban (54%) and rural (43%) areas, compared to those in suburban (32%) and urban (31%) areas.[25]
- Homeowners (41%) compared to renters (19%).[26]
- Residents whose property was about half an acre or more (47%) compared to those whose property was less than half an acre (26%).[27]
- Residents who did expect to be living in their community 5 years from now (39%) compared to those who did not (18%).[28]
- Residents with twelve years or more of education (37%) compared to those with less than twelve years (23%).[29]
- Residents whose reported income was above $35,000 (39%) compared to those whose income was below $35,000 (28%).[30]

Vehicle maintenance behaviors

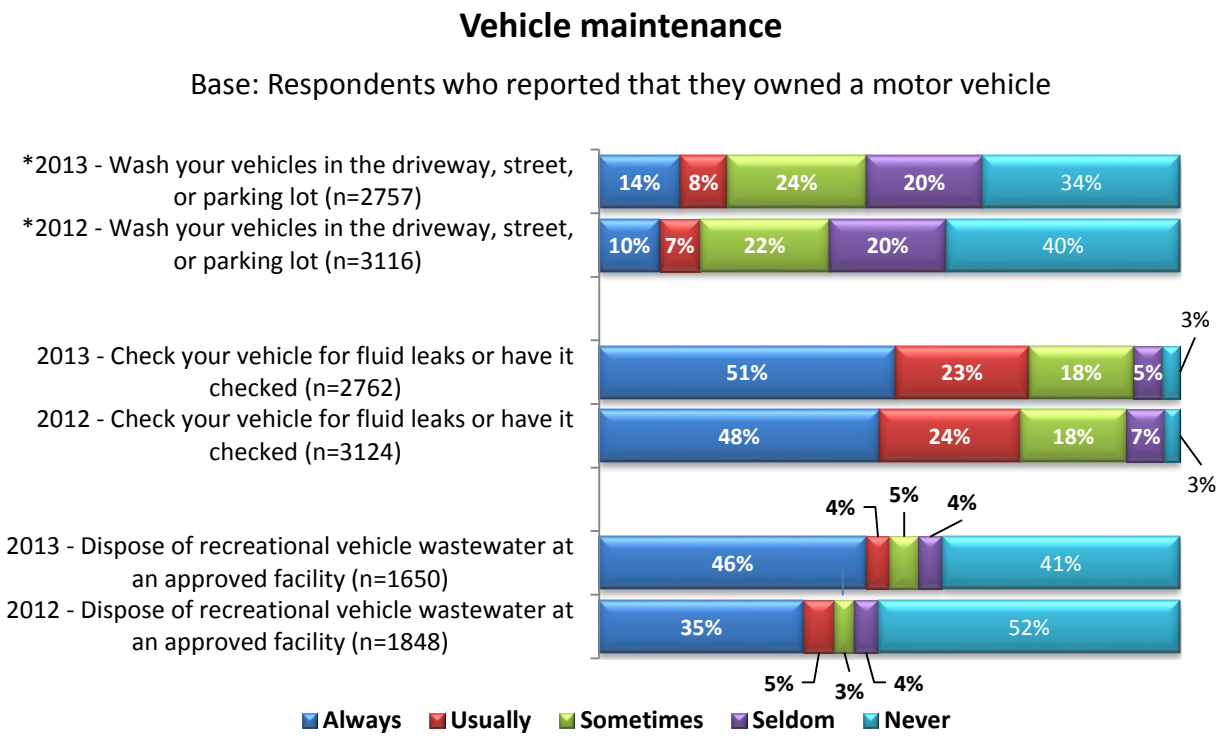
Of those who reported that they had a motor vehicle, more than a fifth (22%) reported that they always or usually wash their vehicles in their driveway, street or parking lot. Almost three quarters (74%) reported that they always or usually check their vehicle for fluid leaks and half (50%) reported that they always or usually dispose of recreational vehicle wastewater at an approved facility.

Statistically significant changes from 2012 to 2013 included:

- An increase in the reported frequency of washing vehicles in the driveway, street, or parking lot.[31]

- An increase in the reported frequency of disposing of recreational vehicle wastewater at an approved facility.[32]

Figure 2: Vehicle maintenance



Those who were more likely to report that they always or usually washed their vehicles in the driveway, street or parking lot were:

- Residents in rural (30%) and rural changing to suburban (30%) areas compared to suburban (17%) and urban (18%) areas.[33]
- Homeowners (22%) compared to renters (18%).[34]
- Residents who self-identified as very conservative (25%), somewhat conservative (25%), or moderate (21%) compared to somewhat liberal (19%) or very liberal (12%).[35]

Those who were more likely to report that they always or usually checked their vehicle for fluid leaks or had it checked were:

- Residents who self-identified as moderate (80%) or somewhat liberal (77%) compared to very conservative (73%), somewhat conservative (70%), or very liberal (64%).[36]
- Residents who were Black/African Americans (84%) or Asian (77%) compared to White/Caucasians (74%), American Indians or Alaska Natives (74%), or Native Hawaiian or other Pacific Islanders (57%).[37]

- Residents whose reported income was below $35,000 (78%) compared to those whose income was above $35,000 (74%).[38]

Those who were more likely to report that they always or usually disposed of recreational vehicle wastewater at an approved facility were:

- Residents in rural changing to suburban (61%) or rural (50%) areas compared to those in suburban (43%) or urban (38%) areas.[39]
- Residents who self-identified as very liberal (49%) or very conservative (48%) compared to moderate (45%), somewhat liberal (44%), or somewhat conservative (36%).[40]
- Residents who were Asian (52%) or White/Caucasian (45%) compared to Black/African Americans (37%), Native Hawaiian or other Pacific Islanders (32%), or American Indians or Alaska Natives (29%).[41]
- Residents whose reported income was above $35,000 (45%) compared to those whose income was below $35,000 (32%).[42]

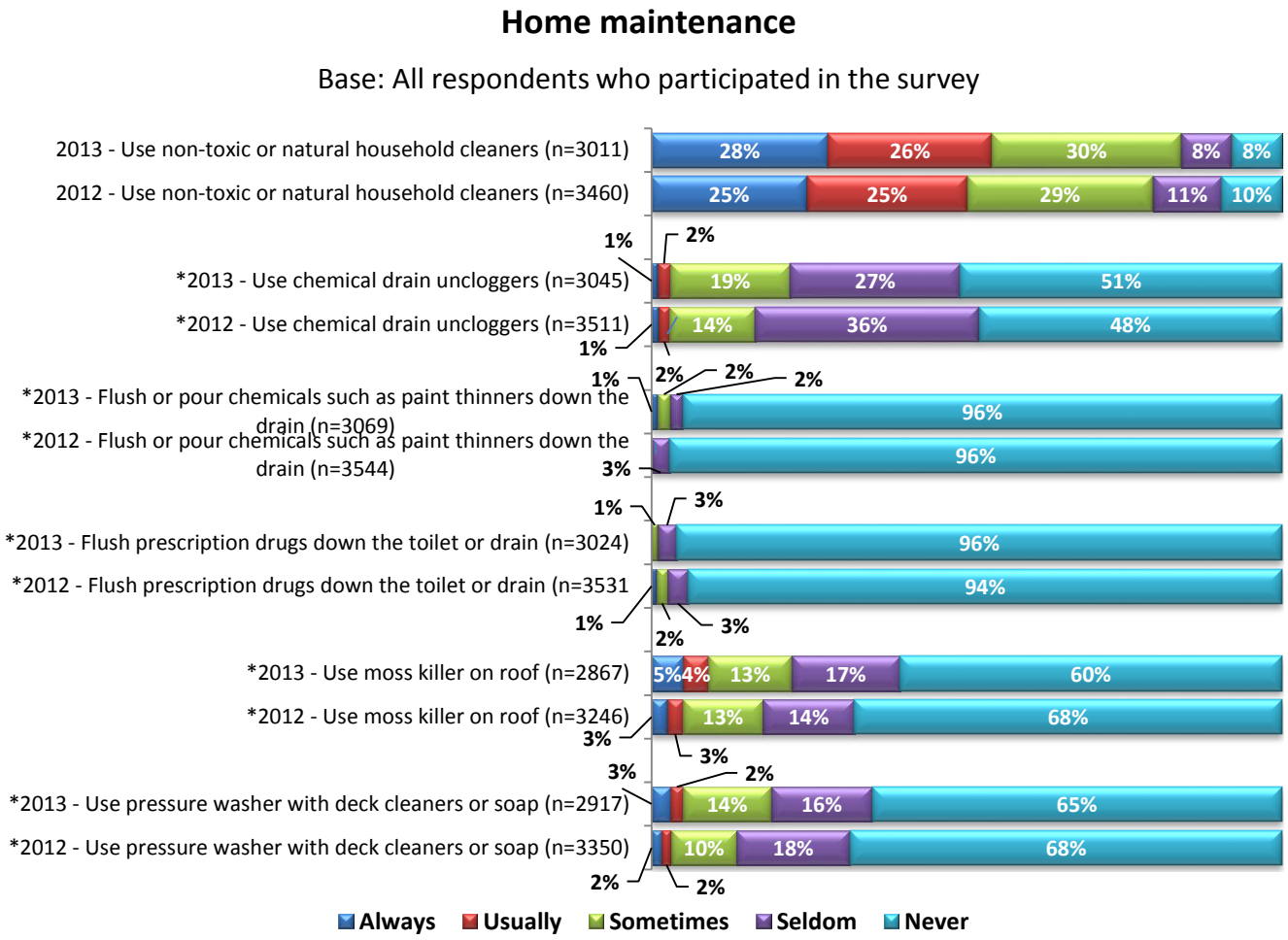
Home maintenance behaviors

Respondents were asked how often they engaged in various activities during the maintenance of their homes. Most respondents reported that they never flushed or poured chemicals down the drain (96%), flushed prescription drugs down the toilet (96%), used moss killer on their roofs (60%), or used a pressure washer with deck cleaners or soap (65%). Just over half (518%) reported that they never used chemical drain uncloggers. More than half (54%) reported that they always or usually used non-toxic or natural household cleaners.

Statistically significant changes from 2012 to 2013 included:

- A decrease in the reported frequency of using chemical drain uncloggers.[43]
- A decrease in the reported frequency of flushing or pouring chemicals down the drain such as paint thinners.[44]
- A decrease in the reported frequency of flushing of prescription drugs down the toilet or drain.[45]
- A decrease in the reported frequency of using moss killer on the roof.[46]
- An increase in the reported frequency of using pressure washers with deck cleaners or soap.[47]

Figure 3: Home maintenance



Those who were most likely to report that they always or usually used non-toxic or natural household cleaners were:

- Residents in urban (61%) compared to rural (54%), suburban (53%), or rural changing to suburban (47%).[48]
- Homeowners (53%) compared to renters (44%).[49]

Those who were most likely to report that they never or seldom used chemical drain uncloggers were:

- Residents who expect to be living in their community five years from now (79%) compared to those who do not (72%).[50]
- Residents from a Hispanic, Latino, or Spanish-speaking background (86%) compared to those who were not (77%).[51]

Those who were more likely to report that they never or seldom flush or pour chemicals such as paint thinners down the drain were:

- Women (99%) compared to men (96%).[52]
- Residents in urban (95%) compared to suburban (100%), rural (98%), or rural changing to suburban (97%).[53]
- Residents who expect to be living in their community five years from now (98%) compared to those who do not (94%).[54]
- Residents who were Asian (100%), Black/African Americans (100%), White/Caucasian (98%), or Native Hawaiian or other Pacific Islanders (95%) compared to American Indians or Alaska Natives (84%).[55]

Those who were more likely to report that they never or seldom used moss killer on their roof were:

- Renters (86%) compared to homeowners (75%).[56]
- Residents whose property was less than a quarter acre (86%) compared to those whose property was a quarter of an acre or more (72%).[57]
- Residents from a Hispanic, Latino, or Spanish-speaking background (83%) compared to those who were not (76%).[58]
- Residents who were Asian (98%), Black/African Americans (77%), or White/Caucasian (77%) compared to American Indians or Alaska Natives (65%) or Native Hawaiian or other Pacific Islanders (57%).[59]
- Residents with incomes below $35,000 (90%) compared to those whose income was above $35,000 (76%).[60]

Those who were more likely to report that they never or seldom used a pressure washer with deck cleaners or soap were:

- Renters (87%) compared to homeowners (80%).[61]
- Residents with incomes below $35,000 (86%) compared to those whose income was above $35,000 (80%).[62]

Pet waste disposal behaviors

Of those who reported having a dog, almost half (48%) reported that they always (41%) or usually (7%) picked up their dogs waste from their yard. However, a third (33%) reported that they never did so.

Two thirds (66%) reported that they always placed their dogs waste in the trash, while only a tenth (10%) reported that they never did so.

Statistically significant changes from 2012 to 2013 included:

- An increase in the reported frequency of placing dog waste in the trash.[63]

Figure 4: Pet waste disposal

Those who were more likely to report that they always or usually picked up their dog's waste from their yard were:

- Residents in King (85%), Snohomish (76%), Pierce (74%), Island (74%), and Whatcom (71%) counties compared to Skagit (68%), Clallam (65%), Thurston (64%), Eastern Jefferson (63%), Mason (62%), Kitsap (61%), or San Juan (50%).[64]
- Residents in suburban (83%) or urban (80%) areas compared to those in rural changing to suburban (69%) or rural (68%) areas.[65]
- Renters (81%) compared to homeowners (76%).[66]
- Residents whose property was less than three quarters an acre (88%) compared to those who had three quarters an acre or more (74%).[67]
- Residents who do not expect to be living in their community five years from now (82%) compared to those who do (75%).[68]
- Residents from a Hispanic, Latino, or Spanish-speaking background (86%) compared to those who were not (77%).[69]
- Residents with incomes above $35,000 (79%) compared to those whose income was above $35,000 (72%).[70]

Those who were more likely to report that they always or usually placed dog waste in the trash were:

- Females (53%) compared to males (42%)[71]

- Residents in Pierce (54%), Snohomish (53%), Whatcom (51%), Thurston (51%), or Island (50%) counties compared to Clallam (46%), King (45%), Kitsap (45%), Skagit (39%), Eastern Jefferson (38%), Mason (34%), or San Juan (33%).[72]
- Residents who had lived in their county for 6-10 years (66%) or less than 2 years (62%) compared to those who had lived in their county for 2-5 years (42%), 11-20 years (50%), and more than 20 years (42%).[73]
- Residents in urban (53%), suburban (50%), or rural changing to suburban (50%) compared to rural (32%) areas.[74]
- Renters (52%) compared to homeowners (47%).[75]
- Residents whose property was less than a half-acre (61%) compared to those whose property was half an acre or more (30%).[76]
- Residents who self-identified as very liberal (61%), somewhat liberal (54%), or very conservative (53%) compared to somewhat conservative (45%) or moderate (44%).[77]
- Residents who are not from a Hispanic, Latino, or Spanish-speaking background (49%) compared to those who were (39%).[78]
- Residents with incomes below $35,000 (51%) compared to those whose income was above $35,000 (48%).[79]

Septic system maintenance behaviors

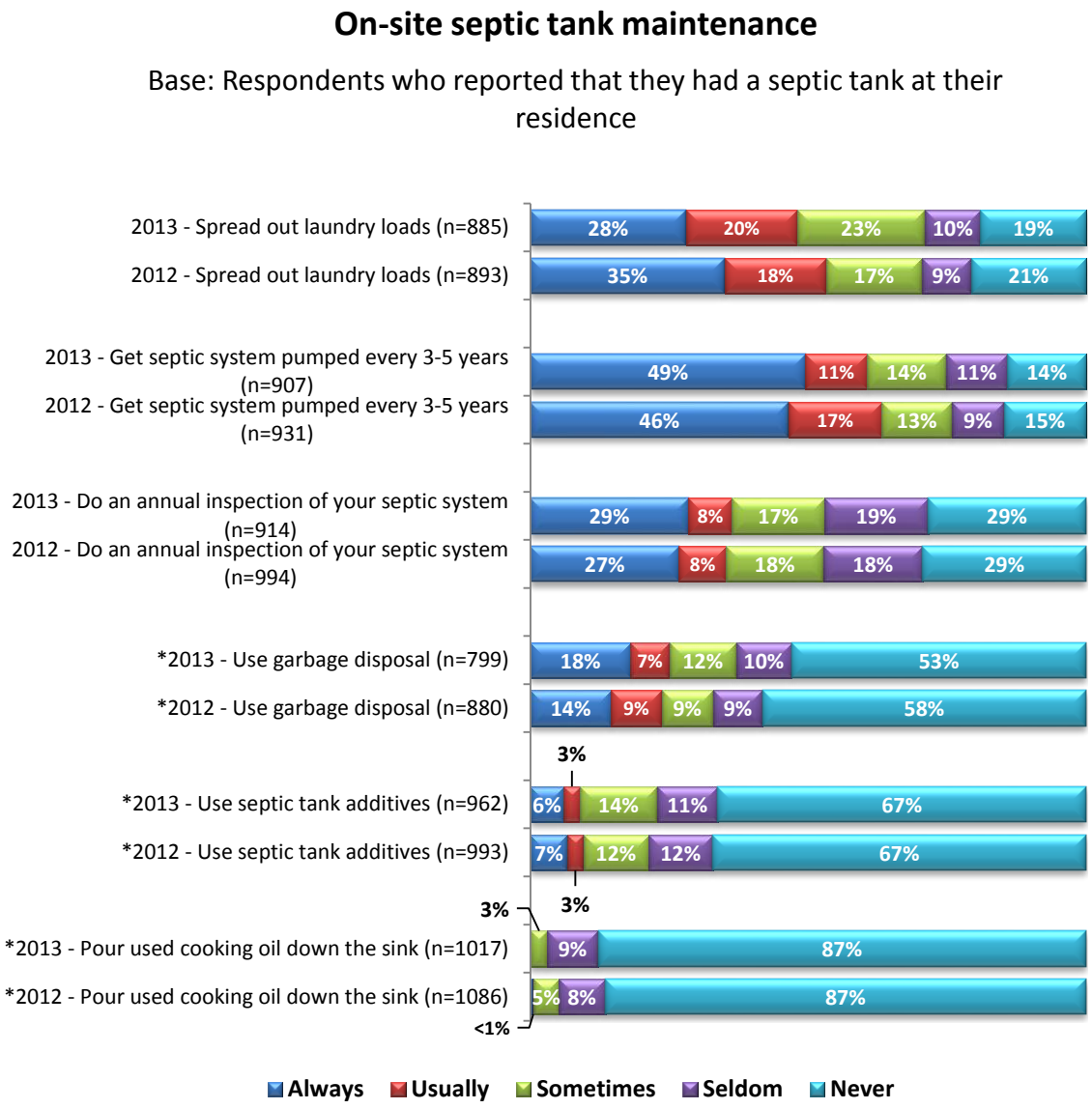
Of those who reported that they had septic tanks, the majority reported that they never used the garbage disposal (53%), used septic tank additives (67%), or poured used cooking oil down the sink (87%).

Many also reported always or usually spreading out their laundry loads (48%) and getting their septic tank pumped every three to five years (60%). A little more than a third (37%) reported getting their septic system inspected annually.

Statistically significant changes from 2012 to 2013 included:

- A decrease in the reported frequency of spreading out laundry loads.[80]

Figure 5: On-site septic system maintenance



Those who were more likely to report that they always or usually spread out laundry loads were:

- Females (54%) compared to males (42%).[81]
- Residents who had lived in their county six of more years (51%) compared to those who had lived in their county less than six years (38%).[82]
- Residents who own their homes (51%) compared to those that rent (44%).[83]
- Residents who expect to be living in their community five years from now (52%) compared to those who do not (31%).[84]
- Residents who self-identified as somewhat conservative (62%), somewhat liberal (54%), or moderate (51%) compared to very liberal (46%) or very conservative (40%).[85]

- Residents who were from a Hispanic, Latino, or Spanish-speaking background (65%) compared to those who were not (49%).[86]

Those who were more likely to report that they always or usually got their septic tank pumped out every 3 to 5 years were:

- Residents in Thurston (73%), Island (70%), or Mason (68%) counties compared to San Juan (63%), Kitsap (62%), Snohomish (61%), King (61%), Skagit (60%), Eastern Jefferson (60%), Whatcom (59%), Clallam (59%), or Pierce (46%).[87]
- Residents in rural (62%) or suburban (60%) compared to rural changing to suburban (55%) or urban (50%) areas.[88]
- Renters (68%) compared to homeowners (59%).[89]
- Residents who were from a Hispanic, Latino, or Spanish-speaking background (78%) compared to those who were not (59%).[90]
- Residents with incomes above $35,000 (60%) compared to those whose income was below $35,000 (53%).[91]

Those who were more likely to report always or usually getting their septic system inspected annually were:

- Males (40%) compared to females (30%).[92]
- Residents in San Juan (63%) or Island (62%) counties, compared to Skagit (50%), Eastern Jefferson (50%), Thurston (46%), Mason (42%), Whatcom (42%), Clallam (39%), Snohomish (36%), Pierce (34%), Kitsap (34%), or King (21%).[93]
- Residents in rural (40%) or rural changing to suburban (35%) compared to urban (32%) or suburban (22%) areas.[94]
- Renters (40%) compared to homeowners (34%). [95]
- Residents who self-identified as somewhat conservative (44%) compared somewhat liberal (32%), moderate (31%), very liberal (30%), or very conservative (30%).[96]
- Residents who were from a Hispanic, Latino, or Spanish-speaking background (53%) compared to those who were not (35%).[97]
- Residents with incomes above $35,000 (36%) compared to those whose income was below $35,000 (24%).[98]

Those who were more likely to report never or seldom using the garbage disposal were:

- Males (66%) compared to females (60%).[99]
- Residents who own their homes (63%) compared to those that rent (57%).[100]
- Residents who expect to be living in their community five years from now (65%) compared to those who do not (59%).[101]
- Residents who self-identified as somewhat conservative (70%) or very liberal (69%) compared to somewhat liberal (63%), moderate (62%), or very liberal (52%).[102]

- Residents who were not from a Hispanic, Latino, or Spanish-speaking background (64%) compared to those who were (37%).[103]
- Residents with incomes below $35,000 (74%) compared to those whose income was above $35,000 (62%).[104]

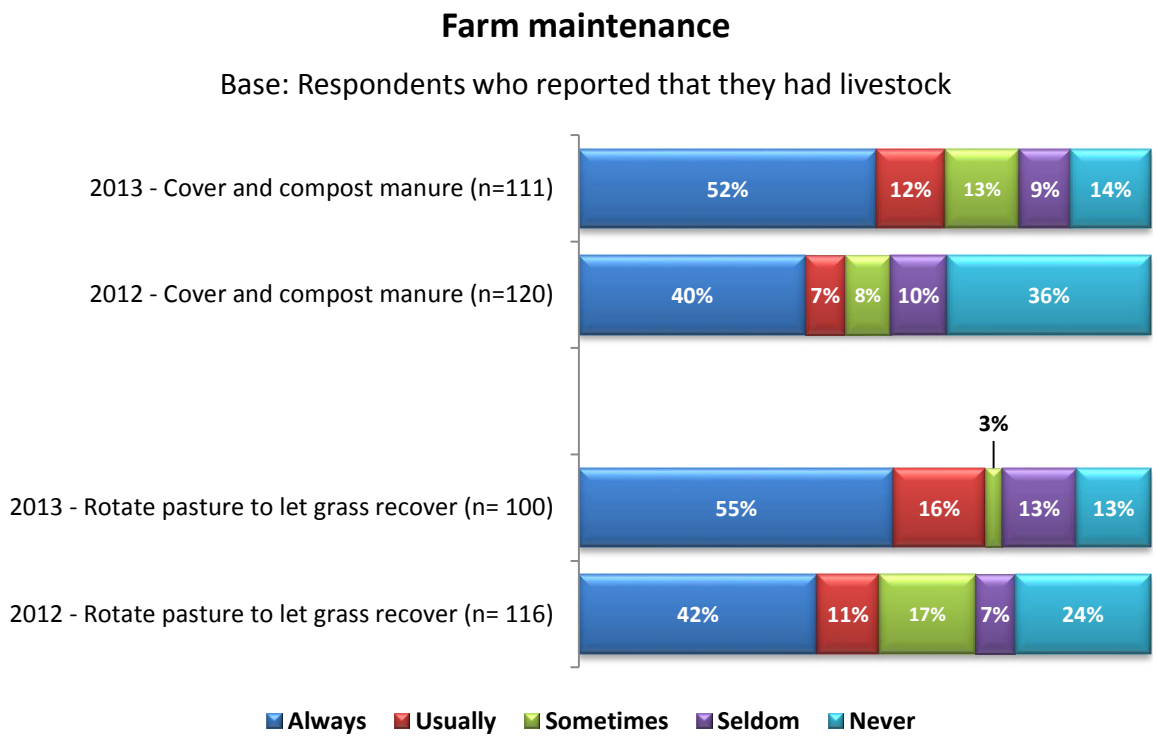
Those who were more likely to report that they never or seldom used septic tank additives were:

- Residents in rural (83%) or rural changing to suburban (81%) compared to suburban (78%) or urban (67%).[105]
- Residents who own their homes (63%) compared to those that rent (57%).[106]
- Residents who self-identified as very liberal (89%), somewhat liberal (82%), or moderate (82%) compared to somewhat conservative (75%) or very conservative (68%).[107]
- Residents who were not from a Hispanic, Latino, or Spanish-speaking background (81%) compared to those who were (54%).[108]

Livestock owner behaviors

Of those who reported that they own livestock, almost half (48%) reported that they always (52%) or usually (12%) cover and compost manure, and almost three quarters (71%) reported that they always (55%) or usually (16%) rotated pasture to let grass recover. Although there were many who reported these positive behaviors, there were still those who reported never covering and composting manure (14%) or rotating pasture (13%).

Figure 6: Farm maintenance



Those who were more likely to report that they covered and composted manure were:

- Residents in urban (99%) areas compared to those in rural (57%), suburban (54%), or rural changing to suburban (32%) areas.[109]

Those who were more likely to report that they always or usually cover and compost manure were:

- Homeowners (67%) compared to renters (31%).[110]
- Residents who do not expect to be living in their community five years from now (91%) compared to those who do (57%).[111]

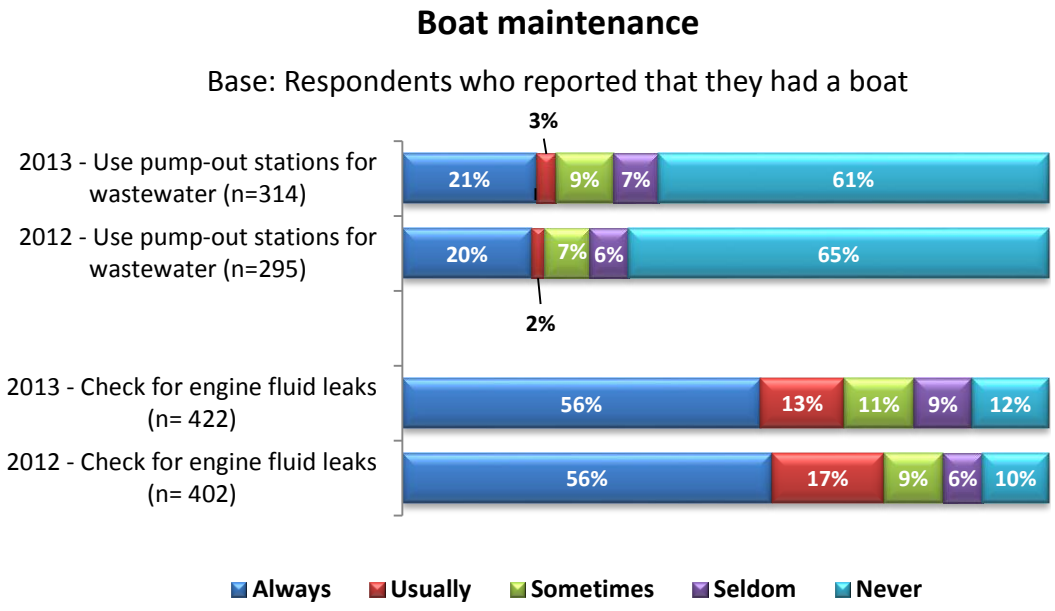
Those who were more likely to report that they always or usually rotated pasture to let grass recover were:

- Males (73%) compared to females (68%).[112]
- Residents who do not expect to be living in their community five years from now (74%) compared to those who do (70%).[113]

Boat owner behaviors

Of those who reported that they own a boat, more than two thirds (69%) reported that they always (56%) or usually (13%) checked for engine fluid leaks. However, a majority (68%) of respondents reported that they never used pump-out stations—only about one fifth (21%) reported that they used pump out stations for the wastewater from their boats.

Figure 7: Boat maintenance



Those who were more likely to report that they usually or always use pump-out stations for wastewater were:

- Women (26%) compared to men (22%).[114]
- Residents in urban (34%) or rural changing to suburban (30%) areas compared to suburban (21%) or urban (17%) areas.[115]
- Homeowners (26%) compared to renters (4%). [116]
- Residents who self-identified as somewhat conservative (39%) or very liberal (33%) compared to moderate (23%), somewhat liberal (16%), or very conservative (11%).[117]

Those who were more likely to report that they usually or always check for engine fluid leaks were:

- Men (75%) compared to women (59%).[118]
- Residents in rural changing to suburban (82%) or rural (71%) areas compared to suburban (65%) or urban (65%) areas.[119]
- Homeowners (69%) compared to renters (47%). [120]
- Residents who expect to be living in their community five years from now (72%) compared to those who do not (62%).[121]
- Residents who self-identified as moderate (78%) or very liberal (76%) compared to very conservative (66%), somewhat conservative (59%), or somewhat liberal (46%).[122]

SOUND BEHAVIOR INDEX RESULTS

The Sound Behavior Index (SBI) was created by application of statistical procedures to the survey questions relevant to the SBI. In this section we present the 2013 results and compare these to the 2012 results. The technical details of the construction of the SBI itself are presented in Appendix E.

The Sound Behavior Index is a comprehensive measure that joins many individual survey question responses into a single indicator. This requires statistical procedures, and managing missing and ambiguous responses. This has to be done in a manner that does not bar too many responses from being included in the computation of the Index. This is especially important given the need to disaggregate the SBI to the county level.

Since there are alternative means of addressing missing data problems, there are alternative SBI models possible. In this section, we report only the SBI results using the approach that the Puget Sound Partnership identified in 2012 as serving best the goals and needs of the project. The results reported here rely on the same methods for imputing missing responses and clustering of selected, correlated variables as in 2012. A small number of related variables were combined on the basis of their correlations being very high.

Numerical Value of the 2013 Sound Behavior Index

The 2012 value of the SBI for the entire, 12-county region was transformed to equal 1.0 to conform to the typical starting point convention for a new index construct. Deviations from 1.0 in the index value for subsequent years are intended to indicate whether the underlying behaviors in the population have improved (yielding an SBI value greater than 1.0) or deteriorated (an SBI value less than 1.0) relative to the 2012 base year. County-level SBIs conform to the same indexing convention (i.e., deviations from 1.0 reflect differences relative to the regional index from 2012).

The county-level SBIs are constructed from the values computed for each respondent in the county. Examining SBI values by county provides some guidance regarding the comparative environmental behavior of the twelve counties sampled. However, not all types of behavior are relevant to every county, and county comparisons should be tempered by that fact. For example, counties with limited opportunities to engage in some behaviors (raise livestock, own a boat, own a septic system, etc.) will have increased or decreased index values due to the lack of relevance of some survey questions. Such behaviors were scored as environmentally friendly since their absence was considered beneficial to the environment.

Since the 2012 survey was the first opportunity to survey the behaviors that constitute the SBI, the sampling approach and sample sizes were necessarily exploratory. With the results of the 2013 survey in hand, we now have information to guide further refinement of the survey and approach. In particular, since the 2013 survey obtained responses from a completely new panel of respondents, we now have insight into future refinements of the survey that can improve the reliability of the SBI over time. In particular, the 2013 survey revealed the extent to which there can be changes in responses as a result of variation in the individuals sampled versus changes in population behavior *per se*.

For example, the 2013 regional SBI is 0.747, lower than the 2012 baseline of 1.0. As noted above, however, this change is a composite of true changes in underlying population behavior as well as differences attributable simply to changes in the characteristics of the specific sample of respondents. Although it is not possible to establish precisely the relative importance of these two sources of change, the size of the change is large given that many of the drivers of behavior (lawn and boat ownership, etc.) are unlikely to have changed materially over the course of a year. In addition, some of the 2013 response patterns differ from those of 2012 in ways that cannot reasonably reflect true changes in circumstances for the population of individual counties or in some cases the region as a whole. For example, the share of King County respondents reporting having a garden or lawn was 76% in 2012 and 90% in 2013. Applying the survey weights, these responses imply that 75% of King County residents had a lawn or garden in 2012, increasing to 85% in 2013. Here, too, it seems implausible that all of the difference reflects a true change in behavior in King County.

The likelihood that sampling variation is playing a role in the changes in the SBI between 2012 and 2013 is also suggested by observable differences in the demographic characteristics of the two samples. Such differences can have a large influence on the SBI calculations, especially if they lead to differences in behavior related to lawn or garden care, since individuals who report not having a lawn or garden are assumed to have the "best" behavior. To the extent that the effects of sampling variation are manifest in differences in demographics and responses to the so-called opportunity questions, we can adjust for sampling variation to some degree. For example, to adjust for differences in opportunity conditions between the two sample years (e.g., "Do you have a lawn or garden?"; "Do you have a motor vehicle?"), we can calculate an "adjusted SBI" that provides an estimate of what the 2013 SBI would have been if 2013 demographics and response to the opportunity questions had matched those of 2012. This estimate implicitly assumes that sampling variability caused all observed changes in opportunity. In reality, some portion of these changes reflects true change in circumstances and behavior. We attribute the remaining difference between 2012 and 2013 SBI to a combination of true behavioral change and residual sampling variability. In addition, we provide estimated confidence intervals for the 2013 SBI estimates based on the distribution of individual respondent SBI scores. The 2013 Adjusted SBI for the region is 0.83.

Figure 8 shows the 2012 SBI (blue bar), the 2013 SBI (red bar), and the estimated 2013 confidence interval for each county and for the region as a whole. Figure 9 shows similar information, but replaces the 2013 SBI with the Adjusted 2013 SBI described above.

Figure 8: 2012 and 2013 SBI Values for the Region and by County

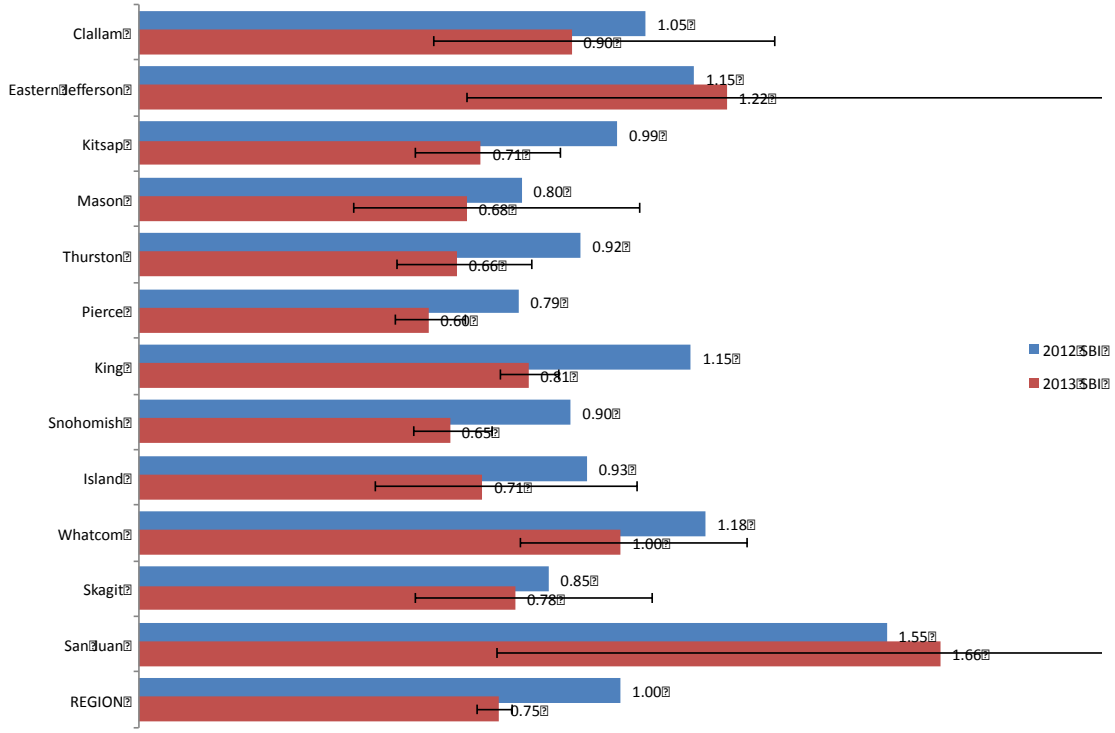
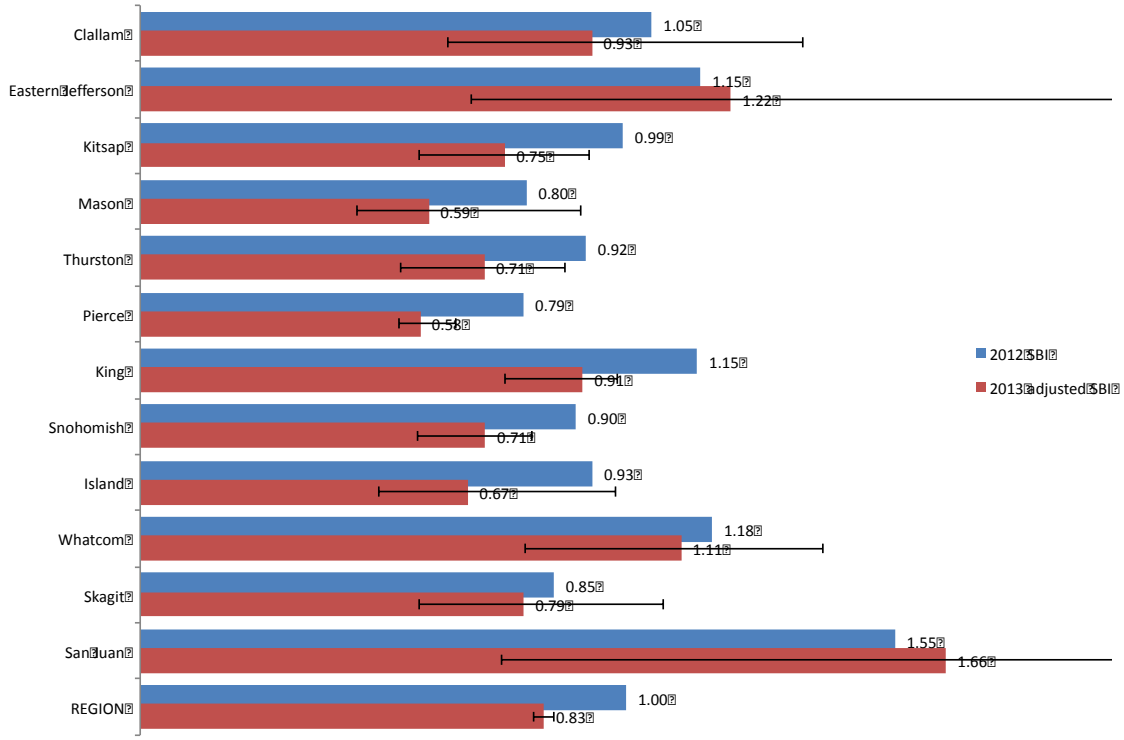


Figure 9: 2012 and Adjusted 2013 SBI Values for the Region and by County



The figures lead to two important conclusions. First, the nominal (unadjusted) SBI values declined considerably in 2013. Only two counties showed an increase (San Juan and Eastern Jefferson). The Adjusted SBI values are generally higher, but still below the 2012 values for most counties. Second, the estimated confidence intervals are quite wide relative to the change in SBI values. In other words, for most counties, the observed changes within since 2012 could be due primarily to chance.[1] The regional confidence interval is much narrower, suggesting a decline in the SBI for the region as a whole, assuming any residual sampling variation *per se* has an innocuous, perfectly random influence.

Demographics and the Sound Behavior Index

Since some respondent demographic information was collected along with the Sound Behavior Index information, the ability of demographics to predict SBI scores was examined. It would be convenient, and could potentially reduce the need for periodic SBI surveys and worries about sampling variation, if regional demographic characteristics corresponded to SBI scores at the individual respondent level.

Through a series of cross-tabulations at the county level, particular demographics were found to be significantly correlated with higher Sound Behavior Index (SBI) scores. Table 1 shows which variables are associated with higher SBI scores at the county level. (See Appendix F for each of these variables presented separately with footnotes to accompanying correlation coefficients.)

Table 1: Variables Related to Higher SBI Scores by County

Characteristics more likely to be associated with higher SBI scores for the counties indicated with an X.												
	Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Females				X	X							X
Lived fewer years in county						X	X			X		X
More urban area	X				X	X	X			X		
Fewer children under 18	X									X		
More children under 18								X			X	
Rent home	X				X	X	X	X			X	
Smaller property	X	X			X	X	X			X	X	X
Lived more years in Puget Sound					X							
More years of education									X			
Fewer years of education								X				
More liberal political views	X				X		X			X	X	X
More conservative political views								X				
Hispanic/Latino background							X	X				
Non-white race	X					X	X					
Lower income	X	X	X		X	X	X	X	X	X	X	X
Younger age								X				X
Older age	X								X			

[1] We do not show confidence intervals for the 2012 SBI values. The ranges encompassed by 2012 and 2013 confidence intervals would overlap considerably for all counties individually.

The relationship between respondent demographics and SBI scores was also explored by use of multiple regression techniques, a widely used method for associating a large number of factors with one primary factor or behavior of interest. The regression results suggest:

1. The demographic variables do not explain, with confidence, variation in Sound Behavior Index values among respondents. In general, less than 25 percent of the index variation can be explained by demographic factors. In our view, this confirms the need to make SBI tracking a periodic event, if overall progress in the behaviors of interest is to be measured accurately.
2. This finding is independent of the formulation of the regression analysis. Numerous formulations, of varying complexity and mathematical form were examined, without finding a reliable method of forecasting respondent behavior indirectly.
3. Relatively few demographic variables displayed a statistically significant influence on the respondents' reported behavior, using a 95% confidence interval as the criterion.

Demographic factors that were significantly related to a lower Sound Behavior Index score (everything else being equal) include:

1. Reported ethnicity of White/Caucasian
2. Reported incomes from $75, 000 through "greater than $200,000"
3. Reported political orientations of Very conservative, Conservative, and Moderate. (Liberal and Very Liberal also displayed negative associations with the SBI score, but were not significant.)
4. Suburban, Rural/suburban, and Rural locations. (Urban location also has a negative score, but is not statistically significant.)
5. The number of children in the household enhances negative behavior reporting.
6. Number of years lived in the county.

Demographic factors that were significantly related to a higher Sound Behavior Index score include:

1. Home renting and 'no home'. Owning a home is positively associated, but of low statistical significance.
2. Higher age
3. Income less than $10,000

Indicator variables for the individual counties, by themselves, showed no significant statistical association with reported SBI scores, nor did they improve the modeling when interacted with the non-county variables.

These findings, as a whole, suggest that established, well-to-do, white families with children may encounter greater opportunities to perform imperfectly, as regards to Sound Behavior. That is, they likely have a higher probability of having lawns, horses, boats, dogs, and engaging in boating and other activities that produce behaviors adverse to water quality.

Less resourced families, if placed in the same situations, might behave the same or worse. However, because the irrelevance of an activity to a particular respondent is scored as if they never perform the

offending activity, these respondents are measured as performing (relatively) better than families with a wider range of opportunities. The regression results are displayed in Appendix E.

Implications for Future SBI Sampling

Developing an index that is consistently measured and meaningful over time requires observation of the index and its components over time, and adjustment of measurement techniques as opportunities for improvement arise. For example, the famous Conference Board's "Business Cycle Indicators" were refined for more than a decade before the three indices were considered fully refined in the 1960s.[2] Analogously, the 2012 and 2013 SBI efforts suggest that there is may be an opportunity to improve the year-to-year utility of the SBI by reducing sampling variance.

As noted earlier, sampling variance occurs when drawing a new sample (e.g., conducting a new survey) results in a sample of respondents that is less than fully representative of the population of interest. This is a common problem in sample design because, ironically, one needs to know something about the distribution of behaviors in the population before one use a formulaic approach to the sample design and size. This is fundamentally why efforts like index development tend to be evolutionary processes.

In the case of the SBI, the "noisiness" of data that sampling variance creates can be dealt with easily without changing the basic elements or approach of the SBI. There are three, basic approaches:

1. Use of a larger sample size. This is the brute force solution to sampling variance. By definition, a randomly drawn sample better represents the behavior of the population as a whole the larger is the sample drawn. The challenge of this approach (and the reason that the SBI has not employed larger samples) is that sampling is costly. Although doubling of a sample size approximately quadruples the statistical "power" of an analysis using the data, the budgetary burden is never trivial.
2. Collection of more "control" variables. If there are demographic or variables that are statistical surrogates for respondent behavior to some degree, such variables can be used in a regression setting to control (correct) for non-representative draws from the population. The SBI work already employs this approach with some success, however, and it is not clear *a priori* what demographic or other control measures could be usefully added.
3. Use of a rolling panel survey. One way to isolate changes in behavior from changes in the respondents being studied is to have a semi-fixed "panel" of individuals who are queried in each survey cycle. Because over time individuals move away, lose interest in participating, age, etc., the panel needs to be refreshed periodically by random draws from the greater population to remain representative. There are offsetting budgetary implications of such an approach. On the one hand, the fixity of the panel allows for more economical and reliable outreach (using non-intrusive Web-based tools, for example). However, refreshing the sample in a manner that

[2] The general approach, the so-called "economic 'indicator approach", was developed at the National Bureau of Economic Research (NBER) in the 1950s under the supervision of economist Geoffrey Moore, drawing on the prior work in the 1930s and 1940s by Arthur Burns and Wesley Mitchell of the NBER. Moore developed the notion of leading, lagging and coincident business-cycle indices. The Conference Board BCI approach has been in place since the 1960s.

keeps the composition of the panel representative (in some broad, demographic sense) is not a costly exercise. It usually involves a coarse screening process that inevitably must reject many people to get the right sample balance.

On balance, the third option seems the most cost-effective, since it jointly improves sampling consistency with a budget impact that is unlikely to be larger than drawing a new sample.

APPENDIX A: DETAILED METHODOLOGY

Survey question development

PRR in collaboration with PSP staff worked to create the overall survey instrument, which contained the SBI items, as well as respondent demographics.

Sound Behavior Index - A preliminary list of questions for the SBI came from several sources:

1. Literature review
2. Questions from previous surveys conducted by PRR
3. A list of priority behaviors provided by the Puget Sound Partnership
4. A stormwater behavior prioritization developed by STORM (Stormwater Outreach for Regional Municipalities)
5. King County's Environmental Behavior Index

A list of behaviors for the index was created from these sources. The SBI was reviewed by PSP for item appropriateness and inclusiveness. Through an iterative process, we reduced the original number of items to a list that focused on the most important issues at a household scale that impact water quality and habitat, as well as eliminating ambiguous and/or repetitive behaviors. The final list of 28 behaviors across the following topic areas included:

- Yard and garden care (7 items)
- Motor vehicles (3 items)
- Home maintenance (6 items)
- Pet waste (2 items)
- Septic systems (6 items)
- Livestock practices (2 items)
- Boat practices (2 items)

The index includes both positive and negative behaviors. Positive behaviors were practices that have a positive impact on water quality and aquatic habitat such as 'planting native plants in your lawn or garden' and behaviors that negatively impact water quality and aquatic habitat such as 'using weed and feed on your lawn.'

Participants responded to each item in the SBI based on the frequency (on a scale) with which they engaged in each behavior. The frequency scale ranged from 1 to 5, with 1 being 'never' and 5 being 'always' for those items that were environmentally friendly. Respondents could also indicate that an item was 'not applicable'. The scoring for the scale was reversed for items that were detrimental to the environment. This reversed scoring ensured that the higher the overall SBI score, the more environmentally friendly the respondent. Each item in the SBI was weighted equally in the overall SBI score.

Pretesting

The final survey questions were programmed into Computer Assisted Telephone Interviewing (CATI) software and pre-tested in 2012 by monitoring 20 completed interviews. Minor changes were made to the survey questions based on the pre-testing. For a complete list of the survey questions, see Appendix B.

Survey fielding

The random sample was originally drawn from two sample sources: Random Digit Dialing (RDD, for including both listed and unlisted landline phone numbers) and cell phone sample (to include both cell-only and cell-mostly households). A quarter (24.8%) of the completed interviews were cell phone households. When it became evident that some younger age ranges (20-34) were underrepresented, a listed sample targeted to 20-34 year olds was also used.

Based on 2010 Census demographics, we set a 50/50 quota for gender and the following quotas for the age categories: 18 to 19 (3%), 20 to 24 (9%), 25 to 34 (19%), 35 to 44 (18%), 45 to 54 (20%), 55 to 64 (16%), 65 to 74 (8%), 75 to 84 (5%), 85 and older (2%).

The 2013 survey was fielded between November 7 and December 27, 2013 in all 12 counties of the Puget Sound region, with a minimum quota of 250 respondents in each county:

- Clallam
- Eastern Jefferson
- Kitsap
- Mason
- Thurston
- Pierce
- King
- Snohomish
- Island
- Whatcom
- Skagit
- San Juan

The final sample size was 3,131. All respondents completed the survey, although they may not have answered all of the questions. Some questions involved skip patterns which, depending on the answer to a specific question, automatically skipped the interviewer to the next relevant question in the survey. In some other cases respondents may have refused to answer a question. This happens occasionally with demographic questions and most frequently with questions about household income. It is typical for about 20% of respondents to refuse to answer income questions. In this survey 13% did not answer this question. For the frequency and crosstab analysis, we used the number of respondents that answered each question. As explained below, for the index calculation, missing data was imputed through a specific process.

The average length of time to complete the interview was 10 minutes. The overall margin of error for the 3,131 completed interviews was +/- 1.75%. The margin of error for each county was +/- 6.2%.

The *response rate*[3] for the survey was 4.7 % and the *cooperation rate*[4] was 22.7%.

Data Analysis

In order to ensure that the data we collected was representative of the adult population in the Puget Sound area in terms of population size, age and gender, we statistically adjusted the data using Census 2010 information for the 12–county Puget Sound region. We calculated two weights:

- Weight 1 was used to adjust the data to report results broken out by county.
- Weight 2 was used to adjust the data to report results for all counties combined.

Cross-tabulation analysis used appropriate descriptive statistical techniques (frequencies and percentages) and explanatory statistical techniques (Cramer's V, Kendall's Tau c, and Pearson's R[5]) to test for the statistical significance of relationships between variables. Relevant coefficients and level of significance for cross-tabulations are presented in the endnotes section and are denoted by a superscript number in the body of the report. Statistically significant differences by region are reported in the body of the report. See Appendix D for SBI survey questions broken out by county. T-tests were used to assess the statistical significance of differences between the 2012 and 2013 results for each of the index items.

Calculating the Indices

A survey is a rich data resource, and can be processed in various ways to understand respondents' behavior. In this case we developed a single, summary measure of the information in a survey that can be used to benchmark community behavior over time, or across subsets of the community or respondents. An index, in fact, is defined as a single variable measure that is derived from the survey data precisely for this purpose.

In the case of the SBI, the challenge was that no predecessor indices existed. The most widely used method in this challenging setting is Principal Components Analysis (PCA). PCA has many uses, but its basic function is to find weights to apply to various survey question responses that explain variance in

[3] Using the approved American Association of Public Opinion Research approach, response rate is defined as the number of completed surveys plus partial or suspended surveys divided by the number of completed surveys, plus partial or suspended surveys, plus qualified refusals, plus break-offs, plus no answer, plus busy signal, plus answering machine, plus soft refusals, plus hard refusals, plus scheduled callbacks, plus unspecified callbacks.

[4] Cooperation rate is defined as the number of completed surveys divided by the number of completed surveys plus refusals plus break-offs. Therefore, it is the percent of those contacted who qualified and who completed the survey.

[5] *Cramer's V* is a measure of the relationship between two variables and is appropriate to use when one or both of the variables are at the nominal level of measurement. *Cramer's V* ranges from 0 to +1 and indicates the strength of a relationship. The closer to +1, the stronger the relationship between the two variables. *Kendall's Tau c* is a measure of the relationship between two variables and is appropriate to use when both of the variables are at the ordinal level of measurement. *Tau c* ranges from -1 to +1 and indicates the strength and direction of a relationship. *Pearson's R* is a measure of the relationship between two variables and is appropriate to use when both of the variables are at the interval level of measurement, but can also be used with ordinal level variables. *Pearson's R* ranges from -1 to +1 and indicates the strength and direction of a relationship. The accompanying "p" scores presented in this report for Cramer's V and Tau c indicate the level of statistical significance.

the responses across the whole survey population.

Applying PCA procedures for the SBI survey questions resulted in a separate SBI score for every respondent. This was derived by multiplying the first principal component weights ("coefficients") from the PCA analysis to the various answers of each respondent. Regional and sub-regional indices were then built up by aggregating (through averaging) the individual scores of the sets of respondents of interest. In the case of the SBI efforts, separate scores were computed for each of 12 Puget Sound counties.

In an ideal setting, the index calculations flow easily from the respondent data collected during the survey. There are, however, a few things to watch out for that can cause problems in creating a reliable index.

1. Missing Data. Sometimes, a question is simply not relevant to a respondent or they choose not to respond. In the case of a respondent choosing to not answer a question, the issue was addressed by imputing the missing value by using the average answer of others. In the case of questions that were not relevant to the respondent, it is obvious what value to impute. For example, if they don't own a boat, then they cannot engage in behaviors associated with boat usage. In the SBI analysis, respondents were given the score indicating the most environmentally friendly answer for that item (either a 1 or a 4 depending on whether the behavior itself was environmentally friendly or not). This was done since they do not engage in the behavior believed to imperil the health of the Sound.

2. Discontinuous data. Traditional PCA analysis is based on a statistical theory that assumes that all answers to a survey questionnaire yield a continuous variable as a response measurement. For example, "how old are you?, would provide one such continuous variable. But other behaviors are not (e.g., "how often do you place dog waste in the trash: never, seldom, sometimes, usually, or always?"). Fortunately, the presence of discrete variables can now be addressed with special procedures applied to the PCA to accommodate such variables. This modified PCA procedure, called Polychoric PCA, was applied in the SBI calculations.

Adding or Deleting Questions from an Index Survey over Time

The SBI is immediately useful because one can obtain separate indices for 12 counties and thus consider what is causing differences in the SBI across counties. However, an index even for the region as a whole is useful over time if the survey is conducted periodically. This is done simply by asking the same questions of a new, randomly selected population and applying the findings to the weights derived in the inaugural SBI implementation. If one wishes to drop or add new questions going forward, however, the process is a bit more complicated:

1. Dropping a question. A question can be dropped from the next wave of the survey. Perhaps the question is no longer relevant (pesticides are no longer applied to lawns, for example). However, it is usually best in this case to re-run the inaugural SBI PCA analysis using that first wave of data without the question included in the PCA computations. This will "re-benchmark" the weights to be consistent with the absence of the question. This yields, of course, a revised inaugural index value, and potentially different values across the counties.

2. Adding a new question is a bit trickier. There is no way to go back and re-survey the population that provided the inaugural survey data. Instead, in the year of the second wave with the

additional question, one should conduct a survey using two instruments one with, and one without, the new question. One should then compute two PCA analyses from the second-wave data and, accordingly, two sets of second-wave indices. One can use these data to re-benchmark the inaugural wave data and move ahead from that point.

There is a limit, of course, to the number of survey questions that can be added, deleted, or revised without disturbing the interpretation of index trends. However, if one keeps rigorously to the spirit of the survey effort, small changes over time can prolong or preserve the usefulness of an index.

APPENDIX B: SURVEY QUESTIONS

PSP- Sound Behavior Index Survey

Hello, this is _____ from Pacific Market Research. We are conducting an important survey about life in Washington communities and would like to include your views in our study. Our estimate is that this will take no more than 9 minutes of your time.

I assure you we are only seeking opinions and there will be no attempt to sell you anything or solicit a donation. Your answers will be completely anonymous.

In order to get a representative sample, may I please speak with the youngest male/female in your household who is 18 years of age or older. [NOTE TO PROGRAMMER – ASK FOR YOUNGEST AT START OF FIELDING AND THEN SHIFT TO OTHER AGE CATEGOREIS AS NEEDED TO FILL AGE QUOTAS IN Q3.] Would that be you? [IF NOT, ASK IF THAT PERSON IS AVAILABLE. IF NOT ASK IF THERE IS SOMEONE ELSE AVAILABLE OVER THE AGE OF 18 WHO IS THE NEXT YOUNGEST. THEN READ THE ABOVE AGAIN.]

SCREENING QUESTIONS

1. Interviewer enter respondent gender (quota = 50% each)
   - 1 Male
   - 2 Female

2. What county do you live in? (quota = 300 per county)
   - 1 Clallam
   - 2 Eastern Jefferson (98365, 98376, 98320, 98325, 98339, 98358, 98368)
   - 3 Kitsap
   - 4 Mason
   - 5 Thurston
   - 6 Pierce
   - 7 King
   - 8 Snohomish
   - 9 Island
   - 10 Whatcom
   - 11 Skagit
   - 12 San Juan

   If none of the above – THANK AND TERMINATE

3. Which of the following categories includes your age? (QUOTAS SHOWN IN PARENTHESES)
   1. 18 to 19 (3%)
   2. 20 to 24 (9%)

3. 25 to 34 (19%)
4. 35 to 44 (18%)
5. 45 to 54 (20%)
6. 55 to 64 (16%)
7. 65 to 74 (8%)
8. 75 to 84 (5%)
9. 85 and older (2%)
10. Refused (THANK AND TERMINATE)

4. Which of the following best describes your household's phone situation? (quota = 80% landline, 20% cell phone)
    1 Have just a landline phone (count as landline)
    2 Have just cell phones (count as cell phone)
    3 Have cell phones and a landline, but most calls are taken on the cell phones (count as cell phone)
    4 Have cell phones and a landline, but most calls are taken on the landline (count as landline)
    5 Have cell phones and a landline, and calls are taken about equally on both (count as landline)
    6 Refused (thank and terminate)

BEHAVIOR INDEX

Now we're going to talk about things such as yard care, car maintenance, home maintenance, etc.

1. **The content areas in this section are rotated**
2. **If they say they do not have a content area, the items under that area are self populated with "not applicable"**

5. Do you have a yard or garden?
    1. No (skip to Q8)
    2. Yes

6. When it comes to your yard and lawn care, who typically does that type of work? Would you say:
    0. Someone from your household
    1. Someone you hire
    2. A combination of someone from your household and someone you hire
    3. Don't know
    4. Not applicable
    5. Refused

7. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)

- Use weed and feed on your lawn
- Use chemical products to control or kill moss, weeds or other plants in your yard
- Use chemical products to control or kill insects in your yard
- Use fertilizers on your lawn or garden
- Plant or keep native plants on your property (R)
- Pull weeds by hand or with tools (R)
- Plant or keep native vegetation on the banks of waterways on your property (R)

8. Do you have a motor vehicle?
    1. No (skip to Q10)
    2. Yes

9. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Wash your vehicles in the driveway, street, or parking lot
    - Check your vehicle for fluid leaks or have it checked (R)
    - Dispose of recreational vehicle wastewater at an approved facility (R)

10. **Now some questions about Home Maintenance.**
    Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Use non-toxic or natural household cleaners (R)
    - Use chemical drain uncloggers
    - Flush or pour chemicals such as paint thinners down the drain
    - Flush prescription drugs down the toilet or drain
    - Use moss killer on your roof
    - Use pressure washer with deck cleaners or soap

11. Do you have a dog?
    1. No (skip to Q13)
    2. Yes

12. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Pick up your dog's waste from your yard (R)
    - Place dog waste in the trash (R)

13. Does your residence have a septic tank?
    1. No (skip to Q15)
    2. Yes
    3. Don't know (skip to Q15)

14. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Spread out laundry loads (R)
    - Get septic system pumped every 3-5 years (R)
    - Do an annual inspection of your septic system (R)
    - Use garbage disposal
    - Use septic tank additives
    - Pour used cooking oil down the sink

15. Do you have a livestock such as sheep, horses, cattle, or goats?
    1. No (skip to Q17)
    2. Yes

16. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Cover and compost manure (R)
    - Rotate pasture to let grass recover (R)

17. Do you have a boat?
    1. No (skip to Q19)
    2. Yes

18. Please tell me if **you never, seldom, sometimes, usually, or always:** (Tell them they can also indicate that the item is 'not applicable'.) (DO NOT CONFUSE 'NEVER' WITH 'NOT APPLICABLE'. Also accept 'don't know' answer.)
    - Use pump-out stations for wastewater (R)
    - Check for engine fluid leaks (R)

DEMOGRAPHICS

The next few questions are for statistical analysis purposes only. Remember, your answers are completely anonymous.

19. What is your home zip code?

20. How many years have you lived in <insert county from Q2> county? Would you say:
    1. Less than 2 years
    2. 2-5 years
    3. 6-10 years
    4. 11-20 years
    5. More than 20 years
    6. Refused

21. How would you describe the area in which you live? Would you say:
    1. Urban
    2. Suburban
    3. Rural changing to suburban
    4. Rural
    5. Don't know
    6. Refused

22. What is your current **Marital Status**? [ACCEPT JUST ONE ANSWER]

1	Currently married
2	Separated
3	Divorced
4	Widowed
5	Never Married
6	Cohabiting
7	Other (specify)
8	Refused

23. In what **YEAR** were you born? [Note: Valid range 1910-1995]

[]	YEAR

Estimates:

2	before 1950
3	1950s
4	1960s
5	1970s
6	1980s
7	1990s
8	Don't Know
9	Refused

24. How many **Children** aged 17 or younger, live in your household?

[]	Number (0- 20)
98	Unknown
99	Refused

25. Do you **Own** or **Rent** your home?

1	Own
2	Rent
3	Live at home with family
4	Don't have a home (skip to Q27)
5	Don't know (skip to Q27)

6 Refused (skip to Q27)

26. What is the size of your property? Would you say:

0. Have no property
1. Less than a quarter acre
2. About a quarter acre
3. About a half acre
4. About three-quarters of an acre
5. About an acre
6. More than 1 acre -→ then ask how many acres

27. How many years have you lived in the Puget Sound region?

1 Less than 2 years
2 2-5 years
3 6-10 years
4 11-20 years
5 More than 20 years
6 Refused

28. Do you expect to be living in your community **5 YEARS** from now?

1 No
2 Yes
8 Don't know
9 Refused

29. What is your current **Employment Status**? Would you say:

1 Working full time
2 Working part-time
3 Temporarily laid off
4 Unemployed
5 Retired
6 Permanently Disabled
7 Homemaker
8 Student
9 Other (specify)
10 Don't Know
11 Refused

30. How many Years of Schooling have you completed?

[] YEARS

Estimates and/or elaborations:

2 Less than high school (Grade 11 or less)
3 High school diploma (including GED)
4 Some college
5 Assoc. degree (2 year) or specialized technical training
6 Bachelor's degree
7 Some graduate training
8 Graduate or professional degree
9 Don't Know
10 Refused

31. When it comes to politics, do you generally consider yourself Liberal, Moderate or Conservative? (IF CONSERVATIVE: Is that very Conservative or somewhat Conservative? IF LIBERAL: Is that very liberal or somewhat liberal?)

1. Very conservative
2. Somewhat conservative
3. Moderate
4. Somewhat liberal
5. Very liberal
6. Don’t know

32. Are you from a Hispanic, Latino, or Spanish-speaking background?

1 No
2 Yes
3 Refused

33. What race would you classify yourself as? Would you say:

1 Black/African American
2 White/Caucasian
3 American Indian or Alaska Native
4 Asian
5 Native Hawaiian or other Pacific Islander
6 Some other race (specify)
7 Two or more races (specify)
8 Refuse

34. Is your total household income above or below $35,000 a year?

1. Below $35,000
2. $35,000 and above (Skip to Q36)
3. Refused (Skip to end)

35. **Ask only those who HH income is below $35,000** - Would that be:
    1. Less than $10,000,
    2. $10,000 to less than $15,000
    3. $15,000 to less than $25,000
    4. $25,000 to $34,999
    5. Refused

36. **Ask only those who HH income $35,000 and above** - Would that be:
    1. $35,000 to less than $50,000
    2. $50,000 to less than $75,000
    3. $75,000 to less than $100,000
    4. $100,000 to less than $150,000
    5. $150,000 to less than $200,000
    6. $200,000 and over
    7. Refused

That's all the questions I have. Thank you very much for your time.

APPENDIX C: DETAILED DEMOGRAPHICS

The table below shows the survey demographics weighted using weight 2. Comparisons to Census 2010 are shown as appropriate.

	Sample	Census 2010
Gender	**n=3131**	
Male	49%	49%
Female	51%	51%
Age	**n=3131**	
18 to 24	12%	12%
25 to 34	19%	19%
35 to 44	18%	18%
45 to 54	19%	19%
55 to 64	16%	16%
65 to 74	8%	8%
75 to 84	5%	5%
85 or older	2%	2%
Hispanic/Latino	**n=3604**	
No	92%	94%
Yes	8%	6%
Race	**n=2947**	
Black / African American	2%	6%
White / Caucasian	84%	77%
American Indian or Alaska Native	2%	1%
Asian	3%	9%
Native Hawaiian or other Pacific Islander	2%	1%
Some other race	4%	2%
Two or more races	4%	3%
Own/rent	**n=2914**	
Own	77%	63%
Rent	23%	37%
Income	**n=2733**	
Below $35,000	18%	27%
Above $35,000	82%	73%

Income categories	**n=2472**	
Less than $10,000	2%	6%
$10,000 to less than $15,000	4%	4%
$15,000 to less than $25,000	6%	8%
$25,000 to less than $35,000	7%	9%
$35,000 to less than $50,000	17%	13%
$50,000 to less than $75,000	17%	19%
$75,000 to less than $100,000	18%	14%
$100,000 to less than $150,000	18%	16%
$150,000 to less than $200,000	4%	6%
$200,000 or over	7%	5%

Political affiliation	**n=3131**
Very conservative	10%
Somewhat conservative	12%
Moderate	28%
Somewhat liberal	17%
Very liberal	15%
Don't know	17%

Years lived in the Puget Sound	**n=2044**
Less than 2 years	2%
2-5 years	5%
6-10 years	9%
11-20 years	17%
More than 20 years	67%
Area of residence	**n=3098**
Urban	26%
Suburban	42%
Rural changing to suburban	9%
Rural	20%
Don't know	3%

Marital status	**n=3060**
Currently married	58%
Separated	2%
Divorced	6%
Widowed	5%
Never married	23%
Cohabitating	3%
Other	2%

Children age 17 or younger living in household	**n=3077**
0	62%
1	14%
2	16%
3	6%
4	2%
5	1%
6	1%
Size of property	**n=2879**
Have no property	9%
Less than a quarter acre	25%
About a quarter acre	23%
About a half acre	13%
About three-quarters of an acre	4%
About an acre	5%
More than 1 acre	13%
Don't know	8%
Expect to be living in community 5 years from now	**n=3608**
No	14%
Yes	79%
Don't know	7%
Employment status	**n=3057**
Working full time	47%
Working part-time	12%
Temporarily laid off	2%
Unemployed	6%
Retired	19%
Permanently Disabled	3%
Homemaker	6%
Student	5%
Other	1%
Years of school	**n= 3019**
2	0.1%
3	0.1%
4	0.4%
6	0.3%
7	0.1%
8	0.5%
9	0.4%

10	1%
11	2%
12	21%
13	5%
14	18%
15	3%
16	27%
17	4%
18	9%
19	2%
20	5%
21	0.1%
22	0.5%
23	0.5%
24	0.5%
25	0.2%

APPENDIX D: TOPLINE TABLES BROKEN OUT BY COUNTY

Q5 - Do you have a yard or garden?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q5 - Do you have a yard or garden?	No	31	28	21	32	16	30	49	16	22	37	24	36
		10.3%	11.2%	8.4%	12.6%	6.4%	11.7%	15.1%	5.9%	8.4%	14.7%	9.6%	14.4%
	Yes	269	223	229	221	234	226	276	257	240	214	227	214
		89.7%	88.8%	91.6%	87.4%	93.6%	88.3%	84.9%	94.1%	91.6%	85.3%	90.4%	85.6%
Total		300	251	250	253	250	256	325	273	262	251	251	250
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q6 - When it comes to your yard and lawn care, who typically does that type of work?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q6 - When it comes to your yard and lawn care, who typically does that type of work?	Someone from your household	207	170	167	188	185	169	188	209	179	171	183	164
		78.1%	76.6%	74.6%	85.5%	80.4%	75.1%	68.4%	81.6%	78.9%	82.2%	82.8%	77.4%
	Someone you hire	20	12	18	6	13	18	26	19	17	10	10	14
		7.5%	5.4%	8.0%	2.7%	5.7%	8.0%	9.5%	7.4%	7.5%	4.8%	4.5%	6.6%
	A combination of someone from your	38	40	39	26	32	37	61	28	31	27	28	34
		14.3%	18.0%	17.4%	11.8%	13.9%	16.4%	22.2%	10.9%	13.7%	13.0%	12.7%	16.0%
	Don't know	0	0	0	0	0	1	0	0	0	0	0	0
		.0%	.0%	.0%	.0%	.0%	.4%	.0%	.0%	.0%	.0%	.0%	.0%
Total		265	222	224	220	230	225	275	256	227	208	221	212
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7a - Use weed and feed on your lawn

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7a - Use weed and feed on your lawn	Never	151	147	113	116	108	75	99	118	120	114	112	174
		58.5%	69.0%	50.2%	54.2%	47.8%	34.9%	37.2%	47.8%	53.3%	56.2%	52.3%	86.1%
	Seldom	56	38	45	30	41	46	54	38	44	30	35	14
		21.7%	17.8%	20.0%	14.0%	18.1%	21.4%	20.3%	15.4%	19.6%	14.8%	16.4%	6.9%
	Sometimes	33	18	55	44	44	66	82	70	38	46	48	8
		12.8%	8.5%	24.4%	20.6%	19.5%	30.7%	30.8%	28.3%	16.9%	22.7%	22.4%	4.0%
	Usually	10	4	3	12	16	13	16	12	13	6	9	4
		3.9%	1.9%	1.3%	5.6%	7.1%	6.0%	6.0%	4.9%	5.8%	3.0%	4.2%	2.0%
	Always	8	6	9	12	17	15	15	9	10	7	10	2
		3.1%	2.8%	4.0%	5.6%	7.5%	7.0%	5.6%	3.6%	4.4%	3.4%	4.7%	1.0%
Total		258	213	225	214	226	215	266	247	225	203	214	202
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7b - Use chemical products to control or kill moss, weeds or other plants in your yard

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7b - Use chemical products to control or kill moss, weeds or other plants in your yard	Never	125	122	88	111	92	73	103	85	105	90	108	155
		49.0%	56.0%	39.8%	51.4%	40.4%	33.3%	38.4%	34.0%	44.5%	43.3%	48.2%	73.1%
	Seldom	47	44	63	48	50	51	54	57	54	52	51	33
		18.4%	20.2%	28.5%	22.2%	21.9%	23.3%	20.1%	22.8%	22.9%	25.0%	22.8%	15.6%
	Sometimes	55	40	54	37	55	59	84	84	44	44	49	17
		21.6%	18.3%	24.4%	17.1%	24.1%	26.9%	31.3%	33.6%	18.6%	21.2%	21.9%	8.0%
	Usually	15	5	7	11	21	12	16	12	22	8	6	5
		5.9%	2.3%	3.2%	5.1%	9.2%	5.5%	6.0%	4.8%	9.3%	3.8%	2.7%	2.4%
	Always	13	7	9	9	10	24	11	12	11	14	10	2
		5.1%	3.2%	4.1%	4.2%	4.4%	11.0%	4.1%	4.8%	4.7%	6.7%	4.5%	.9%
Total		255	218	221	216	228	219	268	250	236	208	224	212
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7c - Use chemical products to control or kill insects in your yard

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7c - Use chemical products to control or kill insects in your yard	Never	163	133	126	128	142	117	154	139	160	126	152	154
		62.0%	60.7%	56.0%	58.4%	62.0%	52.9%	57.7%	55.6%	67.8%	60.6%	67.6%	73.0%
	Seldom	42	45	53	50	39	43	43	58	41	40	30	37
		16.0%	20.5%	23.6%	22.8%	17.0%	19.5%	16.1%	23.2%	17.4%	19.2%	13.3%	17.5%
	Sometimes	41	30	36	26	30	41	52	41	18	29	32	15
		15.6%	13.7%	16.0%	11.9%	13.1%	18.6%	19.5%	16.4%	7.6%	13.9%	14.2%	7.1%
	Usually	6	6	5	6	8	14	7	8	11	3	4	3
		2.3%	2.7%	2.2%	2.7%	3.5%	6.3%	2.6%	3.2%	4.7%	1.4%	1.8%	1.4%
	Always	11	5	5	9	10	6	11	4	6	10	7	2
		4.2%	2.3%	2.2%	4.1%	4.4%	2.7%	4.1%	1.6%	2.5%	4.8%	3.1%	.9%
Total		263	219	225	219	229	221	267	250	236	208	225	211
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7d - Use fertilizers on your lawn or garden

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7d - Use fertilizers on your lawn or garden	Never	103	107	78	72	73	61	73	88	79	72	93	117
		39.2%	50.5%	34.8%	33.2%	31.3%	28.4%	27.4%	34.8%	35.3%	34.6%	42.1%	56.8%
	Seldom	62	39	61	48	51	40	59	41	51	41	47	27
		23.6%	18.4%	27.2%	22.1%	21.9%	18.6%	22.2%	16.2%	22.8%	19.7%	21.3%	13.1%
	Sometimes	48	35	65	60	60	71	90	86	53	66	49	35
		18.3%	16.5%	29.0%	27.6%	25.8%	33.0%	33.8%	34.0%	23.7%	31.7%	22.2%	17.0%
	Usually	26	14	12	18	25	19	27	19	16	14	14	8
		9.9%	6.6%	5.4%	8.3%	10.7%	8.8%	10.2%	7.5%	7.1%	6.7%	6.3%	3.9%
	Always	24	17	8	19	24	24	17	19	25	15	18	19
		9.1%	8.0%	3.6%	8.8%	10.3%	11.2%	6.4%	7.5%	11.2%	7.2%	8.1%	9.2%
Total		263	212	224	217	233	215	266	253	224	208	221	206
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7e - Plant or keep native plants on your property

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7e - Plant or keep native plants on your property	Never	43	13	33	23	27	35	34	36	46	16	42	20
		17.2%	6.3%	15.3%	11.0%	12.2%	17.5%	13.2%	15.4%	21.4%	8.0%	19.6%	9.6%
	Seldom	23	14	8	11	14	14	6	13	13	24	16	18
		9.2%	6.8%	3.7%	5.2%	6.3%	7.0%	2.3%	5.6%	6.0%	12.1%	7.5%	8.6%
	Sometimes	46	36	37	35	47	40	56	47	27	46	40	25
		18.4%	17.5%	17.1%	16.7%	21.2%	20.0%	21.8%	20.1%	12.6%	23.1%	18.7%	12.0%
	Usually	36	28	35	37	28	35	53	47	43	38	31	33
		14.4%	13.6%	16.2%	17.6%	12.6%	17.5%	20.6%	20.1%	20.0%	19.1%	14.5%	15.8%
	Always	102	115	103	104	106	76	108	91	86	75	85	113
		40.8%	55.8%	47.7%	49.5%	47.7%	38.0%	42.0%	38.9%	40.0%	37.7%	39.7%	54.1%
Total		250	206	216	210	222	200	257	234	215	199	214	209
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7f - Pull weeds by hand or with tools * What county do you live in? Crosstabulation

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7f - Pull weeds by hand or with tools	Never	27	15	21	17	15	13	18	17	24	7	20	12
		10.3%	6.8%	9.4%	7.7%	6.6%	5.9%	6.5%	6.7%	10.3%	3.3%	8.9%	5.7%
	Seldom	22	15	17	10	13	14	16	16	23	13	11	11
		8.4%	6.8%	7.6%	4.5%	5.7%	6.4%	5.8%	6.3%	9.8%	6.1%	4.9%	5.2%
	Sometimes	56	34	31	40	42	49	57	56	38	28	63	26
		21.3%	15.5%	13.8%	18.2%	18.4%	22.3%	20.7%	22.0%	16.2%	13.2%	28.0%	12.3%
	Usually	49	31	47	50	46	30	68	39	46	38	44	40
		18.6%	14.1%	21.0%	22.7%	20.2%	13.6%	24.7%	15.4%	19.7%	17.9%	19.6%	18.9%
	Always	109	125	108	103	112	114	116	126	103	126	87	123
		41.4%	56.8%	48.2%	46.8%	49.1%	51.8%	42.2%	49.6%	44.0%	59.4%	38.7%	58.0%
Total		263	220	224	220	228	220	275	254	234	212	225	212
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q7g - Plant or keep native vegetation on the banks of waterways on your property

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q7g - Plant or keep native vegetation on the banks of waterways on your property	Never	67	37	55	45	62	60	63	66	78	47	68	30
		42.7%	35.9%	42.6%	29.8%	48.1%	53.1%	48.1%	50.8%	62.9%	42.3%	50.7%	22.1%
	Seldom	8	4	17	6	4	4	11	6	7	6	6	4
		5.1%	3.9%	13.2%	4.0%	3.1%	3.5%	8.4%	4.6%	5.6%	5.4%	4.5%	2.9%
	Sometimes	18	6	4	15	14	17	12	7	8	6	9	10
		11.5%	5.8%	3.1%	9.9%	10.9%	15.0%	9.2%	5.4%	6.5%	5.4%	6.7%	7.4%
	Usually	11	7	8	10	6	5	10	10	6	7	15	13
		7.0%	6.8%	6.2%	6.6%	4.7%	4.4%	7.6%	7.7%	4.8%	6.3%	11.2%	9.6%
	Always	53	49	45	75	43	27	35	41	25	45	36	79
		33.8%	47.6%	34.9%	49.7%	33.3%	23.9%	26.7%	31.5%	20.2%	40.5%	26.9%	58.1%
Total		157	103	129	151	129	113	131	130	124	111	134	136
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q8 - Do you have a motor vehicle?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q8 - Do you have a motor vehicle?	No	25	23	28	22	14	28	38	28	15	26	16	15
		8.3%	9.2%	11.2%	8.7%	5.6%	10.9%	11.7%	10.3%	5.7%	10.4%	6.4%	6.0%
	Yes	275	228	222	231	236	228	287	245	247	225	235	236
		91.7%	90.8%	88.8%	91.3%	94.4%	89.1%	88.3%	89.7%	94.3%	89.6%	93.6%	94.0%
Total		300	251	250	253	250	256	325	273	262	251	251	251
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q9a - Wash your vehicles in the driveway, street, or parking lot

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q9a - Wash your vehicles in the driveway, street, or parking lot	Never	100	86	69	61	77	79	101	61	107	85	81	123
		37.2%	39.6%	32.1%	27.0%	32.9%	35.4%	35.6%	25.3%	44.2%	38.1%	35.4%	53.2%
	Seldom	58	46	43	54	63	39	57	50	44	53	39	51
		21.6%	21.2%	20.0%	23.9%	26.9%	17.5%	20.1%	20.7%	18.2%	23.8%	17.0%	22.1%
	Sometimes	50	39	50	40	41	49	79	58	42	31	44	28
		18.6%	18.0%	23.3%	17.7%	17.5%	22.0%	27.8%	24.1%	17.4%	13.9%	19.2%	12.1%
	Usually	21	10	24	26	23	23	17	27	17	19	21	9
		7.8%	4.6%	11.2%	11.5%	9.8%	10.3%	6.0%	11.2%	7.0%	8.5%	9.2%	3.9%
	Always	40	36	29	45	30	33	30	45	32	35	44	20
		14.9%	16.6%	13.5%	19.9%	12.8%	14.8%	10.6%	18.7%	13.2%	15.7%	19.2%	8.7%
Total		269	217	215	226	234	223	284	241	242	223	229	231
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q9b - Check your vehicle for fluid leaks or have it checked

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q9b - Check your vehicle for fluid leaks or have it checked	Never	4	6	6	3	3	7	11	3	13	4	5	6
		1.5%	2.7%	2.8%	1.3%	1.3%	3.1%	3.9%	1.3%	5.4%	1.8%	2.1%	2.6%
	Seldom	13	9	10	7	13	13	13	16	6	20	15	10
		4.7%	4.1%	4.6%	3.1%	5.6%	5.8%	4.6%	6.7%	2.5%	9.0%	6.4%	4.3%
	Sometimes	33	16	36	21	28	35	59	46	21	34	42	40
		12.0%	7.2%	16.6%	9.2%	12.1%	15.6%	20.8%	19.2%	8.7%	15.3%	17.9%	17.2%
	Usually	59	68	53	64	60	46	66	53	50	45	52	67
		21.5%	30.6%	24.4%	27.9%	25.9%	20.5%	23.2%	22.1%	20.7%	20.3%	22.2%	28.9%
	Always	166	123	112	134	128	123	135	122	151	119	120	109
		60.4%	55.4%	51.6%	58.5%	55.2%	54.9%	47.5%	50.8%	62.7%	53.6%	51.3%	47.0%
Total		275	222	217	229	232	224	284	240	241	222	234	232
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q9c - Dispose of recreational vehicle wastewater at an approved facility

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q9c - Dispose of recreational vehicle wastewater at an approved facility	Never	73	60	56	70	62	76	73	66	68	60	51	65
		45.3%	46.5%	41.5%	45.8%	47.0%	54.7%	44.0%	46.2%	47.2%	45.5%	37.2%	53.3%
	Seldom	4	5	2	4	7	4	8	5	4	4	5	8
		2.5%	3.9%	1.5%	2.6%	5.3%	2.9%	4.8%	3.5%	2.8%	3.0%	3.6%	6.6%
	Sometimes	4	5	4	12	9	7	6	14	4	9	12	2
		2.5%	3.9%	3.0%	7.8%	6.8%	5.0%	3.6%	9.8%	2.8%	6.8%	8.8%	1.6%
	Usually	6	9	5	8	5	4	8	1	9	6	8	2
		3.7%	7.0%	3.7%	5.2%	3.8%	2.9%	4.8%	.7%	6.3%	4.5%	5.8%	1.6%
	Always	74	50	68	59	49	48	71	57	59	53	61	45
		46.0%	38.8%	50.4%	38.6%	37.1%	34.5%	42.8%	39.9%	41.0%	40.2%	44.5%	36.9%
Total		161	129	135	153	132	139	166	143	144	132	137	122
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10a - Use non-toxic or natural household cleaners

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10a - Use non-toxic or natural household cleaners	Never	24	19	19	16	21	22	20	19	25	20	22	12
		8.2%	7.9%	7.9%	6.7%	8.8%	9.0%	6.4%	7.3%	10.0%	8.2%	9.2%	5.0%
	Seldom	32	23	20	20	17	13	22	24	25	24	22	15
		11.0%	9.5%	8.3%	8.3%	7.1%	5.3%	7.0%	9.2%	10.0%	9.9%	9.2%	6.2%
	Sometimes	74	65	77	61	75	90	90	83	53	60	70	55
		25.3%	26.9%	31.8%	25.4%	31.5%	36.9%	28.7%	31.7%	21.1%	24.7%	29.3%	22.7%
	Usually	71	59	63	72	43	59	89	69	72	70	56	59
		24.3%	24.4%	26.0%	30.0%	18.1%	24.2%	28.3%	26.3%	28.7%	28.8%	23.4%	24.4%
	Always	91	76	63	71	82	60	93	67	76	69	69	101
		31.2%	31.4%	26.0%	29.6%	34.5%	24.6%	29.6%	25.6%	30.3%	28.4%	28.9%	41.7%
Total		292	242	242	240	238	244	314	262	251	243	239	242
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10b - Use chemical drain uncloggers

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10b - Use chemical drain uncloggers	Never	195	160	129	128	141	118	163	105	153	138	142	165
		66.6%	65.8%	52.2%	51.6%	57.1%	47.4%	51.6%	40.2%	60.2%	56.1%	57.3%	67.1%
	Seldom	56	52	79	81	59	63	88	73	54	64	64	54
		19.1%	21.4%	32.0%	32.7%	23.9%	25.3%	27.8%	28.0%	21.3%	26.0%	25.8%	22.0%
	Sometimes	39	29	25	32	40	57	54	76	38	37	33	24
		13.3%	11.9%	10.1%	12.9%	16.2%	22.9%	17.1%	29.1%	15.0%	15.0%	13.3%	9.8%
	Usually	2	1	4	6	1	8	6	7	4	4	5	1
		.7%	.4%	1.6%	2.4%	.4%	3.2%	1.9%	2.7%	1.6%	1.6%	2.0%	.4%
	Always	1	1	10	1	6	3	5	0	5	3	4	2
		.3%	.4%	4.0%	.4%	2.4%	1.2%	1.6%	.0%	2.0%	1.2%	1.6%	.8%
Total		293	243	247	248	247	249	316	261	254	246	248	246
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10c - Flush or pour chemicals such as paint thinners down the drain

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10c - Flush or pour chemicals such as paint thinners down the drain	Never	286	239	239	248	239	249	301	257	251	239	238	241
		97.3%	97.2%	96.4%	98.4%	96.4%	98.4%	94.7%	97.0%	96.9%	97.2%	95.6%	97.2%
	Seldom	8	7	4	2	5	3	4	3	7	3	7	5
		2.7%	2.8%	1.6%	.8%	2.0%	1.2%	1.3%	1.1%	2.7%	1.2%	2.8%	2.0%
	Sometimes	0	0	1	2	4	1	7	5	1	1	2	2
		.0%	.0%	.4%	.8%	1.6%	.4%	2.2%	1.9%	.4%	.4%	.8%	.8%
	Usually	0	0	0	0	0	0	3	0	0	0	1	0
		.0%	.0%	.0%	.0%	.0%	.0%	.9%	.0%	.0%	.0%	.4%	.0%
	Always	0	0	4	0	0	0	3	0	0	3	1	0
		.0%	.0%	1.6%	.0%	.0%	.0%	.9%	.0%	.0%	1.2%	.4%	.0%
Total		294	246	248	252	248	253	318	265	259	246	249	248
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10d - Flush prescription drugs down the toilet or drain

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10d - Flush prescription drugs down the toilet or drain	Never	280	231	231	237	236	233	302	254	250	233	221	238
		94.6%	94.7%	93.5%	94.4%	96.3%	94.0%	97.4%	96.2%	96.5%	94.7%	90.2%	97.5%
	Seldom	11	7	7	4	6	7	6	6	4	11	17	6
		3.7%	2.9%	2.8%	1.6%	2.4%	2.8%	1.9%	2.3%	1.5%	4.5%	6.9%	2.5%
	Sometimes	4	3	9	7	2	5	2	4	5	1	6	0
		1.4%	1.2%	3.6%	2.8%	.8%	2.0%	.6%	1.5%	1.9%	.4%	2.4%	.0%
	Usually	0	0	0	0	1	0	0	0	0	0	1	0
		.0%	.0%	.0%	.0%	.4%	.0%	.0%	.0%	.0%	.0%	.4%	.0%
	Always	1	3	0	3	0	3	0	0	0	1	0	0
		.3%	1.2%	.0%	1.2%	.0%	1.2%	.0%	.0%	.0%	.4%	.0%	.0%
Total		296	244	247	251	245	248	310	264	259	246	245	244
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10e - Use moss killer on your roof

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10e - Use moss killer on your roof	Never	198	155	132	145	121	130	175	168	152	157	167	185
		70.7%	67.1%	57.1%	60.2%	51.1%	52.2%	60.8%	67.5%	64.7%	67.1%	70.5%	79.1%
	Seldom	32	36	46	38	44	47	45	45	37	34	34	26
		11.4%	15.6%	19.9%	15.8%	18.6%	18.9%	15.6%	18.1%	15.7%	14.5%	14.3%	11.1%
	Sometimes	26	31	32	42	44	42	38	20	27	29	23	14
		9.3%	13.4%	13.9%	17.4%	18.6%	16.9%	13.2%	8.0%	11.5%	12.4%	9.7%	6.0%
	Usually	15	3	8	4	13	14	14	9	11	7	3	4
		5.4%	1.3%	3.5%	1.7%	5.5%	5.6%	4.9%	3.6%	4.7%	3.0%	1.3%	1.7%
	Always	9	6	13	12	15	16	16	7	8	7	10	5
		3.2%	2.6%	5.6%	5.0%	6.3%	6.4%	5.6%	2.8%	3.4%	3.0%	4.2%	2.1%
Total		280	231	231	241	237	249	288	249	235	234	237	234
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q10f - Use pressure washer with deck cleaners or soap

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q10f - Use pressure washer with deck cleaners or soap	Never	182	169	144	138	163	163	197	150	154	147	169	170
		66.9%	71.0%	61.5%	58.2%	69.1%	65.7%	65.7%	60.0%	62.3%	66.5%	70.1%	70.2%
	Seldom	41	41	39	45	30	36	42	64	38	49	34	38
		15.1%	17.2%	16.7%	19.0%	12.7%	14.5%	14.0%	25.6%	15.4%	22.2%	14.1%	15.7%
	Sometimes	36	22	30	39	26	37	48	25	47	13	26	25
		13.2%	9.2%	12.8%	16.5%	11.0%	14.9%	16.0%	10.0%	19.0%	5.9%	10.8%	10.3%
	Usually	8	2	5	10	6	3	7	6	4	4	6	2
		2.9%	.8%	2.1%	4.2%	2.5%	1.2%	2.3%	2.4%	1.6%	1.8%	2.5%	.8%
	Always	5	4	16	5	11	9	6	5	4	8	6	7
		1.8%	1.7%	6.8%	2.1%	4.7%	3.6%	2.0%	2.0%	1.6%	3.6%	2.5%	2.9%
Total		272	238	234	237	236	248	300	250	247	221	241	242
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q11 - Do you have a dog?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q11 - Do you have a dog?	No	148	148	138	101	118	136	183	140	135	143	133	151
		49.2%	59.0%	55.2%	39.9%	47.2%	53.1%	56.3%	51.3%	51.5%	57.0%	53.0%	60.4%
	Yes	153	103	112	152	132	120	142	133	127	108	118	99
		50.8%	41.0%	44.8%	60.1%	52.8%	46.9%	43.7%	48.7%	48.5%	43.0%	47.0%	39.6%
Total		301	251	250	253	250	256	325	273	262	251	251	250
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q12a - Pick up your dog's waste from your yard

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q12a - Pick up your dog's waste from your yard	Never	25	20	20	25	23	5	9	16	15	19	21	18
		16.6%	21.5%	18.5%	17.1%	17.6%	4.2%	6.3%	12.8%	12.1%	18.6%	18.1%	18.9%
	Seldom	10	2	15	13	6	9	8	8	8	2	8	5
		6.6%	2.2%	13.9%	8.9%	4.6%	7.6%	5.6%	6.4%	6.5%	2.0%	6.9%	5.3%
	Sometimes	19	11	7	17	12	18	5	6	7	9	7	12
		12.6%	11.8%	6.5%	11.6%	9.2%	15.1%	3.5%	4.8%	5.6%	8.8%	6.0%	12.6%
	Usually	19	13	8	25	14	12	15	22	13	8	11	7
		12.6%	14.0%	7.4%	17.1%	10.7%	10.1%	10.6%	17.6%	10.5%	7.8%	9.5%	7.4%
	Always	78	47	58	66	76	75	105	73	81	64	69	53
		51.7%	50.5%	53.7%	45.2%	58.0%	63.0%	73.9%	58.4%	65.3%	62.7%	59.5%	55.8%
Total		151	93	108	146	131	119	142	125	124	102	116	95
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q12b - Place dog waste in the trash

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q12b - Place dog waste in the trash	Never	67	50	41	81	44	38	41	39	44	37	58	50
		45.9%	50.5%	37.6%	55.5%	34.4%	32.5%	29.7%	31.5%	35.8%	34.9%	50.9%	51.5%
	Seldom	3	7	7	11	7	5	10	6	6	8	3	3
		2.1%	7.1%	6.4%	7.5%	5.5%	4.3%	7.2%	4.8%	4.9%	7.5%	2.6%	3.1%
	Sometimes	10	5	11	5	12	11	25	13	12	7	9	10
		6.8%	5.1%	10.1%	3.4%	9.4%	9.4%	18.1%	10.5%	9.8%	6.6%	7.9%	10.3%
	Usually	9	2	4	11	8	4	13	5	7	6	6	8
		6.2%	2.0%	3.7%	7.5%	6.3%	3.4%	9.4%	4.0%	5.7%	5.7%	5.3%	8.2%
	Always	57	35	46	38	57	59	49	61	54	48	38	26
		39.0%	35.4%	42.2%	26.0%	44.5%	50.4%	35.5%	49.2%	43.9%	45.3%	33.3%	26.8%
Total		146	99	109	146	128	117	138	124	123	106	114	97
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q13 - Does your residence have a septic tank?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q13 - Does your residence have a septic tank?	No	112	117	85	52	82	135	248	182	97	149	153	46
		37.2%	46.6%	34.0%	20.6%	32.8%	52.7%	76.3%	66.7%	37.0%	59.4%	60.7%	18.3%
	Yes	181	131	154	199	158	104	59	80	157	90	89	201
		60.1%	52.2%	61.6%	78.7%	63.2%	40.6%	18.2%	29.3%	59.9%	35.9%	35.3%	80.1%
	Don't know	8	3	11	2	10	17	18	11	8	12	10	4
		2.7%	1.2%	4.4%	.8%	4.0%	6.6%	5.5%	4.0%	3.1%	4.8%	4.0%	1.6%
Total		301	251	250	253	250	256	325	273	262	251	252	251
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14a - Spread out laundry loads

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14a - Spread out laundry loads	Never	31	19	33	31	24	18	9	11	24	17	8	25
		19.3%	16.8%	24.4%	18.9%	18.2%	18.6%	18.8%	14.7%	19.2%	20.7%	11.4%	15.4%
	Seldom	13	8	13	10	11	10	7	5	14	12	2	13
		8.1%	7.1%	9.6%	6.1%	8.3%	10.3%	14.6%	6.7%	11.2%	14.6%	2.9%	8.0%
	Sometimes	31	16	29	27	25	20	16	15	16	15	15	19
		19.3%	14.2%	21.5%	16.5%	18.9%	20.6%	33.3%	20.0%	12.8%	18.3%	21.4%	11.7%
	Usually	30	21	27	41	38	22	5	20	17	14	20	38
		18.6%	18.6%	20.0%	25.0%	28.8%	22.7%	10.4%	26.7%	13.6%	17.1%	28.6%	23.5%
	Always	56	49	33	55	34	27	11	24	54	24	25	67
		34.8%	43.4%	24.4%	33.5%	25.8%	27.8%	22.9%	32.0%	43.2%	29.3%	35.7%	41.4%
Total		161	113	135	164	132	97	48	75	125	82	70	162
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14b - Use garbage disposal

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14b - Use garbage disposal	Never	87	79	74	111	67	48	18	31	82	30	46	105
		60.8%	71.2%	67.3%	77.6%	55.4%	60.0%	39.1%	44.3%	64.1%	48.4%	63.9%	64.0%
	Seldom	12	8	11	7	13	7	4	10	9	8	11	15
		8.4%	7.2%	10.0%	4.9%	10.7%	8.8%	8.7%	14.3%	7.0%	12.9%	15.3%	9.1%
	Sometimes	14	7	5	9	16	10	6	7	17	9	8	23
		9.8%	6.3%	4.5%	6.3%	13.2%	12.5%	13.0%	10.0%	13.3%	14.5%	11.1%	14.0%
	Usually	12	7	4	6	6	3	5	8	6	4	3	3
		8.4%	6.3%	3.6%	4.2%	5.0%	3.8%	10.9%	11.4%	4.7%	6.5%	4.2%	1.8%
	Always	18	10	16	10	19	12	13	14	14	11	4	18
		12.6%	9.0%	14.5%	7.0%	15.7%	15.0%	28.3%	20.0%	10.9%	17.7%	5.6%	11.0%
Total		143	111	110	143	121	80	46	70	128	62	72	164
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14c - Use septic tank additives

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14c - Use septic tank additives	Never	122	89	106	136	107	58	36	52	114	51	57	159
		71.8%	73.6%	72.1%	73.5%	73.3%	59.8%	62.1%	66.7%	80.9%	63.8%	69.5%	83.7%
	Seldom	11	10	11	17	18	10	7	12	6	12	8	17
		6.5%	8.3%	7.5%	9.2%	12.3%	10.3%	12.1%	15.4%	4.3%	15.0%	9.8%	8.9%
	Sometimes	19	10	21	18	11	18	10	9	14	7	7	10
		11.2%	8.3%	14.3%	9.7%	7.5%	18.6%	17.2%	11.5%	9.9%	8.8%	8.5%	5.3%
	Usually	4	3	5	5	5	3	1	1	4	2	5	2
		2.4%	2.5%	3.4%	2.7%	3.4%	3.1%	1.7%	1.3%	2.8%	2.5%	6.1%	1.1%
	Always	14	9	4	9	5	8	4	4	3	8	5	2
		8.2%	7.4%	2.7%	4.9%	3.4%	8.2%	6.9%	5.1%	2.1%	10.0%	6.1%	1.1%
Total		170	121	147	185	146	97	58	78	141	80	82	190
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14d - Get septic system pumped every 3-5 years

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14d - Get septic system pumped every 3-5 years	Never	37	26	23	26	12	20	5	5	20	15	12	28
		22.8%	23.4%	15.8%	14.1%	9.1%	22.5%	9.6%	6.8%	15.4%	19.0%	16.4%	17.3%
	Seldom	14	8	16	19	7	12	8	5	14	13	6	19
		8.6%	7.2%	11.0%	10.3%	5.3%	13.5%	15.4%	6.8%	10.8%	16.5%	8.2%	11.7%
	Sometimes	17	7	17	18	17	16	7	18	5	4	5	12
		10.5%	6.3%	11.6%	9.7%	12.9%	18.0%	13.5%	24.3%	3.8%	5.1%	6.8%	7.4%
	Usually	26	22	24	27	17	5	6	5	23	10	15	28
		16.0%	19.8%	16.4%	14.6%	12.9%	5.6%	11.5%	6.8%	17.7%	12.7%	20.5%	17.3%
	Always	68	48	66	95	79	36	26	41	68	37	35	75
		42.0%	43.2%	45.2%	51.4%	59.8%	40.4%	50.0%	55.4%	52.3%	46.8%	47.9%	46.3%
Total		162	111	146	185	132	89	52	74	130	79	73	162
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14e - Pour used cooking oil down the sink

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14e - Pour used cooking oil down the sink	Never	167	113	142	184	147	91	50	61	144	80	80	181
		92.3%	87.6%	91.6%	94.4%	93.0%	87.5%	84.7%	77.2%	91.7%	88.9%	90.9%	90.0%
	Seldom	13	13	8	2	6	7	6	18	7	5	5	13
		7.2%	10.1%	5.2%	1.0%	3.8%	6.7%	10.2%	22.8%	4.5%	5.6%	5.7%	6.5%
	Sometimes	1	1	3	6	4	6	2	0	4	4	3	7
		.6%	.8%	1.9%	3.1%	2.5%	5.8%	3.4%	.0%	2.5%	4.4%	3.4%	3.5%
	Usually	0	2	1	1	0	0	1	0	0	1	0	0
		.0%	1.6%	.6%	.5%	.0%	.0%	1.7%	.0%	.0%	1.1%	.0%	.0%
	Always	0	0	1	2	1	0	0	0	2	0	0	0
		.0%	.0%	.6%	1.0%	.6%	.0%	.0%	.0%	1.3%	.0%	.0%	.0%
Total		181	129	155	195	158	104	59	79	157	90	88	201
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q14f - Do an annual inspection of your septic system

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q14f - Do an annual inspection of your septic system	Never	33	37	44	44	34	31	18	19	20	16	18	29
		19.8%	30.6%	29.7%	24.6%	24.5%	36.5%	32.7%	26.4%	14.1%	19.0%	24.3%	16.1%
	Seldom	38	11	20	36	18	16	11	18	16	19	12	19
		22.8%	9.1%	13.5%	20.1%	12.9%	18.8%	20.0%	25.0%	11.3%	22.6%	16.2%	10.6%
	Sometimes	33	10	34	21	23	9	14	9	20	14	7	11
		19.8%	8.3%	23.0%	11.7%	16.5%	10.6%	25.5%	12.5%	14.1%	16.7%	9.5%	6.1%
	Usually	21	16	13	17	17	5	1	7	28	14	9	29
		12.6%	13.2%	8.8%	9.5%	12.2%	5.9%	1.8%	9.7%	19.7%	16.7%	12.2%	16.1%
	Always	42	47	37	61	47	24	11	19	58	21	28	92
		25.1%	38.8%	25.0%	34.1%	33.8%	28.2%	20.0%	26.4%	40.8%	25.0%	37.8%	51.1%
Total		167	121	148	179	139	85	55	72	142	84	74	180
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q15 - Do you have a livestock such as sheep, horses, cattle, or goats?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q15 - Do you have a livestock such as sheep, horses, cattle, or goats?	No	276	236	236	236	237	245	317	262	243	233	240	228
		92.0%	94.0%	94.4%	93.3%	94.8%	95.7%	97.5%	96.0%	92.7%	92.8%	95.6%	90.8%
	Yes	24	15	14	17	13	11	8	11	19	18	11	23
		8.0%	6.0%	5.6%	6.7%	5.2%	4.3%	2.5%	4.0%	7.3%	7.2%	4.4%	9.2%
Total		300	251	250	253	250	256	325	273	262	251	251	251
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q16a - Cover and compost manure

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q16a - Cover and compost manure	Never	7	1	5	4	3	1	1	0	5	1	0	2
		30.4%	6.7%	35.7%	23.5%	25.0%	16.7%	12.5%	.0%	27.8%	5.9%	.0%	8.7%
	Seldom	3	2	0	1	0	0	0	5	0	3	1	0
		13.0%	13.3%	.0%	5.9%	.0%	.0%	.0%	45.5%	.0%	17.6%	10.0%	.0%
	Sometimes	1	2	4	4	4	1	0	1	1	5	0	3
		4.3%	13.3%	28.6%	23.5%	33.3%	16.7%	.0%	9.1%	5.6%	29.4%	.0%	13.0%
	Usually	1	0	1	0	2	0	1	1	4	0	3	1
		4.3%	.0%	7.1%	.0%	16.7%	.0%	12.5%	9.1%	22.2%	.0%	30.0%	4.3%
	Always	11	10	4	8	3	4	6	4	8	8	6	17
		47.8%	66.7%	28.6%	47.1%	25.0%	66.7%	75.0%	36.4%	44.4%	47.1%	60.0%	73.9%
Total		23	15	14	17	12	6	8	11	18	17	10	23
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q16b - Rotate pasture to let grass recover

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q16b - Rotate pasture to let grass recover	Never	4	3	4	4	1	0	0	2	4	3	2	4
		16.7%	21.4%	33.3%	23.5%	8.3%	.0%	.0%	20.0%	22.2%	17.6%	20.0%	20.0%
	Seldom	2	2	0	3	2	0	0	5	1	3	0	1
		8.3%	14.3%	.0%	17.6%	16.7%	.0%	.0%	50.0%	5.6%	17.6%	.0%	5.0%
	Sometimes	4	1	3	1	0	0	0	0	1	0	0	2
		16.7%	7.1%	25.0%	5.9%	.0%	.0%	.0%	.0%	5.6%	.0%	.0%	10.0%
	Usually	2	1	0	6	2	0	3	0	4	1	5	1
		8.3%	7.1%	.0%	35.3%	16.7%	.0%	50.0%	.0%	22.2%	5.9%	50.0%	5.0%
	Always	12	7	5	3	7	7	3	3	8	10	3	12
		50.0%	50.0%	41.7%	17.6%	58.3%	100.0%	50.0%	30.0%	44.4%	58.8%	30.0%	60.0%
Total		24	14	12	17	12	7	6	10	18	17	10	20
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q17 - Do you have a boat?

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q17 - Do you have a boat?	No	244	202	205	183	202	232	272	230	217	212	209	168
		81.1%	80.5%	82.0%	72.3%	80.8%	90.6%	83.7%	84.2%	82.8%	84.5%	83.3%	66.9%
	Yes	57	49	45	70	48	24	53	43	45	39	42	83
		18.9%	19.5%	18.0%	27.7%	19.2%	9.4%	16.3%	15.8%	17.2%	15.5%	16.7%	33.1%
Total		301	251	250	253	250	256	325	273	262	251	251	251
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q18a - Use pump-out stations for wastewater

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q18a - Use pump-out stations for wastewater	Never	29	19	18	29	17	8	21	18	20	11	15	29
		76.3%	63.3%	64.3%	78.4%	73.9%	66.7%	60.0%	51.4%	74.1%	55.0%	60.0%	51.8%
	Seldom	0	1	1	1	0	1	1	8	1	0	1	3
		.0%	3.3%	3.6%	2.7%	.0%	8.3%	2.9%	22.9%	3.7%	.0%	4.0%	5.4%
	Sometimes	0	0	1	2	1	1	4	2	1	1	1	3
		.0%	.0%	3.6%	5.4%	4.3%	8.3%	11.4%	5.7%	3.7%	5.0%	4.0%	5.4%
	Usually	0	2	0	0	0	1	2	0	0	0	4	3
		.0%	6.7%	.0%	.0%	.0%	8.3%	5.7%	.0%	.0%	.0%	16.0%	5.4%
	Always	9	8	8	5	5	1	7	7	5	8	4	18
		23.7%	26.7%	28.6%	13.5%	21.7%	8.3%	20.0%	20.0%	18.5%	40.0%	16.0%	32.1%
Total		38	30	28	37	23	12	35	35	27	20	25	56
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Q18b - Check for engine fluid leaks

		What county do you live in?											
		Clallam	Eastern Jefferson	Kitsap	Mason	Thurston	Pierce	King	Snohomish	Island	Whatcom	Skagit	San Juan
Q18b - Check for engine fluid leaks	Never	2	7	3	6	2	0	7	7	2	4	2	5
		3.8%	16.7%	9.4%	11.8%	4.9%	.0%	14.9%	18.9%	5.3%	12.1%	5.6%	7.2%
	Seldom	3	0	3	2	3	2	4	5	4	2	1	1
		5.7%	.0%	9.4%	3.9%	7.3%	10.0%	8.5%	13.5%	10.5%	6.1%	2.8%	1.4%
	Sometimes	2	1	2	7	5	1	5	5	6	4	5	9
		3.8%	2.4%	6.3%	13.7%	12.2%	5.0%	10.6%	13.5%	15.8%	12.1%	13.9%	13.0%
	Usually	6	7	1	5	2	1	9	2	2	5	4	9
		11.3%	16.7%	3.1%	9.8%	4.9%	5.0%	19.1%	5.4%	5.3%	15.2%	11.1%	13.0%
	Always	40	27	23	31	29	16	22	18	24	18	24	45
		75.5%	64.3%	71.9%	60.8%	70.7%	80.0%	46.8%	48.6%	63.2%	54.5%	66.7%	65.2%
Total		53	42	32	51	41	20	47	37	38	33	36	69
		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

APPENDIX E: REGRESSION OF DEMOGRAPHIC FACTORS ON SBI SCORES

Number of obs. = 3024
R-squared = 0.1254
Adjusted R-squsred = 0.1071
Root MSE = 1.2888

Dependent variables: Individual SBI Score

Independent Variable:	Coefficient	Std. Error	t-Stat	P>[t]	[95% Conf. Interval]	
County (omitted category: King County)						
Clallam	0.0928098	0.1180059	0.79	0.432	-0.1385722	0.3241917
Eastern Jefferson	0.2981692	0.1193935	2.5	0.013	0.0640665	0.5322719
Kitsap	0.0163907	0.1143785	0.14	0.886	-0.2078787	0.2406601
Mason	-0.117986	0.1200304	-0.98	0.326	-0.3533376	0.1173655
Thurston	-0.1272036	0.1141789	-1.11	0.265	-0.3510816	0.0966745
Pierce	-0.335034	0.1125386	-2.98	0.003	-0.5556958	-0.1143723
Snohomish	-0.1636017	0.1104675	-1.48	0.139	-0.3802025	0.0529991
Island	-0.0102932	0.116847	-0.09	0.930	-0.2394028	0.2188164
Whatcom	0.2654164	0.1142004	2.32	0.020	0.0414961	0.4893367
Skagit	-0.0378418	0.1155146	-0.33	0.743	-0.2643389	0.1886552
San Juan	0.6114903	0.1217745	5.02	0.000	0.3727191	0.8502615
Years in county (omitted category: More than 20 years)						
Less than 2 years	0.2475616	0.1727399	1.43	0.152	-0.0911408	0.586264
2-5 years	-0.0642802	0.1254379	-0.51	0.608	-0.3102346	0.1816742
6-10 years	0.3242761	0.0906674	3.58	0.000	0.1464985	0.5020536
11-20 years	0.1575088	0.0727915	2.16	0.031	0.0147816	0.3002359
Years in Puget Sound Region (omitted category: More than 20 years)						
Less than 2 years	0.1296966	0.2199101	0.59	0.555	-0.3014956	0.5608888
2-5 years	0.157436	0.1562618	1.01	0.314	-0.1489568	0.4638287
6-10 years	-0.1770903	0.1135334	-1.56	0.119	-0.3997028	0.0455222
11-20 years	-0.2097738	0.0835992	-2.51	0.012	-0.3736923	-0.0458553
Not reported	-0.1887754	0.2939923	-0.64	0.521	-0.7652254	0.3876745
Type of area (omitted category: Rural)						
Urban	0.1564015	0.0748732	2.09	0.037	0.0095927	0.3032102
Suburban	0.0558946	0.0648396	0.86	0.389	-0.0712405	0.1830298
Rural changing to Suburban	0.0148872	0.0810186	0.18	0.854	-0.1439713	0.1737457
Don't know	0.1416911	0.1360267	1.04	0.298	-0.1250254	0.4084075
Not reported	0.3966967	0.6516003	0.61	0.543	-0.8809389	1.674332
Age category (omitted category: 55-64)						
18 to 19	-0.2409141	0.21307	-1.13	0.258	-0.6586944	0.1768662
20 to 24	-0.4413269	0.1822144	-2.42	0.015	-0.7986067	-0.084047
25 to 34	-0.1966845	0.1093556	-1.8	0.072	-0.4111053	0.0177363
35 to 44	-0.1295117	0.0838385	-1.54	0.123	-0.2938994	0.034876
45 to 54	0.0205834	0.0722177	0.29	0.776	-0.1210186	0.1621854
65 to 74	-0.08385	0.0781981	-1.07	0.284	-0.2371781	0.069478
75 to 84	-0.1145729	0.093737	-1.22	0.222	-0.2983693	0.0692234
85 and older	0.0904029	0.1388461	0.65	0.515	-0.1818417	0.3626475
Number of children 17 or younger living in household	0.0039216	0.0237719	0.16	0.869	-0.0426895	0.0505328
Housing (omitted category: Own home)						
Rent	0.5416592	0.074835	7.24	0.000	0.3949254	0.688393
Other or not reported	0.3670203	0.1636283	2.24	0.025	0.0461835	0.6878571
Years of schooling	0.02557	0.009	2.84	0.005	0.0079231	0.0432169
Politics (omitted category: Moderate)						
Very conservative	-0.2015788	0.0780355	-2.58	0.010	-0.354588	-0.0485695
Conservative	-0.0980881	0.0771723	-1.27	0.204	-0.249405	0.0532287
Somewhat liberal	0.1960407	0.0740735	2.65	0.008	0.0508	0.3412814
Liberal	0.2823943	0.0778802	3.63	0.000	0.1296894	0.4350992
Not reported	0.046608	0.0816943	0.57	0.568	-0.1135755	0.2067914
Hispanic (omitted category: No)						
Yes	0.22992	0.1400592	1.64	0.101	-0.0447033	0.5045433
Refused	0.5354965	0.2817809	1.9	0.057	-0.0170099	1.088003
Race (omitted category: White/Caucasian)						
Black/African American	0.0308479	0.221891	0.14	0.889	-0.4042284	0.4659243
American Indian/Alaska Native	0.2178171	0.1719115	1.27	0.205	-0.1192611	0.5548953
Asian	-0.0878629	0.2270669	-0.39	0.699	-0.533088	0.3573621
Native Hawaiian or Pacific Islander	-0.6787323	0.2523739	-2.69	0.007	-1.173578	-0.1838861
Other race	-0.1475217	0.1623052	-0.91	0.363	-0.4657642	0.1707208
Two or more races	0.1989004	0.1626233	1.22	0.221	-0.1199659	0.5177667
Not reported	-0.097821	0.149508	-0.65	0.513	-0.3909712	0.1953292
Income						
Less than $10k	0.7000143	0.157061	4.46	0.000	0.3920543	1.007974
$10k to $15k	0.3524683	0.1446449	2.44	0.015	0.0688535	0.6360832
$15k to $25k	0.0589472	0.1169304	0.5	0.614	-0.1703259	0.2882203
$25k to $34,999	0.2553389	0.1042103	2.45	0.014	0.0510069	0.4596708
$35k to $50k	0.7765721	0.2116046	3.67	0.000	0.361665	1.191479
$50k to $75k	0.0714457	0.0860403	0.83	0.406	-0.0972591	0.2401506
$75k to $100k	0.0245807	0.0861381	0.29	0.775	-0.1443158	0.1934773
$100k to $150k	-0.1934327	0.0928895	-2.08	0.037	-0.3755672	-0.0112982
$150k to $200k	-0.2530108	0.1490783	-1.7	0.090	-0.5453185	0.0392968
$200k and over	-0.0505302	0.154438	-0.33	0.744	-0.3533469	0.2522866
Over $35k but not otherwise specified	0.0865827	0.104601	0.83	0.408	-0.1185154	0.2916809
Not reported	0.2594355	0.0990769	2.62	0.009	0.0651689	0.453702
Constant	-0.8819537	0.1798794	-4.9	0.000	-1.234655	-0.5292524

Notes: t-Stats in italicized red colors imply that the associated coefficient is statistically different from zero with a significance level > 95%. Regression includes 3,024 observations. 43 observations had no response for number of children and an additional 64 observations had no reported years of schooling. Both groups were omitted from this regression. All other missing values are assigned to the “Not reported” category.

APPENDIX F: SIGNIFICANT CORRELATIONS BETWEEN SBI SCORES AND DEMOGRAPHICS BY COUNTY

- Females were more likely to have higher SBI scores than males in the following counties:
    - Mason[123]
    - Thurston[124]
    - San Juan[125]
- Those who lived for less time in their county were more likely to have higher SBI scores than those who had lived there longer, in the following counties:
    - Pierce [126]
    - King [127]
    - Whatcom [128]
    - San Juan [129]
- Those from more urban areas were more likely to have higher SBI scores than those in more rural areas, in the following counties:
    - Clallam[130]
    - Thurston[131]
    - Pierce[132]
    - King[133]
    - Whatcom[134]
- Those with fewer children under the age of 18 living at home were more likely to have higher SBI scores than those with more children under 18 living at home, in the following counties:
    - Clallam[135]
    - Whatcom[136]
- Those with more children under the age of 18 living at home were more likely to have higher SBI scores than those with fewer children under 18 living at home, in the following counties:
    - Snohomish[137]
    - Skagit[138]
- Those who rent were more likely to have higher SBI scores than those who own their homes, in all of the counties:
    - Clallam[139]
    - Thurston[140]
    - Pierce[141]
    - King[142]
    - Snohomish[143]
    - Skagit[144]
- Those with smaller pieces of property were more likely to have higher SBI scores than those with larger pieces of property, in the following counties:
    - Clallam[145]
    - Eastern Jefferson[146]
    - Thurston[147]
    - Pierce[148]
    - King[149]
    - Whatcom[150]

- Skagit[151]
- San Juan [152]

- Those who have lived in the Puget Sound region fewer years were more likely to have higher SBI scores than those who had lived there longer, in the following counties:
  - Thurston[153]
- Those with more years of education were more likely to have higher SBI scores than those with fewer years of education, in the following county:
  - Island[154]
- Those with fewer years of education were more likely to have higher SBI scores than those with more years of education, in the following counties:
  - Snohomish[155]
- Those who were more liberal are more likely to have higher SBI scores than those who were more liberal, in the following counties:
  - Clallam[156]
  - Thurston[157]
  - King[158]
  - Whatcom[159]
  - Skagit[160]
  - San Juan[161]
- Those who were more conservative are more likely to have higher SBI scores than those who were more liberal, in the following counties:
  - Snohomish[162]
- Those who were from an Hispanic/Latino background were more likely to have higher SBI scores than those who were not, in the following counties:
  - King[163]
  - Snohomish[164]
- Those who were from Non-White races were more likely to have higher SBI scores than those who were White/Caucasian, in the following counties:
  - Clallam[165]
  - Pierce[166]
  - King[167]
- Those with lower incomes were more likely to have higher SBI scores than those with higher incomes, in all of the counties, except San Juan County:
  - Clallam[168]
  - Eastern Jefferson[169]
  - Kitsap[170]
  - Thurston[171]
  - Pierce[172]
  - King[173]
  - Snohomish[174]
  - Island[175]
  - Whatcom[176]
  - Skagit[177]

- San Juan[178]

- Those who were younger were more likely to have higher SBI scores than those who were older, in the following county:
  - Snohomish [179]
  - San Juan[180]
- Those who were older were more likely to have higher SBI scores than those who were older, in the following county:
  - Clallam[181]
  - Island[182]

ENDNOTES

[1] T-test mean difference = -.146; p = .010
[2] Cramer's V = .127; p = .000
[3] Cramer's v = .100; p = .000
[4] Cramer's V = .143; p = .000
[5] Cramer's V = .106; p = .106
[6] Cramer's V = .154; p = .000
[7] Cramer's V = .145; p = .000
[8] Cramer's V = .122; p = .000
[9] Cramer's V = .104; p = .000
[10] Cramer's V = .141; p = .000
[11] Cramer's V = .143; p = .000
[12] Cramer's V = .172; p = .000
[13] Cramer's V = .176; p = .000
[14] Cramer's v = .100; p = .000
[15] Cramer's V = .141; p = .000
[16] Cramer's V = .117; p = .000
[17] Cramer's V = .160; p = .000
[18] Cramer's V = .105; p = .000
[19] Cramer's V = .199; p = .000
[20] Kendall's tau-c = .119; p = .000
[21] Cramer's V = .184; p = .000
[22] Cramer's V = .104; p = .000
[23] Cramer's V = .113; p = .000
[24] Cramer's V = .108; p = .021
[25] Cramer's V = .139; p = .000
[26] Cramer's V = .146; p = .000
[27] Kendall's Tau-C = .224; p = .000
[28] Cramer's v = .100; p = .000
[29] Kendall's tau-c = .105; p = .000
[30] Cramer's V = .184; p = .000
[31] T-test mean difference = .307; p = .000
[32] T-test mean difference = -.302; p = .003
[33] Cramer's V = .111; p = .000
[34] Cramer's V = .126; p = .000
[35] Cramer's V = .105; p = .000
[36] Cramer's V = .149; p = .000
[37] Cramer's V = .113; p = .000
[38] Cramer's V = .118; p = .000
[39] Cramer's V = .131; p = .000
[40] Cramer's V = .125; p = .000
[41] Cramer's V = .115; p = .000
[42] Cramer's V = .140; p = .000
[43] T-test mean difference = .181; p = .000
[44] T-test mean difference = .038; p = .021
[45] T-test mean difference = -.074; p = .000
[46] T-test mean difference = .133; p = .000
[47] T-test mean difference = .098; p = .000
[48] Cramer's V = .109; p = .000
[49] Cramer's V = .143; p = .000
[50] Cramer's V = .106; p = .000
[51] Cramer's V = .141; p = .000
[52] Cramer's V = .120; p = .000

[53] Cramer's V = .112; p = .000
[54] Cramer's V = .106; p = .000
[55] Cramer's V = .119; p = .000
[56] Cramer's V = .159; p = .000
[57] Kendall's Tau-C = .119; p = .000
[58] Cramer's V = .106; p = .000
[59] Cramer's V = .112; p = .000
[60] Cramer's V = .146; p = .000
[61] Cramer's V = .109; p = .000
[62] Cramer's V = .139; p = .000
[63] T-test mean difference = -.463; p = .000
[64] Cramer's V = .144; p = .000
[65] Cramer's V = .144; p = .000
[66] Cramer's V = .116; p = .000
[67] Kendall's Tau-C = -.188; p = .000
[68] Cramer's V = .129; p = .000
[69] Cramer's V = .105; p = .000
[70] Cramer's V = .111; p = .000
[71] Cramer's V = .126, p = .000
[72] Cramer's V = .112; p = .000
[73] Kendall's Tau-C = -.100; p = .000
[74] Cramer's V = .177; p = .000
[75] Cramer's V = .135; p = .000
[76] Kendall's Tau-C = -.259; p = .000
[77] Cramer's V = .125; p = .000
[78] Cramer's V = .117; p = .000
[79] Cramer's V = .118; p = .002
[80] T-test mean difference = .239; p = .037
[81] Cramer's V = .152; p = .000
[82] Kendall's tau-c = .106; p = .000
[83] Cramer's V = .194; p = .000
[84] Cramer's V = .213; p = .000
[85] Cramer's V = .130; p = .000
[86] Cramer's V = .112; p = .032
[87] Cramer's V = .141; p = .004
[88] Cramer's V = .177; p = .000
[89] Cramer's V = .192; p = .000
[90] Cramer's V = .109; p = .038
[91] Cramer's V = .117; p = .035
[92] Cramer's V = .153; p = .000
[93] Cramer's V = .147; p = .001
[94] Cramer's V = .135; p = .000
[95] Cramer's V = .135; p = .000
[96] Cramer's V = .110; p = .005
[97] Cramer's V = .109; p = .033
[98] Cramer's V = .119; p = .026
[99] Cramer's V = .118; p = .025
[100] Cramer's V = .110; p = .006
[101] Cramer's V = .160; p = .001
[102] Cramer's V = .135; p = .000
[103] Cramer's V = .156; p = .001
[104] Cramer's V = .187; p = .000
[105] Cramer's V = .104; p = .003
[106] Cramer's V = .110; p = .006
[107] Cramer's V = .123; p = .000

[108] Cramer's V = .272; p = .000
[109] Cramer's V = .407; p = .000
[110] Cramer's V = .283; p = .026
[111] Cramer's V = .312; p = .000
[112] Cramer's V = .337; p = .023
[113] Cramer's V = .491; p = .000
[114] Cramer's V = .229; p = .003
[115] Cramer's V = .234; p = .000
[116] Cramer's V = .135; p = .000
[117] Cramer's V = .302; p = .000
[118] Cramer's V = .268; p = .003
[119] Cramer's V = .152; p = .000
[120] Cramer's V = .130; p = .049
[121] Cramer's V = .255; p = .000
[122] Cramer's V = .196; p = .000
[123] Pearson's R = .191, p = .001
[124] Pearson's R = .152, p = .009
[125] Pearson's R = .142, p = .021
[126] Pearson's R = -.167, p = .006
[127] Pearson's R = -.131, p = .008
[128] Pearson's R = -.140, p = .016
[129] Pearson's R = -.206, p = .001
[130] Pearson's R = -.163, p = .005
[131] Pearson's R = -.168, p = .005
[132] Pearson's R = -.208, p = .001
[133] Pearson's R = -.184, p = .000
[134] Pearson's R = -.135, p = .025
[135] Pearson's R = -.151, p = .008
[136] Pearson's R = -.19, p = .001
[137] Pearson's R = .183, p = .002
[138] Pearson's R = .132, p = .024
[139] Pearson's R = .138, p = .015
[140] Pearson's R = .279, p = .000
[141] Pearson's R = .182, p = 0.003
[142] Pearson's R = .179, p = .000
[143] Pearson's R = 0.311, p = .0
[144] Pearson's R = .291, p = .000
[145] Pearson's R = -.193, p = .001
[146] Pearson's R = -.212, p = .000
[147] Pearson's R =-.220, p = .000
[148] Pearson's R = -.228, p = .000
[149] Pearson's R = -.363, p = .000
[150] Pearson's R = -.253, p = .000
[151] Pearson's R = -.173, p = .004
[152] Pearson's R = -.173, p = .007
[153] Pearson's R = 0.117, p = .048
[154] Pearson's R = .127, p = .031
[155] Pearson's R = -.178, p = .003
[156] Pearson's R = .127, p = .039
[157] Pearson's R = .209, p = .001
[158] Pearson's R = .212, p = .000
[159] Pearson's R = .141, p = .027
[160] Pearson's R = .129, p = .04
[161] Pearson's R = .192, p = .004
[162] Pearson's R = -.159, p = .014

[163] Pearson's R = .127, p = .012
[164] Pearson's R = .339, p = .000
[165] Pearson's R = -.14 p = .016
[166] Pearson's R = -.22, p = .000
[167] Pearson's R = -.208, p = .000
[168] Pearson's R = -.282, p = .000
[169] Pearson's R = -.145, p = .021
[170] Pearson's R = - .199, p = .001
[171] Pearson's R = -.214, p = .000
[172] Pearson's R = -.222, p = .000
[173] Pearson's R = -.245, p = .000
[174] Pearson's R = -.372, p = .000
[175] Pearson's R = -.135, p = .029
[176] Pearson's R = -.212, p = .001
[177] Pearson's R = -.325, p = .000
[178] Pearson's R = -.164, p = .013
[179] Pearson's R = -.118, p = .045
[180] Pearson's R = -.149, p = .016
[181] Pearson's R = .179, p = .002
[182] Pearson's R = .210, p = .000