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Final Report
Public Opinions of Water in Florida

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Public Opinions of Water in Florida

Introduction

Water is one of Florida's most abundant natural resources. Water is a crucial resource that impacts not just the environment, but important industries of Florida's economy, such as tourism, agriculture, and business. To avoid water conflicts between users, it is important to understand what the general public thinks about water issues. Using an online survey design, the PIE Center collected data from Florida residents, age 18 and older, in December 2012 to gauge public opinions surrounding water in Florida.

Key Findings

Main highlights from the study include:

- Florida residents are more concerned with water quality and safety than water quantity.
- Florida residents place the most importance on **clean drinking water**. They are then concerned with:
 - Clean beaches, oceans, bays/estuaries, lakes and rivers;
 - Plentiful water for agriculture; and
 - Clean groundwater.
- When compared to other important water quality and quantity issues, Florida residents place the least amount of importance on having plentiful water for household landscapes.
- 40% of Florida residents have experienced some kind of negative impact due to water quality issues including:
 - Poor quality drinking water;
 - Closed beaches, closed springs, rivers, or lakes; and
 - Prohibitions on eating fish they have caught.
- There are more Florida residents that believe water quality is getting worse than those that believe it is getting better.
- Florida resident water conservation behavior engagement includes
 - 52.6% have low-flow showerheads installed
 - 51.8% have water-efficient toilets installed
 - 33% use low-water consuming plants in their landscape
 - 18.7% use rain barrels to collect water for use in the garden/lawn
 - 65.3% of Florida residents are willing to use recycled wastewater to irrigate their lawn or landscape, but only 20.3% reported that recycled wastewater was available for them to use.

Public Opinions of Water in Florida

Introduction

Water is one of Florida's most abundant natural resources. Water is a crucial resource that impacts not just the environment, but important industries of Florida's economy, such as tourism, agriculture, and business. However, due to high population growth, development, and agricultural needs of the state, the groundwater resources that Florida so heavily depends upon are being depleted. Additionally, the Florida Department of Environmental Protection has recently established new water quality regulations and the process of establishing these guidelines was fraught with conflict and disagreements. To avoid future water conflicts, it is important for different interests groups and the general public to understand the water concerns of **all users** in Florida and work together to find sustainable solutions.

The Public Opinions of Water in Florida survey was designed to examine public opinions related to water issues in Florida as a measure of opinion at a specific point in time. The survey included items that identify Floridians:

- confidence in the water supply (quantity and quality);
- level of perceived importance associated with specific water issues (clean lakes & springs, quality of groundwater, saltwater intrusion, hypoxia, etc.);
- experience with the negative impacts of water quality issues;
- opinions associated with the direction water quality is headed in Florida;
- engagement in water conservation efforts; and
- attitudes towards governmental involvement in regards to the environment.

Methodology

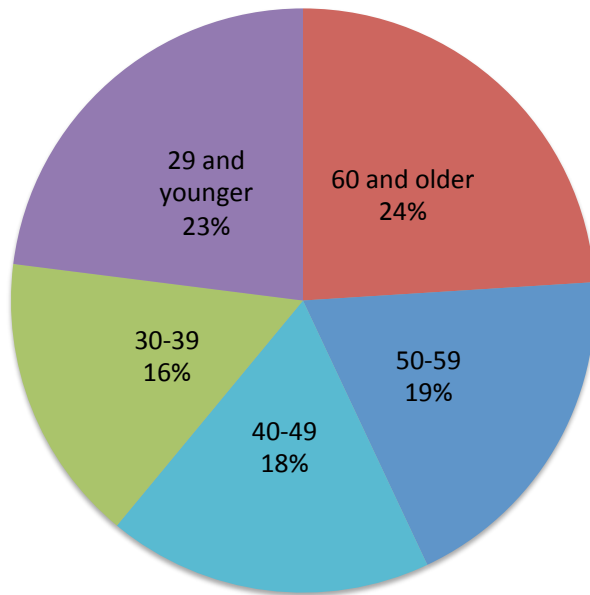
An online survey was distributed in December of 2012, via Qualtrics, to a panel of Florida residents representing equal geographic, age, gender, and race/ethnicity distributions comparable to the 2010 population Census distributions in Florida (cases were weighted to ensure proper representation during analysis). The researchers collected 469 responses from Florida residents age 18 and older, through a partnership with Survey Sampling International, with the intention of providing an overall understanding of what users across Florida think about water issues and their level of engagement in water conservation practices. Descriptive and inferential statistics were used for data analysis purposes using SPSS.

Description of Respondents

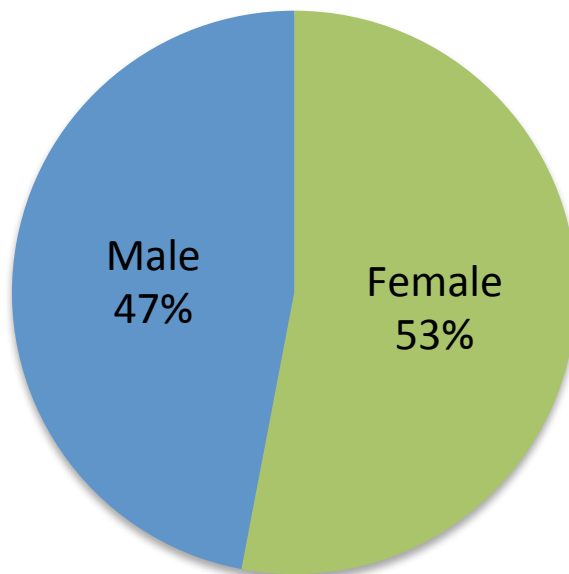
Water in Florida survey respondents represented equal geographic, age, gender, and race/ethnicity distributions as compared to the 2010 population Census data. In cases

where demographics were not a perfect match, the data was weighted by multiplying the number obtained in the sample by the equivalent census data population numbers to ensure the individuals with the demographic characteristic were properly represented during data analysis.

Age Representation

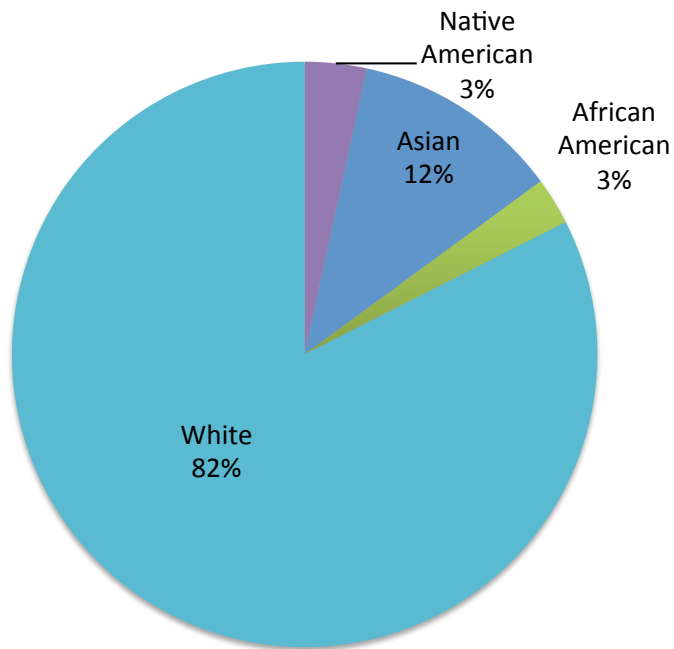


Gender Representation

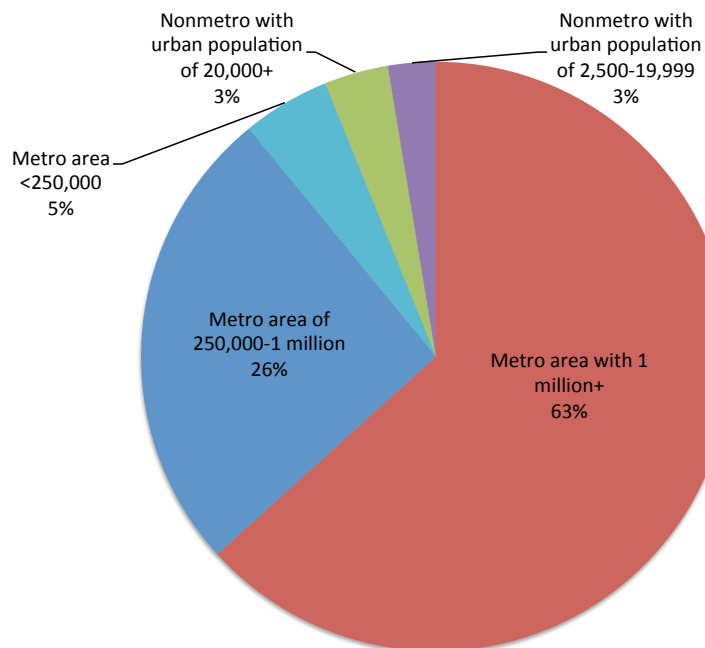


Race/Ethnicity Representation

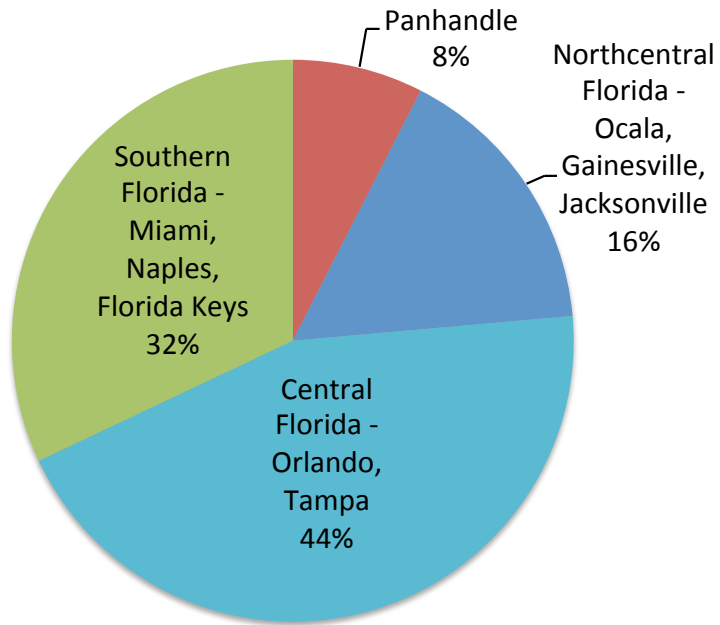
13.5% of the participants reported being of Hispanic ethnicity. In addition, participants' reported race is as follows:



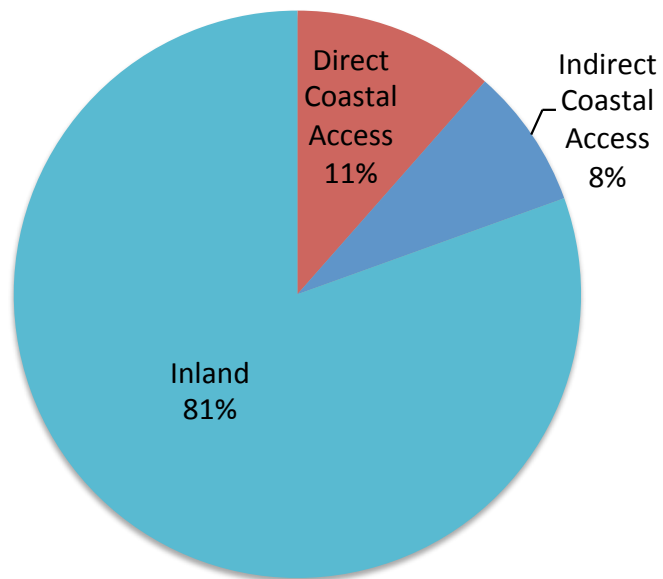
Metro/Nonmetro Representation



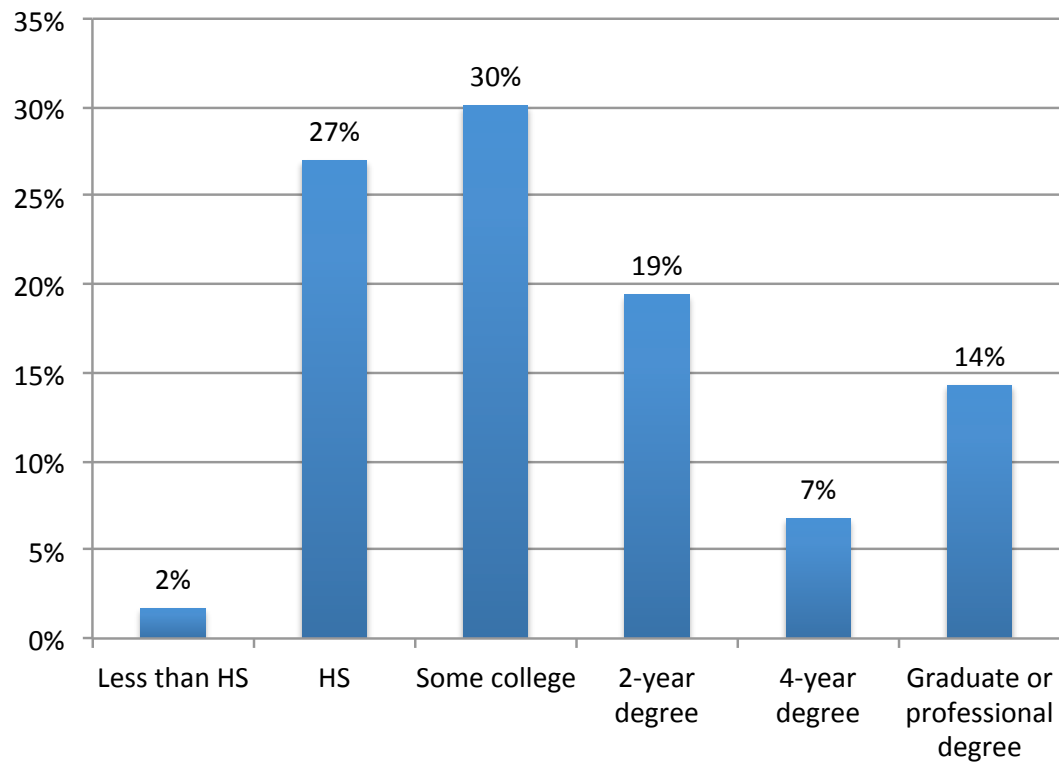
Geographic Representation in the State of Florida



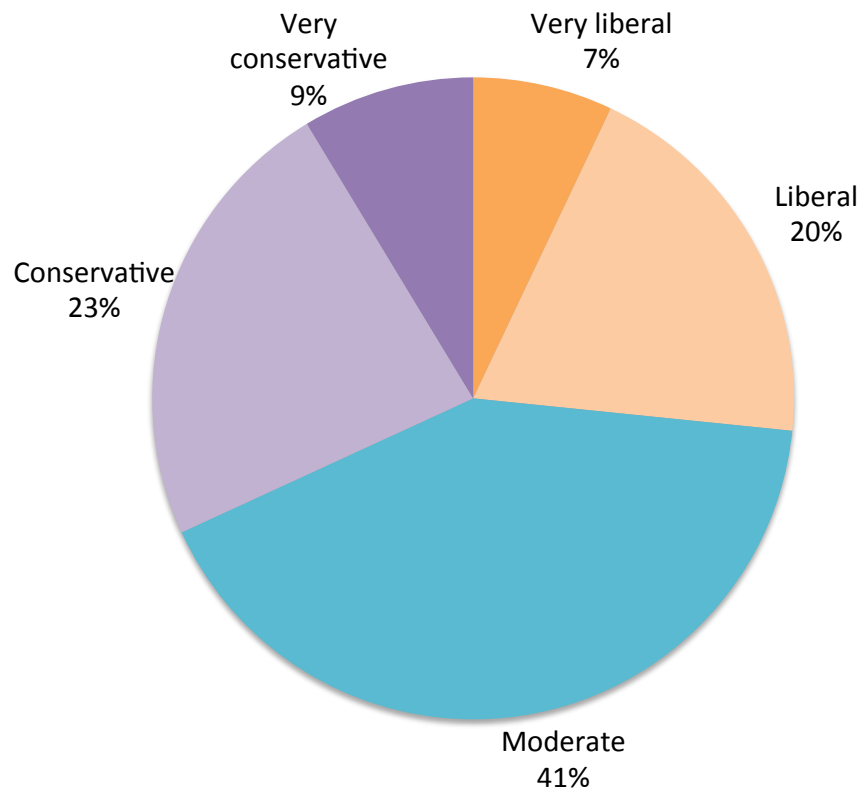
Coastal Access of Participants



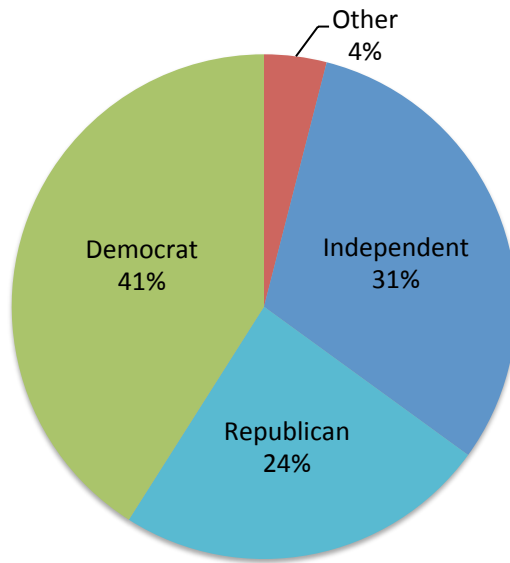
Educational Status of Participants



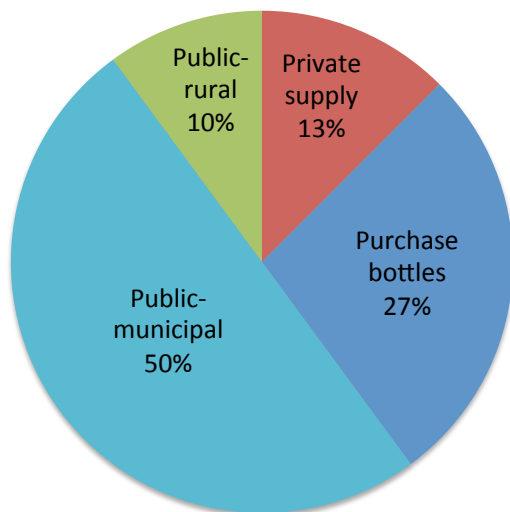
Political Values



Political Affiliation



Main Source of Participants' Drinking Water



Support of Restrictions on Water Use

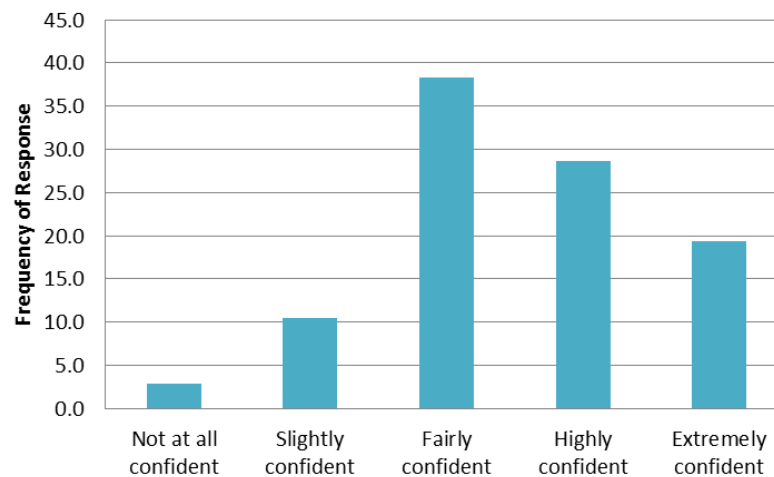
Participants were asked to rank the level they support or unrestricted/restricted water use on a five-point semantic differential scale between 1- support totally unrestricted water use and 5 – support totally restricted water use. The participants' scores were averaged to create a mean score of 3.34 indicating participants were slightly more supportive of restricted water use than unrestricted water use.

Results

Confidence in the Water Supply

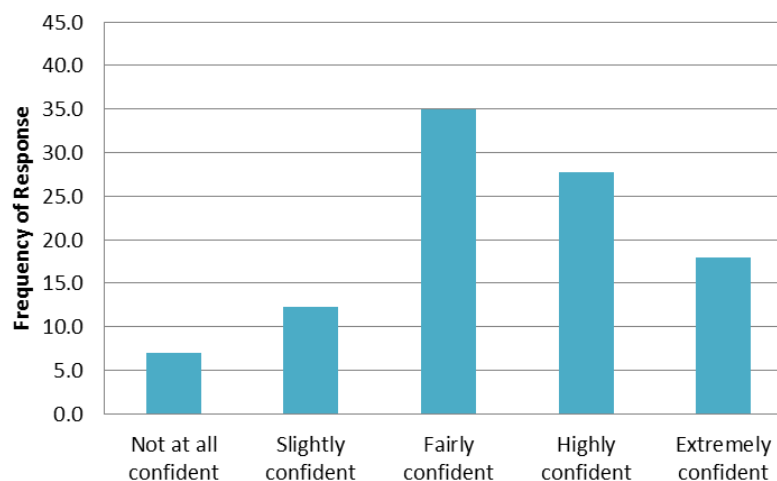
Confidence community will have enough water to meet all of its needs in 10 years

Overall, participants were confident there will be enough water to meet the needs of their community in 10 years. 48.3% reported being either highly confident or extremely confident in this outcome while only 13.4% reported not being confident or slightly confident about their water supply.



Confidence of water safety in the home

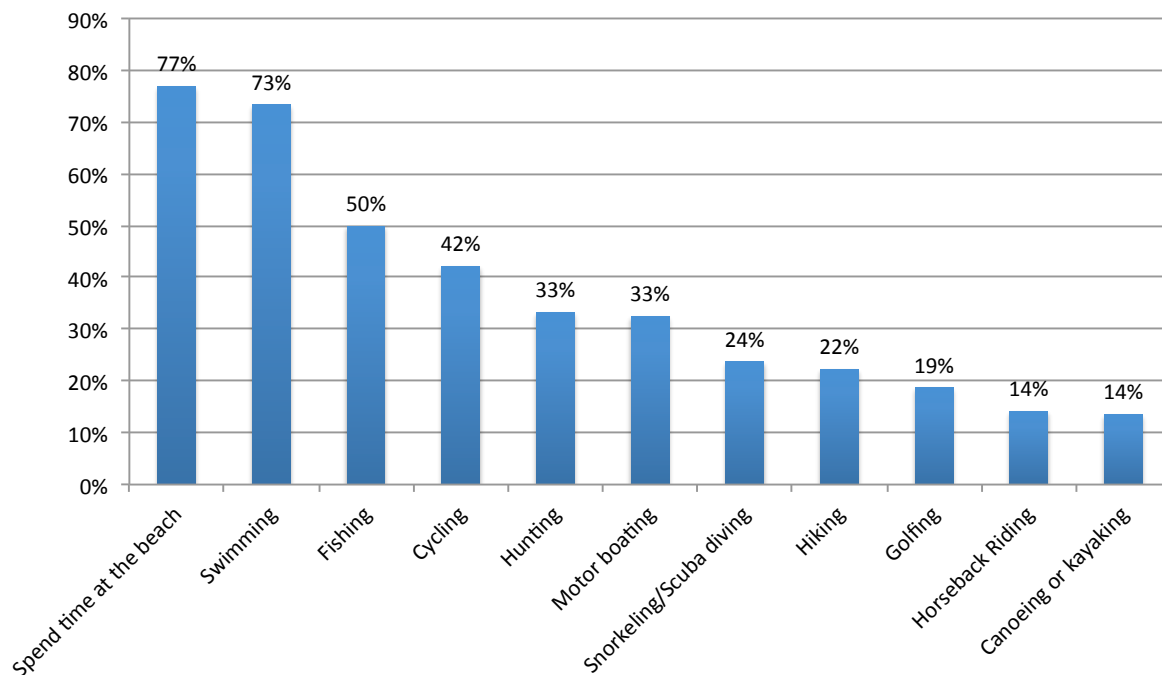
While participants did not report as high a level in water safety as availability, overall participants were confident about the safety of the water in their homes. 46% reported being either highly confident or extremely confident in this outcome. However, 19.3% reported not being confident or only slightly confident about the safety of water in their home. All (100%) of the participants reporting a lack of confidence or only slight confidence lived in metropolitan areas.



Engagement in Outdoor activities

Activities Florida citizens like to participate in while spending time outdoors

Participants were asked to indicate the activities they engaged in while spending time outdoors by selecting the activities they participated in from a list. Florida citizens were most likely to spend time at the beach or swim when outdoors. When asked what other activities they engaged in while outdoors responses included camping, sports (such as basketball, football, and soccer), gardening, photography, picnicking, taking walks/running, and going to theme parks.



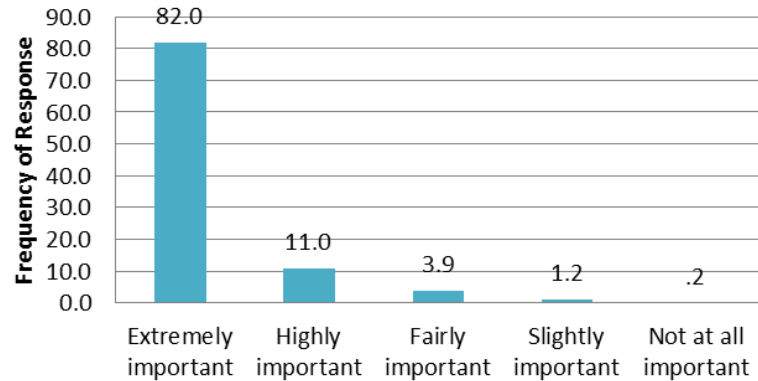
Activity Engagement by Age

Activity	29 and younger	30-39	40-49	50-59	60 and older
Spend time at the beach	87.1	89.2	74.3	77.9	60.4
Swimming	87.6	79.4	70.1	75.4	56.4
Fishing	48.5	62.5	51.4	56.1	36.2
Cycling	51.8	35.7	48.6	46.8	28.5
Hunting	41.0	40.3	40.7	31.2	16.2
Motor boating	33.0	39.5	40.3	32.5	21.7
Snorkeling/Scuba diving	27.5	27.3	29.7	25.3	13.5
Hiking	29.4	26.9	26.0	23.1	9.7
Golfing	18.2	24.2	19.4	18.7	15.2
Horseback Riding	8.2	10.4	13.6	13.5	23.6
Canoeing or kayaking	21.0	24.1	12.9	7.4	4.7

Level of Importance Associated with Water Quality

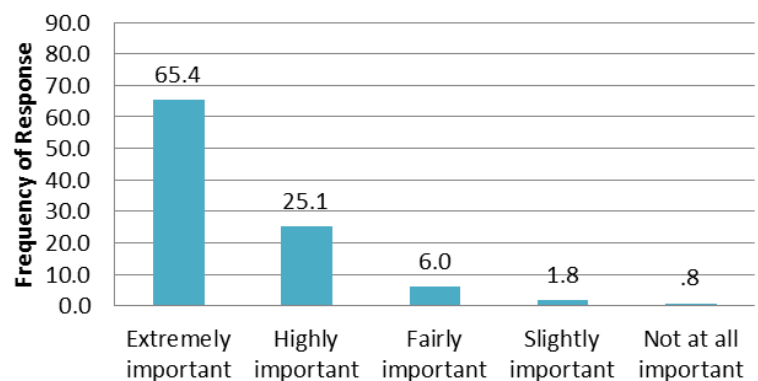
Clean Drinking Water

93.0% of participants reported clean drinking water was either highly or extremely important.



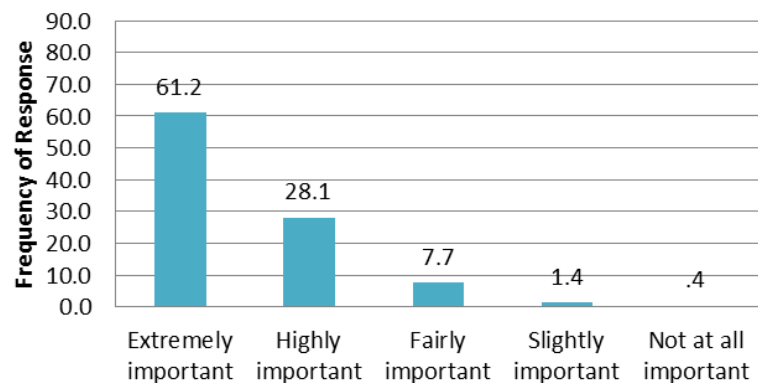
Clean Beaches

90.5% of participants reported clean beaches were either highly or extremely important.



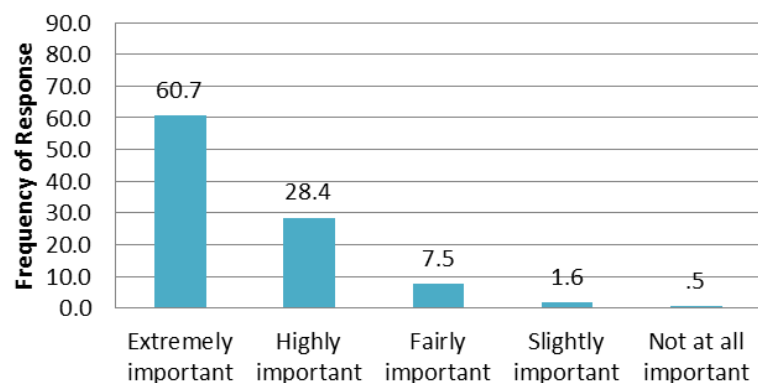
Clean Oceans

89.3% of participants reported clean oceans was either highly or extremely important.



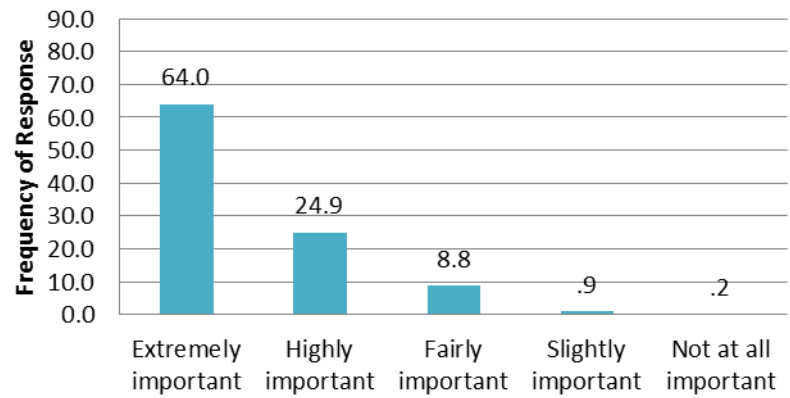
Clean Bays and Estuaries

89.1% of participants reported clean bays and estuaries were either highly or extremely important.



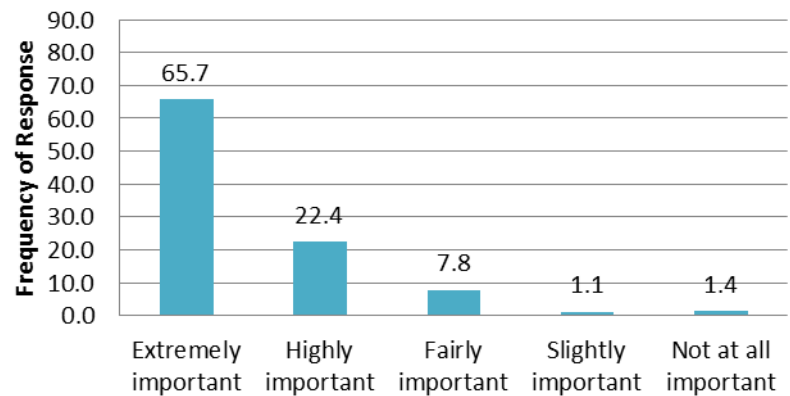
Clean Lakes and Rivers

88.9% of participants reported clean lakes and rivers were either highly or extremely important.



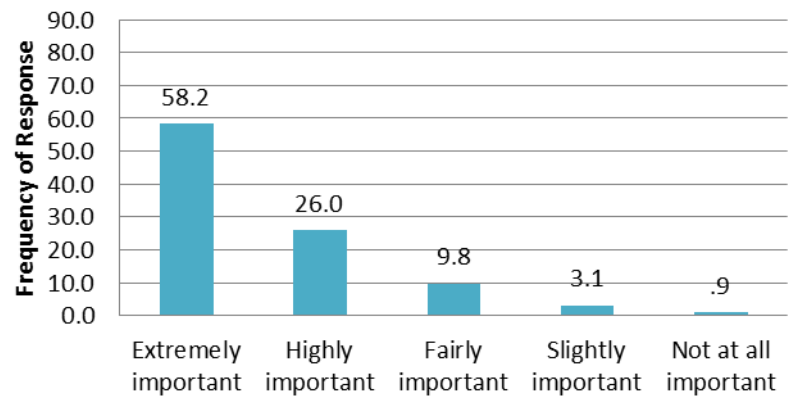
Clean Groundwater

88.1% of participants reported clean groundwater was either highly or extremely important.



Clean Water for Shellfishing

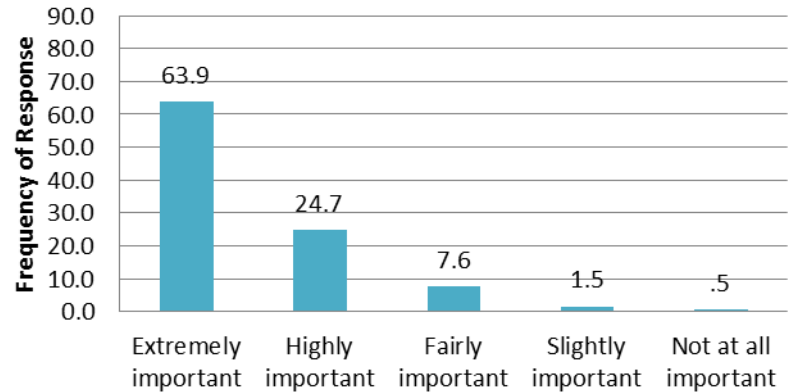
84.2% of participants reported clean water for shellfishing was either highly or extremely important.



Level of Importance Associated with Water Quantity

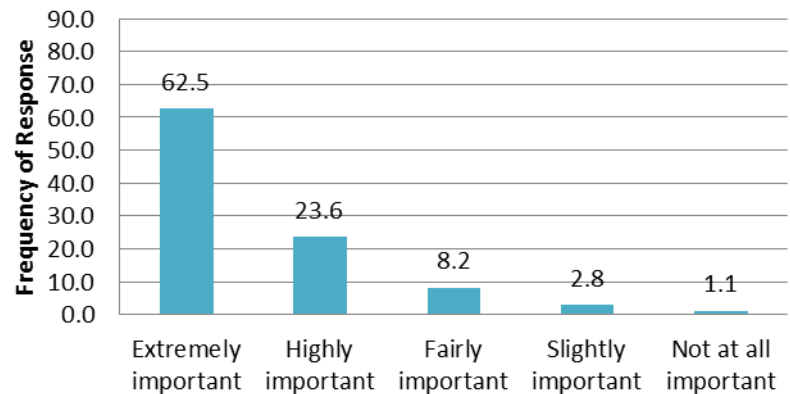
Plentiful Water for Agriculture

88.6% of participants reported plentiful water for agriculture was either highly or extremely important.



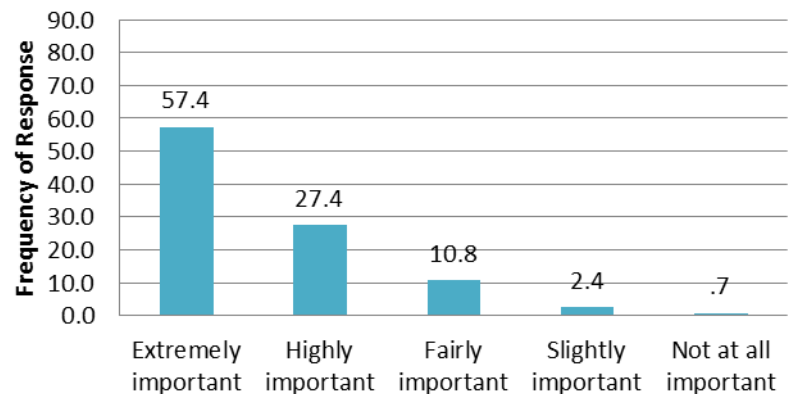
Plentiful Water for Recreation

86.1% of participants reported plentiful water for recreation was either highly or extremely important.



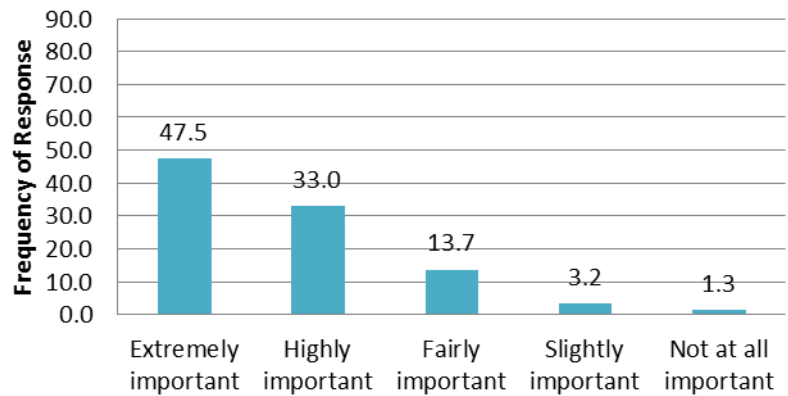
Plentiful Water for Golf Courses

84.8% of participants reported plentiful water for golf courses was either highly or extremely important.



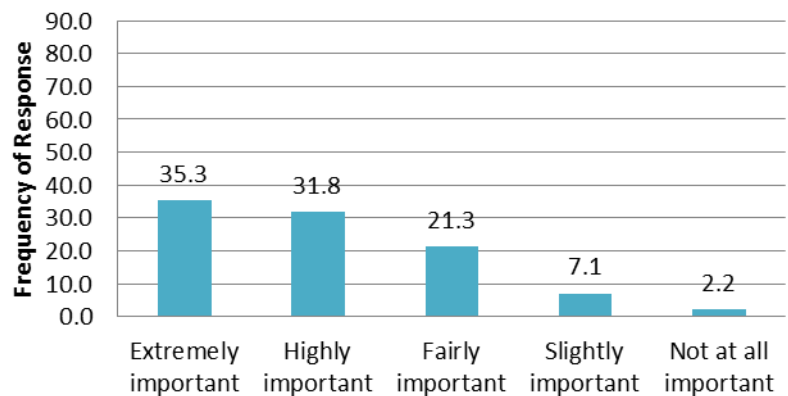
Plentiful Water for Commerce/Industry/Power Generation

80.5% of participants reported plentiful water for industry was either highly or extremely important but less than half rated it as extremely important.



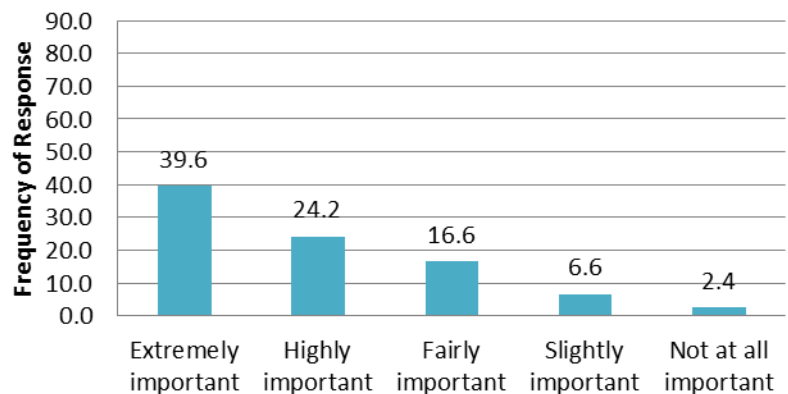
Plentiful Water in Aquifers, Springs, Rivers and Lakes

67.1% of participants reported plentiful water for aquifers, springs, rivers and lakes was either highly or extremely important/ 10% reported it as only slightly important or not important at all.



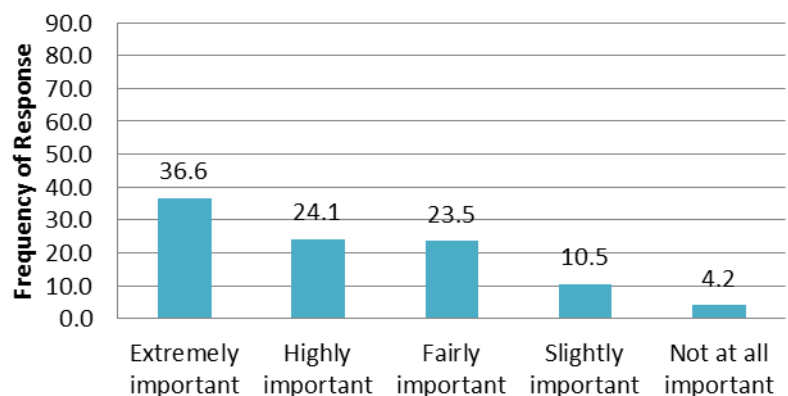
Plentiful Water for Cities

63.8% of participants reported plentiful water for cities was either highly or extremely important with 9% reporting it as only slightly important or not important at all.



Plentiful Water for Household Landscapes

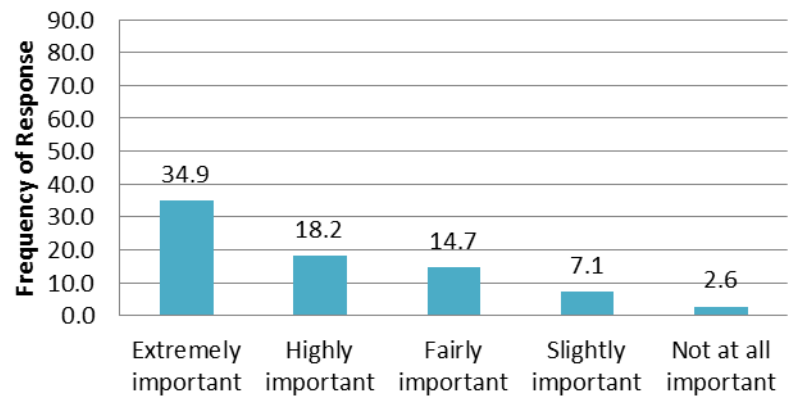
60.7% of participants reported plentiful water for household landscapes was either highly or extremely important and over 15% reported it being only slightly important or not important at all.



Level of Importance Associated with Water Issues

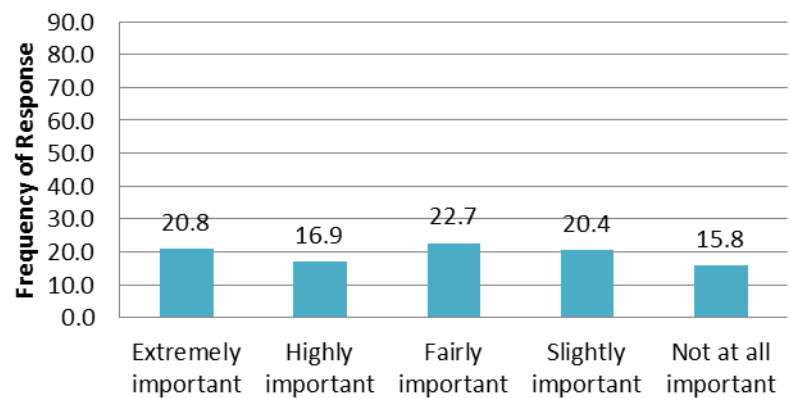
Saltwater Intrusion

Only 53.1% of participants reported saltwater intrusion was either highly or extremely important with nearly 10% reporting it as only slightly important or not important at all.



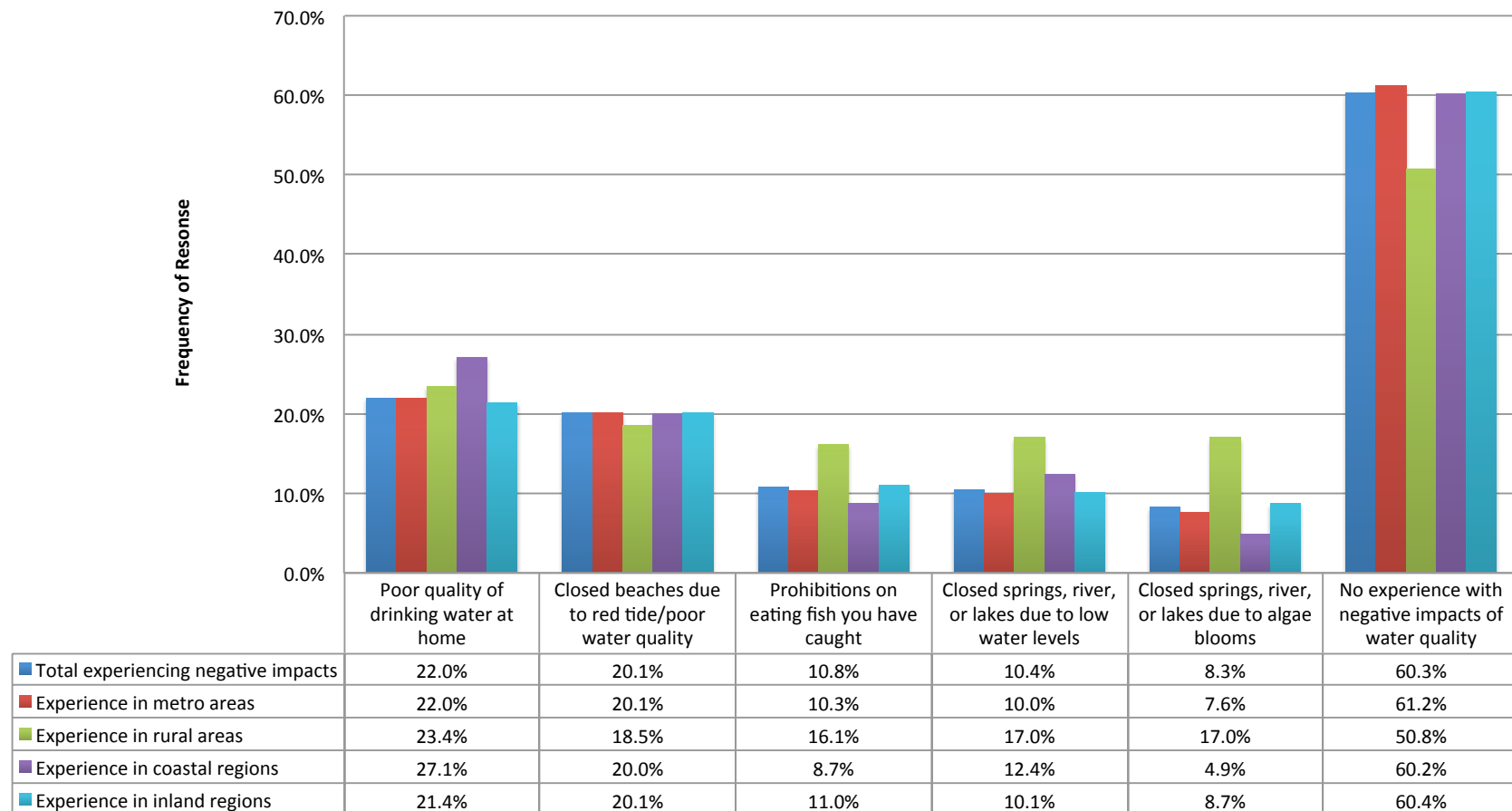
Hypoxia in the Gulf of Mexico

Responses were evenly spread with only 37.7% of participants reported hypoxia as either highly or extremely important. 36.3% reported it as only slightly important or not important at all.



Experience with the Negative Impacts of Water Quality

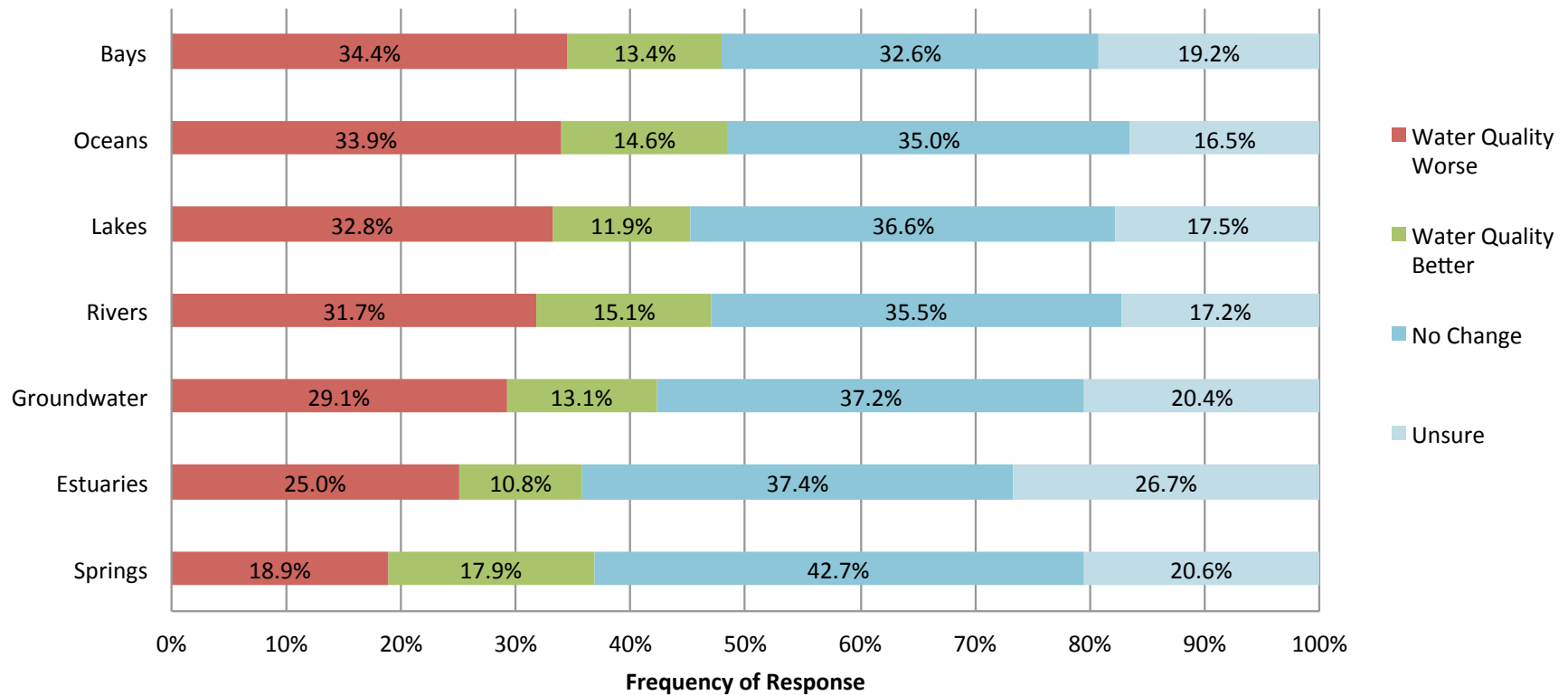
Florida citizens reported experiencing poor drinking water in their home more frequently than any other issue. They also experienced closed beaches due to red tide and poor water quality at a higher level than some of the other water quality issues, as seen in the table below. Individuals living in rural areas experienced the impacts of poor water quality more often than those living in metropolitan areas with almost 50% experiencing some type of impact.



Opinions Associated with the Direction Water Quality is headed in Florida

When asked their opinions related to the direction water quality is headed in various water bodies in Florida, more participants reported they believed water quality was getting worse than getting better as seen in the figure below.

Participants had the most concern over the direction water quality was headed in Florida bays, oceans, and lakes and less concern over the direction water quality is headed in the springs and estuaries.

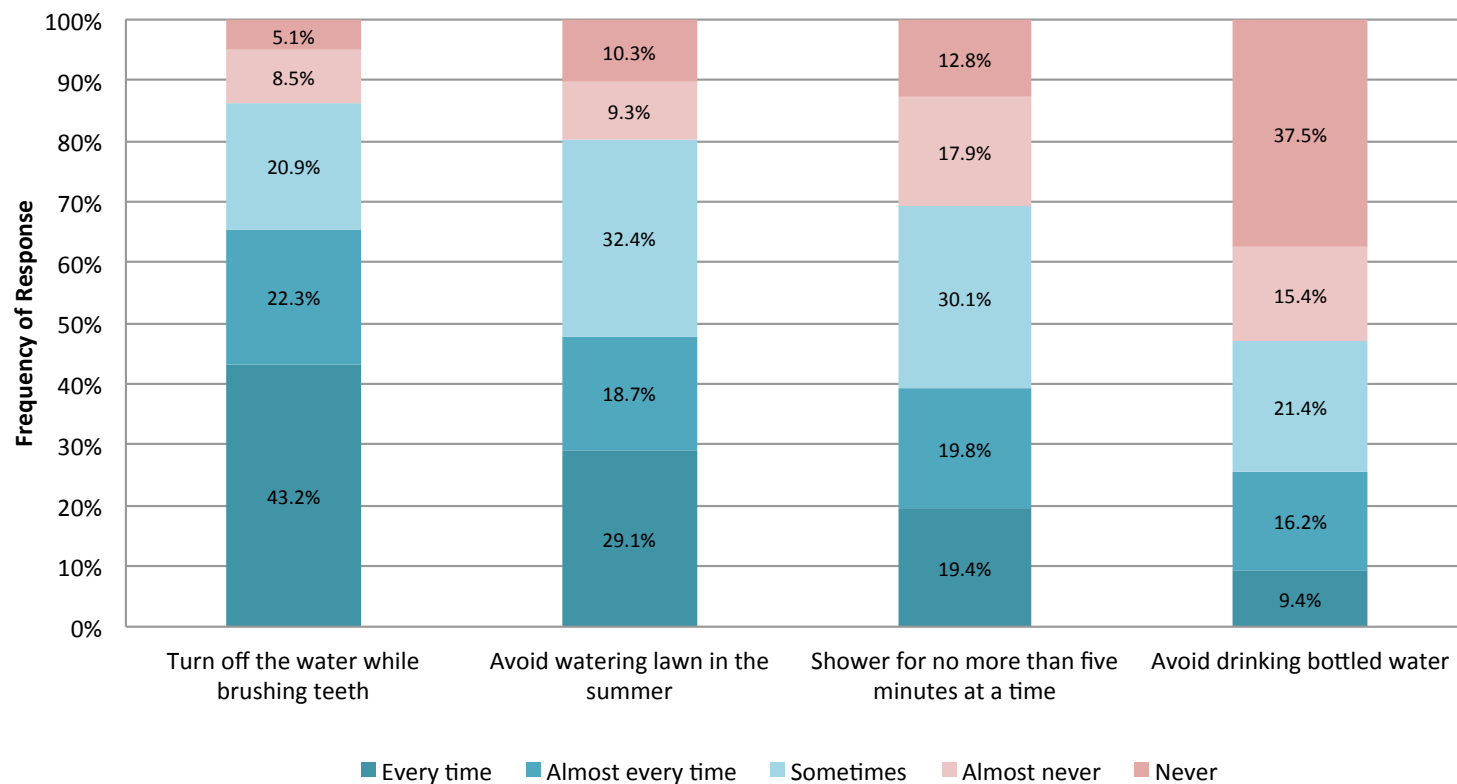


Engagement in Water Conservation Efforts and Water Resource Protection Efforts

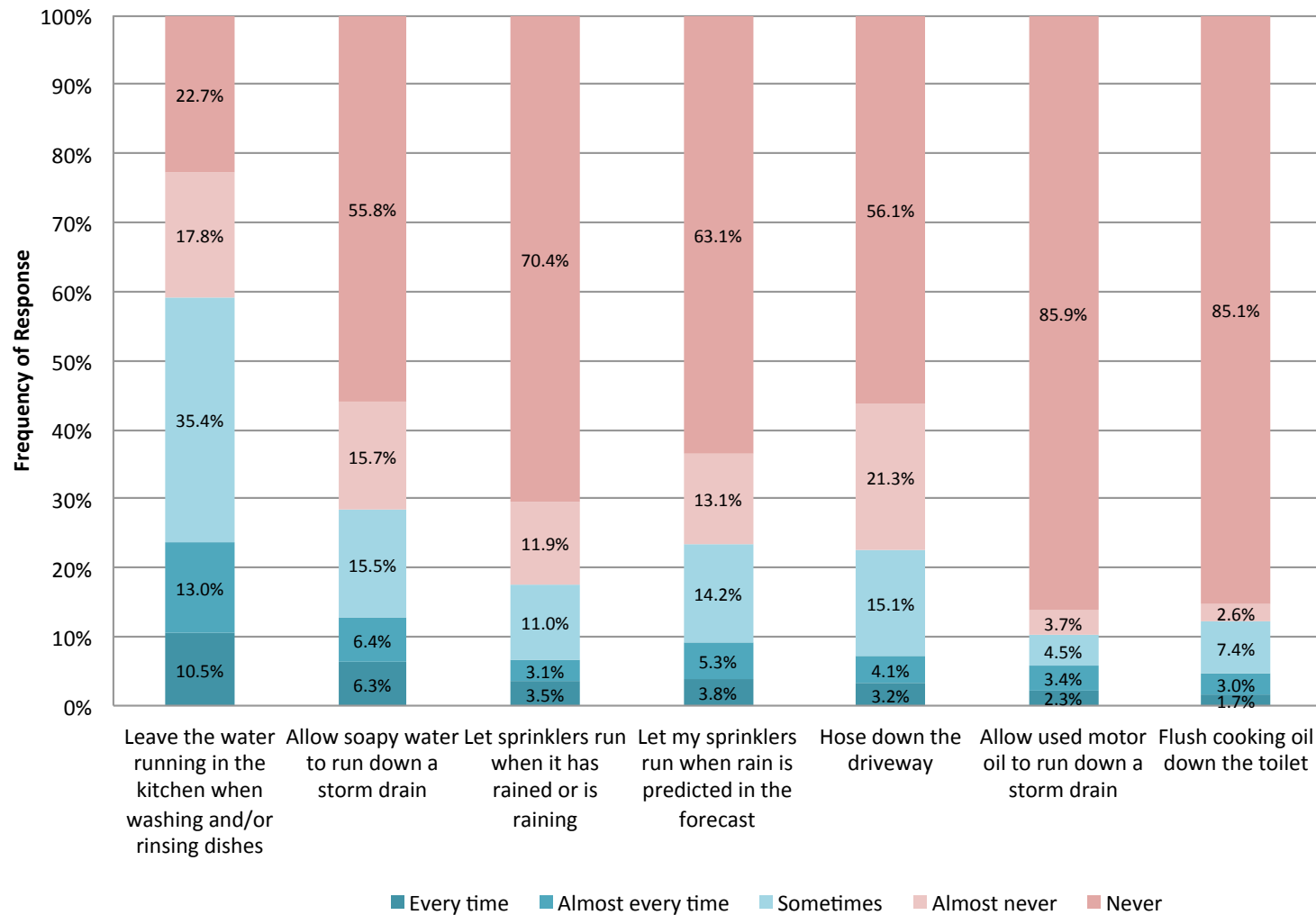
Participants were asked to respond to sets of specific positive and negative water conservation behavior statements by indicating how often they engaged in the particular behavior on a five point Likert-type scale ranging from 1 – Never to 5 – Every time.

Engagement in Water Conservation Efforts

When asked how often participants engaged in specific water conservation efforts, over 65% reported turning off the water every time or almost every time they brush their teeth. Participants were not as willing to limit their shower time or avoid drinking bottled water.

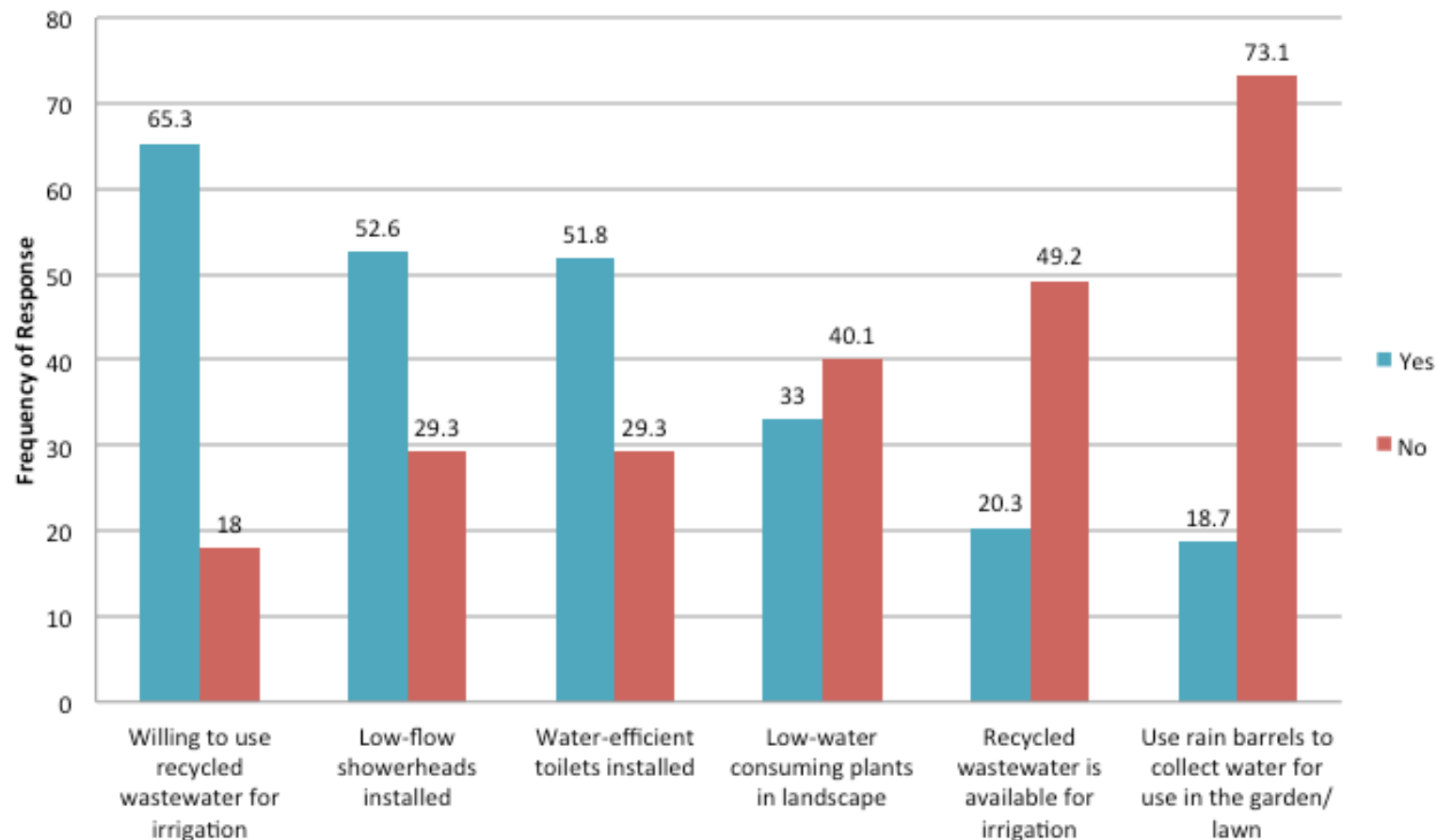


When asked how often participants engaged in specific water behaviors impacting water quantity and water quality, they reported leaving the water running while washing and/or rinsing dishes the most often and allowing used motor oil to run down the storm drain and flushing cooking oil down the toilet least often as seen in the figure below.



Water Resource Protection Efforts

When asked what water resource protection efforts participants engaged in, or were willing to engage in, 65.3% reported being willing to use recycled wastewater to irrigate their lawn or landscape although only 20.3% reported that recycled wastewater was available for them to use as seen in the figure below. The majority of participants have low-flow showerheads and water-efficient toilets installed in their homes, but only a third of the participants have low-water consuming plant materials in their yards.

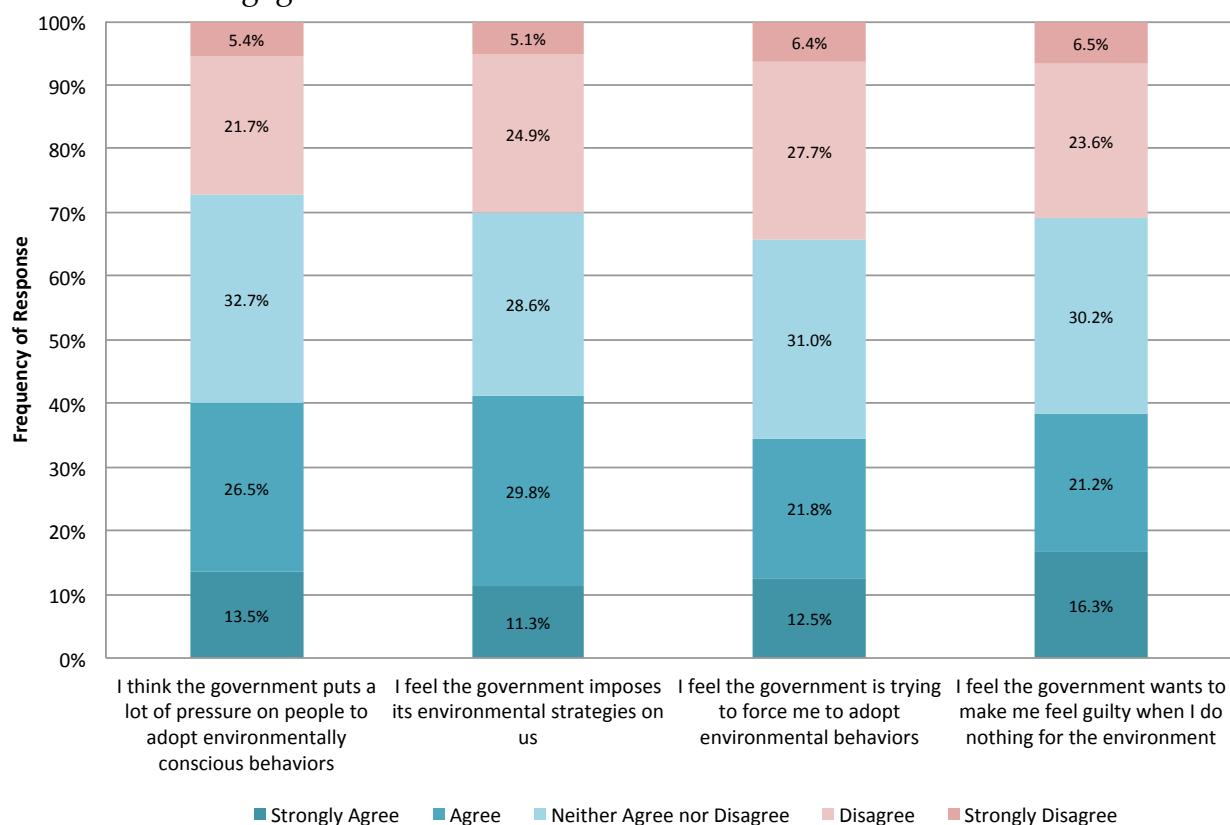


Attitudes towards Government Influence and Involvement in Environmental Efforts

Participants were asked to rate their level of agreement or disagreement with a series of statements involving government involvement and influence as it related to environmental efforts. Participants were asked to rate their perception on a five point Likert-type scale ranging from 1 - Strongly Disagree to 5 - Strongly Agree.

Perceived Government Influence

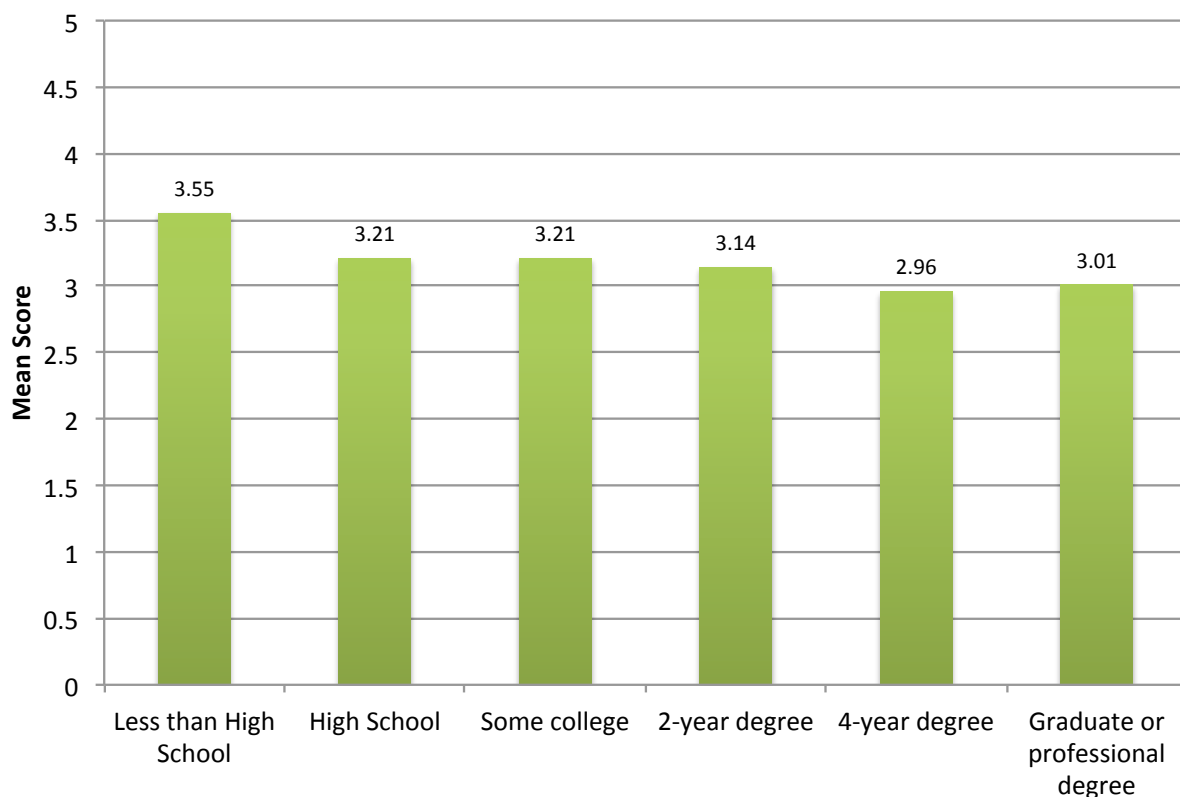
The first series of four statements asked participants to identify how much they perceived the government tried to influence their engagement in environmental efforts. The results can be seen in the following graph:



Participants' numeric scores on the four government influence items were combined and averaged to create a government influence index. Mean ratings were categorized according to the real limits standard: 1.00 to 1.49 = *strongly disagree*, 1.50 to 2.49 = *disagree*, 2.50 to 3.49 = *neither agree nor disagree*, 3.50 to 4.49 = *agree*, and 4.50 to 5.00 = *strongly agree*. The reliability of the government influence index reflected a Cronbach's alpha of .91 when calculated *a priori*. Overall the government influence index had a mean score of 3.16 indicating the participants, as a whole, neither agreed nor disagreed that the government influenced their involvement in environmental efforts.

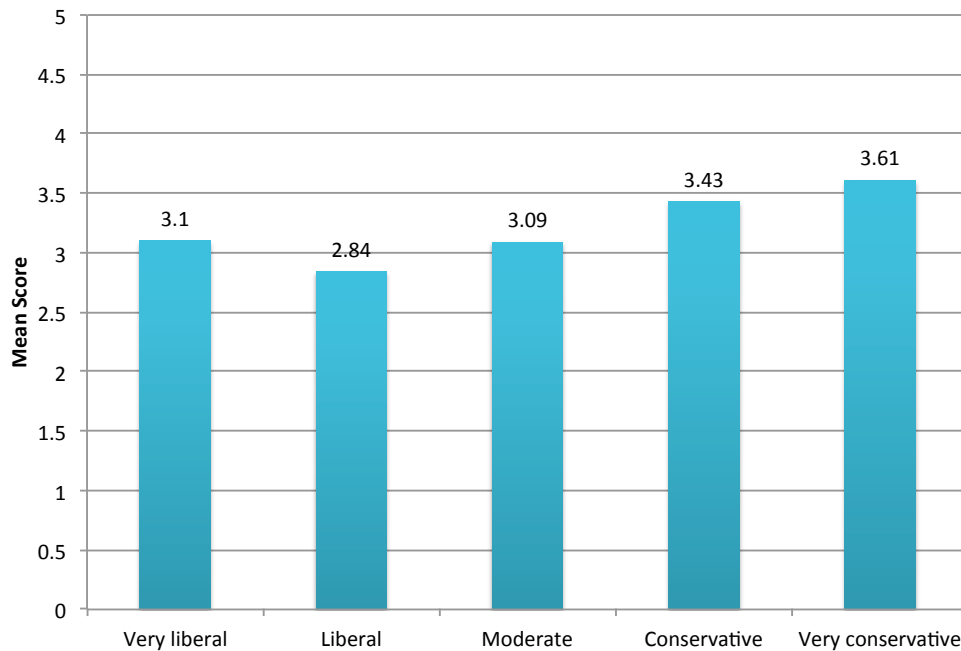
Perceptions of government influence based on educational status

When examined based on educational status, participants with less than a high school education agreed ($M = 3.55$) the government had an influence on their involvement in environmental behaviors.



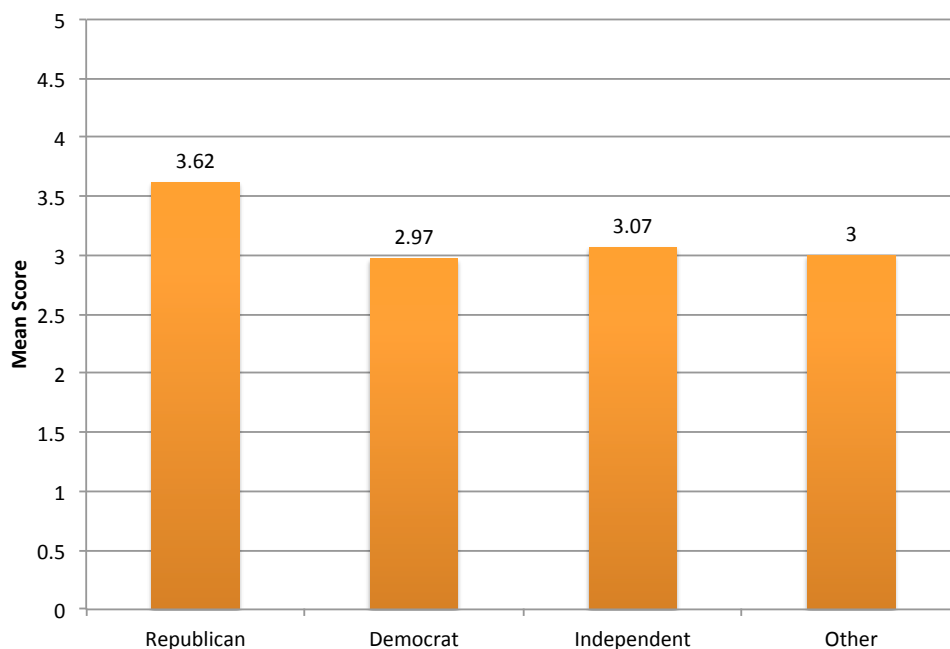
Perceptions of government influence based on political values

When examined based on political values, participants who were very conservative agreed ($M = 3.61$) the government influenced their involvement in environmental behaviors.



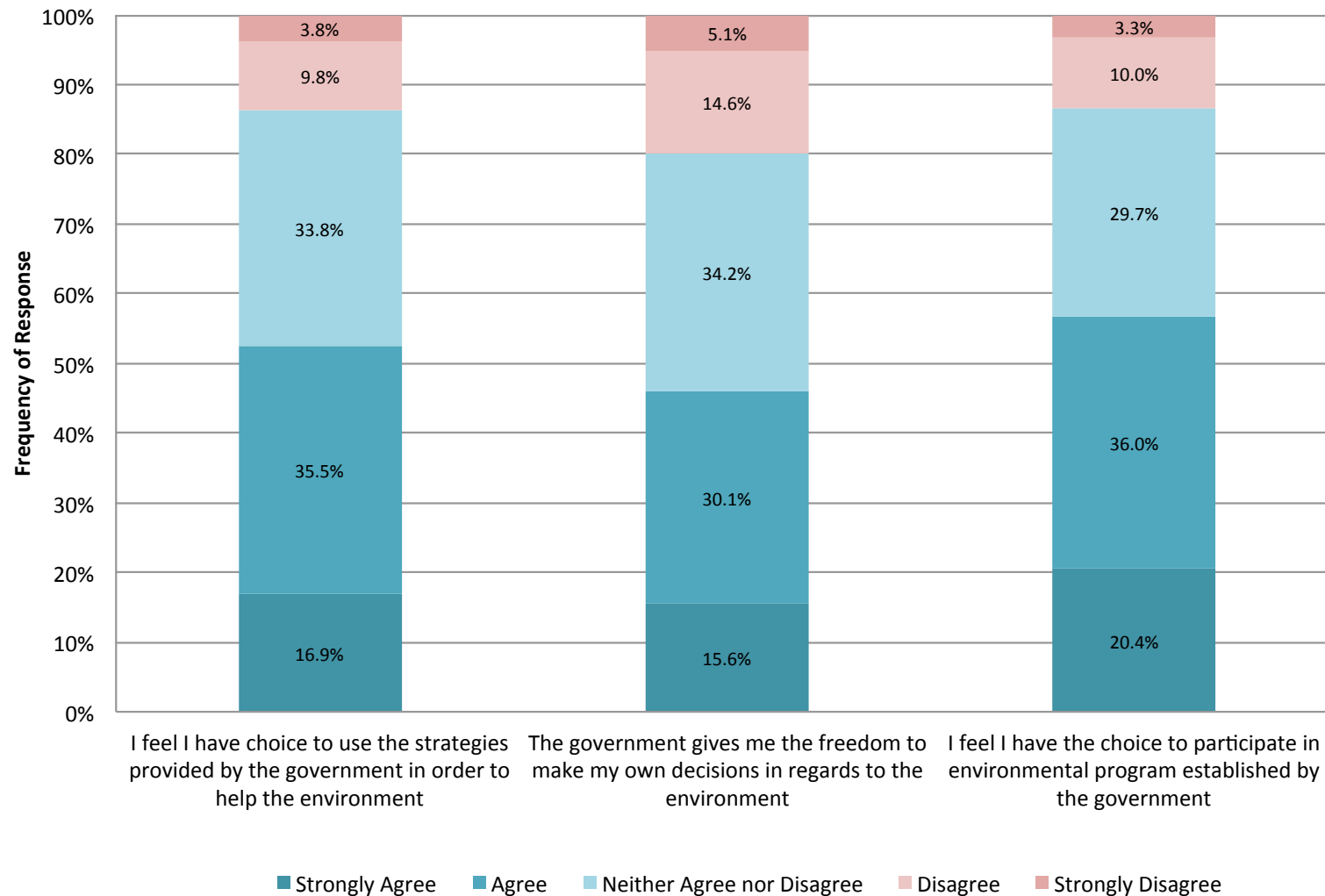
Perceptions of government influence based on political affiliation

Participants reporting a Republican affiliation also agreed ($M = 3.62$) the government had an influence on their involvement in environmental behaviors.



Freedom of Involvement in Environmental Efforts

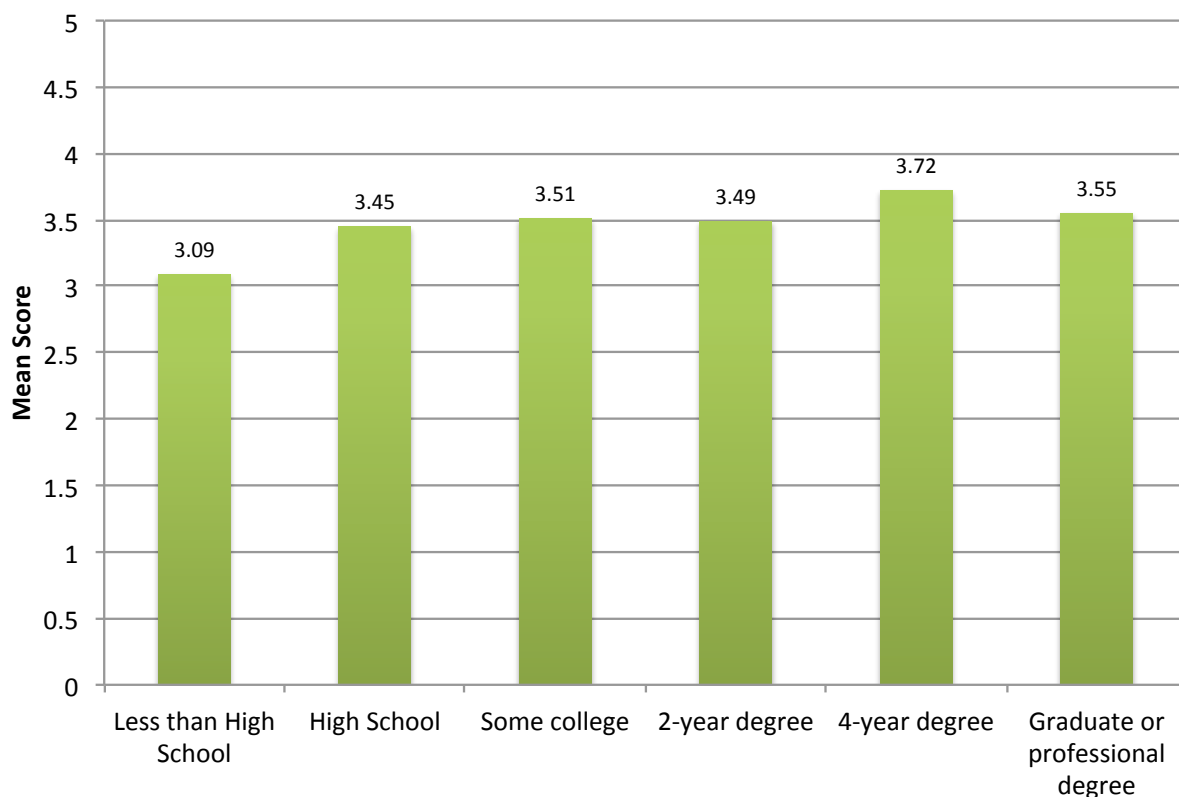
The second series of statements requested participants' signify how much they felt the government gave them freedom of choice when getting involved with environmental efforts. The results can be seen in the following graph:



Participants' numeric scores on the three freedom of involvement items were combined and averaged to create a freedom of involvement index. Mean ratings were categorized according to the real limits standard: 1.00 to 1.49 = *strongly disagree*, 1.50 to 2.49 = *disagree*, 2.50 to 3.49 = *neither agree nor disagree*, 3.50 to 4.49 = *agree*, and 4.50 to 5.00 = *strongly agree*. The reliability of the freedom of involvement index reflected a Cronbach's alpha of .82 when calculated *a priori*. Overall the freedom of involvement index had a mean score of 3.50 indicating the participants, as a whole, agreed they had freedom of choice when getting involved in environmental efforts.

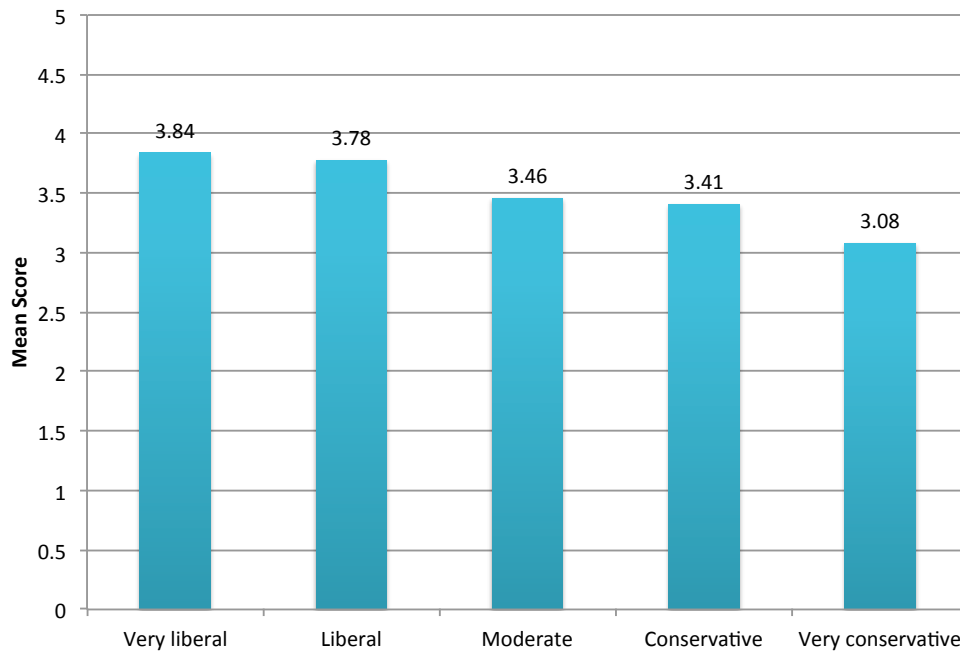
Perceptions of freedom of choice based on educational status

When examined based on educational status, participants who had received a four-year degree ($M = 3.72$) or a graduate/professional degree ($M = 3.55$) agreed they had freedom of choice in their level of involvement in environmental behaviors.



Perceptions of freedom of choice based on political values

When examined based on political values, participants who were liberal ($M = 3.78$) or very liberal ($M = 3.84$) also agreed they had freedom of choice when getting involved in environmental behaviors.



Perceptions of freedom of choice based on political affiliation

Participants reporting a Democratic affiliation also agreed ($M = 3.72$) the government allowed them to have freedom of choice when it came to their involvement in environmental behaviors.

