



February 2015

## Final Report

Public Opinions of Water in Florida

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## Executive Summary

Public Opinions of Water in Florida

February 2015

### Introduction

Water quality and water quantity are crucial issues in Florida. As the population continues to grow, balancing agricultural needs, business and development needs, and public use has become more challenging. The Public Opinions of Water in Florida survey was taken by 749 Florida residents and examines public opinions related to water quality and quantity issues.

### Findings

- While 52% of respondents had not seen news coverage about water issues in Florida in the last month, 85% reported they were likely or very likely to pay attention to a news story about water.
- Fifty-three percent of respondents who had a yard had to abide by water restrictions.
- When ranked against nine other key Florida issues, water was listed third, behind the economy and healthcare. In addition, 84% considered water as extremely or highly important in Florida.
- Respondents felt it was more important to have plentiful water for city use (90%) than for use in golf courses (14%).
- More respondents agreed or strongly agreed red tide was an important issue in Florida (68%) than saltwater intrusion (59%).
- Twenty-three percent of the respondents had experienced poor quality drinking water at home, and 22% had experienced closed beaches due to red tide or poor water quality.
- Forty-five percent of respondents reported they turn off the water while brushing their teeth “every time,” while only 11% of respondents reported they shower for no more than five minutes every time they bathe.
- The most commonly owned water-efficient products amongst respondents were water-efficient toilets and low-flow shower heads. Fifty-eight percent of respondents owned a water-efficient toilet and 56% owned a low-flow shower head. Only 15% owned rain barrels and 24% used recycled wastewater to irrigate their lawns/landscapes.
- When asked about additional water conservation behaviors, 87% reported they were likely or very likely to only run the washing machine when it is full, compared to just 25% who were likely or very likely to join a water conservation organization.
- Seventy-seven percent of respondents were likely or very likely to vote to support water conservation programs, 72% percent of respondents were likely or very likely to support water restrictions issued by their local government, and 68% were likely or very likely to vote for candidates who supported water conservation.
- Seventy-eight percent of respondents were willing or very willing to take action to conserve water if it meant reducing the amount they water their lawn but only 42% were willing or very willing to do so if it meant portions of their grass may die and need replacing.
- Seventy-two percent of respondents would be willing to have their water bill increase by 10% if it ensured a future water supply in Florida, but only 19% were willing to do so if it required a 50% increase in their water bill.
- Overall, respondents had a low level of familiarity with water policies; the Clean Water Act had the highest level of familiarity.
- Out of a list of 14 water-related topics, respondents were most interested in learning about fish and wildlife water needs, with 31% of respondents interested in learning more about this topic.

## Background

Blessed with bountiful freshwater sources, heavy rainfall, and oceans, Florida is unique in its seemingly endless water resources. However, water quality and water quantity are a crucial issue in Florida, as the need to balance agricultural needs, business and development needs, the needs of the natural environment, and public use is becoming more challenging as the state's population continues to grow. Opinion leaders in Florida's agricultural sector have recurrently identified water as the top issue in Florida and recent water quality policy changes have spurred legal and political debates (Odera, Lamm, Dukes, Irani, & Carter, 2013). The Public Opinions of Water in Florida survey was designed to examine public opinions related to water quality and quantity issues in Florida as a measure of opinion at a specific point in time. The survey included items that identify Floridians':

- Perceptions of the importance of water when compared to other Florida issues;
- Confidence in the water supply;
- Level of perceived importance associated with clean and plentiful water;
- Experience with the negative impacts of water quality issues;
- Opinions associated with the direction water quality is headed in Florida;
- Engagement or likelihood of participating in water conservation efforts and behaviors;
- Willingness to pay for water conservation efforts;
- Attitudes towards governmental involvement in regards to the environment; and
- Overall knowledge of and interest in learning about water policies and educational programs.

## Methods

In November 2014, an online survey was distributed to Florida residents using non-probability sampling. Qualtrics, a survey software company, distributed the online survey link to Florida residents, age 18 or older, resulting in 749 completed responses. To ensure the respondents were representative of the Florida population according to the 2010 U.S. Census (seen in Table 1), the data were weighted to balance their geographic location in the state, age, gender, and race/ethnicity (Kalton & Flores-Cervantes, 2003). Weighting procedures are commonly used in non-probability samples to compensate for selection, exclusion, and non-participation biases (Baker et al., 2013), and as a result can yield results comparable or in some cases better than standard probability-based samples (Abate, 1998; Twyman, 2008; Vavreck & Rivers, 2008). Public opinion research commonly utilizes non-probability samples to make population estimates (Baker et al., 2013).

The survey instrument was developed by Dr. Alexa Lamm, Associate Director of the UF/IFAS Center for Public Issues Education, and incorporated elements from several existing instruments, including items from the Canadian water attitudes survey from the Royal Bank of Canada's Blue Water Project (Patterson, 2012), items from the National Water Survey Needs Assessment Program (Mahler et al., 2013) and the Government Style Questionnaire (Green-Demer, Blanchard, Pelletier, & Béland, 1994).

For more detailed methods, please refer to our website: [www.piecenter.com](http://www.piecenter.com)



*Table 1: Florida Census Data from 2010*

Demographic Category	Percentage of Florida residents in 2010 U.S. Census
<b>Gender</b>	
Male	48.9
Female	51.1
<b>Race and Ethnicity</b>	
White	77.5
Hispanic	22.5
African American	16.0
Other	3.6
Asian	2.5
Multiracial	2.5
Native American	0.4
<b>Age</b>	
19 and younger	1.3
20-29 years	12.8
30-39 years	12.2
40-49 years	14.2
50-59 years	13.5
60-69 years	11.1
70-79 years	7.4
80 and older	4.9
<b>Rural Urban Continuum</b>	
Metro- Counties in metro areas of 1 million population or more	63.1
Metro- Counties in metro areas of 250,000 to 1 million population	25.7
Metro- Counties in metro areas of fewer than 250,000 population	4.8
Nonmetro- Urban population of 20,000 or more, adjacent to a metro area	3.5
Nonmetro- Urban population of 2,500 to 19,999, adjacent to a metro area	2.6
Nonmetro- Completely rural or less than 2,500 urban population, adjacent to a metro area	0.3

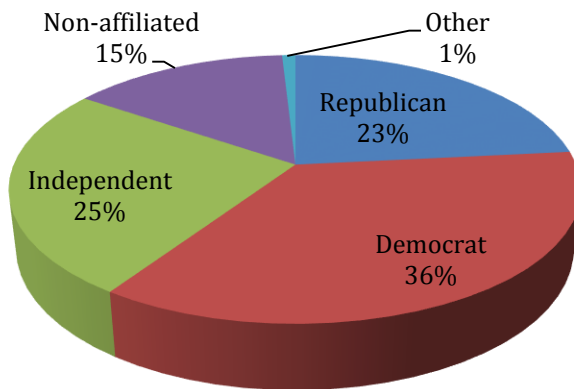
## Results

### Description of Respondents

#### Political Values and Affiliation

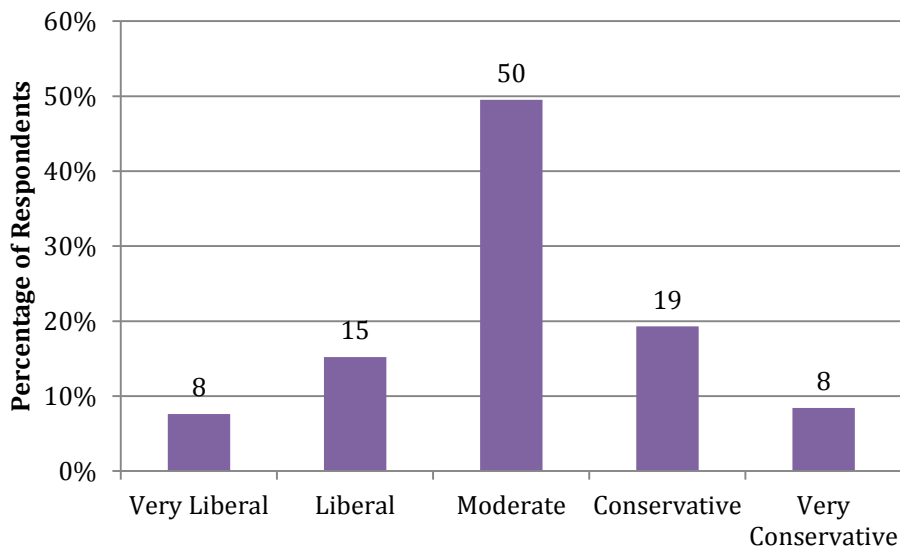
Thirty-six percent of respondents were Democrats, 25% considered themselves Independent, and 23% considered themselves Republican (Figure 1).

*Figure 1: Political affiliation*



When asked about their political ideology, 50% considered themselves to be politically moderate, 27% considered themselves conservative or very conservative, and 23% considered themselves liberal or very liberal (Figure 2).

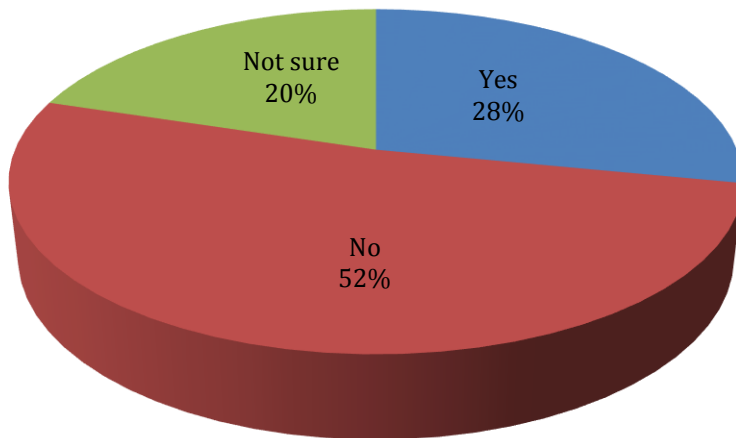
*Figure 2: Political ideology*



### News Coverage of Water Issues

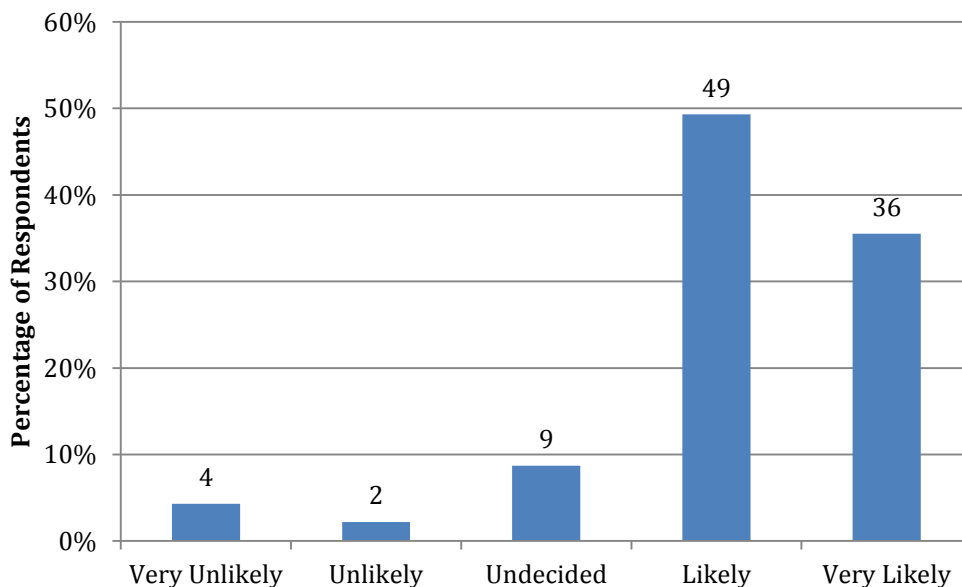
Respondents were asked whether they had seen news coverage about water issues in the last month. Fifty-two percent of respondents had not seen news coverage about water issues in Florida in the last month (Figure 3).

*Figure 3: Seen news coverage about water issues in last month*



Respondents were then asked how likely they were to pay attention to a news story about water issues in Florida. Eighty-five percent of respondents indicated they were likely or very likely to pay attention to such a story (Figure 4).

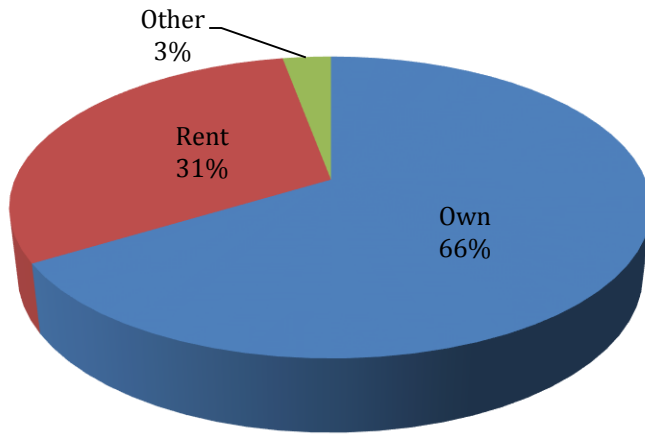
*Figure 4: Likelihood of paying attention to news story about water*



### Home Ownership and Participation in HOA

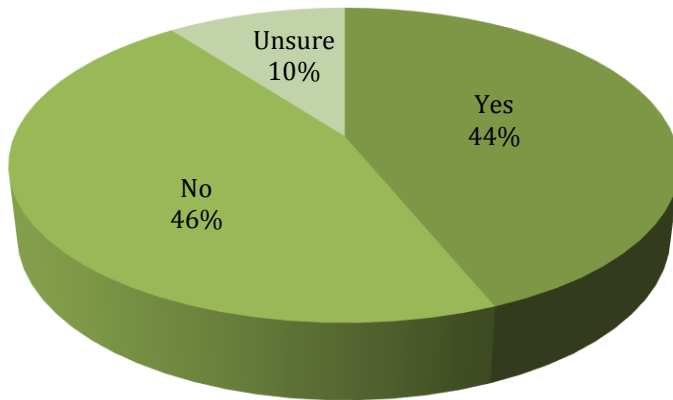
Next, respondents were asked about their home ownership status. Sixty-six percent of respondents own their home while 31% rent (Figure 5).

*Figure 5: Ownership status of current residence*



Respondents were also asked whether they had to abide by restrictions set by a homeowner's association. Forty-six percent do not, 44% do, and 10% were unsure (Figure 6).

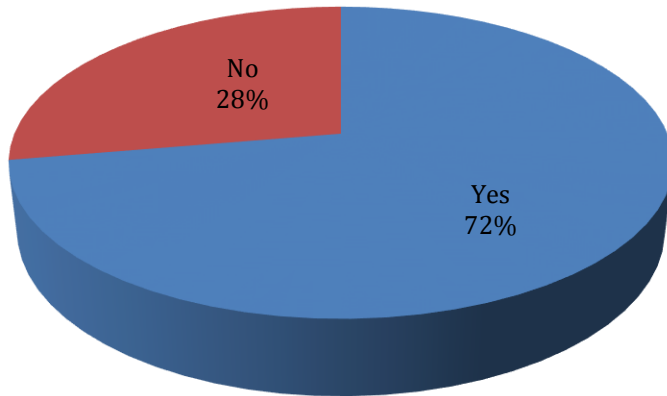
*Figure 6: Participation in a homeowner's association (HOA)*



## Yard Ownership and Care

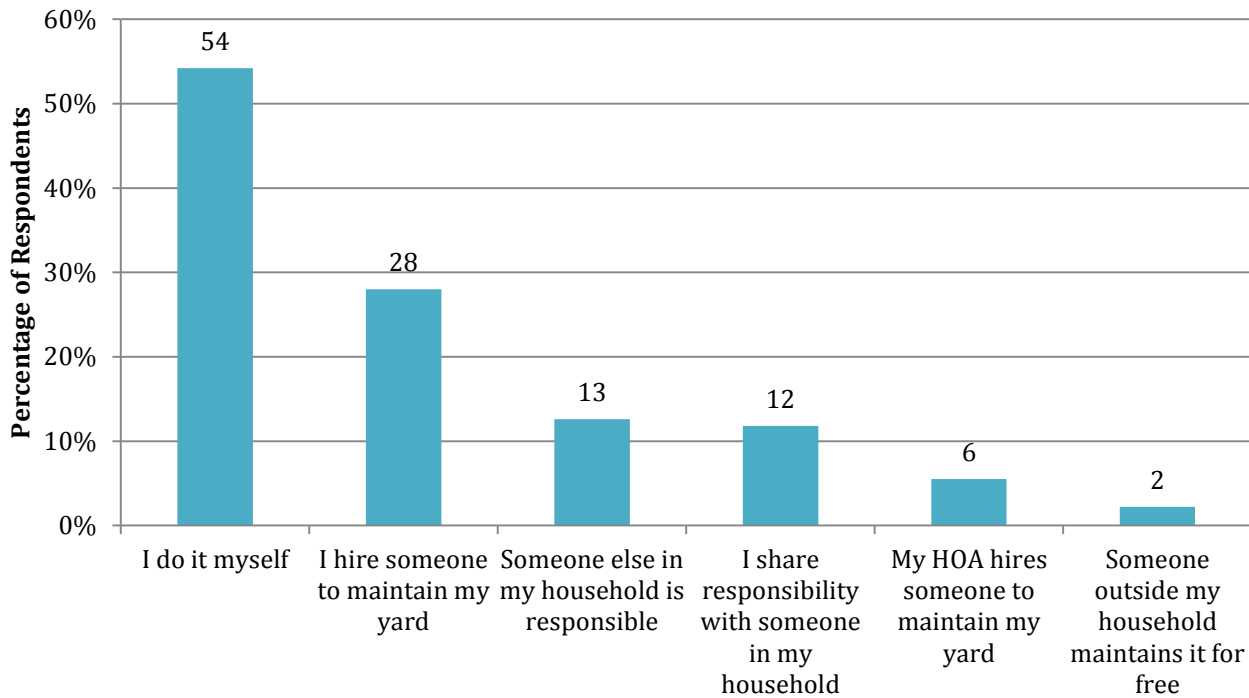
Seventy-two percent of respondents have a yard they are responsible for maintaining (Figure 7).

*Figure 7: Have a yard at current residence*



Those who had a yard they were responsible for maintaining ( $n = 541$ ) were asked to indicate who does the yard maintenance at their home. Respondents were allowed to check all that applied. Fifty-four percent of respondents care for the yard themselves, and 28% hire someone to maintain their yard (Figure 8).

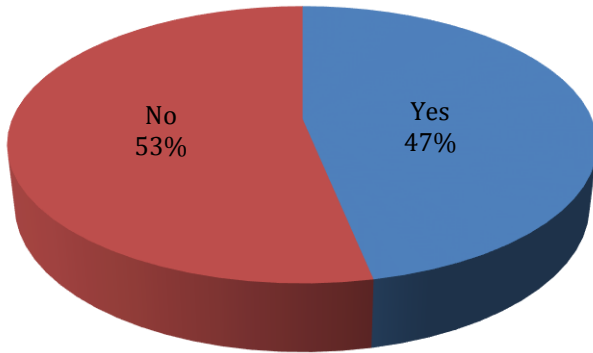
*Figure 8: Person responsible for yard maintenance*



### Restrictions on Water use

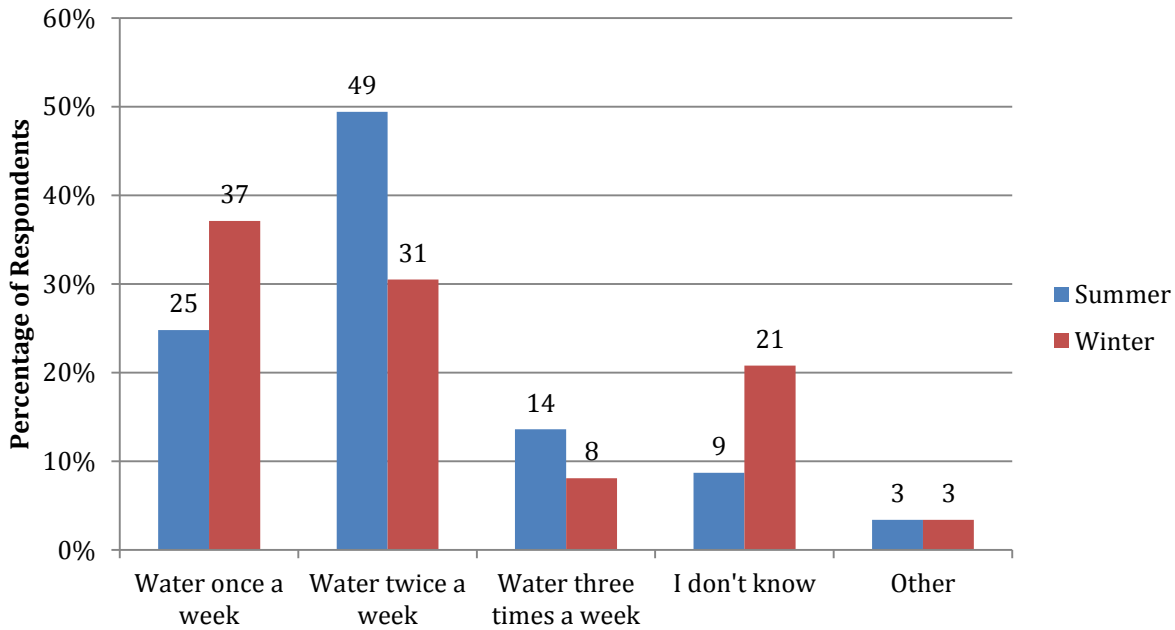
Those respondents with a yard ( $n = 541$ ) were also asked whether they had to abide by water restrictions for their yard. Fifty-three percent do not, while 47% do have to abide by water restrictions for their yard (Figure 9).

Figure 9: Yard water restrictions



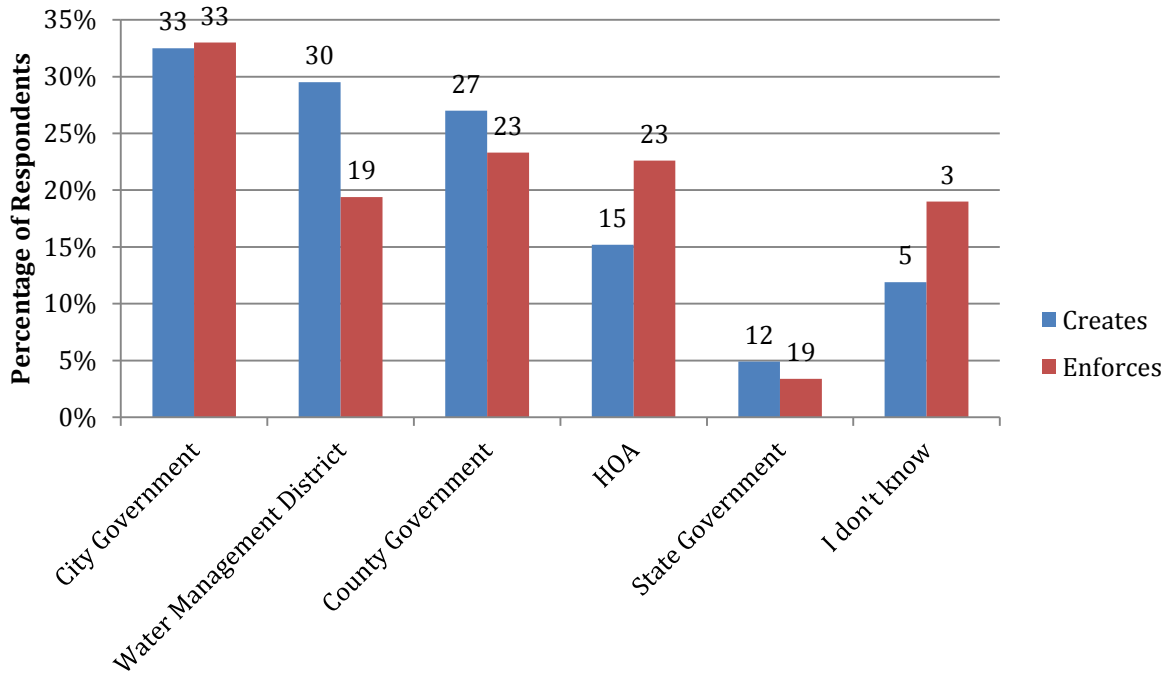
Those who had to abide by water restrictions for their lawn ( $n = 253$ ) were asked what types of water restrictions they face during the hot summer months as well as the cold winter months. Forty-nine percent of respondents indicated they can water twice a week during the summer months and 37% indicated they can water once a week during the winter months. Twenty-one percent of respondents were uncertain of their seasonal water restrictions during the winter (Figure 10).

Figure 10: Seasonal water restrictions



The respondents who have to abide by water restrictions for their lawn ( $n = 253$ ) were asked to indicate which groups they believed created and enforced their water restrictions. They were allowed to choose all that applied. One-third of respondents believed the city government both creates and enforces water restrictions (Figure 11). Thirty-percent of respondents indicated that water management districts create water restrictions, but only 19% indicated that water management districts enforce water restrictions. On the other hand, while only 15% of respondents indicated that HOAs create water restrictions, 23% indicated that HOAs enforce water restrictions.

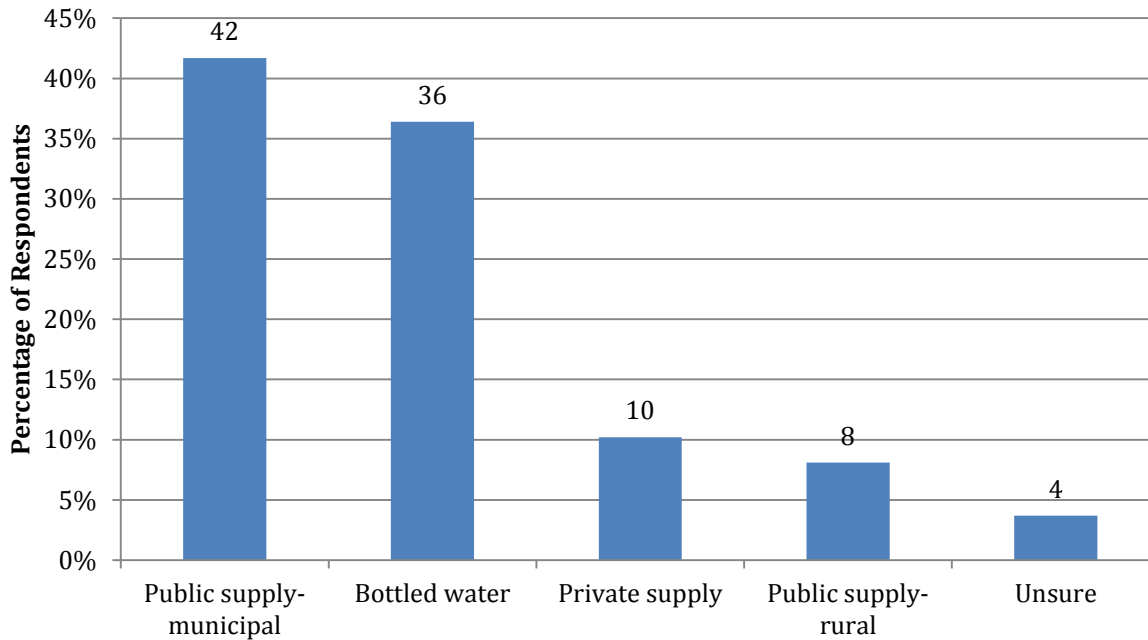
*Figure 11: Group which creates and enforces water restrictions*



## Drinking Water Source

Forty-two percent of respondents reported their main source of drinking water was from a municipal public supply, followed by 36% who used bottled water as their main source of drinking water (Figure 12).

*Figure 12: Main source of drinking water supply*



## Importance of Water as an Issue

### Importance of Key Florida Issues

Respondents were asked to indicate how important they considered ten different Florida issues. They were asked whether they considered the issue to be a) not at all important, b) slightly important, c) fairly important, d) highly important, e) extremely important, and f) unsure. Table 2 displays the percentage of respondents rating each issue as extremely or highly important. When ranked, water is listed third, behind the economy and healthcare, with 84% of respondents who considered water as extremely or highly important in Florida (Table 2).

*Table 2: Importance level of Florida issues*

Florida Issue	% of respondents rating the issue as highly or extremely important
Health care	89
The economy	87
Water	84
Public education	82
Taxes	71
Environmental conservation	70
Food production	68
Housing and foreclosures	63
Immigration	62
Climate change	53



### Importance of Clean Water Resources

Respondents were asked to indicate how important they considered the presence of various clean water sources. Overall, respondents believed clean water was highly or extremely important, regardless of the water body focused upon. Almost all (97%) of the respondents considered clean drinking water to be highly or extremely important, compared to 79% who considered it highly or extremely important to have clean water for shellfishing (Table 3).

*Table 3: Importance level of clean water resources*

Importance of clean water	% of respondents rating the issue as highly or extremely important
Clean drinking water	97
Clean lakes, springs, rivers	89
Clean beaches	89
Clean groundwater	88
Clean oceans	86
Clean bays and estuaries	84
Clean water for shellfishing	79

### Importance of Plentiful Water Resources

Respondents were also asked to consider how important it is to have plentiful water for various purposes. The most important purpose amongst respondents was to have plentiful water for cities (90%) compared to just 14% who considered it highly or extremely important to have plentiful water for golf courses (Table 4).

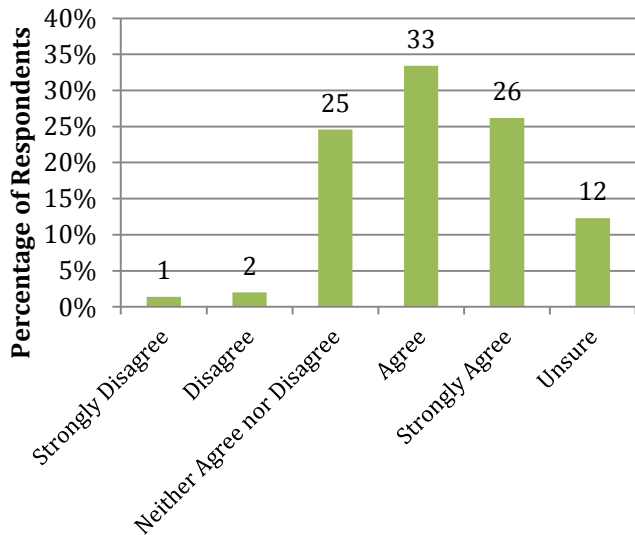
*Table 4: Importance level of plentiful water resources*

Importance of plentiful water	% of respondents rating the issue as highly or extremely important
Plentiful water for cities	90
Plentiful water in aquifers, springs, rivers and lakes	88
Plentiful water for agriculture	84
Plentiful water for commerce/industry/power	68
Plentiful water for household landscapes	45
Plentiful water for recreation	39
Plentiful water for golf courses	14

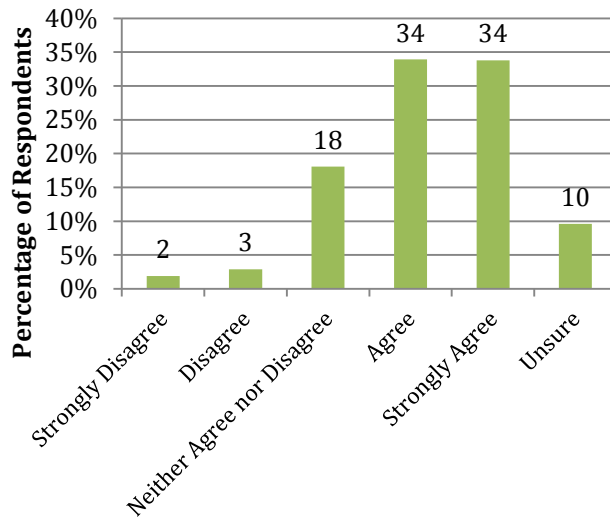
### Level of Importance Associated with Water Issues

Next, respondents were asked to indicate how important they believed saltwater intrusion was in Florida. Fifty-nine percent either agreed or strongly agreed that saltwater intrusion was an important issue in Florida (Figure 13). Respondents were also asked to indicate how important they believed red tide was in Florida. More respondents, 68%, agreed or strongly agreed red tide was an important issue in Florida (Figure 14).

*Figure 13: Importance of saltwater intrusion*



*Figure 14: Importance of red tide*



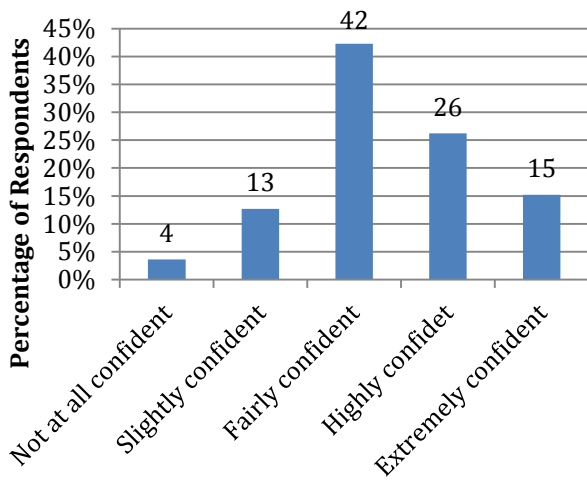
## Experience with Water Resources

Respondents' personal experience with water resources, including water availability, change in water quality, and negative experiences with water quality were also examined.

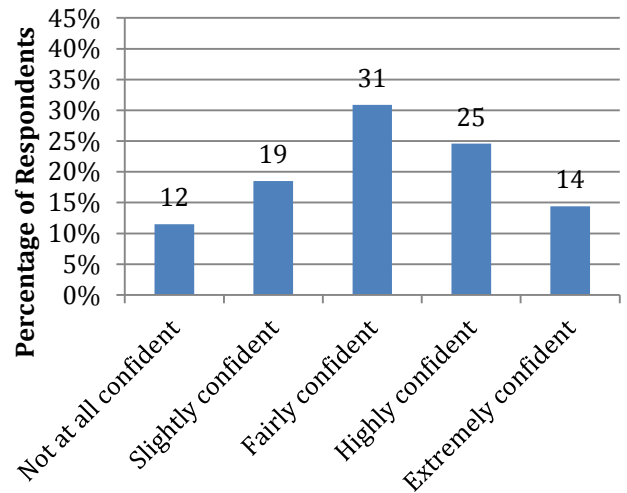
### Confidence in Water Resources

First, respondents were asked to indicate their level in confidence that there will be enough water to meet the needs of their community in the next 10 years, as well as their level of confidence in the safety of the tap water in their home. Respondents reported a relatively similar level of confidence in future water availability for their community's needs and the safety of the tap water in their home, with slightly more respondents confident in the water availability for their community in 10 years (Figures 15 and 16).

*Figure 15: Confidence level in future water availability for community use in 10 years*



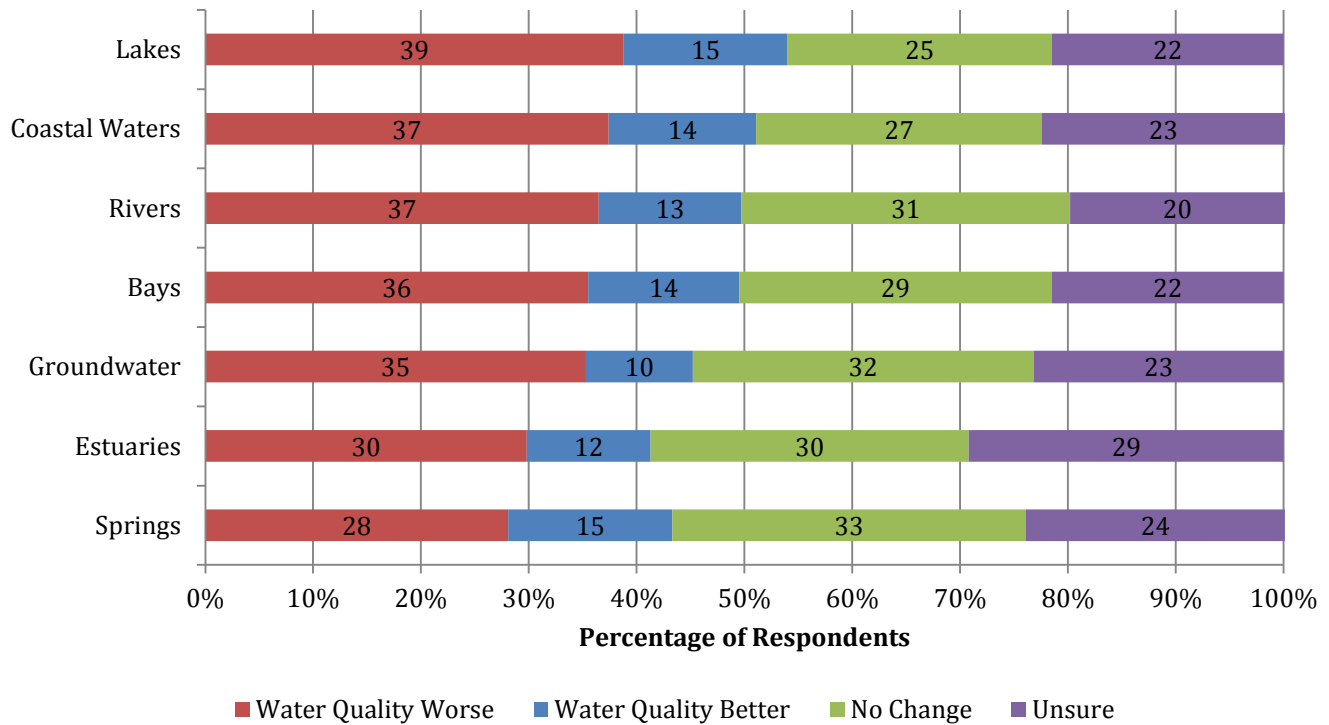
*Figure 16: Confidence in level in the safety of tap water in the home*



**Changes in Water Resource Quality**

Respondents were asked whether they thought the quality of various water resources were getting worse, better, or remaining the same over time. Thirty-nine percent of respondents reported they felt Florida lakes were getting worse (46%) in quality and 33% reported they felt the quality of springs was remaining the same (Figure 17). Very few respondents felt water quality was getting better in any of the water bodies.

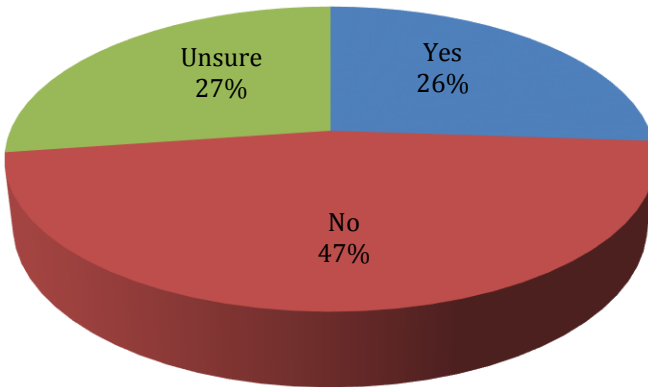
*Figure 17: Changes in water resource quality*



### Wastewater Availability

Respondents were asked whether recycled wastewater was available for them to use when irrigating their yards and landscapes. Twenty-six percent reported that recycled wastewater was available for their use. Forty-seven percent reported that recycled wastewater was not available to them, and 27% were unsure (Figure 18).

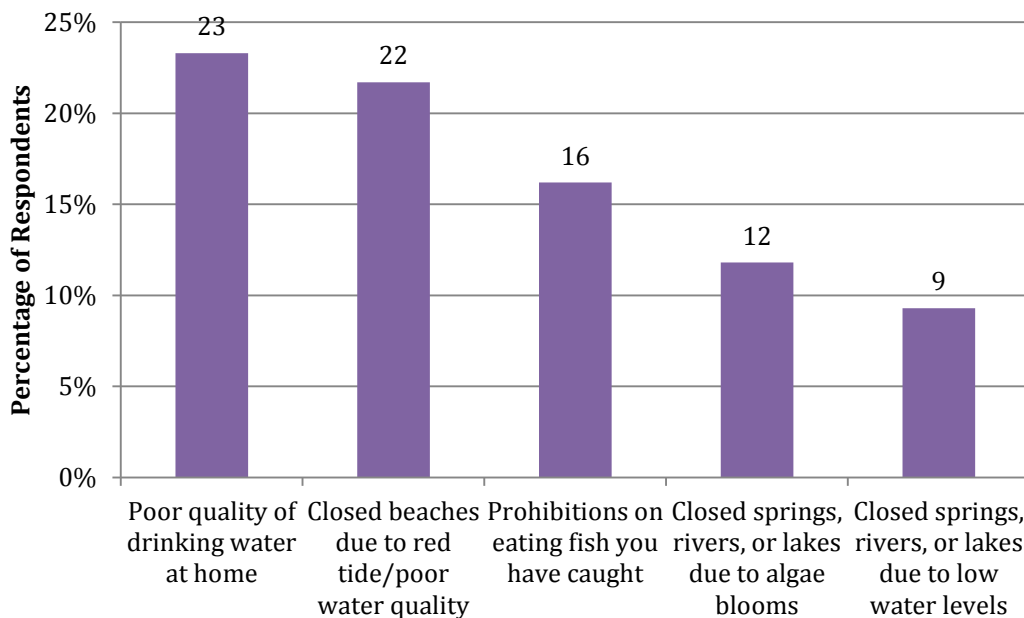
*Figure 18: Availability of wastewater for lawn irrigation*



### Experience with Negative Impacts of Water Quality

Next, respondents were asked to indicate whether they had a negative experience as a result of poor water quality, such as closed springs, rivers, lakes, beaches, or poor drinking water quality. Twenty-three percent had experienced poor quality drinking water at home, and 22% had experienced closed beaches due to red tide or poor water quality (Figure 19).

*Figure 19: Experience with negative impacts of water quality*



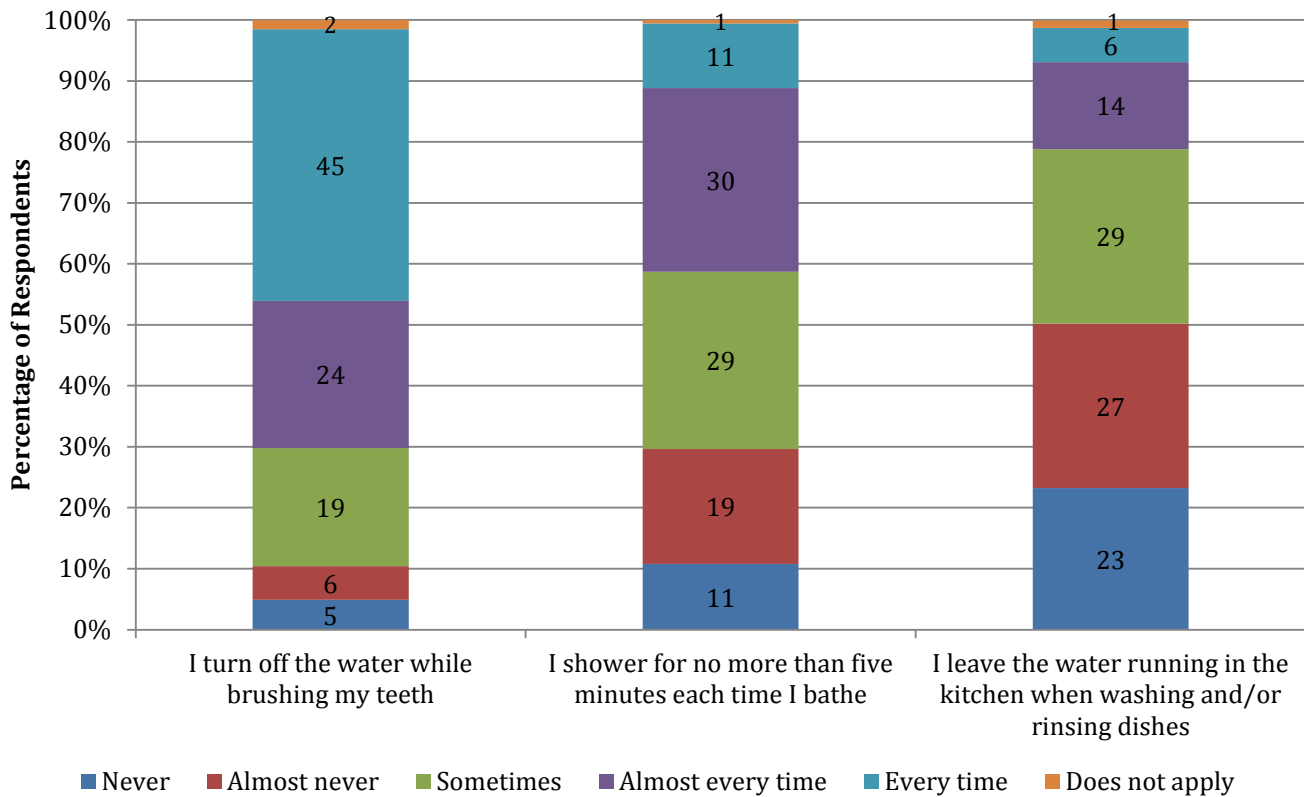
### Engagement in Environmental and Conservation Behaviors

Respondents were asked to describe their current environmental and conservation behaviors along with the likelihood they would engage in specific behaviors.

#### Current Engagement in Water Conservation Behaviors

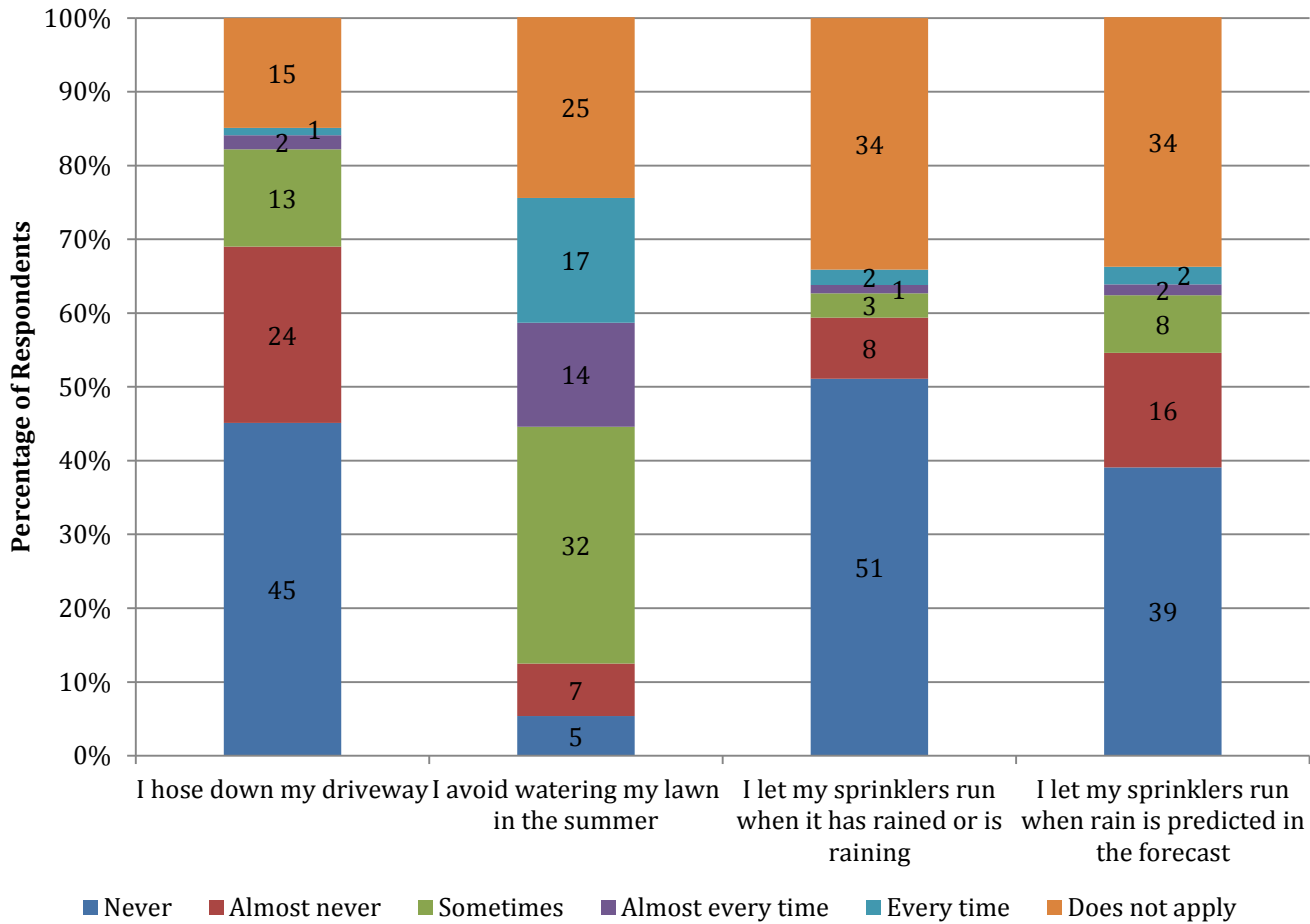
Respondents were asked to describe whether or not they engaged in indoor water conservation behaviors at home. Forty-five percent of respondents reported they turn off the water while brushing their teeth “every time,” while only 11% of respondents reported they shower for no more than five minutes every time they bathe (Figure 20). Twenty-nine percent of the respondents reported they “sometimes” leave the water running while washing or rinsing dishes.

*Figure 20: Indoor household water conservation activities*



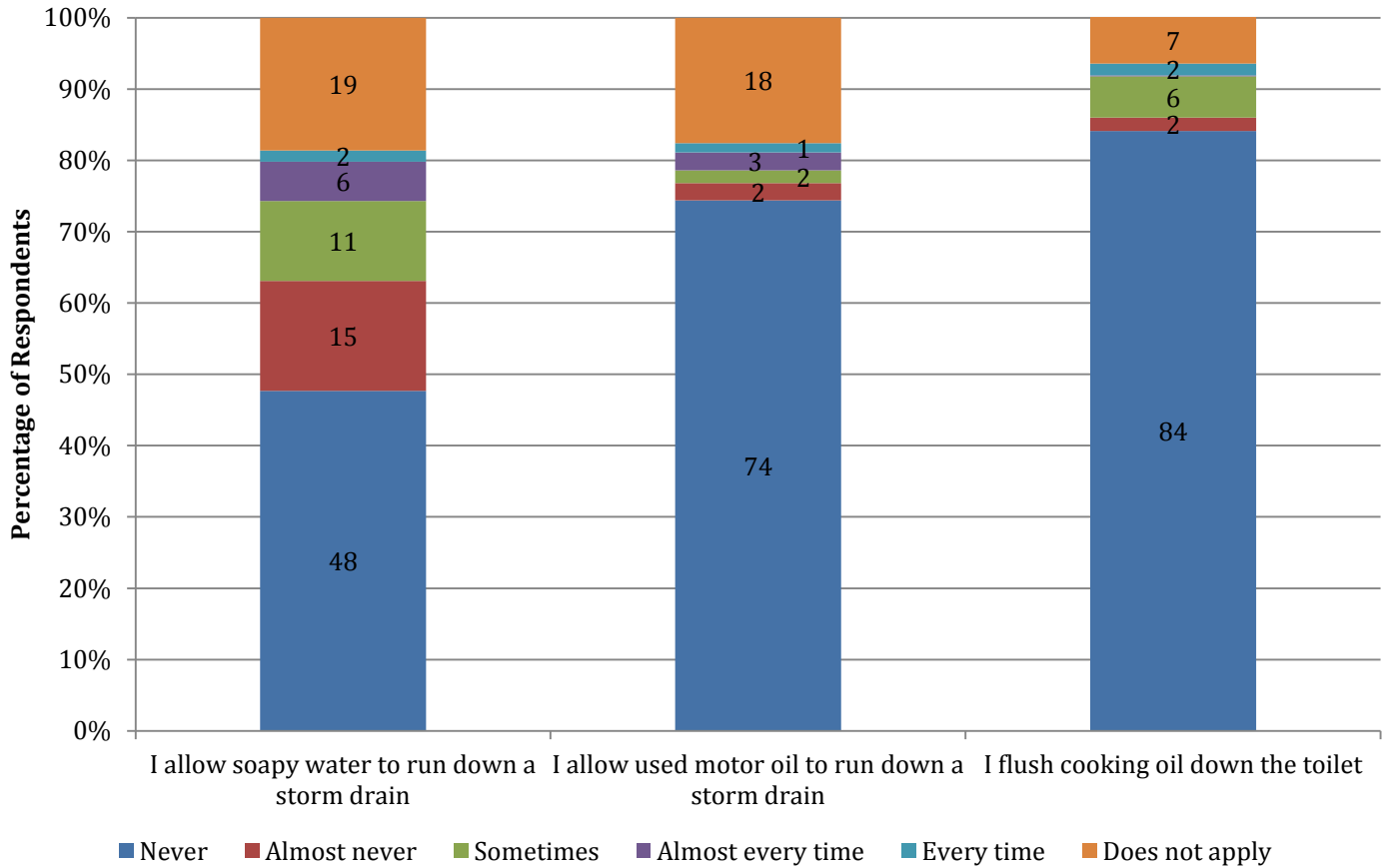
When asked about water conservation behavior engagement associated with outdoor home activities, 51% of the respondents reported they “never” let their sprinklers run when it has rained or is raining and 45% “never” hose down their driveway (Figure 21).

Figure 21: Outdoor household water conservation activities



When asked about the treatment of waste, 74% of respondents reported they “never” allow motor oil to run down a storm drain and 84% “never” flush cooking oil down the toilet (Figure 22). Slightly less, 48%, reported they “never” allow soapy water to run down a storm drain.

Figure 22: Waste disposal conservation activities

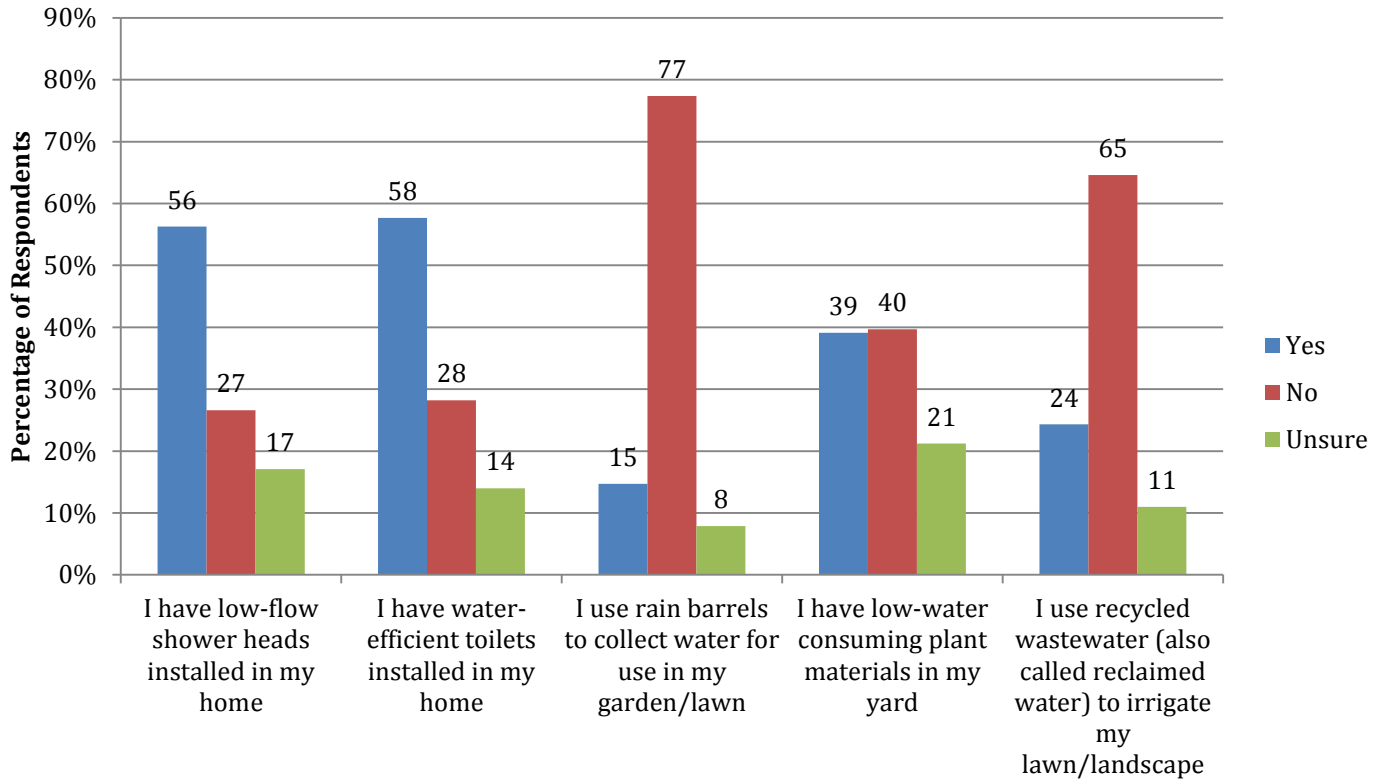




### Ownership of Water Conservation Products and Infrastructure

Respondents were asked whether they owned water-conserving products in their home. The most commonly owned products were water-efficient toilets and low-flow showerheads. Fifty-eight percent of respondents owned a water-efficient toilet and 56% owned a low-flow shower head (Figure 23). Seventy-seven percent of respondents did not own a rain barrel, and 65% did not use recycled wastewater to irrigate their lawns/landscapes.

*Figure 23: Ownership of water efficient products and infrastructure*



## Likelihood of Participating in Environmental and Conservation Behaviors

Respondents were asked to indicate how likely or unlikely they were to engage in a variety of behaviors that can help reduce water use and protect the environment more broadly. The activity respondents were most likely to participate in was only running the washing machine when it is full. The activity respondents were least likely to engage in was joining a water conservation organization (Table 5).

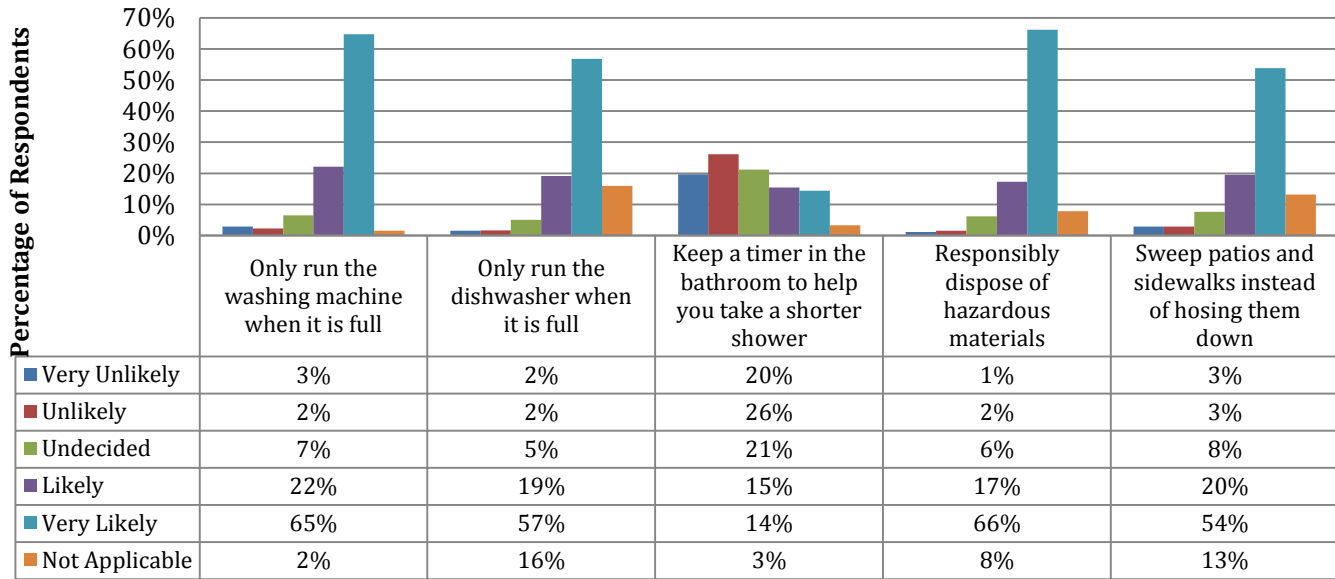
*Table 5: Likelihood of participating in environmental/conservation behaviors*

Environmental/conservation behavior	% of respondents indicating they are likely or very likely to participate
Only run the washing machine when it is full	87
Responsibly dispose of hazardous materials	84
Only run the dishwasher when it is full	76
Vote to support water conservation programs	77
Sweep patios and sidewalks instead of hosing them down	73
Support water restrictions issued by my local government	72
Avoid purchasing plants that require a lot of watering	70
Vote for candidates who support water conservation	69
Use biodegradable cleaning products	65
Reduce your use of natural resources	65
Only water your lawn in the morning or evening	61
Reduce the number of times a week you water your lawn	60
Reduce use of fertilizer if your landscape quality would decrease	52
Reduce your use of pesticides if your landscape quality would decrease	52
Visit springs, lakes, state parks, etc., to learn about water issues	49
Donate to an organization that protects water	36
Volunteer for a stream clean up or wetland restoration event	31
Keep a timer in the bathroom to help you take a shorter shower	30
Buy a specialty license plate that supports water protection efforts	26
Join a water conservation organization	25

**Likelihood of Participating in Household Water Conservation**

Regarding household water conservation, 66% of respondents reported they are “very likely” to responsibly dispose of hazardous materials and 65% were “very likely” to only run the washing machine when it is full (Figure 24). Respondents reported mixed attitudes regarding their likelihood of keeping a timer in the bathroom to help shorten showers; only 14% reported they were “very likely” to engage in this behavior.

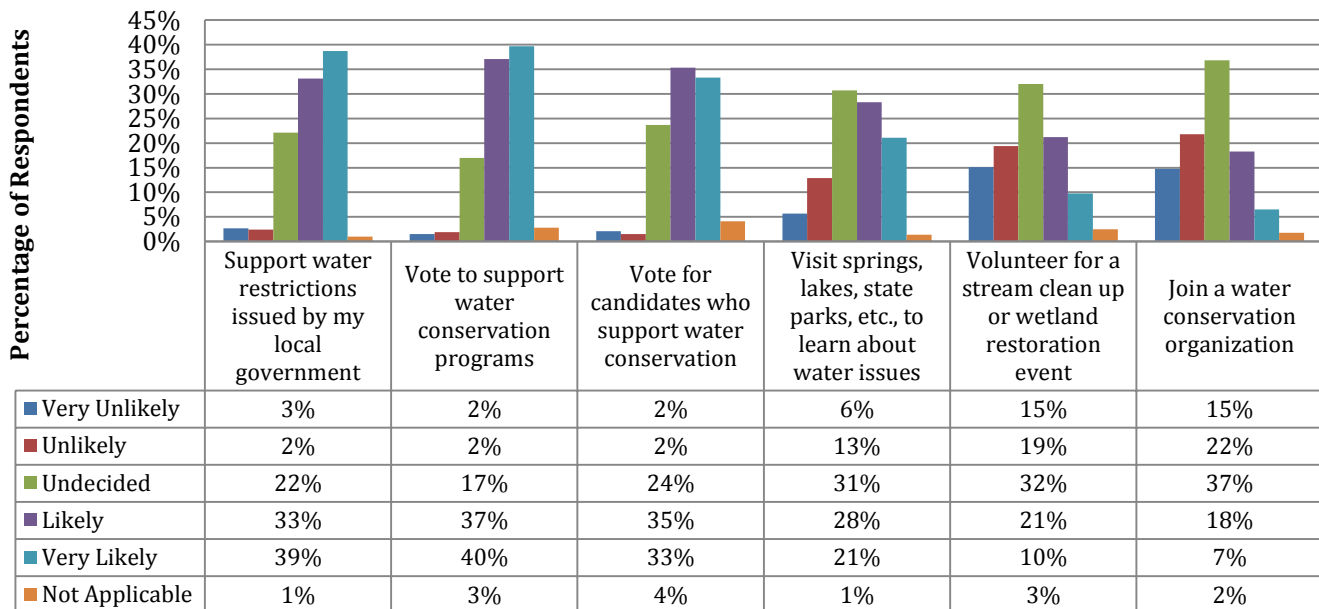
*Figure 24: Likelihood of participation in household water conservation behaviors*



**Likelihood of Participating in Civic Behaviors Related to Water Conservation**

When asked about participating in civic behaviors to conserve water, respondents were more likely to support water restrictions issued by the local government or to vote to support water conservation programs and candidates than to volunteer for a stream cleanup or to join a water conservation organization. Seventy-two percent were likely or very likely to support water restrictions issued by the local government, 77% were likely or very likely to vote to support water conservation programs, and 68% were likely or very likely to vote for candidates who support water conservation (Figure 25). On the other hand, only 31% were likely or very likely to volunteer for a stream clean up or wetland restoration event and only 25% were likely or very likely to join a water conservation organization.

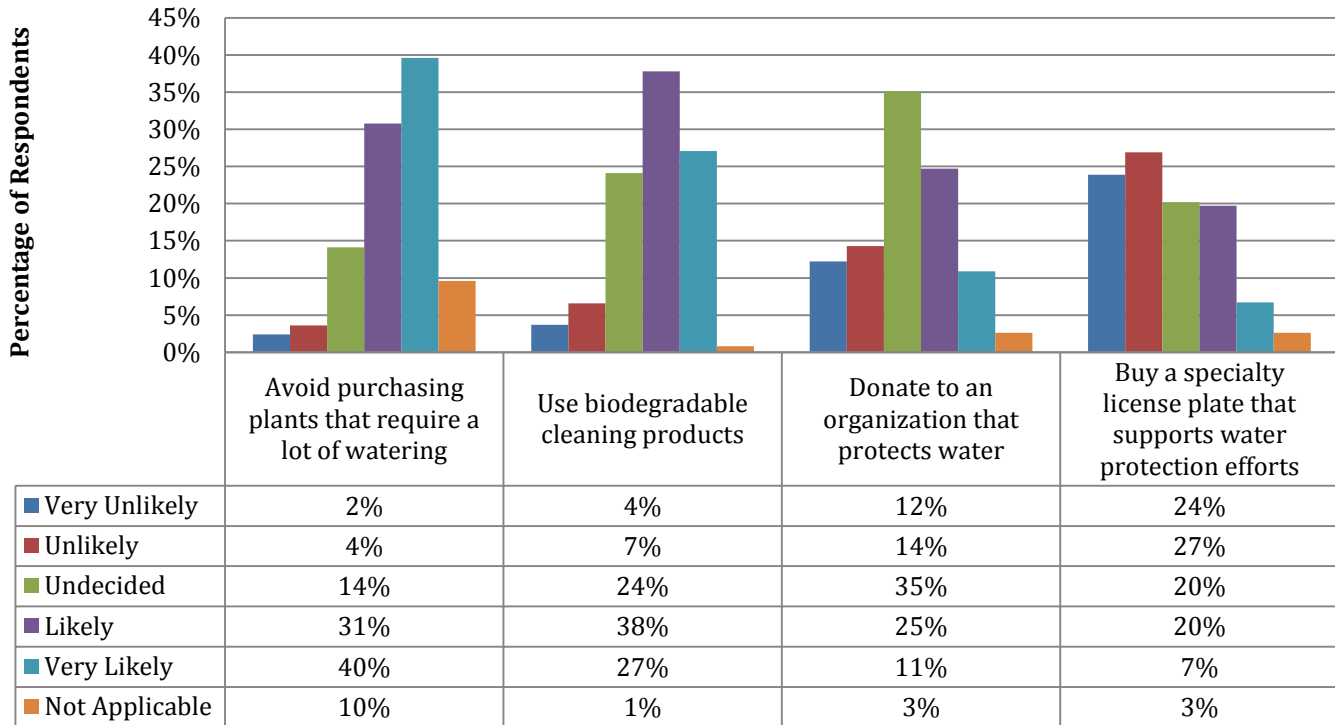
*Figure 25: Likelihood of participation in civic behaviors related to water conservation*



**Likelihood of Altering Purchasing Behaviors to Support Water Conservation**

Respondents indicated they were more likely to avoid purchasing plants that require a lot of watering than to buy a specialty license plate that supports water protection efforts. Forty percent reported they were “very likely” to avoid purchasing plants that require a lot of watering compared to just 7% who reported they were “very likely” to buy a specialty license plate that supports water protection efforts (Figure 26).

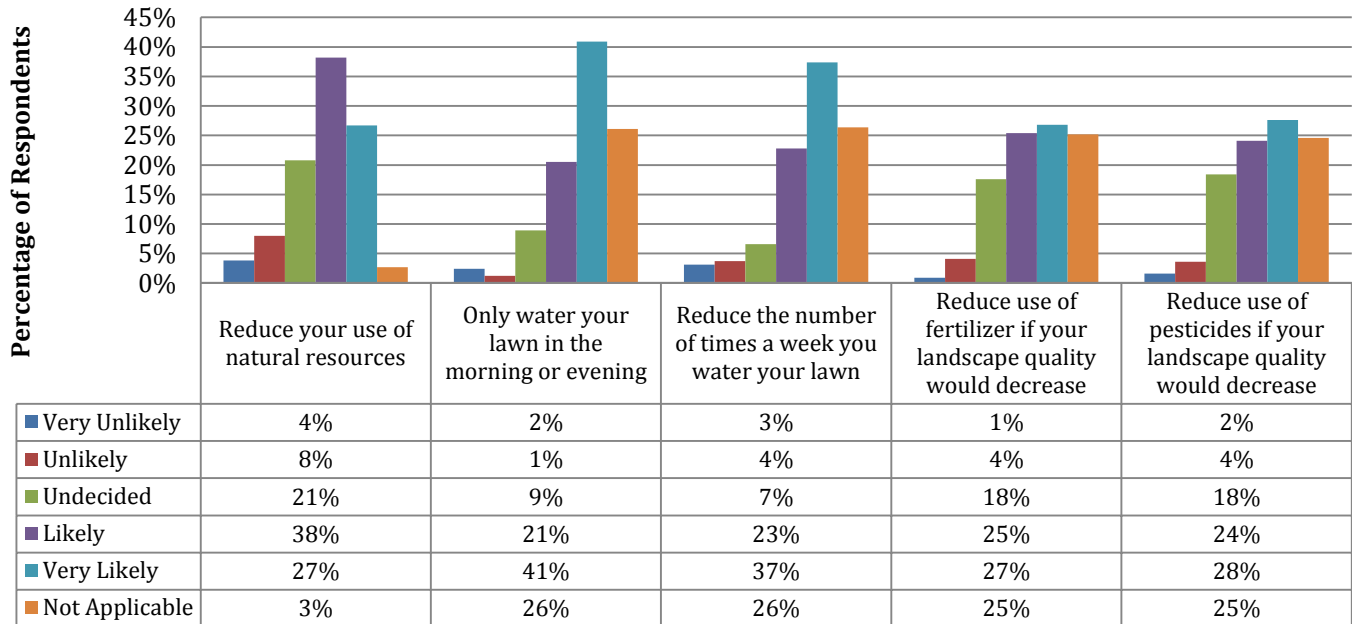
*Figure 26: Likelihood of altering purchasing behavior in support of water conservation*



**Likelihood of Altering Current Landscaping Practice to Support Water Conservation**

When asked about their interest in altering landscaping practices to those that support water conservation, respondents were more likely to reduce watering their lawn than reducing the amount of fertilizer and pesticides they use if it caused a decrease in lawn quality. Forty-one percent of respondents reported they were “very likely” to only water their lawns during the morning and evening, while just 27% and 28% were “very likely” to reduce their fertilizer and pesticide use if it caused a decline in lawn quality, respectively (Figure 27).

*Figure 27: Likelihood of altering landscaping practices to support water conservation*



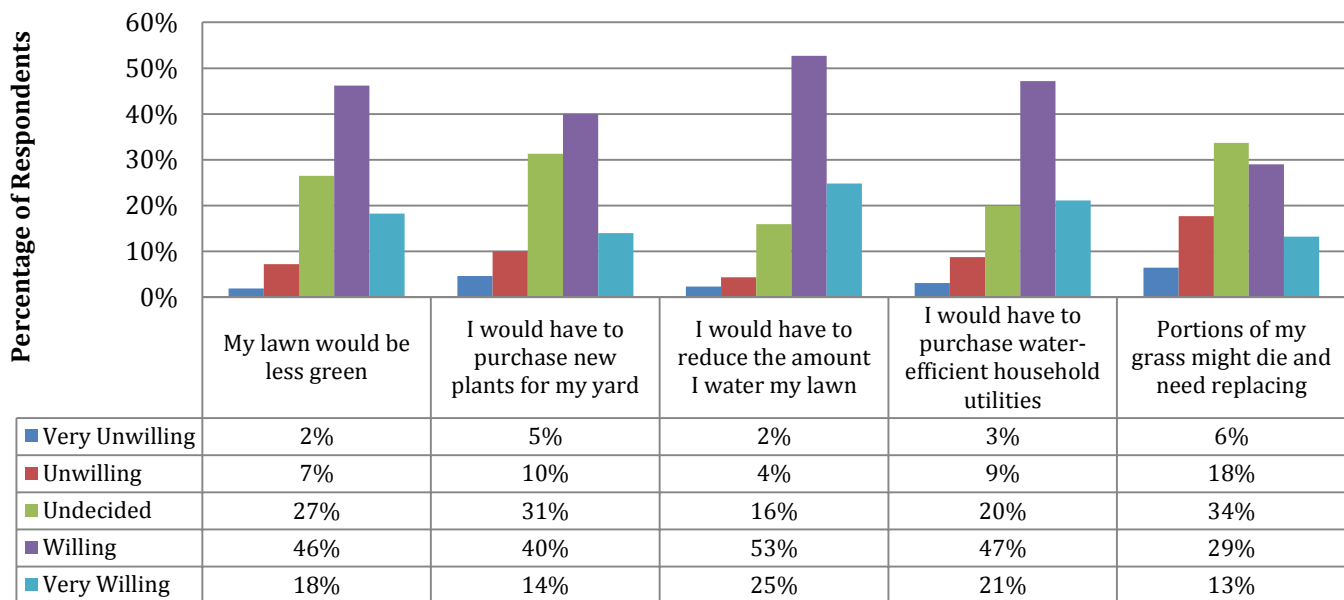
### Willingness to Pay for and Conserve Water

Respondents were then asked a series of questions to better understand their willingness to pay for water conservation.

#### Willingness to Conserve Water

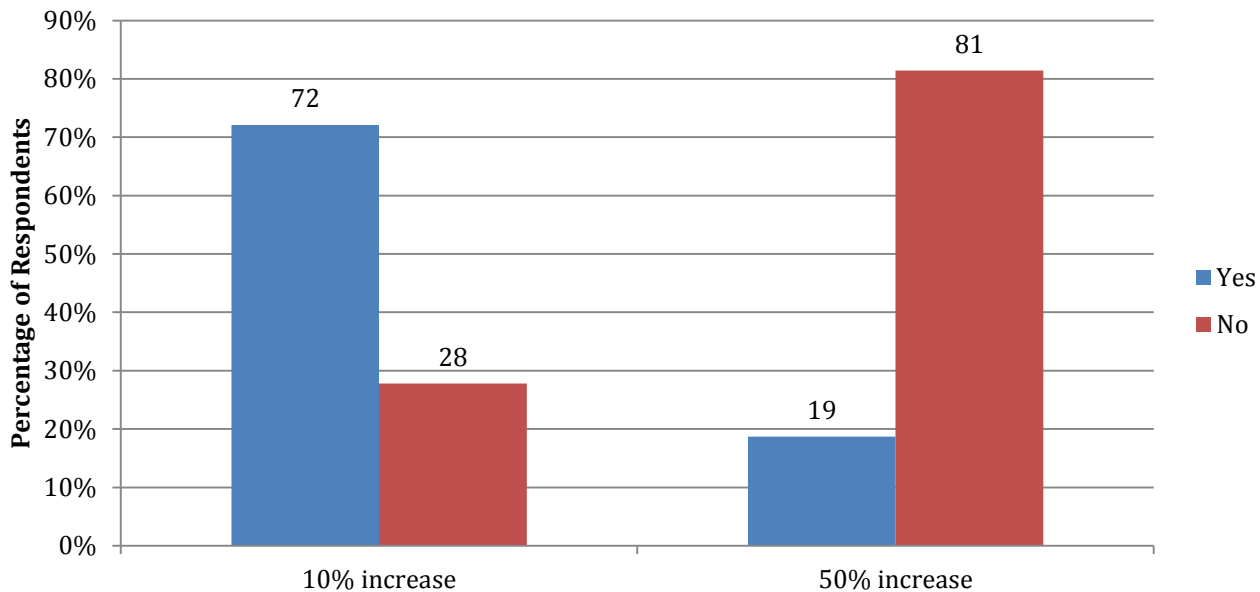
The first set of questions asked respondents to indicate whether they would be willing to take action to conserve water even if a certain outcome occurred. Respondents were willing to take action to conserve water if it meant reducing the amount they water their lawn (78% were willing or very willing) however only 42% were willing or very willing to do so if it meant portions of their grass may die and need replacing (Figure 28).

Figure 28: Level of willingness to conserve water



Respondents were also asked whether they would be willing to pay more for their water bills if they knew it would help ensure enough water resources in Florida in the future. Respondents who indicated they had a yard they are responsible for maintaining were given a larger hypothetical average water bill (\$100) than those who reported they did not have a yard (\$50). Respondents were asked two questions, 1) whether they would be willing to accept a 10% increase to their water bill, and 2) whether they would be willing to accept a 50% increase to their water bill. Seventy-two percent of respondents would be willing to have their water bill increase by 10% if it ensured a future water supply in Florida, but only 19% were willing to do so if it required a 50% increase in their water bill (Figure 29).

*Figure 29: Willingness to pay for increased water bill*





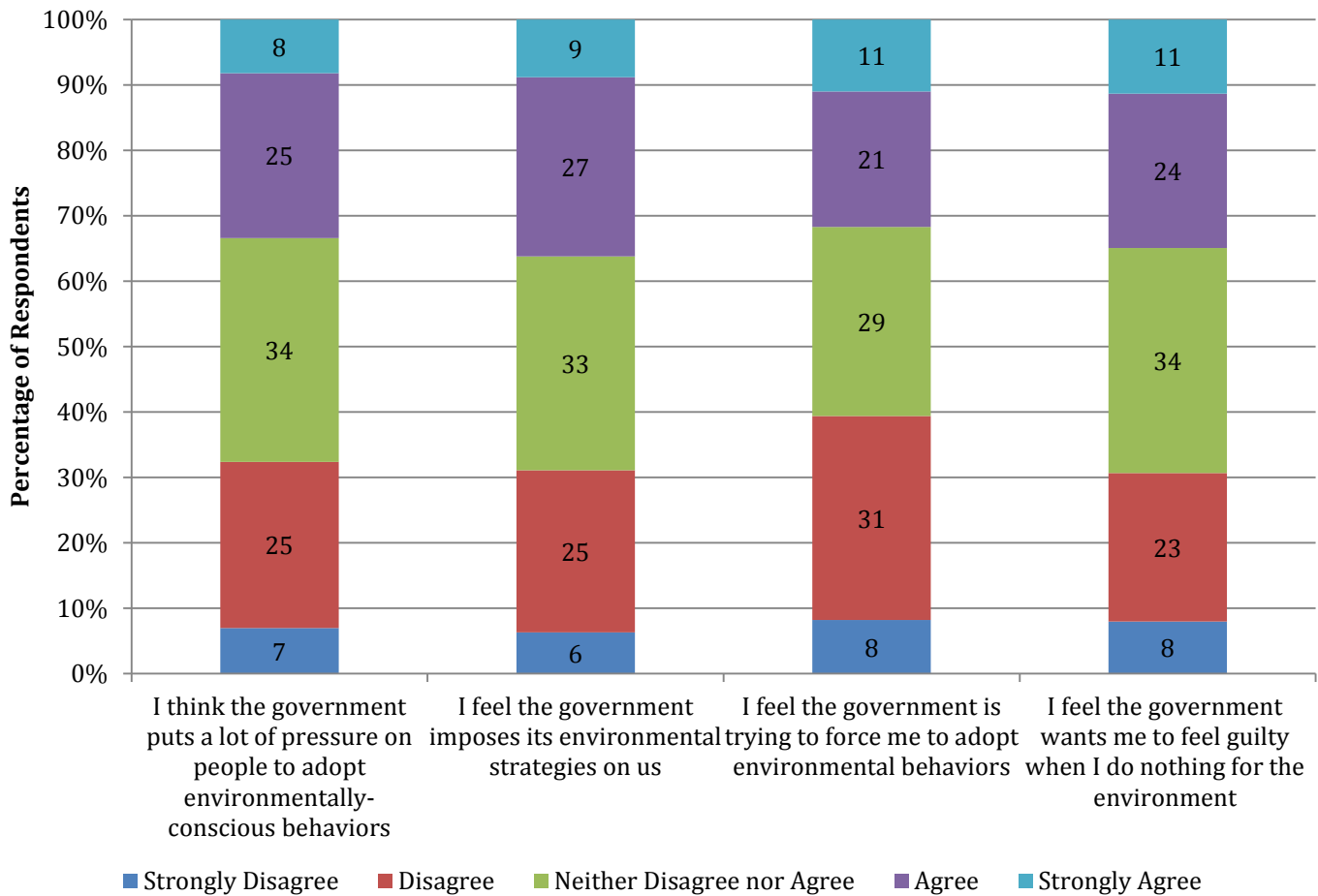
### Knowledge and Attitudes towards Government and Policy

Respondents were also asked to indicate how strongly they agreed or disagreed with a series of statements related to their perceptions of government pressure to make choices and be involved in environmental issues.

#### Attitude towards Governmental Influence on Environmental Issues

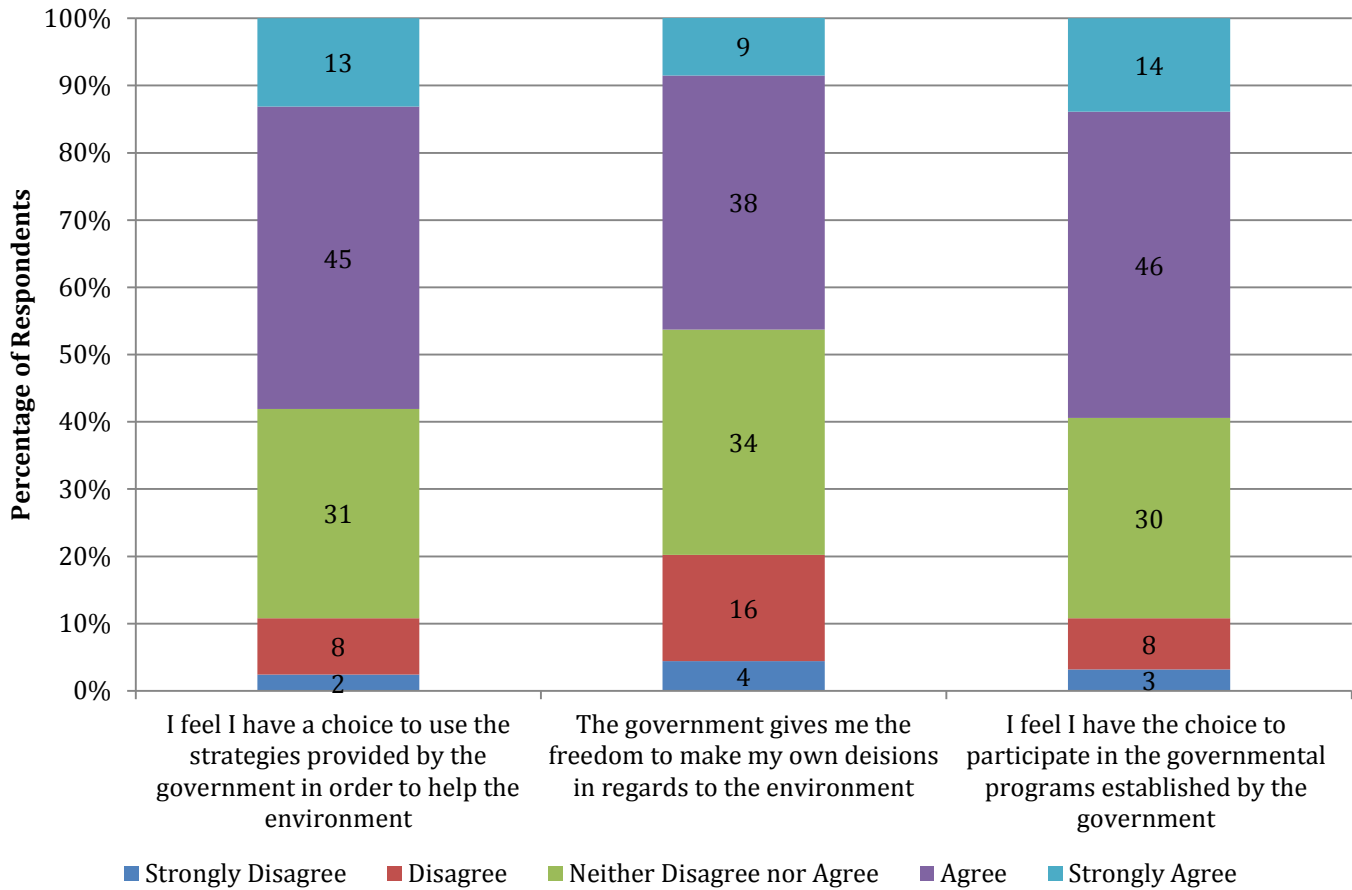
Overall, respondents had mixed feelings about whether or not the government pressures, imposes, forces, or makes them feel guilty for not engaging in positive environmental behaviors (Figure 30).

*Figure 30: Perceived governmental negative influence on environmental behavior*



When asked if the government positively encourages them and gives them freedom of choice to participate in programs that protect the environment, 60% agreed or strongly agreed they have a choice to participate in environmental programs established by the government, and 58% percent agreed or strongly agreed they have a choice to use the strategies provided by the government to help the environment (Figure 31).

**Figure 31: Perceived governmental positive influence on environmental behavior**



**Voting on Agriculture and Natural Resource Policies**

Respondents were asked what actions they engage in when preparing to vote on a policy impacting agriculture and natural resources. Ninety-two percent of respondents agreed or strongly agreed they would consider both positive and negative implications that could result from a new policy before voting, while only 72% agreed or strongly agreed they would discuss their opinion with others (Table 6).

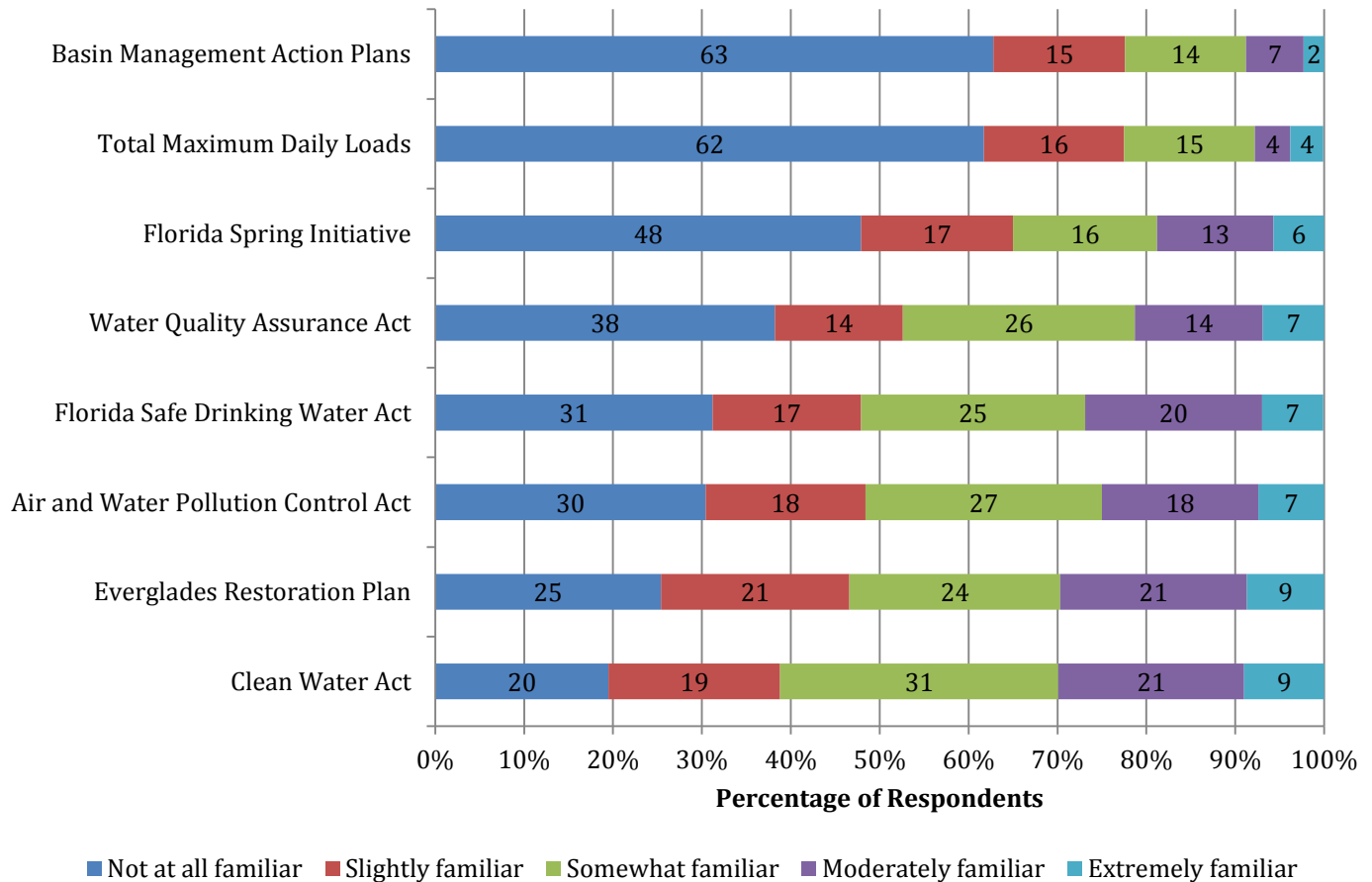
**Table 6: Voting preparation behavior**

Voting preparation behavior	% of respondents who agreed or strongly agreed
I would consider both the positive and negative implications that could result	92
I would seek to fully understand the policy	91
I would seek factual information from multiple sources	86
I would ask others what their opinions are	73
I would discuss my opinion with others	72

**Knowledge of Water Policies**

Respondents were also asked to indicate their level of familiarity with various policies that impact water quality and water quantity in Florida. Sixty-three percent of respondents admitted to not being familiar with the Basin Management Action Plans and 62% were not at all familiar with Total Maximum Daily Loads (Figure 32). Overall, respondents have a low level of familiarity across all water policies; the Clean Water Act had the highest level of familiarity (61% were somewhat, moderately or extremely familiar).

*Figure 32: Familiarity with water policies*



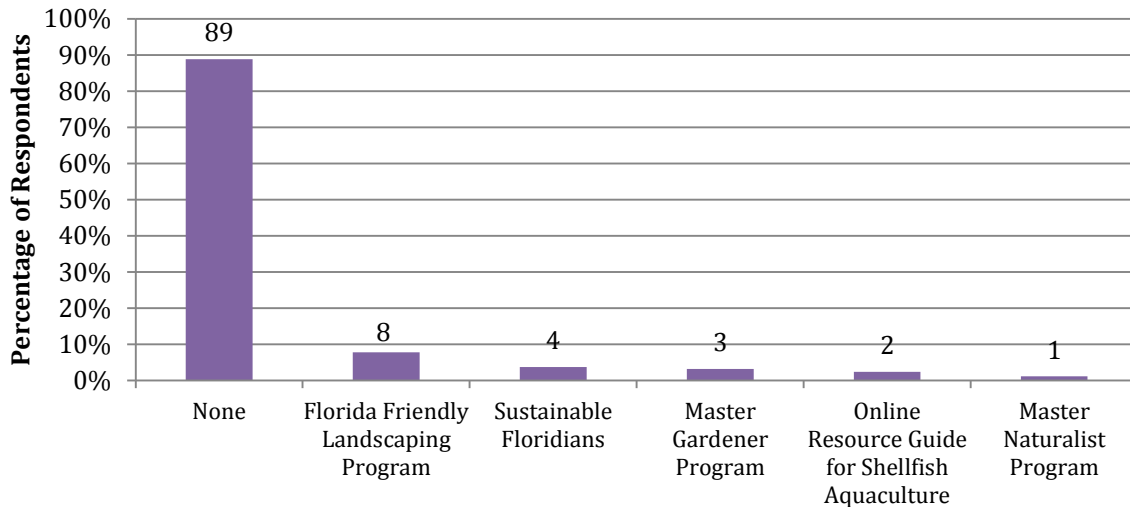
## Education about Water Issues

The final section of the survey asked respondents to indicate Extension programming they have participated in, their interests in learning more about water issues, and how they prefer to learn about such topics.

### Participation in Extension Programs Relevant to Water

Most respondents (89%) had not participated in any Extension programming related to water or landscaping (Figure 33). The most common Extension program respondents had participated in was the Florida Friendly Landscaping Program (8%) followed by the Sustainable Floridians program (4%).

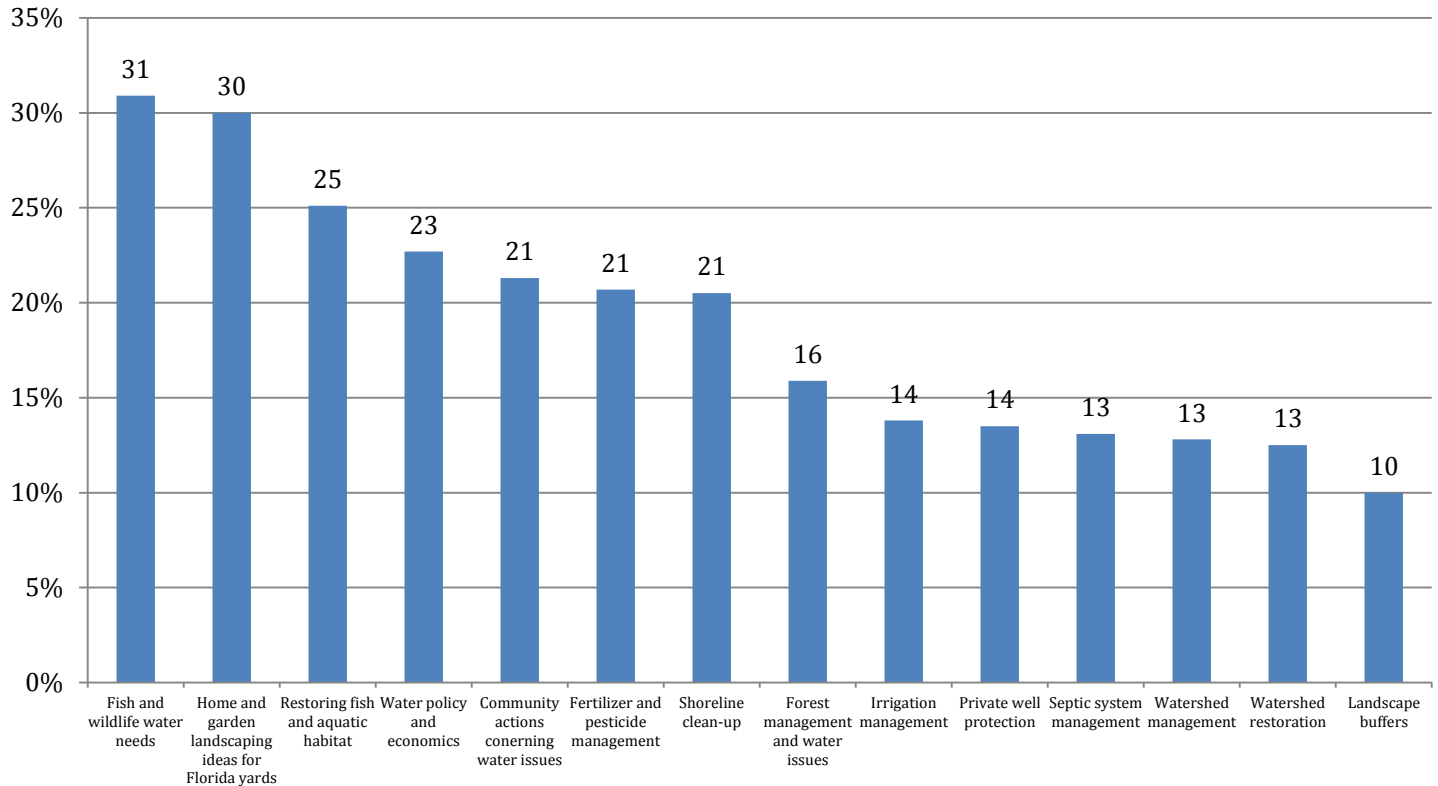
*Figure 33: Participation in Extension programs related to water*



### Interest in Water Topics

Respondents were asked to indicate whether they had any interest in a variety of topics related to water. They were allowed to choose any and all that applied to their interests. The highest level of interest was for the topic “fish and wildlife water needs,” with 31% of respondents who were interested (Figure 34). The lowest level of interest was for the topic “landscape buffers,” with just 10% of respondents who indicated an interest in this topic.

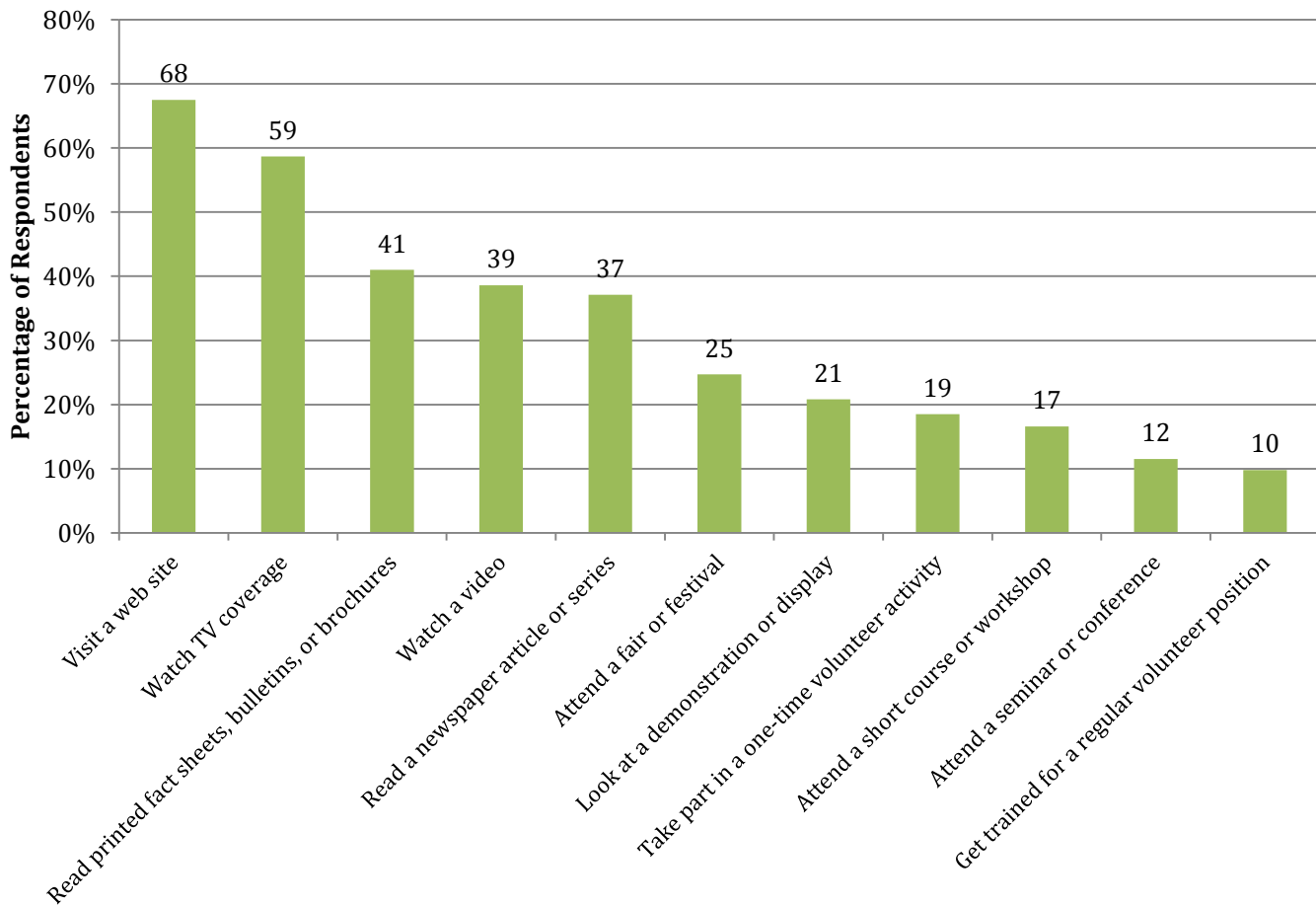
*Figure 34: Interest in water related topics*



### Preferred Mode of Learning

Next, respondents were asked to indicate the type of learning opportunities they would most likely take advantage of to learn more about water issues. Respondents were allowed to choose all choices that applied to them. The most common preferred mode of learning was “visit a website,” with 68% of respondents who reported they would most likely take advantage of this opportunity, followed by 59% who would do so by watching television coverage (Figure 35). Only 10% of respondents reported they would like to get trained for a regular volunteer position to learn more about water issues.

*Figure 35: Type of learning opportunity most likely to take advantage of*



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