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Final Report

Southern Florida High Water Users'
Public Opinions of Water in Florida

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Executive Summary

Southern Florida High Water Users' Public Opinions of Water in Florida
July 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 Southern Florida High Water Users' Public Opinions of Water in Florida survey was taken by 420 Florida residents in March 2015 who live in southeastern and southwestern regions of Florida, have control over their landscaping, and pay for professional lawn care services; therefore classifying them as high water users. This report examines their public opinions related to water quality and quantity issues, and compares their responses by region.

Findings

The following results are key comparative findings between respondents from southeastern and southwestern Florida:

- Description of Respondents
 - An equivalent number of respondents were recruited from the southwest region of Florida (52%) and southeast Florida (48%).
 - Overall, southwest respondents were newer to Florida, lived in less heavily metropolitan areas, were more likely to be female, and less likely to be Hispanic than their southeastern counterparts. Respondents from the southwest were also less educated, earned less in terms of average income, and were more likely to be politically conservative and Republican than the southeastern respondents.
- Importance of Water as an Issue
 - All respondents considered health care, the economy and water to be the top three issues facing Florida. Differences between regions were statistically significant regarding the importance of public education, taxes, and climate change. Southeast respondents rated all of these issues as more important than southwest respondents.
 - Southeast respondents considered it more important to have plentiful water for household landscapes (43%) than respondents from the southwest (34%) ($F = 4.91$; $p = .03$).
- Landscaping Care and Water Resources
 - Seventy percent of southwest respondents are part of an HOA compared to 61% of southeast respondents ($\chi^2 = 3.89$; $p = .03$).
 - Most respondents had their own irrigation systems (85-88%) and had to abide by HOA landscaping restrictions (83-86%).
 - Twenty-five percent of southwest respondents had reclaimed water available for their irrigation water compared to only 11% of southeast respondents.
 - Only 50% of southeast respondents reported they had to abide by restrictions on their irrigation systems compared to 76% of southwest respondents ($\chi^2 = 29.55$; $p = .00$). The most common restriction was only being able to irrigate twice a week.
 - Fifty-five percent of respondents from the southwest indicated they had restrictions enforced by the county government compared to 23% of the southeast respondents, while 41% of southeast respondents had restrictions from the city government compared to 22% of southwest respondents.

- Experience with Water Issues
 - While most respondents had not had firsthand experiences with poor water quality (69-74%), some of the southwest respondents had experienced closed beaches due to red tide/poor water quality (21%).
 - Southeast respondents more frequently indicated they felt water quality was worsening amongst different natural bodies of water than southwest respondents.
- Cost of Water
 - Southwest respondents had slightly more expensive water bills than southeast respondents. Fifty-three percent of southwest respondents had a bill \$51-\$100 per month compared to 44% of southeast respondents.
- Engagement in Environmental and Conservation Behaviors
 - Southwest respondents were less likely to report they allowed their sprinklers to run when rain is predicted or when it has rained/is raining than southeast respondents.
 - Overall, southwest respondents owned more water efficient products and infrastructure, such as water efficient toilets and showerheads, than southeast respondents.
- Likelihood of Participating in Environmental Behaviors
 - Southwest respondents reported they were more likely or very likely to visit springs, lakes, and state parks to learn about water issues (37%) compared to southeast respondents (29%).
 - Southwest respondents were more likely or very likely to avoid purchasing plants that require a lot of watering (84%) than southeast respondents (78%).
 - Southeast respondents were more willing to conserve water if it meant they would have to reduce the amount of times they water their lawn and would have to purchase water-efficient household utilities than southwest respondents.
- Knowledge and Attitudes towards Government
 - Southeast respondents were more likely to agree or strongly agree the government gives them the freedom to make their own decisions in regards to the environment than southwest respondents. Forty-four percent of southeast respondents agreed or strongly agreed compared to 34% of southwest respondents.
 - Overall, respondents were not very aware of water acts and policies. The everglades restoration act, the clean water act, and the air and water pollution control act were the most well-known, but all had less than 25% of respondents who were moderately or extremely familiar with these acts and policies.
- Extension Program Participation
 - While most respondents had not participated in extension programming, more southwest respondents (8%) had participated in Florida Friendly Landscaping program than southeast respondents (3%).
- Education on Water and Landscaping
 - The top three preferred ways of learning about water issues reported by respondents was through visiting web sites, reading fact sheets and watching TV coverage. Southwest respondents were more likely to read a newspaper article and attend events in person (such as a workshop or seminar) than those from the southeast.

Background

Blessed with bountiful freshwater resources, abundant rainfall, and ocean resources, Florida is unique in its seemingly endless water resources. However, water quality and water quantity is a crucial issue in Florida, as the need to balance agricultural needs, business and development needs, 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.

This survey was distributed to high water users living in southeastern and southwestern Florida. High water users are those who have a household income greater than \$50,000/year, have a landscape they manage personally, and those who choose to pay for yard care from a landscaping company. In addition to the topics mentioned above, the Southern Florida High Water Users' Public Opinions of Water in Florida survey asked questions regarding:

- Water and landscaping restrictions;
- Likelihood of modifying irrigation practices to support water conservation.

Methods

In March 2015, 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 420 completed responses.

The survey instrument was developed by Dr. Alexa Lamm 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). The survey was then reviewed by an expert panel and pilot tested on 50 respondents to ensure validity and reliability.

Results

Description of Respondents

A series of questions were given to respondents to assess where and for how long they had lived in Florida, their basic demographic characteristics and political affiliation and ideology.

Residence

The first set of questions asked respondents the county in which they reside. Fifty-two percent of respondents lived in counties making up the southwest region of the state, while 48% of respondents lived in counties making up the southeast side of the state (Figure 1). The southwest counties included Citrus, Collier, Hardee, Hernando, Highlands, Hillsborough, Manatee, Pasco, Pinellas, Polk, Sarasota and Sumter counties. The southeast counties included Broward, Miami-Dade, Indian River, Martin, Palm Beach and St. Lucie counties. Figure 2 displays the southwest counties in pink and the southeast counties in purple.

Figure 1: Region of residence

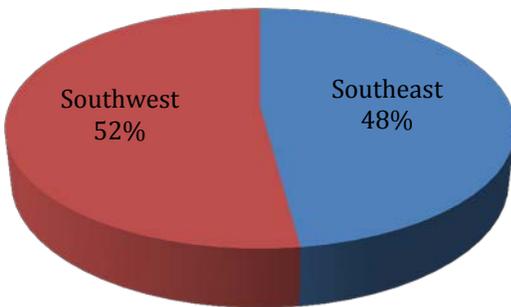
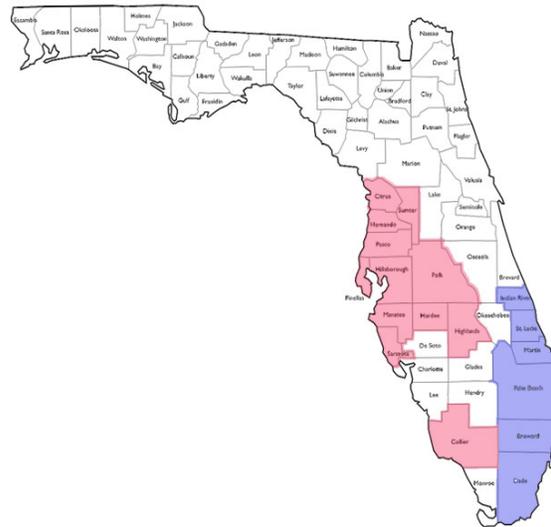
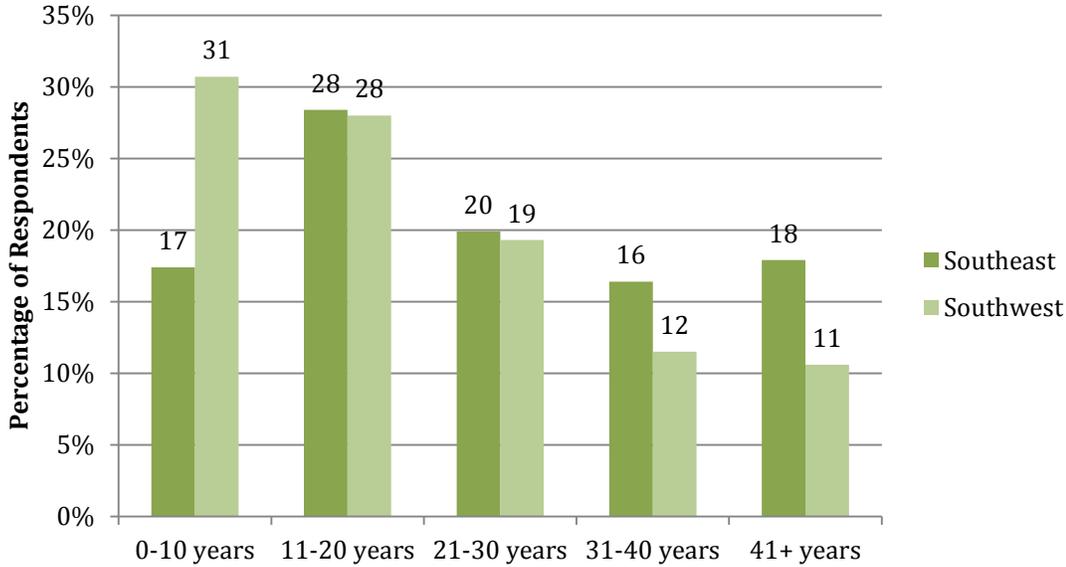


Figure 2: FL counties represented



Respondents from the southwest region were newer residents of Florida than those from the southeast region. Thirty-one percent of southwest respondents had lived in Florida for 0-10 years compared to 17% of southeast respondents (Figure 3). Southwest respondents also had lower percentages of living 31 or more years in Florida (23%) than those from the southeast (34%).

Figure 3: Years lived in Florida



Demographics

General demographic information was also provided by respondents. Southeast respondents tended to be older and to live in more heavily metropolitan areas than those in the southwest (Table 1). Southwest respondents were more likely to be female; 48% of southeast respondents were female compared to 54% of southwest respondents. Racial/ethnic diversity was similar amongst southeast and southwest groups. A Chi Square test was conducted to assess statistical significance between sex, race/ethnicity, and rural-urban residence. Statistical significance was found between southeast/southwest regions with regards to Hispanic ethnicity ($\chi^2 = 13.78$; $p = .00$) and rural-urban residence ($\chi^2 = 62.10$; $p = .00$). An analysis of variance test was conducted to assess whether there were statistically significant differences between the two regions regarding age and the model was significant ($F = 5.40$; $p = .02$).

Table 1: Demographic data

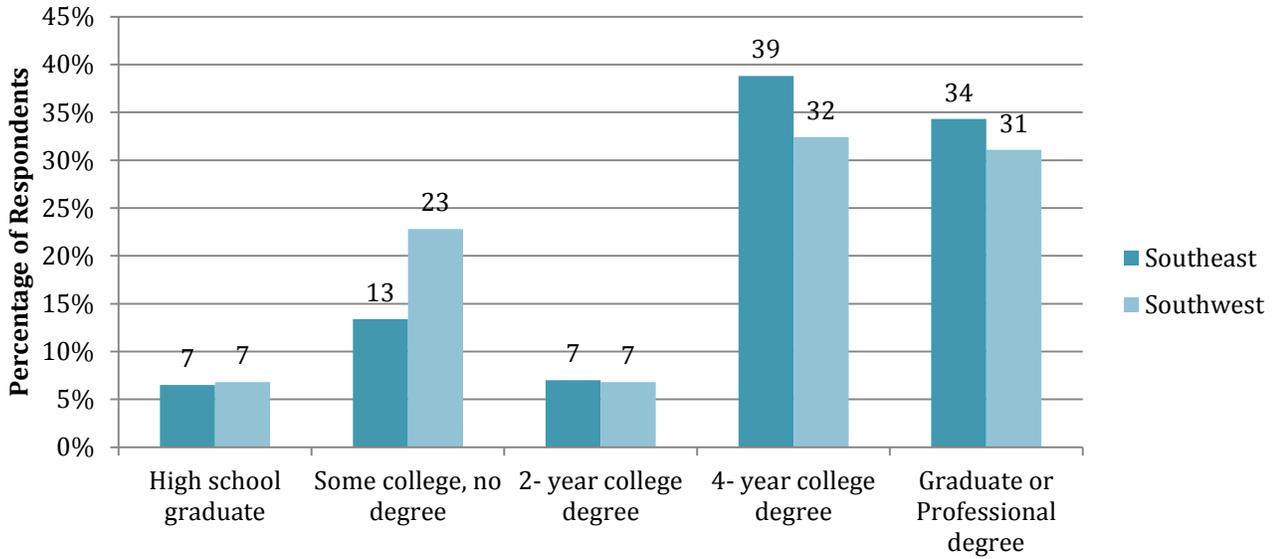
Demographic Category	Southeast %	Southwest %
Gender		
Male	51.7	45.8
Female	48.3	54.2
Race and Ethnicity		
Hispanic*	9.5	8.0
Native American	0	1.0
Asian	1.0	1.6
African American	5.5	4.1
White	92.5	93.5
Age*		
19 and younger	0	0.4
20-29 years	2.5	3.3
30-39 years	7.5	12.7
40-49 years	8.5	15.3
50-59 years	21.9	23.3
60-69 years	36.3	28.2
70-79 years	20.4	15.3
80 and older	3.0	1.6
Rural Urban Continuum*		
Metro- Counties in metro areas of 1 million population or more	88.6	56.6
Metro- Counties in metro areas of 250,000 to 1 million population	9.5	37.4
Metro- Counties in metro areas of fewer than 250,000 population	2.0	0.5
Nonmetro- Urban population of 20,000 or more, adjacent to a metro area	0	5.0
Nonmetro- Urban population of 2,500 to 19,999, adjacent to a metro area	0	0.5
Nonmetro- Completely rural or less than 2,500 urban population, adjacent to a metro area	0	0

Note: * = statistically significant variation/difference between groups

Educational Attainment

Seventy-three percent of southeast residents had obtained of 4-year college degree or graduate degree compared to 63% of southwest residents (Figure 4).

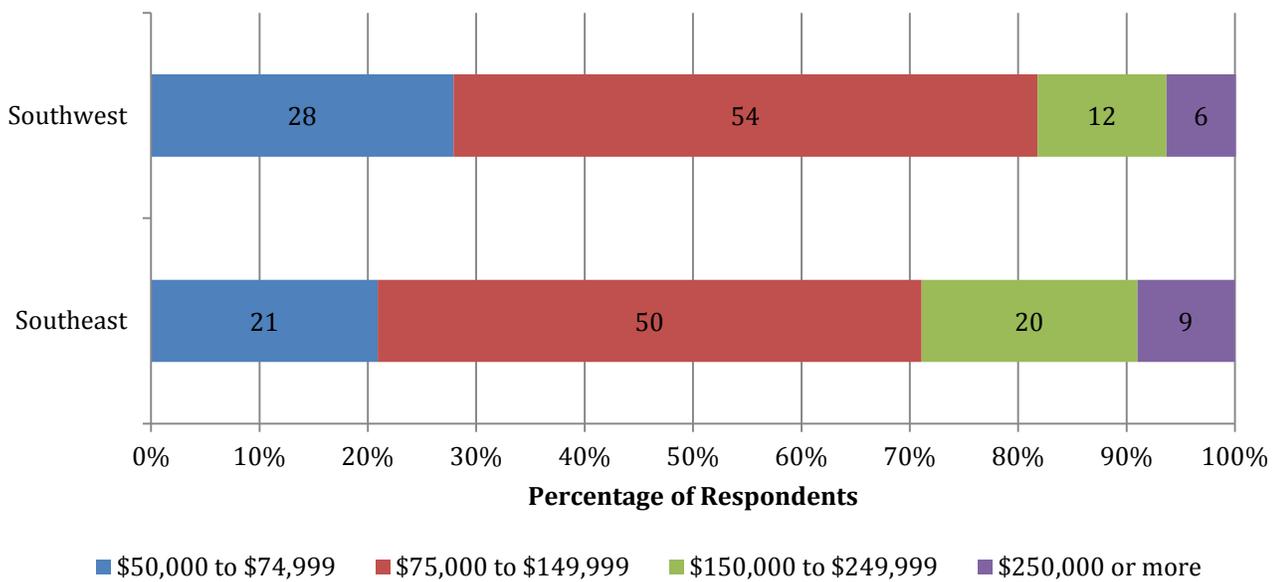
Figure 4: Education



Income

Southwest residents earned slightly less when asked about their annual income over the past year than those in the southeast (Figure 5). Eighty-two percent of southwest residents earned \$149,999 or less per year compared to 71% of southeast residents. Twenty-nine percent of southeast residents earned an average of \$150,000 a year or more compared to 18% of southwest residents. Variance between the two groups was statistically significant when an ANOVA was conducted ($F = 6.09$; $p = .01$).

Figure 5: Income



Political Affiliation and Value

Southeast respondents considered themselves to be more politically liberal or very liberal (34%) than southwest residents (16%). Results are displayed in Figure 6. These differences were statistically significant when a Chi Square test was conducted ($\chi^2 = 12.81$; $p = .01$). Southeast respondents were also more likely to identify themselves as Democrat (44%) than southwest residents (28%) and the differences amongst region regarding political affiliation was statistically significant when a Chi Square test was conducted ($\chi^2 = 12.48$; $p = .01$). Political party affiliation results can be seen in Figure 7.

Figure 6: Political values

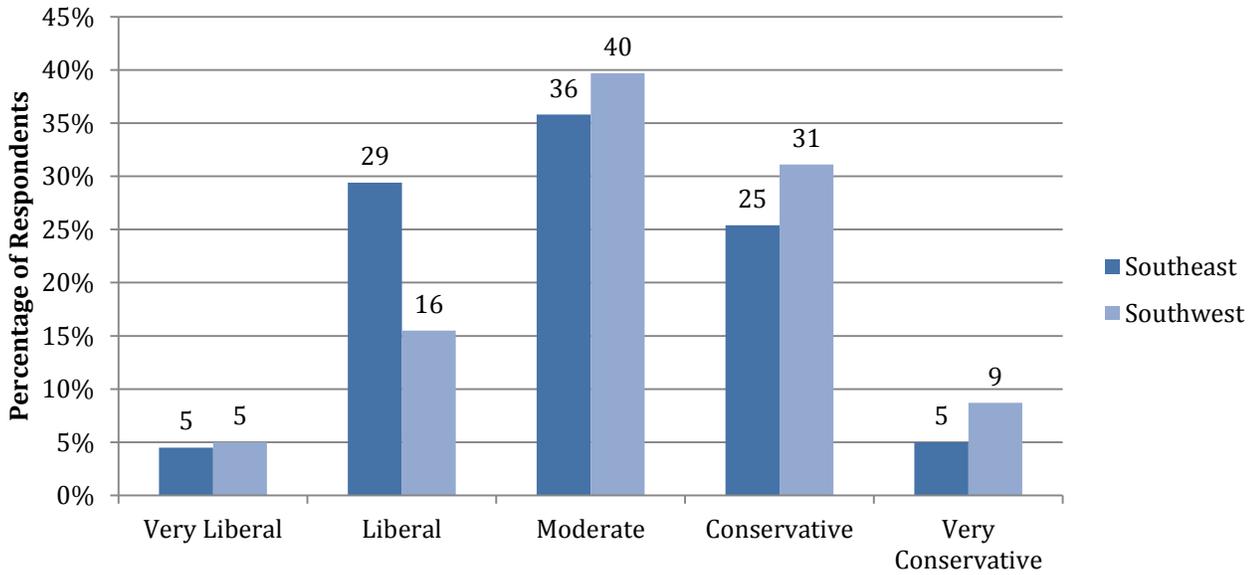
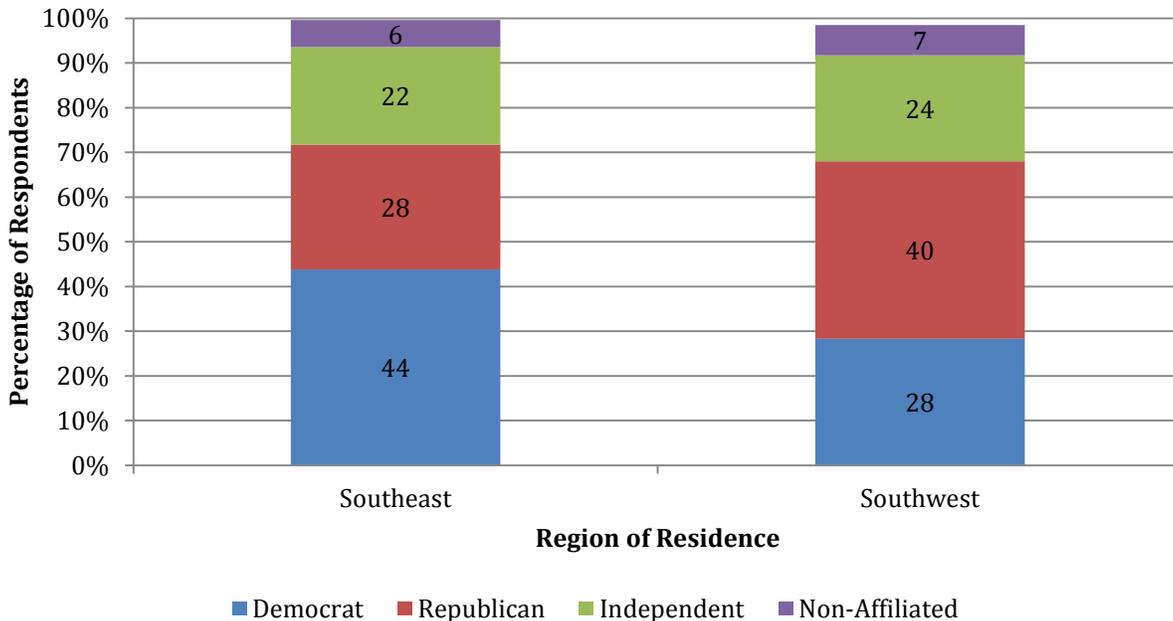


Figure 7: Political affiliation



Importance of Water as an Issue

Respondents were asked questions to understand the level of importance they associate with key Florida issues, clean water resources, and plentiful water resources.

Importance of Key Florida Issues

Respondents were asked how important they considered ten key issues in Florida (1 = *Not at all important*; 2 = *Slightly important*; 3 = *Fairly important*; 4 = *Highly important*; 5 = *Extremely important*). Overall, respondents considered health care, the economy, and water as the top three most important issues in Florida (Table 2). The largest differences between regions occurred for immigration and climate change. Seventy-two percent of southeast respondents indicated immigration was highly or extremely important compared to 64% of southwest residents. Also, 59% of southeast respondents considered climate change as highly or extremely important compared to 48% of southwest respondents. An ANOVA test found three items to be statistically significant. Those items were public education ($F= 5.32$; $p = .02$), taxes ($F= 4.37$; $p = .04$) and climate change ($F= 7.01$; $p = .01$).

Table 2: Importance level of Florida issues

Florida Issue	% respondents rating issue highly or extremely important – Southeast	% respondents rating issue highly or extremely important - Southwest
Health care	91	88
The economy	89	84
Water	86	87
Public education*	81	76
Taxes*	79	74
Environmental conservation	73	72
Immigration	72	64
Food production	62	61
Climate change*	59	48
Housing and foreclosures	56	58

Note: * = statistically significant variation/difference between groups

Importance of Clean Water Resources

Respondents were asked how important they considered cleanliness of water for different purposes and in different bodies of water. Respondents in both southeast and southwest regions answered similarly (Table 3). The most important item was clean drinking water. Ninety-six percent of southeast respondents and 98% of southwest respondents rated this issue highly or extremely important.

Table 3: Importance level of clean water resources

Importance of clean water	% respondents rating issue highly or extremely important- Southeast	% respondents rating issue highly or extremely important- Southwest
Clean drinking water	96	98
Clean ground water	89	89
Clean bays and estuaries	89	91
Clean lakes, springs, rivers	88	91
Clean beaches	88	92
Clean oceans	86	86
Clean water for shellfishing	84	82

Importance of Plentiful Water Resources

Respondents were asked to indicate how important they considered plentiful water resources for a variety of purposes. Plentiful water for cities was the item with the highest percent of respondents who rated the issue highly or extremely important (Table 4). Eighty-eight percent of southeast respondents and 90% of southwest respondents rated this item highly or extremely important. The item with the most difference between regions was “plentiful water for household landscapes.” Forty-three percent of respondents in the southeast region considered this highly or extremely important compared to 34% of southwest respondents. This item was also statistically significant when an ANOVA test was conducted ($F = 4.91; p = .03$).

Table 4: Importance level of plentiful water resources

Importance of plentiful water	% respondents rating issue highly or extremely important- Southeast	% respondents rating issue highly or extremely important- Southwest
Plentiful water for cities	88	90
Plentiful water for agriculture	88	86
Plentiful water in aquifers, springs, rivers, and lakes	84	89
Plentiful water for commerce/industry/power	70	70
Plentiful water for recreation	43	39
Plentiful water for household landscape*	43	34
Plentiful water for golf course	18	15

*Note: * = statistically significant variation/difference between groups*

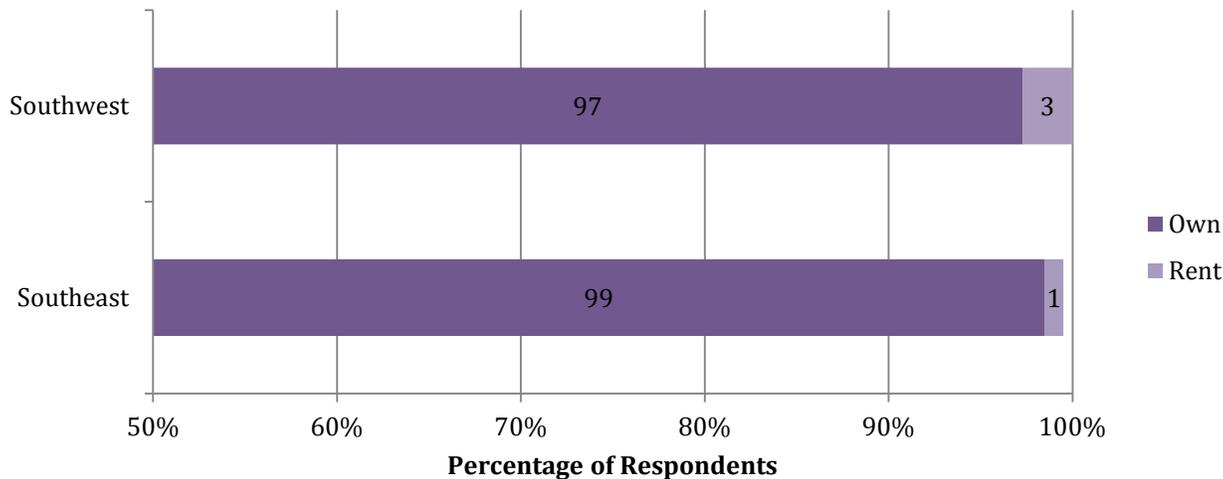
Landscaping Care and Water Resources

The next section of the survey asked respondents questions related to their home ownership, HOA participation, landscaping care and irrigation. All respondents to the survey had a yard and hire someone to maintain this yard.

Home Ownership

Most respondents owned their home (Figure 8).

Figure 8: Homeownership



HOA Participation and HOA Landscaping Restrictions

Seventy percent of southwest respondents are part of an HOA compared to 61% of southeast respondents (Figure 9). This difference was statistically significant when a Chi Square test was conducted ($\chi^2 = 3.89$; $p = .03$).

Those who were part of an HOA were asked “does your HOA have any policies or requirements related to your landscaping?” Responses can be seen in Figure 10. Most respondents do have HOA policies regarding their landscaping.

Figure 9: HOA participation

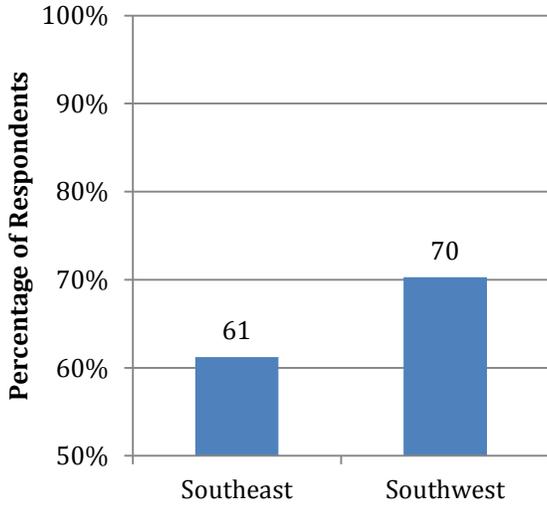
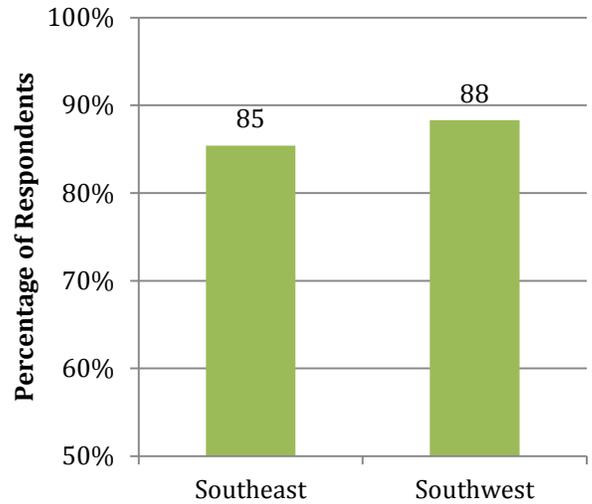


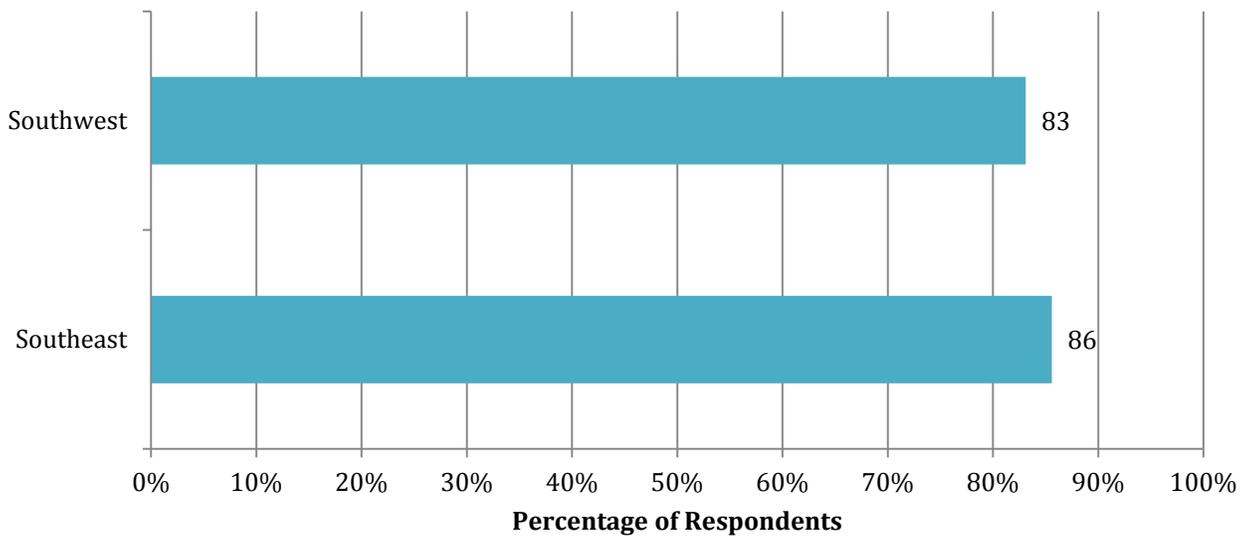
Figure 10: HOA landscaping restrictions



Irrigation Ownership and Water Source

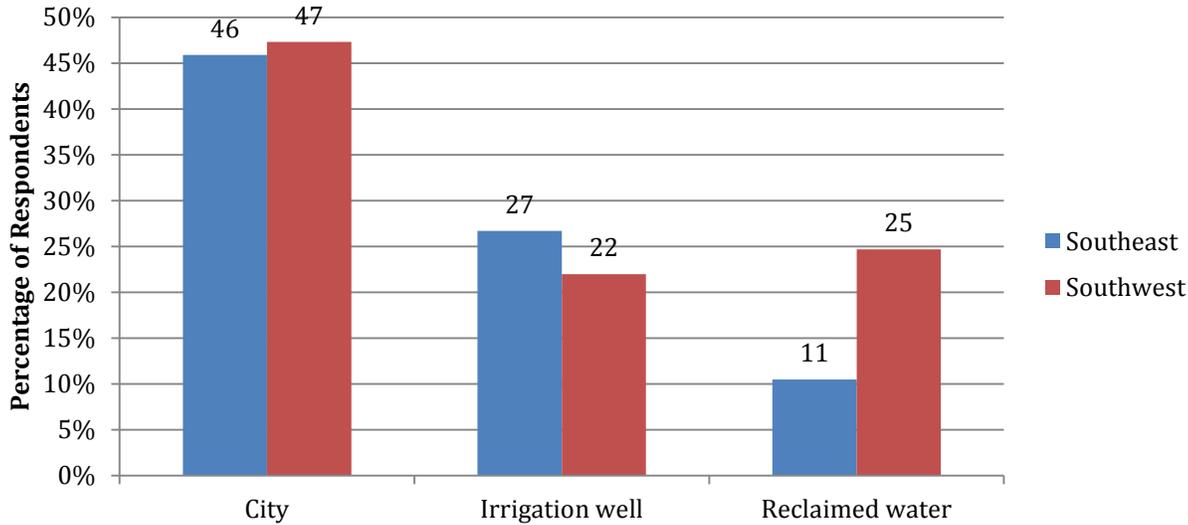
Most respondents have their own irrigation system. Eighty-six percent of southeast respondents and 83% of southwest respondents reported they have their own irrigation system for their yard (Figure 11).

Figure 11: Have irrigation system



Those who had an irrigation system were asked the source of water for their irrigation system (southeast $n = 171$; southwest $n = 182$). The most common water source was from the city (Figure 12). Southwest respondents were more likely to report they were able to use reclaimed water on their landscapes (25%) than southeast respondents (11%). Differences amongst regions were statistically significant when a Chi Square test was conducted ($\chi^2 = 9.87$; $p = .01$).

Figure 12: Water source for irrigation system

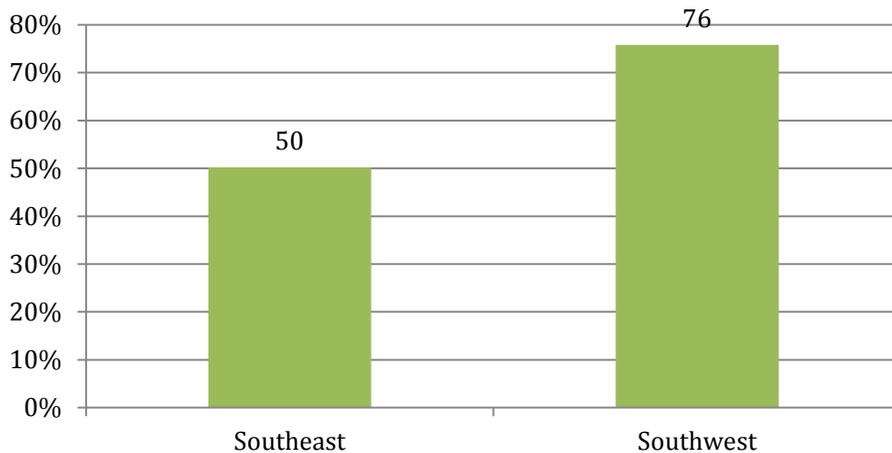


Note: 15% of southeast respondents and 5% of southwest respondents reported "other." Also 2% of southeast respondents and 1% of southwest respondents reported "I don't know."

Irrigation Restrictions

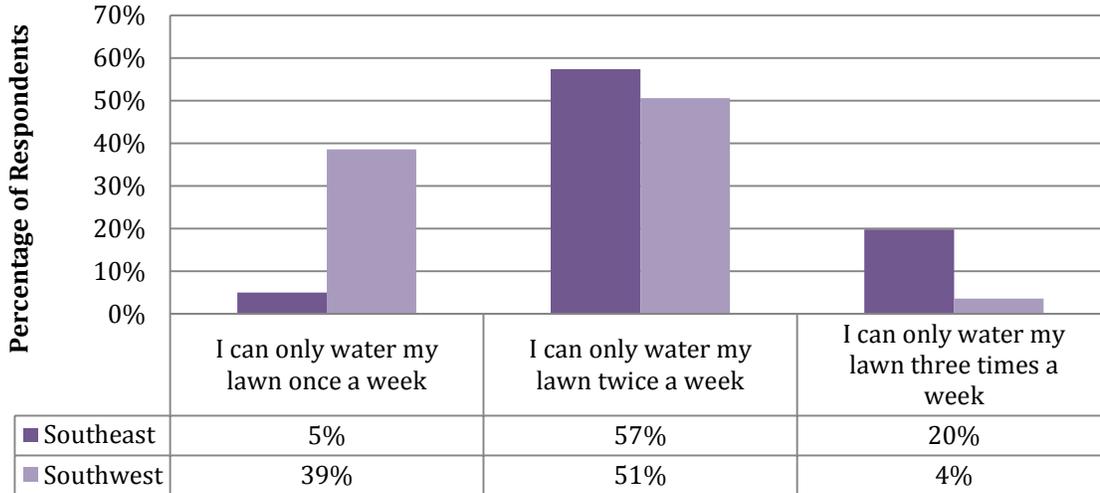
Respondents were then asked whether they had to abide by any water restrictions for their lawn. Seventy-six percent of southwest respondents reported they had to abide by water restrictions for their lawn compared to 50% of southeast respondents (Figure 13). These differences were statistically significant when a Chi Square test was conducted ($\chi^2 = 29.55$; $p = .00$).

Figure 13: Restrictions on irrigation



Those that reported they had to abide by a water restriction for their lawn were asked what type of water restriction they had to abide by. The most common restriction was watering the lawn twice a week, with 57% of southeast and 51% of southwest respondents choosing this option (Figure 14). More respondents from the southwest region indicated they could only water their lawn once a week (39%) compared to the southeast region (5%). These differences were statistically significant when a Chi Square test was conducted ($\chi^2 = 45.57; p = .00$)

Figure 14: Type of irrigation restriction

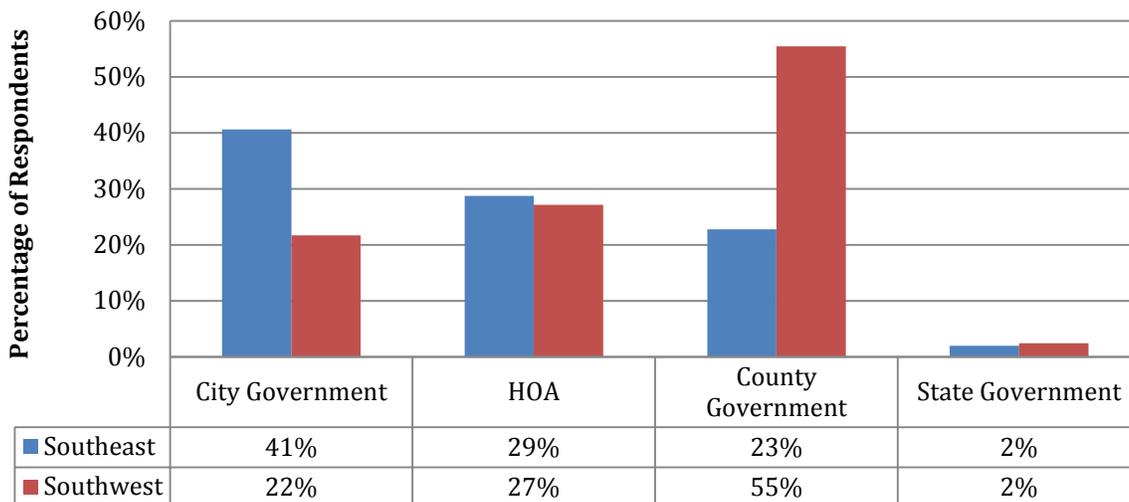


Note: 8% of southeast respondents and 4% of southwest respondents reported "other." Also, 10% of southeast respondents and 3% of southwest respondents reported "I don't know."

Enforcement of Irrigation Restrictions

Respondents with irrigation restrictions were then asked who enforces these restrictions and were allowed to check all that applied. Fifty-five percent of respondents from the southwest indicated they had restrictions enforced by the county government compared to 23% of the southeast respondents, while 41% of southeast respondents had restrictions from the city government compared to 22% of southwest respondents (Figure 15).

Figure 15: Enforcement of water restrictions- Active irrigation users



Note: 17% of southeast and 9% of southwest respondents indicated "I don't know." Also, 7% of southeast and 4% of southwest respondents indicated "other."

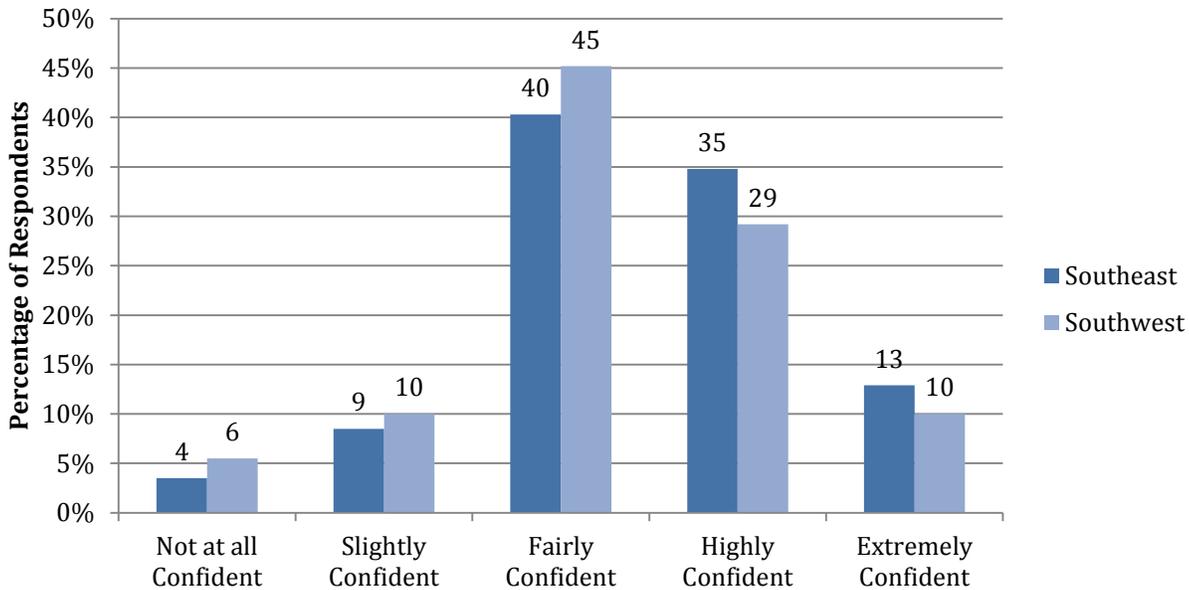
Experience with Water Resources

Respondents were then asked a series of questions about their confidence in safety and availability of water resources, their experiences with water quality, and their perceived changes in water quality.

Confidence in Water Resources

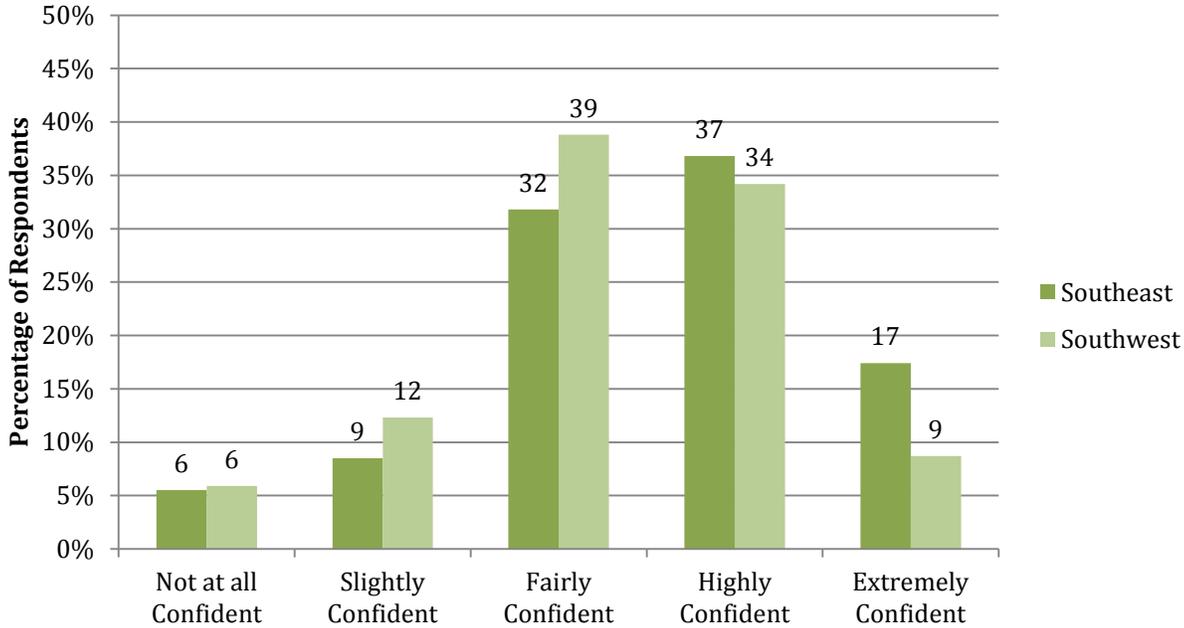
Respondents were asked “how confident are you that your community will have enough water resources to meet all of its needs 10 years from now?” Forty-eight percent of southeast respondents indicated they were highly or extremely confident compared to 39% of southwest respondents (Figure 16).

Figure 16: Confidence in future water resources



Next, respondents were asked “overall, how confident are you about the safety of the tap water in your home?” Fifty-four percent of southeast respondents indicated they were highly or extremely confident compared to 43% of southwest respondents (Figure 17). The differences in responses amongst the two regions was statistically significant when an ANOVA test was conducted ($F = 6.323$; $p = .01$).

Figure 17: Confidence in tap water



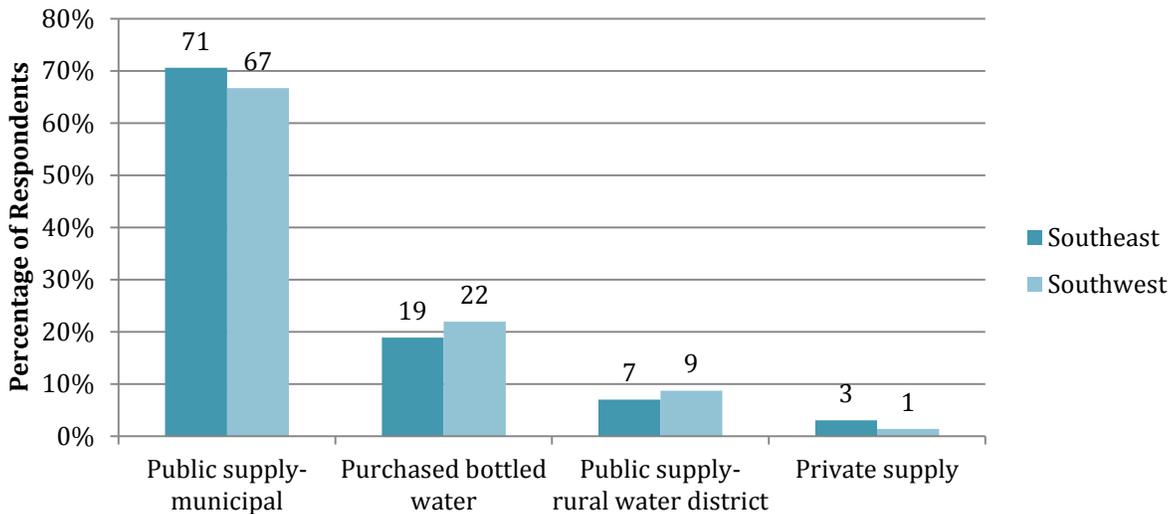
Experience with Water Quality

Respondents were asked a series of questions about their experiences with water quality, including drinking water, water resources outside the home, as well as their perceptions of how water quality is changing in different bodies of water.

Drinking Water

The majority of respondents reported they received their drinking water through a municipal public supply (Figure 18).

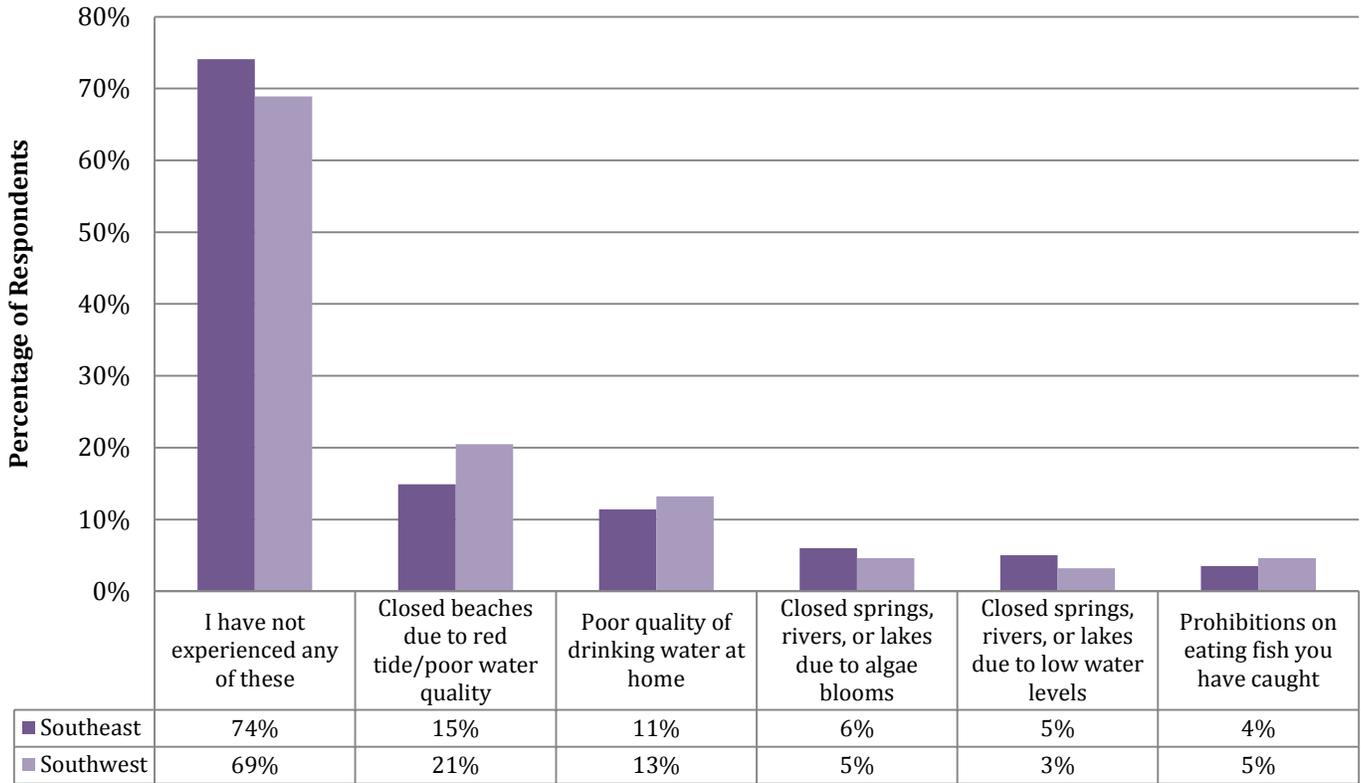
Figure 18: Drinking water source



Negative Experiences with Water Quality

Respondents were asked to indicate whether they had any negative experiences with water quality. The majority of respondents (74% of southeast respondents and 69% of southwest respondents) had not experienced negative water quality (Figure 19). The most common negative experience was closed beaches due to red tide/poor water quality. Twenty-one percent of southwest respondents and 15% of southeast respondents had experienced closed beaches.

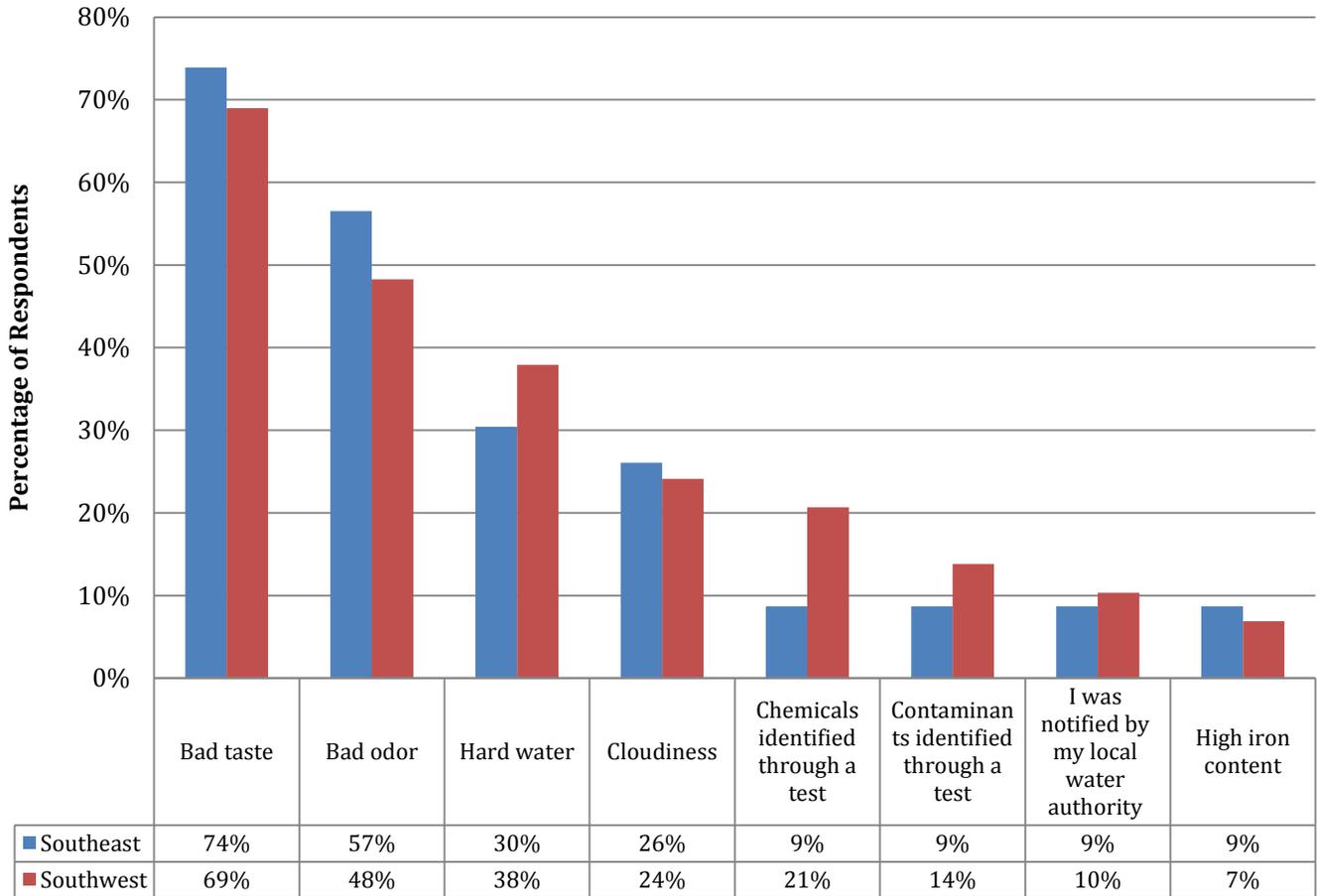
Figure 19: Experience with negative water quality



Quality of Drinking Water

Respondents who indicated they had experienced poor drinking water quality (southeast $n = 23$; southwest $n = 29$) were asked to indicate the reason they rated their drinking water as poor and were allowed to choose all that applied. Bad taste and odor were the most common reasons (Figure 20). More of the southwest respondents than southeast respondents indicated chemicals or contaminants being identified in their water through a test.

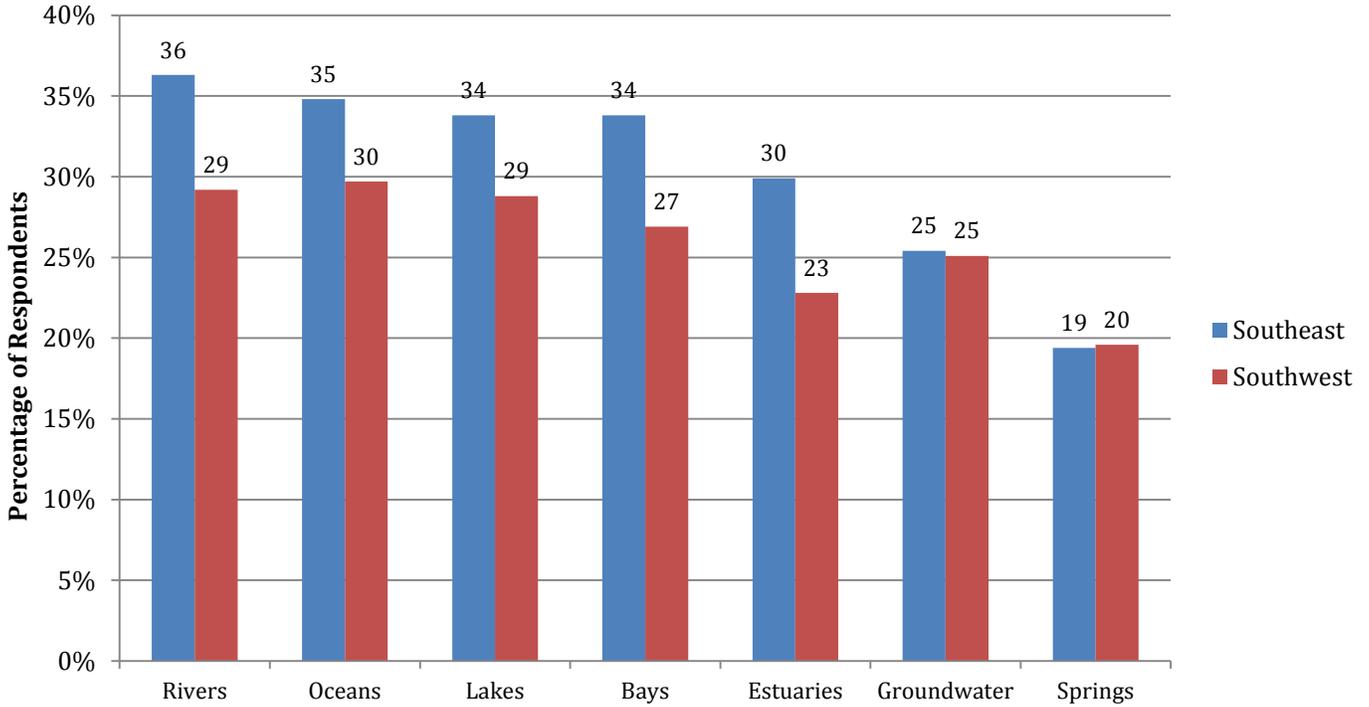
Figure 20: Reason for poor drinking water quality



Perceived Change in Quality of Water Sources

Next, respondents were asked a question about whether they felt the quality of water in different bodies of water were getting worse, better, or the same. Respondents from the southeast tended to think water quality was worsening more frequently than the southwest respondents (Figure 21). The item about quality of water in bays was statistically significant between the two groups when a Chi Square test was conducted ($\chi^2 = 8.80; p = .03$)

Figure 21: Perceptions of water quality change worsening



Cost of Water

Another set of questions asked respondents about their current water bill and their willingness to accept a higher water bill to ensure the sustainability of water resources in Florida.

Average Monthly Water Bill

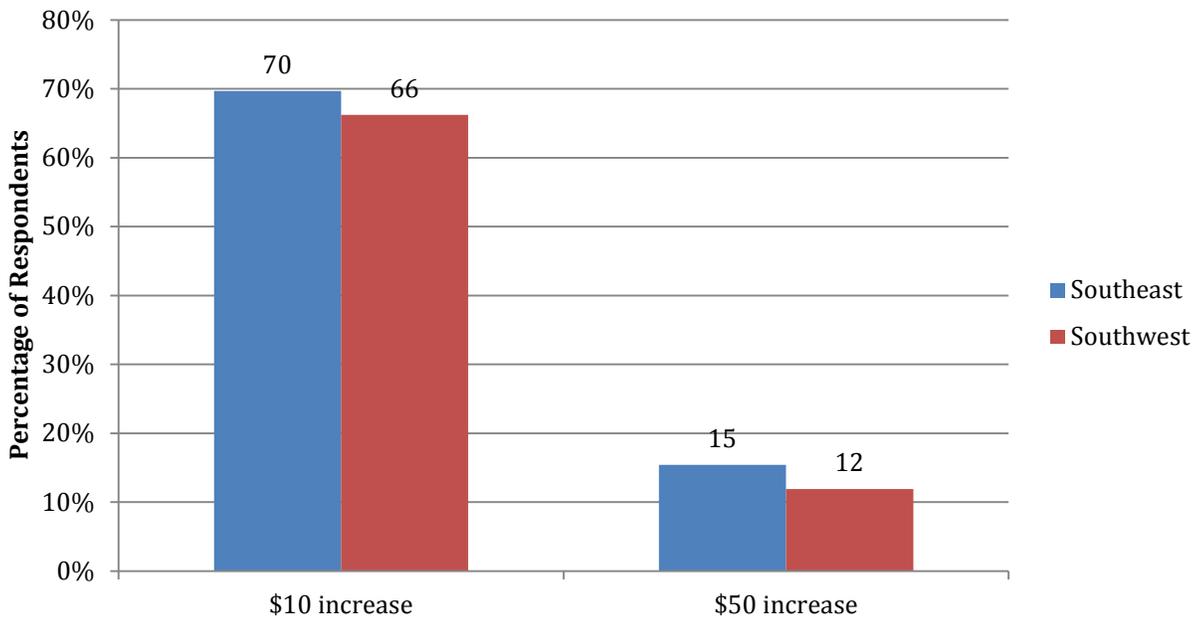
Respondents were asked to indicate the cost of their average monthly bill. Southwest respondents had slightly more expensive water bills than southeast respondents. Thirty-seven percent of southeast respondents had a bill \$0-\$50 per month compared to 29% of southwest respondents; 53% of southwest respondents had a bill \$51-\$100 per month compared to 44% of southeast respondents (Figure 22).

Figure 22: Average monthly water bill



Respondents were then asked if they had an average water bill of \$100, would they accept it increasing by \$10 or \$50 if it ensured a future water supply in Florida. The majority of respondents were willing to accept a \$10 increase in their bill, but few (12-15%) would accept a \$50 increase (Figure 23).

Figure 23: Increase in bill



Engagement in Environmental and Conservation Behaviors

The next section of the survey asked respondents to indicate their current engagement and future willingness to engage in a variety of environmental and conservation behaviors. Respondents were asked whether they participated in various indoor and outdoor water conservation behaviors as well as waste disposal activities. They were asked to indicate whether they engaged in an activity “1 = *Every time*, 2 = *Almost every time*, 3 = *Sometimes*, 4 = *Almost never*, and 5 = *Never*.” The activity respondents were most likely to indicate they engaged in frequently was “I turn off the water while brushing my teeth” (Table 5). They were least likely to indicate “I flush cooking oil down the toilet.” Two items showed statistical significance by southeast/southwest region when an ANOVA test was conducted. These items were “I let my sprinklers run when rain is predicted in the forecast” ($F = 5.81$; $p = .02$) and “I let my sprinklers run when it has rained or is raining” ($F = 7.26$; $p = .01$).

Table 5: Engagement in water conservation and waste disposal behaviors

	Southeast %	Southwest %
Indoor household conservation		
I turn off the water while brushing my teeth	65	68
I shower for no more than five minutes each time I bathe	47	47
I leave the water running in the kitchen when washing and/or rinsing dishes	22	21
Outdoor household conservation		
I avoid watering my lawn in the summer	30	33
I let my sprinklers run when rain is predicted in the forecast*	12	6
I let my sprinklers run when it has rained or is raining*	10	3
I hose down my driveway	3	2
Waste disposal		
I allow soapy water to run down a storm drain	7	4
I allow used motor oil to run down a storm drain	4	1
I flush cooking oil down the toilet	2	1

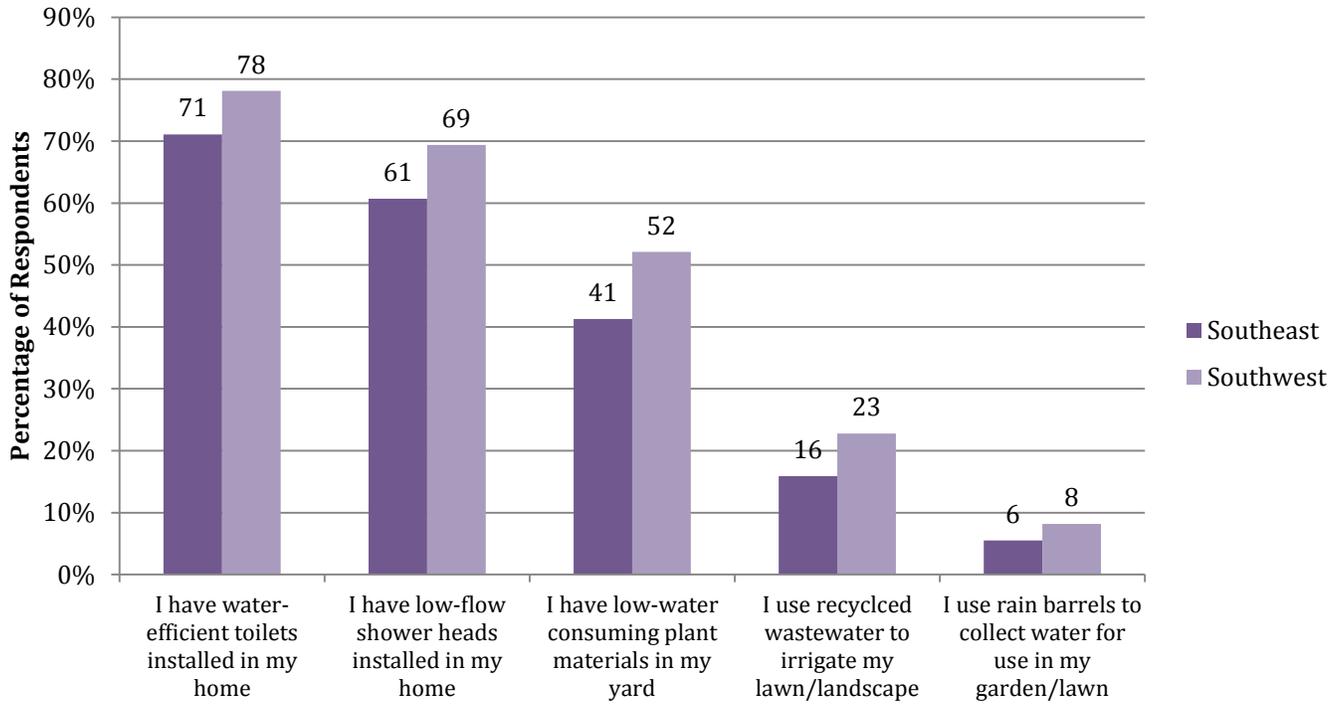
Note: Table indicates percentage of respondents who reported they engage in the activity “every time” or “almost every time.”

** = statistically significant variation/difference between groups*

Ownership of Water Conservation Production and Infrastructure

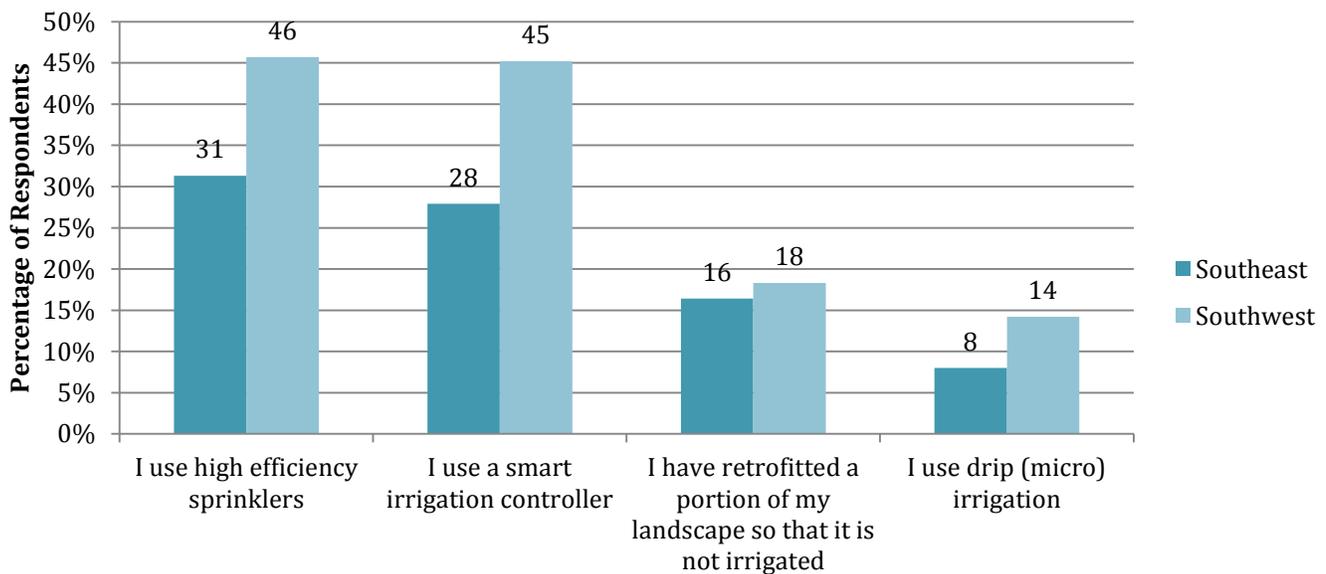
Respondents were also asked whether they owned or used various water saving products in their home or lawns. Overall, southwest respondents had higher frequency of owning or using water saving products than southeast respondents. Seventy-eight percent of southwest respondents and 71% of southeast respondents have water-efficient toilets installed in their homes (Figure 24). Two items displayed statistical significance when a Chi Square test was conducted to assess differences between the two regions. The significant items were “I have low-flow shower heads installed in my home” ($\chi^2 = 7.98$; $p = .02$) and “I have low-water consuming plant materials in my yard” ($\chi^2 = 8.49$; $p = .01$).

Figure 24: Ownership of water efficient products and infrastructure



A similar question asked respondents whether they owned water saving products specific to their irrigation systems. Overall, southwest respondents were more likely to own these irrigation efficient products than southeast respondents (Figure 25). The two items with the highest difference between southeast and southwest respondents were also statistically significant when a Chi Square test was conducted. Forty-six percent of southwest respondents use high efficiency sprinklers compared to 31% of southeast respondents and this was statistically significant ($\chi^2 = 11.23$; $p = .00$). Forty-five percent of southwest respondents use a smart irrigation controller compared to 28% of southeast respondents and this was also statistically significant ($\chi^2 = 14.78$; $p = .00$).

Figure 25: Ownership of irrigation efficient products



Likelihood of Participating in Environmental Behaviors

Next, respondents were asked a series of questions regarding their likelihood of participating in water conservation behavior, civic engagement behavior, as well as altering their purchasing behavior and household landscapes. Table 6 displays all results for respondents who reported they were likely or very likely to participate in various environmental behaviors.

Table 6: Likelihood of participating in environmental behaviors

	Southeast %	Southwest %
Household water conservation		
Only run the dishwasher when it is full	91	91
Responsibly dispose of hazardous materials	88	93
Only run the washing machine when it is full	85	90
Sweep patios and sidewalks instead of hosing them down*	80	81
Reduce your use of natural resources	64	61
Keep a timer in the bathroom to help you take a shorter shower	20	13
Civic behavior		
Support water restrictions issued by my local government	82	83
Vote to support water conservation programs	80	74
Vote for candidates who support water conservation	67	67
Visit springs, lakes, state parks, etc., to learn about water issues	29	37
Volunteer for a stream clean up or wetland restoration event	20	16
Join a water conservation organization	19	17
Altering purchasing behavior		
Avoid purchasing plants that require a lot of watering	78	84
Use biodegradable cleaning products	68	69
Donate to an organization that protects water	32	33
Buy a specialty license plate that supports water protection efforts	15	12
Altering landscaping		
Only water your lawn in the morning or evening	87	85
Reduce the number of times a week you water your lawn	70	63
Reduce use of fertilizer if your landscape quality would decrease	51	45
Reduce use of pesticides if your landscape quality would decrease	48	47
Install an efficient irrigation technology (e.g., smart irrigation controller, high efficiency sprinklers, drip irrigation)	37	38
Modify my landscape so that a portion is not irrigated	31	30

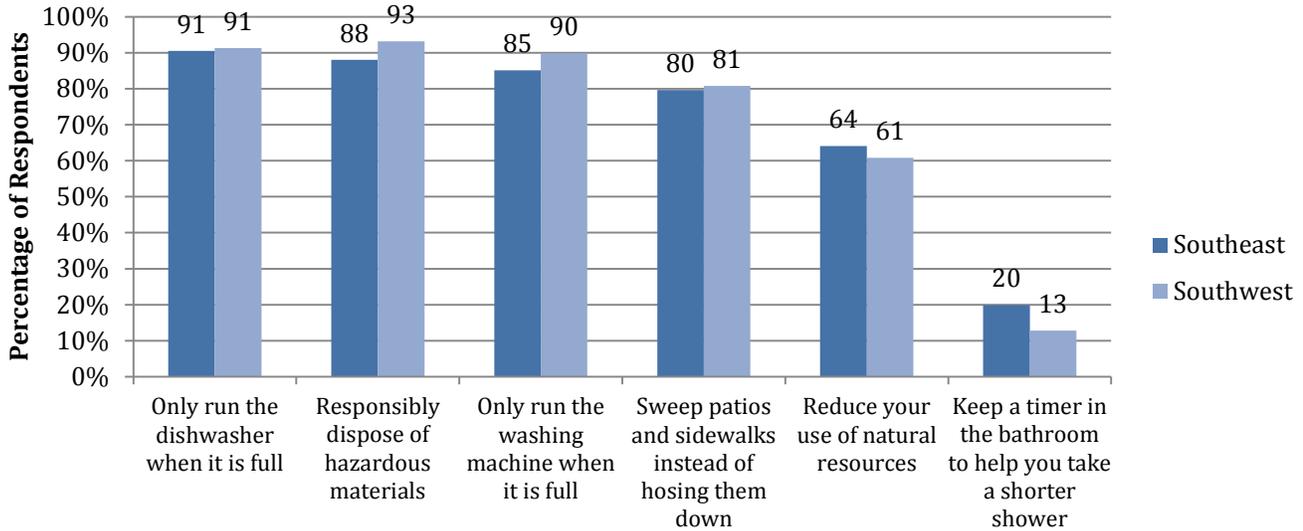
Note: Table indicates percentage of respondents who reported they were likely or very likely to engage in the behavior

** = statistically significant variation/difference between groups*

Likelihood of Participating in Household Water Conservation Behaviors

Regarding household water conservation, respondents from both regions were more likely to only run the dishwasher or washing machine when full and responsibly dispose of hazardous materials than to reduce their use of natural resources or keep a timer in the bathroom to help them take a shorter shower (Figure 26). The item “sweep patios and sidewalks instead of hosing them down” was statistically significant when an ANOVA test was conducted ($F = 8.57; p = .00$).

Figure 26: Likelihood of participation in household water conservation behaviors

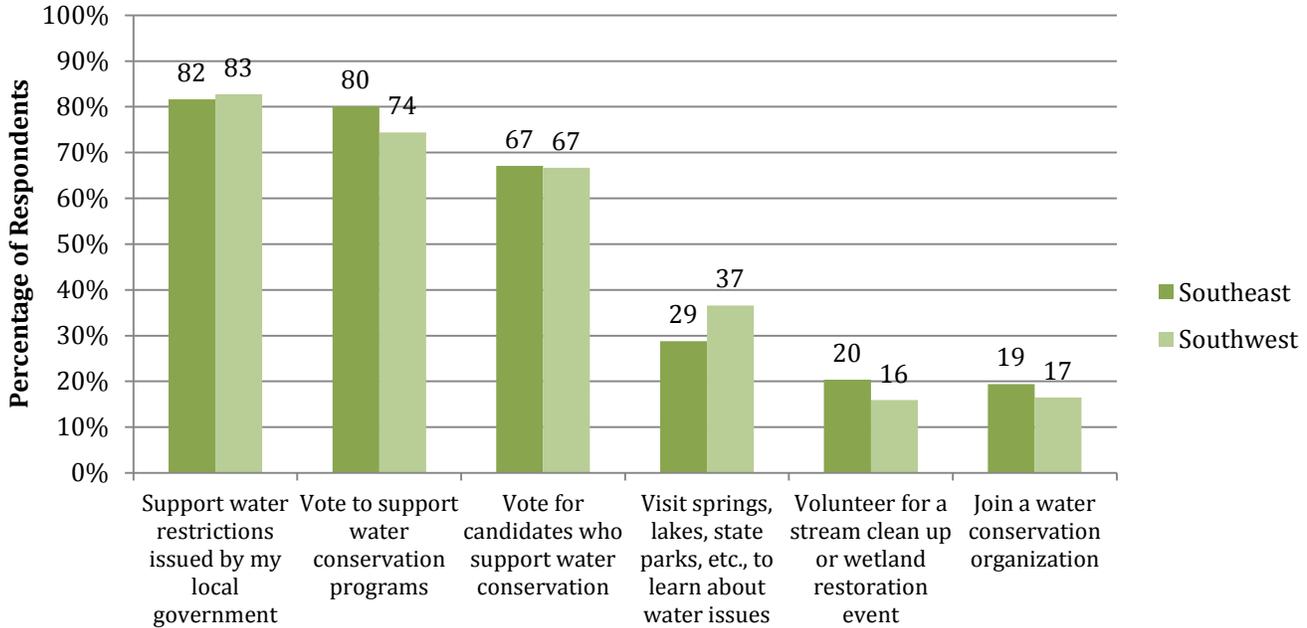


Note: Figure indicates percentage of respondents who reported they were likely or very likely to engage in the behavior

Likelihood of Participating in Civic Behaviors Related to Water Conservation

Regarding civic behavior, respondents from both regions were more likely to support water restrictions issued by local governments and vote to support water conservation programs than to volunteer for a stream clean up or join a water conservation organization (Figure 27). The largest difference between the two regions occurred for the item “visit springs, lakes, state parks, etc., to learn about water issues.” Nearly 29% of southeast respondents were likely or very likely to engage in this activity compared to nearly 37% of southwest respondents.

Figure 27: Likelihood of participation in civic behaviors related to water conservation

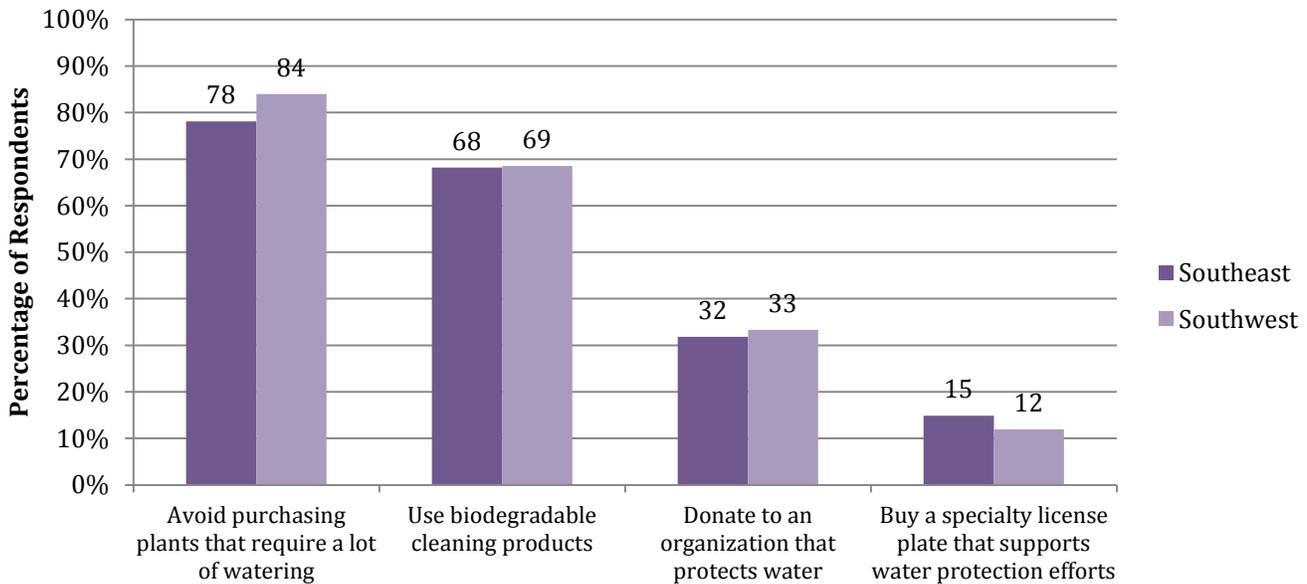


Note: Figure indicates percentage of respondents who reported they were likely or very likely to engage in the behavior

Likelihood of Altering Purchasing Behaviors to Support Water Conservation

Regarding altering purchasing behavior, respondents from both regions indicated they were more likely to avoid purchasing plants that require a lot of watering than to buy a specialty license plate that support water protection efforts (Figure 28). The largest difference between the two regions occurred for the item “Avoid purchasing plants that require a lot of watering.” Seventy-one percent of southeast respondents indicated they were likely or very likely to engage in this activity compared to 84% of southwest respondents.

Figure 28: Likelihood of altering purchasing behavior in support of water conservation

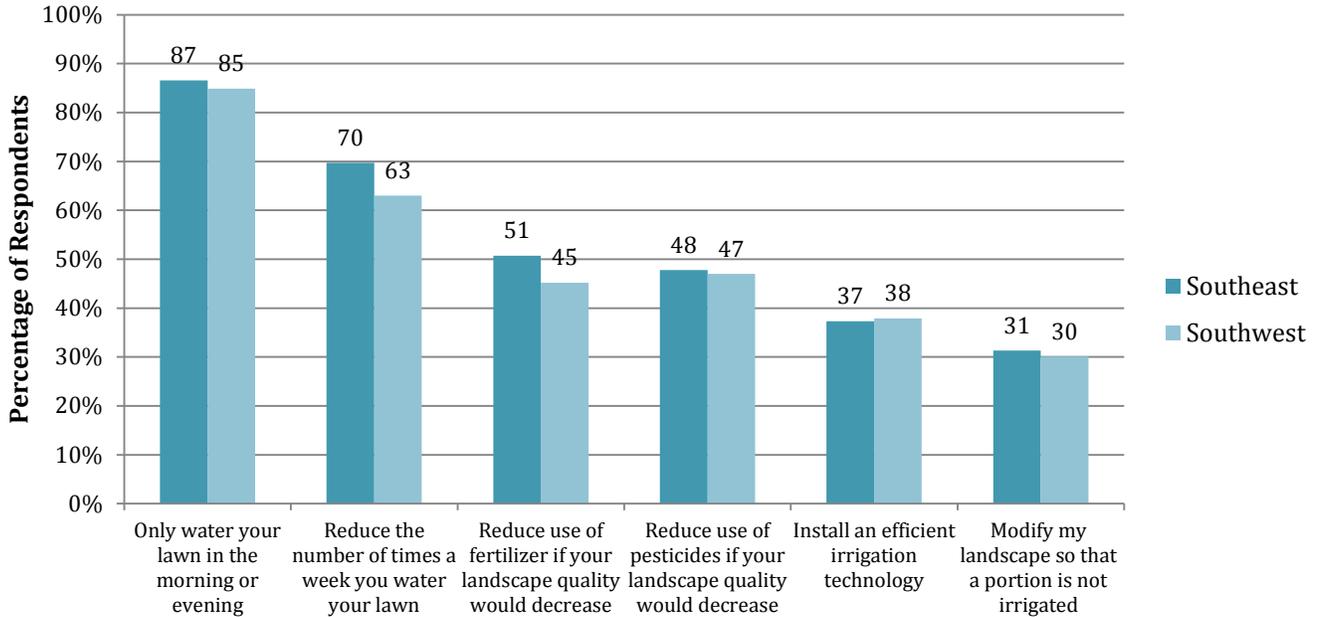


Note: Figure indicates percentage of respondents who reported they were likely or very likely to engage in the behavior

Likelihood of Altering Current Landscaping Practices to Support Water Conservation

Regarding altering household landscapes, respondents from both regions indicated they would be more likely or very likely to reduce watering their lawn than to actively modify their landscape so it uses less water (Figure 29). The item with the largest difference between the two groups was the item “reduce the number of times a week you water your lawn.” Nearly 70% of southeast respondents indicated they were likely or very likely to engage in this behavior compared to 63% of southwest respondents.

Figure 29: Likelihood of altering landscaping practices to support water conservation

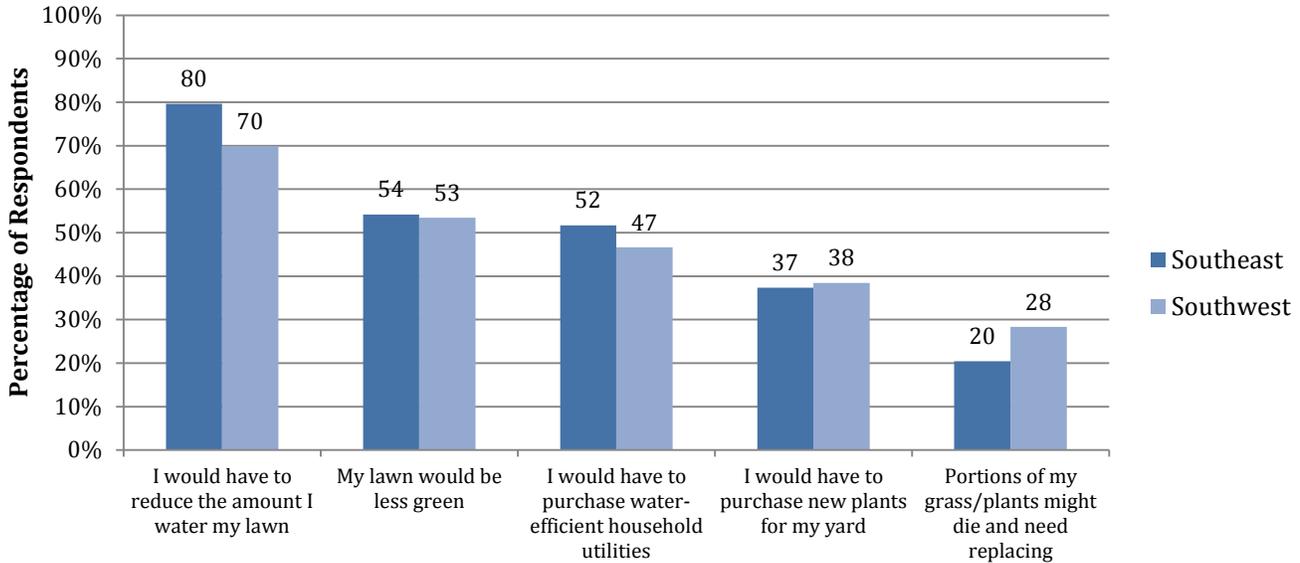


Note: Figure indicates percentage of respondents who reported they were likely or very likely to engage in the behavior

Willingness to Conserve Water

Respondents were also asked if they would be willing to conserve water if it resulted in certain outcomes, such as poorer quality lawn, the need to purchase new materials, or changing watering practices. Eighty-percent of southeast respondents and 70% of southwest respondents would be willing to conserve water even if it meant they would have to reduce the amount they water their lawns (Figure 30). This item was also statistically significant between the two regions when a Chi Square test was conducted ($X^2 = 5.24; p = .03$) However, only 20% of southeast respondents and 28% of southwest respondents would be willing to conserve water even if it meant portions of their grass may die and need replacing.

Figure 30: Willingness to conserve water



Knowledge and Attitudes towards Government and Policy

Respondents were 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 (Table 7). Respondents from both regions answered similarly, with about one-third of respondents who agreed or strongly agreed that the government influences environmental behavior in a negative, or coercive, way. About half of respondents from both regions feel they have a choice to use strategies provided by the government to help the environment or to participate in environmental programs established by the government. The two items with the most difference between the two regions was the item “I feel the government imposes its environmental strategies on us” and “The government gives me the freedom to make my own decisions in regards to the environment.” Thirty-three percent of southeast respondents agreed or strongly agreed that they felt the government imposes its environmental strategies, compared to 42% of southwest respondents. Forty-four percent of southeast respondents agreed or strongly agreed that “the government gives me the freedom to make my own decisions in regards to the environment” compared to 34% of southwest respondents.

Table 7: Attitudes about government influence on environmental behavior

	% agree or strongly agree- Southeast	% agree or strongly agree- Southwest
Negative government influence		
I think the government puts a lot of pressure to adopt environmentally-conscious behaviors	32	38
I feel the government imposes its environmental strategies on us	33	42
I feel that the government is trying to force me to adopt environmental behaviors	33	34
I feel the government wants to make me feel guilty when I do nothing for the environment	34	35
Positive government influence		
I feel I have a choice to use the strategies provided by the government in order to help the environment	51	55
The government gives me the freedom to make my own decisions in regards to the environment	44	34
I feel I have the choice to participate in the environmental programs established by the government	52	52

Voting Preparation Behavior

Respondents were asked what actions they engage in when preparing to vote on a policy impacting agriculture and natural resources. Ninety-one percent of southeast respondents and 94% of southwest respondents agreed or strongly agreed they would consider both the positive and negative implications that could result from voting on an issue affecting agriculture and natural resources (Table 8). This number was lower for the item “I would discuss my opinion with others” with 62% of southeast and 68% of southwest respondents who agreed or strongly agreed.

Table 8: Voting preparation behavior

Voting preparation behavior	% of respondents who agreed or strongly agreed- Southeast	% of respondents who agreed or strongly agreed- Southwest
I would consider both the positive and negative implications that could result	91	94
I would seek to fully understand the policy	87	92
I would seek factual information from multiple sources	81	85
I would ask others what their opinions are	72	68
I would discuss my opinion with others	62	68

Familiarity with Water Acts and Policies

Respondents were also asked to indicate their level of familiarity with various policies that impact water quality and water quantity in Florida. Responses ranged from 1 = *Not at all familiar*, 2 = *Slightly familiar*, 3 = *Somewhat familiar*, 4 = *Moderately familiar*, and 5 = *Extremely familiar*. Respondents were more aware of the Everglades Restoration Act and Clean Water Act than Total Maximum Daily Loads and Basin Management Action Plans (Table 9). The item “Florida Spring Initiative” was statistically significant when a Chi Square test was conducted ($X^2 = 5.67$; $p = .02$).

Table 9: Familiarity with water acts and policies

	% Moderately or Extremely Familiar- Southeast	% Moderately or Extremely Familiar- Southwest
Everglades Restoration Plan	22	21
Clean Water Act	22	23
Air and Water Pollution Control Act	19	20
The Water Quality Assurance Act	13	12
Florida Safe Drinking Water Act	12	16
Florida Spring Initiative*	10	10
Total Maximum Daily Loads	6	5
Basin Management Action Plans	5	5

Note: * = statistically significant variation/difference between groups

Extension Program Participation

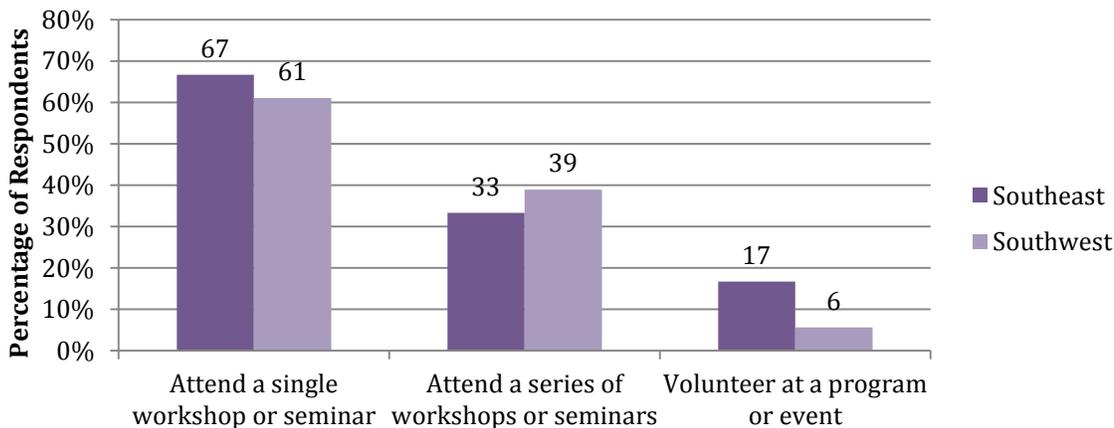
Respondents were asked whether they had participated in specific Extension programming (See Table 10). The majority of respondents had not participated in any of the Extension programs given (90% of southeast respondents and 87% of southwest respondents). Slightly more southwest respondents participated in the Florida Friendly Landscaping Program (8%) than those from the southeast (3%).

Table 10: Extension program participation

	% Southeast	% Southwest
Master Gardener Program	5	6
Florida Friendly Landscaping Program	3	8
Sustainable Floridians	2	2
Master Naturalist Program	2	1
Online Resource Guide for Shellfish Aquaculture	1	1

Those who had participated in the Florida Friendly Landscaping program (southeast *n* = 6; southwest *n* = 18) were asked to indicate how they participated and were allowed to select all that applied. Those who had participated most often attended a single workshop or seminar, with 67% of southeast respondents and 61% of southwest respondents who had participated in the FFL program who chose this option (Figure 31).

Figure 31: Florida Friendly Landscaping program activity



Education on Water and Landscaping

The last set of questions asked respondents to indicate topics they would be interested in learning more about regarding water, and their preferred way of learning new information. They were allowed to check all responses which applied.

Interest in Water Related Topics

The most common topic in which respondents were interested in learning about was “home and garden landscaping ideas for Florida yards.” Nearly 43% of southeast respondents and 49% of southwest respondents chose this topic as one of interest (Table 11). The largest different between the two groups was for the item “water policy and economics.” Nineteen percent of southeast respondents were interested in this topic compared to 25% of southwest respondents.

Table 11: Interest in topics related to water and landscaping

Topic of interest	% Southeast	% Southwest
Home and garden landscaping ideas for Florida yards	43	49
Community actions concerning water issues	23	20
Fertilizer and pesticide management	21	20
Irrigation management	20	18
Fish and wildlife water needs	20	17
Water policy and economics	19	25
Restoring fish and aquatic habitat	17	15
Shoreline clean-up	16	17
Landscape buffers	14	16
Private well protection	13	10
Septic system management	11	9
Forest management and water issues	10	6
Watershed restoration	9	10
Watershed management	8	9

Preferred Way of Learning

Respondents were asked to indicate the type of learning opportunities they would most likely take advantage of to learn more about water issues and were allowed to choose all that applied. The most commonly preferred way of learning was through visiting a website, with 69% of southeast respondents and 71% of southwest respondents who chose this option (Table 12). The next two preferred types of learning were through reading printed material and watching television coverage.

Table 12: Preferred type of learning

Preferred type of learning	% Southeast	% Southwest
Visit a web site	69	71
Read printed fact sheets, bulletins, or brochures	51	56
Watch TV coverage	48	49
Read a newspaper article or series	41	49
Watch a video	28	27
Attend a fair or festival	19	19
Attend a short course or workshop	16	23
Look at a demonstration or display	16	18
Take part in a one-time volunteer activity	12	12
Attend a seminar or conference	10	15
Get trained for a regular volunteer position	4	3

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