

**Identifying Communication Strategies to Reach Florida about Government Regulated
Water**

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The largest consumers of water in Florida are single-family homeowners. The increase in population and the availability of quality water in Florida poses a concern. Identifying audience segments through demographic characteristics can assist in determining strategies to communicate with consumers about government regulated water policies. The purpose of this study was to examine how perceptions of government-mandated water conservation initiatives were related to reported water conservation behaviors based on demographics. Understanding the relationship between government-mandated water conservation initiatives and water conservation behaviors may assist in strategy development when communicating about the need to conserve water to various audience segments based on demographic characteristics.

Introduction

State water managers across the United States face growing concerns about the availability and quality of the freshwater supply (United State Government Accountability Office, 2014). Population growth, agricultural use, urbanization, climate change, and drought have impacted the growing disparity between the availability of quality water resources and demand for consumption. Increased water demand and a limited supply of water have prompted a conversation around the need for water conservation (Wickstrom & Specht, 2016).

In Florida, water is one of the most valued natural resources (Marella, 2008). Water sources in Florida are incredibly varied and include over 1,700 streams and rivers, 7,800 freshwater lakes, 700 springs, and 11 million acres of wetlands (Fernald & Purdum, 1998). Florida is also home to the most plentiful freshwater aquifers in the United States, which provides water to many springs and rivers (Florida Department of Environmental Protection [FDEP], 2016).

In 2010, public water use surpassed agricultural water use in Florida (Office of Water Policy, 2014) with single-family homes identified as one of the largest water users (Kenney, Goemans, Klein, Lowrey, & Reidy, 2008). Already high, water demand in Florida is expected to increase by 26% in 2020 due to the state's increasing population (Office of Water Policy, 2014).

In reaction to the 2001 drought, one of the worst droughts in Florida history, FDEP – in coordination with the state's five water management districts – developed specific water conservation recommendations to increase water use efficiency (FDEP, 2014). The recommendations were presented in a Joint Statement of Commitment (JSOC) by the five water management districts, FDEP, Florida Public Service Commission, Florida Rural Water Association, Florida Section of the American Water Works Association, and Florida Water Environment Association. A working plan was created and implemented in 2005 based on the recommendations from the JSOC. The plan included developing standardized definitions and performance measures, establishing a clearinghouse for water conservation, developing and implementing a standardized water conservation planning process for utilities, developing and maintaining a Florida-specific water conservation guidance document, and implementing pilot applications through cooperative agreements with volunteer utilities.

In conjunction with the work plan, various pieces of legislation were passed related to water conservation including the Clean Water Act, Safe Drinking Water Act, and various other laws that regulated the application of lawn chemicals and irrigation systems (University of Florida Extension, 2015). In 2009, Senate Bill No. 494 was amended to include mandatory licensing for commercial fertilizer application in urban landscapes and the mandatory installment of soil moisture monitoring systems on all landscape irrigation systems (Natural Resources; Conservation, Reclamation, and Use, 2009). Failure to comply with state statutes could result in monetary penalties for commercial contractors and private citizens.

Demographic and social factors are important aspects to explore when trying to understand consumers' water behaviors (Wolters, 2014). National surveys designed to explore the opinions of the American public in regards to climate change, which is directly linked to water issues, rely heavily on audience segmentation (Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012; Maibach, Roser-Renouf, & Leiserowitz, 2009; Maibach, Leiserowitz, Roser-Renouf, & Mertz, 2011). Kenney et al. (2008) observed three levels of water use in his study: high, mid, and low. Water user segments of the population were identified by specific demographic factors, specifically, that high-volume water users were older, wealthier, and lived in newer and larger homes. The three water-use groups also responded in various ways to water restriction and pricing structures, with the high-volume water users most responsive to price increases. An examination of audience segments for Extension water conservation programming in Florida revealed specific demographic segments based on membership in homeowner's associations (Monaghan et al., 2013). Residents in Florida that used landscape irrigation and lived in homeowner's associations were found to have lower perceived behavioral control over adopting water conservation practices in irrigation than others (Warner, Rumble, Martin, Lamm, & Cantrell, 2015).

Political ideology was also identified as a relevant factor in predicting environmental behavior and engagement in conservation efforts (Gromet, Kunreuther, & Larrick, 2013). Individuals that identified themselves as having politically conservative beliefs were less likely to adopt environmental behaviors based on the presence of environmental messaging (Gromet et al., 2013). Other studies identified age (Arcury, 1990; Dunlap, Van Liere, Mertig, & Jones, 2000; Kenney et al., 2008), attained education (Dunlap et al., 2000; Jones & Dunlap, 1992), and gender (Brehm & Eisenhauer, 2013) as demographic factors with a connection to conservation behavior. Demographic factors are essential in identifying audience segments. Audience segmentation allows agricultural communicators to group individuals into segments based on their specific needs and demographic variables. Targeted programming can motivate behavior change, specifically the adoption of water conservation behaviors (Warner et al., 2015).

As Florida moves to implement increased water regulations and restrictions, those trying to create change need to recognize that individuals are less likely to adopt water conservation behaviors if they do not trust the water authority or government (Jorgensen, Graymore, & O'Toole, 2009). Public lack of trust in the water authority and government presents a need for agricultural communicators to play a role in facilitating a conversation that focuses on water conservation efforts. Due to the largest user of water being homeowners, a shift must occur with communication messages tailored to audiences in suburban, single-family homes (Monaghan,

Ott, Wilber, & Gouldthorpe, 2013) rather than just agricultural operations. Agricultural communicators have an opportunity to bridge the trust gap between the public and water and governmental authorities (Jorgensen et al., 2009) and discuss water behaviors with consumers based upon their social and demographic factors (Wolters, 2014) as well as their political ideology (Gromet, Kunreuther, & Larrick, 2013). This study investigated existing perceptions of Florida's residents regarding government involvement in water regulation and water-use behaviors.

Theoretical Framework

The theory of planned behavior (Ajzen, 1991) was used as the framework for this study. The theory of planned behavior predicts behaviors through the combination of intentions to perform an action taken (Ajzen, 1991). The combination of perceived behavioral beliefs driven by attitude, normative beliefs driven by subjective norms, and control beliefs are driven by perceived behavioral control influence intention to act and actual behavior practiced (Ajzen, 1985; 1991). Understanding an individual's behavioral, normative, and control beliefs will theoretically allow one to predict their intent and behavior for a given action.

Ajzen (1985) describes behavioral beliefs as to how an individual believes they should behave towards a certain action. Their attitude toward this behavioral belief then allows them to perceive the behavior as positive or negative (Ajzen, 1985). Normative beliefs indicate how someone should act in a certain situation. Subjective norms are an individual's perception of how society will react to their normative beliefs (Ajzen, 1985). Ajzen (1985) also identified control beliefs as a presence of outside factors that influence an individual's ability to complete an action. Control beliefs are regulated by an individual's perceived behavioral control, which indicates how a person will be able to act with the presence of outside factors (Ajzen, 1985).

Previous studies have examined the links between environmental/water conservation attitudes and observed water consumption. Water users with positive environmental and water conservation attitudes consumed significantly less water when showering, washing clothes, irrigating their lawn or landscape, and using tap water than those with moderately positive attitudes or negative attitudes (Willis, Stewart, Panuwatwanich, Williams & Holingsworth, 2011). Corral-Verdugo, Bechtel, and Fraijo-Sing (2003) found general environmental beliefs had a significant impact on domestic water consumption.

Perceived efficacy is the ability to mitigate the impact of drought or water shortages can also impact an individual's choice to conserve (Lam, 2006). While positive environmental attitudes are predictors of voluntary water conservation behaviors, mandatory water restrictions have been found to be more effective in reducing water use (Kenney et al., 2008; Lee, 1981). Strategies that provide information on the environmental impact of daily activities are increasing in effectiveness (Delmas et al., 2013). Therefore, government regulation should be partnered with educational and informational programs targeting water conservation to reduce water consumption (Delmas, Fischlein, & Asensio, 2013).

Municipal government and utility companies use two types of strategies to reduce water use: price and rate structures or non-price strategies (Kenney et al., 2008). Consumer reduction

of water use in reaction to price strategies is a result of a desire to save money and not the desire to lessen the impacts of overusing water (Lam, 2006). Attitudes and beliefs towards institutional actors that impose mandatory water conservations restrictions have also been examined. When trust in the water provider and government institution is high, compliance with water restrictions is greatest (Lee, 1981). Jorgensen, Graymore, and O'Toole (2009) identified a lack of institutional trust and negative perceptions of government initiatives prompted individuals not to engage in water-saving behaviors.

Purpose and Research Objectives

The purpose of this study was to examine how perceptions of government-mandated water conservation initiatives were related to reported water conservation behaviors based on demographics. Understanding the relationship between government-mandated water conservation initiatives and water conservation behaviors may assist in strategy development when communicating about the need to conserve water to various audience segments based on demographic characteristics. The following research objectives guided this study:

1. Describe the respondents' water conservation behaviors;
2. Describe the respondents' perception of government-mandated water conservation measures based on demographics; and
3. Determine if the level of engagement in water conservation behaviors impacted perceptions of government-mandated water conservation measures.

Methods

An online survey was used to examine Florida residents' perceptions of government control and government autonomy-support in water conservation behaviors based on demographics. The survey was reviewed for content and validity by a panel of experts consisting of the director of the Public Issues Education (PIE) Center, the director of the Public Issues Education (PIE) Center, and a professor in agricultural and environmental communications. Qualtrics, an online sampling firm, was used to disseminate the survey to Florida residents age 18 or older. Non-probability sampling was used to recruit individuals included in the sample. Non-probability sampling is a commonly used sampling method in public opinion research allowing for population estimates (Baker et al., 2013). As with other forms of survey methodology, non-probability sampling does have limitations, including selection, exclusion, and non-participation biases (Baker et al., 2013). To help control for these limitations post-stratification weighting methods were implemented (Kalton & Flores-Cervantes, 2003).

A scale developed by Lavergne, Sharp, Pelletier, and Holtby (2010) was used to measure respondents' perceptions of government involvement in water conservation-behavior. The scale was divided into two segments designed to measure respondents' perceptions of government pressure or support to partake in water conservation behaviors. A three-item subscale was used to measure respondents' perception of government control in water conservation behaviors. The second subscale consisted of four items designed to measure respondents' perceptions of

government autonomy-support in water conservation behaviors. Both scales were measured on a five-point Likert-type scale that ranged from 1– *strongly disagree*, 2 – *disagree*, 3 – *neither agree nor disagree*, 4 – *agree*, and 5 – *strongly agree*. For both scales, the responses to the items were averaged to create an overall index score that could range from one to five. The government control scale had an alpha reliability of .90 and the government autonomy-support scale had an alpha reliability of .80. Both scales exceeded the minimum requirements of reliability as outlined by Cronbach (1951).

Respondents’ water conservation behaviors were examined using their responses to eleven statements. Seven statements were positive in nature, and four statements were negative. The eleven statements were adapted from items found in the 2012 RBC Canadian Water Attitudes Study (Patterson, 2012). Respondents reported their water conservation behaviors on a frequency scale that was later recoded to a dichotomous scale to sum the eleven variables into a conservation score. Respondents that reported engaging in a positive water behavior, or disengaging in a negative behavior, received a one for that item. Engaging in a negative behavior, or avoidance of a positive behavior resulted in a zero score for that item. The sum for all eleven items was reported as that individual’s conservation score and could range from a zero to 11. A zero indicated the respondent did not engage in any positive behaviors and all negative behaviors, and an 11 indicated a respondent engaged in all of the positive behaviors and none of the negative behaviors.

The survey also asked respondents to answer a number of demographic questions. Respondents were asked to indicate their sex, race, age, education level, rural/urban residence, political affiliation, and homeownership in a categorical format.

A total of 516 individuals completed the survey of the 767 individuals invited for a response rate of 67.3%. The data were analyzed using descriptive and correlational statistics in SPSS ® 23.0. Descriptive statistics were used to analyze the first two objectives of the study and an ANOVA for the third objective.

Results

RO1: Describe the respondents' water conservation behaviors.

Respondents were asked to report their water conservation behaviors by indicating whether or not they engaged in 11 specific positive or negative water behaviors (Table 1). Respondents most frequently reported the positive water conservation habits of turning off the water while brushing their teeth ($n = 373$, 72.3%) and installing low-flow showerheads ($n = 297$, 57.5%). Hosing down the driveway ($n = 336$, 65.2%) was the most frequently reported negative water-use behavior.

Table 1
Water Use Behavior (N = 516)

	<i>n</i>	<i>%</i>
I turn the water off while brushing my teeth. *	373	72.3
I hose down my driveway.	336	65.2

I have water-efficient toilets installed in my home. *	297	57.5
I let my sprinklers run when it has rained or is raining.	282	54.6
I have low-flow showerheads installed in my home. *	282	54.6
I leave the water running in the kitchen when washing and/or rinsing dishes.	250	48.6
I shower for no more than five minutes each time I bathe. *	223	43.2
I have low-water consuming plants in my yard. *	180	34.9
I avoid watering my lawn in the summer.	168	32.6
I use recycled wastewater to irrigate my lawn/landscape. *	94	18.3
I use rain barrels to collect water for use in my garden/lawn. *	69	13.4

Note: *indicates positive water conservation behavior

Conservation scores were calculated for each respondent. A score of 11 indicated the respondent participated in all positive water-use behavior and no negative water-use behavior, while a zero score indicated the respondent participated in no positive water-use behaviors and all negative water-use behaviors. Five was the most frequent ($n = 85$, 16.6%) conservation score (Table 2). A small section of the respondents ($n = 4$, 0.8%) received a score of 11. Seven respondents (1.3%) received a score of zero, indicating they participated in no positive water-use behaviors and practiced all negative water-use behaviors. The mean conservation score was 4.95 ($SD = 2.34$).

Table 2
Conservation Score Frequencies (N = 516)

	<i>n</i>	%
0	7	1.3
1	29	5.7
2	49	9.6
3	66	12.9
4	70	13.6
5	85	16.6
6	69	13.5
7	60	11.6
8	44	8.6
9	24	4.6
10	7	1.4
11	4	0.8

Note. Conservation score was calculated for 11 measures, four negative and seven positive. Engaging in positive behavior or abstaining from negative behavior resulted in a score of one. Engaging in negative behavior or abstaining from positive resulted in a zero score. Scores were summed to create individual conservation scores.

Individual conservation scores were used to classify respondents as having high, mid-level, or low water conservation behaviors. Respondents were divided into high, mid-level, and low conservation groups based on z-scores. Those with a mean conservation score one standard deviation above the raw mean score were considered to have high conservation. Respondents with a mean conservation score one standard deviation below the raw mean score were

considered to have low conservation behaviors. The majority (68.1%) of respondents had mid-level water conservation behavior, 16.5% of respondents were classified as having low water conservation behaviors, and 15.4% were classified as having high water conservation behaviors.

To better understand conservation categories, demographic information was explored for each group. The high-conservation group was largely metropolitan ($n = 72, 91.1\%$), female ($n = 48, 60\%$), had received a two-year degree ($n = 21, 26.4\%$), owned their home ($n = 65, 82.3\%$), and was mainly comprised of Independents ($n = 28, 35.4\%$). The mid-level conservation group – the largest of all three classifications – was largely metropolitan ($n = 333, 94.9\%$), nearly equally comprised of males ($n = 178, 50.7\%$) and females ($n = 173, 49.3\%$), had a two-year degree ($n = 89, 25.4\%$), and mostly Democrat ($n = 123, 35.0\%$). The majority of the low-conservation group was metropolitan ($n = 78, 91.8\%$), female ($n = 59, 69.4\%$), had taken some college courses but did not earn a degree ($n = 25, 29.4\%$), rented homes ($n = 46, 54.1\%$), with approximately a third ($n = 30, 35.3\%$) reported less than \$24,999 in annual gross income, and was largely Democrat ($n = 35, 41.2\%$).

RO2: Describe the respondents’ perception of government-mandated water conservation measures.

Respondents rated their level of agreement with seven statements, comprising two scales, regarding their perception of government control and government autonomy-support in individual water conservation and environmental behaviors (Table 4). Over half of the respondents ($n = 290, 56.2\%$) positively agreed that they have the choice to use government-provided strategies to help the environment. About one-third ($n = 188, 36.4\%$) of respondents negatively agreed that the government tried to impose environmental strategies on them. Mean scores were also calculated for each individual on the government control scale and perception of government autonomy-support subscale. The government control scale mean was 2.97 ($SD = 0.95$). The mean for the perception of government autonomy-support subscale was 3.38 ($SD = 0.84$).

Table 4
Perception of Government Involvement in Water Conservation and Environmental Behaviors (N = 516)

	Strongly Disagree/ Disagree %	Neutral %	Strongly Agree/Agree %
I think the government puts a lot of pressure on people to adopt environmentally conscious behaviors.	37.7	31.6	30.7
The government wants me to feel guilty when I do nothing for the environment.	36.4	28.3	35.3
The government is trying to force me to adopt environmental behaviors.	36.3	31.7	32.0
The government imposes its environmental strategies on us.	32.5	31.1	36.4

The government gives me the freedom to make my own decisions in regards to the environment.	22.8	30.9	46.3
I have the choice to participate in the environmental programs established by the government.	18.0	26.0	56.0
I have choice to use the strategies provided by the government in order to help the environment.	13.9	29.9	56.2

Note. A five-point Likert-type scale was used ranging from 1– *strongly disagree*, 2 – *disagree*, 3 – *neither agree nor disagree*, 4 – *agree*, and 5 – *strongly agree*.

Means for the perception of government of autonomy-support and control were also examined by sociodemographic variables (Table 5). Respondents 80 years old and older had the highest mean score ($M = 3.87$, $SD = 0.44$) for perceived government control, while those who were 20-29 had the lowest ($M = 2.51$, $SD = 0.93$). Those with less than a 12th-grade education had the lowest mean ($M = 1.92$, $SD = 1.04$) for government autonomy-support.

Table 5

Perception of Government Involvement in Water Conservation by Demographic Variable

	Government Control		Autonomy-support	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sex				
Male	3.07	0.96	3.30	0.89
Female	2.89	0.93	3.46	0.79
Race				
Caucasian/White (Non-Hispanic)	3.00	0.95	3.36	0.85
Hispanic	2.82	0.72	3.40	1.05
African American	2.79	0.81	3.44	0.74
Asian	2.74	1.29	3.86	0.70
Native American	2.59	1.34	3.87	0.91
Age				
80+	3.87	0.44	2.56	0.46
70-79	3.32	0.77	3.24	0.76
60-69	3.12	0.95	3.42	0.87
50-59	2.92	0.93	3.34	0.92
40-49	2.83	1.06	3.38	0.84
30-39	2.85	0.81	3.49	0.80
20-29	2.51	0.93	3.56	0.71
19 and younger	2.57	0.98	3.65	0.29
Education Level				
Less than 12th grade	3.71	1.30	1.92	1.04
High school graduate	3.03	0.85	3.44	0.78
Some college, no degree	3.17	0.97	3.34	0.88
Two-year college degree	2.79	0.95	3.33	0.87
Four-year college degree	2.98	0.92	3.41	0.81
Graduate or professional degree	2.81	1.00	3.50	0.81

Rural/Urban				
Fewer than 2,500 - non-metro area	3.25	0.00	3.67	0.00
2,500 to 19,999 - non-metro area	3.06	0.50	3.58	0.75
20,000 or more - non-metro area	3.06	0.91	3.31	0.83
Fewer than 250,000 - metropolitan area	2.97	1.03	3.48	0.99
250,000 to 1 million - metropolitan area	2.94	0.98	3.28	0.85
Over 1 million - metropolitan area	2.97	0.95	3.41	0.84
Political Affiliation				
Republican	3.29	0.95	3.17	0.95
Democrat	2.70	0.79	3.58	0.68
Independent	3.08	1.02	3.40	0.89
Non-affiliated	2.86	0.94	3.24	0.76
Other	2.54	1.57	3.17	1.44
Homeownership				
Own	3.02	0.94	3.33	0.87
Rent	2.92	0.97	3.50	0.78
Other	2.48	0.80	3.49	0.82

Note. Both scales utilized five-point, Likert-type scales: 1 – *strongly disagree*, 2 – *disagree*, 3 – *neither agree nor disagree*, 4 – *agree*, and 5 – *strongly agree*.

To further describe the conservation segments, mean scores were calculated for perception of government control and autonomy-support for high, mid-level, and low conservation segments. The low conservation segment had the lowest level of perceived government control ($M = 2.87$, $SD = 0.87$) and government autonomy-support ($M = 3.23$, $SD = 0.78$) (Table 6). The high-conservation segment had the highest scores for both government control ($M = 3.01$, $SD = 0.99$) and government autonomy-support ($M = 3.57$, $SD = 0.84$).

Table 6

Government Perception by Conservation Segments

	Government Control		Autonomy-Support	
	M	SD	M	SD
High	3.01	0.99	3.57	0.84
Mid-Level	2.99	0.96	3.38	0.85
Low	2.87	0.87	3.23	0.78

Note. Both scales utilized five-point, Likert-type scales: 1 – *strongly disagree*, 2 – *disagree*, 3 – *neither agree nor disagree*, 4 – *agree*, and 5 – *strongly agree*.

RO3. Determine if the level of engagement in water conservation behaviors impacted perceptions of government-mandated water conservation measures.

To determine if the level of engagement in water conservation behaviors impacted perceptions of government-mandated water conservation measures, a one-way analysis of variance (ANOVA) was used to compare the three groups for both the government control and government autonomy-support constructs. Tests for homogeneity of variance and other assumptions were calculated with no violations. Statistically significant differences were not found within the perception of government control scale. There was a statistically significant difference between groups within the perception of government autonomy-support $F(2,512) = 3.38$ $p = .04$. Post hoc comparisons using a Tukey HSD test indicated the mean score for the perception of government autonomy-support differed significantly between high and low levels of water conservation ($p = .02$), but not between mid-level and high or mid-level and low levels of water conservation.

Discussion and Conclusions

One important aspect of communicating positive water conservation behavior is understanding the demographic and social factors that influence water conservation (Wolters, 2014). Audience segmentation was identified as one way to create strategic messages to encourage sustainable conservation behavior (Leiserowitz, Maibach, Roser-Renouf, & Hmielowski, 2012; Maibach et al., 2011). The findings of this study were supported by previous studies which identified younger (Arcury, 1990; Dunlap et al., 2000; Kenney et al., 2008) and higher educated (Jones & Dunlap, 1992) individuals expressed more concern and were more likely to partake in conservation activities. Findings that women and Democrats largely comprised the segment with low water conservation behaviors deviated from previous studies which found that women (Brehm & Eisenhauer, 2013) and those that are politically democratic (Gromet et al., 2013) are most likely to engage in the highest levels of environmental behavior and express concern for the environment. Other studies indicated that education attained, age, and political affiliation are not significant predictors of environmental behavior (Brehm & Eisenhauer, 2013).

Three segments were identified within the population as having high, mid-level, and low water conservation behaviors. Understanding and describing the characteristics of each conservation group will assist utility managers, governments, agricultural communicators, and public educators in communicating the importance of water conservation (Kenney et al., 2008). Varying levels of water conservation behaviors can be partially explained through the theory of planned behavior that states an individual's intent to act is influenced by their attitude and beliefs towards the action (Ajzen, 1985). Results of this study indicated respondents disagreed or had neutral attitudes when asked about the level of government attempt to control or impose environmental strategies on them. Respondents also indicated they had largely neutral attitudes toward the level of government autonomy or support to engage in environmentally conscious behavior.

The low-water conservation segment had the lowest mean scores for perceived government control and autonomy-support. Low scores on both scales indicated a lack of personal efficacy when it comes to water conservation and low levels of trust in the government. Low self-efficacy (Lam, 2006) and low levels of trust in government (Jorgensen et al., 2009) have both been found to predict a lack of engagement in conservation behaviors. In this study, a

significant difference was found between high and low levels of conservation and autonomy support, indicating perceived support from the government was likely to increase conservation behaviors.

A comparison of participation in water conservation behaviors and the government control and government autonomy-support scales revealed those who felt they had higher levels of government autonomy-support also had higher conservation scores. The findings of this study support the findings of Willis et al. (2011), who found those individuals with positive attitudes towards conservation and the environment had higher levels of conservation behavior. While positive attitudes towards the environment, and the perceived ability to make conservation decisions free from government interaction, influenced positive water conservation behavior, it is likely that increases in government water conservation mandates increased the level of conservation (Kenney et al., 2008).

Recommendations

The findings of this study revealed agricultural communication efforts should be focused on individuals within the low-conservation segment. More specifically, communication efforts should focus on increasing personal efficacy and knowledge about water conservation in Florida (Lam, 2006). Agricultural communicators should keep in mind the demographic characteristics of each conservation segment (Maibach et al., 2011; Monaghan et al., 2013) when creating water conservation messages. In this study, the low water conservation segment was identified as being largely female, renting a home in urban areas, making less than \$24,999 annually, and affiliating as Democrats.

Along with demographic factors in mind, communicators should work to build a feeling of self-efficacy and choice in promoting water conservation messages. Messages should focus on an individual's ability to impact water conservation efforts and their personal choice in engaging in the activities. Communicators should also focus on building a sense of trust and cooperation with government entities. Working to increase place meaning and attachment within the low water conservation segment could potentially lead to the adaption of water conservation behaviors (Brehm & Eisenhauer, 2013).

A lack of awareness in conservation practices may also impact an individual's ability to participate in that activity. Communication and promotion should emphasize the programs currently available in Florida and the existing regulations (Florida Department of Environmental Protection, 2002). Extension may serve as a viable way to communicate messages and encourage adoption of conservation behaviors (Monaghan et al., 2013).

Future research should focus on message creation and testing within each conservation group to encourage adaptation of water conservation behaviors. In addition to message testing, research should focus on preferred communication channels, including traditional media and social media outlets. As Extension develops additional programming and communication campaigns, the effectiveness of those efforts in encouraging Florida residents to adopt water conservation behaviors should be explored. The effects of government regulations should also be

examined. Trends in regulation over time – in comparison to prevalence in mass media and community preparedness – should be examined.

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