

# DEVELOPMENT OF ADVANCED WATER EXTENSION PROGRAMS FOR MGVS

L. Bravo, K. Moore  
lbravo1@ufl.edu

UF/IFAS Extension Broward County, FL. UF/FLREC Broward County, FL.

**METHOD:**

**PROGRAM 1:**

Figure 1. Rain Barrel -A New Water Management Method



**RESULTS:**

Figure 6. Program 1  
43% MGVS Adopted a Rain Barrel

Year	MGV Trainees	MGV's Adopted a Rain barrel (s)	Class Percentage %	MGV Class Format
2021	20	8	40%	Virtual Class
2020	22	12	54%	Virtual Class
2019	25	9	36%	Live Class
TOTAL	67	29	43%	

**IMPACTS::**

Figure 9. Water Ambassadors Giving Back.  
Volunteered a total of 2,250 hours back to the community.



**BACKGROUND:**

- Educating governments, homeowners, and the public on the tangible benefits of water conservation principles under the UF/IFAS Extension Water Conservation Roadmap is essential for the Urban Horticulture agent.
- Training and certification of Master Gardener Volunteers (MGV) as change agents is important when educating homeowners on water conservation.

**OBJECTIVES:**

- This study evaluated the addition of "water" focused programs to MGV programs.
- The overall goal
- To improve water conservation in urban communities by empowering MGV with advanced water knowledge.

**METHOD:**

- From January 2019 to December 2020, three stand-alone advanced water education programs were developed for MGVS in Broward County Florida. MGVS had the option to participate in all three programs or just one or two programs. We used different measures of success for each program.
- The first program introduced was the rain barrel program. The measure of success was the adoption rate of rain barrels from each MGV. (Fig 1)
- The second program followed by the virtual Hydro-Kit program. The measure of success was student engagement. (Fig 2)
- The third program was the water ambassador program. The measure of success was knowledge gain and the number of students who received GI-BMP and/or FFLCP Certifications. (Fig 3)

**CONCLUSION:**

- The rain barrel program was successful, with half of the students adopting a rain barrel as a new water management method.
- The hydro-kit was successful, with students actively engaged with a personal hydro-kit to grow hydroponic lettuce and introduce water management method.
- The water ambassador program tried to tie all elements together and was successful in having participants become Florida-Friendly Landscaping™ Certified Professional (FFLCP) and Green Industries Best Management Practice (GI-BMP) certified.
- The team recognized 10 urban Florida-Friendly landscapes with an estimated water savings of 1.6 million gallons of water annually, based on Extension clients' reported behavior change.
- In the future, we need to stress the importance of taking these programs in sequence. There is vast potential to improve water conservation in urban communities by empowering MGV with advanced water knowledge.

**PROGRAM 2:**

Figure 2. Hydro-Kit -A New Water Management Method



Figure 7. Hydro-Kit Program 2 (n=11)

Observed Behaviors in Virtual Learning Environments Results

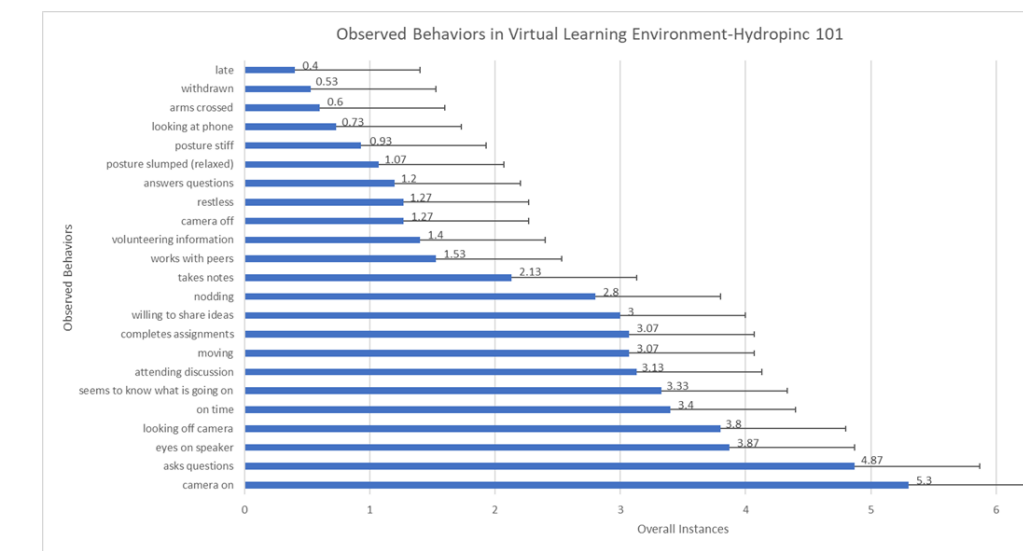


Figure 10. Hands-On program 2 Improved Student Engagement

Final UF Lettuce Lines Cultivar # 43007, #70882, #60183



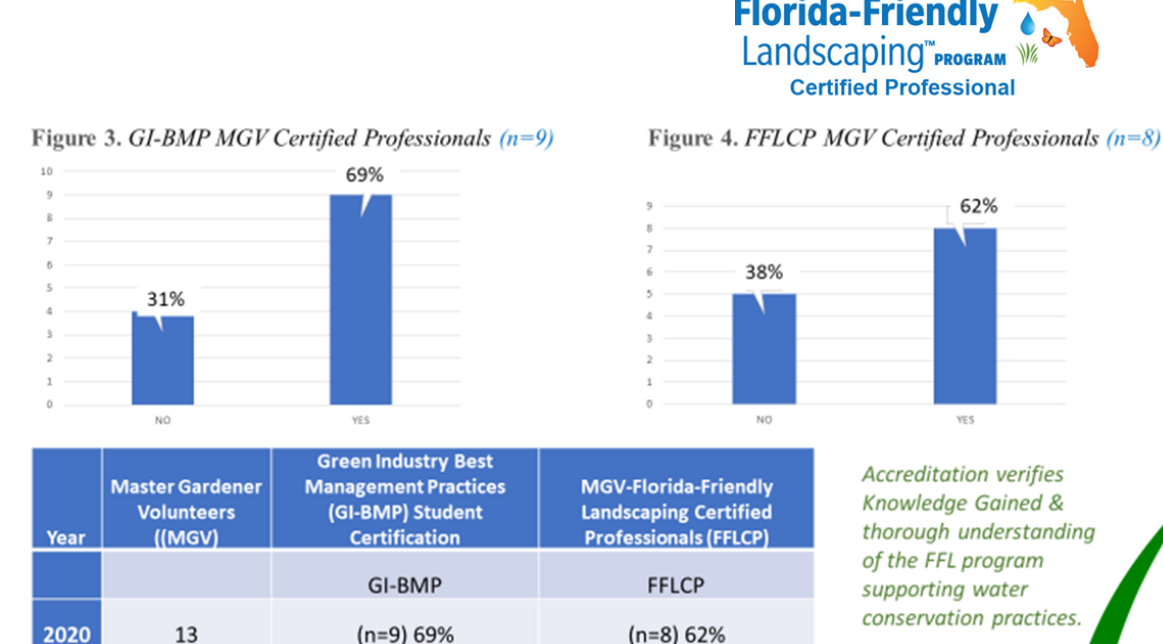
**PROGRAM 3:**

Figure 3. Water Ambassador Program class participants



Figure 8. Water Ambassador Program 3 (n=13) Certification results.

GI-BMP & FFLCP MGV Certifications



69% of MGV participants in the Broward County Water Ambassador short course became GI-BMP professionals. 62% of the MGV class participants became the first Florida-Friendly Landscape Certified Professionals in South Florida (FFLCP).

The average knowledge score of 13 Master Gardener participants changed from 80% (week 2-5 exams) to 94% on the final exam—a gain of (14) points. The final test results demonstrating water knowledge gained from the advanced Water Ambassador program.

Figure 11. Florida-Friendly Landscaping Broward County Water Ambassadors

Inspections & Recognitions (12 Inspections/ 10 FFL Recognitions)

Water Savings Impact Statement	
In Florida in 2021, <b>Water Ambassador Program</b> efforts resulted in a combined estimated water savings of	<b>1,671,153</b> gallons of water annually, based on Extension clients' reported behavior change.
This is enough water to supply nearly	<b>20</b> households with water per year [based on the average of 88,000 thousand gallons per household per year].
This water savings is valued annually at a total of	<b>\$5,540.73</b> in water bill savings for participating households [based on the average statewide/regional value of \$X per 1,000 gallons]
and	<b>\$4,352.22</b> in water delivery costs for utilities [based on the average cost of \$2.60 per 1,000 gallons in delivery costs] statewide.