

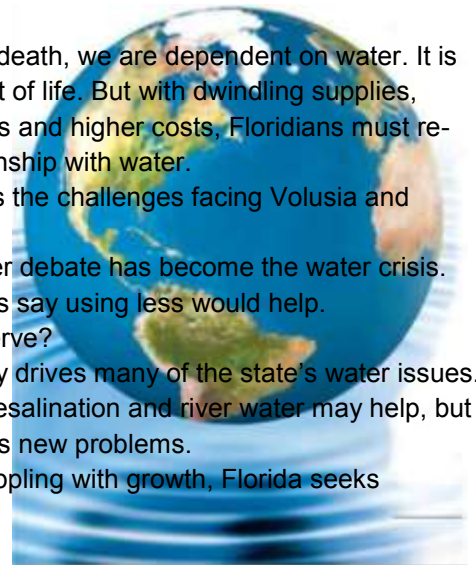


About the Series

From conception to death, we are dependent on water. It is the essential element of life. But with dwindling supplies, increasing restrictions and higher costs, Floridians must re-evaluate their relationship with water.

This series explores the challenges facing Volusia and Flagler counties.

- **TODAY:** The water debate has become the water crisis.
- **MONDAY:** Experts say using less would help. How can you conserve?
- **TUESDAY:** Money drives many of the state's water issues.
- **WEDNESDAY:** Desalination and river water may help, but climate change poses new problems.
- **THURSDAY:** Grappling with growth, Florida seeks solutions.



By DINAH VOYLES PULVER
ENVIRONMENT WRITER

Like a slow leak, concerns about the state's limited water supply have been brushed aside by Floridians for 65 years while growth and water use continued unabated.

Today, the long-forecast crisis has arrived.

"We're about to face the Maker (on water)," said regional official Herky Huffman. Utilities have been told to limit groundwater pumping. Consumers face new rules and rate hikes that could send bills soaring five to 10 times higher.

As early as the 1940s, Florida's governor convened a special commission to study water problems.

Some 20 years later, experts warned Volusia County of saltwater intrusion and looming water shortages, pleading for conservation and limits on homebuilding in water-sensitive areas.

But population growth and water use continued to exceed expectations. Lawns grew larger and more lush. From time to time, water concerns would rise to the surface again, only to sink under a tide of parochial debate and fears of slowing Florida's growth-based economy.

"We're arguing about the same things, and we've got the same problems," said Bill Scovell, a retired municipal manager who served on the Volusia County Council from 1973 to 1976. "Nobody has guts enough to do anything about it."

Of all the water on Earth, 97 percent is in the oceans and seas.

Of all the fresh water on Earth, only 1 percent is available for drinking. The rest is in ice caps.

Got water? The rarity we take for granted

When experts describe water use in Florida and the United States, they often use the same word: profligate, meaning shameless, extremely wasteful, recklessly extravagant.

Only seven countries in the world use more water per capita than the United States, but none of those uses as much water in single-family homes. Nearly a third of the world's population doesn't have clean, safe drinking water.

Only two states use more total water than Florida — California and Texas. Florida ranks near the middle of the pack nationally when it comes to average water use per person, about 140 gallons a day, but that's still two or three times the amount of water used per person in many other countries.

We're a state and nation of water wasters, say experts familiar with water use internationally.

We run lawn sprinklers day and night, let the water run while shaving, take 30-minute showers and splash

in pools and bubble baths.

“There’s no sense of how much water goes down the drain,” said Lindsay Roberts, executive director of the Water Authority of Volusia.

Some local families do consider their water use — the Dobbersteins of Port Orange, for example. Blond hair and giggles abound in their two-story home where four children bounce from schoolwork and snacks to the family pets and a pond of goldfish in the back- yard.

They never thought much about the ways that water influences their lives. They just turned on the tap. Then mom Beth got interested in conservation. Since then, the family has worked to reduce its water use, finding they can get by with less. Averaging 6,000 gallons a month, or about 1,000 gallons per family member, they’re on the low end of average use for the area.

But, with water everywhere you look, convincing most Floridians that fresh water is a finite resource has proven a difficult, if not impossible, task.

All the water that ever existed on the planet is still here, right?

Even water used by the mastodons that once roamed Florida may remain, mingled in the fresh water found below ground, sandwiched between layers of limestone, soil and rock.

The problem is that those underground aquifers that provide most of the state’s drinking water get refilled only when it rains. Because of the overwhelming growth and a rising demand for water, experts say, we’re using groundwater faster than it can be replaced, creating water shortages and harming the state’s fragile environment.

Commercial and industrial businesses and power plants have reduced their water use significantly since 1980, in Florida and nationwide, in response to technological improvements and pressure from government agencies.

But the total amount of water pumped by public utilities continues to climb in the state and the nation. It tripled nationwide between 1950 and 2005, even though the population didn’t quite double. Florida’s population and public water use doubled between 1975 and 2005.

In rapidly growing Flagler County, water use nearly tripled between 1997 and 2006.

Volusia County’s water use continued to rise, but not as much as Flagler’s.

Scovell and other veterans of the long debate say state and local governments have either lagged or been downright resistant to meaningful solutions to conserve water and postpone or eliminate the need for more expensive alternatives such as desalination.

Now, it appears time has run out.

Officials with the St. Johns River Water Management District, one of five regional water districts in the state, say the demand for water will exceed supply within three years in several local cities, including Palm Coast and DeLand, and in unincorporated Volusia County.

Others aren’t far behind.

The water districts rely on a complex set of state rules to try to ensure water for future development while protecting the environment and parceling out water to competing interests.

District scientists have concluded any additional pumping in much of Central Florida, including Volusia and Flagler counties, would cause unacceptable harm to wetlands, lakes and springs.

A dip in total water use statewide in 2005 caused some to hope the water use trend might be reversed, but the water sold through public utilities continued to climb. District officials attribute the decrease to the five hurricanes that sloshed across the state, dumping enough rain to dissuade many farmers and homeowners from turning their sprinklers on. By comparison, an intense drought gripped the state in 2000.

But the fluctuations in water use between rainy years and wet years, like those of 2006 and 2007, point out one of the biggest problems in the state. More than half the residential water used in Florida winds up on the lawn. “That’s a dead waste,” said Charles Lee, director of advocacy for Audubon of Florida.

Rules to rein in wasteful behavior, such as measures to require smaller lawns, more drought-tolerant plants and water- efficient appliances, remain difficult to enact and enforce.

Proposed solutions include curbing water use, rethinking the way cities use treated wastewater and stormwater, and looking to the sea and the St.

Johns River to slake the thirst of the growing region. But the solutions bring extreme costs, and not everyone agrees on the possible impact and results.

A few cities dispute the district's predictions of a looming shortage of fresh groundwater.

But most of the debate centers on when, not if, supplies will run low, and on what, if anything, should be done to delay the need for more expensive water treatment options.

Some argue the need for new water supplies could be forestalled indefinitely if the state, including Volusia and Flagler counties, gets serious about two things — conserving water and limiting growth.

Meanwhile, state officials say the last drought made one thing crystal clear. If another extreme drought occurs, the state will be making tough decisions about who gets water — and who does not.



News-Journal photos/ **NIGEL COOK**

Skipper, the Dobbersteins' family pet, gets a bath from Lydia, 10, Levi, 4, Aleah, 7, and their mom, Beth. This fun activity on the family's Port Orange deck illustrates just one of the many ways water influences daily life in Volusia and Flagler counties. According to official estimates, area utilities provide about 68 million gallons of water a day.

Lydia Dobberstein rinses a dish at the kitchen sink. Utilities supply about 28 billion gallons of water each day to households across the country.



Water Consumption Around the World

This chart illustrates the eight countries around the world with the highest water use and other selected countries. The water-use figure estimates all water used in 2000, including agriculture, industry, mining, etc.

Country	Water use per capita	Percent for household use
Turkmenistan	1,348,000 gal.	2
Kazakhstan	623,400 gal.	2
Uzbekistan	579,600 gal.	5
Guyana	577,700 gal.	2
Hungary	550,000 gal.	9
Azerbaijan	541,800 gal.	5
Kyrgyz Republic	506,100 gal.	3
United States	422,700 gal.	13
Ecuador	338,900 gal.	12
Egypt	243,800 gal.	8
Mexico	193,100 gal.	17
Japan	182,300 gal.	20
Belize	146,900 gal.	7
France	144,800 gal.	16
China	109,600 gal.	7
South Africa	69,700 gal.	31
Ghana	11,600 gal.	24
Republic of Congo	1,600 gal.	59

SOURCE: Pacific Institute

Total Daily Water Use Per Capita in U.S.

(in gallons)

1. Idaho	15,116
2. Wyoming	10,466
3. Montana	9,191
4. Nebraska	7,193
5. Arkansas	4,082
6. Colorado	2,930
7. West Virginia	2,845
8. Kansas	2,457
9. Louisiana	2,327
10. Alabama	2,245
11. Utah	2,229
12. Oregon	2,026
13. Tennessee	1,898
14. New Mexico	1,791
15. South Carolina	1,788
16. North Dakota	1,776
17. Delaware	1,684
18. Indiana	1,661
19. California	1,510
20. Maryland	1,492
21. Missouri	1,470
22. North Carolina	1,416
23. Texas	1,416
24. Wisconsin	1,416
25. Nevada	1,405
26. U.S. Virgin Islands	1,358
27. Arizona	1,312
28. Florida	1,256
29. Virginia	1,247
30. Connecticut	1,217
31. Iowa	1,147
32. Illinois	1,105
33. Mississippi	1,042
34. Kentucky	1,030
35. Michigan	1,006
36. New Hampshire	976
37. Ohio	974
38. Washington	902
39. Pennsylvania	809
40. Georgia	794
41. Minnesota	787
42. Puerto Rico	738
43. Massachusetts	734
44. Vermont	734
45. South Dakota	699
46. New Jersey	661
47. New York	637
48. Maine	629
49. Oklahoma	586
50. Hawaii	530
51. Alaska	486
52. Rhode Island	409

MOST POPULOUS STATES

1. California (19th individual use)
2. Texas (23rd)
3. New York (47th)
4. **Florida (28th)**
5. Illinois (32nd)

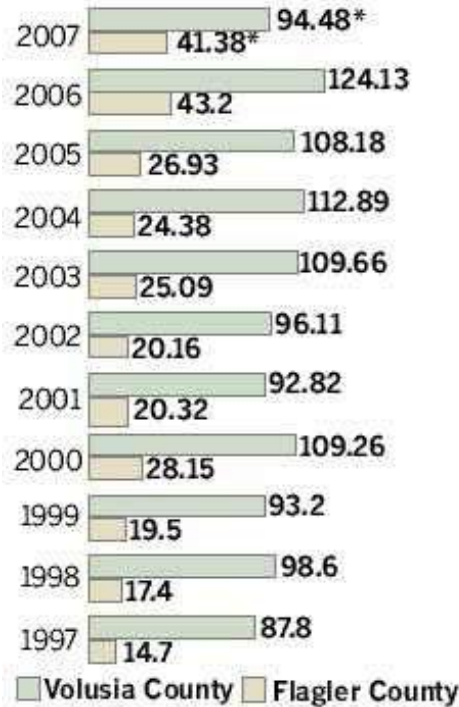
WATER USE STATEWIDE

1. Illinois (32nd individual use)
2. Idaho (1st)
3. **Florida (28th)**
4. Texas (23rd)
5. California (19th)

SOURCE: U.S. Geological Survey

Total water use in Volusia/Flagler counties

In millions of gallons per day



* The 2007 figures do not include reclaimed water because that information was not available. In 2006, Volusia County used 16.4 million gallons per day of reclaimed water and Flagler County used 5 million gallons.

SOURCES: Florida Department of Environmental Protection; St. Johns River Water Management District

News-Journal

Groundwater levels dropping

Since early in the 20th century, officials have charted the water level in the Almaraz well, near Lake Ashby. They use the information as an indicator of the amount of water available underground, in the Floridan Aquifer, which feeds a well area that includes Volusia and Flagler counties. The numbers indicate how many feet above the 1929 sea level the Almaraz was on each date.

