

FOR MORE INFORMATION

IF YOU SUSPECT A SINKHOLE IS ACTIVELY FORMING:

- Evacuate.
- Contact your local fire, police or emergency management.
- Contact your insurance company.
- Contact a licensed professional geologist or engineer.



ONLINE RESOURCES

General Sinkhole Information:

FloridaDEP.gov/FGS/sinkholes

Sinkhole Frequently Asked Questions:

FloridaDEP.gov/FGS/sinkholes/content/sinkhole-faq

Subsidence Incidents Reports Information:

FloridaDEP.gov/FGS/sinkholes/content/subsidence-incident-reports

Subsidence Incidents Reports

ca.dep.state.fl.us/mapdirect/?focus=fgssinkholes

U.S. GEOLOGICAL SURVEY

USGS.gov/faqs/what-sinkhole

LICENSE SEARCH - FLORIDA DEPARTMENT OF BUSINESS & PROFESSIONAL REGULATION

MyFloridaLicense.com/wl11.asp?mode=0&SID=

SINKHOLE QUESTIONS

Call 850-245-2118

YOUR HOME AND PROPERTY

A Homeowner's Guide to Sinkholes in Florida

Florida Geological Survey Leaflet 20

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Florida Department of
Environmental Protection



Florida Department
of Environmental
Protection



Florida
Geological
Survey



Sinkholes naturally occur in Florida. Use this guide to better understand sinkholes, why they form and what to do if you encounter one.

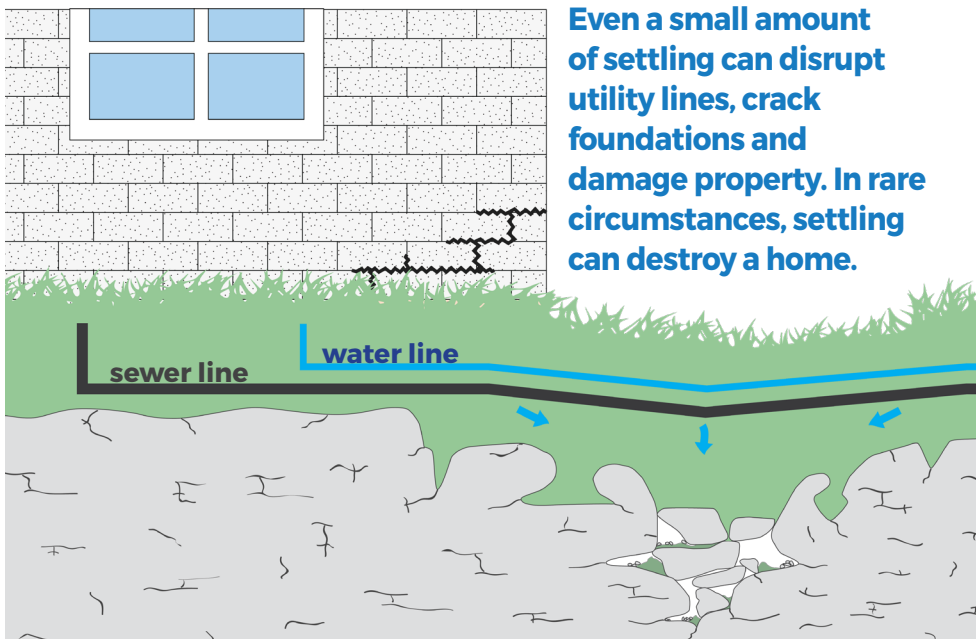
WHAT IS A SINKHOLE?



A sinkhole forms when surface sediments settle, wash or collapse into a void formed by dissolving carbonate rock such as limestone. Carbonate rock is susceptible to dissolution by naturally occurring weakly acidic rain, and surface and ground waters.

WHY SHOULD I CARE?

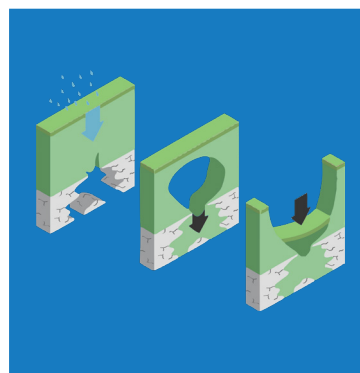
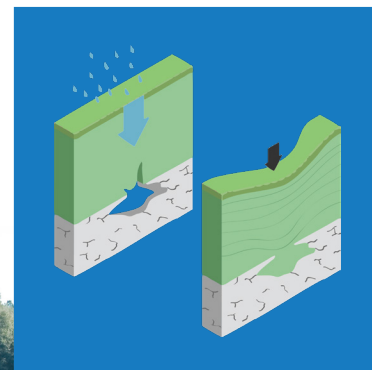
Even a small amount of settling can disrupt utility lines, crack foundations and damage property. In rare circumstances, settling can destroy a home.



FloridaDEP.gov/FGS/sinkholes

SINKHOLE TYPES

Cover-subsidence sinkholes form slowly and occur when surface sediments settle or wash into a void.



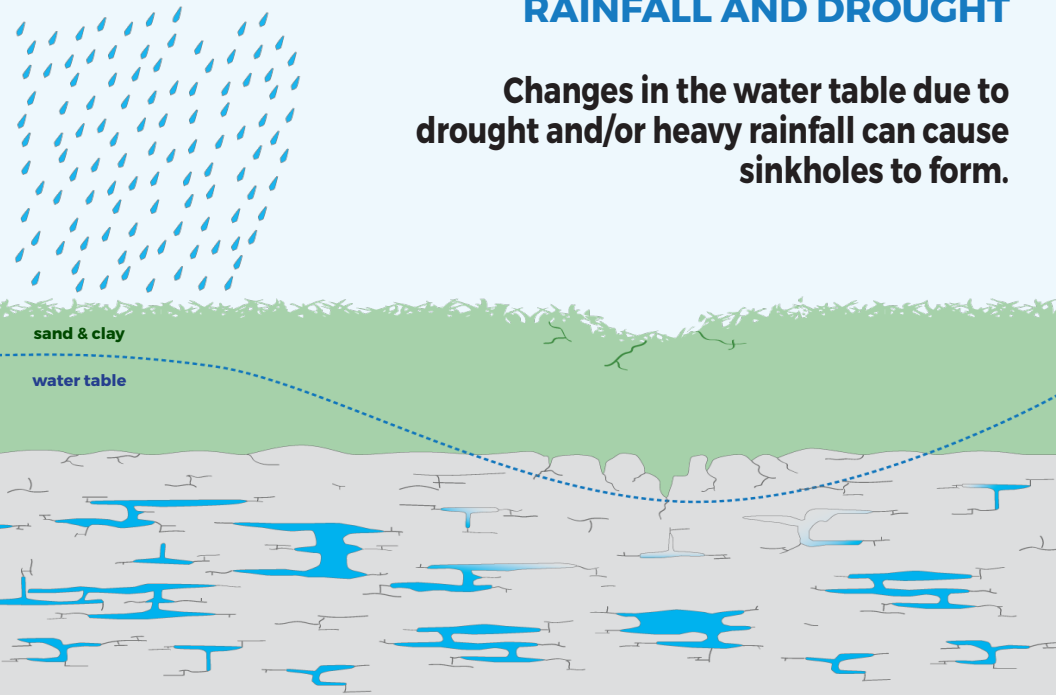
Cover-collapse sinkholes form by the sudden collapse of cover sediments into a large void in the limestone bedrock beneath the surface.



FloridaDEP.gov/FGS/sinkholes

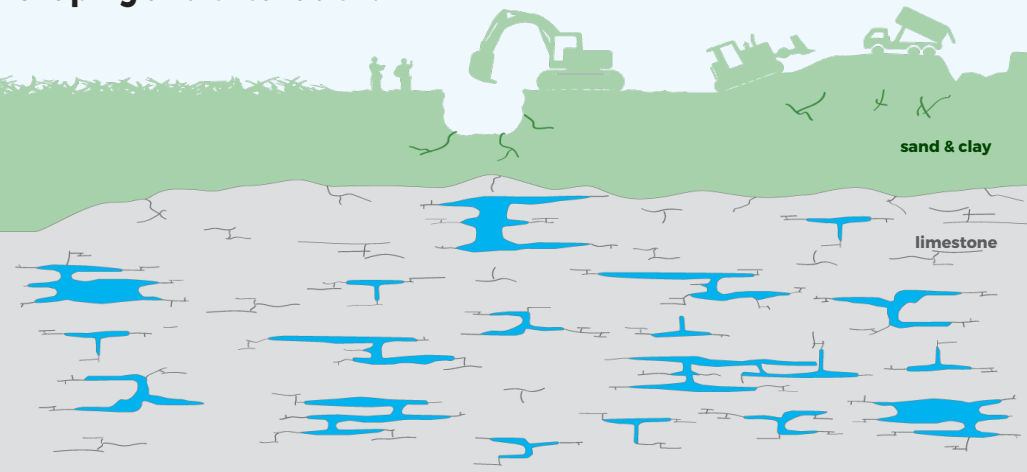
RAINFALL AND DROUGHT

Changes in the water table due to drought and/or heavy rainfall can cause sinkholes to form.



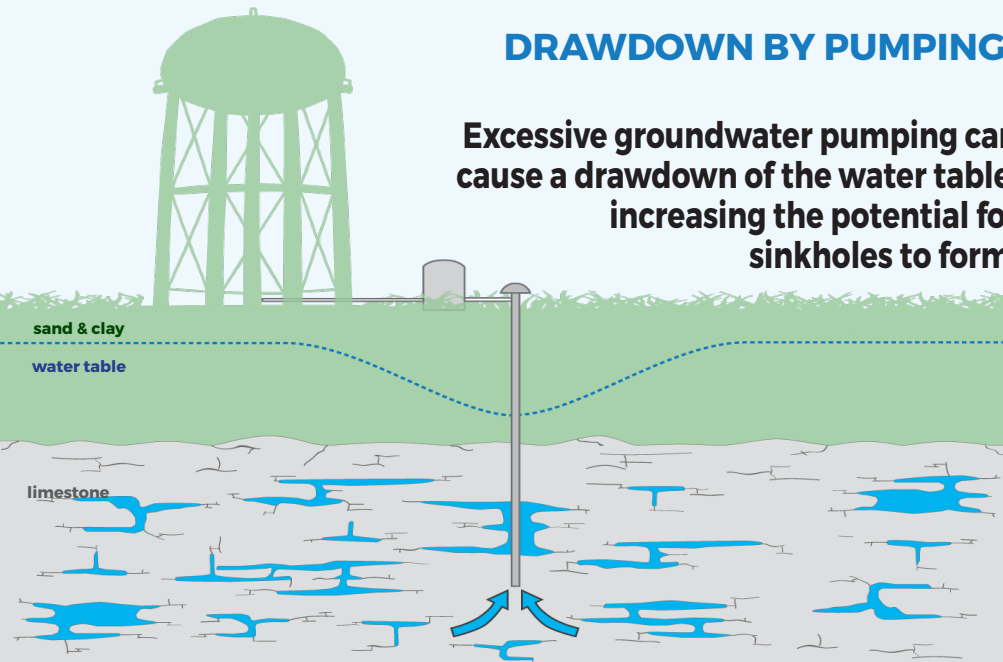
LAND SURFACE DISTURBANCE

Development activities that can increase the risk of sinkhole formation include land clearing, heavy loads on the surface, and earth shaping and excavation.



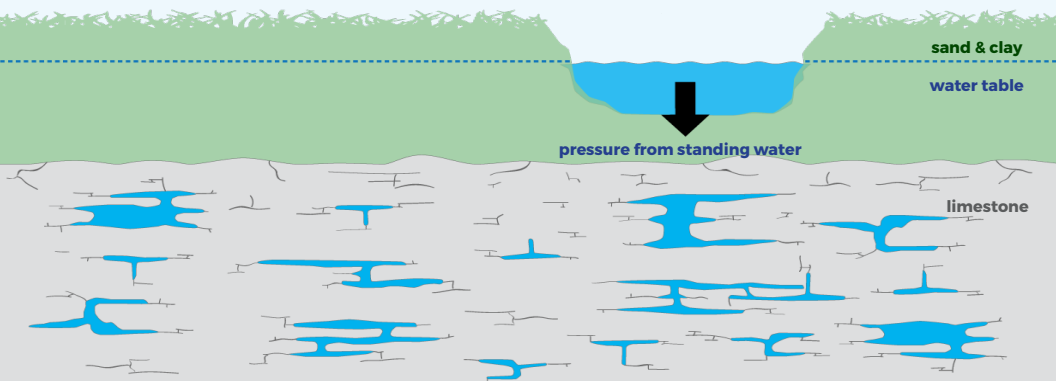
DRAWDOWN BY PUMPING

Excessive groundwater pumping can cause a drawdown of the water table, increasing the potential for sinkholes to form.



WATER DRAINAGE

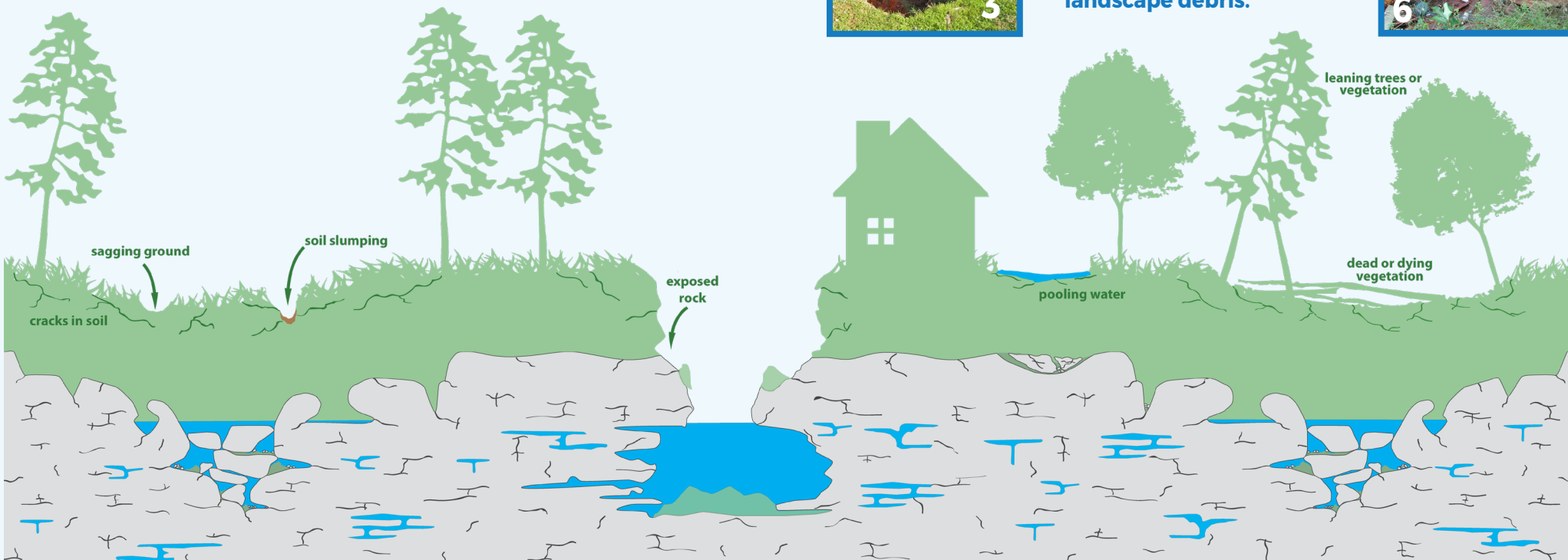
Drainage in a specific location, such as lakes and retention or stormwater ponds, can cause sinkholes.





POSSIBLE SINKHOLE FORMATION SIGNS:

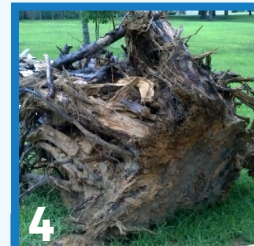
- Cracks in soil.
- Sagging ground.
- Soil slumping.
- Exposed rock.
- Pooling water.
- Dead or dying vegetation.
- Leaning trees, vegetation or structures that were previously upright.

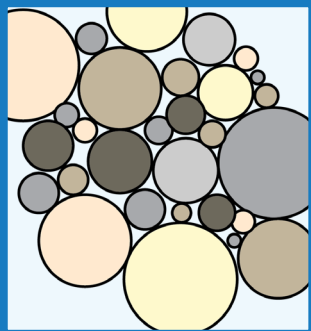


SINKHOLE IMPOSTERS:

Not all ground collapses are sinkholes. Some are erosional features formed by other causes.

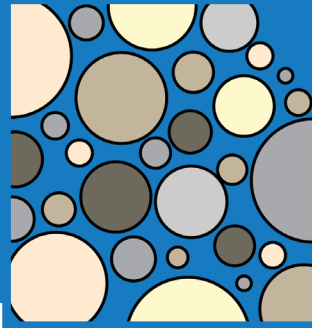
1. Utility main breaks/leaks.
2. Storm-drain line breaks/leaks.
3. Septic tank collapse.
4. Underground rotting tree stumps and rotten tree root masses.
5. Erosion from runoff from roofs, driveways or roads.
6. Buried construction and landscape debris.





DRY vs. WET CONDITIONS

Under **dry** conditions, soil grains are packed closer together, creating a self-supporting structure that is able to bear weight and less likely to settle.



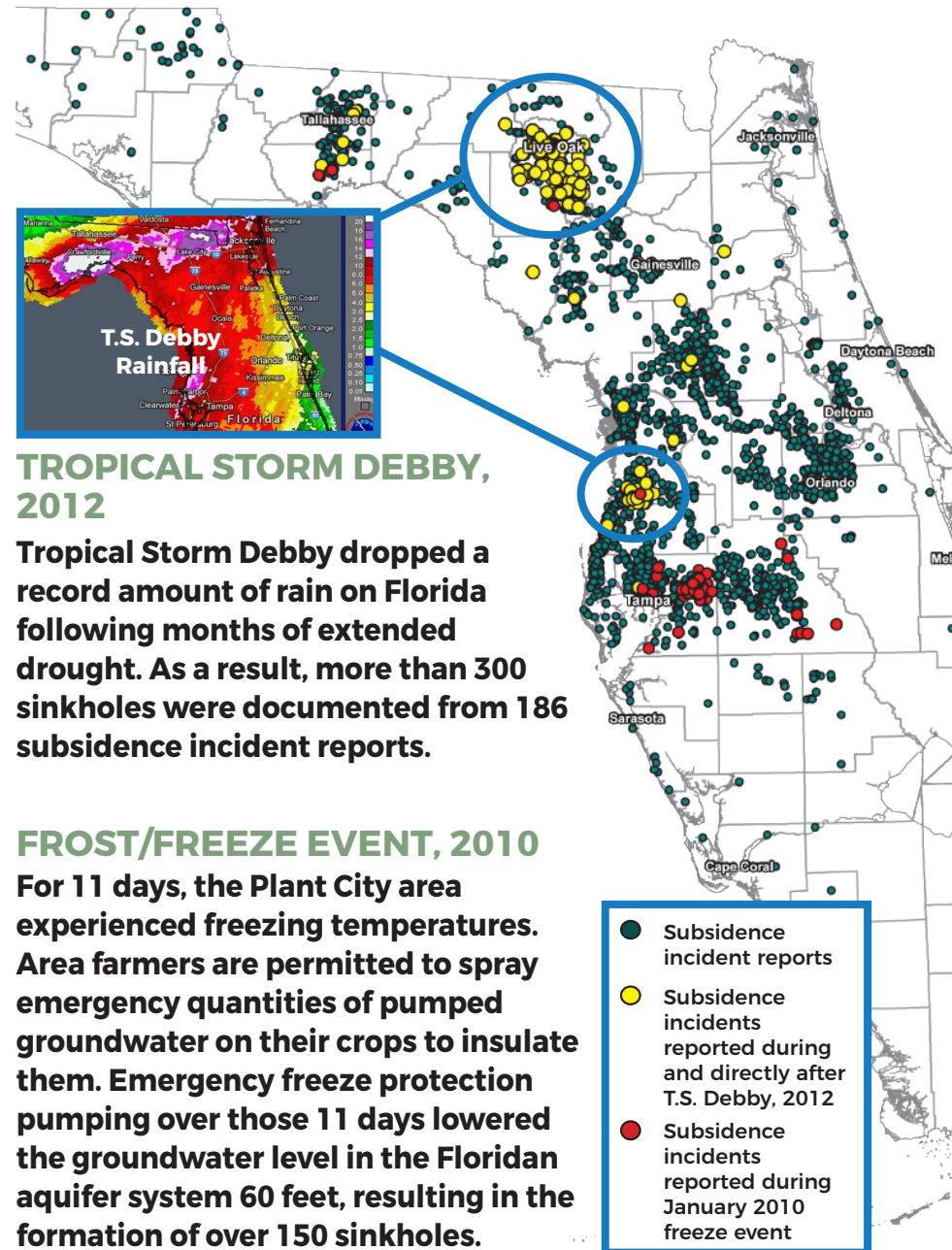
Under **wet** conditions, soil grains can become separated, making the sediment weaker, less able to support weight and susceptible to movement.

Water plays a major role in the subsidence - or settling or collapse - of sediment. Large fluctuations in groundwater levels can trigger sinkhole formation. You can take these steps to reduce the risk to your home.

KEEP WATER AWAY:

- Fix leaking plumbing immediately.
- Manage gutter downspout runoff and divert it away from buildings.
- Plant trees and shrubs that absorb water more efficiently than lawns.
- Avoid overwatering landscape and lawn.
- Add soil to lower areas to prevent pooling of surface water.

SIGNIFICANT WATER-RELATED EVENTS



TROPICAL STORM DEBBY, 2012

Tropical Storm Debby dropped a record amount of rain on Florida following months of extended drought. As a result, more than 300 sinkholes were documented from 186 subsidence incident reports.

FROST/FREEZE EVENT, 2010

For 11 days, the Plant City area experienced freezing temperatures. Area farmers are permitted to spray emergency quantities of pumped groundwater on their crops to insulate them. Emergency freeze protection pumping over those 11 days lowered the groundwater level in the Floridan aquifer system 60 feet, resulting in the formation of over 150 sinkholes.

HOW YOU CAN REDUCE THE CHANCES OF A SINKHOLE AFFECTING YOUR PROPERTY



- Direct water from surface runoff, downspouts and driveways away from buildings.
- Fill and level low-lying areas to prevent water pooling.
- Consult with a licensed professional geologist or engineer (see last page) before significantly altering property.
- Check online maps and databases (see last page), such as the subsidence incidents reports database, or contact the Florida Geological Survey.

YOU AND YOUR NEIGHBORS SHARE MORE THAN FENCES. WE ALL SHARE THE RESPONSIBILITY OF KEEPING OUR PROPERTY AND HOMES SAFE.

- Do not attempt to drive or walk over recently depressed areas.
- Do not get close to open holes as the edges may collapse.
- Do not take action without a licensed professional geologist or engineer's help (see last page).
- Do not ignore warning signs of a potential sinkhole (see page 6).



LOOK FOR WARNING SIGNS

If you are in an area where sinkholes are common, evaluate the property for signs of ground movement. Many, but not all, warning signs related to sinkhole formation are listed below. The presence of more than one may indicate a potential sinkhole.

INSIDE YOUR HOME:

- Cracks in walls or floors.
- Floors become uneven or sloped.
- Windows and doors become difficult to open/close.
- Water leaks.
- Creaking/popping noises.
- Nails in walls and sub-floors begin to extrude.
- Cabinets and drawers become uneven, difficult to open/close.
- Displaced moldings and wall trim.

OUTSIDE YOUR HOME:

- Water pooling under house or along foundation.
- Changes in surface drainage.
- Cracks in exterior walls or foundation.
- Exposed rock that is not normally visible.
- Cracks or depressions in yard.
- Broken water, utility or sewer lines.
- Cracks or separation of paved surfaces.
- Leaning trees, vegetation or structures.
- Dying foliage and grass.

CONSIDER CONSULTING A LICENSED PROFESSIONAL GEOLOGIST OR ENGINEER BEFORE PURCHASING PROPERTY.