



# Lake Jackson Dry Downs

## Frequently Asked Questions



### WHAT IS A DRY DOWN?

Lake managers use several terms to refer to the natural, periodic lowering of the water level in a lake, including natural drawdown, dewatering, draining or dry down.

### WHY DOES LAKE JACKSON GO DRY?

The lake basin was created by the dissolution of limestone bedrock over geologic time causing overlying sediments to collapse and form a basin. Karst lakes like Lake Jackson often have many sinkholes through which water can drain at varying rates. Two of the larger sinkholes in the bottom of Lake Jackson are examples of how these features are formed by karst processes: Lime Sink in the northern portion and Porter Hole Sink in the southern area. The lake is in a closed 27,000-acre, or 42-square-mile, drainage basin. Water flows into the lake via precipitation and stormwater and leaves through the sinkholes in the lakebed, evapo-transpiration, and downward seepage through lake bottom sediments.

### WHERE DOES THE WATER GO?

Once the water leaves the lake basin through the sediment and sinkholes in the lake bottom, it eventually enters the upper Floridan aquifer. Researchers think the water leaving Lake Jackson may travel to Wakulla Springs, 20 miles south of the lake. However, the timing and flow path of the water once it reaches the aquifer needs further investigation. Dry downs offer an opportunity for researchers to study the karst features in the lake and monitor the rates and direction of water flows.

### WHY DID THE LAKE GO DOWN SO FAST?

A dry down event can be caused by a combination of factors, including below average rainfall, low lake levels, lowered groundwater levels and high rates of evapo-transpiration. As the water level in the lake drops, water flowing into the sinkholes becomes more visible to onlookers. In the last stages, the lake appears to drain rapidly as though someone pulled the plug from a bathtub.

Water is always leaving the lake through evapo-transpiration, bottom leakage and sinkholes. Annual or long-term rainfall amounts do not appear to be as important to keeping water levels up as large, heavy storm events that can rapidly fill the lake in short periods.

### HOW OFTEN DOES LAKE JACKSON EXPERIENCE DRY DOWNS?

Lake Jackson's original name was "Okeehoopkee," meaning "disappearing waters." The first documented disappearance of the lake's water in recent times was in February 1829, according to a newspaper report. Since then, Lake Jackson has had a major or partial dry down event in 1907, 1909, 1932, 1935, 1936, 1957, 1982, 1999-2000, 2006-2007 and 2012.

### WHAT HAPPENS TO THE FISH AND WILDLIFE?

Many of the lake's fish species take refuge in the remaining deeper holes found in Church Cove, Rhoden Cove, Miller Landing, and in areas north of the "Cattle Gap" and in Meginnis Arm. Wildlife congregate in remaining holes when lake levels begin to drop – including turtles, alligators, salamanders, snakes and fish. While not all wildlife may make it to one of the water refuges during major dry downs, populations of each species remain and often rebound once the water returns. This is because of less competition for food and increased foraging and reproduction habitats.

## **WILL THE WATER COME BACK?**

Refilling of the lake generally occurs when regular, wet weather patterns return and inflows to the lake exceed the amount of water leaving the lake. Heavy, intense storm events (>10") may speed up refilling and aid in maintaining lake levels compared to the lake receiving normal annual rainfall amounts (i.e., small events over long periods).

## **WHAT ARE STATE AND LOCAL AGENCIES DOING ABOUT THE DRY DOWN?**

When it becomes evident that the lake is likely to drain, an established network of partner agencies, including the Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, Florida Department of State, Northwest Florida Water Management District, Leon County, City of Tallahassee and law enforcement agencies, begin working together to create an action plan that clearly establishes the priorities and critical tasks.

Historically, restoration started with the treatment of runoff before it entered the lake through construction of regional stormwater treatment facilities. Restoration efforts also focused on removal of the accumulated, nutrient-rich sediment from the bottom, taking advantage of natural dry down events for management. The Northwest Florida Water Management District, in cooperation with other state agencies and local governmental entities, led this effort with guidance from Lake Jackson Management Plan and through the state's Surface Water Improvement and Management (SWIM) program at the time.

Today, the Florida Department of Environmental Protection along with partner agencies and other public and private groups continue work on Lake Jackson.

This natural draining provides an opportunity for easier removal of Chinese tallow, an invasive exotic tree, from the shores of Lake Jackson. Prescribed fire can be undertaken on the lakebed to reduce biomass and improve habitat. Public boat landings are improved and repaired. In addition, education and outreach events will be offered, and public trash pick-up events will be initiated to involve the community in removing litter from the lakebed and shoreline.

## **WHY ARE PERIODIC DRY DOWNS BENEFICIAL FOR LAKE HABITATS?**

When lake bottom sediments and organic matter, or muck, are exposed to air, they oxidize, decompose and dry out over time, releasing nutrients and organic matter from the lake. Some organic matter is always needed for the lake ecosystem but so is sand bottom habitat in Lake Jackson. For example, bass prefer to bed on sand bottom in order to spawn. Bass, however, also eat small fish, fry and insects that live in muck. Periodic, natural dry downs facilitate both types of bottom habitat and allow for the lake's diversity in fish, insects, amphibians, reptiles, mammals, plants and birds to thrive.

## **IF I CAN'T FISH OR BOAT, HOW ELSE CAN I UTILIZE LAKE JACKSON?**

Community members can bird-watch, hike and photograph. Fish can still be caught in remaining pools, in accordance with FWC regulations. Private and public landowners on the lake can also use the dry down as an opportunity to fix or maintain their existing docks, with prior and appropriate permitting.

For safety purposes, certain access points may be closed. Please follow all posted signage and avoid closed areas.

## **IS LAKE JACKSON DIFFERENT FROM OTHER AREA LAKES?**

Other Tallahassee area lakes share this characteristic, including lakes Miccosukee, Lamonia and Lafayette, although each has its own unique, natural cycle.

## **WHERE CAN I LEARN MORE?**

- Visit DEP's [Lake Jackson Aquatic Preserve webpage](#).
- [Time-lapse citizen science photo station monitoring](#) of two lake landings is available online.
- The Northwest Florida Water Management District has a [water level gauge](#) on Lake Jackson at Miller Landing.

