

Crystal River National Wildlife Refuge



photo: Masa Ushioda

Manatee feeding on freshwater eelgrass. Four common saltwater plants that manatees eat are: manatee grass, turtle grass, wigeon grass and shoal grass.

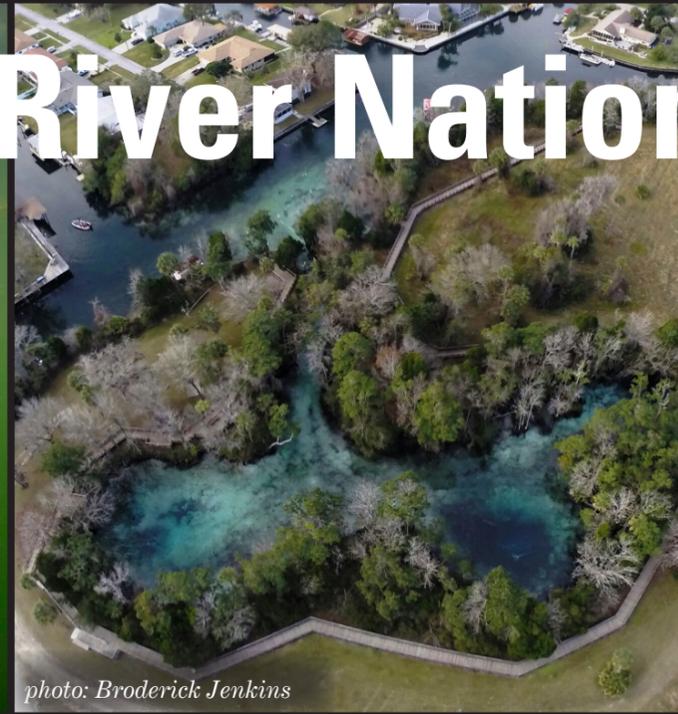


photo: Broderick Jenkins

Three Sisters Springs is surrounded by a 1300 foot-long boardwalk and viewing platforms for visitors to enjoy.



photo: David Schriente

Underwater spring lobe closure marker. Three Sisters Springs is one of the most critical manatee protection areas in Kings Bay.



photo: Joyce Kleen/USFWS

The Banana Island sanctuary and King Spring swim area. The King Spring is the deepest (over 20 feet) and largest spring vent in Kings Bay.

Established in 1983, Crystal River NWR is the only refuge created specifically for the protection of the endangered Florida manatee. The refuge manages 177 acres, including several islands and 40 acres of winter manatee sanctuaries within the spring-fed waters of Kings Bay. Crystal River NWR is one of over 561 national wildlife refuges which have been established throughout the United States for the protection of wildlife and natural areas.

Manatee population dynamics

The Florida manatee, a subspecies of the West Indian manatee, is native to Florida. Their summer range extends along the Atlantic and Gulf coasts. Manatees are sensitive to cold water temperatures and, like humans, are susceptible to hypothermia in the winter months. Kings Bay encompasses several natural springs that collectively discharge a few hundred million gallons of water per day at a constant flow of 72°F water. When the Gulf of Mexico waters drop below 68°F, hundreds of manatees move to the shallow springs of Kings Bay to escape the cold Gulf waters. These wintering manatees rest for prolonged hours to conserve the energy they need for their quick foraging journeys (in-between cold spells) outside of Kings Bay when temperatures warm.

When it warms up, manatees spend most of their time feeding mainly on submerged aquatic vegetation found in freshwater and saltwater environments. When foraging within healthy large continuous ecosystems (e.g. seagrass bed ecosystem), manatee herbivory can enhance and promote lush submerged vegetation growth in healthy seagrass beds. However, grass beds that are stressed by poor water quality or saltwater intrusion may not recover quickly.

Manatees often return to the same wintering areas each year, when it gets cold. Protecting wintering habitat is key to protecting and recovering this endangered species. The U.S. Fish and Wildlife Service (USFWS) has designated some of the springs in Kings Bay as manatee sanctuaries and temporary closed areas (see images to the right above).

How are manatees protected in the Kings Bay?

The USFWS provides three levels of protection for manatees within Kings Bay.

A **National Wildlife Refuge** is created by an act of Congress and is part of a larger system of federally owned lands and waters set aside to conserve fish, wildlife and plants for the benefit of the American public.

A **Manatee Refuge** is a special protected area created by an administrative act of the U.S. Fish and Wildlife Service. This is an area where some activities in the water may be restricted to prevent the taking (by harm or harassment) of one or more manatees. No federal land or water ownership results from establishing a manatee protected area.

A **Manatee Sanctuary** is a federally designated area which restricts all activities, including human entry, during the winter months. The sanctuaries in Kings Bay are in effect from November 15 through March 31. Seven of these sanctuaries are in place each year. Temporary no entry areas may be established at House, Jurassic or Three Sisters Springs at the discretion of the refuge manager (see map on reverse of tearsheet).

Manatee Viewing Guidelines and Prohibitions

The U.S. Fish and Wildlife Service encourages passive observation, which means not initiating contact with manatees and calmly observing from a distance and at the surface.

The following activities are prohibited within all waters of Kings Bay, including Three Sisters Springs:

- Chasing or pursuing a manatee
- Disturbing or touching a resting* or feeding manatee
- Diving from the surface onto a resting or feeding manatee
- Cornering or surrounding a manatee
- Riding, holding, grabbing, pinching, poking, prodding, or stabbing a manatee with anything, including your hands and feet
- Standing on a manatee
- Separating a mother and calf or separating a group of manatees
- Giving manatee(s) anything to eat or drink
- Actively initiating contact with belted/tagged manatee(s)
- Interfering with rescue and research activities

*A resting manatee is mostly motionless, but rises from the water bottom, the water column, or the surface to breathe, and may make minor movements while resting in order to roll or compensate for drift.

Visiting Crystal River NWR

Except for the areas closed as winter manatee sanctuaries, Crystal River NWR is open to the public during daylight hours. The Kings Bay area is unique for its increasingly high abundance of wintering manatees. The refuge boasts the largest concentration of manatees in the world within a natural winter habitat, with densities nearly reaching 1,000 manatees on extremely cold days.

People come from around the world to experience the Florida manatee at Crystal River NWR, particularly during the cold weather periods (e.g. cold spells) when manatees congregate around the springs. Some of the popular winter areas where visitors can encounter manatees are the King Spring and Three Sisters Springs. The King Spring, aka the Key Hole or the Main Spring (see image above), consists of a loop-shaped open swim area available for year-round snorkeling and scuba-diving. This spring is surrounded by one of the most important manatee wintering areas in Kings Bay - the Banana Island manatee sanctuary (established in 1980).

Three Sisters Springs (see image above) offers visitors in-water access as well as land access. However, to protect wintering manatees from human disturbance during cold days, or when manatees are found in the Three Sisters Springs interior, the springs may be temporarily closed to in-water access until conditions inside the springs are suitable for visitors to enter the springs. Please check in our website: www.fws.gov/crystalriver; for the latest information about access to Three Sisters Springs in-by water visitation. For more information about visiting the Three Sisters Springs property and boardwalk by land, please visit: <http://threesistersspringsvisitor.org> or contact call 352/586 1170.

U.S. Fish and Wildlife Service

How can you help?

There are many ways you can help the refuge protect the endangered Florida manatee:

- Follow the regulations in this tearsheet and practice passive observation
- Report manatee violations or injuries to the FWC Wildlife Alert Hotline (888/404 3922)
- Join the Friends of Crystal River NWR, Inc. via their website (<http://friendsofcrystalriver.org>)
- Help improve the quality and quantity of spring water for manatees and other native Florida wildlife by conserving water and limiting the use of fertilizers.

The refuge headquarters is located on SE Kings Bay Drive, off of Highway 19 in Crystal River. Office hours are from 8 am – 4 pm Monday through Friday. The visitor contact station is open seven days a week from November 15 - March 31; and on weekdays from April 1 - November 14.

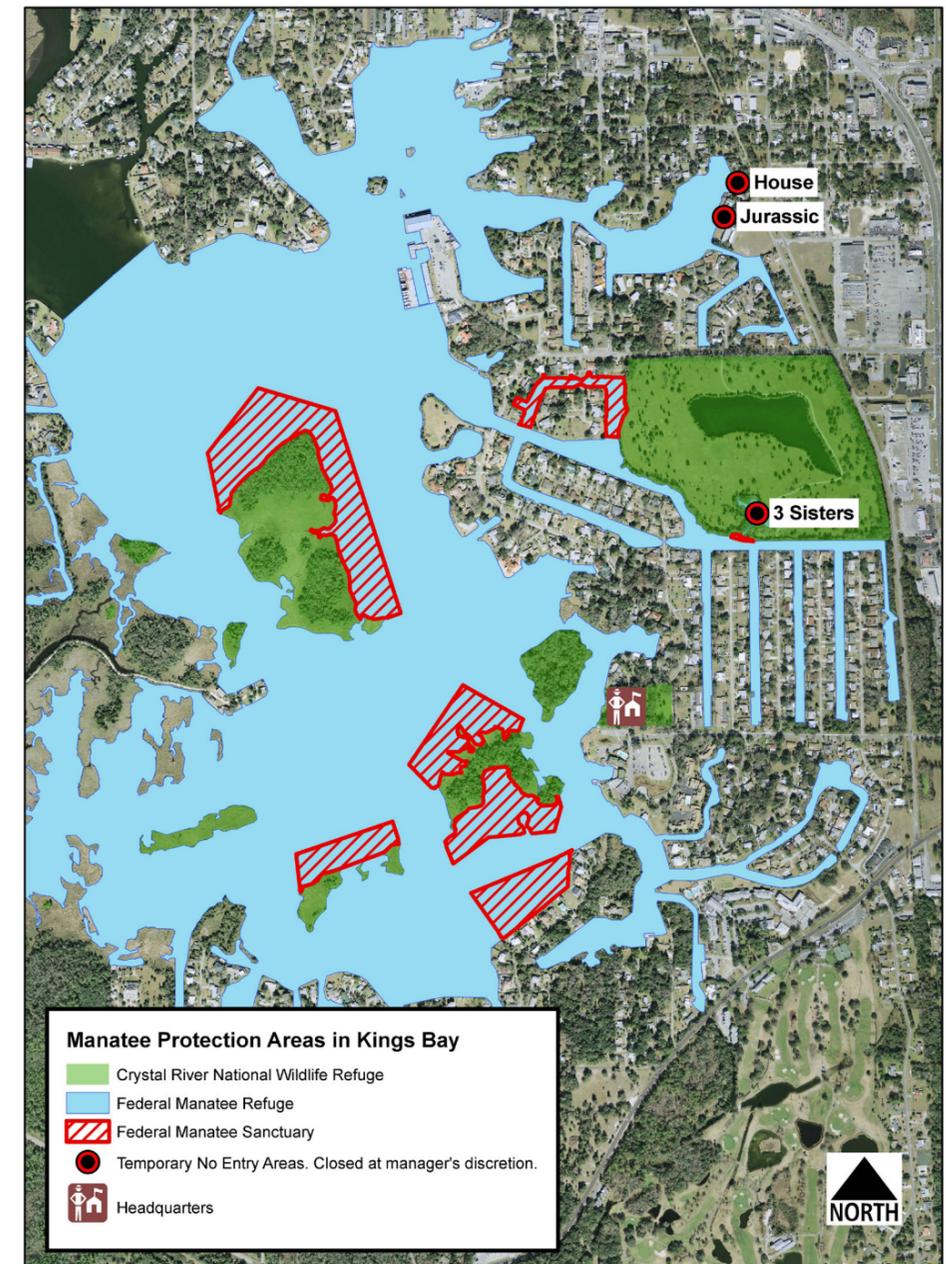
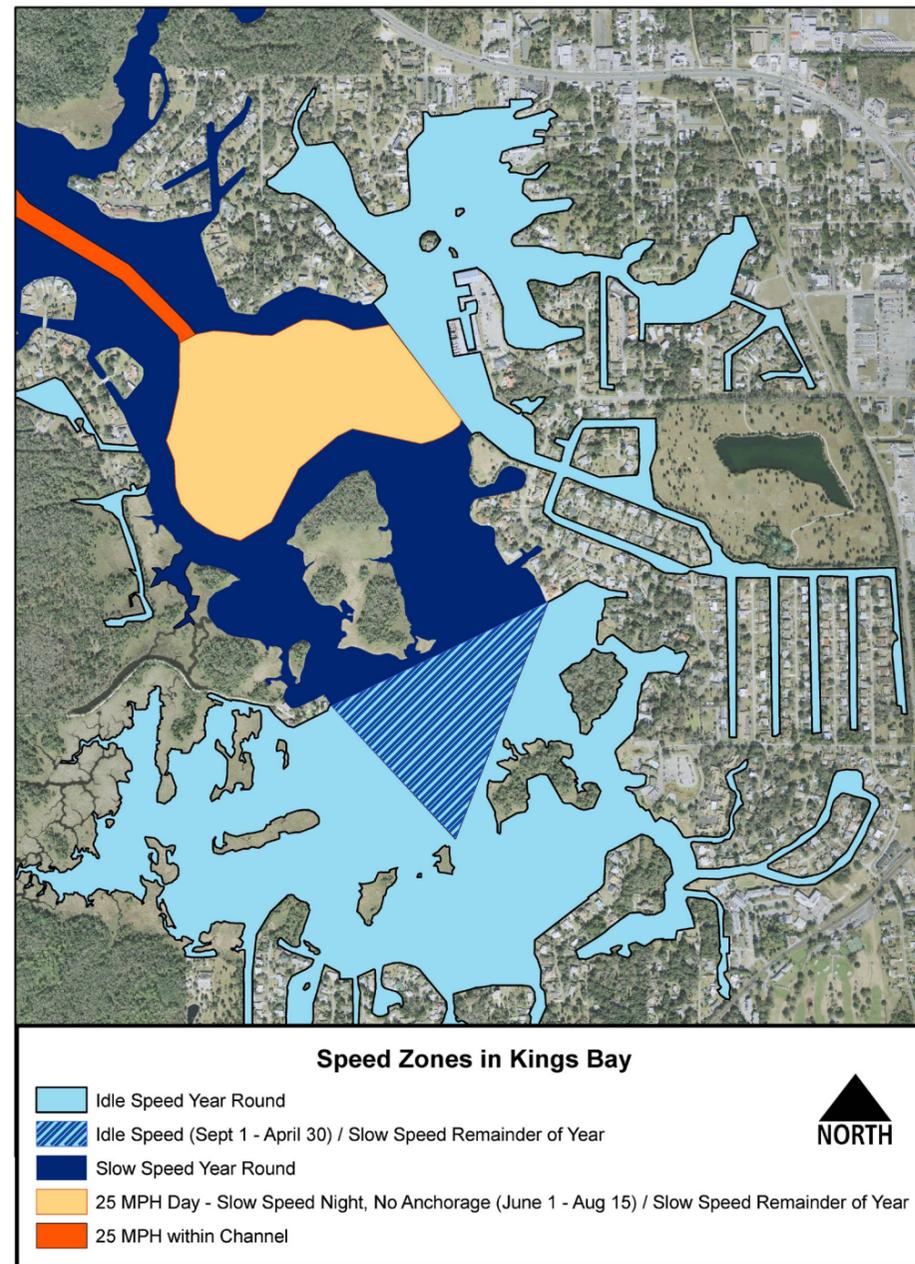
For more information about this refuge, the refuge system, or volunteer opportunities, please contact:

Refuge Manager
1502 SE Kings Bay Drive
Crystal River, FL 34429
Phone: 352/563 2088
Fax: 352/795 7961
Email: CrystalRiver@fws.gov



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<p>NO WAKE ZONE IDLE SPEED</p>	<p>Idle speed: No wake. Minimum speed that will maintain the steerage of a motorboat.</p>	<p>Closed Area Nov. 15 to Mar. 31</p> <p>These buoys mark manatee sanctuaries in Kings Bay. There is no fishing, boating, swimming, or public use allowed in these areas while sanctuaries are in effect.</p>	<p>SLOW SPEED MANATEE AREA</p> <p>Slow speed: The speed of a vessel at which it is completely off plane, is settled into the water, and is producing minimum wake. A motorboat operated with an elevated bow is not proceeding at slow speed. No specific speed is assigned to slow speed.</p>	<p>NATIONAL WILDLIFE REFUGE UNAUTHORIZED ENTRY PROHIBITED</p> <p>This sign marks the refuge boundary. Public access is limited to areas designated open for public use.</p>	<p>No lifeguard on duty at Crystal River NWR. Swim at your own risk.</p> <p>King Spring: Parts of this cavern are potentially unstable. Falling rocks can cause death. Avoid small passages beneath fractured rocks.</p>
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