

Trip Report

FLORIDA'S ADORABLE MANATEES

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RIVER OF SIRENS

Interacting with the much-loved marine mammals of Crystal River leaves one with stunning photos and mixed feelings - Don Silcock reports



Crystal River - Three Sisters

The set of three large springs known as The Three Sisters is probably the best site one could imagine to see and truly appreciate the Florida manatee. It is set in 58 acres of pristine vegetation, which is now a wildlife refuge after having been acquired in 2010 by a consortium led by the Manatee Conservation Fund.



West Indian Manatee *Trichechus manatus*
Manatees (family *Trichechidae*, genus *Trichechus*) are large, fully aquatic, mostly herbivorous marine mammals sometimes known as sea cows.

TEXT AND PHOTOS
BY DON SILCOCK

*A*winter's dawn is a very special time to be on Kings Bay, for as the first rays of the Florida sun appear over the horizon they light up the soft mist on the warm waters of the bay and create an ethereal, almost mystical, feeling. Listen carefully and you will hear the gentle ripples from the swirl pools formed by the paddle-like tails of the Sirenians as they make their way towards the fresh-water springs that are the source of the Crystal River. Look closely into the dark waters ahead of those swirl pools and you will see the large and unmistakable sausage-like shape of the Florida Manatee. The arrival of the manatees usually coincides with a rising tide and heralds their return from feeding on the sea grass of Kings Bay and the Crystal River. Cold and tired, they need the warmth of the spring waters to restore their body temperature as they sleep in the natural and man-made refuges of the area. This area of the Florida peninsular in Citrus County, on the western side of the state that is bordered by the Gulf of Mexico, is without doubt the best place in the world to experience the unique and singularly exceptional Florida Manatee.

The peninsular that makes up most of the state of Florida is formed by a large plateau of karst limestone that sits on a massive subterranean platform of bedrock which stretches far out in to the Gulf of Mexico. Underneath all of Florida and the southern

parts of Alabama, Georgia and South Carolina is one of the world's most productive aquifers - the massive Floridan Aquifer, which covers a total area of almost 100,000 square miles. Instead of running off into river systems, the porous karst limestone allows the state's regular and heavy rainfall to percolate down in to the many underground chambers of the plateau and, as new water makes its way in to the aquifer system, hydraulic pressure forces previous rainfall out in areas where those chambers are closest to the surface - such as Kings Bay in Citrus County. The water that emerges in those natural springs is extremely clear, having been thoroughly cleaned by the percolation process. In an area covering about 1 square mile, Kings Bay has between 70 to a 100 natural springs (depending on whose opinion you accept) 15 of which are significant "first magnitude" ones. Combined they pump out some 300 million gallons a day, all at a constant temperature of 72 deg F, filling the bay with warm water and forming the head waters of the Crystal River which flows out in to the Gulf of Mexico. This constant flow of warm water is the reason why the manatees come to Crystal River every winter.

Said to be the source of the mermaid myth, Sirenians are large mammals with stout bodies which look a bit like a small whale. Their considerable size - a fully grown

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West Indian Manatee *Trichechus manatus*

There are three accepted living species of *Trichechidae*, representing three of the four living species in the order Sirenia: the Amazonian manatee *Trichechus inunguis*, the West Indian manatee *Trichechus manatus*, and the West African manatee *Trichechus senegalensis*.



Crystal River - Three Sisters

Unlike the other main springs in Kings Bay, the setting of the Three Sisters means that the crystal clear waters that emerge from the underground aquifers do not merge with the darker waters of the bay until they exit the refuge. This means that - in the right conditions - the visibility there is absolutely stunning.



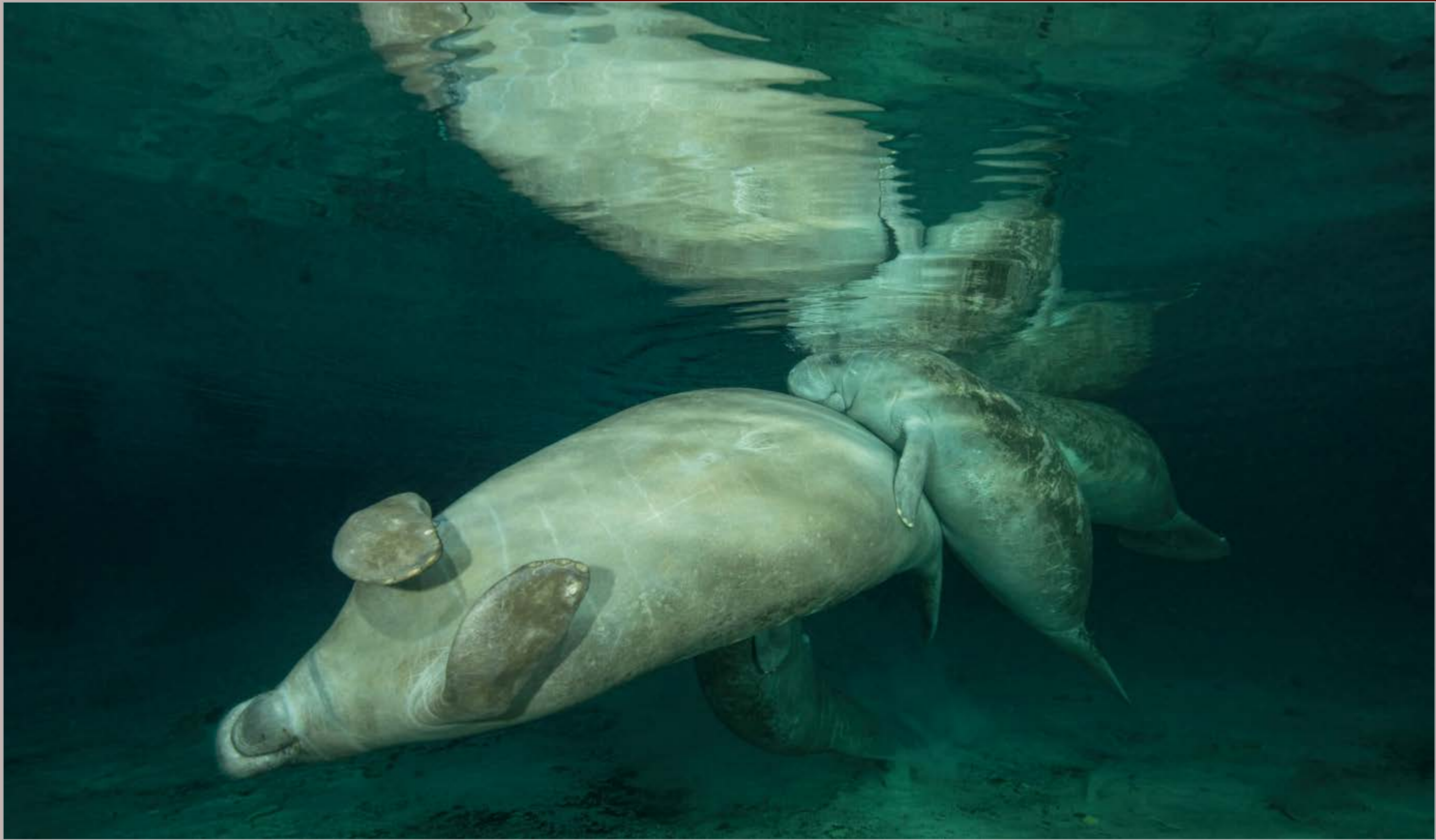
West Indian Manatee *Trichechus manatus*
 This trio of Manatees is engaged in a bout of sexual foreplay, leading to later actual mating. Manatees are generally solitary animals.

female manatee can reach 4m in length and about 1500kg - means they have evolved without any natural enemies and have developed a rather slow and passive nature. They get their name from "sirens", the ancient term used to describe the sea nymphs and their captivating songs that lured sailors to their deaths in treacherous shallow waters. Distantly related to elephants, but usually referred to as "sea-cows", there are now only four species of sirenians still alive of the 35 that are known to have once existed - three of which fall in to the Manatee family, while the fourth is in the Dugong family. A sub-species of the West Indian manatee species, the Florida Manatee is usually found in the shallow coastal waters around the state, but in summer can be spotted as far west as Louisiana and all the way up to the Carolinas on the east coast of the USA. Solitary creatures that can live more than 70 years, manatees are the only aquatic mammal that is also an herbivore and they exist on a primary diet of sea grass, the pursuit of which consumes up to 8 hours a day, with a full grown adult consuming up to 10% of its body weight every day. Contrary to what its rotund appearance might suggest, the manatee's diet means that it is actually a really "lean machine" with virtually no fat or blubber to keep it warm when the water temperature drops in winter. At water temperatures below 68 deg F the Florida Manatee simply cannot maintain its core body temperature and will

die of cold stress unless it can find a source of warmth, which means that Kings Bay and its natural springs provide a perfect natural refuge for them.

There are actually two Crystal Rivers – the river itself and the town of the same name that sits on the shores of the 400-acre lake that is Kings Bay. First impressions are not always what they might appear, and such is the case with the Town of Crystal River where the sign outside of City Hall proudly informs you that you are now in the "home of the manatee". With a population of just over 3000, Crystal River gives the first-time visitor a feeling of small-town America doing OK, thank you very much. There are numerous hotels and restaurants, plus a large shopping mall and the area around Kings Bay hosts numerous very nice canal-side homes. This prosperity derives from two very different sources, the estimated 150,000 people who come to experience the manatees every winter, injecting somewhere between \$20m and \$30m in to the local economy. Then there are the "snowbirds"... wealthy residents of the north-east American states and Canada who migrate south in the winter months to escape their harsh weather for Florida's much warmer southern version. Peel the Crystal River onion however and you will find a lot of lingering resentment amongst both local residents and snowbirds towards the manatee because of the boating speed and access restrictions in

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West Indian Manatee *Trichechus manatus*
More sexual activity in the cool, clear waters of Crystal River, Florida. Manatees typically breed once every two years; generally only a single calf is born. Gestation lasts about 12 months and a further 12 to 18 months are needed to wean the calf.



West Indian Manatee *Trichechus manatus*
 Manatees measure up to 13 feet (4.0 m) long, weigh as much as 1,300 pounds (590 kg) and have paddle-like flippers.

place under both State and Federal law to protect them. Their basic argument is that manatees have been formally classified as “endangered” under Federal law since 1967, which was probably justified at the time, but the protection mechanisms have worked so it is time to move the status to “threatened” and relax the restrictions which impact heavily on the local boating community. Resident groups such as Save Crystal River point to the increasing number of manatees in Kings Bay as the rationale for the change and even went as far as suing the US Fish and Wildlife Service to make the change – forcing them to formally consider it. Manatee advocacy groups like the Save the Manatee Club have equally strong, but diametrically opposed views, arguing for stronger protection and making the main Three Sisters Spring a closed sanctuary. Their basic argument being that there is still a long way to go before any status change can be considered, pointing to the loss of 830 manatees in 2013 because of unusually cold winter weather and pollution induced red tides.

The unique nature of the manatee has long been recognized in Florida, with the first state protections against killing or mistreating them enacted in 1893. Nationally, manatees were the first species to be listed as formally endangered under the Federal Endangered Species Preservation Act of 1966, with other State and Federal protection following - all tacitly

recognizing the unique status of the Florida manatee. Further legislation in 1978 recognized the entire state of Florida as a “refuge and sanctuary for the manatees” and established enforceable access restrictions and marine craft speed limits in 13 critical aggregation areas where manatees gather each winter. Manatees prefer shallow water, swim slowly and because they are mammals they must surface regularly to breathe - which puts them right in the danger zone where water craft are involved. For most of the year that danger is relatively small, as they roam far and wide in search of the sea-grass that sustains them - so the chances of being hit are minimal, but in winter when they aggregate in places like Kings Bay they are incredibly vulnerable. Possibly the single biggest life-style attraction in Florida is the “life-aquatic” and boating in general is extremely popular in the state. The no-go access restrictions and speed limits in place in Kings Bay and the Crystal River are like red rags to a bull to those who argue that the manatee conservation pendulum has swung too far. The conservationists counter that such restrictions are essential if the unique manatee is to prosper and survive. A common statistic doing the rounds is that the most common cause of manatee fatality is water craft collision, with about 45% of those fatalities by propeller cuts and 50% because of “blunt trauma” from the boat hull. However fatality statistics on the Florida Fish and Wildlife Commission’s website

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West Indian Manatee *Trichechus manatus*
 The deep scars left on a manatee's back by a boat propeller leave little doubt to the dangers facing these slow-swimming marine mammals in Florida waters.



West Indian Manatee *Trichechus manatus*
 The name *manatí* comes from the Taíno, a pre-Columbian people of the Caribbean, meaning "breast".



King's Bay

In the USA manatees were the first species to be listed as formally endangered under the Federal Endangered Species Preservation Act of 1966, with other State and Federal protection following. Further legislation in 1978 recognized the state of Florida as a "*refuge and sanctuary for the manatees*".

show that in 2013 "only" 4 of the 17 reported manatee fatalities in Citrus County were due to water craft. Obviously the conservationists would argue that this shows the restrictions are working, while the resident groups and boaters would probably point to the statistical disinformation bandied around is typical of what happens when that pendulum goes too far!

While the access restrictions and speed limits are the big issue in town, the "swim with" program is also a major source of contention between the manatee conservationists and tour company operators. Crystal River is the only location in the United States where tourists are allowed to enter the water and have a degree of interaction with the manatees. An anachronism that dates to before the 1966 Endangered Species Act, swimming with the manatees was always a popular tourist drawcard in Crystal River and was "grandfathered" through the legislation – something that would never be permitted if it were proposed today. But back then the numbers of tourists swimming with the manatees were a mere fraction of the projected 150,000 who did it in 2014 and Crystal River was certainly not the hot location it is today. Tourist numbers have more than doubled since 2007 when they hit an all-time record of 60,000, and they look set to climb further as travel magazines

Booming tourism is both a blessing and a curse for the Florida manatee.



26 Crystal River companies and 110 boat captains offer daily manatee tours.

and television shows continue to publicize the chance to swim with manatees in Kings Bay. Add to that Crystal River's appearance in the book *1,000 Places to See Before You Die* and it is easy to see how tourist numbers could top 200,000 in the next few years! For the 26 Crystal River companies offering manatee tours, not to mention the 110 licensed boat captains, the "swim with" is a big drawcard with huge emotional pulling power. Something you will quickly come to appreciate when you arrive for your first dawn departure on to Kings Bay and find yourself surrounded by dozens of excited schoolkids and their mothers! About 60% of all tourists who visit Crystal Bay are from Florida and swimming with a manatee is a very popular thing to do...The problem is that while many of those tourists leave Crystal River with a greatly heightened appreciation for the manatee, there are always those who get carried away by the excitement of the moment and do stupid things like trying to ride them! Local manatee activist Tracy Colson started documenting this on video and posting them on YouTube. She even caught local guides taking babies manatees from their mothers to pass around to tourists... Stricter interaction guidelines have since been introduced, but I know from my personal experience in Kings Bay a moment of sublime but cautious connectivity as a curious manatee approaches is instantly negated by the arrival of dozens of hyper

active schoolkids! Quite what impact this all has on the placid manatee can only be guessed at...

The set of three large springs known as The Three Sisters is probably the most unique and inspiring place you could imagine to see and truly appreciate the Florida manatee. Set in 58 acres of pristine vegetation, which is now a wildlife refuge after having been acquired in 2010 by a consortium led by the Conservation Fund, the Three Sisters is one of Florida's last remaining urban springs. Unlike the other main springs in Kings Bay the setting of the Three Sisters means that the crystal clear waters that emerge from the underground aquifers do not merge with the darker waters of the bay until they exit the refuge. Which means that in the right conditions the visibility is absolutely stunning creating a magnificent backdrop to those manatees that enter the Three Sisters through the narrow channel that connects it with the nearby canal system and Kings Bay itself. However... it is also open to the public and what can seem like a unique and tranquil haven if you are there alone, quickly turns in to thriving mass of assorted legs and torsos suspended from flotation sausages as the next party of tourists arrive. Very few tourists know how to snorkel and so they end up kicking madly to stay afloat, which rapidly stirs up the sandy bottom and sends the manatees to the deeper parts of the spring in search of some peace and quiet.

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West Indian Manatee *Trichechus manatus*

Manatees are herbivores and eat over 60 different freshwater and saltwater plants. Using its divided upper lip, an adult manatee will commonly eat up to 10%-15% of its body weight (about 50 kg) per day. This requires the manatee to graze for up to seven hours a day. Manatees have also been known to eat small amounts of fish from nets.



West Indian Manatee *Trichechus manatus*
 The Sirenia have evolved from four-legged land mammals over 60 million years ago, with the closest living relatives being elephants and hyraxes.



A formidable Florida icon
 More than 150,000 people have dived with manatees in 2014 - a huge boost to Florida's local economy.



West Indian Manatee *Trichechus manatus*

Manatees have a mass of 400 to 550 kilograms (880 to 1,210 lb), and a mean length of 2.8 to 3.0 metres (9.2 to 9.8 ft), with maxima of 3.6 metres (12 ft) and 1,775 kilograms (3,913 lb) seen (females tend to be larger and heavier). When born, baby manatees have an average mass of 30 kilograms (66 lb). They have a large, flexible, prehensile upper lip, which they use to gather food and eat, as well as using it for social interactions and communications.



Crystal River National Wildlife Refuge

Established in 1983, it is the only refuge created specifically for the protection of the endangered Florida Manatee, a subspecies of the West Indian Manatee.

Interestingly of the 400+ manatees that have been identified (usually from their propeller scars) by the Florida Fish and Wildlife Commission as return winter visitors, only around 100 of them will enter the Three Sisters. The rest stay in the sanctuaries where tourists are not allowed to go... Whether it's the more sociable manatees that go into the Three Sisters or those that prefer their warm water from as close to the source as possible is not known. The tidal nature of Kings Bay means that the water height in the Three Sisters also varies with the tides – something that the manatees can sense through their vibrissae, the incredibly sensitive facial and body hair believed to give them a kind of three-dimensional spatial and navigational awareness. One of the most interesting experiences I had during the 10 days I spent in Crystal River was early one morning at the entrance of the narrow channel that provides access in to the Three Sisters Spring. Entrance to the Three Sisters is not allowed before 07:00, which that morning coincided with more or less the low tide and as I entered the water and made my way towards the channel I realized that I was surrounded by several large manatees that were all waiting patiently for the water level to rise. It was really quite something to be surrounded by three to four meter long animals who seemed either oblivious (hard to believe given their vibrissae...) or accommodating of my presence! Then I realized that in all probability the manatees were simply cold and were enjoying the warmth of the water coming out of the Three

Sisters! Quite how long the Three Sisters will remain open to the public is far from clear as there is a strong belief amongst the conservationists that allowing large number of tourists in is greatly stressing those manatees that use it. They argue that it should be made a true sanctuary with observation only allowed from a boardwalk around the springs.

For me, an opportunity to interact and photograph large marine creatures is as good as it gets – they grace you with their presence, are in charge of the agenda and I find the actual experience utterly inspiring! A trip to the Crystal River had long been on my personal bucket list, but Florida is a very long way from where I live and despite several attempts at getting there it just never worked out until February 2014. The Sirenians of the Crystal River was just something I had to do and so I girded my loins and flew two-thirds around the world, complete with all my dive and camera gear. I am so glad I did, but I have to say that I left Crystal River with a degree of ambivalence. On the one hand I loved the manatees – I mean how could you not? They are big, cute and wonderfully photogenic plus, if you can get time alone with one in the Three Sisters, the backdrop is just spectacular. But... I was just not comfortable with the way Crystal River has so commercialised them and if they really are one of the thousand things to see before you die - then it can only get worse. My overall sense of things was that everything that could be done was being

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Crystal River canal

Several homes here are literally on the waterfront and boats are a necessity.



Crystal River National Wildlife Refuge

A grand total of about 600 manatees are protected here.



Manatee Watch Warden

A constant watch is being kept within the National Wildlife Refuge.



Crystal River

Dawn offers a quiet view - before the arrival of the tourist crowds.



West Indian Manatee *Trichechus manatus*

More sexual activity among manatees. Adults have no incisor or canine teeth, only a set of cheek teeth, which are not clearly differentiated into molars and premolars. These teeth are continuously replaced throughout life, with new teeth growing at the rear as older teeth fall out from farther forward in the mouth.



West Indian Manatee *Trichechus manatus*

Manatees have shorter snouts than their fellow sirenians, the dugongs. The tail is paddle-shaped, and is the clearest visible difference between manatees and dugongs - a dugong tail is fluked, similar in shape to that of a whale.

done to minimize stress on the manatees – the Fish and Wildlife Service seem to have good systems in place to monitor the overall situation. The tour operators seem to really know what they are doing and follow the rules (well certainly mine, Birds Underwater did) plus the extensive number of Manatee Watch volunteer wardens do a great job.

I felt incredibly fortunate to have had some close personal contact with a few of those manatees that use the Three Sisters. This was always on their terms though, where they came to me and allowed me to photograph them! The rules of engagement from the Fish and Wildlife Services for “professional photographers” is that after you have watched an instructional video on how to behave and paid a fee, you are given bright vest with a number on and are allowed to submerge rather than stay on the surface like all the other tourists. You are not allowed to pursue the manatees, under any circumstances, so you have to hold your breath and hope they come to you! But when that happens it really is a special moment that can only really last until your desire to breath overcomes your desire to cherish it! What troubled me about the Crystal River was the difference between those incredible moments of intimate interaction and what happens when hordes of tourists arrive eager to spend an hour or so in the water and then go home and tell friends, “I touched a manatee.” ●

Don Silcock’s images, articles and extensive location guides can be found on-line on his website www.indopacificimages.com