

# Manatee Rehabilitation Centre

Wildtracks, Belize



Information Pack



# Wildtracks

*Wildtracks is working towards the sustainable future of the natural resources of Belize, through conservation of ecosystems and species, building engagement and strengthening capacity towards effective environmental stewardship at all levels.*

Wildtracks was established in 1990 and registered as a Belize non-profit organization in 1996. It implements its activities through four Wildtracks Programmes:

- Biodiversity Conservation
- Education and Outreach
- Sustainable Development
- Support

The Manatee Rehabilitation Centre is one of two national rehabilitation facilities hosted under the Biodiversity Conservation Programme. Activities are financed through the Support Programme – through volunteer manpower, income generation, grants and donations.

## Contact Details:

**Wildtracks**

**P.O. Box 278**

**Belie City**

**Belize**

**Tel: (00 501) 650 6758**

**E-mail: [office@wildtracksbelize.org](mailto:office@wildtracksbelize.org)**

**Website: [www.wildtracksbelize.org](http://www.wildtracksbelize.org)**

**Facebook: [www.facebook.com/wildtracksbelize](http://www.facebook.com/wildtracksbelize)**



Conservation and Research



Education and Outreach



Support Programme



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Rehabilitation.....

...preparing manatees  
for their return  
to the wild

# The Manatee Rehabilitation Centre



*The Manatee Rehabilitation Centre has been established to fulfil three primary objectives:*

- *To provide rehabilitative care for all orphaned and/or injured manatees found in Belizean waters*
- *To release rehabilitated manatees back into the wild*
- *To raise awareness of Antillean manatees the importance of manatee conservation*



## ***The Belize Fisheries Department***

Wildtracks has a Memorandum of Understanding with the Belize Fisheries Department (Ministry of Blue economy and Civil Aviation). The Fisheries Department is responsible for the protection of manatees. It also works to improve the general public's appreciation of manatees and the coastal environment they inhabit.



## ***The National Manatee Working Group***

Wildtracks collaborates with other stakeholders as a member of both the National Manatee Working Group and the Marine Mammal Stranding Network, both under the mandate of the Fisheries Department.

# *Manatees in Belize*

Belize is home to the Antillean Manatee (*Trichechus manatus manatus*), a sub-species of the West Indian manatee. The Antillean manatee is considered globally endangered and, in Belize, is being pressured by the increasing boat traffic in key manatee areas, and increasing threats to the coastal environment – primarily habitat loss resulting from coastal development.



**Antillean Manatee**

*Trichechus manatus manatus*

Local Names: Manatee, Lamantin

# Antillean Manatee

*Trichechus manatus manatus*

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<b>Order:</b>	Sirenia
<b>Family:</b>	Trichechidae
<b>Average Weight:</b>	200–600 kg (440–1,300 lb)
<b>Average Length:</b>	2.7 to 3.5m (8.9 – 11 feet)
<b>Conservation Status:</b>	<b>Endangered</b> - <i>The current Mesoamerican population is estimated at less than 1,615 individuals. Without effective conservation actions this is predicted to undergo a decline of more than 20% over the next two generations. This is estimated at ~40 years for an unexploited population, based on current and projected future anthropogenic threats (boat-related impacts, habitat degradation and loss, hunting, accidental fishing-related mortality, pollution, and human disturbance).</i> <i>(Adapted from IUCN – <a href="http://www.iucnredlist.org">www.iucnredlist.org</a>)</i>



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The Antillean manatee is considered globally endangered, with populations declining at an alarming rate. Belize is estimated to have a population of between 700 and 1,000 manatees, and is one of the strongholds for this species in the region. Protecting and reinforcing the manatee population in Belize is critical for long term viability of Antillean manatees, both in the region and globally.

**ENDANGERED ENDANGERED ENDANGERED ENDANGERED ENDANGERED**



# ***Manatee Rehabilitation in Belize***

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## ***Why do manatees need rehabilitation?***

The global Antillean manatee population is estimated at 6,700, but is genetically fragmented. The Mesoamerican sub-population (ranging from southern Mexico to Panama) is estimated at only 1,615. Belize is considered to be the stronghold for manatees in Mesoamerica, with a population estimated to be between 700 – 1000 individuals.

Injured and/or orphaned manatees found in the coastal waters of Belize are brought to the Manatee Rehabilitation Centre at Wildtracks for rehabilitation and eventual release back into the wild. The rehabilitation process can take as long as three and a half years, depending on the age of the animal and the severity of its injuries. With such a low population count, it is critically important to facilitate the return of every animal to the wild.



*J. Weirich*

***Belize has a manatee population estimated at between 700 to 1,000 animals - a significant proportion of the 2,350 animals in the Mesoamerican population of this sub-species.***

# Rescue and Arrival

Stranded manatees (orphaned and/or injured animals) are reported by the general public to the Belize Marine Mammal Stranding Network in Belize City.

Once reported, the manatee is located and an onsite assessment is conducted – the faster a manatee is reported and found, the higher its chances of surviving. Removing the manatee from its natural environment is considered a last resort option - however, if the injuries are too severe or the animal too young to survive on its own, it is then rescued and transported to Wildtracks. The majority of rescued manatees are calves, often younger than 3 months old.

At rescue, manatees are generally dehydrated and extremely emaciated making the first 72 hours critical. During rescue and transport, the manatee is offered rehydration solution (Pedialyte) and, upon arrival at the Rehabilitation Centre, a basic medical assessment is conducted. Along with their original injuries, which may result from boat strikes or fishing gear entanglement, new arrivals will often have a high parasite load, which also needs to be addressed.



L. Mcloughlin

## Lucky's Story:

*A small manatee calf was reported washed up on a beach near Belize City. He was estimated to be about two months old and alone. It is likely that his mother was killed by a boat, the most frequent cause of manatee deaths in the Belize City area.*



*The young calf arrived dehydrated and emaciated, with loose rolls of skin over a bony skeleton. He appeared to have spinal bruising in the shoulder region and was very weak, needing a lot of support and intensive care on arrival. With limited use of his flippers, he required assistance breathing, and for the first two weeks, the Wildtracks team provided him with 24 hour in-water care and monitoring.*

*Eventually, he gained the strength to swim independently. He was then introduced to another young manatee calf for socialization. Earning the name Lucky, he is fully recovered. And released successfully back into the wild.*



## MANATEE REHABILITATION CENTRE FACILITIES

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**Manatee Building:** Food preparation

**Intensive Care Pool**  
For small calves. Hexagonal (8' diameter) in a screened care area. Heat exchange system warms water in colder weather

**Recovery Pool:** Hexagonal (13' diameter) for growing calves

**Large pool 1:** Oval (30' x 14') for larger animals.

**Large Pool 2:** Oval (35' x 15') for larger animals.

**Lagoon enclosure:** With gated access to the lagoon.



# *Manatee Rehabilitation: Stage One*

The phone rings, and there is news of an incoming manatee calf. The Manatee Team swings into action, draining the water from the pools, bleaching and scrubbing the walls down and refilling. Feeding bottles, rehydration solution, milk formula and emergency lighting are prepared, in readiness for the calf's arrival.

Once the calf arrives at the Rehabilitation Centre, it is introduced into the Intensive Care Pool, housed in a screened enclosure. The small volume facilitates regulation of water temperature, critical for intensive care. For the first 72 hours, the manatee is under constant surveillance, with one carer providing in-water support when needed, and a second monitoring breathing and behaviour providing a baseline against which to measure improvements.

Rehydration solution is given every 3 hours, and the water temperature is maintained at between 28° and 30°C. A milk replacement formula is gradually added during the first 6 hours. If the calf doesn't take fluids from a bottle, naso-gastric tubing may be necessary (this, however, may also cause reluctance to trust and accept the bottle so the decision to tube feed is made very carefully). 24 hour in-water support is reduced as the calf becomes stable – in the past this has ranged from 72 hours to two weeks, depending on the injuries.

The first ten days are critical – if calves survive this period, the probability that they will thrive and can be released increases greatly.





Volunteers monitor a new arrival carefully and provide it with social support for the first 72 hours (or more)



Paul convinces a young calf to begin feeding from a small tube attached to his finger, a big step towards accepting a bottle

## *Manatee Rehabilitation: Stage Two*

Once the manatee has stabilised and is thriving, and is large enough to be comfortable in a wider temperature range, it is introduced to the larger, deeper pools, providing much more space for manatees to develop swimming skills. During this stage, the manatee is introduced to seagrass, water hyacinths and other aquatic plants. Seagrass is given in frames at the bottom of the pool, beginning the manatee's education on developing the foraging skills it will need when it returns to its natural habitat.

The end goal of the larger pools is to encourage healthy growth and use of the deeper water. During the manatee's time in this pool, their milk and plant consumption increases, as well as their size.



A number of incoming animals are not calves, but injured sub-adults or adults, and need to be housed in the larger pools. The same preparation is required to ensure the pools are clean and rehydration solution is on hand. Medications are used to treat any wounds – the majority of sub-adults or adults arrive with watercraft-inflicted injuries.



Ben, a sub-adult injured by watercraft collision, is treated for his injuries in one of the larger pools

## *Manatee Rehabilitation: Stage Three*

In Stage Three, the manatee is introduced to the Lagoon Enclosure - a coralled portion of the lagoon where it learns to navigate a more natural environment. With varying depths, substrates, shade, mangroves, fish and seagrass, this is the first time since rescue that the manatee is able to make decisions influenced by its surroundings. The manatee learns what it is like to be in sunny and shaded areas, how to eat seagrass from the seabed, and other important skills for life in the wild. As well as reducing the number of milk feeds at this stage, and increasing reliance on vegetation, the interaction with people is decreased to minimal centered around feeding activities. This stage directly contributes to building post-release success. Once a manatee has become comfortable in the lagoon environment, the Soft Release process will begin.



The Lagoon Enclosure



## Manatee Rehabilitation: Stage Four



Before Soft-Release is started, the manatee is weighed and fitted with a GPS/VHF tracker and two internal PIT tags. The manatee is then introduced to the wider lagoon by the carer, who opens the Lagoon Enclosure gate and walks with the manatee out into the lagoon, encouraging it to forage and explore. Manatees learn by watching their mothers – carers take on the mother’s role, swimming with the manatee to seagrass beds to show them where food can be found, helping them to build a mental map of the area. After the first week or two, depending on the individual, the manatee becomes more independent, leading up to its release date. This extended soft release process is critical in the preparation for a successful reintroduction to the wild.



A. Hagan



*Catching, weighing and fitting a manatee with its GPS/VHF tracking collar takes the entire Wildtracks Team!*



## *Release: The Final Stage*

A release date is selected after the coldest weather has passed, ensuring a safe transition back into the wild. The manatee is given a final health check in preparation for release and the tracking device is fitted for the 6-month post-release monitoring. The manatee is then released into Corozal Bay Wildlife Sanctuary.

The monitoring team watches the manatee's first days in the wild, aided by the GPS tracking system, VHF back-up transmitter and eye-in-the-sky drone tracking. The monitoring then continues for the next six to twelve months, with consistent updates on the manatee's movements. The GPS tracker belt is designed to release after a year, allowing it to be collected and the GPS tracker serviced for re-use.

The first manatee rehabilitated at Wildtracks, Woody, was released in 2000, and has been wild now for over 22 years ...





*Twiggy on arrival at Wildtracks*



*Twiggy at point of release, March 2013*



*Twiggy and her calf 'Twiglet'*

## ***Twiggy's Tale***

*Twiggy arrived as a two-week-old calf in June 2009, having been found injured and alone near the reef to the east of Belize City. She weighed 56lbs on arrival, with a total length of 1.18m. She had many lacerations on her face from dolphin strikes, but her weight was good.*

*At her release in March 2013, she was over 2m long. After an extensive soft release period in the lagoon, where she demonstrated she was able to develop a foraging routine, maintain her weight on the wild benthic vegetation independent of supplemental feeds, and showed little interest in people, Twiggy was carried by boat to the adjacent release site in the Corozal Bay Wildlife Sanctuary. The site is located approximately 200 metres north west of a known manatee aggregation hole, ensuring that she would encounter wild manatees shortly after release.*

*Fitted with a GPS tracking device, she was monitored for several days on site, and then remotely from the Wildtracks office. Her progress was mapped each day, and she began spending more and more time at the manatee resting area, venturing to adjacent seagrass areas and freshwater upwellings. She joined wild manatees, and after an initial week spent within 1km of the release site, she travelled to other key manatee areas in the Wildlife Sanctuary.*

*Surveys of benthic vegetation based on Twiggy's high frequency use areas show that the areas used most frequently were those that combined two types of seagrass – turtle grass and shoal grass. Manatee movement correlates with high density seagrass areas and manatee resting holes, with clear travel corridors linking these high frequency sites.*

***In 2023, Twiggy returned to the soft release lagoon to give birth to a healthy manatee calf!!***

# Corozal Bay Wildlife Sanctuary – The Release Site

Corozal Bay Wildlife Sanctuary is a national protected area managed by the Sarteneja Alliance for Conservation and Development (SACD). It has been chosen as the manatee release site because of its sheltered, enclosed location, supportive stakeholders, limited boat traffic and proximity to the Rehabilitation Centre, facilitating soft releases and facilitating the post-release monitoring process. SACD maintains an active surveillance and enforcement presence, and implements research and monitoring activities that include investigation into seasonal variations in water parameters, particularly salinity and temperature, providing important information on drivers of manatee movements within the Wildlife Sanctuary.



## PROTECTED AREA STATISTICS

**Size:** 178,000 acres (72,000 ha)

**Statutory Instrument:** SI 48 of 1998

**IUCN Category:** IV

**Management Authority:** Forest Department

**Co-management Partner:**

Sarteneja Alliance for Conservation and Development (SACD)

# How Can I Participate?

## Volunteer

Manatee rehabilitation can be very labour-intensive, particularly when supporting injured or orphaned manatees. Foster-mother support of manatee calves, 24-hour in-water assistance for injured manatees on arrival, preparing milk, collecting sea grass, scrubbing pools, maintaining records, and supervising exercise are examples of necessary wildlife care and require a very significant amount of carer time.

In a country such as Belize, where financing support from Government is limited, this level of care can only be provided by volunteers. The Manatee Rehabilitation Centre has a very small salaried staff and relies heavily on its volunteer team. Volunteering can be hard work, tiring, and smelly....but also extremely rewarding!

The minimum timeframe is one month - though longer placements are preferred. Some volunteers have extended their stay for up to six months, and many keep returning. Supported placements are also available for Belizean and Central American volunteers.



Volunteer

## Contact Details

[office@wildtracksbelize.org](mailto:office@wildtracksbelize.org)

[www.wildtracksbelize.org](http://www.wildtracksbelize.org)



# How Can I Participate?

## Donate!

Wildtracks works in collaboration with the Belize Fisheries Department and the National Manatee Working Group. Whilst support from both is strong, this does not extend to funding. Wildtracks is therefore largely dependent upon financial support from granting agencies and individual donors. We rely on individual donors for the day-to-day support for the Manatee Rehabilitation Centre, and for emergency funding when we have equipment failures or higher than expected milk demands with incoming calves.

We also have help from donor agencies – including Save the Manatee Club and the Belize Fund for a Sustainable Future - ensuring that we have the large-scale infrastructure in place for effective rehabilitation and release.

We make every dollar count!



## *Make a Difference Support a Manatee!*

*Average Annual Cost of care per manatee: US\$ \$8,000 – US\$9,000*

*One manatee can eat up to 5 buckets of sea grass and one gallon of specialized milk formula a day. Donating towards the support of our rescued manatees ensures that they have the strongest chance possible of returning to the sea.*

***Any and all help is appreciated!***



Many thanks to

### **Save the Manatee Club**

A key partner of the  
Wildtracks Manatee  
Rehabilitation Centre

*Donations can be made by  
secure PayPal or Credit  
Card payments through...  
[www.wildtracksbelize.org](http://www.wildtracksbelize.org)*

*Thank you!*

# Your Actions Matter!

- *It is illegal to touch, harm or kill manatees in Belize.*
- *Respect No Wake Zones when boating.*
- *Avoid boating over shallow sea grass beds where manatees might be feeding.*
- *Dispose of fishing line and other garbage safely – don't dump into the water.*
- *Report stranded and injured manatees in Belize to:*

*Wildtracks: 660 4820 or 650 6578*



**Belize Fund For A Sustainable Future**

