

## Press Release

### S.E.A. Aquarium Aquarists Develop Bonds and Discover Unique Characteristics of Manta Rays during Enrichment Programme

- *Known as one of the world's smartest fish, manta rays display intelligence, curiosity and the ability to hold extended play interactions with aquarists*
- *In a sign of trust, aquarists can now syringe-feed mantas underwater – a rare husbandry feat*
- *S.E.A. Aquarium invites public to learn more about manta rays and pick names for its three male residents*



In a sign of trust between man and animal, an aquarist at S.E.A. Aquarium gently taps and conducts a quick physical check on *M1* (left). The largest among the three manta rays, *M2* (top right) has a towering presence and prefers to explore the habitat independently. Bearing a heart-shaped mark on his underbelly, *M3* (bottom right) is docile and loves 'dancing' around his aquarists during feeding time. **PHOTO CREDITS: RESORTS WORLD SENTOSA.**

[CLICK HERE TO WATCH THE VIDEO](#)

**SINGAPORE, 14 March 2019** – Visitors to S.E.A. Aquarium at Resorts World Sentosa can now witness firsthand the intelligence of reef manta rays – the aquarium's largest and most iconic species – and their close bonds with aquarists in a one-of-its-kind enrichment session designed to enhance the well-being of these marine residents. After a few years of positive conditioning sessions, aquarists can now get up close and even syringe-feed the manta rays underwater – a feat in terms of animal care in the aquarium world.

Through daily interactions and close observations, aquarists at S.E.A. Aquarium have deepened their understanding of the unique behavioural characteristics of the three male manta rays. *M1*, identified through a black stripe on his underbelly, is a curious and friendly manta who can be seen somersaulting underwater during feeding time. *M2*, with his almost fully black body and towering presence, is independent and enjoys exploring the surroundings on his own. Lastly, *M3*, the smallest amongst the

three, bears a heart-shaped mark on his underbelly and is a docile member who loves twirling around the aquarists during feeding time.

James Hong, Assistant Curator at S.E.A. Aquarium, said: “Manta rays are one of the world’s smartest fish, with the largest brain to body mass ratio of any fish. To promote mental and physical stimulation, we embarked on a variety of operant conditioning and enrichment sessions, from providing visual stimuli to test their ability in recognising shapes, to feeding at the water’s surface. The manta rays responded positively to these conditioning sessions and our aquarists learnt so much more about our rays’ distinct characteristics. Today, we are able to syringe-feed them underwater, a sign of trust and close bond between our aquarists and the manta rays. Such conditioning allows the animal care team to conduct physical and health checks on the manta rays safely and easily when necessary.”

As part of enrichment, aquarists previously donned specially customised suits with different patterns such as stripes and spots. It is believed that manta rays can recognise different visual signs and aquarists conditioned the mantas to associate these patterns with food. Over the years, the rays develop affinity with the aquarists and approach them without the need of visual aids.

Manta rays are listed as “Vulnerable” in the IUCN\* Red List of Threatened Species. They are threatened due to overharvesting of its gill plates for their perceived medicinal purposes, and their low reproduction rate.

Visitors can observe the manta enrichment presentation titled “Manta Moments” as part of S.E.A. Aquarium’s [Ocean Dreams sleepover programme](#). In addition, the aquarium will host a series of talks and engagement sessions to raise awareness on the threats facing manta rays and how the public can take action to protect them. These include community events in collaboration with the National Library Board (NLB) to increase awareness of manta rays and ocean conservation through storytelling and arts-and-crafts sessions at various NLB branches.

Guests are invited to take part in a “Pick Your Favourite Manta Name & Win” contest from now until 30 April 2019. Participants can choose their favourite names at [www.rwsentosa.com/mantacontest](http://www.rwsentosa.com/mantacontest) and submit a short write-up on the chosen name. The three most creative entries will win underwater hotel stays at the luxurious [Ocean Suite](#) and [Sea Trek Adventure](#) to get up close with the manta rays, and other prizes worth more than S\$10,000 in total. Guests can also witness a special underwater presentation where the manta rays will pick their own names on 4 and 11 May, at 2pm at the Open Ocean Habitat.

Families hoping to get inspiration for their entries can head down to the aquarium with a limited-time only S.E.A. Aquarium bundle. Available now until 31 March 2019, Singapore Residents enjoy online discounts for two adults and one child at S\$72 (U.P. S\$98).

More information on S.E.A. Aquarium’s manta rays and the conditioning process can be found in Appendix A.

\*IUCN – International Union for Conservation of Nature

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### ABOUT S.E.A. AQUARIUM

Opened in November 2012, S.E.A. Aquarium at Resorts World Sentosa is one of the world’s largest aquariums home to more than 100,000 marine animals from across 1,000 species. Featuring more than 50 diverse habitats, S.E.A. Aquarium exhibits close to 80 threatened species including the manta ray, Clarion angelfish and a variety of beautiful corals that mirror a pristine aquatic environment. Through interactive programmes, up-close animal encounters and immersive learning journeys, S.E.A. Aquarium aims to inspire visitors to protect the world’s oceans.

S.E.A. Aquarium collaborates with local and regional partners in marine conservation projects and is accredited by the Association of Zoos & Aquariums (AZA) and World Association of Zoos and Aquariums (WAZA).

### ABOUT RESORTS WORLD SENTOSA

Resorts World Sentosa (RWS), Asia’s premium lifestyle destination resort, is located on Singapore’s resort island of Sentosa. Spanning 49 hectares, RWS is home to world-class attractions including Universal Studios Singapore, S.E.A. Aquarium, the Maritime Experiential Museum, Dolphin Island and Adventure Cove Waterpark. Complementing the adventure and adrenaline of its theme parks and attractions are six unique luxury hotels, the world-class Resorts World Convention Centre, a casino and the Asian flagship of a world-renowned destination spa. RWS offers award-winning dining experiences and exciting cuisine from around the world across its many renowned celebrity chef restaurants, establishing itself as a key player in Singapore’s vibrant and diverse dining scene and a leading gourmet destination in Asia for epicureans. The integrated resort also offers world-class entertainment, from original resident productions to concerts and public shows such as Crane Dance and Lake of Dreams. RWS has been named “Best Integrated Resort” since 2011 for eight consecutive years at the TTG Travel Awards which recognises the best of Asia-Pacific’s travel industry.

RWS is wholly owned by Genting Singapore, a company of the Genting Group. For more information, please visit [www.rwsentosa.com](http://www.rwsentosa.com).

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#### Note to Editors

1. Photos and video of the manta rays can be downloaded from <https://app.box.com/v/SEAMantaRay>
2. All photos and video are to be attributed to **Resorts World Sentosa**




## APPENDIX A - FACTSHEET

### Did You Know?

- Reef manta rays (*Mobula alfredi*) are the second largest species of ray, with a wingspan of 3 to 3.5 metres.
- Each manta ray has a unique spot pattern just like human finger prints.
- Contrary to popular belief, manta rays do not have barbs in their tails.
- Manta rays belong to the family of sharks and rays.
- Although manta rays are one of the largest marine species, they feed mainly on small zooplankton like krill.

### Enrichment for the Well-Being of Manta Rays

- Animal enrichment programmes are designed to promote the manta rays' mental and physical well-being.
- A variety of operant conditioning and enrichment sessions, from providing visual stimuli to test their ability in recognising shapes, to feeding at the water's surface, are used for the rays' enrichment.
- The enrichment programmes allow aquarists to conduct physical and health checks on the rays safely and easily.

		
<p><b>STEP 1</b></p> <p>An aquarist executes the <b>“Cue-Action-Bridge-Reinforce”</b> (CABR) method, where he raises his hands as a visual cue to M1 to approach him. Aquarists previously donned specially customised suits with different patterns such as stripes and spots. It is believed that manta rays can recognise different visual signs and aquarists conditioned the mantas to associate these patterns with food.</p>	<p><b>STEPS 2 &amp; 3</b></p> <p>After M1 approaches the aquarist (<b>“Action”</b>), the manta ray receives a gentle tap on his cephalic lobe (<b>“Bridge”</b>), indicating that it is a job well done.</p>	<p><b>STEP 4</b></p> <p>The final step in the CABR method is <b>“Reinforce”</b>. The aquarist is seen pumping food directly into M3’s mouth. Manta rays are positively reinforced with feed when they successfully complete the desired action.</p>

## Getting to know S.E.A. Aquarium's Three Male Manta Rays



**M1**

Has a black stripe on his underbelly

Friendly and curious, M1 is usually the first to approach aquarists. He can also be found somersaulting underwater.



**M2**

Almost fully black with a white patch on his underbelly

The largest amongst the three rays, M2 is independent and prefers exploring the habitat on his own.



**M3**

Bears a heart-shaped mark on his underbelly

A docile manta, M3 loves twirling around aquarists during feeding time.

