





# PHOTO GALLERY

All photographs in this section are provided by authors of papers in our scientific journals and are used by permission. All copyrights reserved.

## CONVERSATIONS UNDER THE CANOPY: AGGREGATING JUVENILE MANGROVE WHIPRAYS ACTIVELY PRODUCE SOUND

J. Javier Delgado Esteban, Joni Pini-Fitzsimmons , and Lachlan C. Fetterplace 

### Study Description

New evidence from Magnetic Island on the Great Barrier Reef, Australia, shows that the mangrove whipray (*Urogymnus granulatus*) can actively produce sounds. Juvenile mangrove whiprays appear to make loud clicking noises as an agonistic display, either to warn off and startle predators or to signal to other nearby juveniles to aggregate in defense. Though it is clear that elasmobranchs (sharks, rays, and skates) can hear and respond to sounds in various ways, until now, there have been no confirmed examples of active sound production by this group in the wild.



Photo 1. In the Great Barrier Reef marine park at Geoffrey Bay, Magnetic Island (Australia), a colony of ~20 juvenile mangrove whiprays (*Urogymnus granulatus*), take refuge among the roots and trunks of partly submerged gray mangroves (*Avicennia marina* subsp. *Australasica*, *A. marina* subsp. *eucalyptifolia*) and red mangroves (*Rhizophora stylosa*). The rays use the dense mangroves, grouping behavior, and partial burial (hiding) as means of protection against predators during high tide. New evidence suggests that they may also use sound as a warning and potentially as a signal to aggregate in the presence of potential danger. Photo credit: José Javier Delgado Esteban. Whale Nation Studio 2018–2023.



Photo 2. At high tide in the intertidal area of Geoffrey Bay, a pair of juvenile mangrove whiprays slowly glide across the substrate under the shade of a red mangrove tree. While among the mangrove roots, juvenile mangrove whiprays are rarely found in solus. Photo credit: José Javier Delgado Esteban. Whale Nation Studio 2018–2023.



Photo 3. A group of five juvenile mangrove whiprays tightens their formation after the photographer and biologist José Javier Delgado Esteban approaches them from behind a partly submerged red mangrove tree. This is a typical response to potential danger. Photo credit: José Javier Delgado Esteban. Whale Nation Studio 2018–2023.



Photo 4. Juvenile mangrove whiprays displaying a typical high tide group overlapping behavior. Photo credit: José Javier Delgado Esteban. Whale Nation Studio 2018–2023.



Photo 5. Shortly, after a Juvenile mangrove whipray produces loud clicking sounds in response to the approach of photographer José Javier Delgado Esteban, more rays move in and aggregate on a rock among the mangroves. Photo credit: José Javier Delgado Esteban. Whale Nation Studio 2018–2023.

These photographs illustrate the article “Evidence of sound production in wild stingrays” by Lachlan C. Fetterplace, J. Javier Delgado Esteban, Joni Pini-Fitzsimmons, John Gaskell, and Barbara E. Wueringer, published in *Ecology*. <https://doi.org/10.1002/ecy.3812>.