

Do Guam mantas plan moon parties?

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This shows Guam mantas (*Manta alfredi*) congregating to feed on fish spawn.
Credit: Julie Hartup

Several of Hartup's paddler and free diving friends told her about seeing mantas congregating purposefully in an area where surgeonfish were spawning. Since they were able to give her an exact date, Julie was able to calculate the moon phase, which is important as many fish synchronize their spawning with the moon. Using this information she predicted when the spawning event would occur that upcoming year and was there to witness a shoal of spawning surgeonfish accompanied by a

fever of mantas.

Hartup's research findings not only highlight important information about mantas, but also reveal predictable spawning aggregations (SPAGs) for three important reef dwellers: *Acanthurus triostegus*, *Acanthurus gutattus*, *Acanthurus lineatus*. These surgeonfish react to the presence of mantas by trying to evade them.

As is often the case with basic research, many more questions evolve out of finding a few answers. "The mantas come in patterns. Are they herding the [spawning](#) fish? Is there cooperative behavior? How do the mantas know to come? Mantas are thought to be singular except for feeding or visiting cleaning station. Are they really singular or more social than we know? These are some of the questions I really want to investigate," says Hartup.

What science does know about mantas is that they live 40 to 50 years and are late to mature. They usually have only 1 pup every 2 to 5 years, which takes 13 months to develop and comes out rolled up like a burrito. There is no parental care, so the pups navigate life without motherly guidance. No one knows where mantas have their young.

"I believe mantas must have a remarkable sensory system. Their cerebellum and frontal lobes are quite large so they are naturally curious and will check out humans in their vicinity," explains Hartup. Through direct observation, photographs and videos she has documented 41 individuals on Guam, but there is a massive lack of information about the lives of mantas in Micronesia.

In 2008 the Yap state government passed Law No. 7-36 which designates " . . . all the internal and territorial waters of the State of Yap are hereby established as an official sanctuary for manta rays." Hartup's research has been tapped by the Yap government to develop an effective

management plan for the protection of the mantas in Yap. She has been collecting data on Yap's mantas for several years: "By understanding the lives of Micronesia's mantas, we'll know where to start protecting them." Hartup wants to document them before they are lost to the threats of human encroachment or habitat degradation.

Provided by University of Guam

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