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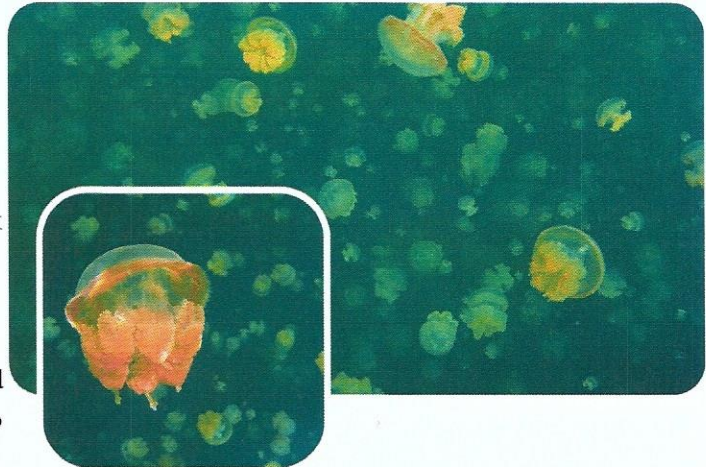
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JOINT PRESS RELEASE

Koror State Government &
Coral Reef Research Foundation

*Current State of the Golden Jellyfish at Ongeim L'Tketau,
Jellyfish Lake, Koror State Rock Islands Southern Lagoon
(RISL)*

Based on continued research and monitoring by our partner, Coral Reef Research Foundation (CRRF) since 1999 of Ongeim L'Tketau Jellyfish Lake, which is world-renowned for millions of a unique subspecies of [MP1] [K2] Golden jellyfish (*Mastigias papua etpisoni*) in the Koror State Rock Islands Southern Lagoon (RISL), there has been a marked and gradual decrease of the Golden jellyfish numbers since October of last year (2021). Recent data from July of this year indicated a sharp decline in the golden *Mastigias* numbers to ~56,000 (10% of April 2022 estimates).



This decline has been consistent with the rise in the lake's water temperature. A follow-up sampling was done on August, 24th 2022, indicating the average lake water temperature (0-12m) was consistently above the 31.5°C threshold, or limit, for successful Golden jellyfish reproduction. The lake has become increasingly stratified in the upper oxygenated layer, with a high temperature of 33.82°C, or 92.87°F, at 6 meters depth. The continued decline in the golden *Mastigias* numbers between April and July/August 2022, to ~34,000, is attributed to the warm lake temperature, as seen in previous years.

Palau has been in a mild – moderate La Niña phase for more than one year. This generally results in warmer water temperatures and higher rainfall than on average. The lack of strong monsoon southwest winds this summer, also possibly due to the La Niña, allows for stronger stratification of the water in Jellyfish Lake, trapping the heat at 6-7 m depth. Without strong storms with winds that can mix the upper layer of the lake to cool the water, the lake will remain warmer than average and it will most likely continue to affect the *Mastigias* population. At this time, most of the Golden jellies are >12cm diameter with minimal production of baby jellyfish to replenish the aging population at its normal rate. It should be noted that this is not the first time that the golden *Mastigias* jellyfish have declined in numbers to literally non-existent at this site. In 1999 and 2016-17, the golden *Mastigias* dwindled from their population in the millions to nearly zero due to similar circumstances.

The Golden jellyfish disappearance is from natural causes, resulting from the lake being sensitive to El Niño and La Niña weather patterns. In this case, it is the La Niña that is influencing the atmospheric circulation and sea-surface patterns, altering the periodicity of wind streams, rainstorms, and or storm tracks[D1] . The lack of strong SW monsoon winds have contributed to the lake's heating, winds that are necessary to adequately cool the water and decrease the subsurface temperature in Jellyfish Lake, and the surrounding lagoon to a degree that would be enough to allow for the normal reproduction of the golden Mastigias. In short, this weather pattern is causing the temperature of the water in the lake to be too warm for the normal reproduction and survival rate of the golden Mastigias jellyfish.



According to NOAA Climate Predictions, it is looking very likely that the long-predicted third consecutive La Niña period will continue through September–December 2022, and possibly even through January 2023. Since weather patterns can be projected for months in advance, we are hopeful, and will anticipate that by February 2023, we will start seeing improved weather patterns and sea temperatures that can aid the recovery and reproduction of the Golden jellyfish towards higher numbers as they were in 2021 and previous years.

Close monitoring of Jellyfish Lake further highlights the presence of an adult population of Moon jellyfish, which are not affected by the current warm temperatures and are seemingly showing more resilience. Snorkelers have been enjoying the presence of the majestic Moon jellies in the absence of the normal large population of the golden Mastigias jellyfish in recent months, and the lake continues to be a memorable experience for visitors to the Koror State Rock Islands Southern Lagoon. It remains open to visitors, highlighting the Moon jellies as we continue to closely monitor for the return of the golden Mastigias jellyfish to its normal population. Updates will be provided to the public as new data becomes available through our partners at Coral Reef Research Foundation.

Thank you.

If you should have any questions, you may contact the KSG Department of Conservation and Law Enforcement (DCLE) at 488-4001 during normal business hours, and speak with either Ms. Dora Lee Benhart or Director Jennifer S. Olegeriil.

Eyos Rudimch
Governor, Koror State

Patrick L. Colin, PhD., Director
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