



Laguna San Ignacio Ecosystem Science Program

A Project of the Ocean Foundation in Baja California Sur, Mexico

Congratulations 2021 Graduates!

We are pleased to announce that three of our gray whale researchers completed their Master's Degrees this past month at the Universidad Autónoma de Baja California Sur, La Paz, Baja California Sur, Mexico.

For the past three winters **Floryser Ronzón Contreras** has documented the declining body



condition of gray whales in Laguna San Ignacio, and produced papers analyzing the health of whales that have been submitted to the Scientific Committee of the International Whaling Commission, and to the Society for Marine Mammalogy's 24th Biennial Conference on the Biology of Marine Mammals. Her research thesis is entitled the "Evaluación de la condición corporal de la ballena gris (*Eschrichtius robustus*) in Laguna San Ignacio y el complejo Lagunar Bahía Magdalena (2018-2020)," (*Evaluation of the body condition of the gray whale in Laguna San Ignacio and Bahía Magdalena from 2018-2020*).

For her thesis research **Yessica Brau Ibarra** took on the challenging task of interpreting the historical gray whale abundance data from Laguna San Ignacio in the presence of variable climate changes in the North Pacific Ocean. Her research included comparing the number of gray whales and gray whale calves observed in the lagoon during winters with changes in ocean temperature and primary food production along the whales' North American migratory routes and the seasonal sea ice coverage of their primary Arctic and sub-Arctic feeding grounds. Her research thesis is entitled the "Cambios históricos en la presencia de ballena gris (*Eschrichtius robustus*) en Laguna San Ignacio en respuesta a la variabilidad climática del Pacífico," (*Historical changes in gray whale abundance in Laguna San Ignacio in response to climate changes in the North Pacific*).



Fabian Missael Rodríguez González applied his skills as a UAV-drone pilot to monitor gray whales, especially mothers with calves, that visited Laguna San Ignacio during the winter. Photogrammetry from drones has been used to estimate the decrease in the weight/mass of



of females as they nurse their calves, and the resulting growth of their calves each winter. This research methodology has also allowed the precise documentation of the body condition of gray whales that occupy Laguna San Ignacio in winter months, and formed the basis of a 2021 publication that suggested a link between body condition in the winter breeding grounds and the Unusual Mortality Event (UME) that has affected gray whale survival

throughout their range. Fabian's research thesis is entitled the "Evaluación de la condición corporal de ballena gris (*Eschrichtius robustus*) utilizando fotogrametría aérea en Laguna San Ignacio, Baja California Sur, Mexico," (*Evaluation of gray whale body condition utilizing photogrammetry from UAV-drones in Laguna San Ignacio, Baja California Sur, Mexico*).

We extend our sincere congratulations for the accomplishments of these 2021 graduates, and thank them for their dedication to research that teaches us more and more about the natural history and lives of the gray whales.

We encourage you to let our graduates and university researchers know that you also appreciate their work by becoming a supporter of the Laguna San Ignacio gray whale research program. Please consider a monthly recurring donation to support our gray whale researchers in Baja California. You may make a safe online donation by visiting our website at:

<https://www.sanignaciograywhales.org/donate/>

