GRAY WHALE RESEARCH IN MEXICO

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Friendly whales: Why do we need best practices for their observation?

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Abstract

Whale-watching tourism is rapidly growing around the world. In Mexico, gray whales (*Eschrichtius robustus*) often display "friendly" or "curious" behavior toward whale-watching boats in winter aggregation and breeding areas in Baja California Sur, Mexico. After 30 years of research on this species, we have observed that this behavior may be attributed to several factors, such as the absence of hunting and human harassment, responsible management, and other conditions in the observation areas. However, often increasing pressure from tourists seeking to touch or kiss the whales has altered the dynamics of these activities, placing pressure on operators and raising concerns about disturbance to the whales. In this article, we emphasize the importance of empathy toward the whales' natural requirements and the need for responsible tourism practices, focusing on the overall experience while reducing the expectation of direct contact. Our goal is to promote better practices that support the balance between tourism interests and the well-being of the whales. To this purpose, we propose guidelines that could enhance the welfare of gray whales during their winter breeding season while meeting the demands of tourism.

Keywords: Gray whale, friendly whales, whale watching, good practices

Why are gray whales “friendly” and “curious” to whale watchers?

We are often asked by tourists and tourism service providers: "Why are gray whales (*Eschrichtius robustus*) 'friendly' or 'curious' to the people watching them from the small boats used for this activity? Why do they swim up to our boat and allow us to touch them? Why do female whales bring their calves to our boat to be petted and rubbed by whale watchers?"

The short answer is “we don’t know,” because we are not gray whales and will never fully understand the whales’ interest in approaching observation or sighting vessels. However, after 30 years and thousands of hours observing whale behavior around whale-watching boats, we can share our reflections on the special circumstances that contribute to the “curious” behavior of gray whales in the wintering lagoons in Baja California Sur, Mexico (Fig. 1).

Figure 1. *Classic gray whale sighting in San Ignacio Lagoon, BCS, Mexico. Photograph by Steven Swartz.*

Gray whales in the Eastern North Pacific are the only species in the family Eschrichtiidae which are characterized by a maximum size of 12-14 m which is attained after they reach reproductive age at 7 to 9 years. Unlike other baleen or Mysticeti whales, gray whales feed primarily on invertebrates which are found in sediments on the ocean bottom along the continental shelf areas of North America and the Asian Arctic.

The feeding season for the gray whale occurs in high latitude areas of the North Pacific and Arctic seas during the summer months when the winter sea ice retreats and lengthening daylight supports abundant seasonal primary production blooms. Because gray whales do not feed appreciably during their winter reproductive season, by late fall they must have stored sufficient energy reserves in their blubber and body fat to complete their fall migration south along the continental shelf along the northeastern Pacific coast. Gray whales can migrate more than 10,000 km from their feeding areas to the warmer more protected water in the bays and lagoons along the Pacific coast of the Baja California peninsula. These areas are used for mating,

giving birth and caring for their young during the winter (January to March) (Jones and Swartz, 2009).

The three main winter aggregation areas for the gray whales breeding and reproduction are from north to south: Laguna Ojo de Liebre (OLO), Laguna San Ignacio (LSI) and the Bahía Magdalena - Bahía Almejas lagoon complex (BMAG). BMAG is sub-regionalized into three zones, Canal Santo Domingo, Bahía Magdalena and Bahía Almejas (Salvadeo *et al*., 2015) (Fig. 2).

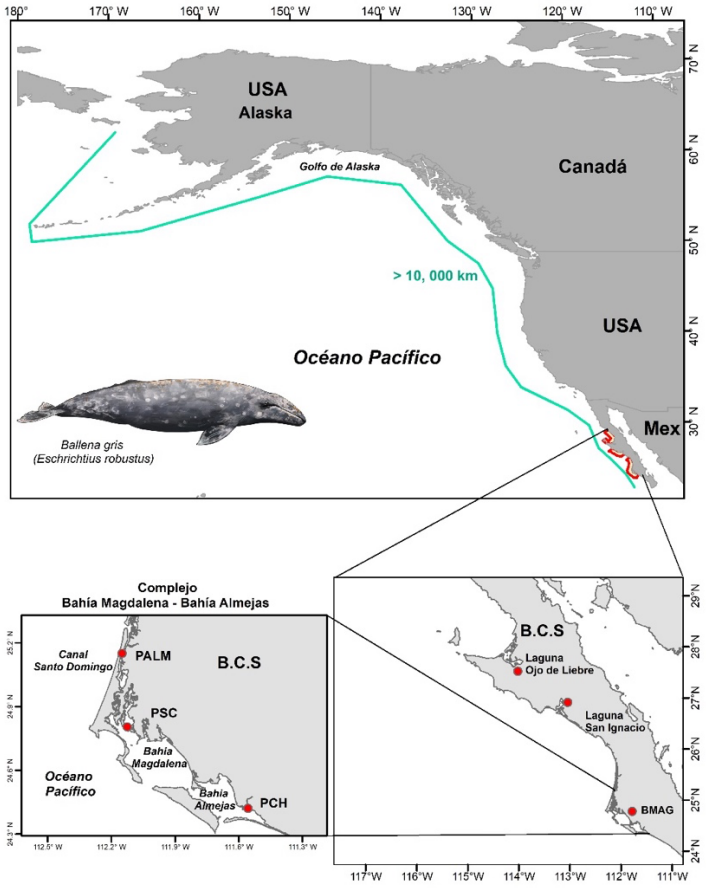

Figure 2. *Migration route and main winter aggregation and breeding areas of the Eastern North Pacific gray whales in Baja California Sur (BCS), Mexico. Green line: example of the coastal migratory route. Subregions of the Bahía Magdalena – Bahía Almejas Complex: PALM (Puerto Adolfo López Mateos), PSC (Puerto San Carlos), PCH (Puerto Chale). Prepared by the authors.*

Our initial investigations of the gray whales in their wintering areas began at LSI in the late 1970s, just as whale watching tourism was beginning to develop. This coastal lagoon is in the southernmost portion of the El Vizcaíno Biosphere Reserve (Gómez-Gallardo *et al*., 2023). It is the smallest of the three main lagoons and winter aggregation areas mentioned above. It is relatively shallow with sandy barrier islands at its entrance that regulate the flow of water in and out with the diurnal tidal cycles.

While researching whales at LSI we first encountered “curious” or “friendly” gray whales in the late 1970s. Initially, these events were rare, but within a few years gray whales approaching and making physical contact with whale-watching vessels and their passengers became a common occurrence during the winter reproductive season; as if as whale-watching tourism increased, so did the whales’ curiosity about the whale-watchers. We suspect that this behavior was shaped by many factors occurring simultaneously in the coastal waters of the Baja California Peninsula.

First, commercial hunting of gray whales in the lagoons of Baja California was common in the 19th century, when whale oil from blubber was the main fuel for lighting North American communities, driving several whale species to near extinction. However, commercial hunting of gray whales ended in the late 1870s, a hundred years before the start of whale watching tourism. We have now learned through analysis of photo identification data that gray whales can live between 50 and 60 years (Martinez *et al*., 2019). Therefore, any gray whales that were hunted by whalers around Baja California would be over 100 years old, and they probably do not live that long. This suggests to us that the current generation of gray whales has not been hunted or harassed by humans, and they have no conditioned fear of the small whale watching boats.

Second, today the wintering lagoon areas are non-threatening environments for whales, as their main predators the Killer Whales or "Orcas" rarely enter the lagoons (Stan, 2022). In addition, whale watching and fishing vessels generally do not pursue or harass whales in these areas. LSI is within the El Vizcaíno Biosphere Reserve, where human activities are managed to minimize disturbance to whales and to maintain the lagoon as a marine wildlife reserve. Whale-watching tourism activity is only permitted in a specific “zone” closest to the ocean entrance,

while the rest of the lagoon (approximately 2/3 of the total area) remains a “whale-watching-free” sanctuary (Gómez-Gallardo *et al*., 2023).

Whale-watching tourism operators in LSI have implemented "best practice" agreements for observing the whales, which are additional activities to those already established in NOM-131-SEMARNAT-2010 (DOF, 2011). For example, in LSI the number of vessels operating in the "whale-watching zone" at a given time is limited to avoid overcrowding in the observation area, and each excursion is limited to 90 minutes so that no service operator monopolizes the area. In contrast, in Magdalena Bay (the southernmost breeding area), there are no restrictions and excursions can last from 1 hour to 4 hours, depending on the subregion (Fig. 2). In LSI it is important that boat operators do not chase or harass whales, rather they simply position their boat in areas where gray whales are present and wait for the whales to approach if they choose to show interest in the whale-watching boat. Although most gray whales ignore the boats because they are busy with courtship, mating and caring for their young, some of them are interested, and perhaps curious enough, to approach a whale-watching boat for a good look.

Third, due to limited visibility underwater, all whales and dolphins (cetaceans) have evolved to use underwater sound, which travels well underwater, to explore their environment and communicate with each other (Berta *et al*., 2015). The sounds emitted by gray whales are low-frequency, and similar to the sounds emitted by outboard motors on whale-watching boats. Whale-watching boats are made of fiberglass and act as acoustic speakers that transmit the low-frequency vibrations of the outboard motor into the water, and whales hear these sounds and know when boats are nearby. Like all mammals, gray whales are curious about their environment, especially when they are young, and they constantly scan their surroundings to learn what is safe and what should be avoided. It is therefore not unreasonable to think that gray whales hear low-frequency sounds coming from whale-watching vessels and not being afraid of them, will approach to investigate these floating objects that emit low-frequency “buzzing” sounds (Moore and Clarke, 2002).

In addition to using sound to hear and to navigate in conditions of low visibility underwater, cetaceans use their sense of touch to communicate from birth by rubbing and touching each other, which is thought to facilitate social bonding and reinforce companionship

between mothers and their calves (Dudzinski *et al*., 2009). Imagine a newborn calf of approximately 4 m in length that cannot see its mother, who is more than 3 times its size, due to limited visibility in the water. The mother whale is simply a large, dark object that emits low-frequency sound vibrations and provides the calf with food, companionship and protection. So newborn calves are in constant physical contact with their mothers, rubbing and rolling on them (Fig. 3). As the calves mature in the lagoon, they meet other whales that were born in the same season and interact in groups before leaving the lagoon in spring and beginning their first migration north with their mothers. It is reasonable to conclude that after approaching a boat full of whale watchers, rubbing and petting by humans further reinforces the whales' approach behavior, for calves and adults.

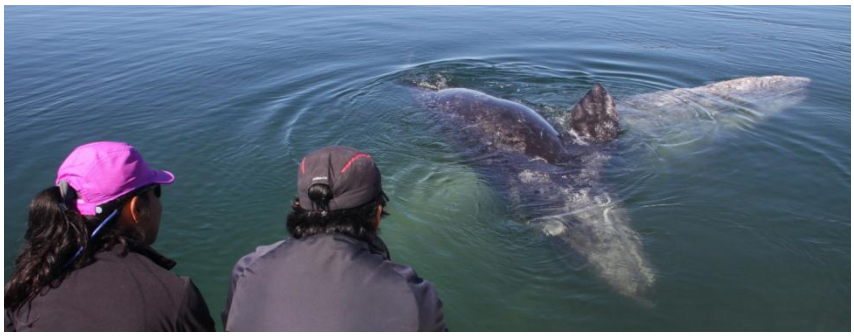

Figure 3. *Tourists watch a gray whale calf rub against its mother in San Ignacio Lagoon.*

Photo by Steven Swartz.

Why do we need “best practices” for whale watching ecotourism?

"When does whale watching become harassment that interferes with whales' essential reproductive behavior?"

When we began gray whale research in the coastal lagoons of Baja California Sur in the late 1970s and early 1980s, tourists were whale-watching enthusiasts but also interested in many aspects of the lagoon, including birds, reptiles, mangroves, and the desert. As time progressed and "friendly" whale encounters became more frequent, visitors' interests began to shift to "I must touch or kiss a gray whale, or my trip will be a failure."

In our view, the tourist's focus on “touching a whale" reduces the richness of their overall experience in the lagoon and puts undue pressure on the tour operators to ensure that the tourist's intention and desire are met. Although they feel this pressure, most operators will maintain responsible behavior around whales, but it becomes very difficult, especially during the first and last weeks of the whales' winter reproductive season when there are few whales in the lagoons. Fewer whales during these periods often results in whale-watching boat operators pointing out the location of "friendly" whales to the next boat of whale-watchers eager to see and perhaps touch a whale, and then the next, and another, and another... creating a continuous presence of boats around a few whales with no "non-watching" intervals.

The fact is that each year gray whales make a total migration of more than 10,000 kilometers to carry out vital activities such as reproduction, giving birth and nursing the new calves that will also make the spring migration back to the feeding areas. During the winter season of more than four months adult whales are fasting living off the energy they obtained during the summer and stored in their blubber and body fat. For this reason, the continuous presence of whale watching vessels can become a constant energy drain and distraction from their regular reproductive behavior, giving rise to a source of harassment that interferes with their need for mating, resting and nursing their calves.

It is worth noting that although there are sites such as LSI where there is a notable interest in carrying out ecological sound whale-watching practices, their guidelines were established several decades ago and could be outdated or difficult to comply with in the face of tourism that is constantly growing along with the whale-watchers' overwhelming interest in having close or, if possible, direct contact with whales. In other places around the world, harassment by tourists has been identified as a primary stimulus for changes in whale behavior, habitat use and migratory destinations (Bejder *et al*., 2006; Lusseau, 2014). Therefore, such harassment from whale-watching tourism can cause gray whales to modify their natural behavior and avoid or abandon such areas, particularly in winter aggregation areas where a lack of compliance with whale-watching guidelines has been reported (García-Castañeda *et al*., 2024).

We believe that fostering empathy for the needs of the whales among tourists, whale-watching boat operators and companies offering whale watching tours, is a necessary program

component that will instill an awareness of the whales' needs (Marcías, 2020). We suggest that whale-watching providers need to stress that the whales are sentient beings that have come to the wintering lagoons to successfully complete their reproductive natural history, and that close encounters with whales are not guaranteed, but depend entirely on the whales if they choose to approach and make contact. Furthermore, interacting with whales should not be the main goal of whale-watchers, but instead whale-watching tourists should be encouraged to enjoy and appreciate the entire experience of seeing whales in their natural habitat, whether or not contact with a “friendly” or “curious” whale occurs.

In a recent study, we were able to see that tourists in the Bahía Magdalena – Bahía Almejas complex felt more satisfied with the whale-watching experience if they received more information from tourist companies about whale behavior and their natural habitat requirements (García-Castañeda *et al*., 2024). Furthermore, rather than putting pressure on the whale-watching boat operator to seek an approach or contact with the whales, compliance with official guidelines (NOM-131-SEMARNAT-2010) could be improved by limiting approaches to the whales so as to not interrupt the natural behavior of the whales, establishing a limit to the maximum number of whale-watching boats observing the same whales at the same time, establishing a time limit for encounters with gray whales, and requiring whale-watching boats to move at slow speeds (*e.g.,* 4 to 10 km/h) around the whales (García-Castañeda *et al*., 2024).

We also believe that it would be very important to go beyond official regulations towards "good practices" for whale watching by supporting equitable access to the whales for all whale-watching boat operators and not allowing a few operators to monopolize the whales. It is also important to provide periods of "no whale-watching time" to allow the whales to carry out their natural behaviors and to rest and nurse their calves. Such measures would be especially important to maintain the health of the reproducing whales when their numbers are low and the tourist's expectation of an encounter with a "friendly" or "curious" whale is high. To this end, we propose establishing guidelines beyond Mexican regulations that would:

1) Reduce the number of whale-watching boats that remain near a whale or whale groups at the same time from four boats per group of whales to one or two whale-watching boats when the whales approach and display "friendly" behavior. In this way, if the whales have a natural

motivation to approach, there would only be two involved whale-watching boats, which would generate less competition between operators and thus protect the whales from disturbance and undue harassment.

2) Reduce the maximum duration of each excursion and the observation time. Currently, official regulations state that the maximum observation time for a whale or group of whales is 30 minutes, which is sufficient time for all whale-watching tourists to have a complete and close-up view of the whales, "friendly" or otherwise. If the whales become overstimulated or disturbed by an encounter with a whale-watching boat, they are able to terminate the encounter and leave the area provided they are not continuously followed by the whale-watching boats.

3) Establish specific areas where whale-watching tourism is permitted. By having a no-observation zone, whales could find places or refuges where they can carry out their natural activities such as mating, nursing, and resting without being distracted or disturbed by eco-tourist boats.

4) Increase dialogue between whale-watching tourism companies, their boat operators and the local community, by example, in workshops and public meetings. This dialogue would promote the development and implementation of protocols for responsible whale-watching for the benefit of the whales as well as the whale-watchers, and that are specifically designed according to the characteristics and needs of each community which would facilitate their adoption and result in meaningful conservation outcomes.

We believe these guidelines would be reasonable features of “good practices” for whale watching eco-tourism. Their implementation would also emphasize the whale-watching tourism companies’ awareness of whales' needs and requirements and demonstrate to their clients a sensitivity to minimizing whale disturbance and encouraging their conservation. Adding advertising campaigns where tourism operators focus more on the guests’ desire to learn more about whales and lagoon environments during their excursions could alleviate the visitors’ expectation of “touching a whale” as the main goal of their visit. This approach would reduce competitive pressure among boat operators and decrease potential harassment of the whales.

We like to say that “it doesn’t matter if you touch a gray whale, but it does matter if the gray whale touches you, in your heart.” We hope that this article helps to highlight the importance of better understanding gray whale behavior and encouraging humans to empathize with the whales' natural needs. It is critical that visitation to these winter homes of gray whales is carried out responsibly and without causing disturbance to the whales during their winter reproductive season. We believe that responsibly managed tourism has great potential to educate and enlist whale-watchers in support of marine life conservation. It is essential that tourism management recognizes and addresses the needs of both gray whales during their winter stay in these areas and the whale-watching tourists who come to see these impressive marine mammals.

References

1. Berta, A., Sumich, J., and Kovacs, K.M. (2015). Marine Mammals Evolutionary Biology, Third Edition: Chapter 11. Academic Press, Inc., San Diego. 726 pp.https://doi.org/10.1016/C2011-0-07338-6
2. Bejder L., Samuels A., Whitehead H. and Wales N. (2006). Interpreting short-term behavioral responses to disturbance within a longitudinal perspective. Anim. Behave. 72, 1149–1158. https://doi.org/10.1016/j.anbehav.2006.04.003
3. Dudzinski, K.M., Thomas, J.A., & Gregg, J.D. (2009). “Communication in marine mammals,” *In:* Encyclopedia of Marine Mammals, 2nd Edn., *eds.* WF Perrin, B. Würsig, and JGM Thewissen (Burlington, MA: Academic Press), 260–269. https://doi.org/10.1016/B978-0-12-373553-9.X0001-6
4. DOF. (2011). Mexican Official Standard NOM-131-SEMARNAT-2010. 32.-_NORMA_OFICIAL_MEXICANA_NOM-131-SEMARNAT-2010.pdf (https://www.gob.mx/profepa/documentos/norma-oficial-mexicana-nom-131-semarnat-2010)
5. García-Castañeda, O., Viloria-Gómora, L., Ávila-Foucat, VS, Vega-Peña, EV, Pardo, MA, Quintero-Venegas, GJ, Urbán R, J., Swartz, S., and Martínez- Meyer, E. (2024). Climate change stands as the new challenge for whale watching and North Pacific gray whales (*Eschrichtius robustus*) in Bahia Magdalena, Mexico, after their recovery from overexploitation. Frontiers in Conservation Science, 5. https://doi.org/10.3389/fcosc.2024.1397204

6. Gómez-Gallardo Unzueta, Alejandro, Swartz, S.L. and Martínez Aguilar, S. (2023). Gray whale watching in Laguna San Ignacio: a story worth spreading. Panorama. UABCS. https://www.uabcs.mx/documentos/revistaPanorama/Panorama%20digital%20revista%20No%207.pdf
7. Jones, M.L., & Swartz, S.L. (2009). The gray whales (*Eschrichtius robustus*). Pp. 503-511. In: WF Perrin, B. Wursig and JGM Thewissen (*Eds*): Encyclopedia of Marine Mammals, 2nd ed. Academic Press, San Diego. 1315 pp.https://doi.org/10.1016/B978-0-12-373553-9.X0001-6
8. Lusseau, David. (2014). Ecological constraints and the propensity for population consequences of whale-watching disturbances. *In*: Whale-watching: SustainableTourism and Ecological Management, eds J. Higham, L. Bejder and R. Williams. Published by Cambridge University Press.
9. Marcías, ML. (2020). Ecotourism and Conservation: Effect of activities with charismatic species of Baja California Sur on the environmental awareness of tourists. Master's thesis. Autonomous University of Baja California Sur. Mexico.
10. Martinez, S.A., Swartz, S.L., Urban, J.R., Gómez-Gallardo, A., and Rosales-Nanduca, H. (2019). The Age of Living Female Gray Whales (*Eschrichtius robustus*), Estimated from Photographic Identification Data. Report published online: Laguna San Ignacio Ecosystem Science Program, https://www.graywhaleresearchmexico.org/
11. Moore, S.E. and J.T. Clarke. (2002). Potential impact of offshore human activities on gray whales (*Eschrichtius robustus*). J. Cetacean Research and Management. 4(1):19–25. https://doi.org/10.47536/jcrm.v4i1.863
12. Salvadeo C.J., Gómez-Gallardo A., Nájera-Caballero M., Urbán-Ramirez J., and Lluch-Belda D. (2015). The Effect of Climate Variability on Gray Whales (*Eschrichtius robustus*) within Their Wintering Areas. PloS One 10, e0134655. https://doi.org/10.1371/journal.pone.0134655
13. Stan, J. (2022). Spotted Preying Orcas in Baja Lagoon Jeopardizing Gray Whale Survival. Science Times. .https://www.sciencetimes.com/articles/40685/20221025/spotted-preying-orcas-baja-lagoon-jeopardizing-gray-whale-survival.htm

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