

Ancient Mayan “Place of the Turtles” Copes with Modern-Day Tourism

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Akumal is a small town on the eastern coast of Mexico’s Yucatan Peninsula in the state of Quintana Roo, about 100 kilometers (62 miles) south of the well-known tourism mecca of Cancún. It was the first tourist destination in Quintana Roo, and the name Akumal means “place of the turtles” in the Mayan language. Akumal lives up to its name, not only as a nesting site for four species of turtles, but also as a foraging ground for a sizable population of juvenile green and loggerhead sea turtles. Akumal has gained fame as one of the few places in Quintana Roo, if not in all of Mexico, where observing sea turtles in their natural habitat is guaranteed. Tourists flock to Akumal by the tens of thousands annually. As a result, local sea turtle populations and marine ecosystems are now threatened by the impacts of too much visitation.

Akumal has a permanent population of only 1,310 people who depend on tourism for their livelihoods. The main in-water tourism attractions are sport fishing, SCUBA diving, and snorkeling. Snorkeling attracts by far the greatest number of tourists and has experienced the greatest growth through the years. Akumal Bay is relatively small—just over 2 hectares (5 acres)—and not only is the presence of 33 small-scale tourism boats causing extensive physical damage to

ecosystems critical to the survival of sea turtles, such as coral reefs and seagrass beds, but it also has the potential to cause damage to the turtles themselves through boat strikes and by negatively affecting their natural behaviors.

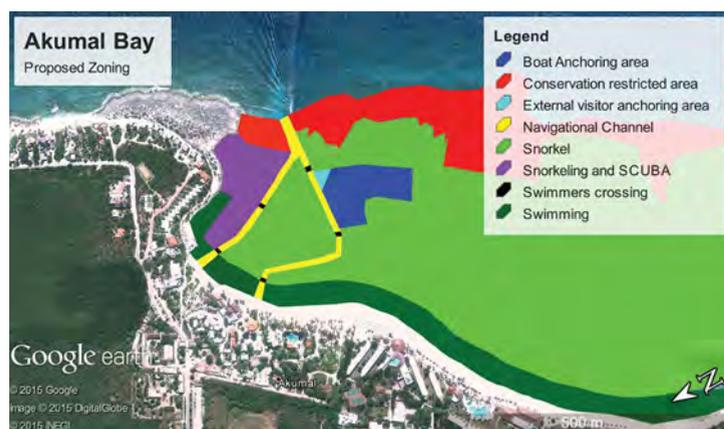
Concerns about the possible effects on turtles from increased sea turtle tourism and boat traffic in Akumal Bay are not unfounded. Research conducted in the U.S. state of Hawai’i and in Mexico’s Bahia de los Angeles in Baja California Sur suggests that turtles in those areas have, in fact, changed their behavior in response to human activities. They now feed at night rather than during the day (documented in both countries) and have changed their movements to avoid snorkelers in Hawai’i.

Concerned about the potential impacts of all this tourism on sea turtles in Akumal Bay, the nonprofit group Operation Wallacea, in collaboration with the Akumal Ecological Center, conducted a study in 2014 to determine the tourism capacity of the bay and to define best practices for sea turtle tourism overall. Researchers conducted daily monitoring over the 12-hour periods during which tourism activities took place, and they evaluated tourist behavior toward sea turtles by documenting crowd size, approaching and touching behaviors, as well as the responses by the turtles to people (evasion, stress, passivity, or feeding). A high incidence of turtle avoidance responses were observed when tourists were within a 5-meter (16.4-foot) radius of the animals, suggesting that the presence and proximity of tourists does indeed affect turtle behavior.

A parallel study carried out by the Akumal Ecological Center, El Colegio de la Frontera Sur (ECOSUR), and the U.S.A.-based organization Teens4Oceans used acoustic transmitters and found that the number of turtles leaving the bay is proportional to the increased presence of tourists. The study also found tourist behaviors such as crowding, approaching, and touching sea turtles to be common daily practices, which is not surprising given that those practices appear in the publicity photos and promotional pamphlets used to promote Akumal Bay as a tourism attraction.

These studies both indicate that the quality of the tour—for example, whether tourists are advised to observe turtles passively, at a safe distance, or are allowed or encouraged to approach and touch them—is likely to be a more important factor influencing the behavior of turtles than simply the number of tourists visiting Akumal Bay. Additional studies are now under way to help to determine the varying impacts of tourist density and tour quality on the health of the ecosystem as a whole.

It is a federal crime in Mexico to disturb the life cycle of sea turtles, yet enforcement is lax at Akumal Bay. As such, the Akumal Ecological Center has proposed a plan for snorkel tourism in the bay that aims to minimize negative environmental impacts while ensuring that local operators can continue to profit from tourism.



TOP: A map of the proposed zoning for Akumal Bay that aims to mitigate tourism’s impact on turtles. BOTTOM: A map of Akumal Bay showing the three snorkel tour paths proposed as part of new zoning measures. AT RIGHT: A snorkeler observes a green turtle in Akumal Bay. The high volume of snorkel tourists in the Bay is impacting the turtles’ natural behaviors. © AKUMAL DIVE SHOP

Current zoning allows a total area for nonextractive tourism in Akumal Bay of 284,381 square meters (340,117 square yards). Seagrass beds and coral reef formations are scattered throughout this area, and approximately 40 sea turtles inhabit the bay. If the total nonextractive-use zone is used over an eight-hour period, and a mandatory buffer of 5 square meters (6 square yards) is observed around each turtle, a maximum of 59 groups of six people can be in the area every 45 minutes. This limit would result in a total of 354 tourists in the bay at any given time, or more than 4,000 in one day, as was recorded last summer. To limit this substantial number of tourists in the bay and to reduce tourism's impact on the ecosystem, we propose the following measures:

- Each sea turtle should be observed by only one group of tourists at a time and only for a maximum of 2 minutes.
- Each group should contain no more than six tourists, with the guide located at the center of the group.
- Groups should maintain a separation distance of 5 meters (16.4 ft).
- A minimum distance of 3 meters (9.8 ft) should be maintained between a turtle and every member of the group, and the distance between group members should never exceed 1.3 meters (4.3 ft), which will always leave two-thirds of the circumference of the 3-meter radius as a potential escape path for the turtle.
- No more than three paths should be established for snorkel groups to follow (see map p. 28). This measure allows snorkel tours to go out every 30 minutes, with a maximum duration of 55 minutes each. Tours should proceed in opposite directions along these paths to minimize congestion.

When enacted, the measures above will ensure that the total number of tourists in the water at any given time will not exceed 72 and that the daily number of tourist in Akumal Bay will not exceed 540.

To establish these guidelines, a management-and-use plan must be created with the Secretary of the Environment and Natural Resources (SEMARNAT). Once in place, the plan will require all tourism operators to obtain permits. This management-and-use plan, which is currently being designed, calls for many additional actions, including the following:

- The formation of a community monitoring team by the local Federal Attorney for Environmental Protection (PROFEPA). The team will monitor and promptly denounce those in violation of the management plan.



- Ongoing training and certification of all snorkel tour guides and photographers operating in Akumal Bay.
- Obligatory use of certified local guides.
- Establishment of properly marked nautical zoning that will designate turtle observation, boating, and swimming areas.
- Establishment of schedules and strict rules for navigation in the bay, and a plan for gradually decreasing the number of vessels engaged in tourism.

The aim of any measures must be to ensure that tourism activities in Akumal Bay are safe for turtles and fragile habitats, and also assure social development for the local community. With the implementation of an effective and well-informed management-and-use plan, coupled with effective outreach, environmental education, monitoring, and research, we hope to rehabilitate the ecosystem and provide the backdrop for healthy sea turtle populations, while encouraging sustainable development within the Akumal community. ■