

Centerpiece

Whale-watch boom raising hopes in Mexico

Mexico

Arturo Mellin is wagering on whales. Once a year-round fisherman in Mexico's Pacific coast village of Barra de Potosí, he now ferries up to six tourists at a time in his outboard boat to observe the humpback whales that take up residence in local waters from December to March. "This has been one of the best years, like 2015," Mellin says of the recently concluded season. "We have a lot of whales. There are many mothers with calves."

Although fishing continues in Barra de Potosí and neighboring coastal communities, Mellin says a two-thirds reduction in the commercial catch in recent years has prompted local fishermen to try their hand at ecotourism, particularly whale watching. Mellin



Migrating humpbacks made themselves conspicuous during the recently concluded whale-watching season off Mexico's Pacific coast. (Photo by Astrid Frisch Jordán)

belongs to the Servicios Turísticos Morros de Potosí, a seven-year-old cooperative that provides boat tours in the waters off Barra de Potosí, which is located in the southern Mexican state of Guerrero. Passengers see humpbacks (*Megaptera novaeanglia*), as well as manta rays, dolphins and other marine life. Barra de Potosí also is home to a tropical lagoon, where crocodiles can be sighted, and is extraordinarily rich in bird and butterfly species.

The 33-member, ten-vessel cooperative reflects the growth of whale watching in Mexico and around the world in recent decades. Surveys by the International Fund for Animal Welfare (IFAW), a leading world wildlife conservation charity, showed that the industry expanded from US\$1.25 billion to US\$2.1 billion during the period 2001-09, and an update now being prepared by the organization is expected to record further gains. To be sure, the whale-watching growth has fueled concern that unless proper standards are applied and enforced, marine spectating could disturb and ultimately harm migrating whale populations. But experts say that when conducted

in line with strict safeguards, the activity can bring valuable benefits, key among them stronger public appreciation and support for marine conservation, and an environmentally friendly, yet economically powerful, alternative to fishing.

Servicios Turísticos Morros de Potosí serves as an encouraging example, says Katherina Audley, founder of the Whales of Guerrero Research Project (WGRP), a nonprofit that promotes eco-friendly development, marine conservation and environmental education in Guerrero and other Mexican states. Says Audley: "[The cooperative] has definitely succeeded. The tourism co-op now outnumbers the [local] fishing co-op in numbers."

For Barra de Potosí fishing families, the hunt for alternative livelihoods is a need, not a choice. Fish stocks in local waters have become so depleted that residents sometimes buy fish in Acapulco. The phenomenon is not isolated: interest in providing whale-watching tours is evident in numerous Mexican coastal communities. That's why the Whales of Guerrero Research Project has extended its work northwest along the Pacific coast to help guide whale-watching efforts in Zihuatanejo, near the international resort of Ixtapa, among other places.

In the season that concluded in March, tour participants in the region had a great deal to see. Audley calls 2018 a "baby-boom year" for the humpback. She says humpbacks visiting southern Mexico's Pacific coast hail from two North Pacific sub-groups: an endangered set of about 400 animals found in the warm feeding months off southern California but which travels as far as Central America for the winter, and a larger population that passes the feeding season between Monterey, California, and British Columbia, Canada.

For Audley and her colleagues, winter is packed with whale watching excursions, classroom education, public presentations, and photo identifications of humpbacks, which are individually recognized by color patterns on their tails. The research project trains guides in whale-watching rules drafted by Mexico's Secretariat of Environment and Natural Resources (Semarnat), instruction that has increased the number of certified whale-tour operators from 27 to 51 during the past two years, Audley says.

Semarnat regulations require that vessels must:

- remain at least 240 meters from whales if they are not certified;
- stay at least 80 meters away if the vessel is large, and at least 60 meters away if it is small;
- operate at reduced speeds of four to nine kilometers an hour (2.2 to 4.9 knots) in the vicinity of whales;
- limit whale viewing to 30 minutes;
- not allow snorkeling fishing or feeding of whales;
- not exceed four in number when observing any individual whale or pod;
- and exercise special care observing whales with calves.

Educating youth and "citizen scientists" also is central to the research project's mission. Audley says the group reaches 1,200 school children a year, teaching computer skills while encouraging future scholars of the marine sciences. Loading more than 150 kids this season onto boats where they could hear the humpbacks' famed underwater "songs" via hydrophones, the outings surpassed an annual goal of 50 young whale watchers. Additionally, high school students from Zihuatanejo and the U.S. community of Sandy, Oregon, meet online to match whale photos taken during different times of the year along their respective coasts.

Audley argues early engagement in science and ecotourism can provide constructive alternatives in Mexican states like Guer-

ro, in which the violent, illegal drug trade ensnares many young people. “As fisheries collapse, a lot of kids turn to cartel activities because that pays,” she says. “I can’t get to everybody, but I can focus on one village... For the research project, saving the oceans and its marine life goes hand-in-hand with local development. You have to heal the communities to heal the oceans.”

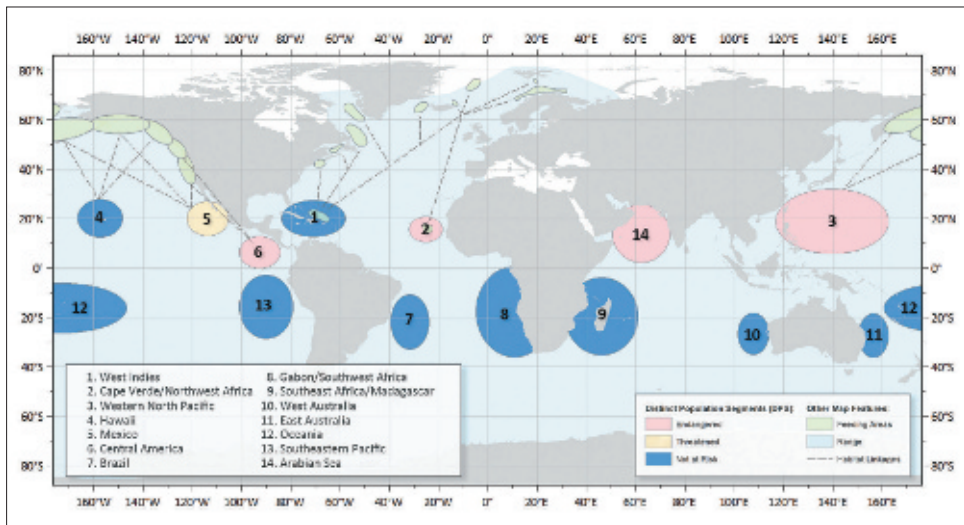
Among those reached by the project’s programming is Yocsan Albarrán, 12, a Barra de Potosí middle schooler who recently delivered a presentation on the humpback whale to a largely adult audience at Eco-Tianguis Zanka, a weekly farmers’ and artisans’ market in Zihuatanejo. “I like when they jump and show their tails,” he said after the talk. “It’s a good thing to take care of them so there will be more in the region.” The young whale enthusiast has “adopted” a newborn humpback calf he has named Violet Cabrera Solís after the family names of Yocsan and his friends.

As tracking technology advances, Violet and other whales are increasingly valued by the public as individuals rather than as an abstract, unknowable species. A website, happywhale.com, now allows anyone to post cetacean photos and—if a whale’s identity is confirmed and the animal is spotted

ers there also were treated to numerous sightings of humpbacks breaching and tail splashing. After appearing only intermittently for a period of two years, the whales were regularly spotted off the port city’s malecon, or seaside promenade, sometimes in groups of four or five.

María Azucena Macías of Bay Tours, another Puerto Vallarta water-touring company, also reported a steady pace of whale

Bay whale-watching to be in the neighborhood of US\$200 million a year. In Banderas Bay alone, the number of whale watching tourists has soared from 76,000 in 2011 to about 300,000 in 2017, Cornejo says, with the total for 2018 likely to be even higher once the final figures are tallied. He forecasts that by 2030, whale watch tours will serve 20% of the region’s visitors, who currently are estimated to number more than



Distribution and status of world humpback-whale populations. (Source: National Oceanic and Atmospheric Administration)

subsequently—monitor the whale’s travels.

Busy as whale watching along the state of Guerrero’s northern coastline can be, it’s even busier farther up the coast in Banderas Bay. The vast bay—shared by the states of Nayarit and Jalisco, where the resort city of Puerto Vallarta is located—is “the [humpback] hotspot of the Mexican Pacific,” says Mexican biologist Astrid Frisch Jordán.

Frisch, a founder of the Puerto Vallarta-based organization Ecology and Conservation of Whales (Ecobac), estimates that 500 to 700 humpbacks winter in and near Banderas Bay. This year whale watch-

ing. She says foreign tourists frequently rank whale sightings as their day’s main objective, while national clients prefer “two-for-one” packages that include activities such as visits to the Marietas Islands, which lie off Puerto Vallarta.

University of Guadalajara researchers José Luis Cornejo Ortega and Rosa María Chávez say organized whale watching in Mexico got started off the Baja Peninsula in the 1940s. Drawing on estimates made from government statistics and university surveys, Cornejo estimates the current direct and indirect economic impact of Banderas

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six million annually in the Banderas Bay region. Says Cornejo: “Every year, records are being broken.”

Underlying the forecasts is the simultaneous annual migration to Mexico of two species: whales coming to calve, and human “snowbirds” flocking from Canada and the United States to escape winter. In addition to humpbacks, cetacean visitors include gray whales, which return each year to calve in Baja Peninsula coastal waters and have spurred tourism there as well.

Experts say whale-watching and other ecotourism is benefiting from growing green consciousness among tourists. As in Guerrero, civil society organizations and individuals in the Banderas Bay region are promoting whale conservation and ecotourism. Ecobac, for instance, trains whale watching operators there and in other regions of the country in the Semarnat regulations, which it helped draft; monitors regulatory compliance on the water with the assistance of a Mexican naval officer; contributes to the expanding catalogues of photo-identified humpbacks used in scientific research; and co-sponsors a biannual environmental fair. Once certified, whale watch professionals are issued a permit by Semarnat.

Patrick Ramage, marine conservation

continued on page 8 ▶

[continued from page 7](#)

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program director for the International Fund for Animal Welfare, calls Semarnat's regulations "relatively state of the art." But Ramage, who has studied safeguards worldwide, says such rules are "meaningless if they are not adhered to, and that's true in the U.S. as well as in Mexico."

Ecobac helps the Mexican Navy and other agencies monitor compliance in Banderas Bay, which has significantly more whale-watching history and vessel traffic than Guerrero does. The group reports steady improvement in the practices of water-tour operators, but Frisch acknowledges that deviations from best practice are a "constant" concern requiring ongoing attention. Experts agree that it is crucial to know how much of the activity is too much from the whales' perspective. Cornejo believes Banderas Bay can handle greater whale-watching volume as long as regulations are observed; but he cautions that research is needed to pinpoint areas where special controls are needed.

No-go zones

Semarnat prohibited whale watching near the Marietas Islands and along a small section of Banderas Bay's northern coastline due to concentrations of mother humpbacks with calves in those areas. And Ramage points out that worries about tour impacts worldwide have prompted the International Whaling Commission to study the issue, particularly the possible disruption of whale breeding, feeding and communication.

There's also the danger of whales growing too accustomed to humans. When John Calambokidis, a biologist with the Olympia, Washington-based Cascadia Research Collective, began researching humpbacks in the 1980s, there were "almost no encounters with friendly whales," he says. But the situation had changed by the 1990s, as Calambokidis discovered one day while alone in a small rubber craft off the southern California coast. Two humpbacks circled him, then one slipped under the boat and playfully lifted him into the air again and again for more than an hour, thankfully without harming the stunned human. Says Calambokidis, laughing: "Their size is not fully appreciated."

Whale watching clearly is helping to boost knowledge of the travels of individual whales. Ecobac's roster of photo-identified humpbacks in Banderas Bay increased from 991 individuals in 2007 to 1,965 in 2013, with hundreds of other photos awaiting analysis, says Frisch. Drawing on over 20 years of humpback observations, she now recognizes some whales by sight. Among them is a big male known as El Camello, or The Camel, that has visited every year since about 1999. Like the human tourists who travel to Banderas Bay, Frisch notes, many humpbacks visit only once while others keep returning.

Experts say the North Pacific humpback population has rebounded since hunting of the species terminated in 1966. The comprehensive census known as Splash (the acronym for Structure of Populations, Levels of Abundance and Status of Humpback Whales) estimated the North Pacific humpback population at over 20,000 a decade ago, Calambokidis says.

"They've increased past that 2004-2006 period when we did that North Pacific estimate, though it has leveled off," he adds. Based on Splash, Calambokidis estimates that 4,000 to 5,000 humpbacks likely winter in Mexican waters, with others heading for Hawaii or the far western Pacific. Jorge Urbán Ramírez, chief of the marine mammal program at the Autonomous University of Baja California Sur, says some 6,000 humpbacks could seasonally inhabit Pacific coastal areas of the Mexican mainland while another 2,000 frequent the remote Revillagigedo Islands south of the Baja peninsula. A recent government census, meanwhile, reported 1,365 gray whales this year in Baja's coastal waters. But conservationists fear that in an era of climate change, increasing frequency of ocean-warming El Niño weather patterns could force whales to abandon their traditional haunts.

Multiple pressures

Urbán is cautious about gauging the long-term effects of climate change on whales, but ventures that the warming of ocean temperatures in El Niño years could cause humpbacks to avoid places like Banderas Bay or coastal Guerrero state, where whale sightings diminished significantly during the El Niño of 2016. "This is very complicated, but in a simple way what we can say about La Niña [and] El Niño is that when the temperature is a little warmer, whales distribute more to the north," Urbán says. Meanwhile, Calambokidis pinpoints three "major" pressures on migratory whales aside from climate change and water pollution: ship strikes; underwater noise; and entanglements in fishing gear and other materials.

Researchers monitoring such problems face an array of challenges, including public and private funding cutbacks, but they are moving ahead with projects. Urbán, for instance, plans workshops to improve coordination among scientists, non-governmental groups and Mexican authorities in identifying and protecting humpbacks. He also advocates an initiative of benefit both to the whales and the humans eager to see them: a humpback biological corridor from Mexico south to Central America and, eventually, north to the United States. Asked to describe his strategy, he answers simply: "Step by step."

—Kent Paterson