

Ad hoc meeting of some members of the Comité Internacional para la Recuperación de la Vaquita (CIRVA)

Southwest Fisheries Science Center (SWFSC) in La Jolla, CA, USA
15 March 2024.



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A pair of vaquitas surfacing just south of the town of San Felipe, Baja California in October 2019 (Photo
Todd Pusser)

Abstract:

Some members of the International Committee for the Recovery of the Vaquita (CIRVA) met on March 15, 2024, at the Southwest Fisheries Science Center in La Jolla, California. The meeting was brief, lasting just over two hours, and was scheduled to coincide with a memorial event for Mike Tillman, a colleague who recently passed away.

The group reviewed recent conservation actions and the distribution of vaquita sightings and acoustic detections from the last large-scale survey conducted in 2015 to the recent distribution inferred from smaller-scale surveys in 2021 and 2023, which were limited to the Zero Tolerance Area. The most recent government conservation action was the deployment of anti-netting devices to prevent, or at least discourage, gillnet fishing inside the ZTA. This measure effectively reduced gillnetting there. One of the key findings of the May 2023 survey was that vaquitas were present both inside and outside the ZTA, and to the northwest of it.

Based on their review, CIRVA members reached the following conclusions:

1. The immediate short-term goal should be to confirm, through continued visual and acoustic monitoring, that vaquitas have reoccupied the range documented in 2015 when the overall species abundance was around 60.
2. The current ZTA provides a good provisional refuge for the remaining population, due to the apparent protection provided by the grid of anti-gillnet devices and ongoing surveillance and enforcement efforts.
3. Recovery requires effective protection from gillnets throughout the vaquita's recent (2015) range to allow the animals to re-occupy at least the small area of the Vaquita Refuge.
4. The two options for a path forward, both problematic, seem to be (a) incrementally expanding the grid of anti-gillnet devices as the population increases, and (b) incentivizing and negotiating a switch to vaquita-safe fishing gear.

REPORT OF THE MEETING

Some members of the Comité Internacional para la Recuperación de la Vaquita (CIRVA) met at the Southwest Fisheries Science Center in La Jolla, California on the morning of 15 March 2024. The timing and venue were chosen to take advantage of several CIRVA members already being in La Jolla for a memorial event to honor the life and legacy of the late Mike Tillman, an esteemed colleague who steadfastly supported efforts to save the vaquita. The meeting was exceptionally brief – running for slightly over two hours.

Present in-person were: Lorenzo Rojas-Bracho (chair), Barbara Taylor, Peter Thomas, Greg Donovan, Robert Brownell, Jr., Sarah Mesnick, Frances Gulland, Cynthia Smith, and Jay Barlow. Jorge Urbán, Tim Gerrodette, Nina Young, Andrew Read, and Randall Reeves participated remotely via video. Armando Jaramillo and Gustavo Cárdenas did not attend.

The meeting agenda included the following:

1. Review recent actions and their effectiveness in the Zero Tolerance Area
2. Review results of the 2023 vaquita survey
3. Consider next steps for vaquita protection

Background

Participants reviewed a document prepared in advance of the meeting by Rojas-Bracho and Taylor, which presented information and their analysis of the current situation. The following background is based largely on that document.

1. Zero Tolerance Area (ZTA) Update

Between September 2020 and January 2021 Mexico announced a series of new regulations, none of which were implemented in the timeframe and manner specified in the Diario Oficial de la Federación. Among them, the following are especially relevant:

- A Zero Tolerance Area (ZTA) of 225 km² was declared (Fig. 1, below). In that area, fishing of all kinds was banned and entry was to be strictly controlled. Enforcement was to be conducted year-round and around-the-clock through maritime, air, and satellite patrols and surveillance.
- The possession, manufacture, sale, and transportation of gillnets were banned in and around the Gillnet Exclusion Zone.
- Fishing and the use of landing sites at night were banned.
- Bycatch of vaquitas and losses of fishing gear were to be reported.
- All pangas (small fishing boats) were required to be equipped with vessel monitoring systems.
- Derelict and lost gillnets ('ghost nets') were to be removed and disposed of in a manner that would ensure they no longer pose a threat to vaquitas.
- Fishermen were required to turn over all gillnets within 60 calendar days of the regulations.

When it became clear that enforcement of the ZTA was ineffective, the Mexican Navy proposed to deploy a series of anti-netting devices to prevent, or at least discourage, gillnet fishing in the ZTA (Fig. 1). The Navy expected this measure to obviate the need for surveillance actions set forth in interagency agreements. After discussions with marine mammal scientists from CONANP, the design of the anti-netting devices was modified to consist of concrete blocks to anchor 3-meter steel rods with hooks that cause fishing nets to become stuck or entangled.

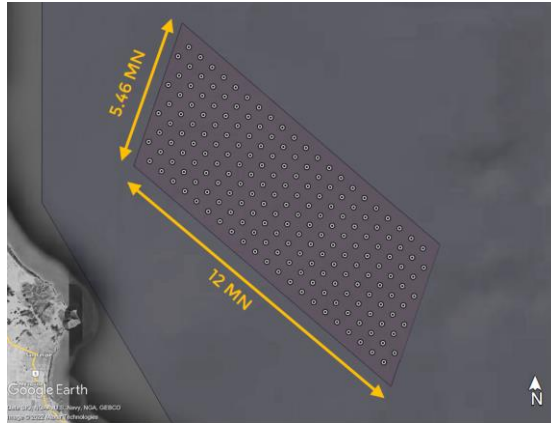


Figure 1. The ZTA showing layout and distribution of the 193 anti-gillnet devices

Data from PESCA ABC, SSCS, and CAT indicate that this measure has effectively reduced gillnetting inside the ZTA.

2. 2023 Vaquita Survey

A vaquita survey in May 2023 resulted in a similar number of sightings to what was seen in 2019 and 2021 (<https://iucn-csg.org/vaquitas-continue-to-surprise-the-world-with-their-tenacity/>). During the 2023 survey, with no pangas observed using gillnets inside the survey area (i.e. the ZTA), vaquitas seemed to be less evasive than in previous surveys. It was possible to track 7 groups for more than 30 minutes, with 16 sightings and 61 acoustic detections compared to the 5 and 8 sightings in 2019 and 2021; only one sighting in 2019 lasted longer than 30 minutes. The biggest factor contributing to increased sightings may have been the weather: there were 11 good-weather survey days in 2023 compared with only four or five in the earlier years. Nevertheless, the changes in vaquita behavior that allowed both more sightings and longer encounters could have been at least partly a result of the effectiveness of the anti-gillnet devices.

One of the most noteworthy elements of the May 2023 survey was that vaquitas were sighted both inside and outside the ZTA and to the northwest of it (Fig. 2).

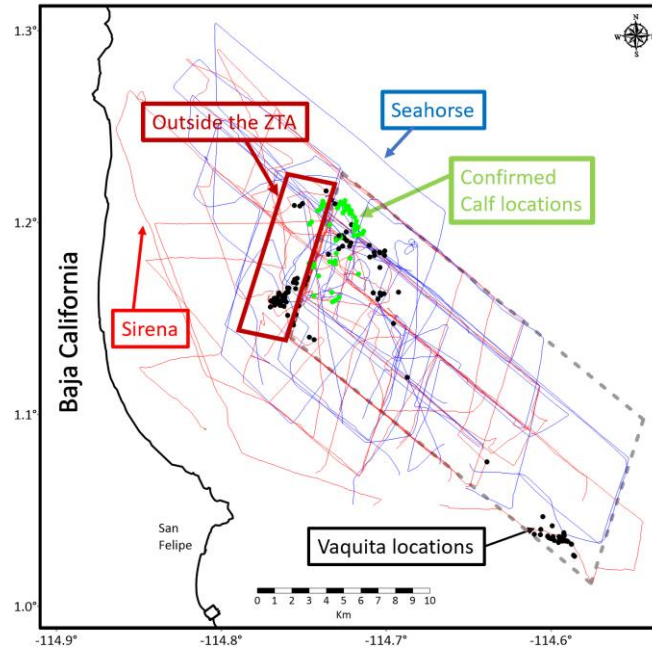


Figure 2. Tracklines followed by the Seahorse (blue lines) and the Sirena de la Noche (red lines) during the 2023 vaquita survey. The small dots are locations where vaquitas were seen: green for confirmed mother/calf locations and black for all other vaquita locations. Clusters of dots represent multiple locations of the same individuals tracked over time. The ZTA is outlined with gray dashes and San Felipe harbor is the small square at the bottom of the figure.

3. Deployment of anti-gillnet devices outside the ZTA

The results of the 2023 survey prompted the Government of Mexico in August 2023 to deploy anti-gillnet devices in an extended area outside the ZTA (Fig. 3). This measure was not properly socialized and discussed with fishermen and consequently has generated strong discontent and tension in the San Felipe fishing community.

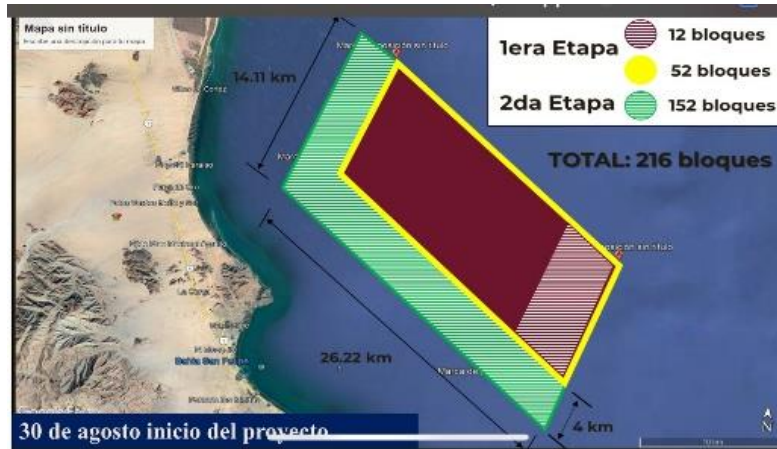


Figure 3. Additional deployment of anti-gillnet devices (bloques) following the 2023 survey: 12 in the southern portion of the ZTA (outlined in yellow), 52 in the remaining northern portion, and 152 in the ZTA extension shaded in green.

The situation so far is that there has been a major decrease in illegal gillnetting inside the ZTA, but not necessarily outside it. The evident success of anti-gillnet device deployment measures, and the interpretation by some that results of the 2023 survey indicated a slight increase in the number of vaquitas, led certain NGOs and government officials in Mexico to declare that anti-gillnet device deployment would be a sufficient measure to fully protect vaquitas.

4. Alternative Gear

The Action Plan submitted by Mexico to CITES indicates that alternative gear will replace gillnets (CITES, 2023). As mentioned above, some government agencies and officers point to the ‘success’ of anti-gillnet devices as having eliminated the needs to (a) remove gillnets from the entire Upper Gulf and (b) accelerate, or for that matter even continue, the development of alternative fishing gear.

The Mexican fisheries authority (Conapesca-Inapesca) has been unwilling to take any initiative in support of vaquita conservation and has impeded progress toward the development and testing of alternative, vaquita-safe fishing gears and practices over many years. Therefore, the Mexican government’s inter-secretarial group for sustainability (GIS) has agreed that another agency, CONANP, will be responsible for organizing workshops with fishermen to implement alternative fishing gears. However, Conapesca-Inapesca is still responsible for the technical aspect of ensuring that these fishing gears are economically viable. Judging by what has been observed to date, there is very little chance that these agencies will follow through and meet their responsibilities when it comes to vaquita conservation.

In any event, the change of government in Mexico in December 2024 is likely to complicate any transition to alternative fishing gears and practices. The new administration will be faced with responding to CITES about the transition to fishing gear other than gillnets. At this time, it is

uncertain what its policy will be and whether much, if any, attention and effort will be given to this issue by Mexico before the CITES COP in 2025.

Deliberations of the Group

After reviewing the background document, participants reviewed the history of visual sightings from large-scale ship surveys in 1997, 2008, 2015, and 2017. A robust spatial analysis of visual line transect and passive acoustic data collected in autumn 2015 estimated that 59 (95% Bayesian Credible Interval 22–145) vaquitas remained (Taylor et al., 2016). The spatial distribution of sightings and acoustic detections that year (Fig. 4) was considered to represent the full geographic range of the species at the time, and over the period of previous systematic survey efforts (which began in 1997).

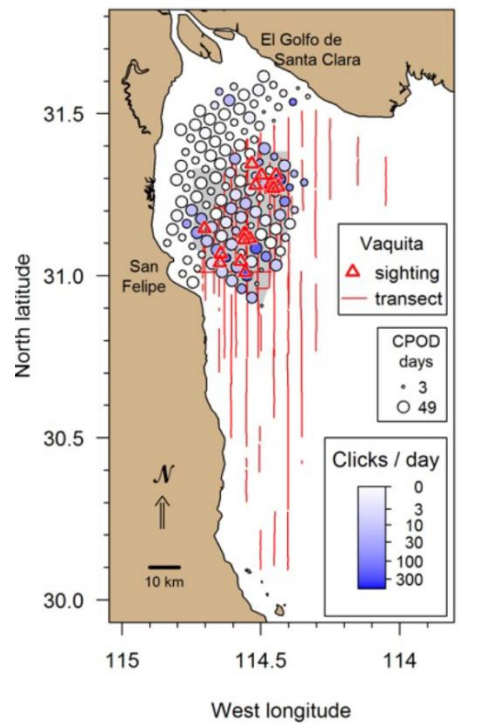


Figure 4. Distribution of vaquita sightings and acoustic detections in 2015 when there were estimated to be around 60 vaquitas in the Upper Gulf.

Throughout the years prior to 2017, acoustic monitoring recorded a steady decrease in vaquita detections in the Vaquita Refuge, but a spatial model indicated that vaquitas continued to be present throughout the area.

An apparently abrupt change occurred in around 2017, when vaquitas were observed only in the area now referred to as the ZTA, suggesting a range reduction from approximately 1,260 km² in 2015 to 208 km² in 2017. In 2019 vaquitas were detected to the east, outside but in the vicinity of the ZTA; and in 2022 they were detected in the western portion of the ZTA. These detections, along with the results of the 2023 vaquita survey mentioned above, spurred the expanded deployment of anti-gillnet devices into 'vaquita hotspots' in 2023 and 2024.

The group discussed possible reasons for the evident contraction of the vaquita's range. 1) It is possible that waters in and around the ZTA are the 'best habitat' available for vaquitas in the Upper Gulf, and therefore the remaining animals converge there to take advantage of advantageous conditions, e.g. for foraging. This hypothesis, however, is not supported by previous data indicating that vaquitas occurred in recent decades over a much wider portion of the Upper Gulf. 2) Another possibility is that a shift in habitat or prey distribution has led to the animals concentrating in this area. 3) Alternatively, the ZTA may simply be the center of the traditional range for the few animals or groups of animals that survive. One thing is certain, however: it would be a misconception to conclude that the currently occupied range of vaquitas is adequate to support their recovery to healthy numbers.

The group acknowledged the possibility that vaquitas are still using other portions of their recent (2015) much larger range. During the most recent survey (2023) some individuals that had previously been considered recognizable due to entanglement markings on their dorsal fins were not sighted. Of course, those individuals might have died, or simply been missed by the observers. Or, they could have been in areas outside the relatively small (225 km²) ZTA at the time of the survey.

Conclusions

Meeting participants concluded that, despite the current success at discouraging gillnetting in the ZTA, it is important to continue to press for protection of vaquitas throughout the larger area of their recent range. While theoretically possible, such protection is unlikely to come from only either (a) an incremental expansion of the grid of concrete blocks into every area where vaquitas are detected or (b) a more serious effort to enforce the current ban on the use of gillnets. Expansion of the grid of blocks to the east and west in 2023 and earlier this year elicited considerable opposition from the fishing community, and any broader expansion to encompass the entire range of what would be a 'recovered' vaquita population is likely impractical, both logistically and socially. Therefore, despite the apparent effectiveness of recent measures taken in and around the ZTA, there is no escaping the continued need to develop and test, incentivize, and deploy alternative fishing gear that does not entangle vaquitas throughout the Upper Gulf.

Following are the main conclusions of the meeting:

1. An immediate short-term goal should be to confirm (through continued visual and acoustic monitoring) that vaquitas have reoccupied the range documented in 2015 when the overall species abundance was about 60.
2. In view of the apparent protection provided by the grid of anti-gillnet devices together with ongoing surveillance and enforcement efforts, the current ZTA serves as a good provisional refuge for the current remnant population.
3. Recovery requires effective protection from gillnets throughout the vaquita's recent (2015) range to allow the animals to re-occupy at least the small area of the Vaquita Refuge.
4. The two main options for a path forward, both of them problematic, seem to be (a) incrementally expanding the grid of anti-gillnet devices as the population recovers, and (b) incentivizing and negotiating a switch to vaquita-safe fishing gear.

References

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ANNEX A: LIST OF PARTICIPANTS

Barlow, Jay

Oregon State University
San Diego, CA. USA
jaybarlow33@yahoo.com,

Rojas-Bracho, Lorenzo

National Marine Mammal Foundation
San Diego, CA
lrojasbracho@gmail.com

Brownell, Robert Jr.

Southwest Fisheries Science Center-NOAA
Monterey, CA. USA
robert.brownell@noaa.gov

Taylor, Barb

IUCN, Cetacean Specialist Group
San Diego, CA
subspecies.def@gmail.com

Donovan, Greg

Cambridge, UK
corkblue1o@gmail.com

Thomas, Peter

US Marine Mammal Commission
Bethesda, Maryland. USA
pthomas@mmc.gov

Gerrodette, Tim

San Diego, CA. USA
tim.gerrodette@noaa.gov

Urbán, Jorge

Universidad Autónoma de Baja California
La Paz, BCS

Gulland, Frances

US Marine Mammal Commission
Sausalito, CA. USA
francesgulland@gmail.com

Young, Nina. M

Sea Shepherd Conservation Society

Henry, Annette

Southwest Fisheries Science Center-NOAA
La Jolla, CA. USA
Annette.henry@noaa.gov

Mesnick, Sarah

Southwest Fisheries Science Center-NOAA
La Jolla, CA. USA
Sarah.mesnick@noaa.gov

Read, Andrew

Duke University Marine Laboratory
Beaufort, NC. USA
aread@duke.edu

Reeves, Randall

IUCN SSC Cetacean Specialist Group
Hudson, QC. Canada
rrreeves@okapis.ca

Maryland, USA

ninayoung@seashepherd.org

Smith, Cynthia

National Marine Mammal Foundation
cynthia.smith@nmmpfoundation.org,