JAMES RENNIE BEQUEST

REPORT ON EXPEDITION/PROJECT/CONFERENCE

Expedition/Project/Conference Title: Expedition Vaquita 2010

Travel Dates: 1st June - 5th July 2010

Location: San Felipe, Baja California, Mexico

Group Member(s): Tobias Nowlan, Josephine Muskus, Stephen Spencer

Aims:

Overall aim: To reduce risk of extinction of the vaquita (*Phocoena sinus*) through field research, as recommended by CIRVA and Mexico's official recovery plan (SEMARNAT 2008).

Sub-aims:

1) To obtain information describing association patterns between individuals. This is crucial to understanding social organization.
2) To obtain data on individual reproductive success, calving intervals and calf survival. This is crucial for building population models.
3) To evaluate the feasibility of estimating population size by mark/recapture techniques using photo-identification.
4) To obtain data on the movements of identified individuals. This is crucial for establishing home ranges, extent of travel and habitat use.
5) To obtain data on the extent of non-fatal injuries from gillnet and trawl entanglement and thereby test the hypothesis "*a positive correlation exists between vaquita size and the presence of gillnet-induced injury*" (see Justification).
6) To obtain data and information detailing observed dermal disease and nutritional status of individuals.

OUTCOME (not less than 300 words):-

The vaquita (*Phocoena sinus*) is the most-endangered species of cetacean in the world, with an estimated global population of less than 250 individuals. The lack of 'fresh', high-quality photographic images of living vaquitas is currently an impediment to conservation of the species. This project aimed to obtain images and to evaluate the potential for using photo-identification to study the species.

Surveys were conducted on 15 days. Poor weather (winds causing sea states of Beaufort 3 or above) prevented us from surveying on the remaining days. We searched while moving and conducted 41 'stop and drift' searches totaling 91.5 hours of at-sea searching. We covered 850 km during our active searches for vaquitas, but the vast majority of this time the sea conditions were not good for sighting these elusive animals (Beaufort 3-6). Previous work indicates that almost all sightings of vaquitas are made during calm sea conditions of Beaufort 0-2 (Silber 1990; Jefferson et al. 2009; T.

Gerrodette pers.comm.). We experienced very little of this calm weather. Our last three days of field work were cut short, due to the vessel blowing a head gasket. Despite our best efforts, we were not able to get an alternative vessel of suitable configuration to replace it in time.

We sighted only a single group of vaquitas plus several Bryde's whales and two groups of unidentified dolphins. Somewhat surprisingly, no confirmed bottlenose or long-beaked common dolphins were sighted. Photos were obtained of the Bryde's whales (with dorsal nicks and body scratches allowing future photo-identification of these individuals). Unfortunately no photos were obtained during the brief vaquita sighting.

One interesting observation was that less fishing activity occurring in vaquita habitat than was observed in October 2008 (when gillnet pangas and shrimp trawlers were frequently observed plying the area where vaquitas occur). The 2010 field effort occurred in the month of June, outside of the shrimp fishing season, and it was encouraging to see very few commercial/artisanal fishing vessels operating in the area. The few vessels that were observed were clearly fishing for small fish near the San Felipe coastline and outside the main habitat area of the vaquita. The illegal fishing patrol enforcement vessels of PROFEPA were observed actively patrolling the area.

In addition to the field work, we also conducted education and public awareness activities while we were in San Felipe. This included the following:

1) A slide-illustrated lecture on the vaquita and its conservation at El Dorado Ranch, which was attended by about 60 people (mostly local American landowners). The lecture also included a chance for attendees to see and touch our life-sized model of an adult female vaquita which proved very popular.
2) The distribution of several thousand brochures on the vaquita to individuals and businesses in San Felipe (both English and Spanish versions).
3) Informal interviews and discussion with local fishermen. Some fishermen demonstrated support for the expedition and vaquita conservation. Other fishermen explained that despite fishing in the region for over 20 years, they had never seen a vaquita and doubt that they have ever existed.
4) Meeting with PROFEPA personnel, who are responsible for enforcing fishing restrictions and regulations protecting the vaquita.

Meteorological records show that June has the average lowest wind speeds however this may be due to a lack of hurricanes and storms in June as opposed to frequent days with Beaufort state 0 or 1. This was the first vaquita photo-identification work attempted in June. The only prior photo-identification work was conducted in October (in 2008). It is therefore difficult to recommend future months to continue this fieldwork.

In light of the lack of success in finding vaquitas on this expedition, seasonal movement of the population is worthy of proper investigation. Multiple boat-based transects and photo-identification work throughout the year may provide this critical information which can in turn be used to advise effective conservation management of areas critical to the population at critical times of the year.

Future photo-identification work, which hopes to be resumed in 2011, will also allow important information on population size, association patterns, habitat preferences, animal health and calf proportion to be determined. Future work should also incorporate data collection regarding the density and distribution of active fishing vessels, habitat preferences (including whether vaquitas are observed more frequently fishing the boundaries of two water currents), habitat quality, prey abundance, prey distribution and prey habitat to determine whether any of these factors influence the seasonal and overall distribution of vaquitas.