BY-CATCH OF ALBATROSS AND PETREL IN ARTISAN LONGLINE AND GILLNET FISHERIES IN NORTHERN PERU

Progress report

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Methods

Interviews

We conducted a survey in four fishing towns during April and May, in the north of Peru where longline and gillnet fishing is a common activity. The survey consisted in 23 questions regarding the gear type, the fishing season, distances, target fish species, type of bait, whether the catch of albatross was incidental or intentional, and other interactions. Here we highlight the progress of this survey.

The survey was designed as an interview. But when it was applied to some fishermen was develop as dialogue. The interview took 40 minutes.

Forty eight fishermen were interviewed. Twelve in Paita (5º 2'S, 80º 54'W), thirteen in San Jose (6º 44'S, 79º 47'W), eleven in Salaverry (08°13' S, 78°58'W) and twelve in Chimbote (9º 4'S, 78º 25'W).

Observations on board

The observers boarded longline vessels that departed from the ports of Paita (5º 2'S, 80º 54'W), and Salaverry (08°13' S, 78°58'W). The on board observers gathered the following information from each longline set: the date and time at deployment, geographic position at the beginning and at the end of deployment, speed of deployment, the date and time at retrieval, geographic position at the beginning and at the end of retrieval, speed of retrieval, mainline length, mainline material, gangions length, number of hooks deployed, hook type, hook material, distance between gangions, number of floaters, distance between floaters, bait, bait color, total capture of fish.

Fishing interactions with seabirds

During hauling and setting, the observer identified and counted groups of seabirds (sometimes they identified species). Data collection consisted of visual scanning 100m from pope using a 10X50 binocular. Data was collected during hauling and setting as follows: 1. During the first 5 minutes (of hauling and setting), 2. In the middle of hauling or setting for 5 minutes, 3.The last 5 minutes of hauling and setting.

Results

Interviews

Vessel size and Fishing distance to coast

Gillnet vessels in Chimbote (n= 4), San Jose (n= 13) and Salaverry (n= 7) sized between 3-18 MT. The vessels conduct fishing operations between 1 to 200 nm (a mean of 46 nm). The capture includes Humpback smooth-hound *(Mustelus whitneyi)*, Smooth hammerhead, *Sphyrna zygaena),* among other species.

Longliner vessels from Chimbote (n =5) and Paita (n=12) sized between 7-25 MT. The capture includes Common Dolphin Fish between 60 to 300 nm (a mean of 119 nm) and sharks between 100-400 nm (a mean of 153).

Gillnet and longline (according to the fishing season) vessels from Salaverry (n= 4) and Chimbote (n= 3) sized between 3-10 MT and captured Common Dolphin Fish and Humpback smooth-hound.

Baits

Longliner fishermen (n=24) use different baits depending on the target fish species. They capture Common Dolphin Fish using as baits the Giant Squid (54 %) or the Chub mackerel *Scomber japonicus* (54%). Fishermen from Paita used Peruvian puffer *Sphoeroides sp,* too (16%). They capture sharks using Chub mackerel (54%), dolphin (33%), mullets (25%), Blue jack mackerel *Trachurus picturatus murphyi*, Skipjack tuna or squids (4% each one) as baits.

Fishing Season

Longliner fishermen from Paita show a seasonal fishing. They capture Common Dolphin Fish (*Coryphaena hippurus*), from August to February and sharks (Mako shark, *Isurus oxyrinchus*, and Blue shark, *Prionace glauca*) from May to July. However, in the present year few sharks were caught, and instead they captured Giant Squid *Dosidicus gigas*.

Fishermen from Chimbote and Salaverry show a seasonal fishing, too. Thirty percent of them mentioned the use of gillnet and longline throughout the year (vessel 3-7 MT), they capture Common Dolphin Fish from August to February, after that they change the longline by the gillnet to capture Humpback smooth-hound, Smooth hammerhead, etc. 48% of the fishermen mentioned the use of gillnet (vessel 5-8 MT) and capture Humpback smooth-hound, Smooth hammerhead. 17% declared the use of longline (vessel 7-20 MT) and capture Common Dolphin Fish season from August to February, after that they capture sharks.

Artisanal fishermen from San Jose use gillnets, they do not use longline. They capture Humpback smooth-hound, Smooth hammerhead, among other species

Albatross Bycatch

10% of fishermen admitted they capture albatross to eat, all of them use gillnet (Chimbote, Salaverry and San Jose). 50 % of fishermen said they have albatross rings or had seen rings. 26% of fishermen described “pajarotes” (Chimbote, Salavery, San Jose, Paita) or “pajaronas” (Paita) as Galapagos waved albatross *Phoebastria irrorata*.

Fishermen from Salaverry identified the 20-100 nm (a mean of 57) as the capture zone of albatross. A 25% of gillnet fishermen indicated that they or their colleges use viscera of Humpback smooth-hound to catch albatross.

A 9 % of gillnets fishermen mentioned that they hunt albatross especially in winter because fishing is scarce during that season. Besides, 9 % indicated that they cure the albatross meat by using salt and sell the meat to other fishermen (Salaverry Port), each bird costs S/. 5 ($1.5). Some fishermen mentioned that they expect to get money from seabird rings.

A 42% of longliners mentioned incidental bycatch of albatross. Those fishermen mentioned an extra weight on the gear make the baits which sinks the bait and for this reason albatross is not captured by longliners. An 8 % mentioned that albatross bycatch is possible when a strong winds that tangles the main line and snood so the bait floats.

Other interactions

Gillnets fishermen manifested interactions with Dolphins (58%), Turtles (71%), Manta rays (*Manta* sp.), (55%), Humboldt penguins (*Spheniscus humboldtii*) (3%) and Peruvian Boobies (*Sula variegata*) (3%).

Fishermen from Salaverry and Chimbote mentioned fishing interactions with manta rays (Manta rays are not commercialized), they reported loss of nets, and it seems to be dangerous for their small vessels. A fisherman from Paita mentioned that Salaverry and Chimbote fishermen hunt dolphin with harpoon, to use them as bait in those ports.

Observations on board

Longline vessels and trips

The on-board observers made a total of five longline and one gillnet fishing trips. Since November through February 2007, we contacted some fishermen that worked with longline vessels targeting on Common dolphin fish. During March (shark season) those fishermen change longline by other fishing set because there are few sharks.

Albatrosses were not caught or observed during these trips. The following seabirds were observed during fishing hauling and setting: Peruvian Boobies, Storm petrels, shearwaters, terns and gulls.

Gillnet vessels

During March an observer was on board a gillnet vessel. The vessel returned to Salaverry port three days later because an incidental bycatch of Manta rays. Fishermen lost nests and fishes; bycatching Manta rays seems dangerous to them.

The picture below was took by our observer on board a gillnet vessel. Almost all the birds of the picture are Galapagos waved albatross, which were observed during two days of work, especially during setting. They were observed at 8º57'S, 79º42'W and 9º06’S, 79º41'W and a maximum of 87 Galapagos waved albatross were counted.

Discussion

The results indicate fishing interactions with albatross especially of gillnet vessels. This intentional catch might be high in winter (shark season) when fishermen sail many miles, increasing their expenses. If a lack of actual prey makes fishermen catch seabirds as food, intentional bycatch may be higher during the season. It is important to consider the rings, some fishermen mentioned that they expect to get money from these.

Factors that might explain the low incidence of seabirds in longliners are: The extra weight in the gears which sinks the bait and particular conditions for this incidental capture: strong winds that tangle the main line and snood so the bait floats.

Fishermen from Salaverry and Chimbote mentioned intentional bycatch, Paita fishermen did not mention it, but a fisherman from San Jose mentioned intentional bycatch in the past. Jahncke et al (2001) report that fishermen use bird flesh as a bait and Awkerman *et al* (2006) report intentional catch of albatross in Salaverry port. It is relevant to quantify the intensity and location of intentional catch.

Longline fishing has recently been forbidden in the Galapagos Islands (Jiménez-Uzcátegui et al 2006). However, Peruvian fishermen declared they sail Ecuadorian and Chilean seas. A fisherman from Paita declared he catches Galapagos Waved albatross in Ecuadorian seas. This issue requires international commitments.

Fishermen from Chimbote and Salaverry declared they use dolphins as bait (shark season). Estrella et al (2001) report catch of turtles and dolphins only in those ports (gillnet and longline fishing) and Sanchez & Ayala (2006) report intentional catch of Marine Otter (*Lontra felina*) in the central cost. It is suggested to conduct an intensive education and outreach campaign, focused on the protection of threathened species, to sensibilize fishermen and society, in this area.

References

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