

Field Test of Longline Gear Modification

Following the first False Killer Whale TRT meeting, TRT members John Hall and Clint Funderburg, in consultation with Tory O'Connell, developed a longline gear modification, with the goal of reducing depredation by marine mammals on bait and target catch. John and Clint worked with scientists from the NMFS Pacific Islands Fisheries Science Center and the PIRO Observer Program to develop research and observer protocols to field test the gear modification.

Description of Gear Modification

Modification 1

0.027" stainless steel cable would be formed into two (2) interconnected loops with copper crimps. One small loop, about 3/8" diameter, would be placed over the hook point and barb and rest on the bend of the hook. The second loop, about 5" diameter, would dangle from the upper loop. When the hook is baited the tail of the bait would be dropped through the larger loop and the head of the bait placed over the point and barb of the hook. In this way the bait would have a fine stainless steel cable draped around the tail section of the bait. The 0.027" stainless steel cable would provide a different sonar reflection to a small toothed whale compared to the bait hanging from the hook without the stainless steel cable loop.

Clint will have samples of the stainless steel cable double loop at the April TRT meeting.

Modification 2

Modification 1 would be further modified by placing a plastic tubular bead (about 3/8" diameter x 3/8" - 1/2" long) embedded with 3M microspheres onto the larger stainless steel cable loop. Since air is a very strong sonar reflector, the stainless cable's sonar signature will be substantially increased by the presence of the microsphere embedded plastic bead. The amount of microspheres embedded into the plastic bead would be insufficient to cause the stainless steel cable to float away from the bait.

This modification is still under development and could change.

Status of Research Trips

Modification 1 will be tested on both of Clint's boats on their next deep-set trips, at the end of March or early April. Clint hopes to be able to provide initial or anecdotal results for the April TRT meeting.

Data Collection

The control and modified gear will be alternated every 10 baskets.

On the first trip, there will be only one fisheries scientist (observer) aboard the vessel. In the future, the addition of another fisheries scientist aboard the vessel(s) may facilitate more complete standard sampling, but some sampling will be suspended at first to accommodate the extra data collection. The suspended sampling is not related to the research.

A summary of the duties required under protocol to be completed by the staff on the first vessel:

- Condition of each bait retrieved (*see the attached data sheet developed for this research*)
- Trip Events (vessel, documentation number, captain, port stops, departure & arrival)
- Gear Configuration (as per current protocol)
- Set & Haul Events (as per current protocol)
- Seabird Mitigation Techniques (as per current protocol)
- Catch Composition species, hook/float, condition, disposition, damage, tag data
- Marine Mammal, Sea Turtle, Short-tailed Albatross behavior data
- Biological Data of Marine Mammals, Sea Turtles, and Seabirds including specimen collection

The fisheries scientist may alter some observer collection protocols, to facilitate the collection of data on bait condition.

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DOC/NOAA Fisheries Pacific Islands Region Longline Observer Program

Trip No.

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Observer ID

Day Month Year

Set No.

Haul Date

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Bait/Catch Log

This Bait/Catch Page No.

Float Bait Hook No. - Record Bait as: none (0), whole (1), partial (2), catch (3) or unknown (9)

No.	(C/E)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37		
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COMMENTS
