

False Killer Whale TRT – Research Needs Work Group
Post-Meeting 2 Teleconference #1, May 5, 2010

Attendees: Paul Nachtigall, John Hall, Ryan Steen, Robin Baird, Tory O’Connell, Kris Lynch, Erin Oleson, Karin Forney, Bennett Brooks, Scott McCreary, Nancy Young

Background Documents

Two documents were used to support the call. The first (Attachment 1) was the Research Needs table extracted from the near-final version of the Meeting 2 Key Outcomes memo. The second (Attachment 2) was a table in which Erin Oleson re-categorized the long-term research needs by topic. Items in the tables are not sorted by priority.

Attachment 2 includes several long-term research needs that were previously identified (Attachment 1) as mid-term needs (e.g., data collection on shortline and kaka line fisheries, weak hook experiments). It was suggested that these items may need more immediate attention. Erin clarified that long-term does not necessarily indicate when the research will begin, only that we do not expect to have a “final answer” to these research questions by the end of the TRT’s deliberations in July. However, some projects have begun or will begin shortly. Erin also noted that the table of long-term research needs does not include the items previously identified from the Key Outcomes memo as short-term analysis of observer program data, which will be completed before the 4th TRT meeting. However, if there are research questions that need to be explored in more depth, such as those that require collection of data other than observer data, the long-term research table could be expanded to include these additional research topics.

Updates

- The HICEAS II survey will be conducted August-December 2010, rather than 2011
 - Time on the R/V Sette originally slated for false killer whale-specific research is being subsumed by the larger survey
 - Researchers will gather as much data as possible from FKW encounters during the cruise, but the cruise will not specifically target FKWs

Additions to List of Research Needs

Several ideas for additional research topics were generated following the 2nd TRT meeting, and were added to the list

- Observers collect biopsy samples from bowriding FKW using existing equipment, to gather information on FKW stock structure and which animals are being taken.
- Playback of longline vessel noise to FKWs to assess whether they react and at what distance; results will be most informative for animals in insular stock, but also pelagic stock
- Continued satellite tagging of FKWs should be long-term as well as mid-term research need

Discussion of Research Needs

The Work Group discussed each of the research needs listed in Attachment 2, including a description of the research, relative cost, and feasibility. Information from this discussion will be

incorporated into an updated table and distributed to the Work Group for comment and ranking (see Next Steps below).

Next Steps

- Several next steps for updating the tables and prioritizing/ranking the options
 1. Update the Research Needs tables to include description, feasibility, and cost; send to Work Group 5/10 or 5/11
 2. Work Group members confirm tables are accurate and capture today's discussions, and send edits/comments, if any, to Erin by 5/14
 3. Distribute to Work Group the updated tables with edits incorporated, early the week of 5/17
 4. Work Group members rank topics within each heading (FKW biology; longline gear research; shortline and kaka line research; assessment research), using high/medium/low, or numerically if appropriate and realistic; send to Erin by 5/21
- Next Work Group conference call to discuss rankings – to be scheduled for week of 5/24

Attachment 1

(Sent to Work Group via email, 5/4/10)

Research needs, as captured in the near-final Meeting 2 Key Outcomes Memo:

Research Needs to Support False Killer Whale Take Reduction Team			
Short-Term – General (by June meeting)	Short-Term – Observer Program Data (by June meeting)	Mid-Term – General (over next three months)	Long-Term – General (six months to two years)
<ul style="list-style-type: none"> • Determine extent to which FKW are able to drag gear & catch to surface if hooked at deepest part of set • Understand which vessel characteristics serve as proxy for noise profile • Determine which vessels are using various light types and configurations (<i>fleet input needed</i>) • Elicit fisherman input into depredation avoidance techniques • Examine habitat maps for first quarter 2010 and 2009 to assess possible differences to explain high take rate in 2009 • Review fishing data to determine number of boats depredated at same time to provide sense of FKW population range and size • Continue efforts to understand why FKW more likely to be hooked in middle of basket • Assess impact of C. Funderburg tests of bait gear modification to reduce depredation • Develop predictive model of potential measures (take rate, depredation rate, target catch, fleet movements) 	<ul style="list-style-type: none"> • Assess individual vessel effects (light, sound) • Assess relationship between depredation and spacing of fishing vessels • Supplement observer data with vessel logbook or VMS data, if possible • Examine relative hook positions for bigeye • Simulate hookings v. hook number to see if significant pattern • Plot sets, takes and depredation versus eddies, sea temperatures and monthly spatio-temporal composite • Determine appropriate scale (2°x2° or 5°x5°) for examining variance patterns • Assess bigeye catch rate and FKW/blackfish M&SI rates on small circle v. tuna hooks • Assess impact of various line colors and widths • Assess data by both captain and code group (<i>fleet would need to provided vessel IDs for respective code groups</i>) • Review mouth hookings to assess hook-type trends • Assess extent to which depredation is distributed evenly between floats 	<ul style="list-style-type: none"> • Develop photo database of pelagic-zone animals, including scars & disfigurements • Continue satellite tagging of FKWs (April) • Evaluate acoustic differences between insular vs. pelagic animals • Evaluate feasibility of mooring listening stations (FADs, NOAA weather buoys) • Begin data collection of shortline and kaka line fisheries (where and how fishing) • Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting • Begin weak hook experiments • Survey all longline vessels to identify commonalities among those with high depredation rates • Understand impact of weak hooks on target species catch rates (<i>may need to be longer-term effort</i>) 	<ul style="list-style-type: none"> • Conduct FKW-targeted research on the R/V Sette, September 2010 • Begin longline acoustic monitoring • Understand foraging and acoustic behavior using acoustic tags • Develop methods for prorating “blackfish” bycatch • Record the acoustic profile of individual longline vessels • Undertake HICEAS II-Hawaii EEZ survey 2011 • Develop predictive habitat models of FKW density • Understand mechanism of hooking • Study adaptive learning, particularly by young FKW • Evaluate alternative methods for estimating abundance, with emphasis on improving precision • Pursue industry support for photo-ID from fishing vessels • Consider ways for Team members and their constituents to generate funding/support for future abundance surveys • Determine range at which a hook in a fish can be detected by FKW • Assess impact of hook density on FKW ability to follow line • Assess potential for hooks be modified (foam coating, etc.) to increase detection range

Attachment 1

			<ul style="list-style-type: none">• Carry out underwater observations of foraging behavior• Test visual acuity using different types of lights• Evaluate FKW capability to see floats, as well as monofilament line of different colors and width• Assess whistling and echolocation using Dtags• Evaluate potential to use killer whale/other playbacks as deterrent
--	--	--	---

Attachment 2

(Sent to Work Group via email, 5/5/10)

Long-term Research Needs to Support False Killer Whale Take Reduction Team			
False Killer Whale Biology	Longline Gear Research	Shortline & Kaka line Research	Assessment Research
<ul style="list-style-type: none"> • Continue telemetry studies to assess FKW movements • Evaluate acoustic differences between insular vs. pelagic animals • Evaluate acoustic behavior near longlines using recorders on fishing gear • Understand foraging and acoustic behavior using acoustic tags • Understand mechanism of hooking • Study adaptive learning, particularly by young FKW • Determine range at which a hook in a fish can be detected by FKW • Assess impact of hook density on FKW ability to follow line • Carry out underwater observations of foraging behavior • Test visual acuity using different types of lights • Evaluate FKW capability to see floats, as well as monofilament line of different colors and width 	<ul style="list-style-type: none"> • Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting • Begin weak hook experiments • Survey all longline vessels to identify commonalities among those with high depredation rates • Understand impact of weak hooks on target species catch rates (<i>may need to be longer-term effort</i>) • Record the acoustic profile of individual longline vessels • Assess potential for hooks be modified (foam coating, etc.) to increase detection range • Record acoustic profile during setting, soaking, and hauling to assess potential cues to FKWs • Evaluate potential to use killer whale/other playbacks as deterrent • Evaluate feasibility of using moored listening stations (FADs, NOAA weather buoys) to determine FKW occurrence before a fishing trip 	<ul style="list-style-type: none"> • Determine how many vessels use shortline and kaka line gear • Begin data collection on when and how fishing • Form an observer program to assess level of FKW and other cetacean bycatch with shortline and kaka line fisheries 	<ul style="list-style-type: none"> • Conduct HICEAS II-Hawaii EEZ survey in fall 2010 • Develop methods for prorating “blackfish” bycatch • Develop predictive habitat models of FKW density • Continue research into assessing FKW abundance using towed and stationary acoustics • Evaluate alternative methods for estimating abundance, with emphasis on improving precision • Pursue industry support for photo-ID from fishing vessels • Consider ways for Team members and their constituents to generate funding/support for future abundance surveys