

Research Category	Recommendation
Longline gear	Evaluate impact of weak hooks/circle hooks on FKW bycatch rates
	Understand impact of weak hooks on target species catch rates
	Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting
Shortline/ kaka line fishery	Assess shortline and kaka line fishing: number of vessels, location, timing and method of fishing
FKW biology	Distinguish FKW calls from other odontocete species
	Telemetry studies to examine range and movements of FKWs
FKW assessment	Regular Hawaiian EEZ survey (at least every 5 years) to estimate abundance
	Continue research into FKW abundance using towed and stationary acoustics
	Collect additional FKW genetic samples to assess population structure

Research Category	Recommendation
Longline gear	Evaluate impact of weak hooks/circle hooks on FKW bycatch rates
	Understand impact of weak hooks on target species catch rates [Bigelow 2012 + follow-up analyses]
	Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting [Geoff McPherson research in Coral Sea & Indian Ocean]
Shortline/ kaka line fishery	Assess shortline and kaka line fishing: number of vessels, location, timing and method of fishing [Information provided from State]
FKW biology	Distinguish FKW calls from other odontocete species
	Telemetry studies to examine range and movements of FKWs
FKW assessment	Regular Hawaiian EEZ survey (at least every 5 years) to estimate abundance [2010 analysis complete]
	Continue research into FKW abundance using towed and stationary acoustics
	Collect additional FKW genetic samples to assess population structure

Questions to the TRT

- Do any of the current research recommendations need to be refined?
- Are there other research topics that should be added to the list
- Any need to reprioritize the listed needs?

FKW Biology Recommendations

- Distinguish FKW calls from other odontocete species
- Telemetry studies to examine range and movements of FKWs
- Evaluate FKW acoustic behavior near longlines using recorders on fishing gear
- Determine range at which a hook in a fish can be acoustically detected by FKW
- Carry out underwater observations of FKW foraging behavior to understand mechanisms of depredation
- Mine existing acoustic data from Cross Seamount and elsewhere to assess frequency of FKW occurrence
- Evaluate acoustic differences between insular vs. pelagic FKWs
- Assess impact of hook density on FKW ability to follow line
- Understand FKW foraging and acoustic behavior using acoustic tags
- Evaluate FKW capability to see floats, as well as monofilament line of different colors and width
- Conduct vessel sound playbacks to FKWs to determine the distance of reaction and whether insular individuals react
- Assess FKW response to compounds found in oil fish and other fish species that FKWs do not depredate
- Test FKW visual acuity using different types of lights
- Study adaptive learning, particularly by young FKW

Longline Gear & Fishing Recommendations

- Evaluate impact of weak hooks on FKW bycatch rates
- Understand impact of weak hooks on target species catch rates
- Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting
- Survey all longline vessels to identify commonalities among those with high depredation rates
- Evaluate effectiveness of wire loops on hooks as a method to reduce depredation on bait, catch and takes of FKWs (already completed during the deliberations of the Team)
- Evaluate where FKWs are caught within a set and why
- Record acoustic profile during setting, soaking, and hauling to assess potential cues to FKWs
- Assess potential for hooks to be modified (foam coating, etc.) to increase or decrease detection range
- Record individual sound profile of longline vessels
- Evaluate potential to use killer whale/other playbacks as deterrents
- Evaluate feasibility of using moored listening stations (FADs, etc) to determine FKW occurrence before a trip

Shortline & Kaka Line Fishing Recommendations

- Determine number of vessels that use shortline & kaka line gear
- Begin data collection on when and how shortline and kaka line fishing occurs
- Form an observer program to assess level of FKW and other cetacean bycatch in shortline and kaka line fisheries

False Killer Whale Stock Assessment Recommendations

- Regular Hawaiian EEZ survey (at least every 5 years) to estimate abundance
- Continue research into FKW abundance using towed and stationary acoustics
- Collect additional FKW genetic samples to assess population structure
- Evaluate alternative methods for estimating FKW abundance, with emphasis on improving precision
- Develop methods to pro-rate "blackfish" bycatch
- Develop predictive habitat models of FKW density
- Evaluate degree of genetic differentiation between insular and pelagic FKW stocks