Incidental Catch of Non-target Fish Species and Sea Turtles:

Comparing Hawaii's pelagic longline fishery against others.

- **PFRP Project:** start date, January 2002.

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Background

- ***Responsible fishing*** and ***responsible consumption*** by the market should be linked to promote ***sustainable fisheries***.
- The market is an inseparable part of the fisheries management equation.

Need and Purpose

- A practical means of ***comparing fisheries*** and ***their products*** in terms of managing bycatch of non-target fish and incidental catch of protected species is needed……..
- to make ***informed market*** and ***management decisions.***

Transferred Environmental Effects

- ***Environmental impacts*** associated with fisheries products ***are not lost*** as they move through the global seafood production and marketing system.

- ***Transferred environmental effects*** can be thought of as ***"environmental baggage".***

- Should be considered in the assessment of ***cumulative environmental effects***.

Examples of Transferred Environmental Effects

- Ex. ***dolphin mortalities*** associated with some sources of purse seine-caught ***tuna***.
- Ex. ***sea turtle mortalities*** associated with some sources of trawl-caught ***shrimp***.
- Ex. ***sea turtle mortalities*** associated with ***swordfish*** imported from coastal longline fisheries.

Pelagic Longline Fishing

- Mixed message and generalizations.
  Environment-friendly or *destructive*
  Selective or *indiscriminant*

- Not a homogeneous method.
  Environmental effects vary greatly with
  Specific fishing and marketing practices

- Assessment requires "*splitting*" (*not lumping*).

Bycatch Index

- A ***bycatch index*** is needed to estimate transferred environmental effects.
- To estimate cumulative effects of management actions.
- Ex. sea turtle takes / 1,000 tons of Costa Rican longline-caught swordfish

Project Objectives

- Apply methodology patterned after Hall (1999) for quantifying bycatch of non-target fish species and the incidental catch of sea turtles in Hawaii's multi-species pelagic longline fishery.

- **Hall, M.A. (1999)** *Estimating the ecological impacts of fisheries: What data are needed to estimate bycatches?* FAO International Conference on Integrated Fisheries Monitoring, Sydney, Australia, Feb 1-5, 1999. 175-184.

Project Objectives

- Summarize pertinent details of Hawaii pelagic longlining practices.
- Characterize the Hawaii pelagic longline fleet in terms of non-target fish bycatch and sea turtle incidental catch.

Project Objectives

- Develop a ***bycatch index*** to express bycatch and incidental catch as a function of the catch of main target species (yellowfin, bigeye, swordfish).

Project Objectives

- Attempt to conduct same analysis on the same market species from representative pelagic longline fisheries.

- Ex. *sashimi tuna longlining in Micronesia, swordfish longlining in Costa Rica*.

Project Objectives

- Compare the bycatch indices and transferred environmental impacts associated with target species from these different fleets and fisheries.

- Estimate the ***environmental "cost"*** of management actions that promote market substitution.