EVALUATING “ENVIRONMENTAL BAGGAGE”

MARKET-TRANSFERRED EFFECTS WHEN FRESH PELAGIC FISH IMPORTS REPLACE HAWAII LONGLINE PRODUCTION

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MARKET TRANSFER OF PELAGIC LONGLINE BY-CATCH EFFECTS

- IMPACTS ON BY-CATCH DO NOT DISAPPEAR AS A RESULT OF REGULATING ONE FISHERY OR ONE AREA
- IMPACTS TRANSFER TO OTHER PLACES
  - WITH TRANSFER OF FISHING EFFORT
  - WITH GLOBAL MARKETING OF FRESH FISH PRODUCTS
- FOCUS ON SECOND TYPE -- "MARKET DRIVEN’ TRANSFER
Ecosystem of Longline By-Catch
WHAT HAPPENS WHEN HAWAII LONGLINE PRODUCTS REPLACED WITH IMPORTS?

- U.S. MARKETERS AND CONSUMERS OF FRESH PELAGIC FISH SUBSTITUTE IMPORTS WHEN HAWAII SUPPLY REDUCED

- CUMULATIVE EFFECTS ON LONGLINE BY-CATCH THAT IMPACT:
  - SEA TURTLES
  - NON-TARGET FISH
WHITE HATS OR BLACK HATS?

• SPC PAMPHLET: PELAGIC LONGLINE FISHING “…RELATIVELY ENVIRONMENTALLY FRIENDLY”

• HINMAN (1998): LONGLINE FISHING LIKE “…LAYING AN UNDERWATER MINEFIELD”

• CROWDER AND MYERS (IN RESEARCH PROPOSAL):
  - LONGLINE FISHING “…ONE OF THE MOST LUCRATIVE AND DESTRUCTIVE FISHERIES IN THE WORLD”
PELAGIC LONGLINING NOT ONE FISHERY

• ENVIRONMENTAL EFFECTS VARY WITH:
  - SPECIFIC DETAILS OF GEAR
  - DEPLOYMENT
  - FISHING TACTICS

• EFFECTS BETTER UNDERSTOOD IF FISHING PRACTICES
  - SPLIT
  - NOT LUMPED
PELAGIC LONGLINE FISHING OCCURS IN DIFFERENT ENVIRONMENTS

- CONTINENTAL SHELF?
- GYRES, FRONTS?
- PROXIMITY TO PROTECTED SPECIES NESTING?
ONE SIZE DOESN’T FIT ALL LONGLINING

• NEED TYPOLOGY OF LONGLINE FISHING THAT ACCOUNTS FOR DIFFERENCES IN:
  - FISHING GEAR AND PRACTICES
  - FISHING ENVIRONMENT

• NEED TO CONNECT TYPOLOGY TO SEA TURTLE AND NON-TARGET FISH BY-CATCH
  - STANDARD MEASURE FOR COMPARISON
  - LOOK FOR ORDER OF MAGNITUDE DIFFERENCES
UNIT OF BY-CATCH PER UNIT OF TARGET CATCH (BPUTC)

- ADAPTED FROM MARTIN HALL WORK ON DOLPHIN BY-CATCH IN EASTERN PACIFIC PURSE SEINE FISHERY

- EXAMPLES:
  - SEA TURTLE TAKES PER MT OF TARGET FISH
  - SEA TURTLE MORTALITIES/ MT OF TARGET FISH
  - MT OF FISH DISCARDS PER MT OF TARGET FISH
LIKELY IMPORT SUBSTITUTION SCENARIOS

- HAWAII FRESH TUNA REPLACED BY LEADING EXPORTERS TO U.S.:
  - TRINIDAD AND TOBAGO
  - BRAZIL
  - COSTA RICA
  - PANAMA
  - VIETNAM
  - MARSHALL ISLANDS
  - PHILIPPINES
  - INDONESIA
  - MEXICO
  - SAMOA

- HAWAII FRESH SWORDFISH REPLACED BY LEADING EXPORTERS TO U.S.:
  - BRAZIL
  - MEXICO
  - COSTA RICA
  - AUSTRALIA
  - ECUADOR
  - SOUTH AFRICA
  - PANAMA
DOCUMENT ACTUAL REPLACEMENTS

- THROUGH PERSONAL COMMUNICATIONS WITH U.S. MAINLAND MARKETERS
- INTENSIVE INTERVIEW EFFORT AT BOSTON SEAFOOD SHOW, MARCH 2002
ASSESSING TRANSFERRED EFFECTS ON SEA TURTLE BY-CATCH

- FOR COUNTRIES THAT REPLACED HAWAII FRESH PELAGIC FISH PRODUCTION
  - TRY TO DERIVE CUMULATIVE EFFECTS USING HALL METHOD (BCUTC) FOR LONGLINE FLEETS

- IF DATA INADEQUATE FOR SPECIFIC COUNTRIES AND FLEETS
  - USE TYPOLOGY OF LONGLINE METHODS TO CLASSIFY EFFECTS

- MAJOR DATA PROBLEM
  - SEA TURTLE ID BY SPECIES
ASSESSING TRANSFERRED EFFECTS ON NON-TARGET FISH BY-CATCH

- FOR COUNTRIES THAT REPLACED HAWAII FRESH PELAGIC FISH PRODUCTION
  - TRY TO DERIVE CUMULATIVE EFFECTS USING HALL METHOD (BCUTC) FOR LONGLINE FLEETS

- IF DATA INADEQUATE FOR SPECIFIC COUNTRIES AND FLEETS
  - USE TYPOLOGY OF LONGLINE METHODS TO CLASSIFY EFFECTS

- MAJOR DATA PROBLEMS:
  - REGIONAL DIFFERENCES IN SPECIES COMPOSITION
  - % NON-TARGET FISH RELEASED DEAD OR MORTALLY INJURED VERSUS % ALIVE AND VIABLE
  - MARKETING FATE OF NON-TARGET FISH
POSSIBLE TYPOLOGY OF LONGLINE METHODS

- HAWAII DEEP-SET TUNA
- JAPAN DEEP-SET TUNA
- TAIWAN, CHINA SHALLOW-SET TUNA
- HAWAII SHALLOW-SET SWORDFISH
- EASTERN PACIFIC SWORDFISH
  - CLOSE TO SEA TURTLE NESTING
  - AWAY FROM SEA TURTLE NESTING
- ATLANTIC SWORDFISH
LOSS OF INFORMATION

• REGULATIONS TEND TO DISPLACE FISHERMEN
  - FROM BETTER REGULATED, BETTER MONITORED FISHERIES
  - TO LESS REGULATED, LESS MONITORED FISHERIES

• UNCERTAINTY INCREASES

• HOW TO RECONCILE WITH “PRECAUTIONARY MANAGEMENT”?
“NAUGHTY OR NICE”

- COMPARE U.S. FRESH PELAGIC LONGLINE FISH SUPPLIERS

- BASED ON PERFORMANCE STANDARDS FOR:
  - RESPONSIBLE FISHING
  - RESPONSIBLE MONITORING AND MANAGEMENT
  - RESPONSIBLE MARKETING AND CONSUMPTION

- HOW DOES HAWAII LONGLINE FISHERY RATE?
  - MODEL FISHERY OR
  - ROGUE FISHERY