

“Bycatch” Property Rights

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“Bycatch” Property Rights

- What are “bycatch” property rights?
- Why do they matter?
- What is the link to policy instruments?
- How do they relate to governance?
- Case Studies
 - Northern Fur Seal
 - Tuna and Dolphins
 - Northeastern United States Bycatch

Property Right Attributes

- Exclusive
- Enforceable
- Divisible
- Transferable
- Duration
- Security

Why do property rights matter?... (1)

- Economic efficiency requires well defined property rights
 - Eliminates race-to-fish, higher costs, congestion, market price surges, etc.
- Allows for better planning by users/ owners and management
- Allows flexible vessel responses to changing markets, environment, etc.

Why do property rights matter?...**(2)**

- Ability for trade and/or compensation allows for lower-cost outcomes
- Creates incentive as gains accrue to holder
 - Bycatch reduction methods
 - Technological innovations

Policy Instruments

- Can work within existing structure
 - *Input controls (Command-and-Control)*: Mesh size, days-at-sea quotas, vessels size, trip limits
 - *Output controls*: Total Allowable Catch (TAC), minimum fish size, total bycatch limits
 - Technology Standards: Gear types, electronic vessel monitoring
 - Time & Area Closures
- Or modify rights
 - Participation limits (e.g. permits)
 - *Output controls*: vessel harvest quotas, ITQs, “bycatch” rights

Property Rights and Governance Arrangements Interact ...

- Property Rights Arrangement
 - Who (vessel, individual, group, etc.)
 - What (effort, catch, bycatch)
 - Attributes
- Governance Arrangement
 - Permanent right reserved
 - Policy instrument a strategic choice
 - Input controls (compliance via deterrents)
 - Output controls (compliance via incentives)
 - Side payments are a strategic choice

North Pacific Fur Seal Treaty

- Not a bycatch right, but excellent example of property rights over marine megafauna.
- *The North Pacific Fur Seal Treaty furnishes an illustration of the feasibility of securing a general international game law for the protection of other mammals of the sea, the preservation of which is of importance to all nations of the world.*
- President William Taft, State of the Union Address (1911)

Property Rights for Megafauna: Northern Fur Seal

- Create an Aggregate Gain
 - Full Participation of states with breeding populations
- Distribute the Aggregate Gain
 - Recognize asymmetries – side payments
 - Gainers compensate the losers
- Deter Non-Participation
 - Gain if all participate - terminate if one party withdraws
- Deter Non-Compliance
 - Participants deliver violators to their domestic law authority
- Deter Entry
 - Trade restrictions

Dolphin Mortality Limits in EPO

Background

- Dolphin mortality reduced due to combination of technical change and property rights
- Agreement on the International Dolphin Conservation Program (AIDCP)
- Embodied & disembodied technical change
 - Problem solved thru technical change
 - Disembodied: Change practices & operations
 - Learn how to avoid
 - Backdown procedure, no sundown sets
 - Embodied in Capital Stock: Medina panel
 - Fine-mesh panel at top of net

Dolphin Mortality Limits (DMLs)...(1)

- Right to prescribed level of dolphin mortality for 4 species as a group
 - Different mortality rates & growth rates by species
- Use right assigned to state and then to vessel (*some exclusive*)
- DML is relatively weak right because it does not provide full exclusive use
 - National mortality limits, if reached, would curtail individual rights

Dolphin Mortality Limits (DMLs)...

(2)

- Limited *transferability* among vessels in that DMLs from vessels that renounce or forfeit their assigned limits are redistributed among other vessels.
- In practice, parties to AIDCP have also allowed *ad hoc* transfers among vessels.
- Limited to 1 year (*duration*)

Borrowing & Security

- *Borrowing*: If a vessel kills more than its limit of dolphins in any year, the excess, plus an additional 50 percent of its limit, is deducted from its DML for the following year.
- *Security* is subject to the ability of the various governments to renounce their DMLs or to reallocate them among vessels of their fleets.

- Dolphin quota not binding in recent years
 - Limits innovation incentive
 - But might serve as a limit or floor and prevent “backsliding”
- Trade Measures
 - Trade Restriction (Embargo) gave initial pressure, but WTO legal issues
 - Consumer Market Response (Dolphin-safe tuna)

Property rights lessons using the U.S. situation

- Property rights not available for protected species
- Protected Species (marine mammals and sea turtles) managed under
 - Marine Mammal Protection Act
 - Take limit
 - Endangered Species Act
 - Incidental Take Statement (ITS) - No PBR for turtles
- Preferred mitigation measures are gear modifications (technology standards) or season/area closures
- Compliance problematic for gear modifications
 - Sometimes technology standards easy to verify

Property Rights w. Rare Species...(1)

- Some species' populations at low levels
- Gear interaction is rare event
- Individual vessel rights not possible
 - Number vessels $>$ number turtle rights
- Fractional rights are one alternative
 - Each vessels receives < 1 full right
 - Either trade or pool rights & cooperate

Property Rights w. Rare Species...

(2)

- Group rights another alternative
 - How to create incentives within group
 - Allocation, management, compliance, enforcement issues within group

Conclusions

- Property rights most widely used for target species, but can apply to “bycatch” species.
- Property rights provide incentive to:
 - reduce “bycatch” and lower costs over short and long run
 - Promotes technological innovation over longer run
- Incentives lead to higher compliance compared to deterrents
- Understanding the life history of the animal is crucial to conservation

Conclusions continued....

- Need full participation, well defined property right attributes, recognize the need for side payments, deter entry...
- It takes time, resources, patience and cooperation to develop successful solutions.

Thank you.....Questions?

Pacific Tuna- Dolphin: Why it works

