Opportunities and challenges for marine and coastal ecosystem services markets

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Resources to consider

- Food – wild harvests, recovering stocks, aquaculture, recreation
- Medicines – Biodiversity (cold water corals, MPA’s)
- Energy – wave/tidal
- Carbon – deep ocean injection, mid-ocean dispersion, nearshore kelp beds? (linked to species recovery – sea otter)
- Water – coastal/watershed pollution (ag, cities, etc.)
- Salmon – linking pieces of ecosystems: (marine/freshwater/terrestrial) - (habitat/water/harvest rights) – (escapements/nutrient transfers/production resilience)
Opportunities

- **Start with Total Economic Value spectrum**
- Site specificity: Use ocean zoning to foster spatial segmentations of resources, valuations, conflicts, leasing, other forms of structured “3E” tempered rights.
- Futures trading?
- Examine current efforts in the development of “community trust” instruments for enhancing stewardship, bioeconomic models, and control of assets as a basis for trading.
Total economic value of marine resources

Use values

- **Direct use**
  - Outputs/services that can be consumed directly
  - **Consumptive**
    - commercial/recreational fisheries
    - some diving
  - **Non-consumptive**
    - tourism
    - recreation
    - education/research

- **Indirect use**
  - Functional benefits enjoyed indirectly
  - Biological support to
    - fisheries
    - other ecosystems

Option value

- Future direct and indirect uses of:
  - Species
  - habitats
  - biodiversity

Quasi-option

- Expected new information from avoiding loss of:
  - Species
  - habitats
  - coastal “way of life”

Non-use values

- **Bequest value**
  - Value of leaving use and non-use value to future
  - threatened habitats
  - endangered species

- **Existence value**
  - Value of knowing an area/resource exists
  - ocean wilderness

Decreasing “tangibility” of value to individual
Opportunities

• Start with Total Economic Value spectrum
• Site specificity: Use ocean zoning to foster spatial segmentations of resources, valuations, conflicts, leasing, other forms of structured “3E” tempered rights. Establish the knowledge base.
• Futures trading? Commodities or regional specialties?
• Examine current efforts in the development of “community trust” instruments for enhancing stewardship, bioeconomic models, and control of assets as a basis for trading.
Crab Fishing Grounds Based on Fishermen Local Knowledge

Ex-vessel revenues and pounds derived from California landing receipts, 2003.

Ex-Vessel Revenue per 3 Km Block

- Light pink: 1 - 2,500
- Medium pink: 2,501 - 5,000
- Medium red: 5,001 - 10,000
- Medium dark red: 10,001 - 20,000
- Dark red: 20,001 - 31,000
- Medium blue: 31,001 - 50,000

Bar charts show the revenue and pounds for different areas:

- Bodega Bay: 1,277,186 lbs, $2,116,191
- Bodega Bay Area: 109,352 lbs, $212,342
- San Francisco Area: 35,176 lbs, $77,165
- Half Moon Bay: 1,944,610 lbs, $3,313,683
- San Francisco: 1,430,741 lbs, $2,568,932
OPPORTUNITIES

• Start with Total Economic Value spectrum
• Site specificity: Use ocean zoning to foster spatial segmentation of resources, valuations, conflicts, leasing, other forms of structured “3E” tempered rights.
• Futures trading? Commodities or regional specialities, bycatch cap and trade?.
• Examine current efforts in the development of “community trust” instruments for enhancing stewardship, bioeconomic models, and control of assets as a basis for trading.
  (ownership segmentation)
Challenges

- **Issues of scale**
- Rights, established culture and the commons
- Regulatory environment unstable (e.g. Councils)
- Sorting singular events (easements/buyouts) vs. true markets (recurrent transactions – e.g. fisheries quotas)
- Desirables (good things) vs. problems (pollution).
- Building trading mechanisms
- Mobile stocks, lack of geographically specific stock assessments
- Disparate market values in fisheries quota markets between regions (AK, BC, PNW)
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