ALLOCATING COMMERCIAL-RECREATIONAL HARVEST RIGHTS THROUGH MARKET MECHANISMS

Economic Implications of the CATCH Proposal for Alaska Halibut

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Regulatory Areas 2C and 3A

- Combined areas represent:
  - 65% of Commercial Catch
  - 99% of Recreational catch

- Each area has different characteristics both commercial and recreational
Highlights of the Talk

- Describe the CATCH Proposal
- Provide brief relevant history of the halibut recreational fishery
- Describe our role and approach
- Findings and Key Recommendations
- Next steps -- future economic analysis
What is “CATCH”

Alaska Charter Association
South East Alaska Guides Organization

“Catch Accountability Through Compensated Halibut”

Goal: “provide stability in guided angler regulations”

Area 2C:
- one halibut low abundance any size
- two halibut any size high abundance

Area 3A:
- maintain two halibut any size

Use markets to acquire catch quotas

Manage quota through “common pool”

Precedent in the commercial sector for common pool purchases and holdings (CQE’s)
History of efforts to by the charter halibut fishery to acquire IFQ’s

- Council consideration 2005
- Purchase of IFQ by individual charter firms—a “first best solution”
- Gains in efficiency but loss in commercial IFQ social objectives
- Concept initially adopted for analysis but then rescinded
Drivers of CATCH Proposal

- **GHL (2003-2013) constantly exceeded** by recreational sector
- **2014 Catch Sharing Plan (CSP)**
  - Fixed quota percentage *(14-18% depending on combined catch and area)*
  - Ability to lease quota from Commercial sector
- **Uncertainties** about regulation to meet CSP requirements
  - Uncertain Input Controls
  - Different regulations between guided harvest sectors
- **Impacts of National Economy**
  - **50% decrease in exploitable biomass**, reduced harvest limits, smaller fish *(lower size at age)*
    - Only one fish per angler in 2C and below 38 inches
Perceived Limitations of “Guided Angler Fish” (GAF) Leasing Program

- Leasing decisions by individual charter operators
  - Highly heterogeneous operations
- Risk/uncertainty of lease price
- Risk/uncertainty of charter demand
- Risk/uncertainty of input regulations
- A complex decision each year
  - Easier for some holding a “portfolio” of businesses or greater access to capital?
Complex Issues for CATCH Proposal
“A More Permanent and Certain Solution”

- Relatively unprecedented proposal
- How to purchase and at what prices??
  - Unprecedented purchase levels
  - Expected quota price?
  - Future resource abundance?
  - Future recreational demand?
  - Attracting effort into the charter industry (excess permits)?

- Financing the Purchase
  - Type of Funds?
  - Mechanisms for financing?
  - Who pays?

- Mechanism for funding: (ex: angler stamp vs vessel tax)

- Managing the Pool
  - Organization framework?
  - Managing quota?

- Accountability procedures
Working relationship

- Two separate reports
- They reference our work
- Help CATCH with economic insights on core elements
- **Help CATCH predict (or bound):**
  - Financial feasibility of schemes
  - Commercial selling price of quota assets
  - Guided anglers response to different fees/stamps prices
Our Financial and Economic Analysis -- Approach

- Economic Background of Halibut Fisheries
- Highlight issues/qualitative analysis of key elements of CATCH
- Conduct quantitative analysis -- commercial and recreational:
  - NEV and REI
  - Marginal values
  - Predict prices and WTP
- Scenarios
- Recommendations
FIGURE 7: Halibut Price and Catch 1929–2011
Commercial Fishery Overview

Complex IFQ System-1995—many rules/constraints to achieve social goals

- **Longline fishery**
  - 48% consolidation since 1995
  - Approximately 1000 vessels
  - 20.5 Million Pounds Harvest 2012
  - $5.80/pound exvessel price 2012
  - Traded Quota Shares in 2013 approximately 2.5%
    - 60,000lb 2C @ $35-$39
    - 360,000 lbs 3A @ $32
Commercial Fishery Overview (continued)

- Revenue $148 million statewide
- Revenue: $15.8 million Area 2C
- Revenue $67.9 million Area 3A
- Personal Income for 2C and 3A $113 million
Recreational Fishery Overview

- **Area 2C:** 287 active permits (Total 578)
- **Area 3A:** 419 active permits (Total 449)
- **Area 2C:** desire for one fish, no size limit
  - Need 500,000 lbs of additional quota
  - (21% of 3C 2013) commercial quota
- **Number of Halibut Guided Angler Days:**
  - Area 2C -- 82,000
  - Area 3A -- 127,000
- **Personal Income all saltwater Alaska angling**
  - $182.4 Million per year
Core Issues and Qualitative Analysis

- **Designing Quota Purchase Strategy**
  - Constrained Supply of Commercial Quota
  - 5% Traded per year
  - Many rules constraining trades
  - Uncertain Price
- **Estimating Recreational Demand** Response to Higher Catch/Higher Costs
- **Funding the Pool Purchase**
- **Managing the Pool**
- **Latent Charter Permits**
- **Factors Affecting QS Price**
Quantitative Approach
Use Existing Data/Studies

- **Commercial NEV** (Waters and TRG 2012) (TRG 2007)
  - Budgets for “representative longliner”
  - Budgets for processors
  - $42K per vessel Net Income
  - QS Price 2012 $35-39 Area 2C and $32 Area 3A
  - Rule of Thumb Quota Price (7X Ex vessel price = $38.20)
  - NPV Asset value based on todays prices and volume = $17.90/lb
  - NPV Asset value based on 1995-2005 prices/volumes = $35.78/lb

- **Halibut Charter Permit Asset Value** (based on assumptions)
  - Area 2C -- per active vessel = $68,000
  - Area 3A – per active vessel = $72,000
Quantitative Approach

Use Existing Data/Studies (continued)

- **Recreational Demand (WTP)**
  - Criddle et al (2003) - Values per day (updated)
    - $25 then 9.7% decrease in participation
  - Lew and Larson (2012)
    - Additional Fish $132 ($13/lb)

- **Regional Economic Impact (Household income) FEAM Model (Waters and TRG 2012)**
  - Lew and Seung (2010)
    - 1.25% increase participation rate = 3319 additional angler days = $11.4M additional expenditures
  - For every pound of commercial halibut 2012 REI was:
    - $2.76 Alaska
    - $5.90 Washington/Oregon
    - $11.14 Total U.S.
Example of Quantitative Analysis: Economic Results from Shifting Pounds from Commercial to Recreational Charter Sector

<table>
<thead>
<tr>
<th>Area</th>
<th>Pounds</th>
<th>Com. Revenue</th>
<th>REI (Millions)</th>
<th>NB (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>C   R   Net</td>
<td>C  R  Net</td>
</tr>
<tr>
<td>2C</td>
<td>600,000</td>
<td>-$3.2M</td>
<td>-1.7 10.7 9.0</td>
<td>-0.8 6.0 5.2</td>
</tr>
<tr>
<td>3A</td>
<td>800,000</td>
<td>-$5.1M</td>
<td>-2.2 13.1 10.9</td>
<td>-1.0 3.7 2.7</td>
</tr>
</tbody>
</table>
Scenarios for Buying Quota for Guided Sector Area 2C: Financing Costs vs Revenue — Examples

**Financing Costs** (Quota Acquisition Costs plus interest rate and admin costs-20 years)
1. 300,000 pounds $35/lb Annual Costs $1.17M
2. 300,000 pounds $50/lb Annual Costs $1.67M
3. 700,000 pounds $35/lb Annual Costs $2.72M
4. 700,000 pounds $50/lb Annual Costs $3.89M

**Net Revenue**
1. 81,698 angler days Fee $10 Annual Revenue $0.82M
2. 81,698 angler days Fee $20 Annual Revenue $1.63M
3. 81,698 angler days Fee $30 Annual Revenue $2.45M
4. 89,868 angler days Fee $10 Annual Revenue $0.90M
5. **89,868 angler days** Fee $20 Annual Revenue $1.80M
6. 89,868 angler days Fee $30 Annual Revenue $2.70M
Our Core Findings

- $20 stamp would generate roughly enough revenue to purchase 500,000 lbs at market trading prices

- 500,000 lb loss to commercial industry would not significantly impact ex-vessel price (qualitative assessment)

- Significant NEV and REI gains by transferring 500,000 lbs to recreational sector
Qualitative Findings and Recommendations

- **Predicting Quota Share Price**: depends on many factors:
  - Structure of purchasing schemes
  - Quantity purchased
  - Certainty and efficiency of financing, management, regulatory structure
  - Increase above observed prices? ... decrease?

- **Purchasing quota**: one time reverse auction with relaxed constraints

- **Design and management of common pool**: dynamic “asset strategies”

- **Latent permits**: design creative incentives/sticks

- **Pilot project**: given complexities and uncertainties
**Purchasing quota**: one time reverse auction with relaxed constraints

**Funding:**

- **Area 2C**: $25-$50/lb \* 587,000lbs = $14.6 Million to $29.4 Million
- **Area 2C**: For a $20 stamp annualized revenue equals $1.32 million
- **Area 3A**: $25-$50/lb \* 785,000lbs = $19.6 Million to $39.3 Million

**Design and management of common pool via a CQE:**

- **Dynamic “asset strategies”** (but recognize political limitations)
- **Portfolio of funding sources**
- **Develop a State Halibut Tax** (modeled after Chinook stamp), or
CATCH Final Proposal

- Form a RNPA and self tax
  - All firms must charge clients
  - Dissuade non active charters

- Accountability:
  - Electronic logbooks-real time electronic reporting
  - Harvest tickets per fish
  - Conservation buffers

- **Pilot project**: given complexities and uncertainties
Next Steps

- If Council willing to consider the proposal
  - NEV analysis?
  - REI analysis?
- Consideration of other social and cultural objectives
  - “fair and equitable” for both sectors
- Alternative options and design elements
- Our work is a “back of the envelope” start
Needed Research

- **Forecasting “willingness to sell”**
  - under different auction schemes and supply constraints

- **Forecasting recreational halibut demand**
  - under different “fee” structures” and prices

- **Analyzing “optimal” management of the IFQ Guided Pool**
  - under alternative scenarios

- **Evaluating approaches to reduce impacts to commercial sector**
  - social and community goals while increasing overall benefits

- **Evaluating community impacts and tradeoffs**
  - for helping Council determining “fair and equitable” under alternative schemes for purchasing, financing and managing

- **Reducing charter vessels**