

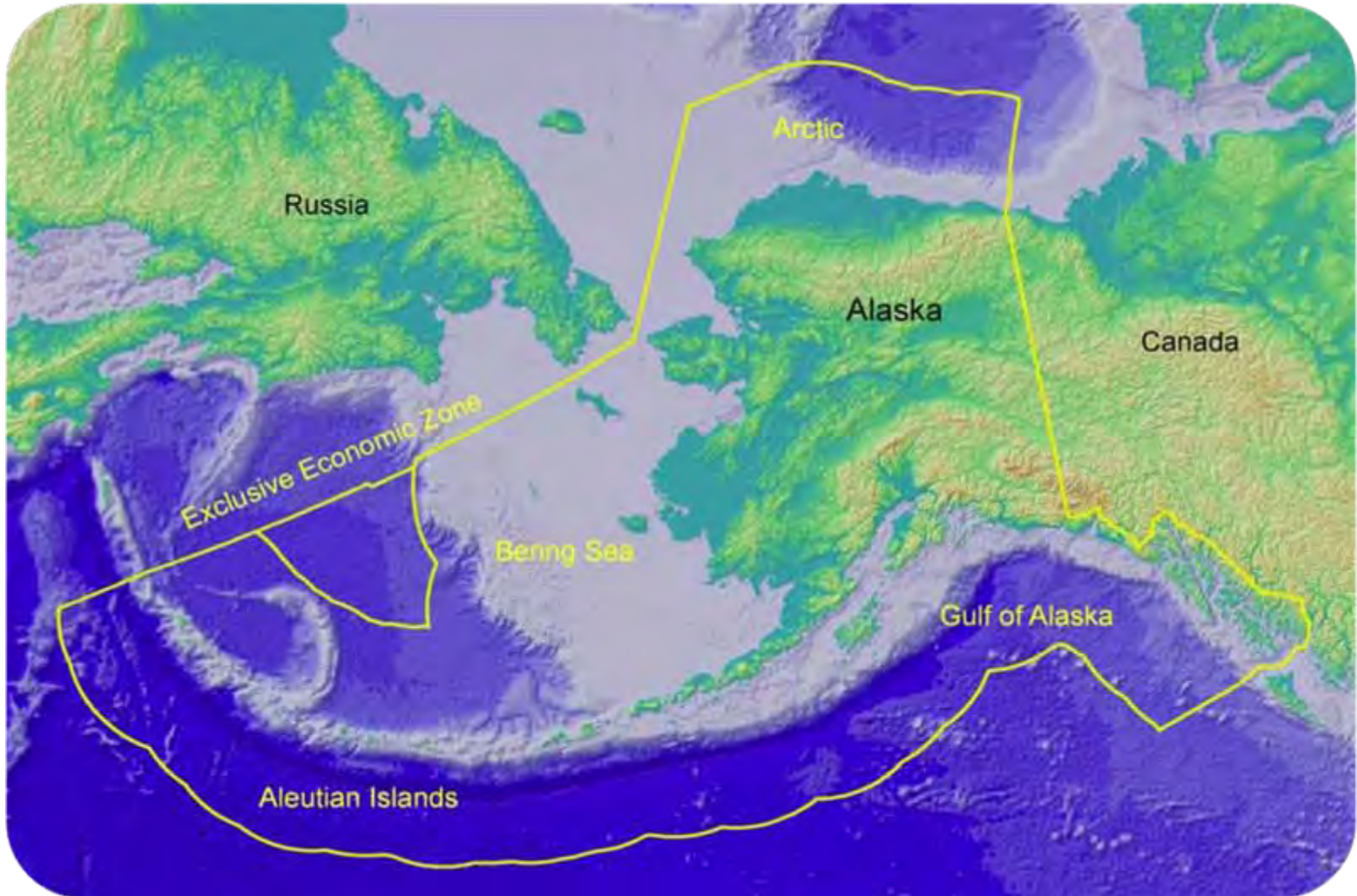
Dysfunction by Design: Consequences of Limitations on Transferability of Catch Shares in the Alaska Pollock Fishery

Keith R Criddle & James Strong

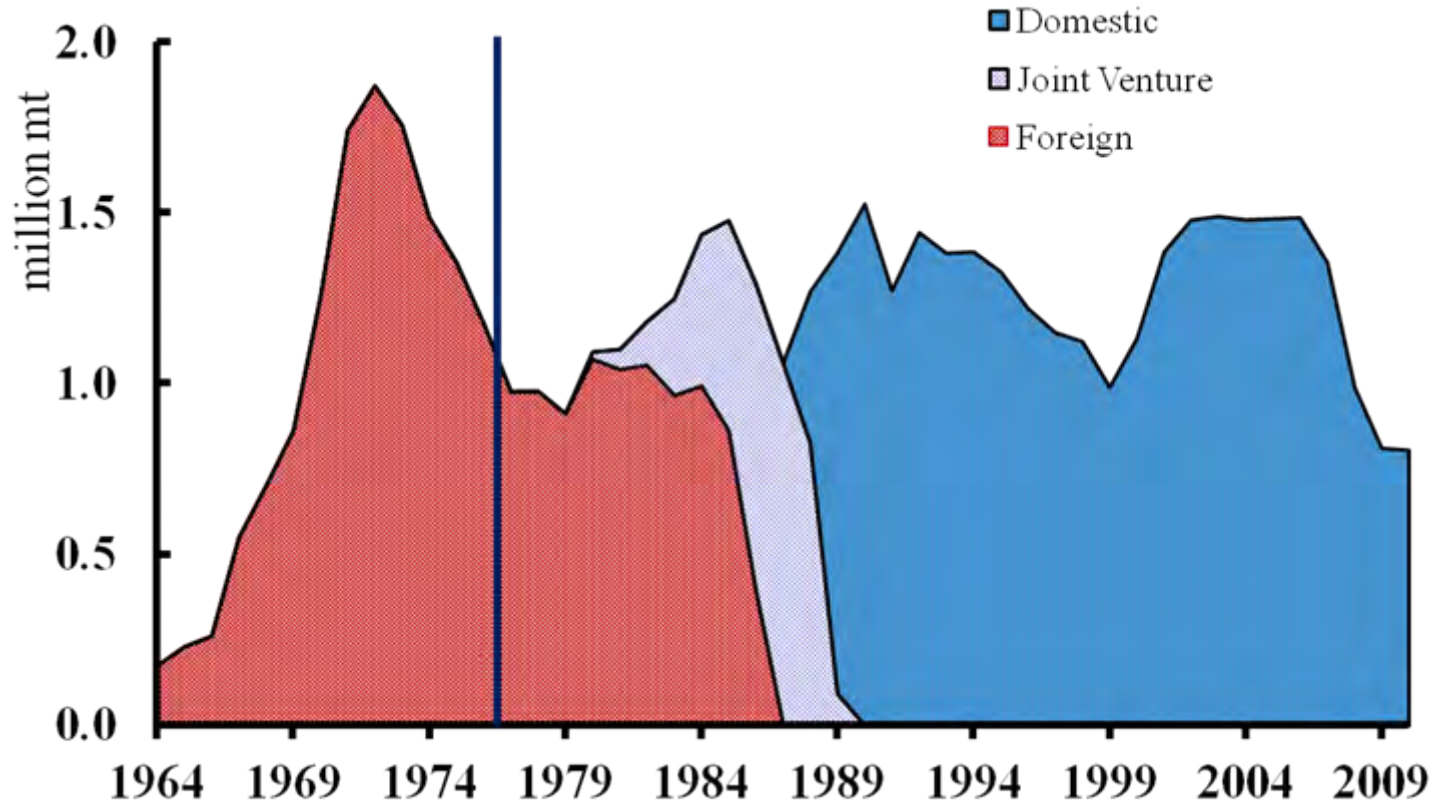
UAF Fisheries Division, Juneau



The Alaska Region pollock fishery is number one in the U.S. by volume and number six by exvessel revenue.



Focused exploitation of EBS pollock began in the 1960s. Following passage of the FCMA, the fishery rapidly transformed from foreign catching and processing to catching by U.S.-flagged vessels and processing by U.S.-flagged catcher-processors and shorebased processing plants.



- 1991, 1995, 1998—allocation battles between inshore and offshore sectors.
- 1992—creation of the Western Alaska CDQ program.
- 1994-1998—cycles of bankruptcy caused by excess capacity due to a lack of regulatory barriers to entry and lack of individual quotas.
- 1996—Moratorium on entry.
- 1998—American Fisheries Act (AFA).



The American Fisheries Act (AFA):

- established a permanent moratorium on entry and permanent allocations to four sectors and institutionalized the CDQ program;
- provided \$95 million to retire 9 of 29 catcher-processors;
- allowed sub-allocations within each sector and market-based transfers within each sector;
- increased the CDQ program allocation from 7.5% to 10% of the BSAI groundfish TACs; and,
- authorized CDQ entities to lease to any sector and HSCVs to lease or sell their DPF to CPs.



Pollock Allocations Before and After Implementation of the AFA

	1998	1999	2006
Bycatch set aside	~5%	~4.7%	~2.8%
CDQ*	7.5%	10.0%	10.0%
Inshore CVs	30.6%	42.7%	43.6%
Mothership	8.8%	8.5%	8.5%
CPs	45.2%	31.2%	31.9%
HSCVs	3.0%	2.9%	3.0%

* Approximately 85-90% of the CDQ is harvested by CPs, the most of the balance is harvested in the mothership sector.



Community Development Quota Program

- The CDQ Program allocates 10% of all Bering Sea and Aleutian Islands quotas for groundfish, prohibited species, halibut, and crab to 6 CDQ entities representing 65 communities.
- The purpose of the CDQ Program is to:
 - provide eligible villages with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands Management Area;
 - support economic development in western Alaska;
 - alleviate poverty and provide economic and social benefits for residents of western Alaska; and
 - achieve sustainable and diversified local economies in western Alaska.



Outcomes of the AFA

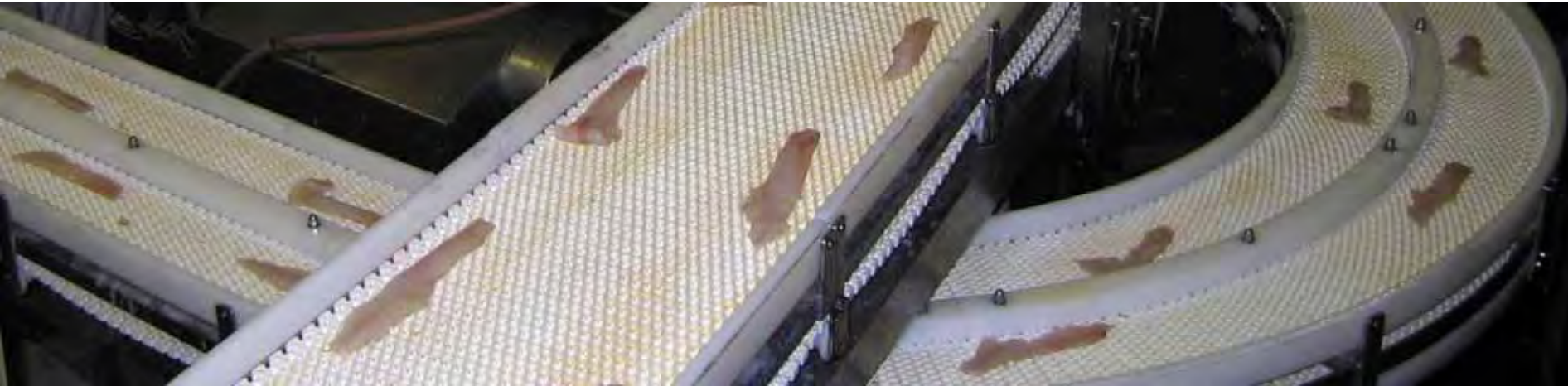
- The mothership sector has consolidated to 2 of the 3 eligible motherships and uses fewer CVs.
- The inshore coops have consolidated the number of active CVs from 97 to 70-80.
- The PCC has consolidated to 6 firms and leased or acquired shares from the HSCVs.



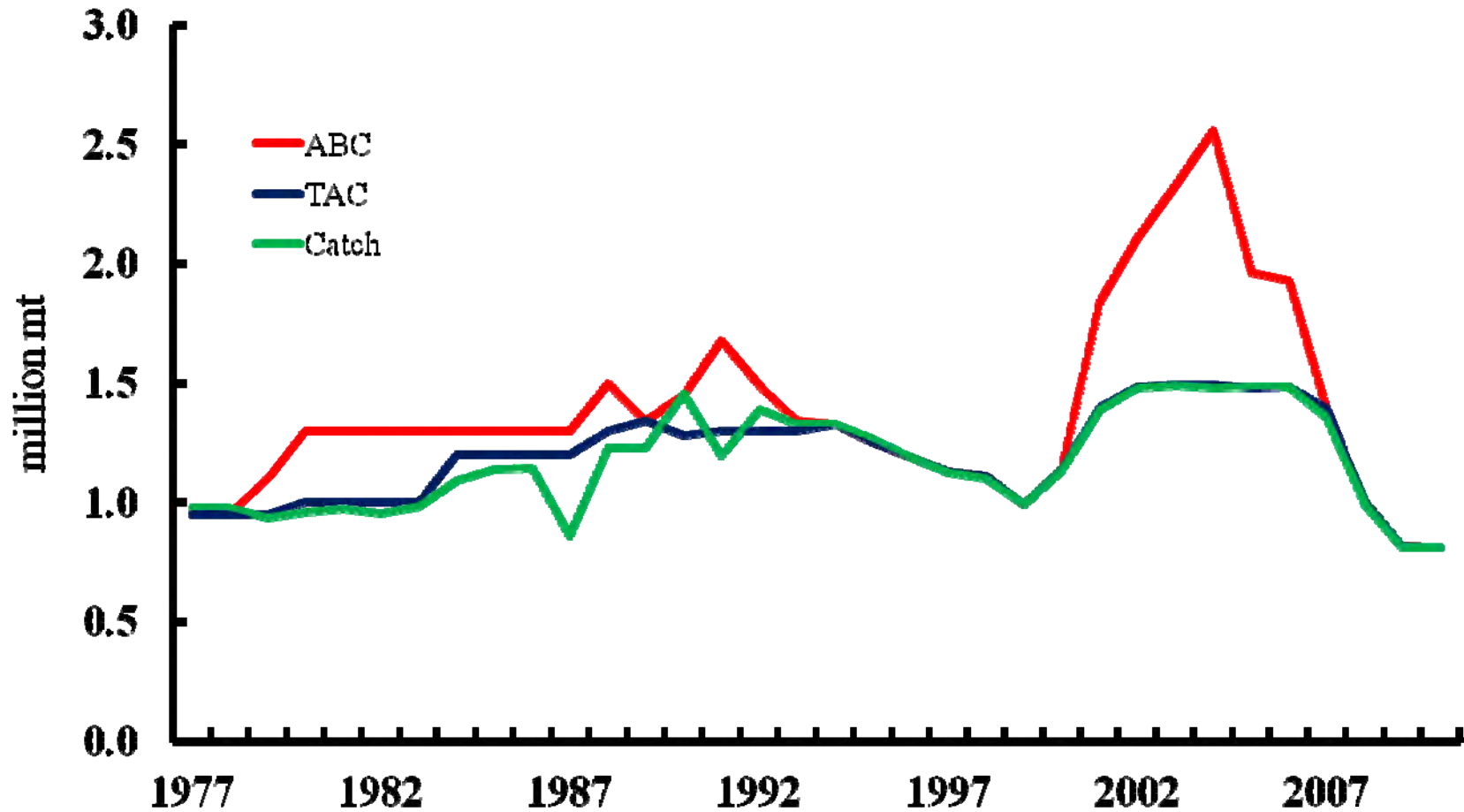
The AFA:

- ended the race-for-fish;
- increased utilization and product recovery rates;
- shifted production from high throughput product forms to high per-unit value product forms, and bolstered economic returns;
- improved management precision and reduced bycatch; and,
- reduced uncertainty about future catch shares and unleashed much-needed capital investments to modernize fishing vessels and processing equipment.

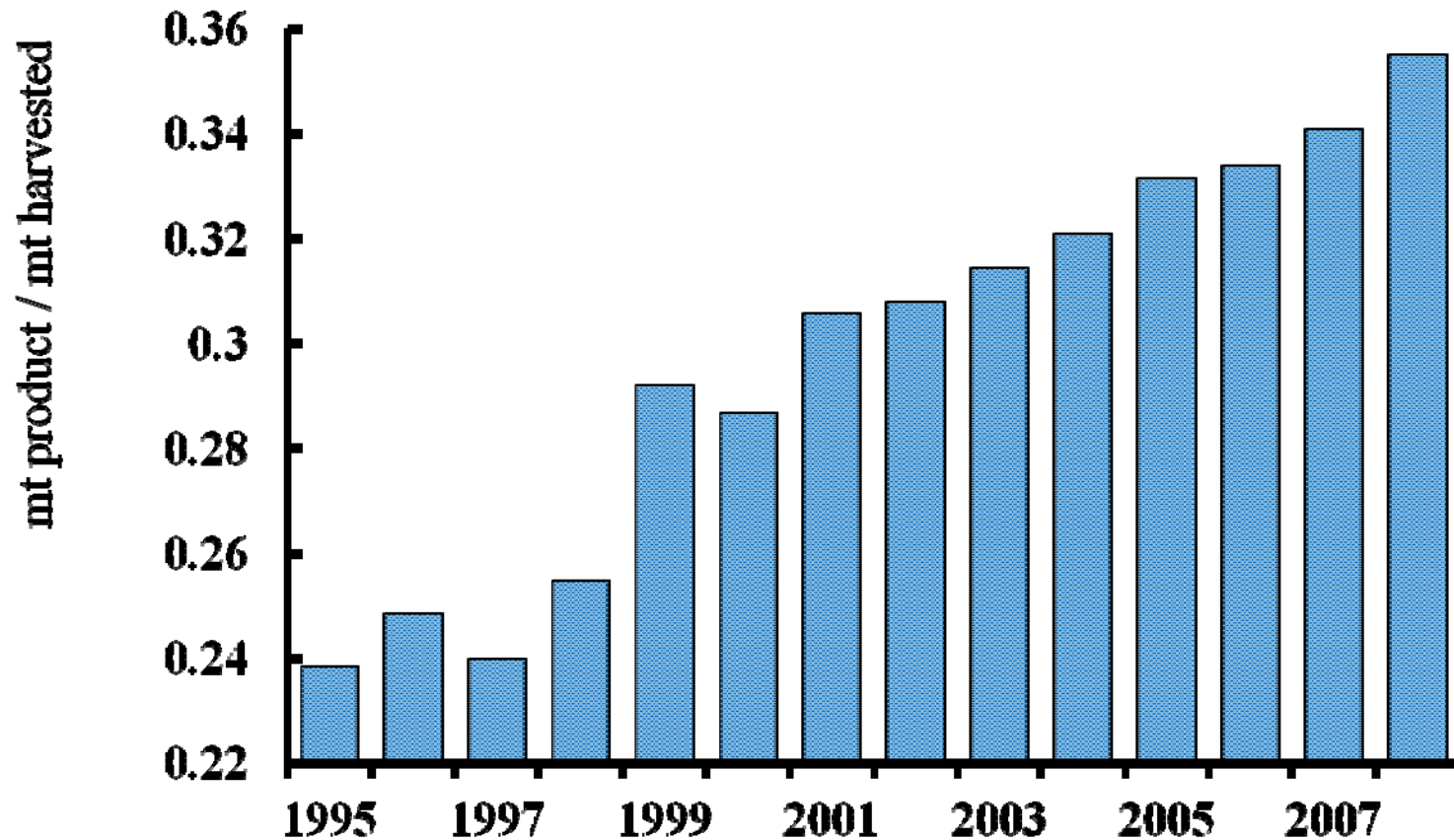
In addition, secure catch rights have helped the fishery weather spatial and temporal closures required to meet ecological concerns.



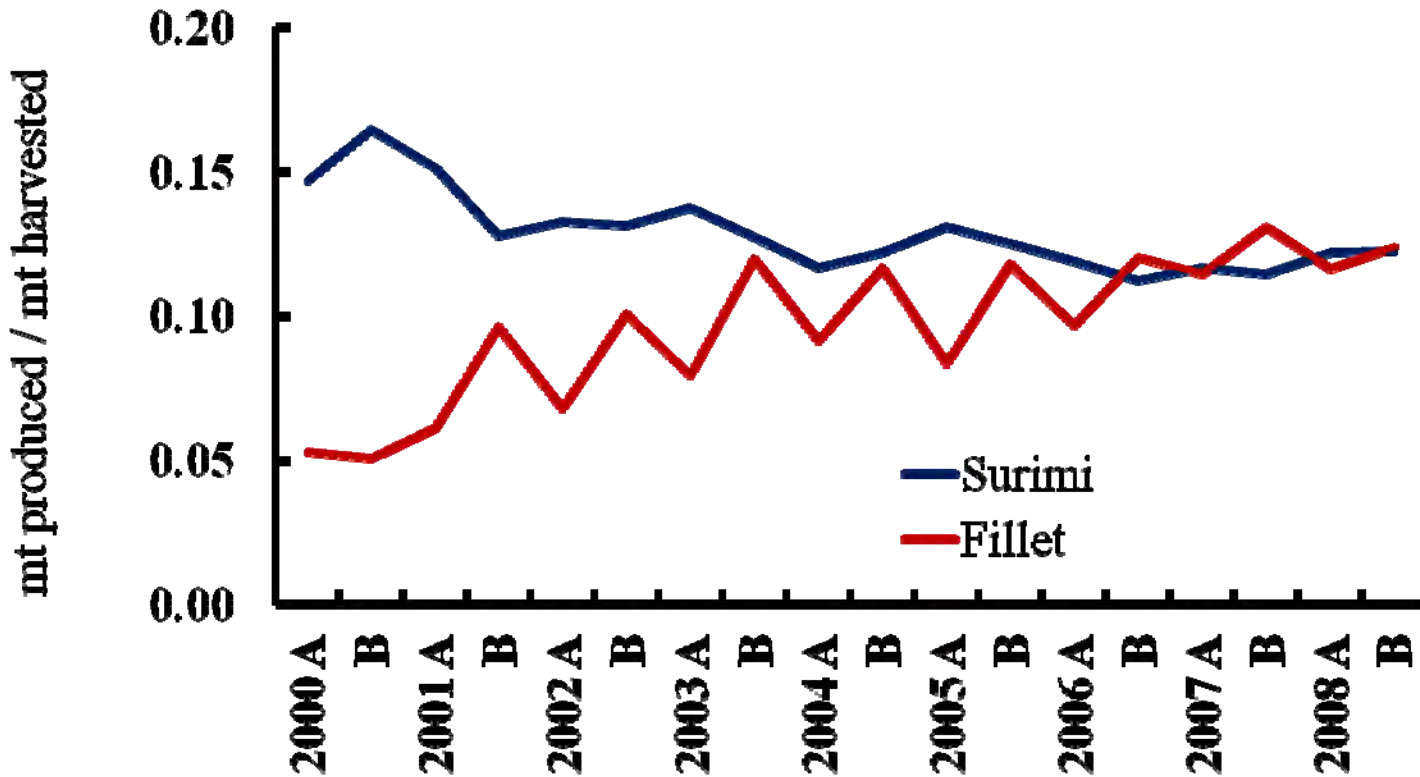
Management Precision in the EBS Pollock Fishery



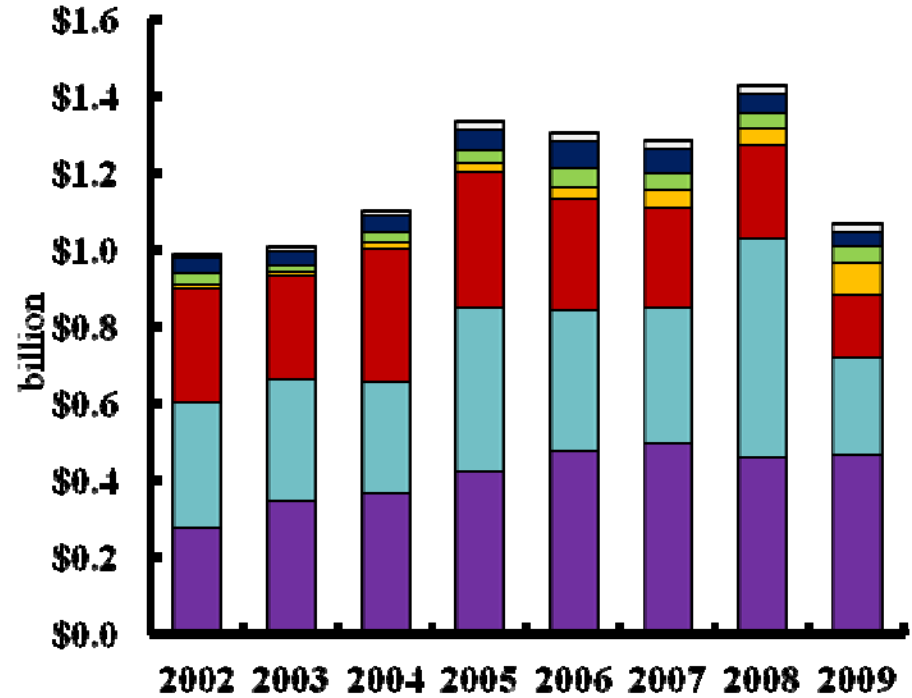
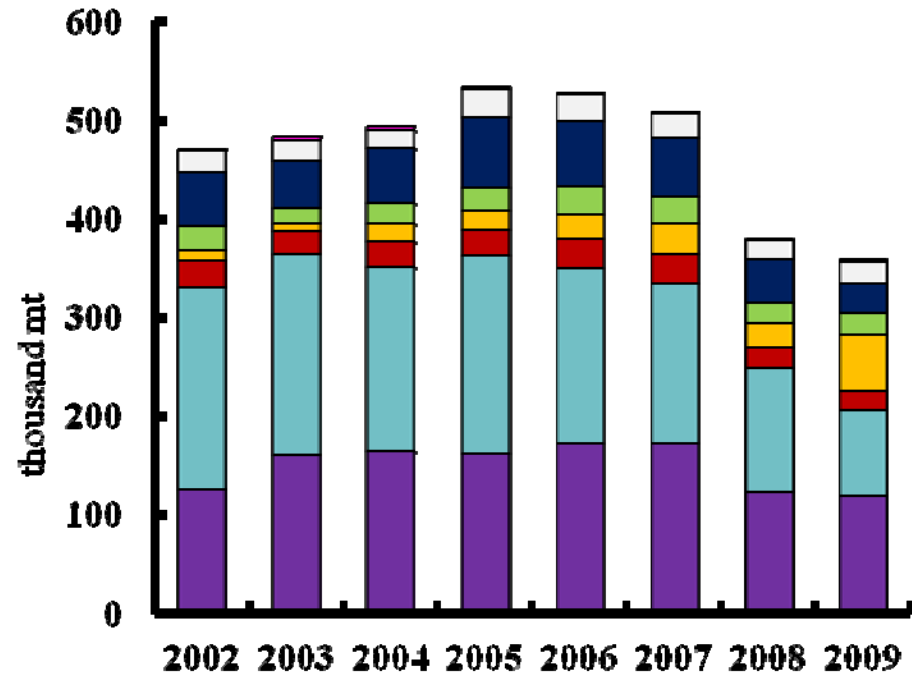
Overall Product Recovery Rates (excluding whole fish and H&G)



Product Recovery Rates for Surimi and Fillets



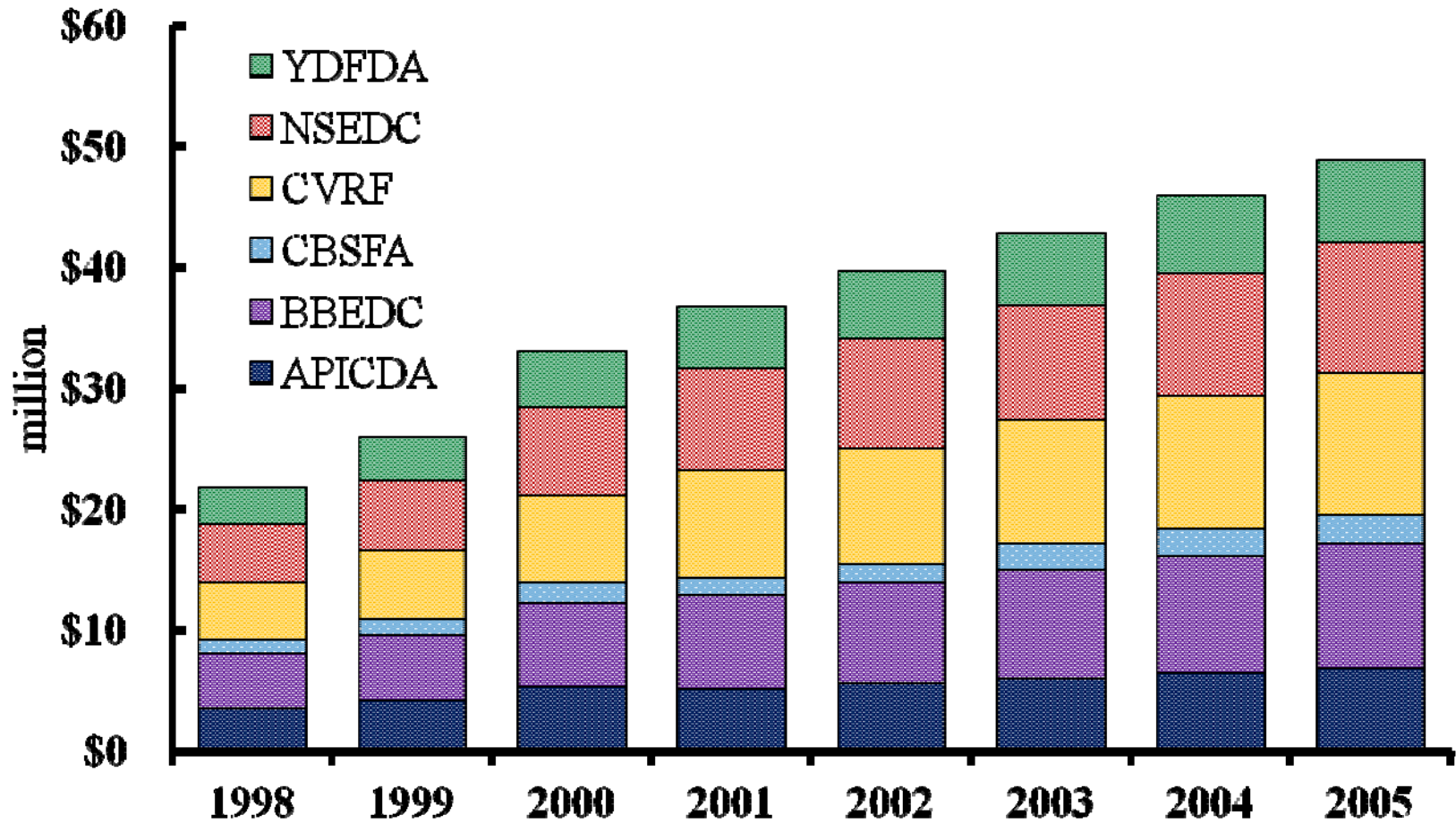
Pollock Product Volume and Value



Fillet
 Sturini
 Roe
 H&G
 Mince
 Fishmeal
 Other
 Whole Fish

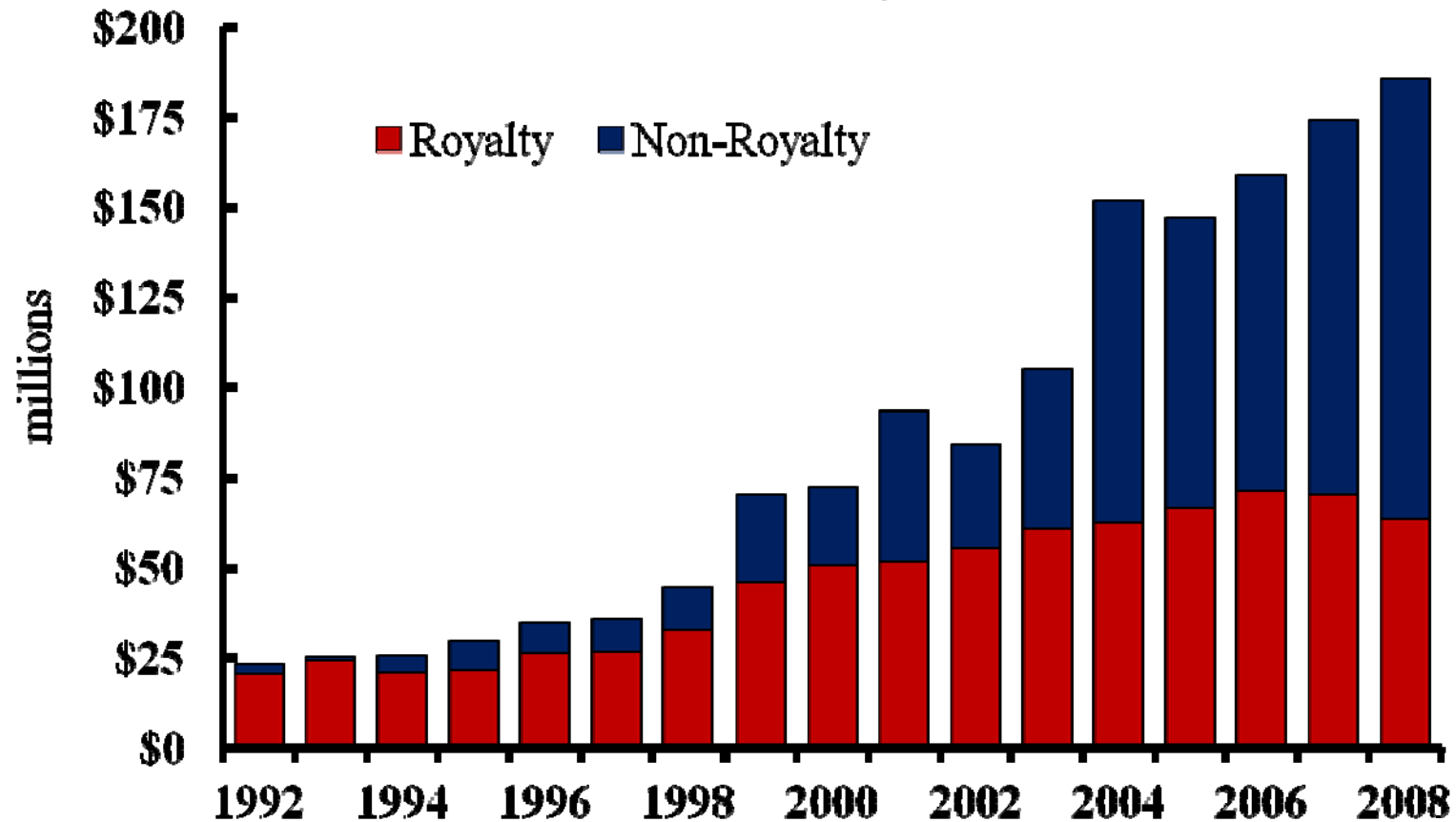
Fillet
 Sturini
 Roe
 H&G
 Mince
 Fishmeal
 Other
 Whole Fish

CDQ Pollock Royalties



CDQ Pollock Earnings

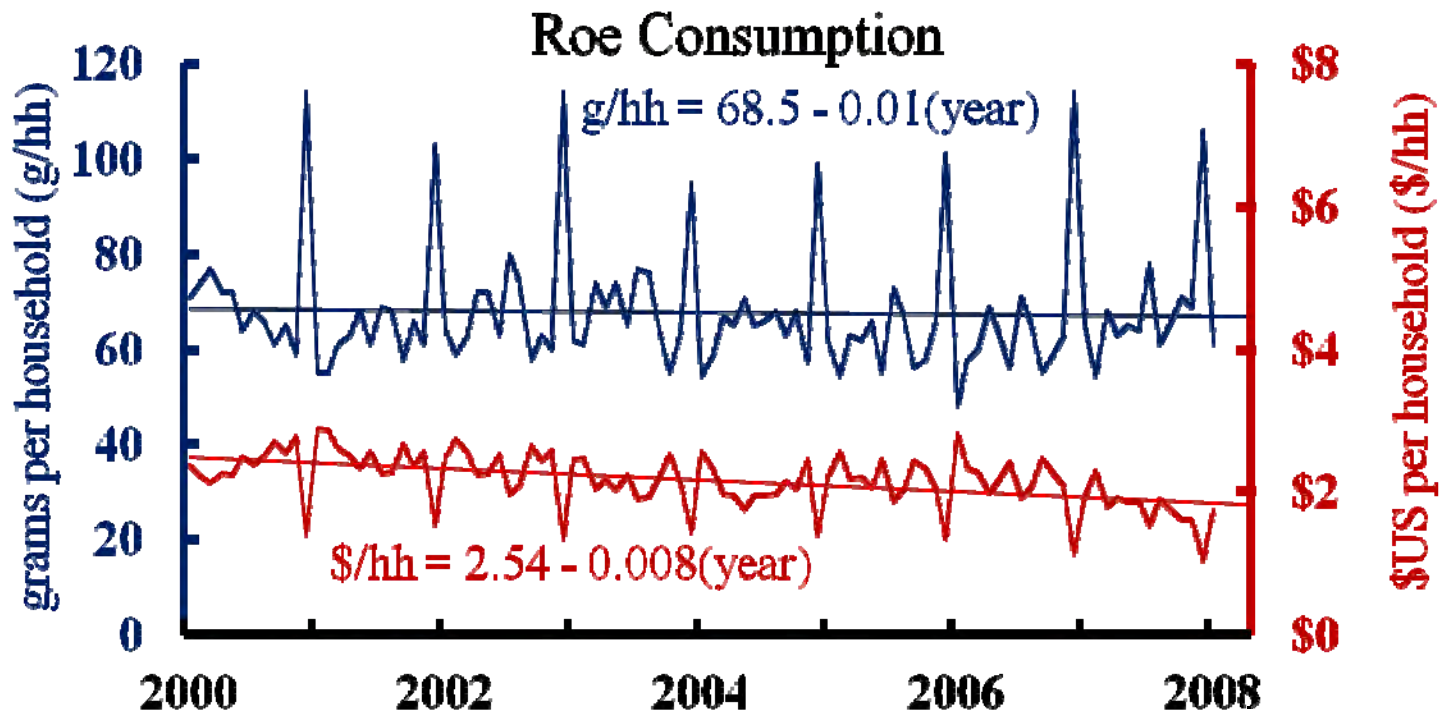
In addition to their allocation of 10% of the TAC which is leased to CPs and mothership cooperatives, CDQ entities now control 16% of the CP DPF, 9% of the mothership DPF, and 17% of the inshore CV DPF—A total of ~23% of the TAC.



Potential Destabilizing Factors

Changing Japanese seafood consumption patterns

- Japanese household demand for pollock roe and high-grade pollock surimi is declining



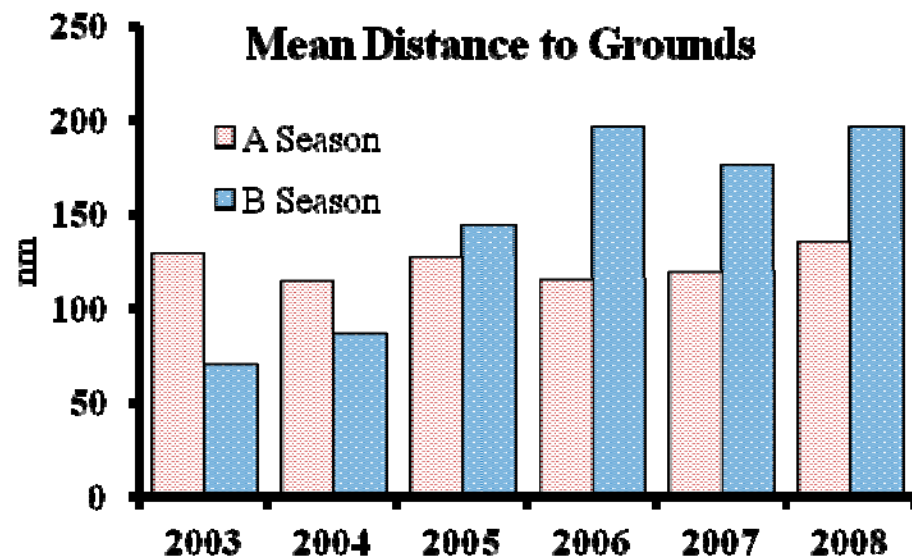
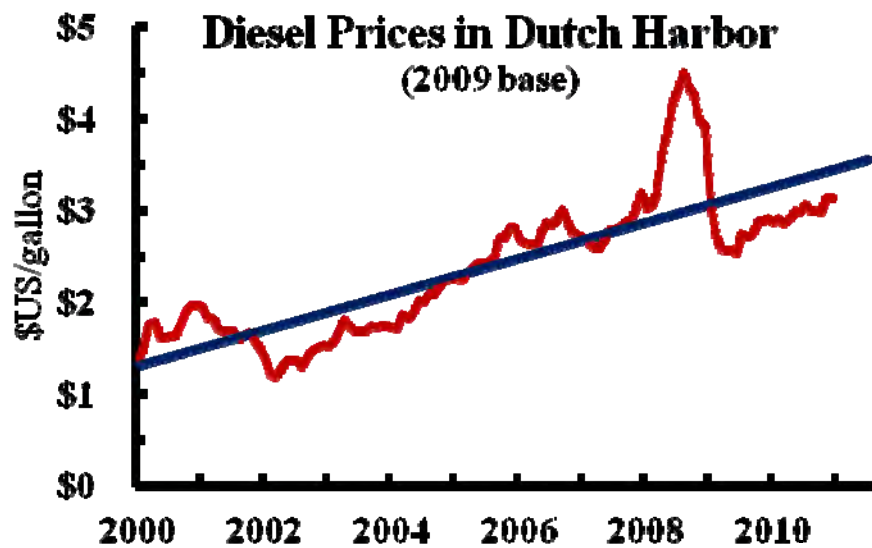
Potential Destabilizing Factors

- Increased production of substitute seafood products
 - Russian pollock harvests are expected to increase as Western Bering Sea and Sea of Okhotsk stocks recover from overexploitation.
 - Farmed tilapia and basa compete with pollock in fillet and surimi markets.



Potential Destabilizing Factors

- Increased fuel costs
 - Diesel prices are rising
 - Distance to productive fishing grounds varies in response to changes in the spatial distribution of pollock biomass and closures of nearshore fishing grounds.



Potential Destabilizing Factors

Political machinations

Inefficient regions seek to reintroduce political allocations in place of markets

Appeal to the Washington and Oregon Congressional Delegations,

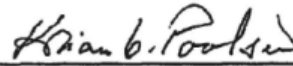
Governors and State Legislators:

Level the Fisheries Playing Field with Alaska

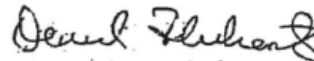




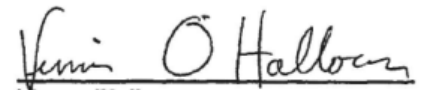
Dr. Dayton L. Alverson
First SSC Chairman, NPFMC
Retired, Marine Biologist



Kris E. Poulsen
Retired, Bering Sea Crabber



Dr. David Fluharty
Former Council Member, NPFMC



Vince O'Halloran
President, Puget Sound Ports Council
AFL-CIO



Dennis Petersen
Past President, NPFVOA
National Fisherman Highliner 1995
NPFVOA Safety Program Founder

Potential Destabilizing Factors

- Regulatory barriers to intersectoral leasing/sales of DPF preclude transactions that could increase net benefits.
- Management measures intended to reduce salmon bycatch and minimize putative impacts on Steller sea lions force fishing vessels to travel greater distances from port.
- The longer travel distances, and rising fuel costs, have increased the operating costs per ton of pollock harvested and increased the likelihood that portions of the sector allocations will be unfished.
- In 2007, 37,991 mt (>10% ~\$12 million exvessel, ~\$38 million 1st wholesale) of the B-season (July-October) inshore sector allocation was left unharvested.
- In 2011, the inshore sector will probably leave about 18,000mt (~5% ~\$6 million, ~\$18 million 1st wholesale) unharvested.

Consequences of Limitations on Transferability of Catch Shares in the Alaska Pollock Fishery

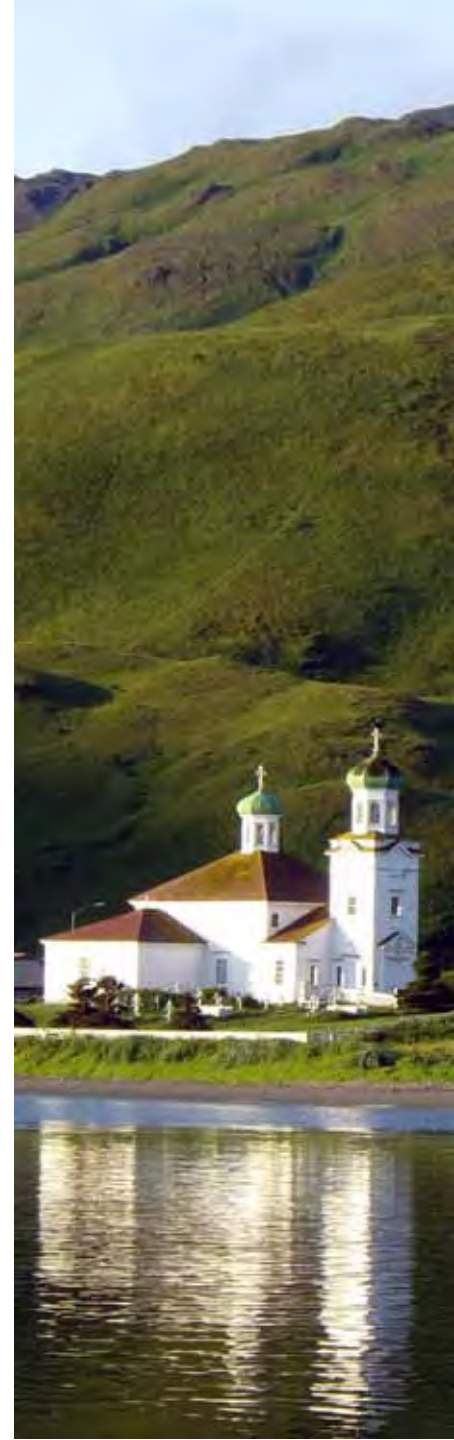


We use comparative static simulations based on based on a model of the flow of fillet, surimi, and roe to markets in the U.S., Japan, and Europe (Strong 2011) to estimate the opportunity cost to inshore and offshore sectors and the CDQ entities of the prohibition on intersectoral transfers of AFA catch shares.



Market Model

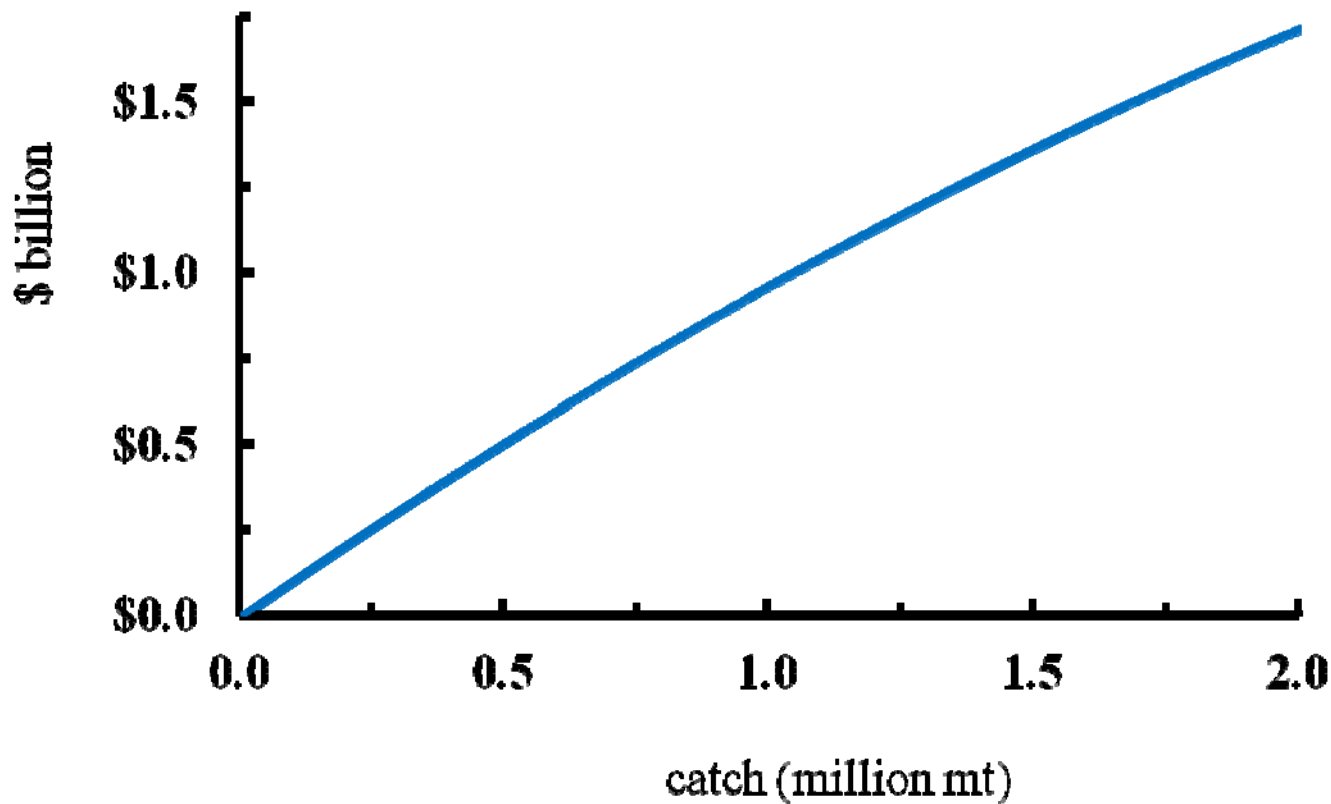
- Four allocation (supply) equations
 - Pollock fillets to US and EU
 - Pollock surimi to Japan & US
- Five inverse demand equations
 - US and EU demand for pollock fillets
 - Japanese and US demand for pollock surimi
 - Japanese demand for pollock roe
- Monthly data from 2000 – 2008
- 27 exogenous variables
- 108 seasonal variables
- Jointly estimated using iterated 3SLS



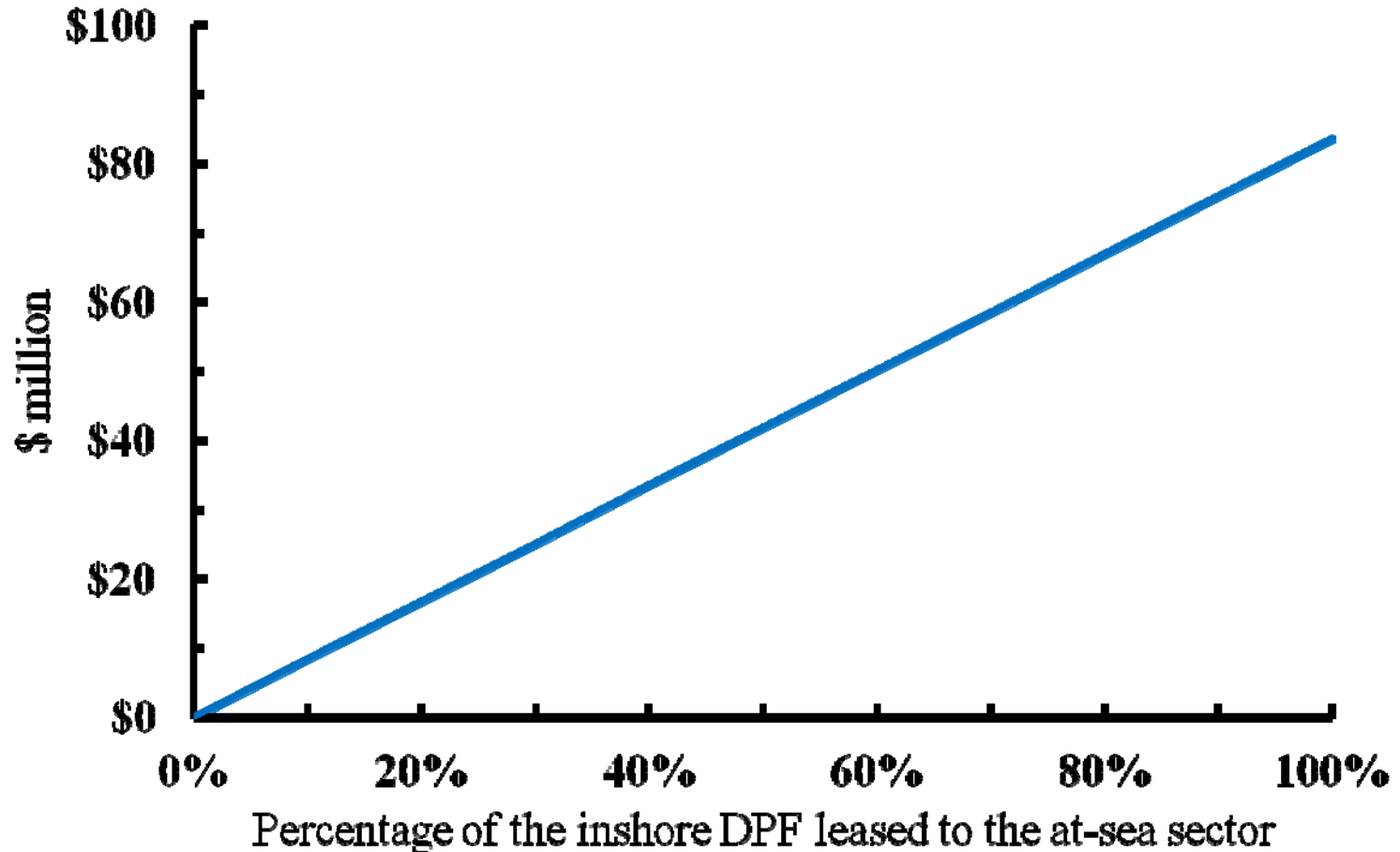
Simulation Assumptions

- Based on 2007 market conditions and recovery rates
- Allocation of pollock
 - % allocated to fillet and surimi
 - Remainder determined by marginal returns
- The at-sea sector has operational advantages
 - Process fish within hours
 - Stay on grounds for as much as 2-3 weeks
 - Higher fillet recovery
- At-sea sector benefits from a product price premium
 - Surimi (~23.5%)
 - Roe (~23%)

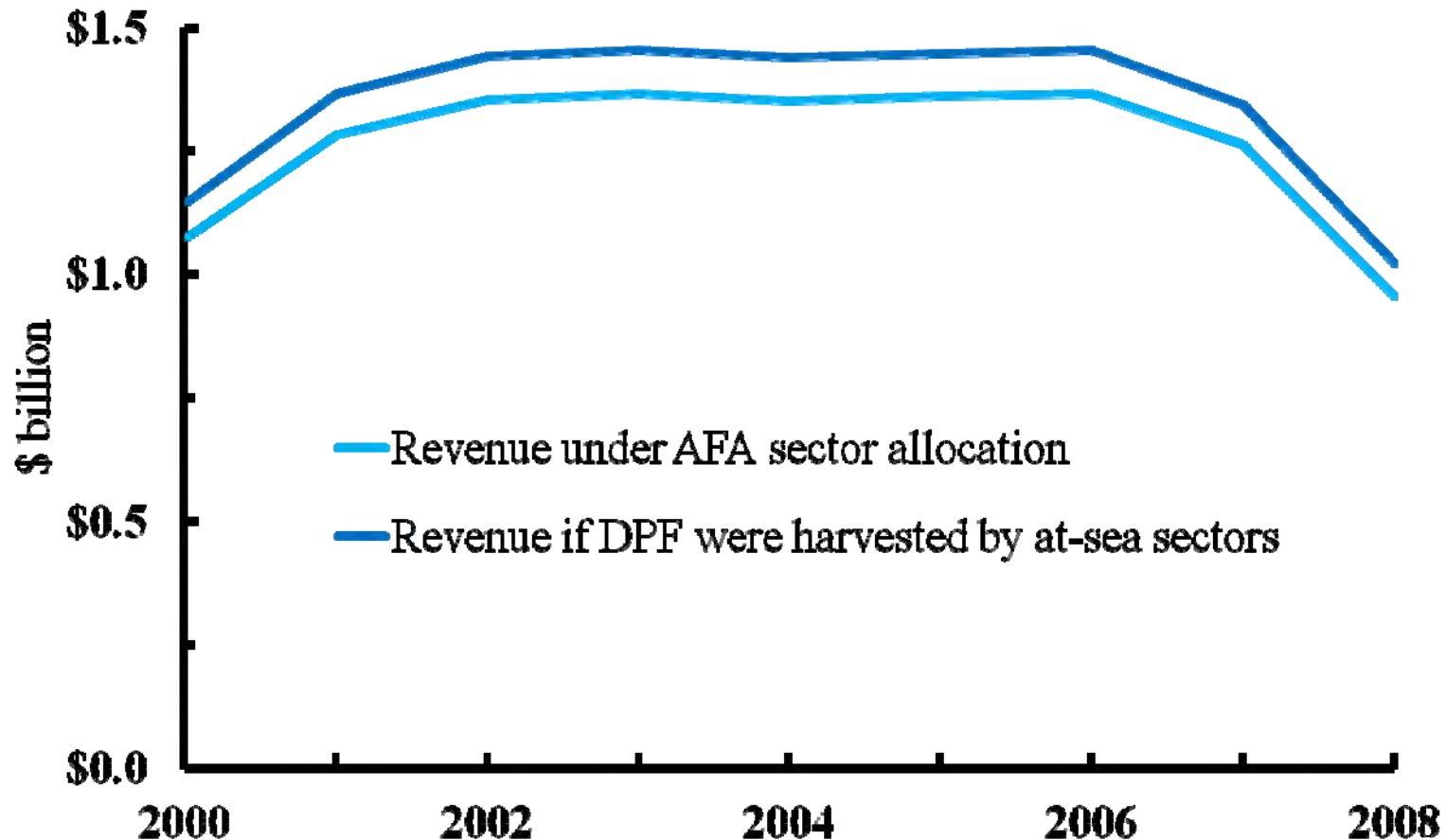
Wholesale Revenue as a Function of the Pollock TAC



Change in Wholesale Revenue if Inshore Sector Catch Shares Could be Leased



Wholesale Revenues With and Without Intersectoral Leasing



Dysfunction by Design?



The AFA was an expedient work-around the 1996 congressional moratorium on IFQs.

It provided side-payments to affected parties that were beyond the resources of the NPFMC.

It skirted the requirement for regulatory analyses.

It provided a level of permanency not possible through NPFMC action.



The AFA freed fishermen from the financial burden of perennial rent-seeking and it freed them from the spendthrift race-for-fish.

Under the AFA, fishermen and processors have been free to optimize their product lines in response to changing market conditions and to optimize their production technology and production capacity given input and output price vectors.



Inefficient design features of the AFA have reduced net benefits that could become available if the AFA were amended to permit intersectoral trades.

The ability of inshore cooperatives to harvest their catch shares is uncertain under conditions such as

- rising fuel costs,
- falling real product prices,
- decreased CPUE,
- reduced abundance of large pollock, and
- increased in distances to productive fishing grounds.



The inshore B-season DPF is likely to be under-harvested for three reasons.

1. Inshore sector catches generate \$0.13/kg less, on average, than at-sea sector catches.

2. Roe, which comprises 25% of pollock revenue, is primarily harvested in the A season, thus the overall price per kg for B-season pollock is much lower.

3. Pollock are distributed further away from shore during the B season so fuel costs per ton of harvest are generally higher in the B season.



Support for intersectoral transferability is unlikely to come from first-generation pollock fishermen who remain scarred by the inshore/offshore battles and worry that reopening the AFA could risk the benefits that they currently enjoy.

Proposals are more likely to come from CDQ entities who could gain from transferring DPF between inshore and at-sea firms in which they are invested.

Under 2007 conditions, CDQ entities stand to gain over \$14.3 million per year by transferring their inshore DFP to their at-sea operations.



Because the NPFMC lacks authority to amend the AFA, it is increasingly likely that the pollock fishery will fail the National Standard (1) which requires that U.S. fisheries be managed to produce optimum yield.

While unharvested portions of the inshore B-season DPF could be released into an open-access pool, non-AFA qualified vessels and AFA-qualified vessels from other sectors would be prohibited from fishing the open access pool: Catch 22—dysfunction by design.

