

Reducing Chinook Salmon Bycatch:

Legacy Program and Rolling Hot Spots

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PPA Incentive Requirements to Receive Allocations Based on a 68,392 Chinook Hard Cap

- Provide incentives at the individual vessel level
- Incentivize vessels to avoid Chinook bycatch at all levels of abundance in all years
- Reward vessels that successfully avoid Chinook and/or penalize vessels that fail to avoid Chinook
- Incentives must influence fishing decisions at levels below the hard cap

Creating Incentives Through Individual Vessel Chinook Bycatch Limits – Legacy Program

- Each vessel participating in the Legacy Program is assigned a limit of Chinook salmon called an ITEC.

Individual **T**radable **E**ncounter **C**redit

- Each vessel now becomes responsible for managing their own bycatch. Once out of credits a vessel must stop fishing.

PPA - Provide incentives at the individual vessel level

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

- First year – Vessel ITEC allocations are made pro rata to the vessel's pollock allocation.

Example: NMFS allocates a bycatch limit of 5,000 Chinook salmon to an inshore coop. A member vessel with 10% of that coop's pollock would receive 10% of the Chinook bycatch limit, or 500 ITECs.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

- Second and subsequent years – Initial ITEC allocations are adjusted up or down for each vessel based on the vessel's relative bycatch performance to all participating vessels in the sector.
 - Worst and best performing vessels lose and gain 11% of their initial allocation.
 - Vessels distributed between the worst and best vessels receive ITEC adjustments within the + /- 11% range.
 - Those ranging further from the mean lose or gain ITECs at a greater rate than those closest to the mean.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

How it works:

- In every single year each vessel will either:
 - Lose between 0 and 11% of their initial (first year) allocation
 - OR
 - Gain between 0 and 11% of their initial allocation
- Over the lifetime of the program no vessel will have an accumulative loss greater than 67% of their initial allocation or gain greater than 133%.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

Example: Using the previous vessel that received an initial (first year) allocation of 500 ITECs.

- In a single year this vessel can never lose or gain more than 55 ITECs; 11% of 500.
- Over the life of the program this vessel can never fall below 335 ITECs; 67% of 500.
- Over the life of the program this vessel can never acquire more than 665 ITECs; 133% of 500.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

The fast path to the bottom, or top.

If a vessel is the worst performer 3 years running it would find itself against the bottom limit.

Likewise,

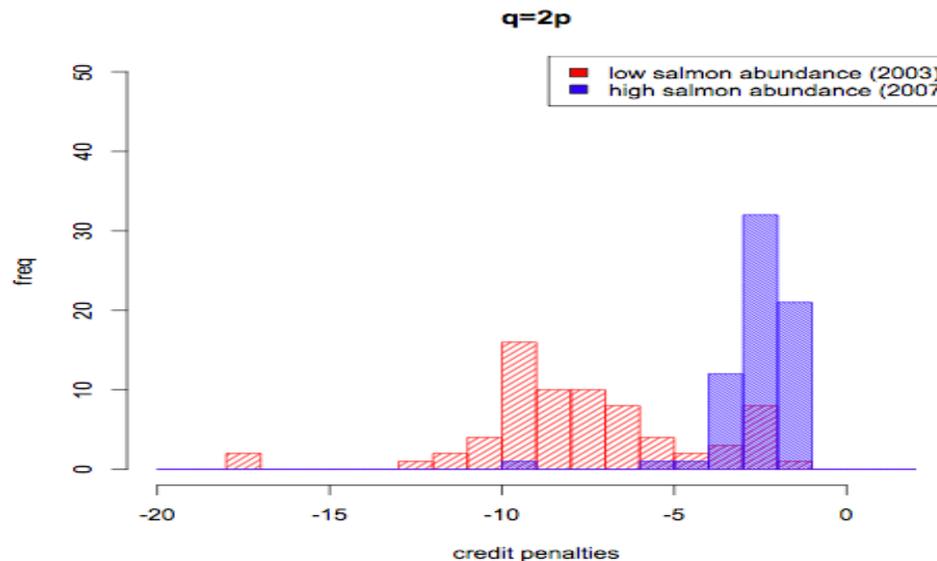
If a vessel is the best performer 3 years running it would find itself against the upper limit.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

- Incentives to reduce bycatch begin in the first year of the program.
- Incentives to reduce bycatch are just as strong in the first year as in following years.
- ITECs should be thought of as insurance, where the cost of not having enough can be quite high.

Creating Incentives Through Individual Vessel Chinook Bycatch Limits

- Incentives are strongest in years of low Chinook encounters due to more widely distributed bycatch rates.



- **PPA - Incentivize vessels to avoid Chinook bycatch at all levels of abundance in all years**

The Strength of Varying ITEC Allocations as an Incentive

- ITECs serve as a strong incentive for a vessel to minimize Chinook bycatch at all levels of abundance.
 - Regardless of current levels of encounter, a fisherman never knows future bycatch needs.
 - Protecting ITEC allocations, both in season and for future seasons, becomes a very high priority; equates to securing an adequate insurance policy verses a minimal policy.

Behavior Influence of ITECs in Encounter Years Below the Hard Cap

An Inshore Sector Study

The annual Inshore Sector limit (under the 68,392 PPA option) is 38,060 Chinook salmon. In 2001, 02, 03, & 04 the Inshore Sector stayed under that cap, but some individual vessels did exceed their pro rata bycatch limit.

Year	Sector Bycatch Total	Percentage of PPA Sector Allocation	Number of Vessels over Pro Rata Share	Percentage of vessels over Pro Rata
2001	9,178	24.11%	6	7.23%
2002	20,551	54.00%	11	16.28%
2003	21,186	55.66%	14	13.10%
2004	33,278	87.44%	23	27.38%

Behavior Influence of ITECs in Encounter Years Below the Hard Cap

Conclusion;

- Allocating the Chinook hard cap to the individual vessel level will drive fishermen into changing their behavior at encounter levels well below the hard cap.
- Raising and lowering vessel allocations based on relative bycatch performance will further enhance those changes in behavior; driving bycatch to even lower levels.

Behavior Influence of ITECs in Encounter Years Below the Hard Cap

Therefore, the allocation of bycatch limits at the vessel level, in conjunction with performance driven adjustments, meets all 4 PPA criteria.

- Provide incentives at the individual vessel level.
- Incentivize vessels to avoid Chinook bycatch at all levels of abundance in all years.
- Reward vessels that successfully avoid Chinook and/or penalize vessels that fail to avoid Chinook
- Incentives must influence fishing decisions at levels below the hard cap.

ITECs From a Pollock Fisherman's Perspective

High encounter times of the year = **Survival**

Fishermen must reduce bycatch to insure the harvest of their pollock

Low encounter times of the year = **Competition**

Fishermen will continue to reduce bycatch to minimize ITEC loss or maximize ITEC gain.

Transfer of ITEC

- Very few, if any, vessels will transfer ITECs to others until completing their own pollock harvest.
- When transfers do occur, they will be constrained by a “sell side” limit.
- Exception – transfers of ITECs in conjunction with matching pollock amounts are called “paired transfers” and are exempt from the sell side limit

Sell Side Transfer Limits

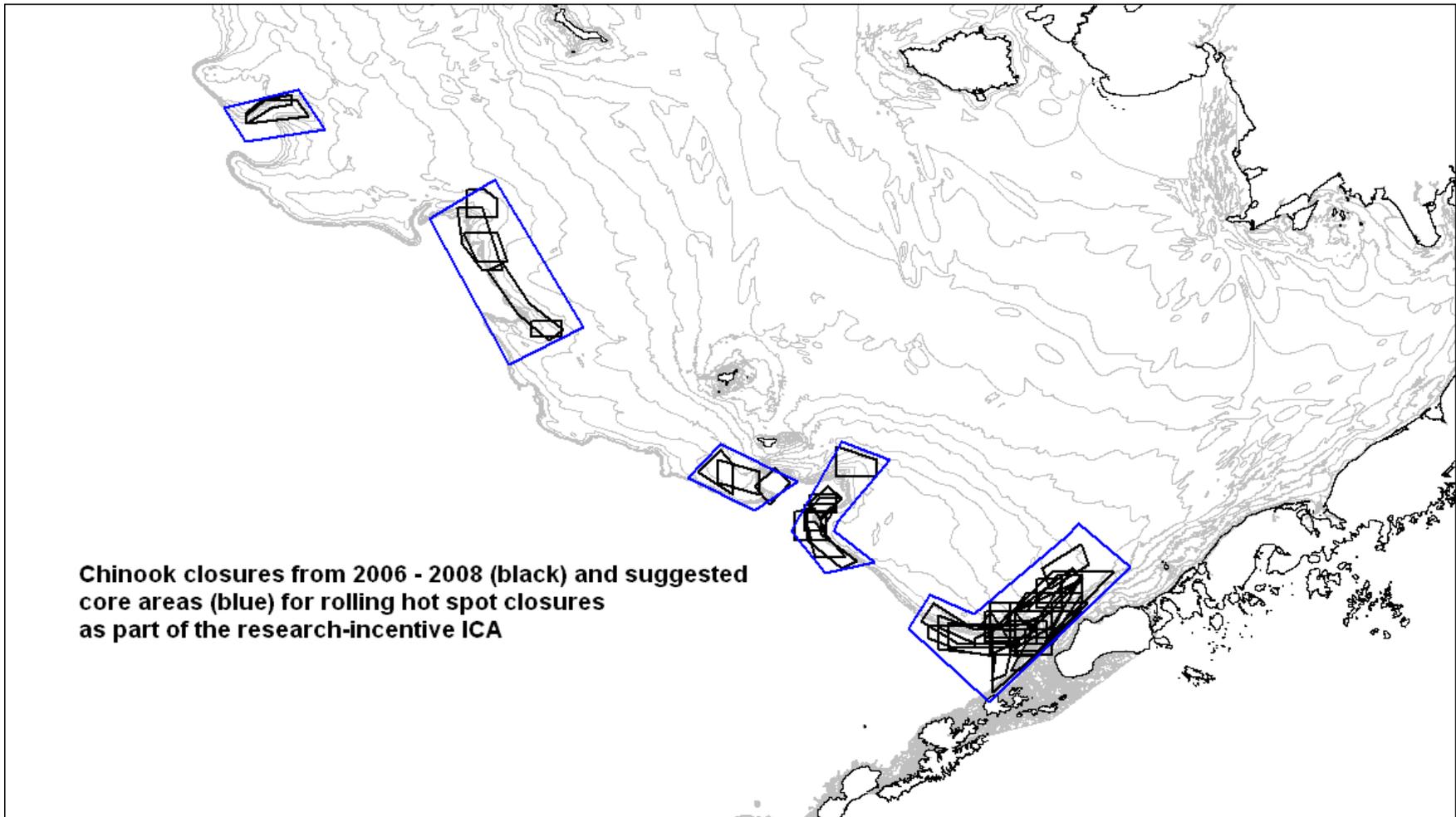
Dynamic Salmon Savings Program

- Dynamic – meaning that the lower the fleet encounter rate, the higher the transfer limit.
- Savings – insures that transfers **do not** become the path to abusive bycatch practices.
- Will save substantial amounts of salmon during mid to low encounter years.

Hot Spot Closure Program

- While a rolling hot spots are not an incentive based program, they work well in conjunction with the Legacy Program
- This revised program, while similar to the successful hot spot program implemented in 2008, raises the bar higher by applying closures at the individual level, not at the coop level.
- Closures for individual vessels for the c/p and inshore sectors and for processor fleets in the MS sector.

Improving the Current Hot Spot Closure Program Utilizing “Core” Closure Areas



Improving the Current Hot Spot Closure Program Utilizing “Core” Closure Areas

- Core Closures are defined by reviewing the repeated placement of Chinook closures over the past 2 years.
- Rolling hot spots closures will only occur in the Core Closure Areas
- The goal of using Core Closure Areas is to prevent the rolling hot spot program from closing the dirtiest of the clean areas.

The Legacy Program provides powerful incentives for pollock vessels to change behavior, resulting in reduced Chinook bycatch. The added feature of Rolling Hot Spots enhances bycatch reduction even further.