

## Selective (Salmon) Fishing Update

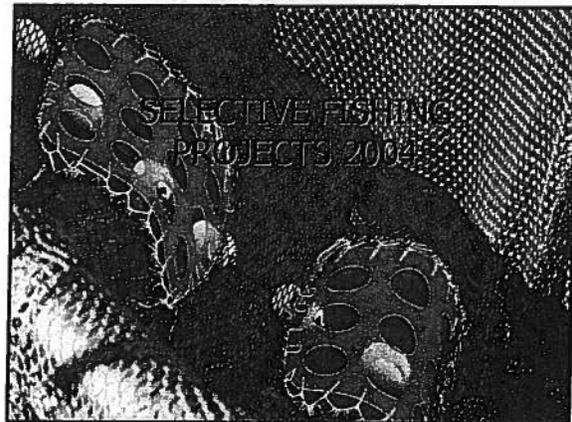
2004 Overview & Process  
2004 Projects  
Recommendations for 2005

## Overview

- Increasing priority and concern for species or stocks of concern (SARA listed or not)
- Selective Fishing Policy guides us
- The toolbox approach (developing & proven tools)
- DFO and Industry have resources to find solutions (5% of commercial TAC and innovation) First Nations and Recreational community don't have the funding

## Selective Fishing Process 2004

- Proposals to DFO by April 30
- Vetted through Area Harvest Committees
- Evaluation criteria
- DFO makes final decision in consultation with AHC
- Project teams develop and implement experiments and oversee results



## Grids & Knotless Bunts

- What are they?
  - Grids allow the escape from a seine bunt of small or immature salmon
  - Knotless bunts are smoother than knotted bunts resulting in reduced scaling
  - Knotless bunts with small mesh size reduce gilling
- Coastwide
  - Experimentation 1998-2004
  - PSARC paper March 2005

## Seine Grids & Knotless Bunts North Coast Status

- Area 3 & 4 (experimentation 2000-2004)
  - Immature chinook have an 80% mortality (short term) rate in sockeye fisheries
    - Scaling and gilling are major causes of this mortality
    - Grids can release up to 92% (2004) of the immature chinook caught while the knotless bunt can reduce scaling on those requiring handling and release
- Area 6 (experimentation 2000-2004)
  - Hatchery chum (Douglas Ch.) going uncaught due to weak stock wild pinks mixed by time and area
    - Pinks can be released through grids while retaining chum

### Seine Grids & Knotless Bunts South Coast – Status

- Area 20 can be an area of high coho incidence and an area of predominance for Thompson Coho
- Seines permitted to fish this area for Fraser Sockeye while developing a suitable solution to coho mortality (70% mortality)
- Ongoing work to reduce incidence and mortality on released coho:
  - Moving fleet away from high bycatch areas
  - Experimentation with selective fishing gear and implementation of what appears to work into a subset of the fleet

### Grids & Knotless Bunts South Coast - Status

- Area 20 (Experimentation 1998-2003)
  - Initial implementation of a solution in 2004
  - Management strategy to avoid high coho areas appears to work but mortality too high
  - Grids, knotless bunts & motivated crew appear to be the solution 70% -> 30% mortality
  - Increased fishing time possible based on lower impact on stocks of concern (primarily coho)

### Grids & Knotless Bunts South Coast - Status

- Area 20 (continued)
  - Area B advisors reluctant to embrace this solution until DFO demonstrates a benefit
  - Fraser sockeye stock concerns also restricting fishing time
  - PSARC paper due May 2005
  - Other applications of this gear
    - Sorting sockeye from pinks
    - Releasing small sockeye (e.g. Sakinaw)

### Gill Net Mesh Size vs. Size Range of Sockeye Caught

- Objective
  - Determine the size range of sockeye caught by various mesh sizes
  - Determine how mesh size can be used to reduce the potential catch of Sakinaw sized sockeye in Johnstone Strait
- Preliminary Results
  - Larger mesh size results in reduced catch of smaller sockeye
  - Data analysis required with comparison to Sakinaw

### Are Laminar Flow Revival Tanks Required in the Troll Fishery?

- Area H has challenged DFO on the move to laminar flow tanks in the troll fishery (report)
- Recommendations:
  - Review total coho mortality from fisheries and if acceptable take no further action (overall est. 0.3 coho mortalities/vessel /day)
  - If improvements required test the laminar flow tank against waterline release

### Beach Seine Testing – Fraser River

- Sto:lo experimenting with the use of a beach seine to target sockeye and chum
- Objective:
  - Develop an efficient harvest method for sockeye, pink and chum while developing acceptable release methods for coho and steelhead

## Special Projects that included Selective Fishing Results

## Sockeye Catch versus Coho Bycatch in Area 19/20 (Troll)

- Area H tested the viability of fishing sockeye in Area 19 & 20 due to reduced fishing time in Johnstone St.
- Coho a limiting factor
- Objective:
  - Test to determine if viable for sockeye
  - Test incidence of coho and ways to reduce
  - If viable (sockeye versus coho) consider taking a portion of Area H's TAC from these areas

## Sockeye Catch versus Coho Bycatch in Area 19/20 (Troll)

- Results Area 19
  - Limited fishing (2 days) and no catch of sockeye (2 coho 1 chinook)
- Results Area 20
  - Economically viable catch of sockeye possible
  - Fishing between the 75 & 90 f depth reduced incidental coho and chinook (1-3 coho mortalities/vessel/day)

## Area E Chinook Test Fishery vs. incidental Sockeye

- Area E testing their ability to fish large mesh gill nets to catch abundant Fraser Chinooks while minimizing their incidental sockeye catch
- Preliminary Results
  - Sockeye caught in all large mesh nets
  - Study design may need to compare hang ratio

## Implementation of Selective Fishing Gear or Methods

## Tooth Tangle Net – North Coast Implementation

- What is it?
  - Small mesh (4") gill net that captures fish predominantly by the mouth or projections on the head (most not gilled)
- When combined with short net and sets efficiency on target species can be maintained while significantly improving survival of releases
  - Coho mortality about 10% (40-60% with regular nets)
- Opportunity in 2004 to use this gear to fish pinks in the Skeena R. but run was poor (Only 1 vessel participated)

## Recommended Projects for 2005

- Seine – Areas A & B
- Grids & Knotless Bunts (PSARC paper to provide guidance but not until May 2005)
  - Complete experimentation on chinook mortality in Areas 3 & 4
  - Sorting hatchery chum from pinks in Area 6
  - Grids & knotless bunts to release sockeye and retain Fraser pinks
  - Investigate the potential benefit of grids releasing small sockeye in Johnstone St. to lower the potential harvest rate on Sakinaw sockeye
  - Implementation stepped up in Area 20

## Recommended Projects for 2005

- Gill Net – Area C
  - Encourage the use of tangle net gear to target pink salmon
- Gill Net – Area D
  - Analyze mesh size catch results with Sakinaw sockeye size data to determine existing or future benefits of using a particular mesh size
- Gill Net – Area E & First Nation Harvesters
  - Experiment with mesh size and hang ratio to target chinook while reducing the incidental catch of sockeye

## Recommended Projects for 2005

- Gill Net – Area E & First Nation Harvesters
  - Explore small mesh nets (short nets and sets) to target pink & chum while reducing the incidental mortality of sockeye, coho and steelhead

## Recommended Projects for 2005

- Troll – Area H
  - Determine from DFO whether further study of troll laminar flow revival tanks is necessary, if so plan a study (Area F & G involvement?)
- Troll – Area H
  - Expand the exploration of a viable sockeye fishery in Area 20 (19) and how to reduce incidence & mortality on coho & chinook
- Troll – Area H
  - Plan a pink fishery in Johnstone St. with release of sockeye and DFO to determine if additional work on sockeye release mortality is required

## Other Issues & Recommendations for 2005

- Harvesters not always taking advantage of "tools" (available or developing) and need to take on more responsibility through the AHC to find selective fishing solutions
- How to engage harvesters to adopt solutions?
  - Set conservation standards for fisheries
  - Propose benefits of adopting solutions (carrot)
  - Propose consequences of not adopting solutions (stick)
- DFO to encourage all AHC to develop collaborative agreements with DFO in 2005 to fund operations and selective fishing

## Other Issues & Recommendations for 2005

- Analysis of results
  - Laminar flow revival tanks (gill net) - done
  - Grids & knotless bunts – scheduled
  - Troll revival tanks versus waterline release
  - Gill net mesh size and hang ratio
- Review area licensing policy regarding shared use of Area 20 between Area G & H
- First Nations encouraged to adopt selective fishing gear and methods therefore AFS and Treaty staff need to take this into consideration in discussions and negotiations