



# Catch Monitoring in First Nations Fisheries in the Lower Fraser River

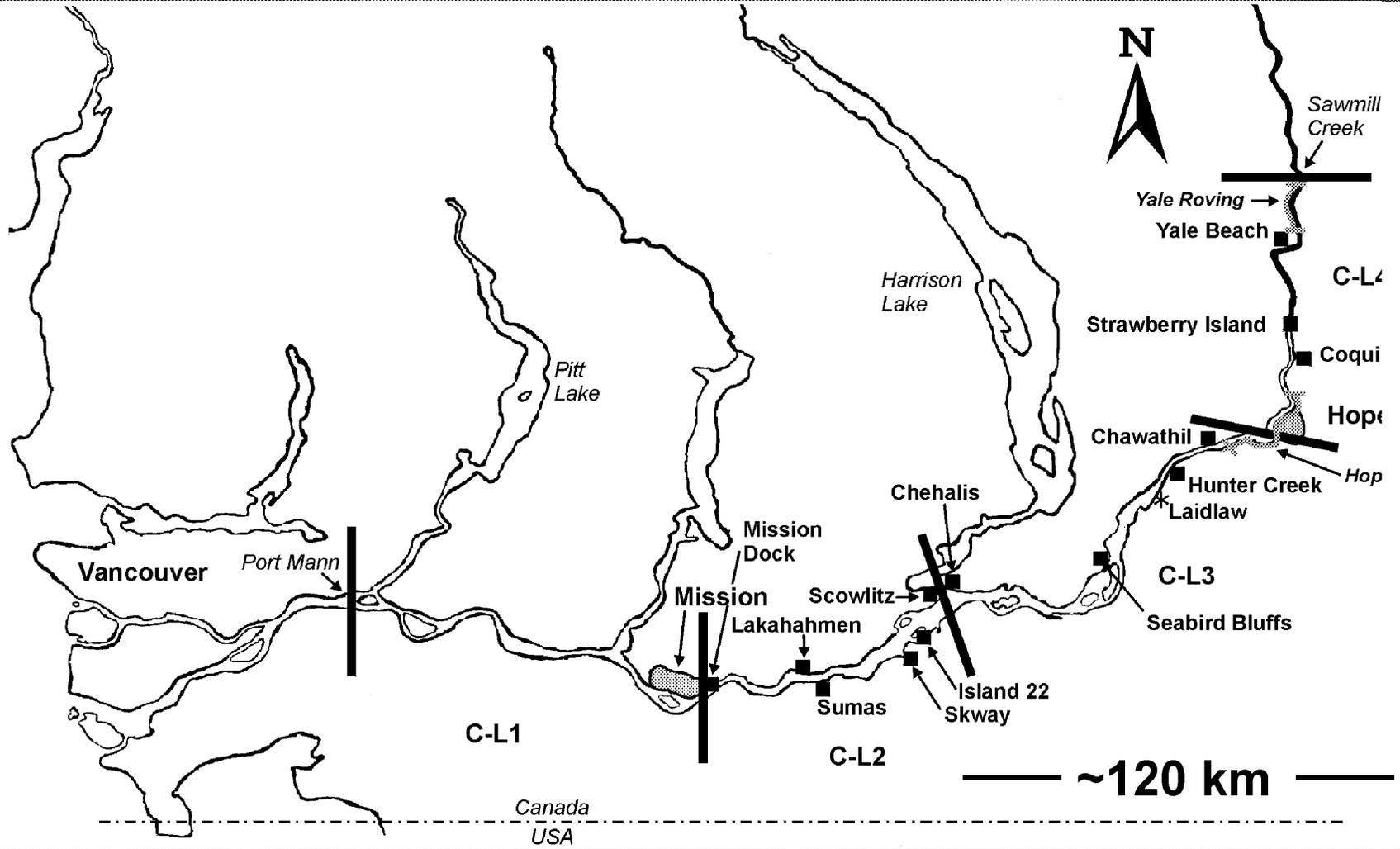




# Different Programs for Different Fisheries

- 3 major areas
  - Mouth to Port Mann Bridge
  - Port Mann Bridge to Mission
  - Mission to Sawmill Creek
- Two types of fisheries
  - Food, Social, Ceremonial
  - Economic Opportunity







# FN Fisheries - Mouth to Port Mann Bridge

- Mostly drift nets – larger boats, few bands
- Continuous openings for up to 72 hours
- FSC Fisheries
  - Catch reported on-the-water to FN or DFO fishery monitors during the fishery (hails)
  - Final hails collected by FN monitors at the close of the fishery
- Economic Opportunity Fisheries
  - Mandatory Landing Program (MLP)
  - Catch offloaded at designated landing sites (dock or packer) and counted by FN fishery monitor
  - Catch recorded on Landing Slip by FN monitor





# FN Fisheries - Port Mann Bridge to Mission

- Mostly drift nets, mix of large vessels and skiffs, few bands
- Drift nets open 12 hours per day (1 to 2 days per opening)
- FSC Fisheries
  - Hails collected on-the-water by charter patrols, and at landing dock by FN monitors
- Economic Opportunity Fisheries
  - Mandatory Landing Program similar to below Port Mann bridge





# FN Fisheries - Mission to Sawmill Creek

- Mostly set net, with some drifting in lower reaches – smaller boats, many bands
- Set nets open continuously for up to 72 hours
- FSC Fisheries
  - Creel survey for set nets (drift nets are hail)
- Economic Opportunity Fisheries
  - Mandatory Landing Program (MLP)
  - Catch offloaded at designated landing sites and counted by FN fishery monitor
  - Catch recorded on Landing Slips





## FSC Catch Data – Mouth to Port Mann

- DFO receives a single page report per opening
- Final hails by fisher for most species (includes releases)
- May include daily effort count (Musqueam)
- Also receiving electronic data from Tsawwassen
- Administered by individual bands





## FSC Catch Data – Port Mann to Mission

- Drift net interview sheets filled out by monitors at each landing site
- DFO receives data from each interview, by fisher
- Data includes kept and released catch based on dockside hails
- Administered by LFARM fisheries program







## FSC Catch Data – Mission to Sawmill Creek

- Creel Survey
  - catch interviews
  - instantaneous gear counts
  - 24-hr effort surveys
- Split into 3 sections for catch estimation
  - Mission to Harrison
  - Harrison to Hope (Harrison to Laidlaw / Laidlaw to Hope)
  - Hope to Sawmill Creek (Hope to Yale / Yale to Sawmill Creek)
- Administered by LFARM Fisheries Program





# Creel Survey: Catch Rate

## Catch interviews

- Monitors record fish caught and soak time whenever gear is checked
- The average number of fish caught per hour (CPUE)
- Approximately 20 monitoring sites
- Most monitors work at one site, but a few have “roving” patrols
- ~100 interviews per opening (depending on location, length of opening)







## Creel Survey: Effort

- Catch interviews
- Instantaneous gear counts (overflights)
  - Snap-shot of amount of gear fishing at a particular time of day
  - Covers entire area from Mission to Sawmill Creek
  - 1 flight per day
  - **Does not tell you how much fishing occurs over 24-hours**





LOWER FRASER FIRST NATION SALMON FISHERY

EFFORT DATA SHEET

trawler: Tony/Kow  
lot: BCAT Fisheries

Date: Aug 6/05  
Weather: clear

1. Jones to Laidlaw	Time Entered: <u>0912</u>	2. Hope to Harrison	Time Finished:
<u>45</u>			
3. Laidlaw to Harrison	Time Entered: <u>0918</u>	6. Harrison to Laidlaw	Time Finished:
<u>52</u>			
5. Harrison to Mission	Time Entered: <u>0930</u>	4. Mission to Harrison	Time Finished:
<u>79</u>			
7. Hope to Yale	Time Entered: <u>1013</u>		
<u>79</u>			
8. Yale to Sawmill	Time Entered: <u>1021</u>		
<u>51</u>			

TOTALS:

Hope to Jones (Co 1b) (1 & 8): 45  
 Jones to Harrison (Co 3a) (2 & 5): 52  
 Harrison to Mission (Co 2) (3 & 4): 79  
 Hope to Yale (Co 4a) (7): 79  
 Yale to Sawmill Creek (Co 4b) (8): 51

TOTAL 306 set nets  
70 MIT NETS

COMMENTS: Really lots of seals.





# Creel Survey: Effort

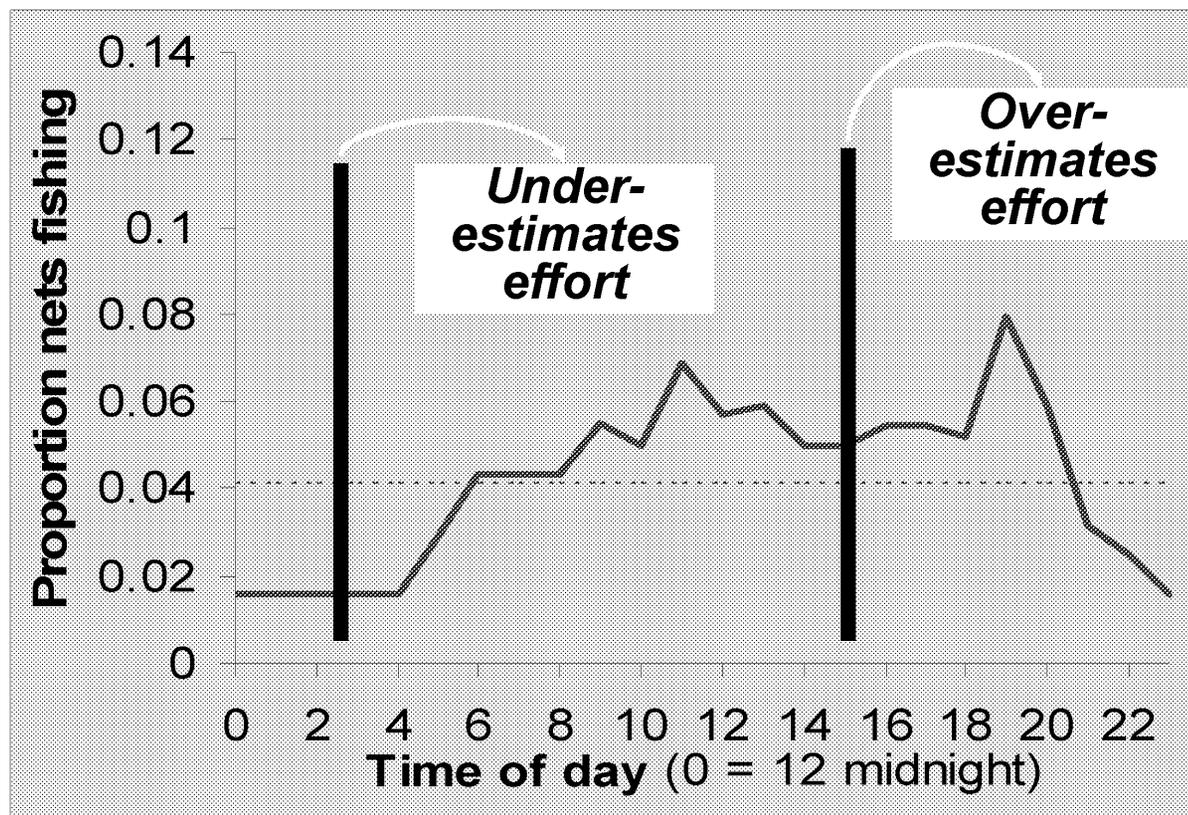
- Catch interviews
- Instantaneous gear counts (overflights)
- Proportion gear fishing during overflights (24-hr effort surveys)
  - tells you the avg. **proportion** of harvesters fishing at different times of day
  - Data reconstructed from catch interview data





# Overflight information alone not enough

***If only  
overflight  
information...***





# Creel Survey: Catch Estimate

- DFO summarizes and enters raw creel survey data into catch estimation software to generate catch estimates (by species and area) for each opening





## Economic Opportunity Catch Data

- DFO receives copies of each landing slip, which detail kept and released catch by species
- DFO enters landing slip data into a database, and produces summaries (by area, band, species, gear)
- Same data process for all EO fisheries, regardless of area (Ec Opp beach seine fisheries are the exception)
- Effort data provided by overflights (set net) and on-the-water vessel counts





<b>First Nation Fishery Landing Slip</b>		Date (yyyy/mm/dd) / /	Time (hh:mm) : AM PM	Trip ID # E-01-00001
Landing Location	Packer Boat Name	Fishing Location		Gear: Drift Set Beach Seine
Participant Landing Fish	Designation Card #	Band Name that Designated Participant		First Nation Vessel #
Other Participants (Crew)	Designation Card #	Signature of Participant		
Other Participants (Crew)	Designation Card #	Name of Monitor	Signature of Monitor	
I CERTIFY THAT THE INFORMATION ON THIS FORM IS COMPLETE AND ACCURATE				
Species	Total Number of Fish Landed (This includes fish taken home)	Number of Fish Taken Home	Number of Fish Released	
Sockeye				
Coho				
Pink				
Chum				
Chinook (Spring)				
Steelhead				
Sturgeon				
Comments/Tag Number & Species				
White - DFO Original, Yellow - First Nation Copy, Pink - Participants Copy, Green - DFO Copy				





# Validation

- Catch Validation
  - Catch is directly counted by a monitor/observer either by on-board observer or at offload (0 to 100%)
- Release Validation
  - Any released catch is directly observed and recorded (observer, video)
- Effort Validation
  - Complete fishing effort is assessed through overflights, vessel counts, start fishing reports





# Validation in FN Fisheries

<b>FSC</b>	<b>Below Port Mann</b>	<b>Port Mann to Mission</b>	<b>Mission to Sawmill</b>
Catch Validation	no	no	partial
Release Validation	no	no	no
Effort Validation	no	no	yes

<b>Ec Opps</b>	<b>Below Port Mann</b>	<b>Port Mann to Mission</b>	<b>Mission to Sawmill</b>
Catch Validation	yes	yes	yes
Release Validation	no	no	no
Effort Validation	no	no	no





# Challenges

- Existing catch monitoring programs are part of annual FN fishing agreements – improving catch monitoring not a priority when agreements are negotiated
- Regional disparity in catch monitoring standards, among all fishing sectors
- Management decisions often made without considering implications for catch monitoring
- Increasing sampling demands (e.g. CWT, LGL)
- Increasing data management requirements (FN database, FOS)
- Insufficient long-term support for programs

