



Fisheries and Oceans  
Canada

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# DFO CWT Lab Improvements

*Presentation to RCMT Committee  
Boise, Idaho*

*Kathy Fraser, DFO*

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# DFO Dissection lab – JO Thomas



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# CWTIT Project

- Visited ADFG and WDFW labs
- Reviewed DFO processes / protocols
  - Sample Data Collection, Forms, and Management
  - Lab Processing
  - Data Entry
  - Archival



# Sample Data Collection, Forms, and Management

- Established clear delineation of role of lab vs. sampling program
- Developed “Container” labels, standard protocols for shipping and packaging containers → Improved Freezer Storage Capacity
- Standardized “lab use only” data collection across all sampling programs



## Freezer (before standardizing container storage)

- All samples in square buckets and clear bags, with external barcoded labelling
- Shelving build along both sides of freezer





## Head Labels – Commercial, FN Economic, Test Fisheries, and Escapement

**Commercial**

1234001

Lab Use

P ☐ H ☐ C ☐

15 24

**Research**

1222000

Lab Use

P ☐ H ☐ C ☐

15 24

**First Nations  
Fisheries**

1229001

Lab Use

P ☐ H ☐ C ☐

15 24

**Escapement**

1229000

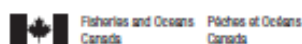
Lab Use

P ☐ H ☐ C ☐

15 24



## Head Labels - Recreational Fisheries (front and back)



F# \_\_\_\_\_  
ENT \_\_\_\_\_  
SC ☐ INV ☐

Office Use



1 1 9 7 0 0 1

Lab Use

P ☐ H ☐ C ☐  
15 24

### Salmon Sport Head Recovery Program

Check for missing Adipose Fin  
If missing:

1. Cut off Head - Remove Gills
2. Fill out label and attach to Jaw
3. Place Head in freezer or in bucket



\*\*\*Please Use Pencil\*\*\*

### Required Information

Place Fish Caught: \_\_\_\_\_  
(Local Name)

Management Area: \_\_\_\_\_

Date Caught: 

Year			

Month	

Day	

example

2 0 2 3 0 7 1 4

Type of Catch: Sport Saltwater ☐ Sport Freshwater ☐

Other \_\_\_\_\_

R.D. PENHALL LTD. - MADE IN VANCOUVER, CANADA - DUKSIAK WATERPROOF

DFO 2015/06

Optional (to receive email about your catch)

### Angler Contact Information

Name: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone: \_\_\_\_\_

### Mailing Address (alternative to email)

Address: \_\_\_\_\_

City: \_\_\_\_\_

Prov / State: \_\_\_\_\_

Postal / Zip Code: \_\_\_\_\_

### Guide Contact Information

Guide #: \_\_\_\_\_

To receive your guide #  
contact 1-866-483-9994

OR

Name: \_\_\_\_\_

E-mail: \_\_\_\_\_

Phone: \_\_\_\_\_

### Mailing Address (alternative to email)






***Container Labels – Used for all shipments of samples to the Lab***

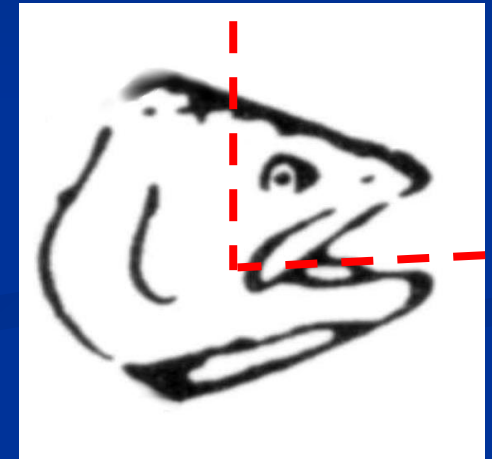
SALMON HEAD RECOVERY PROGRAM CONTAINER LABEL		Recorded by:
Fishery: <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Sport <input type="checkbox"/> 1st Nations <input type="checkbox"/> DFO Creel <input type="checkbox"/> Test <input type="checkbox"/> Research <input type="checkbox"/> Escapement <input type="checkbox"/> Other (Describe on back)		Bag/Container From: <input type="checkbox"/> Rep <input type="checkbox"/> Fisher
Depot Name:		
Pickup Date:		Catch Month:
Project Name:		Stat Week: (Commerc)
Location:		Sample Year:

CL-1001





# Standards for Fisher-provided Samples





# Lab Processing

- Manual dissection procedures required for majority of samples due to variation in tag placements (mixed stock fisheries). Reviewed method for manual dissection vs. AK vs. WA – binary search
- Rotation of staff through 3 roles – rough dissection to pea-sized, picking, reading/data recording → reduced fatigue



# Binary Search for Tag



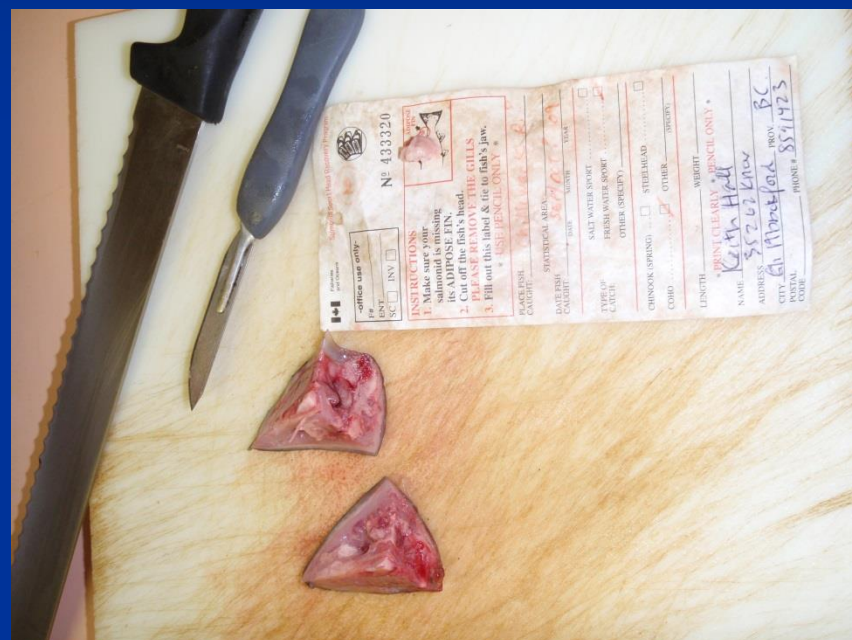




# V-Detector

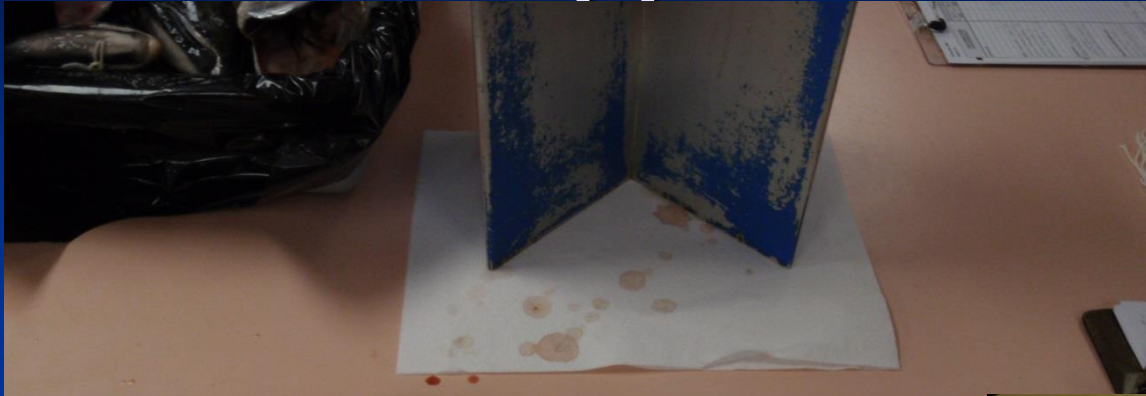








# Prepped for 'Picking'





# Lab Processing

- Introduced digital microscope reading stations
- Reviewed protocols for QC and eliminated processes that had evolved over time with no current rationalization
- Introduced electric corers for samples with consistent tag placement (escapement).





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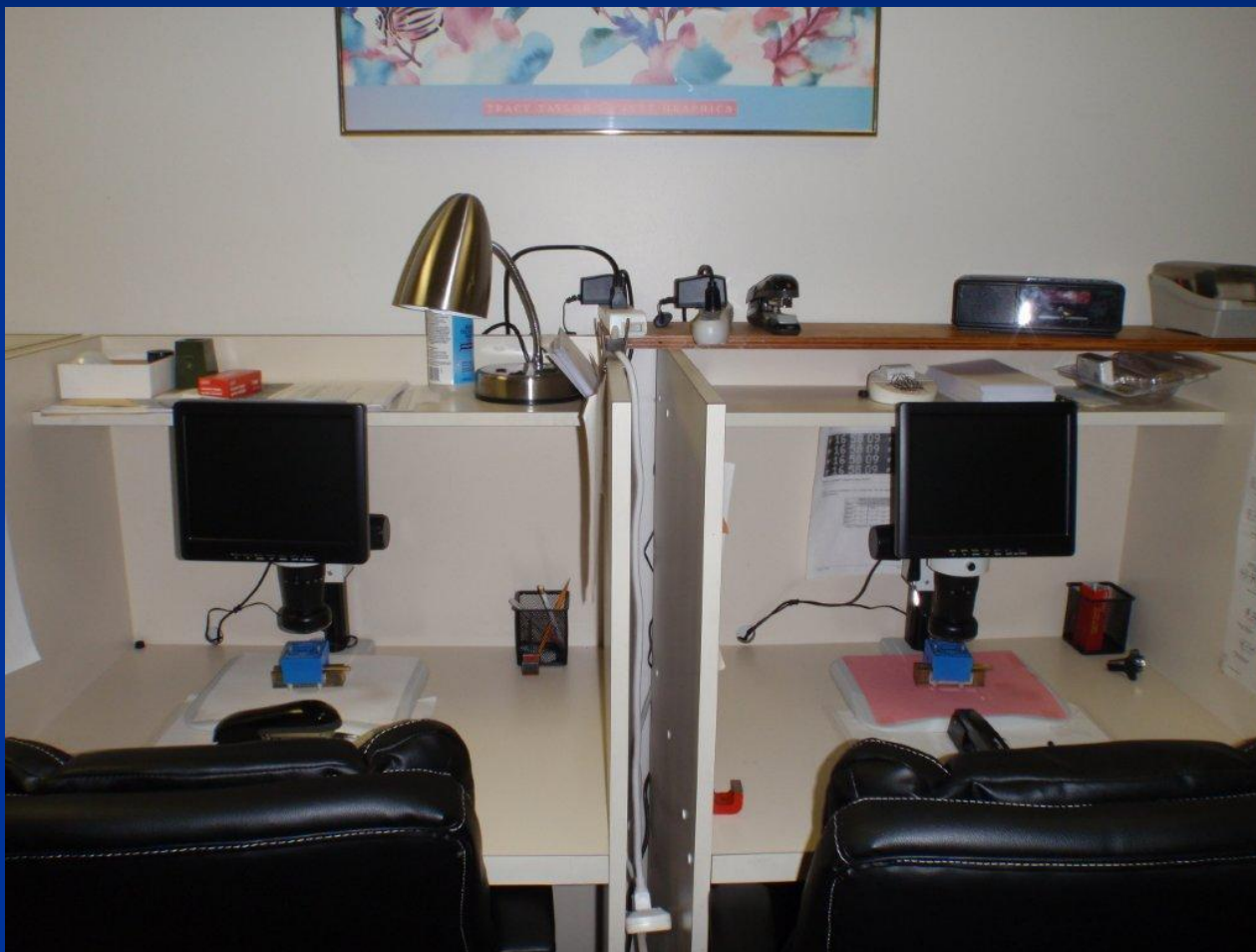
# Tag Reading – Old Equipment







# New Tag Reading Stations











# Coring Equipment







# Video Demo







# Samples ready for Extraction







# Data Entry / Data Delivery

- All lab info recorded in red (eg. Tag placement, head condition, species id)
- Developed new data entry application – touch screens
- Integrated data entry with reading station  
→ data entry by responsible subject matter expert





# Data Entry / Data Delivery

- Eliminated manual processes → reduced transcription error
- Barcode readers for head label and container management data
- Brief exploration of archiving tag read images – not implemented



# Data Entry / Data Delivery

- Introduced tag reread history and team communication protocols with date stamps embedded in data collection process.
- Standardized data delivery to central group (Fisheries results) or Escapement subject matter experts → reduced lab technician time involved in sampling QA/QC issues



# Archiving

- Standardized – plastic sleeves (1”) with CWT for all head labels
- Integrated sorting for rereading and archival in lab processes
- Introduced digitization of forms containing raw data to reduce physical archives and increase accessibility