SNAKE RIVER CHINOOK SCALE AGEING

CHINOOK AGEING MEETING APRIL 2-3, 2014
COLLECTIONS

- Snake River Spring/Summer Chinook
- ESA - Classified threatened in 1992
- Seven Major Population Groups
- **Wild** stream Type
- Status monitoring
SAMPLE COLLECTION

- Scales are removed from the preferred location
- Scale and tissue samples
- Envelopes labeled for easy data collection
- Unique sample IDs, format YY-XXXXX
Electronic data from sample site
- Collection Date
- Species, Run, Rear Type
- Sex

QC fish data and enter into database

**Species, Adult**

**Location:**

**Date:** 

**Male** Female Unknown (circle one)

**Markings:** None AD LV RV OP (circle all that apply)

**Fork Length:** 

**PIT Tag #:** 

**Comments:** 

**Collector (Full Name):**
Processing Methods: Mounting

- Select best scales for mounting
- Cleaned
- Mounted between two glass microscope slides
PROCESSING METHODS: IMAGING

- Leica DM4000B compound microscope
- Leica DC500 digital camera
- Image Pro Express software
- 6 images taken for each adult fish
  - 3 of whole scale 12.5x
  - 3 of freshwater region 40x
- Images saved as .jpg
PROCESSING METHODS: AGEING

- Supporting Info Used
  - Location
  - Date
  - W vs. H
- Identify Patterns
  - Ocean entrance
  - Freshwater age
  - Saltwater age
- Assign Confidence
  - High, medium, low, unreadable
QUALITY CONTROL

- Two independent readers
- Discrepancies resolved with 3rd reader
- Training and practice
- Known age validation
TRAINING METHODS

- PowerPoint training presentations
- Reference samples
- Blind test on set of 50 scale samples
  - Multiple tests for each species and life stage
  - Must achieve >90% before contributing to ageing
VALIDATION

Saltwater Validation
- PIT tags mark-recapture
- 100 samples desired for accuracy rate

Total Age Validation
- Parental Based Tagging (PBT)
  - Genetic markers, assign fish to brood year
ACCURACY & PRECISION

“Seasonal Training” - Examine known-age before ageing
- Discuss new or distinct patterns as a group

Coefficient of Variation
- 2013: Freshwater 3.1% ; Saltwater 3.9%
- 2012: Freshwater 2.0% ; Saltwater 1.5%
SUMMARY OF AGEING CHALLENGES

- Ocean entrance
- Freshwater age (0 vs. 1 vs. 2)
- “Summer” check
- 4 salt fish
- Minijacks (3-4 months in saltwater/estuary)
- Resorption of scale margin
Lower Granite Dam
5/12/11
11.4 cm

Lower Granite Dam
5/10/13
80 cm
Female
AGEING CHALLENGES

Freshwater Age

Hayden Creek
9/10/09
8.4 cm

No annulus (0)

Secesh River
5/13/10
10.7 cm

Lemhi River
5/12/09
10 cm
Lower Granite Dam
7/5/13
49 cm
Male

Lower Granite Dam
7/19/10
54 cm
Male
Lower Granite Dam
5/21/12
63 cm
Female
Known: 2 Salt
AGEING CHALLENGES

Identification of 4 Saltwater

Lower Granite Dam
6/16/2012
90 cm
Female

Lower Granite Dam
7/20/12
97 cm
Male
Lower Granite Dam
8/3/11
33 cm
Male

check

AGEING CHALLENGES

Resorption on Scale Margin

Pahsimeroi River
7/26/05
84 cm
Female
Hernandez et al. In Review TAFS (STHD)

Lower Granite Dam
8/2/11
94 cm
Male
Known: 3 Salt

Lower Granite Dam
7/14/09
79 cm
Male
LONGITUDINAL SAMPLE

Mark Recapture: Juvenile and Adult Collection

- Lemhi River
  - 5/13/09
  - 12 cm

- Lower Granite Dam
  - 5/24/12
  - 83 cm
  - Female
  - Known: 3 Salt
QUESTIONS??