Stream Studies of Hatchery-Wild Pink and Chum Salmon Interactions in PWS and SE, Alaska, 2015

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2015 Field Campaign PWS

- 32 study streams throughout PWS.
2015 Field Campaign PWS
- 6 pedigree fitness streams for pinks.
- Sampled every 1-3 days.
2015 Field Campaign PWS

- 28 pink straying streams.
- Includes 12 streams for stock structure study.

Stream Type
- pink fitness
- pink straying only
- chum straying only
- pink and chum straying
2015 Field Campaign PWS

- 18 Chum straying streams, 17 in fraction analysis.
2015 Field Campaign PWS

- 6 field crews operating in PWS.
PWS Vessel-Based Crews 2015: Cathy G

- July 18 – September 26, 2015
- 3 port calls
- Focus: stray streams
August 1 – September 19, 2015
1 port call
Focus: pedigree streams
  - Early/Late: Every 3 days
  - Mid: Every 2 day sampling
August 21 – 30, 2015
Focus: pedigree stream
Every day sampling

Stream Type
- Pink fitness
- Pink straying only
- Chum straying only
- Pink and chum straying

Photo Credit: T. D’Aoust
PWS Camping Crew 2015: Paddy Bay

- August 1 – September 26, 2015
- Resupply via Cathy G
- Focus: pedigree streams
TAMU Crew
- Alice Cove base camp
- July 10 – August 21, 2015
- Focus: Spring Creek (pedigree) only
- Daily sampling

CDV Crew
- Mid-July – September 20, 2014
- Focus: Hartney Creek, Double Creek, Sheep River, Humpback and Windy Creeks (Wei), Spring Creek (pedigree) late season, 2 trips to Coghill River
Field Collections: Otoliths and Genetic Samples

Photo Credit: D. Janka
Field Collections: Otoliths and Genetic Samples
## 2015 PWS Sample Summary

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Pink</th>
<th>Chum</th>
<th>Pink-Wei (Windy, Humpback, &amp; Snug)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Otoliths</strong></td>
<td>78,098</td>
<td>70,815</td>
<td>6,492</td>
<td>791</td>
</tr>
<tr>
<td><strong>DNA-Pedigree</strong></td>
<td>58,809</td>
<td>58,809</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Stream Visits</strong></td>
<td>311</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Sampling Goal</strong></td>
<td></td>
<td></td>
<td>28/28 streams &gt;384</td>
<td>12/17 streams &gt;384</td>
</tr>
</tbody>
</table>

- Chum sampling goals: Blackstone Creek (13.3% of the sampling goal), Coghill River (60.9%), Paulsen (37.2%), Siwash (32.8%), Spring (44.3%), and Swamp (52.1%) Creeks.

- Excellent field crews and charter vessel operators!

- Great conditions for sampling in 2015, but low water in streams.
PWS Hatchery Fraction Results 2015: Pink Salmon Streams, Districts, Region

Photo Credit: K. Ruck
2015 - PWS Pink Overall

Total PWS

0.10

225

223

222

221

224

226

227

228
PWS Hatchery Fraction Results 2015: Chum Salmon Streams, Districts, Region

Photo Credit: A. Patterson
2015 - PWS Chum
By: Stream

- Mill
- Coghill
- Wells
- Beartrap
- Long
- Spring
- Hartney
- Double
- Sunny
- Paulsen
- WestFinger
- Swamp
- Cabin
- Constantine

Locations and percentages:
- Mill: 0.01
- Coghill: 0.01
- Wells: 0.04
- Beartrap: 0.001
- Long: 0.02
- Spring: 0.03
- Hartney: 0.03
- Double: 0.04
- Sunny: 0.01
- Paulsen: 0.04
- WestFinger: 0.04
- Swamp: 0.79
- Cabin: 0.90
- Constantine: 0.03

Total Chum:
- Siwash: 0.33
- Blackstone: 0.06
- WestFinger: 0.04
- Paulsen: 0.04
- Swamp: 0.79
- Cabin: 0.90
- Constantine: 0.03
2015 - PWS Chum
By: District

Coghill: 0.01
Northwestern: 0.04
Montague: 0.85
Northern: 0.10
Eastern: 0.01
Southeastern: 0.03
2015 Field Campaign SEAK

Interactions of Wild and Hatchery Chum Salmon in Southeast Alaska

Legend
- ▲ 4 dna streams
- ● 28 streams

Sources: En, DeLorme, NAVTEO, TomTom, Intermap, APC, USGS, FAO, NGDC, NRCAN, UGA/IGI, Kaktovik, Kigluaik, ASC Survey, Esri Japan, RST, INFOTRAC, China (Hong Kong), and the GIS User Community
2015 Field Campaign SEAK

- Sampled July 22 – Sept 2, 2015
- No pedigree sampling
- Otolith crews
  - 3 vessel crews
  - 2 land-based crews
- Streams sampled 2-4 times.

Photo Credit: D. Rhea-Fournier
### 2015 SEAK Sample Summary

<table>
<thead>
<tr>
<th></th>
<th>Total Chum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Otoliths</strong></td>
<td>10,651</td>
</tr>
<tr>
<td><strong>DNA-Pedigree</strong></td>
<td>NA</td>
</tr>
<tr>
<td><strong>Stream Visits</strong></td>
<td>116</td>
</tr>
<tr>
<td><strong>Sampling Goal</strong></td>
<td>16/32 streams &gt;384</td>
</tr>
</tbody>
</table>
SEAK Hatchery Fraction Results 2015:
Chum Salmon Streams, Districts, Region

Photo Credit: B. Ferguson
2015 – SEAK Chum Overall

Total SEAK

NSO

SSI

NSI
Overall Stream Hatchery Fractions 2013-2015