Smolt Monitoring 2009

Condition Sampling Standardization
Standardization

• Brief history of what has been done
• Where we are now
• What is left to be done
• Timeline of tasks to be completed
A brief review of steps to date

- FPAC requested in the fall of 2007 that condition data be reported real-time
- February meeting with SMP sites to determine data they were collecting (diverse suite of condition sampling data)
- FPC attempted to report condition data as gathered by sites (had issues with reporting results because some sites did not track individual fish (double counting injuries was possible)
- COE memo summarizing their findings about condition monitoring May 8, 2008 also showed no standardization
- FPC check in with FPAC on the condition indices to report (essentially FPC identified same set of categories as in COE memo) memo dated 5/12 discussed and approved at FPAC on 5/13
- First step toward standardization was to have sites report data within condition and disease categories implemented on July 1.
### Standardizing Fish Condition Data Between Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Original</th>
<th>Standardized</th>
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</thead>
<tbody>
<tr>
<td>LGR</td>
<td>34</td>
<td>19</td>
</tr>
<tr>
<td>LGS*</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>LMN*</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>MCN</td>
<td>32</td>
<td>19</td>
</tr>
<tr>
<td>JDA</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>BON</td>
<td>21</td>
<td>19</td>
</tr>
</tbody>
</table>

* LGS and LMN have changed the way they report condition and now report only the 19 Standardized Conditions.
Standardized Fish Conditions

**Head Injuries**
- Eye Injury
- Pop Eye
- Operculum
- Head Inj. Other

**Body Injuries**
- Body Injury
- Fin Injury
- Predation
  - Fish
  - Bird
  - Lamprey
  - Pred. Other

**Disease**
- Fungus
- Columnaris
- BKD
- Parasite
- Deformity
- Disease Other

**Reported as Physical Injury in Graphs**

**Descaling**
- Descaled (0-5%)
- Descaled (6-19%)
- Descaled (≥ 20%)

**Reported as Disease In Graphs**

**Currently NOT Reported In Graphs**
Examples:

JDA and BON have 3 different parasites:

- Trematode
- Leech
- Copepod

McNary Identifies five additional “diseases” that are not included in the standardized format:

- Fin Rot
- Digenia
- Unknown Infection
- Emaciated
- Moribund

Lower Granite identifies a predator that is not included in the standardized format:

- Human Predation

McNary has seven different “types” of descaling that they identify, Standardized Format has 3:

- Partial Descaling (5-19%)
- Descaled (20-50%)
- Descaled from Bird (20-50%)
- Descaled from Fish (20-50%)
- Descaled (>50%)
- Descaled from Bird (>50%)
- Descaled from Fish (>50%)
Future steps to standardize condition sampling

• Get input in Defining the uses for the data (this determines what should be collected) -- ongoing
• Determine reports to be generated (data summaries) (FPAC and COE)
• Determine data to be collected (finalize) check in with FPAC and COE
• Standardization of indices (carefully define metrics to be gathered so that they are as meaningful as possible) in context of questions being answered – final product protocol document
• Training SMP personnel to report data in agreed upon categories of injury and disease
Other steps to complete

• Programming
  – Incorporate condition data entry into new data entry program
  – Include outputs for COE, FPAC and FPC database/web

• Determine sample size requirements
  – Including addressing whether to examine all fish for descaling or subset

• Determine sampling frequency necessary to provide reliable condition information
What is the purpose of condition monitoring? What management decisions will be based upon these data? Examples

- Identify changes in fish condition (rapid increases?) to find bypass problems at dams
- Provide triggers for management actions (e.g. 5% injury = rake trash racks or 80% disease: stop collecting fish for transport...)
- Provide historical record for year to year comparisons (descaling events per site/yr)
- Characterize overall population health
Salmon Managers

• Objective of condition sampling is to provide information about the impacts of bypass passage on salmonids
Timeline for completing standardization for 2009 season

<table>
<thead>
<tr>
<th>SMP GANTT CHART</th>
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<tbody>
<tr>
<td><strong>NEW SMP DATA ENTRY PROGRAM</strong></td>
</tr>
<tr>
<td>DEP1 - Analyze SMP data flow (diagram)</td>
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<tr>
<td>DEP2 - Identify incorporate changes</td>
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<tr>
<td>DEP3 - Design Prototype</td>
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<tr>
<td>DEP4 - Develop Prototype Software</td>
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<tr>
<td>DEP5 - Test Prototype (SMP personnel)</td>
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<tr>
<td>DEP6 - Install and Test at Sites</td>
</tr>
<tr>
<td>DEP7 - Final Version tested Installed</td>
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<thead>
<tr>
<th><strong>STANDARDIZED CONDITION DATA COLLECTION</strong></th>
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<tr>
<td>SCD1-Initial Request from FPAC</td>
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<tr>
<td>SCD2-Identify Initial Metrics</td>
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<tr>
<td>SCD3-Checkin with FPAC on Condition Data to report</td>
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<tr>
<td>SCD4-Initial Metrics Report to Web/FPAC</td>
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<tr>
<td>SCD5-Refined Metrics reported to Web/FPAC</td>
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<tr>
<td>SCD6-Identify Final Metrics to Collect</td>
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<tr>
<td>SCD7-Standardize Metric Identification/Classification</td>
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<td>FP3-Realtime reporting of data to managers via web</td>
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<td>FP4-Checkin identify program time line/identify goals</td>
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<tr>
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<tr>
<td>C1 - Site Contacts re data needs for DEP</td>
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<tr>
<td>C2 - COE Hurson memo</td>
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<tr>
<td>C3 - FPOM coordination/review/subgroup</td>
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**GANTT CHART**

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<tr>
<th>Month</th>
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<tbody>
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<tr>
<td>Dec</td>
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**Timeline Details**

- **NEW SMP DATA ENTRY PROGRAM**
  - DEP1: Analyze SMP data flow (diagram)
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- **FPAC INTERACTION**
  - FP1: Initial Request
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  - FP4: Checkin identify program time line/identify goals

- **COE INTERACTION**
  - C1: Site Contacts re data needs for DEP
  - C2: COE Hurson memo
  - C3: FPOM coordination/review/subgroup

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Fish condition data is entered using "Fish Condition buttons" on the touchscreen.

Batch Fish Count
1. Technicians count fish using tallies on tally wacker or standardized handlog
2. Main technician completes standardized handlog with batch data
3. Main technician enters batch data on touchscreen or uses office computer

Outputs
Files/Reports include:
1. Standardized handlog faxed to FPC
2. Batch data file in .xls format emailed to FPC
3. Fish condition sub-batch data in .xls format; NOTE 1 and 2 could be the same file emailed to FPC
4. At FPC, Daily SMP Summary Batch Report
5. At FPC, Daily Mark Recap Report
6. At FPC, Daily Incidental Catch Report
7. At Site, Daily COE Report(s) – needs to be determined
8. At FPC and Site, Daily Sub-Batch Fish Condition Report

If batch data were not entered in the site wet lab, batch data are entered into FPC32 from the standardized handlog.

Data are saved and output in an .xls format to email to FPC office.

.XLS data can be used by SITE for their own functions.

Daily reports are generated and also saved in XLS format.