# CHaMP 2013 - Why are we here?

- *Monitor and Evaluate Tributary Habitat Conditions and Limiting Factors (RPA 56)*

- *Evaluate the Effectiveness of Tributary Habitat Actions (RPA 57)*

# *Monitor and Evaluate Tributary Habitat Conditions and Limiting Factors (RPA 56)*

- **RPA 56.1 --** Implement research in select areas of the pilot study basins (Wenatchee, Methow and Entiat river basins in the Upper Columbia River, the Lemhi and South Fork Salmon river basins, and the John Day River Basin) to quantify the relationships between habitat conditions and fish productivity (limiting factors) to improve the development and parameterization of models used in the planning and implementation of habitat projects.

- **RPA 56.2 --** Implement habitat status and trend monitoring as a component of the pilot studies in the Wenatchee, Methow and Entiat river basins in the Upper Columbia River, the Lemhi and South Fork Salmon river basins, and the John Day River Basin.

- **RPA 56.3 --** Facilitate and participate in an ongoing collaboration process to develop a regional strategy for limited habitat status and trend monitoring for key ESA fish populations.

# RPA 56.3 -- Facilitate and participate in an ongoing collaboration process to develop a regional strategy for limited habitat status and trend monitoring for key ESA fish populations.

- One or more populations per MPG should be monitored for habitat status and trend. The recommended populations were identified as populations with relatively large habitat/survival gaps and have, or will have, fish in-fish out monitoring (identified in RPA 50.6). This information will help evaluate expected benefits of habitat actions. At a minimum, habitat monitoring should focus on measuring the metrics associated with the habitat impairments identified in the table below. Those habitat metrics that have a strong relationship with population processes should be included in the core set of metrics.

- The habitat status and trend monitoring design should follow the GRTS-based, master-sample management tools whenever possible. In addition, habitat restoration actions occurring in these population watersheds should be monitored for their physical and biological habitat effects. Monitoring these actions, or a representative set thereof, will support the extrapolation of pilot watershed habitat restoration effects on population processes to a broader, Columbia River Basin context. A limited set of response metrics for watershed-scale monitoring will be generated based on IMW analyses and previous BiOp workgroup implementation plans. Use habitat status and trend monitoring to characterize stream responses to watershed restoration and/or management actions. Assess the status relative to watershed condition objectives to identify and prioritize future management actions.

- Collaborate with agencies performing projects that are supporting the watershed level habitat monitoring identified in Table 3 to implement the preliminary recommendations in the report "Tributary Habitat Monitoring Summary Report: A recommendation for a standardized fish habitat monitoring program implemented under the Federal Columbia River Power System's Biological Opinion - Nick Bouwes et al. May 17, 2010 draft". The preliminary recommendations in this report should be the focus of a workshop in June 2010 with monitoring agencies. The workshop should review and refine the recommendations and agree on consistent protocols and training of monitoring crews across these strategic watersheds.  This coordination and training is critical to ensure the results of these monitoring projects can be combined effectively in the development of relationships and models under RPA 57.5

# RPA 56.3 -- Facilitate and participate in an ongoing collaboration process to develop a regional strategy for limited habitat status and trend monitoring for key ESA fish populations.

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- **The habitat status and trend monitoring design should follow the GRTS-based, master-sample management tools** whenever possible. In addition, habitat restoration actions occurring in these population watersheds should be monitored for their physical and biological habitat effects. Monitoring these actions, or a representative set thereof, will support the extrapolation of pilot watershed habitat restoration effects on population processes to a broader, Columbia River Basin context. A limited set of response metrics for watershed-scale monitoring will be generated based on IMW analyses and previous BiOp workgroup implementation plans. **Use habitat status and trend monitoring to characterize stream responses to watershed restoration and/or management actions. Assess the status relative to watershed condition objectives to identify and prioritize future management actions**.

- Collaborate with agencies performing projects that are supporting the watershed level habitat monitoring identified in Table 3 to **implement the preliminary recommendations in the report** "Tributary Habitat Monitoring Summary Report: A recommendation for a standardized fish habitat monitoring program implemented under the Federal Columbia River Power System's Biological Opinion - Nick Bouwes et al. May 17, 2010 draft". The preliminary recommendations in this report should be the focus of a **workshop in June 2010 with monitoring agencies**. The workshop should review and refine the recommendations and **agree on consistent protocols and training of monitoring crews** across these strategic watersheds.  This coordination and training is critical to ensure the results of these monitoring projects can be combined effectively in the **development of relationships and models under RPA 57.5**

# *Evaluate the Effectiveness of Tributary Habitat Actions (RPA 57)*

- The Action Agencies will evaluate the effectiveness of habitat actions through RM&E projects that support the testing and further development of relationships and models used for estimating habitat benefits. These evaluations will be coordinated with hatchery effectiveness studies.

- **RPA 57.1 --** Action effectiveness pilot studies in the Entiat River Basin to study treatments to improve channel complexity and fish productivity.

- **RPA 57.2 --** Pilot study in the Lemhi River Basin to study treatments to reduce entrainment and provide better fish passage flow conditions.

- **RPA 57.3 --** Action effectiveness pilot studies in Bridge Creek of the John Day River Basin to study treatments of channel incision and its effects on passage, channel complexity, and consequentially fish productivity.

- **RPA 57.4 --** Project and watershed level assessments of habitat, habitat restoration and fish productivity in the Wenatchee, Methow, and John Day basins.

# CHaMP Sites Sampled 2013

| CHaMP  Visit Type | Number of Sites |
|---|---|
| CHaMP Core | 273 |
| CHaMP 10 % Revisits | 51 |
| IMW | 81 |
| Effectiveness Monitoring | 119 |
| Have Fish Data | 275 |
| Velocity Validation | 61 |
| Bug Validation | 58 |
| **TOTAL SITE VISITS** | 532 |

# CHaMP Method Changes in 2013

| Previous Version Number | New Version Number | Revision Date | Method | Changes made | Reason |
|---|---|---|---|---|---|
| 1.2 | 1.3 | 2013 | Air Temperature | Eliminated methodology. | Utility of data is unknown. |
| 1.2 | 1.3 | 2013 | Macroinvertebrate Drift | Eliminated methodology. | In previous years, all crews collected drift using two nets. In 2013, a new methodology was implemented in four test watersheds to improve data quality. Sampling protocol available as separate document. |

| Previous Version Number | New Version Number | Revision Date | Method | Changes made | Reason |
|---|---|---|---|---|---|
| 1.2 | 1.3 | 2013 | Point Collection Method | Eliminated "q" code. | Method was not implemented consistently and the desired use of data point was unknown |
| 1.2 | 1.3 | 2013 | Channel Segment Numbers | Uniquely identified non-qualifying side channels, detached them from channel unit they flowed in to. | Associating non-qualifying side channels to the channel unit that they flowed into was not consistent among crews and the data utility was unknown. Unique record will allow additional side channel metric calculations. |
| 1.2 | 1.3 | 2013 | Fish Cover | Included boulders and undercuts in estimation of Total NO fish cover. | Including boulders and undercuts provides a better estimation of total no fish cover and allows interpretation of those elements that may overlap. |
| 1.2 | 1.3 | 2013 | Ocular Substrate Composition | Changed Bedrock size class from >4000mm to na | Bedrock will be classified based on its characteristic, not its size. |
| 1.2 | 1.3 | 2013 | Large Woody Debris | Removed "Jam" classification | Difficult to assess in the field based on rules of touching pieces. Utility of data not known. |
| 1.2 | 1.3 | 2013 | Large Woody Debris | Extended qualifying pieces to those within bankfull prism that are supported by other qualifying pieces. | By removing jams, this eliminated pieces that were above bankfull elevation but supported by qualifying pieces. Clarification will continue these pieces to be counted. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Associate each unique undercut to a channel unit. | Focusing on undercuts within channel units allows for unit level metric calculations and reduces the crew members area of inquiry. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Eliminated depth measurements. | Depth was measured inconsistently among crew members and the utility of |

| Previous Version Number | New Version Number | Revision Date | Method | Changes made | Reason |
|---|---|---|---|---|---|
| | | | | | the data is unknown. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Eliminated distance to upstream or downstream channel unit boundary. | Not necessary since undercuts are now linked directly to a channel unit. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Changed vertical limit from bankfull to 1m above water surface. | Designate a vertical limit that is more consistent with other fish cover elements. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Increased minimum qualifying width from 10 cm to 20cm. | Increase the repeatability of identifying qualifying undercuts in the field. |
| 1.2 | 1.3 | 2013 | Undercut Banks | Required three width measurements at predefined locations along undercut length. | Average width measurements were inconsistent among crew members. Having defined locations where measures are taken eliminates field judgment calls. |
| 1.2 | 1.3 | 2013 | Particle Size Distribution | Reduced number of counts to 110 pebbles (11 pebbles at 10 cross-sections) | To increase the efficiency of data collection. |
| 1.2 | 1.3 | 2013 | Particle Size Distribution | Prioritized measurements to be done in riffles. | Uncertainties regarding where to place cross-sections. Lead to more consistent measurements among crews. |
| 1.2 | 1.3 | 2013 | Particle Size Distribution | Changed Bedrock measurements from particles >4000 mm to "bedrock" | Bedrock will be identified when encountered in the field. Creates distinction between bedrock and very large boulders >4000 mm. |
| 1.2 | 1.3 | 2013 | Particle Size Distribution | Added unique size classes >512 mm. | Increase resolution of data stemming from medium sized to mega boulders. |

# CHaMP QA RBT Tools



CHaMP Topo-Processing Toolbar

# Stream Temperature QA Tool
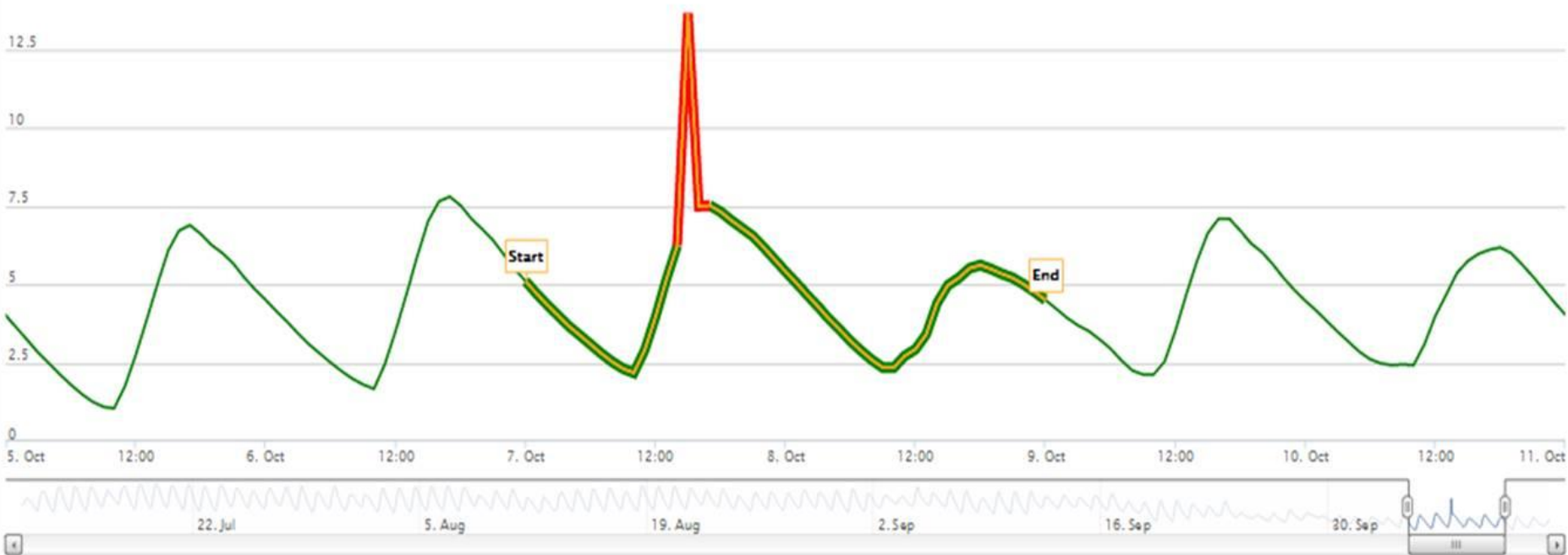
# CHaMP Measurement and Metric QA
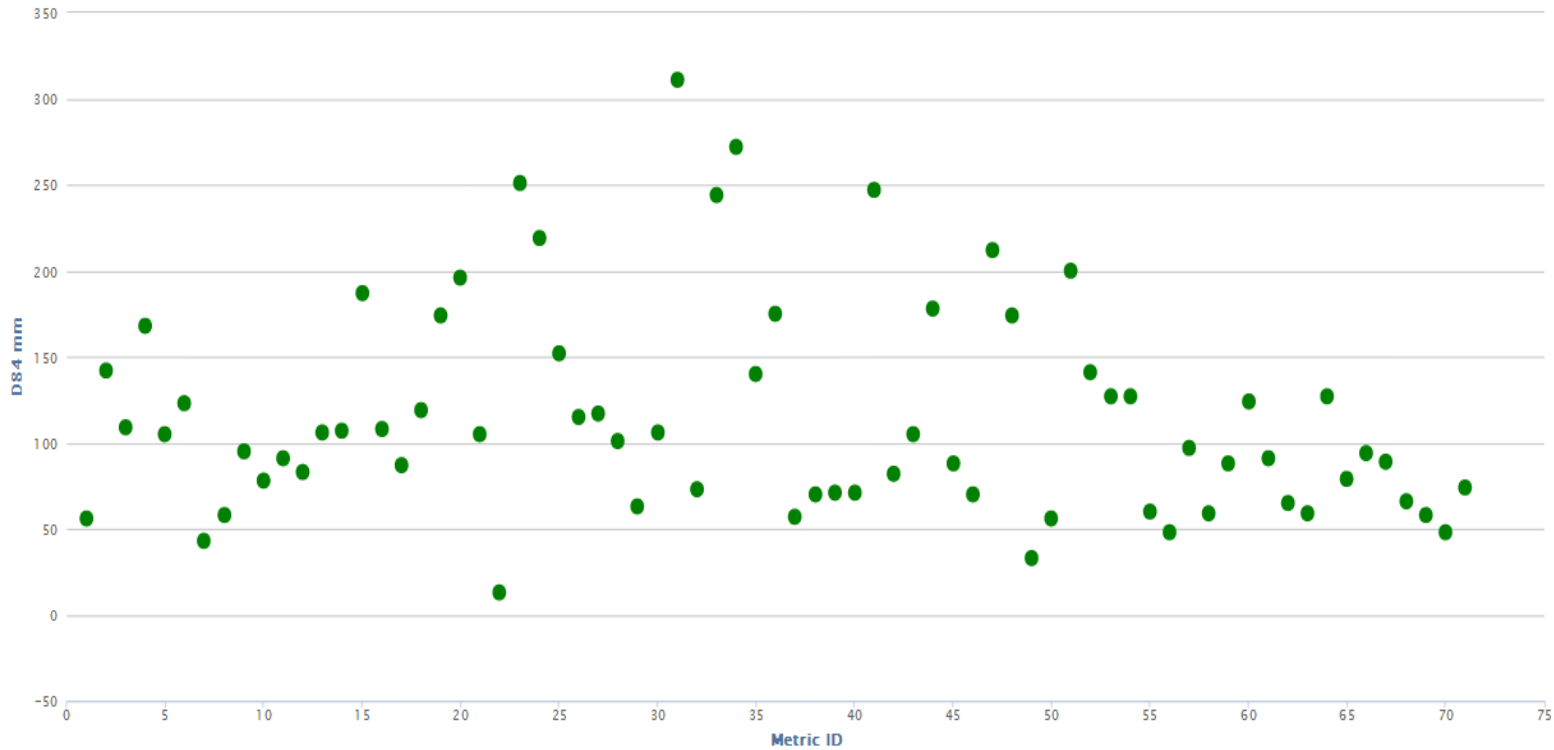
# CHaMP QA Status



## CHaMP Program - overall status

Legend: ■ Complete ■ InProcess □ NotStarted

| Category | Complete | InProcess | NotStarted |
|---|---|---|---|
| Evaluation | 530 | 96 | 342 |
| OversampleEval | 53 | 37 | 177 |
| Planned | 530 | | 478 |
| Collection | 401 | 129 | 478 |
| QA | | 400 | 607 |
| Released | | | 1007 |