Hatchery Group DQO Step 6

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Background – Basis for Step 6 Approach

- Three categories of hatcheries
  - harvest Augmentation – 11 questions
  - supplementation – 25 questions
  - conservation – 5 questions
  - 65 performance measures
- No “decision rules” developed:
  - no standards to justify statistical requirements
  - no “if-then” relationships

Background – Basis for Step 6 Approach

- Too many questions, too little time:
  - dropped conservation hatcheries
  - 3 harvest augmentation
  - 14 supplementation
  - 65 performance measures

- More tractable, but less useful.

Background – Basis for Step 6 Approach

- Many possible approaches to the same questions:
  - interchangeable data types
  - data types drive, in part, evaluation/sampling designs
- “Buffet” approach

Background – Basis for Step 6 Approach

	Weir	Visual	Redd Count		
			Statistical	Multiple Pass	Single Pass
Screw Trap					
Scoop Trap					
Electrofishing					
Seining					
Snorkeling					

Background – Basis for Step 6 Approach

- Problems with the “buffet”
  - large range of variances
  - different combinations = different designs
- Benefits of the “buffet”
  - high design = lowest variance
  - combinations for every appetite

Questions: Harvest Augmentation

1. What are the optimum strategies to maximize harvest management opportunities and minimize impacts to non-target populations?
2. To what degree does the hatchery meet harvest objectives?
3. What is the magnitude and distribution of hatchery strays?

Questions: Supplementation

1. What are the R/S ratios of hatchery and naturally produced fish?
2. What is the relative reproductive success of naturally spawning hatchery and natural origin adults?
3. What is the spawning distribution of hatchery and natural origin fish?
4. What are the effects of supplementation on productivity and abundance of targeted natural populations?

Questions: Supplementation

5. What are the differences in life stage specific survival rates between hatchery and natural fish?
6. Do adult life history characteristics of hatchery and natural origin fish differ?
7. Do juvenile life history characteristics of hatchery and natural origin fish differ?

Questions: Supplementation

8. What are the effects of supplementation on adult life history characteristics?
9. What are the effects of supplementation on juvenile life history characteristics?
10. What is the degree and rate of change in genetic characteristics of supplemented populations?
11. How do the genetic characteristics of hatchery and natural fish differ?

Questions: Supplementation

12. What is the distribution and magnitude of straying?
13. What is the catch contribution and distribution of hatchery fish?
14. What are the affects of the hydrosystem on the survival and productivity of supplemented populations?

Next Steps

1. Populate the matrices with ranges of observed variance and cost.
2. Determine whether the buffet works.
3. Evaluate a high design based on minimization of variance.
4. Evaluate a low design by incremental cost analysis?

Next Steps

1. Work with the Status & Trends group on straying/reference stream issues.
2. Work with Harvest Group to partition mortality.
3. Work with Hydro Group to partition mortality.