MINUTES
Independent Multidisciplinary Science Team
October 11, 2000
ODFW Commissioners Conference Room
ODFW Headquarters
Portland Oregon

Attendees
IMST: Logan Norris, Jim Lichatowich,
ODFW: Kay Brown; Trent Stickell, Hatchery Program Manager; Bruce McIntosh; Roy Elicker, Acting Assistant Fish Division Director; Rich Carmichael
Others: Cathleen Rose, IMST Support Staff; Roy Hemmingway, Oregon Plan Manager; Kelly Moore, Governor's Office

Answers to questions posed in October 6, 2000 letter from IMST to ODFW (appended to these minutes):

Question 1. Are there any other policies relevant to the operation of the state's hatcheries in addition to those that you sent to the IMST early this spring?

Response:
There are no other official policy documents, but ODFW is now guided by the Northwest Power Planning Council's Artificial Production Review (APR). (In an earlier response ODFW indicated the APR was not the basis of their policy). ODFW has "informally adopted" the APR as policy for fish propagation staff based a recommendation by the four western states' Governors. It may be adopted as policy later. We note that this document was designed for the Columbia Basin and needs to be adjusted for the rest of the state

Question 2. What specific policies does ODFW have regarding monitoring of hatchery programs? Policies relating to the monitoring of the effects of hatchery fish on wild fish after release of hatchery fish into the stream are of particular interest.

Response:
The Wild Fish Management Policy is the most formal monitoring policy, requiring monitoring of percentages of hatchery and wild fish. Draft plans for the Nehalem and Rogue basins have monitoring components, and ODFW will provide these to IMST. In addition, a variety of other documents have monitoring components, and hatchery and genetic monitoring plans are under development for 92 hatcheries for ESA 4d rule compliance (ODFW will provide copies of draft coastal and mid-Columbia plans that would be used as a model for monitoring plans).

In response to IMST's request about the ODFW STEP/hatch-box program, ODFW responded that the hatch-box program is considered part of the hatchery program and serves as an education opportunity. Hatch-box monitoring is very limited; however, ODFW does have estimates of the

numbers of fish released from hatch-boxes. They recognize that more monitoring is necessary, but volunteer requests for more hatch-boxes make this difficult.

Question 3. What monitoring of hatchery programs has been initiated specifically in response to the Oregon Salmon Plan?

Response:
There is not much new monitoring, but there are ongoing programs. Monitoring inside and outside the hatchery occurs through presence/absence of hatchery adults on spawning grounds for coho salmon and northeast OR spring chinook. There is comprehensive monitoring of the Imnaha and Grande Ronde hatchery steelhead and chinook (smolt to adult survival, age structure, sex ratio); some programs have comparable data for wild fish. However, around the state, the steelhead monitoring program is less comprehensive than salmon monitoring.

Question 4. How is carrying capacity of the receiving stream taken into account in the policies and operational plans covering hatchery programs?

Response:
Carrying capacity is often not yet taken into account, but it may be considered at a small scale (e.g. juvenile densities in a small stream). In eastern Oregon, carrying capacity helps regulate smolt production and adult return goals (i.e. there is sliding scale of smolt production: wild production is calculated and hatchery smolt production is added to meet adult return goals). In some cases, efforts to limit smolt production must be abandoned because of policy controversies over surplus hatchery fish. In coastal coho, carrying capacity is addressed with fixed annual production.

Question 5. How are the effects of climate fluctuations and cycles and ocean productivity regimes taken into account in the policies governing hatchery operations?

Response:
IMST noted that a recent paper suggested that hatchery production should follow natural cycles and a hatchery might need to be closed or its purpose modified during periods of low productivity (i.e. hatcheries could be operated as conservation hatcheries during low productivity and as harvest augmentation hatcheries during periods of high productivity). ODFW recognized the need for accounting for these factors, and noted that they do spread releases to account for climate.

Question 6. We have reviewed the ODFW document titled Fish Hatchery Purposes, Goals, and Objectives, May 17, 1999. Is there a document that describes the objectives of individual hatcheries in measurable terms?

Response:
There is a collection documents that do this: 1) annual hatchery production goals; 2) basin plans; 3) contracts for mitigation agreements; 4) the hatchery audit; and 5) HGMP, specifically IDS.

Question 7. The March 1997 ODFW Strategic Plan states on pg. 14 that the department will emphasize ecosystem based management (broader population/habitat management focus) as opposed to single species management. We agree with this approach and would like to discuss how ODFW is implementing this aspect of the Strategic Plan relative to the operation of hatcheries.

Response:
There is no single document that regulates ecosystem management, but the ecosystem perspective is addressed by: 1) Power Council Review, which has a broad perspective; 2) HGMP process – not quite as much ecosystem pointed, but the topic is addressed somewhat; and 3) the Oregon Plan. Incorporation of an ecosystem perspective into hatchery management is underway in ODFW. Implementation will take some time because of the complexity. A strategic umbrella may help this process along. (ODFW has a new strategic plan – Vision 2006. They will provide a copy to IMST). Although the Oregon Plan is activity and species oriented, it gives a conceptual foundation for the pieces of an ecosystem perspective.

ODFW made suggestions for applying a landscape perspective to hatcheries:

1. A hatchery is just one tool (conservation and supplementation) in the toolbox and needs to be combined with habitat and fisheries
2. Connection of gene conservation to higher spatial scales (subbasin→basin→statewide). Hatcheries help keep all of the pieces.
3. Consider attributes of the watershed and the system (hatchery management should be consistent with carrying capacity, disease, straying, and water quality).
4. Hatcheries should play roles in harvests, not just gene conservation
5. Metapopulation perspective (GCGs)
6. Need to link programs (hatchery, harvest, habitat) for perspective
7. APR addresses this issue in some recommendations

Question 8. As part of our review of the scientific basis of artificial propagation, we are evaluating the scientific basis for the assumptions that underlie artificial propagation strategies. We want to discuss these with ODFW. The specific assumptions as we have them stated at this time are:

a. Improved survival at one life stage will carry through to higher survival through the entire life cycle (Increased survival in the hatchery should carry through to the end of the life cycle to produce more adults (net increase in survival). Survival is lower at some stages and higher at others. The IMST has historic (40s and 50s data) – Wallace reports, 1982 coho plan table from Nickelson showing survival for different programs. More recent data are needed.)

Response (suggestions for data relating to the assumption):

- There is not much life stage specific data but Rich Carmichael's programs have recruit-to-recruit survival for hatchery and wild fish (ODFW is sending a copy of the report to IMST).
- Matt Smith has done work with Willamette spring chinook data
- There are some data on wild egg to smolt survival for Grande Ronde (i.e. comparing hatchery and wild spring Chinook survival)
- Evenson's work on Rogue is relevant.

- Columbia PIT tagging will make it possible to obtain wild smolt to adult survival soon (the life cycle monitoring sites program is currently at the end of the first cycle)
- How about Washington, Alaska, Idaho state monitoring?
- Little Sheep steelhead (ODFW will provide data to IMST)
- Imnaha chinook (ODFW will provide data to IMST)
- Cle Elum supplementation
- Umpqua – hatchery and wild survival (Bower?)
- Al McGie – Information Report on Umpqua

b. The hatchery environment can be substituted for natural habitat lost due to human activities in a watershed

Response:
There was disagreement as to whether this assumption is valid today, but it was agreed that this premise continues to underlie the mitigation hatchery program; therefore, the assumption (reworded to state that hatchery adults may be substituted for wild adults, meaning we can replace fish (or lost production) but not habitat) is valid today for some hatchery programs. Historically the idea was that hatchery habitat could substitute for lost habitat (mitigation concept) but this is not the assumption today. There are some hatchery programs (e.g. Willamette) where wild runs are gone, without mitigation there would be nothing left. As long as dams are in place, mitigation will continue.

c. Hatchery operations are designed so that fish retain the behavioral, genetic, and physiological traits that facilitate increased adult returns

Response:
In most programs, domestication is not minimized; they would have to be operated differently to produce wild-like fish. Sometimes the hatchery objective is not to produce wild-like fish (e.g. for harvest) and some programs promote domestication for higher egg to smolt and/or smolt to adult survival. To minimize the effects of domestication on smolt to adult survival, a cross-section of the run and the diversity within the population should be maintained. Domestication tends to decrease survival after release from the hatchery, so hatcheries don't want to change fish so much that they cannot meet their objectives. This assumption is not equally applicable across all hatchery programs and should recognize different program objectives.

Suggested rewording of the assumption is: Artificial propagation programs are used to maintain genetic material at low productivity or until habitat is restored (maintain natural population), with sub-assumption: conserve genetic resources (for supplementation/enhancement hatcheries).

d. Interactions between hatchery and wild fish are inconsequential

Response:
What does inconsequential mean? Suggested rewording: Interactions between hatchery and wild fish are inconsequential to achieving program objectives. Or, Operations of hatcheries are designed to prevent interactions between hatchery and wild fish. Once again, this assumption varies with the hatchery program objectives.

Other assumptions suggested by ODFW staff:

- The environment will improve in the future and the hatchery program won't be needed at the level that it is needed now (for gene conservation programs – mid- and upper- Columbia Basin hatcheries)
- We can selectively harvest with acceptable impacts on wild fish

Hatchery Phase II draft letter report to ODFW

Comments:

Major points of report:

- Expand management to go beyond the hatchery
- Put individual hatcheries within a system of hatcheries
- IMST recommends a hierarchical approach, beginning with a statewide goal for hatcheries, then determine how individual hatcheries can help carry that out
- Currently hatcheries are not within that common framework

There is nothing out of line in the report.

ODFW is available to meet with IMST Dec. 8, 12, 13, or 14 to review the recommendations in the hatchery phase III report.