

DRAFT Prototype of a Hatchery and Genetic Management Plan

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Executive Summary

SECTION 1. GENERAL PROGRAM DESCRIPTION

- 1.1 Name of hatchery or program.
- 1.2 Species and population (or stock) under propagation, and ESA status.
- 1.3 Responsible organization and individuals
- 1.4 Funding source, staffing level, and annual hatchery program operational costs.
- 1.5 Location(s) of hatchery and associated facilities.
- 1.6 Type of program.
- 1.7 Purpose (Goal) of program.
- 1.8 Justification for the program.
- 1.9 List of program "Performance Standards".
- 1.10 List of program "Performance Indicators", designated by "benefits" and "risks."
- 1.11 Expected size of program.
- 1.12 Current program performance, including estimated smolt-to-adult survival rates, adult production levels, and escapement levels. Indicate the source of these data.
- 1.13 Date program started (years in operation), or is expected to start.
- 1.14 Expected duration of program.
- 1.15 Watersheds targeted by program.
- 1.16 Indicate alternative actions considered for attaining program goals, and reasons why those actions are not being proposed.

SECTION 2. PROGRAM EFFECTS ON NMFS ESA-LISTED SALMONID POPULATIONS. (USFWS ESA-Listed Salmonid Species and Non-Salmonid Species are addressed in Addendum A)

- 2.1 List all ESA permits or authorizations in hand for the hatchery program.
- 2.2 Provide descriptions, status, and projected take actions and levels for NMFS ESA-listed natural populations in the target area.

SECTION 3. RELATIONSHIP OF PROGRAM TO OTHER MANAGEMENT OBJECTIVES

- 3.1 Describe alignment of the hatchery program with any ESU-wide hatchery plan (e.g. Hood Canal Summer Chum Conservation Initiative) or other regionally accepted policies (e.g. the NPPC Annual Production Review Report and Recommendations - NPPC document 99-15). Explain any proposed deviations from the plan or policies.
- 3.2 List all existing cooperative agreements, memoranda of understanding, memoranda of agreement, agency policies, or other management plans or court orders under which program operates.
- 3.3 Relationship to harvest objectives.
- 3.4 Relationship to habitat protection and recovery strategies.
- 3.5 Ecological interactions.

SECTION 4. WATER SOURCE

- 4.1 Provide a quantitative and narrative description of the water source (spring, well, surface), water quality profile, and natural limitations to production attributable to the water source.
- 4.2 Indicate risk aversion measures that will be applied to minimize the likelihood for the take of listed natural fish as a result of hatchery water withdrawal, screening, or effluent discharge.

SECTION 5. FACILITIES

- 5.1 Broodstock collection facilities (or methods).
- 5.2 Fish transportation equipment (description of pen, tank truck, or container used).

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- 5.3 Broodstock holding and spawning facilities.
- 5.4 Incubation facilities.
- 5.5 Rearing facilities.
- 5.6 Acclimation/release facilities.
- 5.7 Describe operational difficulties or disasters that led to significant fish mortality.
- 5.8 Indicate available back-up systems, and risk aversion measures that will be applied, that minimize the likelihood for the take of listed natural fish that may result from equipment failure, water loss, flooding, disease transmission, or other events that could lead to injury or mortality.

SECTION 6. BROODSTOCK ORIGIN AND IDENTITY

- 6.1 Source.
- 6.2 Supporting information.
- 6.3 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish that may occur as a result of broodstock selection practices.

SECTION 7. BROODSTOCK COLLECTION

- 7.1 Life-history stage to be collected (adults, eggs, or juveniles).
- 7.2 Collection or sampling design.
- 7.3 Identity.
- 7.4 Proposed number to be collected:
- 7.5 Disposition of hatchery-origin fish collected in surplus of broodstock needs.
- 7.6 Fish transportation and holding methods.
- 7.7 Describe fish health maintenance and sanitation procedures applied.
- 7.8 Disposition of carcasses.
- 7.9 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish resulting from the broodstock collection program.

SECTION 8. MATING

- 8.1 Selection method.
- 8.2 Males.
- 8.3 Fertilization.
- 8.4 Cryopreserved gametes.
- 8.5 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic or ecological effects to listed natural fish resulting from the mating scheme.

SECTION 9. INCUBATION AND REARING -Specify any management goals (e.g. "egg to smolt survival") that the hatchery is currently operating under for the hatchery stock in the appropriate sections below. Provide data on the success of meeting the desired hatchery goals.

- 9.1 Incubation:
- 9.2 Rearing:

SECTION 10. RELEASE

- 10.1 Proposed fish release levels.
- 10.2 Specific location(s) of proposed release(s).
- 10.3 Actual numbers and sizes of fish released by age class through the program.
- 10.4 Actual dates of release and description of release protocols.
- 10.5 Fish transportation procedures, if applicable.
- 10.6 Acclimation procedures (methods applied and length of time).

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- 10.7 Marks applied, and proportions of the total hatchery population marked, to identify hatchery adults.
- 10.8 Disposition plans for fish identified at the time of release as surplus to programmed or approved levels.
- 10.9 Fish health certification procedures applied pre-release.
- 10.10 Emergency release procedures in response to flooding or water system failure.
- 10.11 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish resulting from fish releases.

SECTION 11. MONITORING AND EVALUATION OF PERFORMANCE INDICATORS

- 11.1 Monitoring and evaluation of “Performance Indicators” presented in Section 1.10.
- 11.2 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse genetic and ecological effects to listed fish resulting from monitoring and evaluation activities.

SECTION 12. RESEARCH

- 12.1 Objective or purpose.
- 12.2 Cooperating and funding agencies.
- 12.3 Principle investigator or project supervisor and staff.
- 12.4 Status of stock, particularly the group affected by project, if different than the stock(s) described in Section 2.
- 12.5 Techniques: include capture methods, drugs, samples collected, tags applied.
- 12.6 Dates or time period in which research activity occurs.
- 12.7 Care and maintenance of live fish or eggs, holding duration, transport methods.
- 12.8 Expected type and effects of take and potential for injury or mortality.
- 12.9 Level of take of listed fish: number or range of fish handled, injured, or killed by sex, age, or size, if not already indicated in Section 2 and the attached “take table” (Table 1).
- 12.10 Alternative methods to achieve project objectives.
- 12.11 List species similar or related to the threatened species; provide number and causes of mortality related to this research project.
- 12.12 Indicate risk aversion measures that will be applied to minimize the likelihood for adverse ecological effects, injury, or mortality to listed fish as a result of the proposed research activities.

SECTION 13. ATTACHMENTS AND CITATIONS

SECTION 14. CERTIFICATION LANGUAGE AND SIGNATURE OF RESPONSIBLE PARTY

ADDENDUM A. PROGRAM EFFECTS ON OTHER (AQUATIC OR TERRESTRIAL) ESA-LISTED POPULATIONS. (Anadromous salmonid effects are addressed in Section 2).

- 15.1 List all ESA permits or authorizations for USFWS ESA-listed, proposed, and candidate salmonid and non-salmonid species associated with the hatchery program.
- 15.2 Describe USFWS ESA-listed, proposed, and candidate salmonid and non-salmonid species and habitat that may be affected by hatchery program.
- 15.3 Analyze effects.
- 15.4 Actions taken to minimize potential effects.
- 15.5 References

Appendix A