

**ENVIRONMENTAL ASSESSMENT
OR-128-99-06**

A Proposal to Remove Exotic Fish from Heliponds on the Coos Bay District of the BLM

Appendix A

ESA Consultation Package for NMFS

Project Name:	Helipond Exotic Species Eradication Project
BLM District/Resource Area:	Coos Bay District
Project Location (5th Field Watershed):	East Fork and North Fork Coquille River Watersheds
Project Location(s):	See Project Vicinity Map
Watershed Analysis Name/Date:	Draft East Fork Coquille River Watershed Analysis, and various 6th field subwatersheds in the North Fork Coquille River
NEPA Document Number:	EA OR128-99-06

Basic Project Information

The proposed action is designed to remove known exotic fish species from 3 concrete-bottomed heliponds located on the Coos Bay District of the Bureau of Land Management. The non-native fish present in the ponds would be removed using rotenone.

Specific project activities would include the following:

- lowering the water level in each pond several feet using large siphons, in order to prevent chemically treated water from escaping.
- treating each pond with enough rotenone to achieve a concentration of 0.05 ppm of active rotenone. A total of 2 gallons of the liquid form would be needed for the entire project (the liquid form of this product contains 5% active rotenone).
- removing dead and dying fish from the treated ponds and dispersing them in vegetation surrounding the ponds.
- installing prefabricated concrete catch basins filled with small gravel at the outlet of each pond in order to prevent the potential of any reintroduced exotic species from escaping to downstream areas.

Comments: This work would be done in the late summer, when warmer water temperatures would make the chemical treatment more effective. There are no fish-bearing streams adjacent to the ponds proposed for treatment. The Shuck Mountain Helipond is the closest pond to a known fish-bearing stream. It is located roughly 1.0 mile from the main stem North Fork Coquille River. Each of the other ponds is 1.5 miles, or more, above known fish-bearing waters.

TABLE A-1: CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS FOR SOUTHWEST PROVINCE TYEE SANDSTONE PHYSIOGRAPHIC AREA.

Administrative Unit: Coos Bay District- BLM
 Project: Helipond Exotic Species Eradication

Section 7 Subbasin: Coquille River
 5th Field Watershed: East Fork Coquille River
 Environmental Baseline: East Fork Coquille River

FACTORS INDICATORS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
	Properly Functioning ¹	At Risk ¹	Not Properly Functioning ¹	Restore ²	Maintain ³	Degrade ⁴
Water Quality						
Temperature			WA, MO		PJ	
Turbidity			PJ		PJ	
Chem. Contam.			PJ		PJ	
Habitat Access						
Physical Barriers			WA		PJ	
Habitat Elements						
Substrate/Sediment			WA		PJ	
Large Woody Debris (LWD)			WA		PJ	
Pool Area (%)		WA			PJ	
Pool Quality		WA			PJ	
Off-Channel Habitat			WA		PJ	
Channel Condition & Dynamics						
Width/Depth Ratio			PJ, WA		PJ	
Streambank Condition			PJ, WA		PJ	
Floodplain Connectivity			PJ, WA		PJ	
Watershed Conditions						
Road Density & Location			PJ, WA		PJ	
Disturbance History			PJ, WA		PJ	
Landslide Rates			WA		PJ	
Riparian Reserves			PJ, WA		PJ	

- 1 Two categories of function (“properly functioning” and “not functioning”) are defined for each indicator in the “Matrix of Factors and Indicators”. The “at risk” category is all other situations.
- 2 For the purposes of this checklist, “restore” means to change the function of an “at risk” indicator to “properly functioning” or to change the function of a “not properly functioning” indicator to “at risk” or “properly functioning” (i.e. it does not apply to “properly functioning” indicators).
- 3 For the purposes of this checklist, “maintain” means that the function of an indicator does not change (i.e., it applies to all indicators regardless of functional level).
- 4 For the purposes of this checklist, “degrade” means to change the function of an indicator for the worse (i.e., it applies to all indicators regardless of functional level). In some cases, a “not properly functioning” indicator may be further worsened, and this should be noted

RATIONALE USED IN COMPLETING THE CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND THE EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS

Description of Project(s): Helipond Exotic Species Eradication Project

Note: Unless noted otherwise, the information source used for accessing the environmental baseline is contained in the draft East Fork Coquille Watershed Analysis (EFCWA); Iteration 1.0, in preparation by the Myrtlewood Resource Area, Coos Bay District Bureau of Land Management (4/14/99). [Note: baseline was assessed at the scale of the East Fork Coquille watershed (approx. 130 mi²)].

DESCRIPTION OF AFFECTED ENVIRONMENT

Water Quality:

Temperature- The E. Fork Coquille River is included in the Oregon Department of environmental Quality's (DEQ) 303D list of temperature-limited water bodies from its mouth to the confluence of Lost Creek. Water temperature monitoring data for the E. Fork Coquille (1994-1996) indicate seven-day average daily maximums of 73.6° at the mouth to 64.4° at RM 23.2; the standard (64°F) was exceeded for up to 94 days per year. The watershed was therefore determined to be "*not properly functioning*" with respect to water temperature during the migrating and rearing period.

There would be no trees cut with this project. Therefore, there would be no effect on temperature.

Sediment/Turbidity - Stream habitat inventory data from 1992-1997 indicate >17% fines in riffles (spawning habitat) in 21 of 56 reaches surveyed in the E. Fork Coquille subbasin. BLM data collected during the winter of 1995/96 indicated that, following storm events, turbidity levels at several sampling stations in the Lower E. Fork Coquille River and adjacent tributaries consistently exceeded 50 NTU. The highest recorded turbidity was 164 NTU.

Turbidities in the 25-50 NTU range have been implicated in the reduction of growth in young coho salmon and steelhead (Sigler et al. 1984). Berg and Northcote (1985) reported that feeding and territorial behavior of juvenile coho salmon were disrupted by short-term exposures (2.5-4.5 days) to turbid water up to 60 NTUs. Furthermore, sudden, dramatic increases in turbidity may result in elimination of benthic macroinvertebrates, the primary food source of stream salmonids (Waters 1972). Turbidity data collected on the E. Fork Coquille indicates that the stream regularly produces levels of turbidity that are known to adversely affect fish behavior and growth, suggesting that the watershed is "*not properly functioning*" with respect to turbidity.

There may be a short-term sediment pulse originating from ground disturbed during installation of the concrete catch-basins. This would most likely occur during the first fall rains, would be small in scale, and would dissipate quickly.

Habitat Access:

Physical Barriers-BLM data and culvert inventories by the Coquille Watershed Association document several instances of culverts that present barriers to fish passage at a range of flows,

resulting in a “*not properly functioning*” designation in this category.

There would be no culverts installed or removed with this project.

Habitat Elements:

Substrate/Sediment-Data from 1992-1997 stream habitat inventories of tributaries to the E. Fork Coquille River indicate that gravels/cobbles are the dominant substrates in approximately 60% of the streams surveyed. Embeddedness was not directly measured during these surveys. However, silt, sand, and organics in riffles substantially exceeded the ODFW benchmark standard of 10% in over half of the surveyed reaches. (Refer to Tables in the draft E. Fork Coquille WA.) As a result, the watershed was determined to be “*not properly functioning*” with respect to substrate and sediments.

This project would have no effect on in-channel substrate or sediment regimes in the North Fork Coquille River.

Large Wood Debris-According to Wolniakowski et. al. (1990) and Farnell (1979) splash dams and stream cleaning occurred on the mainstem E. Fork Coquille River and two major tributaries (Steel Creek and Elk Creek). Stream habitat inventory data from 1992-1997 (summarized in Tables in draft E. Fork Coquille WA) clearly demonstrates poor LWD loading and/or pool complexity in substantial portions of nearly every surveyed tributary. Furthermore, the mainstem E. Fork Coquille River below Brewster Gorge is practically devoid any of wood (personal observation). This is probably due to salvage logging, stream cleaning and lack of recruitment from the riparian area. As a result, the watershed was determined to be “*not properly functioning*” with respect to large wood debris.

This project would have no effect on large wood regimes within the North Fork Coquille River.

Pool Character and Quality- According to 1992-1997 stream habitat inventory data on E. Fork Coquille tributaries, pool frequency (pools/mile) is below the benchmark set forth in the Matrix of Pathways and Indicators in 40 out of the 56 surveyed reaches. However, the criteria for this benchmark were derived for the Upper Columbia River Basin, and may not readily apply to Southwest Oregon Coast Range streams. It should be noted that only 10 of the 56 surveyed reaches rated “poor” against the ODFW Habitat Benchmarks (1997) for pool area (%) and/or pool frequency (channel widths/pool). Stream habitat inventory data from the Oregon Coast Range was used in the formulation of the ODFW Benchmark criteria.

The 1992-1997 stream habitat inventory data also indicates that pools >1 meter deep are uncommon on most surveyed tributaries. Furthermore, over half of the stream reaches surveyed rated poorly with respect to pool habitat complexity. The previously mentioned water temperature problems in the E. Fork Coquille River also compromise the overall quality of the available pool habitat. Reduction of pool volume due to fine sediments has not been demonstrated within the E. Fork Coquille subbasin. The watershed was therefore determined to be “*functioning at risk*” with respect to pool area and quality.

This project would have no effect on pool character and quality in the North Fork Coquille River.

Off-channel Habitat- Due to its proximity to roads and a history of stream-cleaning and splash dams, any segments of the E. Fk. Coquille are severely downcut and isolated from the natural floodplain. As a result, few if any backwaters pools, alcoves or other off-channel areas exist. Many of the tributaries are constrained by hillslopes and are not likely to contain off-channel areas. However, because of the condition of the E. Fk. Coquille R., the watershed is determined to be “*not properly functioning*” with respect to this criteria.

This project would have no effect on off-channel habitat.

Channel Conditions and Dynamics:

Width-Depth Ratio-Current information on riffle width and depth is lacking for the mainstem E. Fk. Coquille R. but has been collected for several tributaries in the basin. Reaches in Steel Cr. Have W/D ratios of 40.5 and 34.2; the Camas Creek W/D ratio is 26.0 Therefore, the watershed was determined to be “*not properly functioning*” with respect to this baseline.

This project would have no effect on width-to-depth ratios.

Streambank Condition-Streambank condition is good for many of the tributaries of the E. Fk. Coquille; however, many areas along the E. Fk. Coquille are highly unstable and actively eroding (pers. comm. B. Hudson and M. Kellett, Coos Bay BLM). The watershed was therefore determined to be “*not properly functioning*” with respect to streambank condition.

This project would have no effect on streambank condition.

Floodplain Connectivity- Due to its proximity to roads and a history of stream-cleaning and splash dams, many segments of the E. Fk. Coquille are severely downcut. Few, if any, aggregations of large wood remain to create large pools, secondary channels, and maintain a high water table. Where the river is unconstrained by hillslopes or terraces, floodplain vegetation is primarily agricultural or residential. The watershed is therefore determined to be “*not properly functioning*” with respect to floodplain connectivity.

This project would have no effect on floodplain connectivity.

Watershed Condition:

Road Density & Location/Drainage Network- Road densities throughout the E. Fk. Coquille Watershed are high (average of 4.4 miles of road per square mile). Additionally, most of the wider valley bottoms contain roads and many of the larger tributaries of the E. Fk. Coquille have roads along much of their length. The watershed is therefore determined to be “*not properly functioning*” with respect to this baseline.

This project would have no effect on road density, location, or drainage densities.

Disturbance History- The watershed contains $\geq 15\%$ LSOG. However, disturbance activities such as road-building and stream cleaning and splash dams have been concentrated in riparian areas. Furthermore, the high percentage of hardwoods in riparian areas documented in stream surveys along several tributaries of the E. Fk. Coquille (W. Fk. Brummet, Peevey, Camas, Steel Cr.)

indicates a high level of disturbance. Lane (1987; see below) indicates a high rate of mass movements in roaded and logged areas. The watershed was therefore determined to be “*not properly functioning*” with respect to disturbance history.

This project would not effect overall disturbance histories in the watershed.

Landslide Rates- Relations Between Geology and Mass Movement Features in a Part of the East Fork Coquille River Watershed, Southern Coast Range, Oregon (Lane 1987) indicates that a disproportionately high percentage (47%) of debris avalanches in the watershed are concentrated in roaded and logged areas which made up only 13% of the landscape. As a result, the watershed was determined to be “*not properly functioning*” for landslide rates.

This project would have no effect on landslide rates.

Riparian Reserves-Federal ownership in the E. Fk. Coquille watershed follows the “checkerboard” pattern and, as a result, the riparian reserve system is highly fragmented. Additionally, extremely high water temperatures in the E. Fk. Coquille indicate that riparian zones throughout the watershed are not providing adequate shade. The watershed is therefore determined to be “*not properly functioning*” with respect to riparian reserves.

This project would have no impact of riparian reserves.

TABLE A-2: CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION(S) ON RELEVANT INDICATORS FOR SOUTHWEST PROVINCE TYEE SANDSTONE PHYSIOGRAPHIC AREA.

Section 7 Subbasin: Coquille River

Administrative Unit: Coos Bay District- BLM

5th Field Watershed: North Fork Coquille River

Project: Helipond Exotic Species Eradication

Environmental Baseline: North Fork Coquille River

FACTORS INDICATORS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION(S)		
	Properly Functioning ¹	At Risk ¹	Not Properly Functioning ¹	Restore ²	Maintain ³	Degrade ⁴
Water Quality						
Temperature		WA/ODEQ			PJ	
Turbidity			PJ		PJ	
Chem. Contam.		ODEQ			PJ	
Habitat Access						
Physical Barriers			WA		PJ	
Habitat Elements						
Substrate/Sediment		ODFW			PJ	
Large Woody Debris (LWD)			ODFW		PJ	
Pool Area (%)		ODFW			PJ	
Pool Quality		ODFW			PJ	
Off-Channel Habitat		PJ			PJ	
Channel Condition & Dynamics						
Width/Depth Ratio			ODFW		PJ	
Streambank Condition		ODFW			PJ	
Floodplain Connectivity		ODFW/PJ			PJ	
Watershed Conditions						
Road Density & Location			WA		PJ	
Disturbance History		WA			PJ	
Landslide Rates			PJ		PJ	
Riparian Reserves			PJ		PJ	

1 Two categories of function (“properly functioning” and “not functioning”) are defined for each indicator in the “Matrix of Factors and Indicators”. The “at risk” category is all other situations.

2 For the purposes of this checklist, “restore” means to change the function of an “at risk” indicator to “properly functioning” or to change the function of a “not properly functioning” indicator to “at risk” or “properly functioning” (i.e. it does not apply to “properly functioning” indicators).

- 3 For the purposes of this checklist, “maintain” means that the function of an indicator does not change (i.e., it applies to all indicators regardless of functional level).
- 4 For the purposes of this checklist, “degrade” means to change the function of an indicator for the worse (i.e., it applies to all indicators regardless of functional level). In some cases, a “not properly functioning” indicator may be further worsened, and this should be noted

DICHOTOMOUS KEY FOR MAKING SECTION 7 DETERMINATION OF EFFECTS

Name and location of action: Helipond Exotic Species Eradication Project

1. Are there any proposed/listed anadromous salmonids and/or proposed/designated critical habitat in the watershed or downstream from the watershed?

NO No effect
 YES May affect, go to 2

2. Will the proposed action(s) have any effect whatsoever¹ on the species and/or critical habitat?

NO No Effect
 YES Go to 3

3. Does the proposed action(s) have the potential to hinder attainment of relevant properly functioning indicators (from checklist)?

NO: Go to 4
 YES: Likely to adversely affect²

4. Does the proposed action(s) have the potential to result in "take"³ of proposed/listed anadromous salmonids or destruction/ adverse modification of proposed/designated critical habitat?

A. There is a negligible (extremely low) probability of take of proposed/listed anadromous salmonids or destruction/adverse modification of proposed/designated critical habitat
 Not likely to adversely affect

B. There is more than a negligible probability of take of proposed/listed anadromous salmonids or destruction/adverse modification of proposed/designated critical habitat
 Likely to adversely affect²

¹"Any effect whatsoever" includes small effects, effects that are unlikely to occur, and beneficial effects, i.e. a “no effect” determination is only appropriate if the proposed action will literally have no effect whatsoever on the species and/or critical habitat, not a small effect, an effect that is unlikely to occur, or a beneficial effect.

²Document expected incidental take on reverse side of this key.

³"Take" - The ESA (Section 3) defines take as "to harass, harm, pursue, hunt, shoot, wound, trap, capture, collect or attempt to engage in any such conduct". The USFWS further defines "harm" as "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering", and "harass" as "actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering".

DOCUMENTATION OF EXPECTED ADVERSE EFFECTS (Not Applicable)

Name of action: Helipond Exotic Species Eradication Project

Species of concern: OC coho, OC steelhead, Coastal sea-run cutthroat trout

10. The proposed action may result in adverse effects through which of the following mechanisms (underline or circle and describe as appropriate).

Harm: act that actually kills or injures fish (may include habitat modification that significantly impairs behavioral patterns such as spawning, rearing, migrating, or feeding).

Harass: actions disrupting normal behavioral patterns which include, but are not limited to, breeding, feeding, sheltering.

Pursue, Hunt, Shoot, Wound, Capture, Collect, or Delayed Mortality from stress or disease.

11. **Temporal Scale:** Are the adverse effects expected to be of short term (i.e., days/weeks) or long term (i.e., months or years)? Describe as appropriate.

12. Which of the following life stages will be adversely affected (underline or circle as appropriate)?

Fertilization to emergence (incubation)

Emergence to smoltation (freshwater rearing).

Juvenile out migration (including estuarine rearing).

Adult migration to spawning areas.

Spawning.

13. **Spatial Scale and Relative Biological Significance:** Describe the reaches of stream likely to be adversely affected by the proposed action(s), i.e., is the effect limited to the immediate site or a short reach downstream, or will the effects extend/occur over a lengthy reach (or reaches). Note if the adverse effects are likely to affect exceptionally productive or sensitive salmonid habitat in listed or proposed Critical Habitat, Key Watersheds, or proposed Essential Indigenous Anadromous Salmonid Habitat (i.e., likely to affect productivity of the fifth field watershed).

Name of Biologist Scott W. Lightcap

Date 04-14-99

Consistency with Northwest Forest Plan S & G's

The Record of Decision for the Northwest Forest Plan contains standards and guidelines designed to reduce the impacts on native aquatic organisms caused by fish stocking activities. Specifically, S&G FW-4 (Page C-38) is written as follows: Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands.

Consistency with various Watershed Analyses

A draft watershed analysis has been completed for the East Fork Coquille River. Elimination of non-native aquatic species from helicopter fireponds is recommended (page VIII-7). A watershed analysis has also been completed for the lower portion of the North Fork Coquille River (Middle Main Coquille/North Fork Mouth/Catching Creek Subwatershed Analysis). While there are no recommendations that pertain specifically to exotic fish species management in that analysis, there is sufficient language in the document that is focused on attaining ACS objectives. Therefore, if this project is consistent with ACS objectives, it should also be consistent with the findings and recommendations of that watershed analysis as well.

Consistency with ACS Strategy and Objectives

There are four components of the Aquatic Conservation Strategy: Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration (ROD, page B-12).

- The design features contained within the Helipond Exotic Species Eradication EA are consistent with WA recommendations for riparian reserves, and the pertinent Standards and Guidelines contained within the ROD (C30-33).**
- There are no Key Watersheds in the East Fork Coquille River 5th field watershed. In the North Fork Coquille River 5th field watershed, there are 2 smaller, tier 1 Key Watersheds; Cherry Creek and the Upper North Fork. None of the ponds proposed for treatment are located in Key Watersheds.**
- The relevant watershed analyses are the draft East Fork Coquille Watershed Analysis, and the Middle Main Coquille/North Fork Mouth/Catching Creek Sub-Watershed Analysis.**
- Watershed Restoration in these 5th fields is ongoing, and is addressed in the respective watershed analysis documents.**

The following table shows the relationships among the nine Aquatic Conservation Strategy (ACS) objectives, the measurable factors/indicators developed by NMFS, and site-specific impacts on actions proposed in the Helipond Exotic Species Eradication Project. The table demonstrates that the actions proposed in this project would meet Aquatic Conservation Strategy objectives. Fundamental to this conclusion is the assumption that site-specific design features which do not degrade the NMFS factors/indicators in the long-term will not prevent the attainment of the associated ACS objectives.

Table A-3 : Summary of the Helipond Exotic Species Eradication project design features, impacts of the Proposed Action on aquatic/riparian values within the Southwest Province Tye Sandstone Physiographic Area, Matrix of Factors and Indicators (Attachment 3 to the NMFS Biological Opinion, March 18, 1997), and assessment of consistency with the ACS objectives.

ACS Objectives Northwest Forest Plan	Factors/ Indicators (NMFS)	Helipond Exotic Species Eradication Design Features and Impact Analysis
<p>2,4,8,9 Design features will maintain spacial and temporal connectivity within the drainage network with regard to shade and water temperature (ACS#2), maintain water quality with respect to temperature (ACS#4), maintain vegetation for adequate summer/winter thermal regulation for aquatic species (ACS#8), and therefore maintain habitat for well-distributed riparian-dependent populations (ACS#9).</p>	<p>Water Quality / Temperature</p>	<p>Interim <u>Riparian Reserve (RR)</u> widths would be maintained on all streams within, and adjacent to, the project area; this is of sufficient width to maintain water temperature. No canopy will be cut, girdled, or otherwise disturbed in the Riparian Reserves, and there will be no direct effect on stream temperature.</p>
<p>4,5,6,8,9 Design features will maintain water quality (ACS#4) in the long term, may temporarily degrade turbidity in the short term, but maintain the sediment regime in the long term (ACS#5), maintain instream flows to retain patterns of sediment routing (ACS#6), maintain vegetation to provide adequate rates of erosion (ACS#8), and therefore maintain habitat for well-distributed riparian-dependent populations (ACS#9).</p>	<p>Water Quality / Sediment / Turbidity</p>	<p>Interim <u>Riparian Reserve (RR)</u> widths would be maintained on all streams within, and adjacent to, the project area.</p> <p>Turbidity associated with the first freshet/s subsequent to construction is expected to be within the present range of variability for the site. Short-term turbidity would be minimized by best management practices (BMPs) (water diversion, silt fencing/mats, seeding and mulching, and seasonal restrictions).</p>
<p>4,6,8,9 Design features will maintain water quality with regard to chemical concentration/nutrients (ACS#4), maintain instream flows to retain patterns of nutrient routing (ACS#6), maintain vegetation to provide adequate nutrient filtering (ACS#8), and therefore maintain habitat for well-distributed riparian-dependent populations (ACS#9).</p>	<p>Water Quality / Chemical Concentration / Nutrients</p>	<p>Interim <u>Riparian Reserve (RR)</u> widths would be maintained on all streams within, and adjacent to, the project area; this is sufficient to maintain the natural input of organic material into streams by riparian vegetation.</p> <p>Water levels in each pond will be drawn down several feet. This will prevent any chemically treated water from escaping into live streams. The chemical dissipates quickly, and is not likely to impact overall water quality.</p> <p>The proposed action involves the use of heavy equipment in immediate proximity to the stream channel. However, water quality will be maintained through implementation of the <i>Conservation Practices for Streams and Riparian Reserves</i> (Coos Bay District ROD, BMPs p. D-3).</p>

ACS Objectives Northwest Forest Plan	Factors/ Indicators (NMFS)	Helipond Exotic Species Eradication Design Features and Impact Analysis
<p>2,9 These design features will maintain spacial and temporal connectivity within the drainage network (ACS#2) and therefore maintain habitat for well-distributed riparian-dependent populations (ACS#9).</p>	<p>Habitat Access / Physical Barriers</p>	<p>The proposed project will not create physical barriers or otherwise degrade access to aquatic habitat. It will improve stream connectivity by re-diverting the streams involved back into their original channels.</p>
<p>3,5,6,8,9 Design features will maintain the banks and bottom configurations of the aquatic system (ACS#3), may temporarily degrade turbidity in the short term, but maintain the sediment regime in the long term (ACS#5), maintain instream flows to retain patterns of sediment routing (ACS#6), maintain vegetation to provide adequate rates of erosion, and to supply coarse woody debris sufficient to sustain physical complexity and stability (ACS#8), and therefore maintain habitat for well-distributed riparian-dependent populations (ACS#9).</p>	<p>Habitat Elements / Sediment</p>	<p>Turbidity associated with the first freshet/s subsequent to construction is expected to be within the present range of variability for the site. Short-term turbidity would be minimized by best management practices (BMPs) (water diversion, silt fencing/mats, seeding and mulching, and seasonal restrictions).</p> <p>Disturbed soils will be seeded and mulched to protect against transport of sediment to the stream channel during subsequent rains.</p>
<p>6,8,9</p>	<p>Habitat Elements / Large Woody Debris</p>	<p>The proposed action would have no effect on large woody material.</p>
<p>2,3,5,8,9</p>	<p>Habitat Elements / Pool Area (%)</p>	<p>The project would have no effect on pool area</p>
<p>2,3,5,6,9</p>	<p>Habitat Elements / Pool Quality</p>	<p>The proposed action would have no effect on pool quality</p>
<p>1,2,3,6,7,8,9</p>	<p>Habitat Elements / Off-Channel Habitat</p>	<p>The proposed action would have no effect on off-channel habitat</p>
<p>1,2,3,5,6,8,9</p>	<p>Channel Condition & Dynamics / Width/Depth Ratio</p>	<p>The proposed action would have no effect on width/depth ratios</p>
<p>3,5,6,8,9</p>	<p>Channel Condition & Dynamics / Streambank Condition</p>	<p>The proposed action would have no effect on streambank condition</p>

ACS Objectives Northwest Forest Plan	Factors/ Indicators (NMFS)	Helipond Exotic Species Eradication Design Features and Impact Analysis
1,2,3,6,7,8,9	Channel Condition & Dynamics / Floodplain Connectivity	The proposed action would have no effect on floodplain connectivity
1,2	Watershed Condition / Road Density & Location	The proposed actions do not affect road density or location.
1,2,5,8,9	Watershed Condition / Disturbance History	There would be very little ground disturbance associated with this project. The disturbance would be limited to the outlets of each respective pond, during placement of prefabricated concrete catch basins. It is likely to be small enough in extent to be considered negligible.
1,3,5,8	Watershed Condition / Landslide and Erosion Rates	The proposed action would have no effect on landslide rates. There is likely to be a short term spike in stream turbidity as a result of newly disturbed ground near each of the respective pond outlets, caused by installation of prefabricated concrete catch basins.
1,2,4,8,9	Watershed Condition / Riparian Reserves	Interim <u>Riparian Reserve (RR)</u> widths would be maintained on all streams within, and adjacent to, the project area. The proposed actions would not involve the removal of trees from the riparian area.

Conclusion

Based on the above review I find the proposed project is consistent with Watershed Analysis recommendations and findings, applicable Northwest Forest Plan Standards and Guidelines, NEPA Documentation, and applicable aspects of NMFS' March 18, 1997 Biological Opinion. In addition, I find the proposed project does not hinder or prevent attainment of Aquatic Conservation Strategy objectives at the 5th field watershed scale over the long-term.