Appendix E. Aquatic Conservation Strategy (ACS) Objectives Consistency Review

Aquatic Conservation Strategy Consistency Summary
For a project to proceed, "a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives" (ROD B-10) from the Northwest Forest Plan Record of Decision. The nine objectives are listed on page B-11 of the ROD and used to determine if the project would restore, maintain, or degrade these indicators. Once this determination is made, the indicators are examined together with the Range of Natural Variability to ascertain whether the project is consistent with the objectives. A description of the range of natural variability of the "important physical and biological components" (ROD B-10) is necessary for determining whether a project "meets" or "does not prevent attainment" of the Aquatic Conservation Strategy objectives (ROD B-10).

The effects analysis in this document focused on habitat indicators that make up elements of the nine Aquatic Conservation Strategy objectives and found that all habitat indicators would be **maintained or slightly enhanced** as a result of this project. Therefore, this project **meets** the Aquatic Conservation Strategy objectives.

Table 1. Consistency with ACS objectives.

	Goals	Project
Objective 1:	**Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.**	The proposed action is expected to maintain the distribution, diversity, and complexity of watershed and landscape-scale features and ensure the conservation and enhancement of the aquatic systems to which species, populations, and communities are uniquely adapted. The proposed thinning of stands in Riparian Reserves would promote the development of late seral conditions by accelerating tree growth and the production of large down wood, while maintaining woody legacies such as snags and downed logs. Where vegetative complexity is high, and adjacent to all known aquatic features, no-cut riparian buffers along stream courses would maintain the existing level of vegetative complexity associated with these areas.
Objective 2:	**Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.**	No-cut buffers along stream courses and project design criteria (PDC) would protect highly functioning riparian areas from disturbance and maintain a high level of connectivity along these corridors. In the short-term, the proposed action would maintain spatial and temporal connectivity within and between watersheds by retaining untreated riparian buffers along stream corridors and wetlands. Untreated riparian buffers in Riparian Reserves would conserve riparian habitat, including floodplains,

	Goals	Project
		wetlands, upslope areas, and headwater tributaries. Untreated riparian buffers and PDC would provide chemically and physically unobstructed routes to areas critical for fulfilling the life history requirements of smaller or less mobile aquatic and riparian-dependent species that are physiologically sensitive, such as amphibians and mollusks. In addition, untreated riparian buffers would maintain wildlife travel corridors that parallel streams for daily, seasonal, or once-in-a-lifetime travel by mobile species such as American marten, black-tailed deer, and Roosevelt elk. In the long-term, the proposed action would enhance spatial and temporal connectivity within and between watersheds by improving habitat. The proposed thinning of stands in Riparian Reserves would promote the development of late seral conditions by accelerating tree growth and the production of large down wood, while maintaining woody legacies such as snags and downed logs. The proposed action would conserve and enhance opportunities for dispersal and the consequent gene flow between populations and allow for potential long-distance range shifts of species in response to climate change.
Objective 3:	**Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.**	The physical integrity of the aquatic system would be protected by designating no-cut buffers along most stream channels, by maintaining equipment setbacks from streams, and by designing stand treatments, road reconstruction and road decommissioning activities to minimize impacts at the project sites. New temporary road construction will be limited and would not involve stream crossings. See the Hydrology specialist report for more detailed analysis.
Objective 4:	**Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.**	Designated riparian no-cut buffers would maintain current streamside shading to protect stream temperatures. Riparian no-cut buffers would also prevent sediment generated from timber harvesting operations from reaching stream channels. Best management practices and PDC were developed to address potential impacts at the project scale and to retain water quality values. Therefore, the water quality would

	Goals	Project
		remain within the range that maintains the biological, physical, and chemical integrity of the aquatic system, which would benefit the survival, growth, reproduction, and migration of individuals composing the aquatic and riparian communities. See the Hydrology specialist report for more detailed analysis.
Objective 5:	**Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.**	At the project scale, stream courses are protected with a no-cut riparian buffer, exclusion of road construction and PDC. Best management practices have been incorporated in the project design to help minimize both the production and delivery of sediments. At the watershed scale, changes in the overall sediment rates would not be detectable given the high variability in natural rates of sediment input. Actions taken to improve existing drainage problems and to minimize road related erosion would incrementally reduce existing sediment delivery to planning area streams. See the Hydrology specialist report for more detailed analysis.
Objective 6:	**Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.**	This project will not substantially affect instream flows so they would be maintained. There is high natural variability in discharge that is related directly to annual precipitation seasonal snowpack accumulation. Water withdrawals would not be affected and would likely continue to impair late summer baseflow conditions in some years. See the Hydrology specialist report for more detailed analysis.
Objective 7:	**Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.**	The project provides a no-cut buffer around all aquatic features and does not directly affect surface waters or the hydrology of floodplains, wetlands, or meadows. The timing, variability, and duration of floodplain inundation and water table elevation would be maintained. Based on the geographic extent of forest treatments, the proposed removal of vegetation would not affect the floodplain or water table elevations in any of the area watersheds. See the Hydrology specialist report for more detailed analysis.

	Goals	Project
Objective 8:	**Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.**	Thinning in Riparian Reserves would promote the development of late seral conditions by accelerating tree growth and the production of large down wood, while maintaining woody legacies such as snags and downed logs. Where vegetative complexity is high, no treatment is proposed in order to maintain the high level of vegetative complexity associated with these areas. The proposed action implements untreated buffers along streams and wetlands. The untreated riparian buffers would protect diverse riparian plant communities, current shading levels for thermal regulation, stream banks from operational disturbances, and should provide sufficient area for sediment transport interception to streams or wetlands. See the Hydrology specialist report for more detailed analysis.
Objective 9:	**Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.**	This project includes no cut buffers along riparian areas to help maintain the existing microclimates and structural diversity which are important for relatively immobile species sensitive to changes in temperature and humidity (e.g., amphibians, mollusks, and vascular plants) as well as for those animals that use the riparian areas as travel corridors. These riparian areas contribute to the landscape heterogeneity of both untreated and treated stands. The retention of cedars and minor hardwood species provides for different stocking levels and species composition. This variety of stand conditions would create a diverse range of habitats that will support a variety of species within the riparian areas and across the landscape. See the Hydrology specialist report for more detailed analysis.