coverage), scattered Red Alder saplings (25%), Stinging Nettle (15%), and Creeping Buttercup (10%). Many more species, such as Bulrush and Soft Rush, are present in the marsh wetland and emergent in the surface water but were not in the sample.

3.1.2 Upland Habitat

Most of the 59.47 acres of upland habitat is located in the southern half and northeast corner of the site. The two types of upland areas on the site are forested upland and a cleared lot.

Forested upland

The majority of the upland habitat on the site consists of forested upland (58.81 acres). A total of 38 species were observed in the various forested upland stands (plots 2,4,7,8,9,11), with Red Alder, Bigleaf Maple, Black Cottonwood, Douglas Fir, and Western Red Cedar as the major overstory species. The shrub layer is dominated by Vine Maple, Snowberry, Indian Plum, Salmon Berry, and Bitter Cherry. Prominent in the ground layer is Youth-on-age, Lady Fern, Trailing Blackberry, and Oregon Bentgrass.

Cleared lot/upland

This area (0.66 acres) has a large number of exotic herb and grass species that typically invade disturbed areas. The lot was cleared and leveled for the construction of the second residence, which will be used by fish hatchery personnel. The site was not sampled in the wetland determination surveys because of its disturbed nature.

3.2 Hydrology

The hydrology on the site is a complex association of surface water draining into the site from adjacent upland areas, direct precipitation, ground water, and river water intruding under the site under seasonal hydrological conditions. The groundwater aquifer beneath the site is heterogeneous (unpredictable) and discontinuous and is not limited to river fluctuations.

The hatchery has as many as 5 wells pumping water into the facility at any given time. These wells have the capacity to lower the water level of the aquifer, thereby reducing the water feeding the wetlands. The yield from the groundwater aquifer is limited during the dry season with lack of continuity with the river. The aquifer can be recharged, under normal conditions, by surface water from upland drainage and groundwater infiltration from the river. However, especially during the dry season, the pumping rate out of the wells is limited to the rate of infiltration from the river to the aquifer. Only a limited rate