

AN ABSTRACT OF THE THESIS OF

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Title: Seasonal Influences on Food Availability and Diet of Coastal Cutthroat Trout in Relation to Riparian Vegetation.

Abstract approved: _____

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Current riparian management objectives in the Pacific Northwest promote both retention of existing conifers and conversion of hardwood-dominated areas to conifers. Although understanding of relationships between riparian vegetation and salmonid prey availability is growing, temporal variation in these relationships is poorly understood. Seasonal fluxes in availability of aquatic and terrestrial invertebrate prey for coastal cutthroat trout (*Oncorhynchus clarki clarki*) were investigated by estimating invertebrate biomass from aquatic (benthos and drift) and allochthonous (terrestrial) sources in three watersheds in the Oregon Coast Range. To investigate the influence of vegetation type on food sources, samples were collected in each watershed from stream sections dominated by deciduous, conifer, and mixed vegetation. During each sample period, diet was assessed by examining gut contents of captured trout. Stream discharge appeared to be an influential factor regulating seasonal fluxes of aquatic invertebrate biomass in the benthos and drift. Total

allochthonous invertebrate biomass at deciduous and mixed vegetation sites (64 and 61 $\text{mg}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$, respectively) was almost 30% higher than at coniferous sites (45 $\text{mg}\cdot\text{m}^{-2}\cdot\text{day}^{-1}$). Although aquatic insects dominated the total gut contents during this study, prey from terrestrial origin was more common during summer and fall. These results suggest that systematic removal of deciduous vegetation in riparian zones to promote conifers may have unintended consequences on the food resources of coastal cutthroat trout and the productivity of aquatic food webs in the Pacific Northwest.