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June 2015

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Jane Claire Dirks-Edmunds

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Recommended Citation

Dirks-Edmunds, Jane Claire, "Ecology - As I See It" (2015). *Jane Claire Dirks-Edmunds Documents*. Document. Submission 6.

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ECOLOGY -- As I See It

Jane Claire Dirks-Edmunds

Ecological research studies on Oregon Coast Range's Saddleback Mountain illustrate what has been happening to Pacific Northwest forests during the last three or four decades.

In the early 1930's Dr. James A. Macnab selected a site on the north side of ~~the mountain~~ ^{Saddleback} and with the help of several student assistants, including myself, and others who volunteered their services, made an intensive five-year study. At that time magnificent virgin ~~Douglas fir~~ ^{predominantly Douglas fir} forests extended throughout the mountainous areas of the northwest in almost unbroken and seemingly inexhaustible supply. ^{In the research area,} Smaller hemlock trees of all ages formed an understory extending into the lower portion of the nearly continuous Douglas fir canopy 150 to 200 feet or more above the ground surface. Where there was enough light ^{scattered patches of} sword fern, salal, Oregon grape and huckleberry shrubs were found, and in summer herbs dotted the moss-covered forest floor.

In the summer of 1940 the research area was logged. While the merchantable timber was removed, some of the largest Douglas firs, presumably over-mature, were left to reseed the area.

In 1959 a NSF grant enabled me to make a 2 1/2 year study patterned as nearly as possible after the original one. Comparisons of such physical factors as temperature, relative humidity, precipitation and sunlight illumination have revealed interesting differences: trees in the young forest appear to be more effective ^{than the mature trees as} summertime thermal blankets, ~~and~~ ^{and} interceptors of rainfall and ~~in addition~~ ^{in addition} they are reducers of sunlight penetration.

~~Presence of~~ ^{occurrence of} small openings among the young tree thickets permitted more than twice as many plant species, ^{which, in turn supported} as well as a much greater variety of insect species,

especially ones which feed upon the abundant decomposing vegetation. Also presence ~~absence~~ of garter snakes and lizards and absence of amphibia indicated drier conditions in the young forest.

Absence from the young forest of certain distinctive species of invertebrates and amphibia which Dr. Macnab found to be seasonal indicators in the mature forest gives rise to a feeling of concern for their survival since the virgin forest is disappearing so rapidly. Just what significance this would have, only further research ~~can~~ ^{could} reveal, but at the very least it would reduce diversity of species, and diversity has been shown to be a stabilizing factor in ecological communities.