

Jerry F. Franklin, William H. Moir, Miles A. Hemstrom, Sarah E. Greene and Bradley G. Smith. 1988. The forest communities of Mount Rainier National Park. U.S.D.I. National Park Service, Scientific Monograph Series No. 19. U.S. Government Printing Office, Washington D.C., 194 p. + maps.

This easy-to-read and well organized book is directed toward park managers and visitors to Mount Rainier National Park.

A brief introduction into the climate, geology, soils and topography is followed by a description of major vegetation patterns within the Park. Wildfires, snow and rock avalanches, volcanic eruptions, mudflows, floods and wind are discussed as natural disturbance factors which influence the structure and composition of the forested ecosystems. Field sampling methods, data analysis and terminology employed in the forest classification are clearly and concisely summarized in a manner that is understandable to a general readership. Unlike much of the work done today on vegetation classification, this book goes to great length to explain the procedures and types of analyses undertaken to derive the classification units.

The classification comprises 14 plant associations and 5 community types. Each type is discussed in detail under one of four broad environmental groupings: moist forest ecosystems, modal forest ecosystems, dry forest ecosystems, and cold forest ecosystems. Field data providing structural and compositional information on each type are clearly summarized in tables and cross referenced to a written text. A wealth of information is presented in each written text, typically including information on: geography within the Park; elevation range; soils and landforms; forest structure; major dominant or characteristic trees; understory shrubs and herbs; bordering community types and the nature of the transition; and the relationship of the type to others within the Park and elsewhere in the Pacific Northwest. Each written description is accompanied by a black and white photograph of a representative stand. Two high quality, color plates depict the distribution of habitat types and forest age classes in the Park.

Following the classification and discussion of individual plant associations, a chapter is devoted to

exploring environmental and floristic patterns in six major drainage basins within the Park. Forest associations are arrayed and discussed in generalized, 2-dimensional diagrams. The horizontal axis depicts a generalized topographic gradient; the vertical axis depicts an elevational gradient. The chapter closes with a discussion of statistical and analytical procedures employed in construction and refinement of the classification. This later section is somewhat esoteric, but has heuristic value not only to the classifiers themselves, but to managers and the general public who are not often given a full view of the complexities and mysteries of classification.

The role of large-scale natural disturbance (especially wildfire) is examined in terms of its effect on natural succession within the Park. Fire frequency and natural fire rotation are determined for each plant association. The successional role that each major tree species plays within each habitat type is presented in a summary table. A short discussion on the role of small-scale disturbance (tree gaps) in forest succession completes the chapter.

The final chapter, "Management Interpretation of the Habitat Types," is where one of the important by-products of forest classification becomes most evident. Classification of the landscape into habitat types (all of the land capable of supporting the same association) provides the land manager with an ecologically based classification which accentuates the constraints or potential of a given piece of land. The power of this approach as a planning tool is revealed in the discussion of the forest habitat types in relation to physical conditions (growing season, drainage, snowpack), biological conditions (productivity, plant diversity, wildlife), natural disturbances (fire, pathogens, wind), and development potential (resistance, resilience).

The visitor to the Park, especially those curious about natural history, will be exposed to ideas usually missed or glossed over in species-oriented accounts of natural history. The "big picture," landscape oriented approach offered in this volume is a welcome addition to the science, management, and natural history of Mount Rainier.

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