

HAZARD TREE MANAGEMENT PLAN

MOUNT RAINIER NATIONAL PARK

Prepared by:

Stanley E. Schlegel
Resource Management Specialist

APPROVED:

William J. Sigge
Superintendent

10/23/78
Date

HAZARD TREE MANAGEMENT PLAN

Many of the man-made facilities in Mount Rainier National Park are located in forested areas, surrounded by trees 50 feet to 200 feet in height. Periodically trees, or parts of trees, fall. Some cause damage to park facilities. Some have the potential for causing loss of property or life to park visitors and employees.

The goals of this hazard tree management plan are to minimize the hazards to which park visitors and employees are exposed; to minimize the costs of the program both in property damaged and money expended for inspection and control; and to develop and use dependable, well-defined standards for hazard tree identification and evaluation. A hazard tree is one which may cause loss due to structural failure or uprooting unless some control is taken. In order to fully assess the hazard potential of a tree, both internal and external factors effecting the probability of failure must be examined. The probability of a target being hit must also be considered. Finally, the value of the target must also be evaluated.

The method used to determine a tree's hazard potential consists of a four point rating of tree condition, and a three point rating of target value. Separate tree condition rating systems are set up for conifers and hardwoods, due to the greater frequency of failure experienced in hardwoods.

All developed areas should be inspected by the Resource Management Specialist annually, and any hazardous trees recorded on a map of the area. The maps will be color coded in the following manner. Trees rated 3 to 4 will be marked in blue. Trees rated 5 will be marked in green. Trees rated 6 or 7 will be marked in red. The number rating of each tree will also be marked on the map along with the Dbh and species. Copies of these maps, and records of the trees removed will be kept in the Resource Management Specialist's office.

Trees for removal, or hazards to be corrected, will be identified by the Resource Management Specialist as a work order request to the Chief of Maintenance with a copy to the District Ranger.

Complete clean up will be done, as is customary, in housing and administrative areas. However, research has indicated that campgrounds may be more properly managed by allowing rotten wood to accumulate, to act as a seed bed, and to prevent soil compaction and erosion. Therefore, in campgrounds, hazard trees that are felled will be cleared from parking spots, tent pads, and eating and cooking areas only. Other trees or portions of trees will be left on the ground to decompose and help perpetuate the forest ecosystems.

TREE CONDITIONS (Conifers only)

ASSIGN 1 point if any or all of the following conditions are present:

- a. Small basal or trunk scars; front cracks, black knots on hemlock
- b. Single punk knots or conks less than 6 inches in width; upper bole conks. On Douglas fir, conks of Fomes pini (Phellinus pini)
- c. Mistletoe branch cankers or brooms; stem cankers with bark intact or where dead face is less than 1/2 the circumference of the swelling; upper bole stem cankers
- d. Forked tops, pronounced crooks, broken tops (if top branches are thrifty), volunteer tops
- e. Hollow butt (more than 6 inches sound wood around 3/4 circumference of tree)

ASSIGN 1 additional point if any or all of the following are present:

- a. Old trunk scars (more than 15 years old); large scars (more than 2 square feet -- 4 square feet on Douglas fir); lower bole scars
- b. Mistletoe stem cankers where the dead face is more than 1/2 of the circumference of the swelling; lower bole cankers
- c. Fading or chlorotic foliage; thinning crowns, distress cone crop; resin flow at base of the tree (root rot indicators); presence of velvet fungus conks -- Polyporus schweinitzii (Phaeolus schweinitzii); insect frass or pitch tubes, swollen butts; hollow butt (6 inches sound wood on 3/4 circumference of tree)
- d. "Saturated soil"
- e. Undercut roots (25% of roots cut or exposed)
- f. Broken tops if top branches are declining, dead spike or volunteer tops
- g. Visible soil cracks around root system, indicating shallow rooting

ASSIGN 1 additional point if any or all of the following are present:

- a. Mycelial fans beneath bark; mycelium on surface of buried roots; conks of Fomes anorus (Heterobasidium anorus), Poria weirii (Phellinus weirii), or mushrooms of Armillaria mellea
- b. Undercut roots (50% of roots cut or exposed)
- c. Broken tops if tops are declining, dead spike and volunteer tops are present, and large dead branches are present
- d. Hollow butt (less than 6 inches of good wood on 3/4 circumference of tree)
- e. Broken limbs detached
- f. Open or healed-over tension cracks visible
- g. Large dead branches, large sections of loose bark
- h. Multiple conks especially if separated by 10 feet or more; lower bole conks; single conks of Fomes laricus
- i. Tree dead

ASSIGN 1 additional point if tree is leaning more than 5 degrees from vertical and is susceptible to heavy snow or winds

TREE CONDITIONS (Hardwoods only)

ASSIGN 1 point if tree is a hardwood (alder, maple, cottonwood, etc.)

ASSIGN 1 additional point for EACH of the following up to a maximum of 4 points:

- a. Heavy branches present
- b. Large dead branches present
- c. Rot organisms present
- d. Lean of more than 5 degrees from vertical

SITE (Target) CONDITIONS

ASSIGN 1 point if there is a target of value present (monetary, historical, operations; but not a structure)

ASSIGN 1 additional point if:

- a. The site is commonly inhabited by 10 people or less, less than 100% of the time, in season
- b. A structure is present with less than \$5,000 value

ASSIGN 1 additional point if:

- a. The presence of people is considered continuous, or in groups larger than 10 persons
- b. There are major facilities present, such as power lines, water systems, sewage plants
- c. There are major structures present (homes, shops, visitor centers, etc.)

TOTAL RATING

REMOVE TREE IF:

Rating equals or exceeds:	And tree is located in:
5	Developed areas
6	Backcountry camps, cabins; roadside pullouts
7	Along park roads