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COOPERATION
City of Portland
City Forest-Park

Portland, Oregon
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MANAGEMENT RECOMMENDATIONS

for

PORTLAND CITY FOREST-PARK

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Foreword: At the request of the City of Portland Park Bureau, through Mr. Harry B. Buckley, Superintendent of Parks, this outline of the management possibilities of the City Forest-Park has been prepared. These recommendations have been formed from a general investigation of the City Forest-Park area, involving an examination along roads and trails and a sampling of many of the timbered portions. They are intended to be of assistance in the preparation of a complete management plan which should be developed by the City Forester, detailing each unit in proportion to its relative importance and kind and intensity of contemplated use. This Forest-Park belongs to the people of the City of Portland. Therefore, the public should be educated to recognize the full value of a multiple-use Forest-Park before major developments are undertaken. The public also should be taught to appreciate the true value of all the resources of the Forest-Park under active management to avoid destruction of these values or a one-sided approach resulting in partial use of these resources.

As an aid in selling progressive management ideas to the people, a demonstration area could be established on a 20 or 40-acre piece of the Forest Park. The State Extension Service has a specialist employed, whose job is to set up demonstration woodlands in each County. Inasmuch as none has as yet been established in Multnomah County he would welcome the opportunity to establish one on city property. The basic idea of such a demonstration is to make a detailed study of the forest situation on an area set aside for the purpose, and manage the forest according to the methods indicated by the data obtained. Crowded stands are thinned and other forest management methods designed to improve the stand are put into practice. Detailed records of volumes and values are kept and posted so that anybody and everybody can follow the work being done. This would be an excellent way to show the people of the County, and of Portland in particular, the methods that are practical in the Forest-Park.

A. THE PHYSICAL FOREST-PARK

1. Description of the Land Area and Road Development. The City Forest-Park area, including interior private holdings, is a 5400-acre tract in the hills of northwest Portland, of which approximately 3800 acres is city-owned. It is bounded by St. Helens road on the northeast, Cernell and Thompson roads on the south, Skyline Boulevard on the southwest, and it touches Newberry road on the northwest. The total area enclosed by these roads is about 6500 acres. The boundaries exclude agricultural and residential areas along Skyline Boulevard, Newberry road and St. Helens Road. A small portion of the northwest side lies outside of the city limits. The tract consists of a rugged forested area, falling off rapidly to the northeast from Skyline Boulevard from

an elevation of approximately 1100 feet to St. Helens road at an elevation of 50 feet. It is surrounded by paved all-weather roads, and is crossed from Skyline Boulevard to St. Helens Road by the paved Germantown road. Two other fairly good roads, Saltzman and Springville roads, originally old wagon roads, lead from St. Helens road to Leif Erikson Drive, continuing to Skyline Boulevard as trails. Leif Erikson Drive is a gravel road, not open to public driving, extending through the center of the tract from the end of Thurman Street, at the southeast end of the Forest-Park, to Saltzman road near the center, and continuing as a dirt grade on to Germantown road. In its present condition the Saltzman to Germantown road section is not passable to vehicles. These, and old and new logging roads and trails, make most of the Forest-Park accessible. Pedestrians can reach the heart of the Forest-Park by these roads, and on trails from the Linnton bus route along Highway 30, or from many points along Skyline Boulevard.

The present forest cover varies from old-growth timber, through several ages of second growth, to bare, recently logged areas. Although there are some stands of well-stocked Douglas-fir 40 to 60 years of age, most of the tract is covered with hardwood brush, alder stands, or mixed alder and Douglas-fir, or brushy growth following burns. The principal exception to this is the large area of recently logged-over private land covered with highly inflammable unburned slash. (See the "Proposed Fire Protection Plan for Portland City Forest-Park", prepared by E. H. Marshall of the U. S. Forest Service of June 8, 1950.)

A few interior plots, logically a part of the Forest-Park, are occupied by their owners. One such resident herds goats, another sheep and a third keeps horses and pigs. These graze on portions of the City-owned lands. Other private tracts, important to the development and administration of the Forest-Park are held by absentee owners. Some may revert to the City by tax foreclosure or donation while others must be purchased, or left in private ownership.

For management purposes the area has been divided into five blocks, labelled A, B, C, D, and E on the accompanying map. The boundaries of these blocks generally follow existing, or recommended, roads and trails. These blocks can be broken into compartments as the preparation of the detailed management plan develops a need for smaller units of management.

2. Description of the Forest. The multiplicity of ownership, the diversity of use made of the area, and the ruggedness of the terrain have all combined to leave a wide range of forest conditions. The factor having the greatest influence upon the forest condition has been poor logging methods. During the past five years most of the commercial timber on private lands

has been clear cut, and that now remaining is being steadily removed. Fire is the second greatest cause of the removal of the forest cover. The areas first depleted by these two agencies, since the original stand was cut, have for the most part grown up to hardwood stands or mixed hardwood-coniferous stands. (These are the grey and orange areas in Blocks B, C, D and E.) More recently depleted areas (during the past 15 to 20 years) are brush-covered, or are covered with unburned slash. (These are the red, yellow and pink areas in Blocks A, B, C, and D.) A very small portion of these areas is restocking satisfactorily to a desirable forest cover, either hardwood or coniferous. Snags are common. The green areas in all blocks represent the coniferous forest. The dark green is the mature and overmature timber and the light green the immature or second-growth stands.

The mature and overmature timber is located in a 75-acre tract in the Macleay Park area already dedicated to recreational use, in several areas in Block A totalling about 100 acres, and in isolated trees and small patches largely in Blocks B and C. Except for the Macleay Park area, which is reserved for recreational use only, this timber is overmature, consisting of scattered trees, many of which have dead tops, in a stand of hardwood brush. These trees of rather large volume are falling out one by one, with considerable volume loss to the stand.

The second growth stands in Blocks B, C, D, and the northwestern part of Block E are about one-half stocked. There are small areas of better stocking and scattered mixed stands of poor stocking; however, all trees are not producing net volume as many of them have been badly damaged at the base by fire. The young stands in the southern portion of Blocks E and A are about two-thirds stocked or slightly better.

Some of the mixed stands contain a good proportion of coniferous trees in scattered groups. The areas shown on the map as hardwood stands, contain scattered coniferous trees. In some of these, such as the grey areas in Block D and along the edges of Block E, the coniferous trees are beginning to overtop the hardwood to the extent that they may soon be classed as mixed conifer-hardwood stands.

3. Drainages and Water Development. There are fourteen major drainages sloping generally to the northeast and many side branches and minor ravines. There are very few springs giving rise to year-round streams. However, the major drainages show traces of water throughout the year and could support permanent water holes after suitable development.

Springs have been developed in several places, one of these areas is directly southwest of the St. Johns bridge. The water flows into two concrete reservoirs. One is located just below Leif Erikson Drive about three-quarters of a mile southeast of Springfield road. The other is along the southeastern approach to the

bridge and just above St. Helens road. Water is piped from these to nearby residential areas. An old development, consisting of a rectangular wooden reservoir and a circular wooden tank now in disuse and rotting, is located along abandoned streets to the north and west of Linnton. Additional developments in this locality collect water that is piped to the Linnton area. Permanent water is found in the ravine heading on either side of the junction of Thompson road and Skyline Boulevard.

B. MANAGEMENT OBJECTIVES

The broad objectives of management of the City Forest-Park are multiple in character and are designed to bring about the greatest value to the greatest number of people over a long period of time. They are as follows:

1. Recreational.

To develop facilities that will afford extensive outdoor recreation for the public in keeping with the wild character of a Forest-Park.

2. Protection.

To protect the entire Forest-Park area from fire and vandalism and from erosion and other natural forces destructive to land and forest values. (Refer to Fire Protection Plan of June 8, 1950).

3. Economic Forestry.

To improve the quantity and quality of forest tree growth toward the end of bringing all forest land into full productivity.

To grow timber and other forest products which in time will make the Forest-Park self-supporting.

To eliminate problems of unwise settlement and excessive public service costs.

To provide a labor reservoir of productive work.

4. Consolidation of Ownership.

To acquire interior private lands needed for blocking up the Forest-Park to simplify the management of the area.

5. Publicity.

Plan and execute publicity designed to acquaint the people of Portland with the full multiple-use value of the Forest-Park

and to secure the maximum protection of these values.

C. MANAGEMENT RECOMMENDATIONS

1. Recreational Development.

All recreational developments should be of a nature compatible with the forest surroundings and not dressed up to meet formal city park standards:

a. Concentrate campground areas in the places easiest to reach, where water facilities can be readily developed, and the fire hazard is not great. Some places offering possibilities, which are accessible primarily through Forest-Park lands, are shown on the map by the letter "C" for camp and a number, as follows:

- C-1. Northwest of Linnton. Improve the trail and develop picnic area along small creek. Accessible only by trail.
- C-2. The center of Block B between Linnton and Waldemere, just above St. Helens road. Here a deep canyon lined with hardwoods is accessible from the highway with cars.
- C-3. Above the first bend in Leif Erikson Drive a short distance west of Springville road a picnic area, accessible to cars in summer, could be developed with a small amount of work. This could be made accessible the year round by placing gravel on the one-eighth mile of road beyond the Springville road.
- C-4. Just below the concrete reservoir supplying Whitwood Court along Leif Erikson Drive a little less than one mile southeast of Springville road. This area now has water from the overflow of the reservoir and is accessible by trail from the St. Johns bridge and the Whitwood Court subdivision and is reached by car in dry weather by way of Springville road and a portion of Leif Erikson Drive.
- C-5. Along the boundary between Blocks D and E in the ravine above Leif Erikson Drive in the south central part of the south half of Section 24, accessible from Leif Erikson Drive. Upper reaches of this ravine are on private land.
- C-6. Above the second big curve in Leif Erikson Drive from the Thurman Street end, in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 30.

- C-7. In the ravine above the first big curve from the Thurman Street end of Leif Erikson Drive. In hardwood timber.
- C-8. The first major drainage southeast of Thurman Street along Aspen Avenue. This, and possibly one other spot along this street, could be developed as close-in picnic spots, readily accessible by cars or afoot. They would be in a good stand of young fir timber.
- C-9. Approach to Macleay Park from under the Thurman Street bridge. In timbered area, accessible by foot trail.
- C-10. Macleay Park already developed and in use. Some other areas could be developed with a little more work.

Some areas in Blocks A and D could be developed, but their use should be delayed pending abatement of the current fire hazard.

b. Trails for hiking and horseback travel already exist but are in need of maintenance work. Other trails should be constructed for combined recreational and protection use, such as those outlined in the fire plan. Some of these, principally on city-owned land, and shown on the map by the letter "T" for trail and a number, are as follows: (See Map)

- T-1. A dim trail exists from the house at the end of the road leading off of the south St. Johns bridge approach, through the timbered area above the house to Leif Erikson Drive. This trail should be improved and continued up the ridge to the junction of the paved Springville road and Skyline boulevard in the center of the east half of Section 15.
- T-2. From Skyline Boulevard near the corner common to Sections 23, 24, 25 and 26, down the ridge and into the ravine to the big bend in Leif Erikson Drive in the $NE\frac{1}{4}SW\frac{1}{4}$ of Section 24. This should continue down the ridge to the north in a northeasterly direction to the first big curve in Saltzman road above St. Helens road.
- T-3. This trail should begin at the north end of a short road that turns north at the mid-point of the newly constructed Northwest 53rd Drive. It should then follow the ridge north to the top of the hill in the $SE\frac{1}{4}SE\frac{1}{4}$ of Section 24, then curve west to drop into the ravine at the campsite near the big curve in Leif Erikson Drive just below the center of Section 24.
- T-4. Should take off of Northwest 53rd Drive at the same point as T-3, cutting through Campsite C-6 and on down the slope to St. Helens road.

- T-5. A trail should be maintained connecting the C-7 Campsite with the old road extending Northwest 53rd Drive, near the high point of the ridge directly southwest of this campsite.
- T-6. Is an old trail extending 53rd Drive and dropping down the hill to Aspen Street just outside of the Forest-Park boundary.

There are other old trails or roads in the area, such as the old road leading from Leif Erikson Drive at the curve in the $SW\frac{1}{4}$ of Section 11 to upper Springville road less than one-quarter mile from Skyline Boulevard. These can be developed along with new trails as they are needed. Many of the trails built for recreational development can be located so as to be of value for protection work. This should be done to the extent found practical.

c. Water development work is needed at each indicated campsite except C-4. Such work should also provide water holes accessible to firefighting equipment. Water for drinking and fire protection should be developed at other spots along roads and trails where it is available. Some of these spots are shown on the fire plan map.

2. Protection from Fire, Insects, Decay, the Elements and the Public.

Fire protection is covered in the Proposed Fire Plan prepared by the Forest Service under date of June 8, 1950. Although some of the measures therein recommended provide some protection against other damaging agencies, additional protective measures require some treatment here.

a. Fire Protection. (See Fire Protection Plan).

b. Insect and Disease. Damage from these causes sometimes becomes a major factor when considering the management of a forest area. No abnormal attacks by these agencies were noted during our reconnaissance of the forest except the decay attending fire scars. In young stands in Blocks C and D, through which fires have run, some of the trees have fire scars that show considerable rot. These trees should be cut so as to salvage their merchantable portions when it is opportune to do so.

c. Damage to Roads and Trails by Erosion. The erosive action of water should be avoided by proper drainage, through ditches and culverts. Portions of Leif Erikson Drive between Saltzman and Germantown roads have been severely damaged by erosion. The installation of culverts, and ditching and crowning of the road will prevent further damage of this sort. All trails built or maintained should have adequate drainage facilities to reduce the amount of damage and maintenance. Roads recently built

by loggers cutting on private land were not properly constructed and are rapidly becoming impassable from the effects of erosion.

The best protection against damage by water and other climatic factors on areas not occupied by roads and trails is the maintenance of a complete vegetative cover. In areas not now supporting such a cover every effort should be made to develop a forest cover least likely to cause the spread of fire, and most likely to prevent excessive soil erosion. (See Planting Recommendations under Section D.)

d. Protection from Damage by the Public. People using the Forest-Park can do considerable damage of both an intentional and accidental nature. Therefore, precautions must be taken to reduce the likelihood of such damage. The following suggestions are designed to accomplish this:

- (1) Keep the public out of areas of high fire hazard, and out of inflammable areas on extremely hazardous days.
- (2) Establish safe campfire areas and restrict the building of fires to these areas during fire season.
- (3) Construct all improvements of rugged character, not easily destroyed by the casual vandal and not easily damaged in use.
- (4) Post cautionary signs where deemed of value. This may be needed to reduce damage from indiscriminate cutting of trees for firewood or blazing trails or other incidental tree damage.
- (5) Post the boundaries of the units of public land within the Forest-Park so as to reduce the likelihood of timber cutting trespass on city lands.

3. Economic Forestry

Most of the city-owned area of the Forest-Park is poorly stocked with forest trees. Of the 3800 acres owned, about 1000 acres support a stand of second-growth Douglas-fir from 40 to 60 years old. These stands have a mean annual growth rate of from 300 to 500 board feet per acre per year, or a total of almost one-half million board feet. When well stocked they should be growing from 600 to 800 board feet per acre per year. Somewhat less than one-third of the city-owned area is partially stocked with Douglas-fir in a stand of alder and maple. Almost an equal area is occupied by stands of hardwoods, mostly alder. The remainder, about one-fifth of the total is brush or recently burned over land not now supporting tree growth. Throughout the area are found snags and dead-topped overmature trees. Some of the younger trees have

been badly damaged by fire. Recommendations for improving the productivity of the Forest-Park lands are as follows:

a. Remove the snags and overmature trees, as they are a fire hazard, and they occupy land that could be growing good trees. This need not be a costly operation. If properly planned, the merchantable material in these snags and overmature trees will pay for the improvement work and may yield additional funds for further rehabilitation. At the same time, thinnings and defective trees can be removed from surrounding dense lands.

b. Plant the recent burns and other open areas not now adequately stocked. (See Planting Plan in Section D.)

c. Harvest merchantable alder from areas not set aside for intensive recreational use and replant with coniferous species.

Any cutting will take careful planning and execution to assure the ever-watchful public of the practicability of the cutting methods used. One of the prime objectives of management of the Forest-Park should be the orderly harvesting of an annual or periodic crop of forest products. Harvesting that should be done as soon as it can be properly planned is as follows:

a. About 100 acres of overmature timber in Block A. This will remove high value material in slow-growing overmature trees and prepare the ground for the establishment of a new fast-growing crop of trees to replace the present hardwood brush understory.

b. The scattered patches of snags and overmature trees should be removed to reduce the fire hazard and to salvage valuable material now being lost by windthrow and decay. This will also prepare the ground for establishing new crops of fast-growing trees.

c. Remove badly fire scarred and otherwise damaged trees from the young stands to allow better formed faster growing trees to thrive.

d. Remove merchantable hardwoods from mixed stands and alder stands when such cutting does not interfere with intensive recreational use.

e. Harvest fuel from hardwood trees that will release coniferous trees.

f. Make contracts with brush pickers for harvesting the fern crop. Only a portion of each bunch of fern fronds is marketable. Therefore, this crop can be harvested without damage to recreational or forest values.

Once the forest land, not set aside for intensive recreational use, is well stocked it can grow enough forest products to make the Forest-Park self-supporting. About 600 to 700 board feet

of wood per acre per year can grow there. With 3800 acres of this land properly managed, the annual production would be about two and one-half million board feet. Good management of a forest requires that no more be removed from an area each year than is growing there. Using a 20% safety factor to build up the stocking and provide for contingencies approximately two million board feet of thinnings, mature, overmature and defective material could be cut each year. This could be removed in a manner that would improve the growth rate of the remaining timber and not interfere with recreational uses of the Forest-Park. Restrictions as to methods and type of equipment used must be written into all Sales Contracts to safeguard the forest and recreational values.

4. Consolidation of Ownership

The consolidation of the Forest-Park by acquiring interior private holdings is an important factor in the overall management job. Areas lying across or adjacent to principal roads and trails should be acquired as soon as possible. Some of these are as follows:

a. The $N\frac{1}{2}$ of Section 23 - Part of the Barber tract. This is needed to protect the upper half of Saltzman road and to permit planting and reduction of the fire hazard attending the recent burn in that area.

b. The $N\frac{1}{2}SE\frac{1}{4}$ of Section 14. To protect the portion of Leif Erikson Drive in that area, and to remove the hog grazing nuisance.

c. Areas in Sections 11 and 15, adjacent to Springville road. To prevent establishment of additional buildings and to eliminate the sheep and goat grazing nuisance.

d. The area partly in Section 3, but mostly in Section 10, adjacent to Germantown road. To forestall additional residential building, thus reducing the demand for excessively expensive public services.

e. Any of the areas in Block A. So that adequate measures can be taken to reduce the fire hazard and to develop a growing forest on recently cut-over land.

5. Publicity.

The people of Portland own this Forest-Park, and many of them have a real interest in its proper development. Some may be misguided as to what proper development really is. Therefore,

one pressing job is to acquaint the public with the full range of possibilities of the management and use of all of the resources of the area. A definite plan of educating the public to an appreciation of these possibilities should be developed immediately, and put into effect as soon as possible. Action on all other recommendations made should hinge upon the readiness of the public to accept it. It is imperative to the successful management of the Forest-Park that the good-will of the public be maintained at a high level. This publicity or educational program may include the following:

a. Overall plan of recreational development showing sites and areas set aside for intensive recreational use, such as campsites, etc.

b. Comparison of Portland City Forest-Park with other community forests that have been under dual-purpose management for some time. Include comparison of actual returns of other areas with possible returns from Portland City Forest-Park.

c. Show how properly planned thinning in young stands improves the growth and reduces the hazard. Emphasize the use of proper methods such as tractor and horse logging that do a minimum amount of damage to the stand.

d. A sample area could be thinned and tours conducted to show the possibilities; a demonstration cutting; "Show Me Trips."

D. PLANTING RECOMMENDATIONS

The objectives of a planting plan in the Forest-Park can well be the following:

- (1) To determine in advance the locations and species to be planted so that all effort along this line can be coordinated and developed into a harmonious result in keeping with the overall objectives of the plan of management.
- (2) Plant commercial species to restock forest areas not now producing a forest crop.
- (3) Plant open areas to eliminate the possibility of weed species occupying the site, or to protect the land from erosion.
- (4) Plant to improve the looks and use of recreational developments.
- (5) Plant as an educational medium for schools and service groups.

A well thought-out plan for all planting, of whatever nature, is needed to properly coordinate the efforts of those people and organizations wanting to help with this work. Planting should be avoided on private holdings. Plantation areas should be surveyed by the City Forester and all plantings supervised to be sure that they are placed in the correct location.

Native species or species known to be satisfactory in the locality should be used for forest plantings. Exotic species or trees from other climates or elevations should not be used. The priority of plantings should be as follows:

a. Recently burned or open areas in which a heavy understory of brush or aspen has not yet become established. They are located in:

- (1) $W\frac{1}{2}NW\frac{1}{4}$, Section 24, above Leif Erikson Drive.
- (2) $W\frac{1}{2}SW\frac{1}{4}$, Section 13, above Leif Erikson Drive.
- (3) $S\frac{1}{2}SE\frac{1}{4}$, Section 14.

b. Additional areas in which some brush may have to be cut or chemically treated at or before the time of planting are the following:

- (1) Brush area at boundary between Blocks D and E, about 100 acres.
- (2) Brush area in the center of Block C, about 120 acres.

c. Recently cutover areas after the fire hazard has been reduced to the point that the plantation would be reasonably safe from fire.

d. Small openings in all areas where the cover is not too dense or where the cover can be opened sufficiently to permit planted trees to survive and grow. Douglas-fir should be planted only where there is plenty of overhead light. This species will not survive when planted under the shade of other trees or plants. Tolerant species, such as white fir and Port Orford white-cedar can be planted in open brush or open hardwood stands. However, it is wasted effort to plant any species under an alder stand or other dense hardwood cover.

A map and tabulation record should be kept of all plantations, showing the class of stock (species, age and source), the season, year, and by whom planted.

Rows should be staked so that an accurate survival check can be made. When large openings occur through losses in a plantation they should be replanted to develop a complete stand.

Trees for planting are available through the State Forester's

office at Salem, Oregon, and sometimes, when a surplus occurs, from the Forest Industries Nursery at Nisqually, Washington, or the U. S. Forest Service at Portland, Oregon.