

N1617

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NOTES ON REVEGETATION
CRATER LAKE NATIONAL PARK 1978

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OBJECTIVES: These notes on revegetation are a collection of information and ideas on revegetation at Crater Lake. After more information is gathered, and after some experimental work is completed, a comprehensive revegetation plan for the Park should be written. The notes consider three broad areas: 1) recommendations for revegetation procedures, 2) prevention of vegetative damage, 3) existing vegetative damage. The overall purpose of these notes is to present as much information as possible at this time concerning these three areas as they pertain to Crater Lake.

I. RECOMMENDATIONS FOR REVEGETATION PROCEDURES

- A. Causes of Damage - An attempt must be made to isolate the causes of damage prior to any revegetation work. If the causes are not isolated and corrected prior to revegetation, the area may be denuded again and again. Some considerations for the cause of damage might include:
1. Repetitive camping, legal or illegal, in inviting areas.
 2. Unconsciously trampling an area in order to obtain a view. This can form a path to a knoll or a denuded area on the knoll itself.
 3. Roads no longer used.
 4. Old building sites, i.e. backcountry cabin sites.
 5. Remains of construction activity, i.e. sewer lines, power lines etc.
- B. Prevention of Further Damage - Once the cause of damage has been isolated, steps must be taken to insure that no further damage will occur. These might include the following:
1. Designated backcountry campsites.
 2. More careful consideration of impact when doing construction. The cost of revegetation following construction should be included in the project cost estimate. It should be budgeted for and completed.
 3. Better visitor information through interpretive signs and contacts.
- C. Erosion and Drainage Considerations - Once the cause of damage has been isolated and corrected, the extent of erosion should be examined along with drainage problems. Some things to consider are:
1. The extent of erosion - is the area gullied? Are check dams and drain bars needed?
 2. Is fill dirt required?
 3. Will the remaining soil support plant life? Is fertilizer needed to replenish leached nutrients?
 4. When diverting water, insure that the water will have no adverse effect downstream from a vegetation and erosion standpoint.

D. Soil Fertility and Soil Compaction - Attempt to check for soil fertility and soil compaction. If the soil is mildly compacted, raking may suffice to form a seedbed. If it is severely compacted, till the soil to a depth of 2-4 inches using a pulaski. If fertilizer or seed are used, the material should be pressed into the soil by walking. The soil surface should be left rough to provide a microclimate and to retard erosion. A 16-20 nitrogen phosphorous fertilizer at 50 lbs/acre was recommended by Dr. Youngbey, soil specialist at O.S.U.

E. Transplanting - Transplanting may be the most efficient method of revegetation at Crater Lake. The preferred method is that of greenhouse grown NATIVE plants grown in the winter and transplanted in the fall. Some plants to consider are woodrush, alpine currant, and dwarf lupine. It is important that the plants be used in their specific community types. Experiments with liquid hormonal root stimulators available from Ortho and other sources should be conducted. Soluble fertilizers should also be researched in conjunction with transplanting. Ron Mastrogiuseppe is currently working on obtaining soil nutrient analysis which will be helpful in determining types of fertilizer needed.

Transplants may be plugs or long and narrow shapes. Experiments should be done to see what works best with each plant. It is important that the transplant be placed in a hole larger than the plug. The excess space should be filled with soft soil. Pruning of flowers and stems should be considered as this aids in plant survival when properly done.

If a greenhouse is not available, transplants from a like community may be moved to a damaged area. It is important that the divots formed when the plant is removed from its original habitat are filled. Only several plants should be taken from an area to avoid damaging another area.

Experiments with seed picking should be explored. A good reference is in the resource file under Sunrise Resource Restoration, 1977, by Joe Van Horn.

F. Record Keeping - All areas that are revegetated should have complete records on file that explain what was done, when it was done, and by whom it was done. A code-a-site inventory should be accurately completed on each area prior to any work being done and every two years afterward. In order for the inventory to be accurate, all plants should be properly identified as to genus and species. Black and white photographs should be taken from a set photo point before and after work is done. They should also be taken every two years. Color slides are helpful because they are easily stored and are excellent for presentations.

- G. Summarization - There are several points that should be stressed before the next section is discussed. It is imperative that only native species be used in revegetation here at Crater Lake. This eliminates any possibility of major alteration of the ecosystem. It is also of extreme importance to have a comprehensive written plan that describes past work and provides guidelines for future projects and goals. Continuity is lost without an available written copy of all that is done.

II. PREVENTION OF VEGETATIVE DAMAGE

We are all fighting a losing battle if we focus only upon past damage. Past damage is the immediate focus of our attention because it is the most obvious and it is found in large quantities. However, the key to success with a revegetation program lies in preventing further damage as the old damage is repaired. One should constantly be on the lookout for situations that may result in vegetative damage. It is imperative that these situations be corrected immediately. I might add that it is much more economical to correct it now than it is to repair it later.

III. EXISTING VEGETATIVE DAMAGE

A. Backcountry Areas

1. Lightning Spring - Lightning Spring is a popular camping area because it is only .75 miles from the Rim Road and provides backcountry camping with easy access to Rim Village and other front country areas. Heavy use and a disregard for backcountry regulations governing distances sites must be from streams has resulted in a large denuded area just below the spring. Designated sites have been constructed to restrict camping to minimum impact areas. However, the damaged area still remains.

Another cause of damage in the same vicinity is the old pumphouse site and holding pond. The water was pumped from the pond to the Watchman Lookout. The pumphouse has been removed and the pond drained, but the leveled and compacted site remains.

These damaged areas are located in a hemlock-woodrush community. Transplanting should be tried after the area is tilled and foot traffic routed elsewhere. Erosion is minimal but leaching may be fairly extensive. Nutrients analysis would be helpful. Perhaps a simple soil test would be adequate to determine if fertilizer is needed.

2. Red Cone Spring - Immediately adjacent to Red Cone Spring is a large denuded area caused by repetitive illegal camping. A designated backcountry campsite with constructed tent pads would eliminate the problem and confine impact to a small area. The plant cover should be examined more closely before recommendations are made for revegetation.

3. Dutton Creek - A large area was impacted when the sewer system was constructed in the Dutton Creek area just below the road. This area needs to be inspected for revegetation and also for concealment of the present system using natural vegetation.
4. Backcountry Cabin Sites - All of the backcountry cabin sites should be reviewed for revegetation needs. The cabins were removed to supposedly comply with the requirements of the wilderness act when the area was designated as wilderness.
5. Junction of PCT and Stuart Falls Trails - Just south of the trail junction is an impacted area caused by illegal camping. The area is denuded and compacted. Further inspection is required before revegetation efforts can begin.
6. Watchman Trail - As a hiker proceeds up the Watchman Trail along the old road, he/she approaches a junction of the road and the trail that leads to the lookout. The road continues and could possibly be obliterated for aesthetic purposes.
7. Garfield Peak Trail - There are several parallel trails following the main trail, but close to the rim. These trails should be obliterated and revegetated. The water storage area should also be worked on. There are exposed pipes and cables that could be concealed with some effort.
8. Old Fire Roads - One track of all maintained fire roads should be obliterated and left to revegetate naturally. This will have to be done in conjunction with Trail Crews to avoid conflicts. These trails should also be cleared of down logs in one track only.
9. Trail Heads - Unsightly tank traps should be leveled. Posts could be installed or the trail could be narrowed using large boulders.

B. Front Country Areas

1. North Junction White Bark Pines - The area in the vicinity of the north junction is heavily used by visitors desiring a lake view. Trampling and subsequent erosion of the rim area is the result of this heavy use. The most extensive damage is at the base of very old western white bark pines where the area has been trampled, denuded, and subsequent erosion has washed the soil from the roots. These areas around the base of the trees should be cordoned off and soil brought in to replace that lost to erosion. The new soil should be mixed with the old soil to aid in bonding. The soil should also be stabilized using buried boards which are secured by wooden stakes. Alpine currant should then be transplanted to aid in soil retention. The currant could be greenhouse grown from cuttings (courtesy of Ron Mastrogiuseppe).

2. Headquarters - The areas immediately adjacent to headquarters and the YCC dorm have been denuded as a result of construction activity. These areas are viewed by the public and should be revegetated with the plant types that are growing adjacent to the damaged areas. Soil nutrients and erosion should be reviewed.
3. Munson Springs Pumphouse - The impacted area where the old pumphouse stood prior to its removal in 1975 is an eyesore easily visible from the highway. The natural gradient should be restored and the areas should be revegetated after inspection.
4. Annie Springs - The old campground at Annie Springs should be removed and restored to a pristine condition. Roads and pavement should be removed and sites obliterated. This is a large project and could be accomplished through use of YCC and maintenance.

Just north of the campground is a large roadcut that should be obliterated and revegetated. Trees are now growing in the old road but should be thinned by pulling smaller trees out by the roots to encourage faster growth by selected individuals.

In the entrance to Mazama Campground, the road is blocked by boulders but it continues on for quite awhile. It should be removed and revegetated.

CONCLUSION: These notes are only the first step in writing a comprehensive revegetation plan. They are to be used as a basis from which to start. They are of no use unless they are added to, deleted, and altered as necessary on a regular basis.