

IV. SOCIAL DOMAIN

A. Human Uses

1. Characterization

*iv-1. *What are the major human uses, including tribal uses and treaty rights? Where do they generally occur within the watershed (Maps IV-1a, IV-1b)?*

A variety of human uses occur within the Detroit Tributary watersheds, including the following:

- Supply of various forest resources such as timber, special forest products and firewood
- Recreation and Tourism
- Residential, commercial and industrial occupation
- Supplies domestic water within the watershed and downstream
- Power line transmission
- Detroit and Big Cliff Dams provide flood control, hydroelectric power generation, agricultural irrigation, reservoir and downstream recreation, and water supply (quantity) to municipal and industrial users.
- Hall's Ridge Communication Site provides local agencies with emergency two-way communication including Forest Service and law enforcement; and local cable television and regional cellular phone services
- Highway 22 transportation corridor

Socio-Economic

The North Santiam Canyon is a rural area located at the base of the west side of the Cascade mountains. It extends for approximately 30 miles along the North Santiam River and includes five small cities: Lyons, Mill City, Gates, Detroit and Idanha; and several unincorporated areas in two adjoining counties, Marion and Linn. The communities are clustered on either side of the North Santiam River and are between 25-50 miles from Salem, the nearest metropolitan area. The North Santiam Canyon serves as both a destination and a corridor for commerce. The total population of the region is about 6,617.

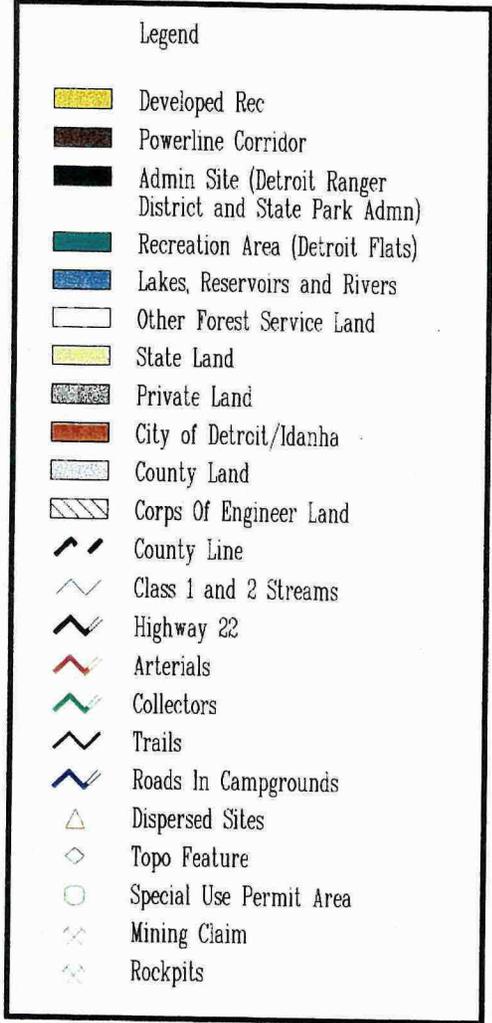
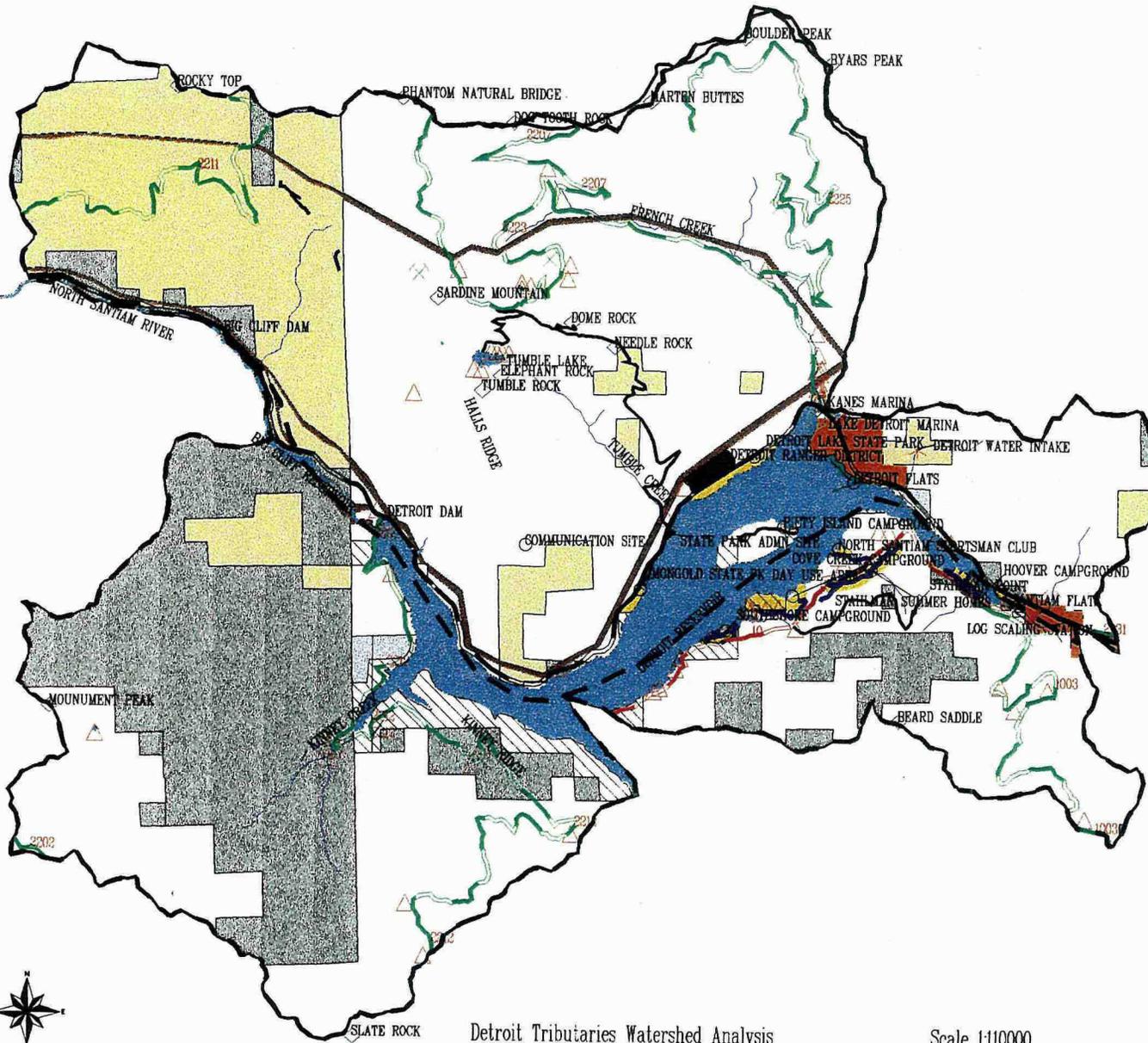
The forest products industry, and tourism generated from recreation in the Detroit Lake area and highway travel, provide the economic base for the Cities of Detroit and Idanha, and support the diversifying economies of other North Santiam Canyon communities. In 1996, 917 people were employed by private mills in the canyon. The regions forest resources are controlled by both public and private landowners. However, the vast majority of the land is managed by three public agencies, the Bureau of Land Management, USDA Forest Service and Oregon State Forestry Department (of which the latter two are in the watershed). In recent years, the communities have been affected by declining timber supplies, and have developed economic development strategies to adjust to a different future.

Recreation

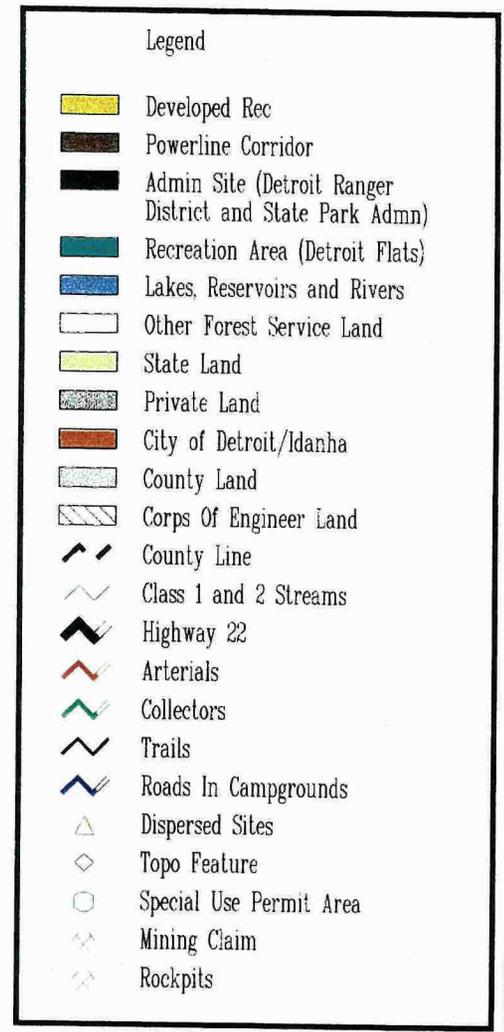
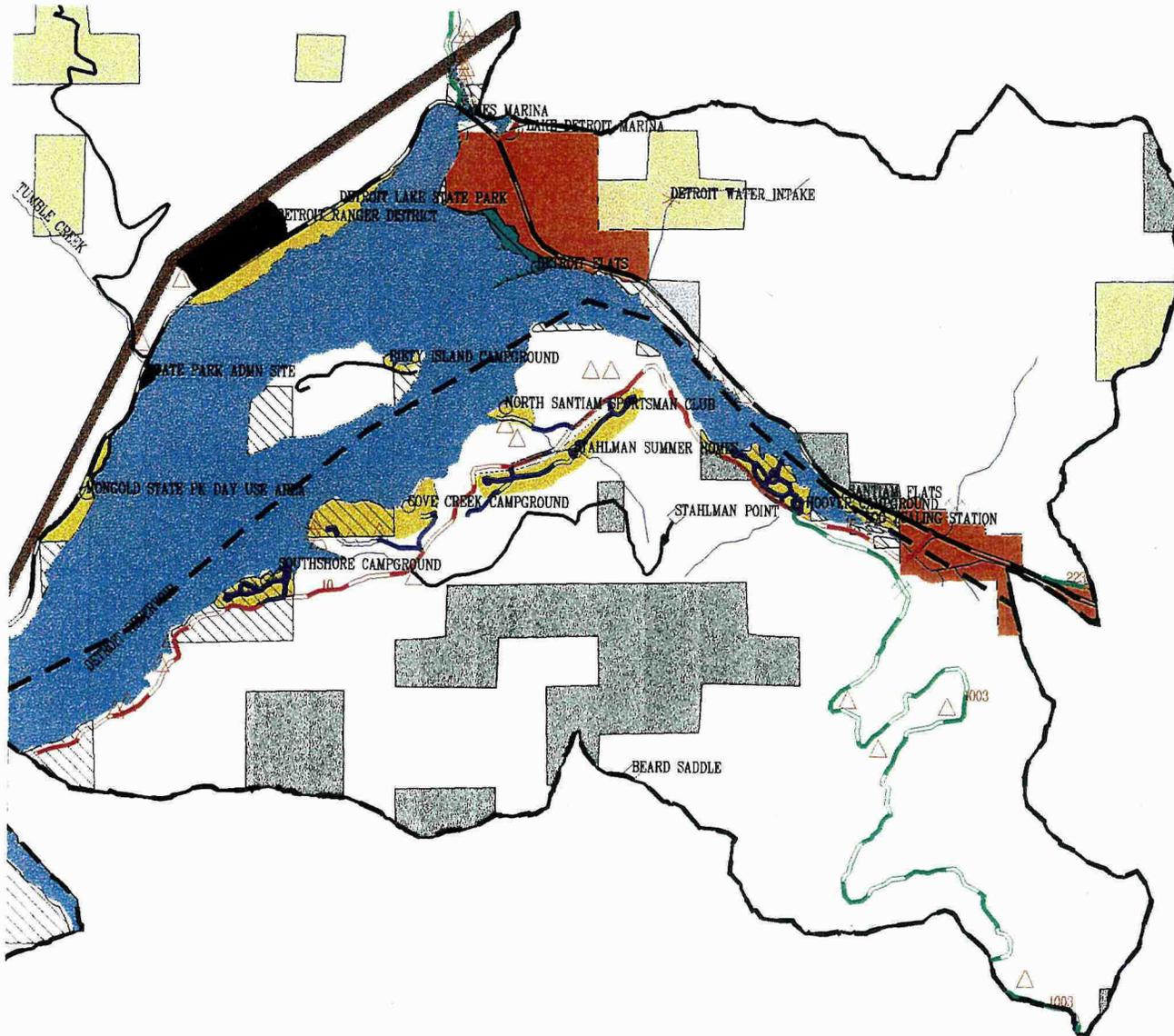
Landscape Patterns of Use

State Highway 22, which is the primary access into this watershed, is also one of the most traveled east-west routes over the Cascades. Landform and topography are obvious influences on human use patterns, particularly the development of "human corridors." Essentially, we use the same corridors today that American Indians used for thousands of years, although we have changed their character greatly. Facilities are often developed in areas where prehistoric and historic uses occurred. People have always been drawn to areas along water, valley benches, meadows, unique topographical features and vista points, whether for recreation, sustenance, residence or cultural values. Future use patterns will likely follow the same corridors as long as access is provided and management direction allows use to continue.

Human Uses



Human Uses



Primary landscape features which draw recreation use are lakes, rivers, streams (riparian reserves), scenic topographical features and vista points. Due to the steep topography of this drainage, the greatest concentration of use is along limited flat, accessible portions of the reservoir

Amount of Use and Primary Visitors

The key attraction in the Detroit Tributaries watershed is Detroit Lake. Detroit Lake ranks the second highest use lake in the state, and overall seventh among all water bodies in Oregon, just behind the Pacific Ocean. Detroit Lake is one of the most popular recreation areas in the western Cascades, and is the highest recreation use area on the Detroit Ranger District, attracting well over 500,000 people a year. The Detroit Tributary watersheds are within a two-hour drive of nearly 80% of Oregon's population. Because highway improvements over the years have made it more accessible, the Detroit Lake area has come to serve as a "back yard destination" for many Willamette Valley residents who once found it remote. Population growth in the Mid-Willamette Valley and Portland Metro area averages 1.9% during 1986-1990. This will likely lead to increasing numbers of visitors to the Detroit Lake recreation area in the future.

A market study found that 46% of Detroit Lake area visitors originate from the Portland-Metropolitan area and 43% from the Mid-Willamette Valley. The remaining 4% came from other regions within the state, and 7% came from other states, primarily California and Washington. The primary users are urban dwellers who like to take their urban comforts with them and like the modern day amenities provided at campgrounds and day use facilities. About 80% are repeat visitors, with a majority of overnight visitors staying for three to five nights. About two-thirds of visitors use some type of water craft. Most visitors are young families, with 30% of household heads age 35-44. Sixty percent of the visitors have children at living at home.

Kinds of Use and Where Use Occurs

The Detroit Tributaries watershed offers a variety of recreational opportunities and settings that are characterized as Roded to more Urban recreational opportunity classifications. Generally, people who go to Detroit Lake enjoy the social experience. This watershed does not contain Semi-primitive to Primitive areas per se, however, some degree of solitude can be experienced in the uplands. Recreation in this watershed is characterized by two distinct areas; reservoir and upland areas of the watershed.

Recreational activities common to both areas are dispersed camping, hiking, fishing, picnicking, sightseeing, biking, berry picking, nature study, wildlife viewing, scenic driving, ORV use and incidental winter recreational use. The reservoir area provides a favorable setting for water-based recreation which are the highest in demand; including activities such as, sailing, motor boating, windsurfing, kayaking, canoeing, jet skiing, waterskiing, water tubing and swimming. The uplands provide launching areas on Hall's and Hoover Ridges for hang-gliders and para-gliders, which is a unique activity in the North Santiam basin. Big game hunting also occurs in some areas of the uplands within the watershed. Downstream of the reservoirs, is popular for fishing, the only place in the watershed to catch wild steelhead and chinook salmon (native anadromous fish runs); rafting, and kayaking.

The reservoir area provides the most urban-like experiences with its modernized developments and availability of conveniences. All recreational developments are located around the lake and include; six Forest Service campgrounds, two State Parks including one campground and a day use/boat launch area; Detroit Flats day use area; Detroit dam visitor facility and unimproved boat ramp; and two privately owned marinas that are under special use authorization. In addition, there are 70 recreation residences on the Stahlman summer home tracts which provides seasonal recreational occupancy; and the Sportsmens Club organization site which contains camping sites and moorage spaces for its club members. Detroit offers services such as lodging, RV parks, restaurants, gas and shopping to visitors.

Two major trails, Tumble Ridge and Stahlman Point, originate near the lake and access prominent peaks in the uplands of the watershed. These trails are part of an old trail system to former lookout points, and provide views of Detroit Lake, Mt. Jefferson and other prominent peaks and rock formations. Hoover Nature Trail located within Hoover Campground currently provides the only barrier-free trail on the District. Upland trails include Dome Rock, Phantom Natural Bridge, and Tumble Lake trails which access these features from French Creek Road. The French Creek Ridge Trail meanders in and out of this watershed to the north. The Monument Peak Botanical Special Interest Area is "isolated" from the rest of the watershed in that it's accessed from outside the Forest Boundary. This area is used primarily by locals and provides opportunities for plant study and scenic views. On State land is an old primitive lookout trail that accesses Rocky Top; and located on road 2211 above Sardine creek is a natural arch similar to Phantom bridge.

Four administrative sites are located within the analysis area including the Detroit Ranger Station, the State Park administrative site, Oregon Department of Transportation Road maintenance site, and the Army Corps of Engineers dams and associated facilities.

When Use Occurs

Detroit Lake is primarily a summer destination due to the favorable climate. One of the primary influences of when use occurs within the watershed is tied with the fluctuation of the reservoir level for flood control. Full pool is reached early May and drawn down begins after Labor Day. At the beginning of fishing season, normally in late April, all boat ramps, campgrounds and marinas are usually operating.

Prevailing winds also affect the lake's recreation patterns during the summer. Generally, the wind comes up the canyon in the early afternoon and continues through late afternoon, causing people to move to sheltered areas of the lake, particularly to the east or at any of the arms. When the wind subsides in the late afternoon and water becomes still, the lake becomes conducive to power boating. Because wind conditions at Detroit Lake are very predictable, the area is gaining a reputation as a good location for sailing and windsurfing, especially on the west end of the lake. In September, consistent winds and thermals also provide excellent opportunities for paragliding and hanggliding above the lake. The paragliding season is between June and September, whereas hanggliding relies on the lakes draw down in September for an adequate dry flat landing area.

Finally, recreation use is weather dependant. Weather is too cold during the fall through spring for most water sports, except for the fisherman. Use peaks on those weekends and holidays that have favorable sunny, hot weather, and even during the week in the heart of summer. A summer with poor weather results in dramatic decreases in use when compared with more fair-weathered years.

2. What values are associated with human uses?

- **Socio-economic Uses(e.g. sustainable communities, tourism, etc)**

Quality of life; preserving the environment and its natural beauty; availability of natural resources for sustained commodity production and year round recreational opportunities for economic benefits; are valued by people in the North Santiam Canyon.

- **Recreational Uses**

Recreational use of National Forest lands is valued for the experiences associated with the activity, such as the enjoyment, challenge, solitude or relaxation that it gives people. It refreshes people mentally, physically and emotionally. Canyon communities characterize forest and reservoir recreational "attractions" as a strength to their economic vitality.

3. What are the highest priority issues or resource concerns associated with human uses?

- **Socio-economic Uses (e.g. sustainable communities, tourism, etc)**

- The Cities and unincorporated communities in the North Santiam Canyon depend on the Willamette National Forest for their livelihoods and economic well-being. The forest products industry, and tourism benefits generated from recreation in the Detroit Lake area and highway travel, provide the economic base for the Cities of Detroit and Idanha, and support the diversifying economies of other North Santiam Canyon communities.

- Species and watershed protection measures and changing public sentiment about selling forest resources (like old growth) as commodities, combined with a changing political climate, have resulted in a sharp reduction in the timber supply from National Forests and other public lands, to operate local mills. This reduction has threatened the economic sustainability of historically forest-dependent communities in the North Santiam Canyon, and have prompted them to developed economic development strategies to adjust to a different future.
 - Detroit and Idanha are "landlocked" cities surrounded by National Forest land facing limited physical growth potential. Urban Growth Boundaries established for the Cities extend into these federal lands.
 - Diversifying local economies and providing family-waged jobs are goals identified in the North Santiam Canyon's Economic Strategic Plan. One of the major challenges communities face in diversifying their economies, especially Detroit and Idanha, is inadequate infrastructure for supporting commercial, industrial and residential growth which leaves these communities continuing to be dependent on National Forest resources.
 - There are conflicting ideas about the use and regulation of the stored water in Detroit Reservoir. (e.g. augmenting downstream flows for fish, agriculture, and municipal use; recreation and tourism in and around the reservoir; and flood control regulation).
 - Decreasing firewood supplies are not able to keep up with the demand for fuel wood by people in the region.
- **Recreational Uses**

There is more demand for recreational opportunities, especially reservoir-based opportunities, than supply available. In addition, available facilities and infrastructure associated with these opportunities are inadequate to meet demand. Growing recreational demand has resulted in an impact to resources; scenic quality; user experiences such as social crowding and user conflicts; increased fire risk; and visitor safety.

4. What are the management direction/activities, human uses or natural processes that affect human uses?

a. *Current Condition*

- **Socio-economic Uses** (e.g. sustainable communities, tourism, etc)

*iv-2. * What are the current conditions and trends of the relevant socio-economic uses in the watershed?*

The timber industry is still an important component of the North Santiam Canyon economy, however, timber related employment is not expected to reach levels as in the past. Canyon communities realize they can no longer depend on wood products industry as their sole economic provider.

The North Santiam Canyon communities are working together to develop cooperative strategic plans for diversifying their economies. Several locally-based organizations have been formed to help these communities plan for their future. Some examples include the North Santiam Canyon Economic Development Corporation, the North Santiam Mainstreet Program, and the North Santiam Tourism Coalition. Common objectives of the communities include increasing the number of family wage jobs (through new business and business expansion), improving infrastructure, improving education and workforce job skills, maintaining and improving quality of life, and improving human resources services.

Community strategic and action plans were developed by residents, businesses and industry interests in the community and with assistance from various local agencies, including the Forest Service. The Forest Service is a partner with community economic and tourism organizations since many community goals, objectives and projects affect or depend upon National Forest lands.

Federal programs such as President Clinton's Northwest Economic Adjustment Initiative, made money available to local communities to begin seeking ways to diversify their economies. One of the first things the community began to do was look into ways of developing infrastructure so they could attract new businesses to the canyon.

One of the major challenges smaller communities face is infrastructure requirements for major manufacturing. As part of a federal effort to aid these timber dependent communities, special funding has been provided through various agencies as grants and low interest loans. This money has help to fund such projects as the construction of the Canyon Life Museum, the development of a special forest products inventory modeling system, infrastructure feasibility studies (water systems, sewage treatment), industrial and business recruitment plans, Mainstreet Program, etc.

Until needed infrastructure upgrades can be completed, some of these communities are exploring the feasibility of retrofitting old timber mills and sites for other manufacturing activities or as recreational facilities (proposed North Santiam RV Park in Idanha), tourism/retail businesses, value-added wood manufacturing, cottage industries and telecommuting. The cities of Detroit and Idanha are the most restricted in that they have limited residential, commercial and industrial growth potential due to lack of a community sewage treatment system. Many residential, commercial and industrial lots cannot be developed due to insufficient lot size to accommodate on-site sewage treatment.

The Canyon communities began exploring ways of attracting more tourism dollars. Having Highway 22, the main link between Salem and Bend, running alongside the North Santiam River and up through the middle of the canyon offers tremendous potential. The highway carries campers and water enthusiasts to Detroit Reservoir, skiers to the Santiam Pass and central Oregon, and others wanting to take advantage of the natural beauty of the canyon. Along with the tourist traveler, it also carries enormous business and commercial traffic which has become an important component of the North Santiam Canyon economy. Detroit and Idanha City Comprehensive Plans recognize the importance of recreation and encourage future economic growth relating to the tourism industry.

Both plans recommend pathways connecting communities, and adjacent campgrounds and day use areas. Tourism plans also incorporate this project and others including, expanding seasons at campgrounds, and developing a brochure on recreational opportunities in the Canyon and surrounding National Forest.

The North Santiam Canyon has also looked into economic diversification through secondary wood products manufacturing or through new markets in nontraditional forest products. The community received a grant to study market opportunities and developed methodology for companies and government agencies to evaluate available sustainable supplies of these products. A potential list of products could include: boughs, Christmas trees, bear grass, sword ferns, salal, prince's pine, mosses, Oregon grape, huckleberries, mushrooms, tree cones, post and poles, shakes and firewood.

Detroit has a full time resident population of about 400. Many home owners in Detroit are part time residents. The visitor population in Detroit is reported to climb to 2,000 or more people during the peak summer recreation period. The town has three small motels, two Bed and Breakfasts, three very small RV parks, two marinas with stores, three grocery stores, a hardware/sporting good store, gas station/mini-mart and a laundry mat. All of these businesses are heavily dependent on the tourist and recreational traffic through the area and at Detroit Lake. The number of vehicles using Highway 22 averages more than 4,000 vehicles per day. The Detroit Lake Recreation Area Business Association sponsors a number of successful events to attract people into the area, including the Fishing Derby in May, Fireworks Over the Lake in July (through a Forest Service Special Use Authorization), a new 1950's Cruise-In event in September, and a Holiday Festival in December.

The town is an obvious destination for thousands of people who come to the lake in the summer and for travelers heading to the nordic and alpine areas in the winter. People go to town to buy supplies and get visitor information. Few public improvements are available for the visitors. Parking is limited and there are no permanent public restrooms. Parking problems exist and conflicts occur with permanent residents of Detroit who don't like the traffic or the imposition of the weekend residents.

The Cities of Detroit and Idanha have Urban Growth Boundaries that extend onto National Forest Lands.

Firewood is a forest commodity used by local communities which has been provided historically from the Detroit Tribes area. Even though public demand for firewood remains high, ability to fulfill the need has diminished steadily since 1992 with the reduction of timber harvest and land management changes to protect habitat. Firewood will only be available where current and future needs for large woody material are met in the area.

- **Recreational Uses**

*iv-3. *How and where are current levels of recreation use impacting resources, and visitor experiences and safety?*

*iv-4. *What are the current and future recreational demands?*

Recreation Opportunity Spectrum

The Willamette National Forest Land Management Plan identified two land classifications of recreation experience in the Detroit Tributaries watershed analysis area. These classifications are based on the Recreation Opportunity Spectrum (ROS) (*Map IV-2*), a recreation planning and management framework that recognizes a continuum of recreation opportunities which include seven categories progressing from the most primitive to the most developed. In classifying recreation opportunities, ROS considers access, remoteness, naturalness, facilities and site maintenance, social encounters, visitor impacts and visitor management. The basic assumption underlying the Recreation Opportunity Spectrum is that quality recreational experiences are best assured by providing a diverse set of recreation opportunities (Clark and Stankey 1979).

Approximately 34 percent, 17,055 acres of the watershed is classified as Roded Natural (RN) which includes: most all scenic allocations around Detroit Lake; special use areas including Stahlman summer homes and North Santiam Sportsmen's Club; recreation sites including developed campgrounds, day use areas, trailheads, and most dispersed campsites; Late-Successional Reserves; Tumble Lake Old Growth Grove; and Monument Peak and Phantom Bridge Special Interest Areas. Roded Natural is characterized by predominantly natural appearing environments. Moderate social interaction can be expected. Resource modification and utilization practices are evident but harmonize with the natural environment.

Although recreational facilities around Detroit Lake are to be managed to meet the physical setting criteria for Roded Natural, facility improvements are becoming more Rural to Urban in nature. All developed lakeside campgrounds and day use areas are designed or are being improved to meet access needs for people with disabilities, and some are designed for user comfort and conveniences such as flush toilets, showers, electricity, and increasing RV use. Social settings in these campgrounds and on Detroit Lake lean toward the Urban setting due to the large number of visitors and high interaction among users. Presently, no implementation guides have been developed for recreational developments for any Old Growth Groves or Special Interest Areas in the Detroit Tributaries Watershed. Future developments shall maintain the integrity of the Roded Natural physical setting identified in the Forest Plan.

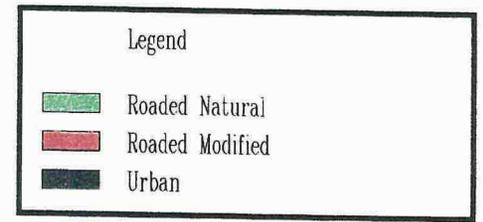
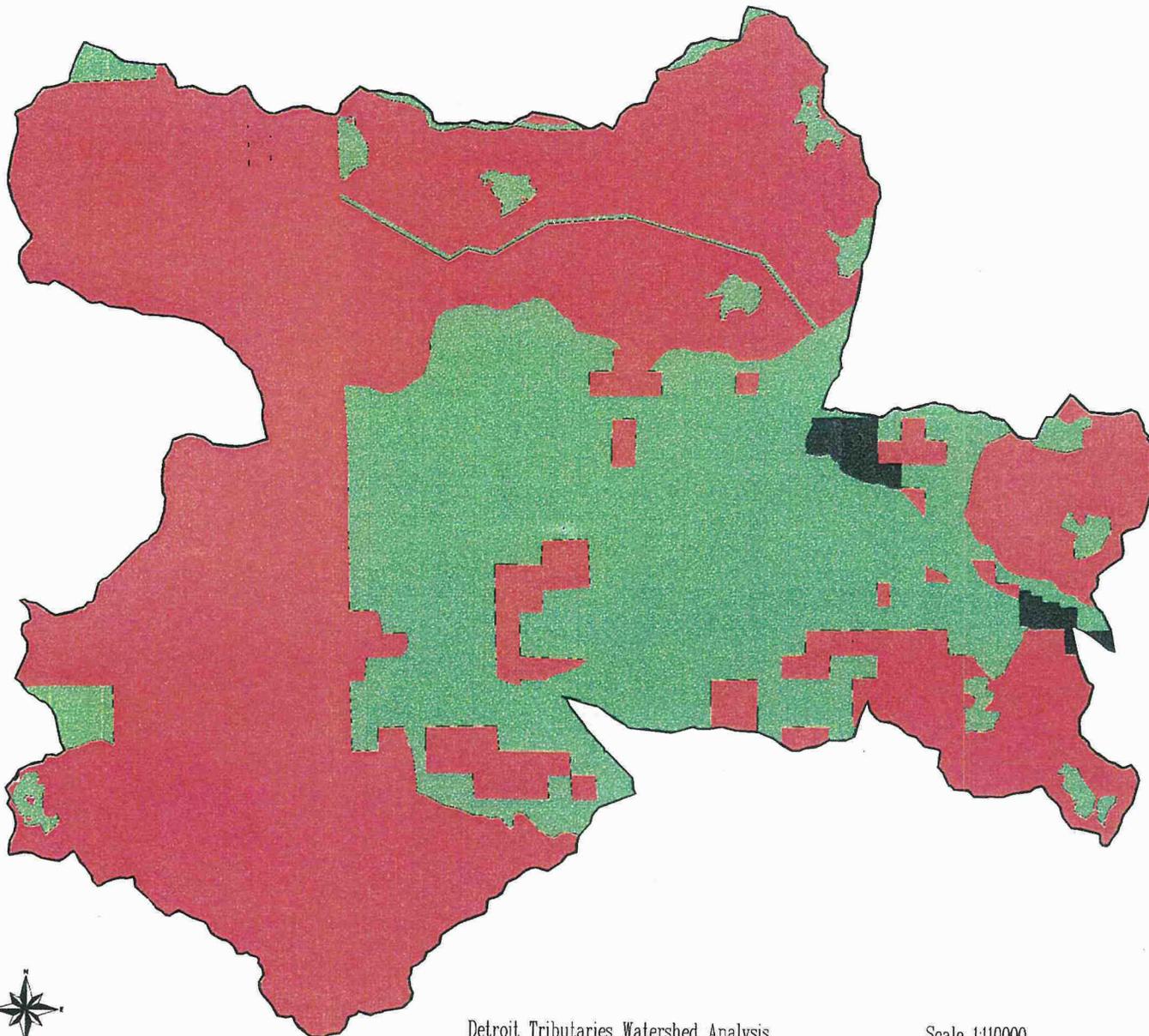
The predominant ROS class in this watershed is classified Roded Modified (RM) and comprises 66% of the Detroit Tributaries Watershed or 31,840 acres. For the purpose of the analysis, it is assumed that State, County and private timber land is classified as Roded Modified. This setting is characterized by a substantially modified natural environment which occurs in the General Forest and Scenic Modification Middleground management areas. Resource activities and structures are strongly dominant from most any point in the setting. Resource management activities, primarily timber production and moderate road densities, are prevalent throughout the area classified RM. Moderate social interaction is expected.

The cities of Detroit and Idanha can be classified as Urban in the Recreation Opportunity Spectrum and occupy 440 acres of the watershed. No areas have been delineated for semiprimitive and primitive settings in this watershed.

ROS Demand and Supply

The information on recreation demand that is reported in the Oregon State Comprehensive Outdoor Recreation Plan indicates a high and increasing demand for recreation settings featuring low levels of development and management activity, with relatively low levels of use, and where motorized access is not permitted (SCORP 1988).

Recreation Opportunity Spectrum



The 1994 SCORP goes on to state that there is a pronounced preference by the public for more semi-primitive and primitive settings, and that this issue requires greater examination and direction of efforts statewide to meet this demand. Thus, it is clear that settings catering to these recreational standards are especially valuable to the public. However, the Detroit Tributaries watershed offers limited potential for providing semi-primitive or primitive settings and may best be met in adjacent watersheds (e.g. current Opal Creek roadless area).

Portions of the Opal Creek Roadless Area lies within the Detroit Tributaries Watershed. According to the Forest Plan as amended by the 1994 President's Plan, no new roads will be constructed in remaining portions of inventoried (RARE II) roadless areas, however, management activities may occur within those areas. Thus, any developments that occur in roadless areas will change the characteristic of the landscape and may remove potential semiprimitive opportunities that could otherwise be available.

Developed Recreation

Current use of developed recreation sites in the Detroit Tributaries watershed has exceeded or nearing practical use capacities for most sites as indicated in *Table IV-1*. Practical capacity is an expression of the maximum amount of use considered appropriate for well-managed sites. Use in excess of this amount would typically result in adverse impacts to resources, site facilities and user satisfaction.

Table IV-1: Practical Capacities for Developed Sites

Development	ROS	PAOT	Use Season	Visits	Theoretical Capacity*	Practical Capacity*	RVD's
Hoover Campground	RN	285	160	33,015	91,200	36,480	53,891
Hoover Group Campground	RN	70	160	2,760	22,400	8,960	4,870
Southshore Campground	RN	240	160	20,330	76,800	30,720	32,243
Cove Creek Campground ***	RN	335	160	12,655	107,200	42,880	22,080
Cove Creek Group Campground	RN	70	160	1,540	22,400	8,960	2,777
Piety Island Campground**	RN	60	160	3,061	19,200	7,680	4,272
Detroit Lake State Park CG	RN	1555	160	106,320	248,800	99,520	146,523
Mongold Day Use Area	RN	579	160	146,858	92,640	37,056	35,902
Santiam Flats Campground	RN	250	160	20,712	80,000	32,000	34,785
Detroit Flats CG/Day Use	RN	125	160	11,215	20,000	8,000	14,981
Stahlman Summer Homes**	RN	350	160	25,460	112,000	44,800	45,257
Kane's Hideaway Marina	RN	NA	160	23,500	NA	NA	10,711
Detroit Lake Marina	RN	NA	160	16,220	NA	NA	5,883
North Santiam Sportsman Club	RN	250	160	22,440	80,000	32,000	28,055
Station Visitor Info. Office	RN	15	300	37,370	4,500	1,800	1,750
Total				483,456			443,980

*Longcore, Robert M., *Process for Calculation of Developed Recreation Capacity*, 1/90.

** Visitor use is estimated. *** Cove Creek opened mid-season.

Campgrounds

Seven campgrounds, Hoover, Hoover Group, Southshore, Cove Creek, Piety Island, Santiam Flats and Detroit Lake State Park are located along Detroit Lake. There are 455 developed campsites within the campgrounds and approximately 50 undeveloped sites at Santiam Flats. Detroit Lake State Park campground has 311 campsites alone and has the highest campsite density level at 9 campsites per acre. All Forest Service Campgrounds except for Piety Island are operated by a concessionaire.

Detroit Lake is a popular recreation destination, making these campgrounds the most heavily used on the District.

Cove Creek is the newest Forest Service campground and provides modern conveniences such as showers and electricity in the restroom/shower buildings. The campground added an additional 63 campsites, one group site to accommodate 70 people, 36 parking spaces at the boat launch area, boat launch, and moorage for about 12 boats. Electric power was brought up the Blowout Road to serve Cove Creek Campground and the Stahlman summer homes in 1994.

Forest Service and Oregon State Park developed campgrounds account for an estimated 197,413 visitors annually.^{1]} These campgrounds vary considerably in terms of recreation experience, amount of development, and size. The campgrounds range from fully developed facilities including rest rooms with flush toilets, showers, electricity, full RV hookups, boat ramps and docks, barrier free campsites, trails and fishing piers, and swimming areas; to minimally developed or undeveloped campsites with pit/vault toilets and no water or garbage services. During peak season in the summer, the Detroit Lake campgrounds reach capacity on the weekends and holidays, and most weekdays. Forest Service campgrounds are used by day use visitors as well due to limited day use facilities in the area. More visitors are recreating during the week to vacation away from the growing weekend crowds.

Current capacity of campgrounds may be insufficient to accommodate current peak season during the summer, and projected amounts of increased use. ^{2]} The historic rate of annual growth for general camping activities on the Forest is 3.4%. The Oregon State Comprehensive Outdoor Recreation Plan for region 8 (Detroit Tributaries is within this region) projects a 3.7% average annual increase in the demand for camping activities for the period of 1991-2010. Developed camping or day use at developed sites has a relatively flat trend due to full occupancy conditions on summer weekends. Camping and day use are simply limited by the available facilities. Visitors frequently mention their frustrations about the difficulty of getting a campsite at Detroit Lake. Numerous visitors are displaced to developed and dispersed sites in the Breitenbush and North Santiam Drainage.

1] Detroit District Recreation Resource Information Database (1996)

2] Longcore, Robert: *Process for Calculation of Developed Recreation Capacity* (1990)

The 1992 Detroit Lake Composite Area Management Guide identified a need to develop 350 campsites and eliminate existing undeveloped sites to accommodate current demand. However, with the completion of Cove Creek Campground, 287 campsites would need to actually be developed. To meet future demand, 577 campsites will need to be developed by the year 2010 as a result of the market study.

In addition, demand for developed day use facilities is greater than the existing supply.^{3]} In the future, with growing population and increasing demands for camping and day use facilities, there will be a need to develop more of these sites. The West Cascade Oregon State Scenic Byway bisecting this watershed, will be marketed on various tourism maps which will promote and encourage use of the watershed. This may create a need to develop additional facilities, camping, day use, and parking near the highway in the future.

The Detroit Lake CAMG proposed several campground locations, all located on the south shore of the lake, away from Highway 22 traffic and the town of Detroit to minimize conflicts with residents.

Day Use Areas

Mongold State Park day use area serves the majority of boaters at Detroit and fills to capacity during weekends and holidays in the summer. Since the Composite Plan was developed, the State Park had expanded their parking to accommodate an additional 53 vehicles to a total of 193 parking spaces. Launching lanes have been expanded and improved to accommodate boat launching pressure. The swimming area grass beach was created to accommodate increasing numbers of people. Even with the addition, the park still becomes full on summer weekends and holidays, and visitors often resort to parking in the no parking zones along Highway 22 or go to Hoover and Southshore Campgrounds to launch their boats. Visitors also launch at these campgrounds to avoid paying an entrance fee at Mongold. This impacts campground users and creates parking problems within the campground and on Blowout Road. Mongold provides the only formal general swimming area at the lake.

3] Walker and Macy: *Detroit Lake Composite Area Management Guide* (1992)

Detroit Flats was a heavily used dispersed camping area until recent years and had many problems including sanitation, resource damage, noise and conflicts with adjacent town residents. The area has slowly gone through transition, and this year is designated as a no overnight camping area. Most issues and conflicts have been resolved during this transition. "The Flats" serves as a popular day use area for fishing, picnicking, swimming and bird watching.

Although not in the analysis area but important to the large picture of the reservoir, Upper Arm recreation site, in 1996, was converted from a large undeveloped campground to a campground with 7 campsites and a day use area on the flats along the reservoir. This area also had many of the same issues that Detroit Flats had and has been resolved with this transition. The Detroit Lake CAMG recommended converting the whole area into day use.

According to the Detroit Lake Composite Area Management Guide, 70% of visitors surveyed indicated a need for more day-use areas and lake access, particularly beach and swimming areas. Proposed day use and parking areas are located on Highway 22 and in Detroit to attract short-term users, and reduce conflicts between residents and visitors in Detroit. Day use location recommendations were based on their limited size for campground development, and proximity to Highway 22 and Detroit.

Special Use Permits

There are 70 recreation residences that are located on the Stahlman tract which provide seasonal recreational occupancy within this area. Highest use occurs during the summer months with occasional use during the winter due to limited access. Winter access to the tract by homeowners is by snowmobile when the road is closed due to snow. A few summer homes are located in riparian reserves.

The North Santiam Sportsmen's Club is a private organization site that provides 50 camp spaces and about 40 boat slips. There is a small club house on the property.

Although recreation homes, private club and organization sites are in high demand, current policy prohibits issuing special use permits for new sites to private clubs and individuals. It is viewed as a private privilege and does not promote public use of the land.

Available moorage at Detroit Lake and Kane's Marinas do not meet current demand for long term (season) and short term moorage. According to a survey conducted by the Oregon Marine Board, respondents felt that Detroit Lake has a lack of short term tie-up facilities. Since the Composite Plan was developed, Kane's Marina has added 100 boat slips with a total of 331 slips; and Detroit Marina added 50 additional slips with a total of 255 slips. In addition, Detroit Marina constructed a large parking lot to accommodate vehicles for people that use their facilities. The Composite Plan recommended the development of 150-200 additional slips was needed to be developed to meet demand in 1992. The plan also recommended an additional marina to be developed adjacent South Shore Campground.

Interpretive/Information Facilities

No interpretive facilities exist in the Detroit watershed, although there are many potential opportunities to develop as identified in the Detroit Lake Composite Area Management Guide. The State Park and Forest Service offer interpretive talks on occasion. There is a demand for these activities and are needed to promote resource protection and appreciation.

Visitor information is available at the Detroit District office, State Park, local stores, and at information kiosks at the campgrounds. A multi-level system (staffed and unstaffed visitor information stations, publications, highway guide signs, etc) for orienting visitors and supplying additional information is needed.

Trails

Two major trails, Tumble Ridge and Stahlman Point, originate near the lake and access prominent peaks in the uplands of the watershed. These trails are part of an old trail system to former lookout points, and provide views of Detroit Lake, Mt. Jefferson and other prominent peaks and rock formations. Hoover nature trail located within Hoover Campground provides the only current barrier-free trail on the District. Upland trails include Dome Rock, Phantom Natural Bridge, and Tumble Lake trails which access these features from French Creek Road. The French Creek Ridge Trail meanders in and out of this watershed to the north.

A demand for hiking and biking trails near campgrounds and day use areas was identified in the Detroit Lake CAMG. Many visitors bicycle on Highway 22 and Blowout Road which poses safety concerns with vehicular traffic. In addition, the Detroit Lake CAMG recommends developing recreational opportunities away from the lake get people away from the shore. The proposals include developing a lake loop trail connecting campgrounds and the local communities, additional upland trails that connect to campgrounds, and a bike route to improve the safety for pedestrians.

Development Opportunities:

The major constraint on development is limited physical capacity of the upland areas to accommodate recreational facilities. Topography and soils are a major factor in determining whether areas can accommodate development. Steep slopes dominate the watershed and severely limit its development potential. The watershed provides little flat land. Slopes that are 0-15% are the most suitable for development. Most of these sites are located at the east end of the reservoir and associated with the old North Santiam River terraces. Many of the areas that have development potential are already used as undeveloped campgrounds. The Composite Plan identified 193 acres as having development potential for recreation. An additional 7 acres have recreational potential but is currently used by State Parks for administrative purposes. Land suitable for development is documented in the DLCAMG, and includes areas adjacent Mongold State Park, Tumble Creek outlet, Ranger Station, Southshore and Cove Creek Campgrounds, and Sportsmen's Club; and Detroit and Santiam Flats.

Dispersed Recreation Use

There is currently no data to support estimates of dispersed recreation visitations specifically for the Detroit Tributaries analysis area. Field observations indicate that summer visitation ranges from moderate in the upper portion of the drainage, and intensive use at Detroit Lake. Peak dispersed use occurs primarily during the summer months, June through September, with big game hunting activities occurring into the fall season.

Boating

The west end of the reservoir is not used nearly as much as the east end. Distance from marinas, campgrounds, and prevailing winds, limit use of this area by many. However, it has become a good site for sailing and windsurfing. Attracting people to use this end of the reservoir for motor boating would be difficult due to the lack of development potential upland and undesirable cruising conditions created by the wind. The four lake arms are best suited for anchoring and for slower boating because of their width and underwater obstructions. According to the Detroit Lake CAMG, Detroit Lake could never attain boater capacity on the lake due to the limited development capacity on land to accommodate visitors and boat use. This figure was based on the assumption that the lake is used "equally." However, the existing use patterns on the lake is not evenly distributed thus creating potential capacity issues at the east end of the lake and within each of the arms.

According to the Oregon State Marine Board records, boat registrations in the state and in the Detroit Lake market area are growing at a rate approximately double the rate of population growth. Boat use at Detroit Lake has been increasing at an annual rate of approximately 5%. Given population and boat registration growth rates, the numbers of visitors to Detroit Lake are projected to increase. According to the Detroit Lake Composite Area Management Guide, projected numbers of visitors to Detroit Lake are expected to grow 20% between 1990-2000, and an additional 20% by the year 2010.

Dispersed Camping

Dispersed camping predominately occurs at Detroit Lake, where access is relatively easy to level areas near the shore. Dispersed camping occurs at the French Creek, Hoover, Breitenbush, Blowout and Kinney Creek Arms and accessible areas below Blowout Road, and on Piety Island. Old access roads are used and social trails developed by users to reach desirable sites along the lake. Other dispersed campsite concentrations which have a high frequency of use occur around Tumble Lake. Other site locations are scattered throughout the watershed.

Many dispersed campsites within Detroit Tributaries are associated with riparian reserves. Approximately, 2/3's of the campsites found within the watershed are located within a riparian reserve.

The total disturbed area of the riparian reserve attributable to dispersed camp sites is less than one percent.

Access roads to these sites are not considered system roads and are not currently being tracked.

Generally, there is a direct correlation between frequency of use and impact from that use. Those campsites that receive the most frequent use, subsequently, receive the most impact to resources ranging from moderate to extreme damage. Conditions of the most heavily impacted dispersed camping sites within the Detroit Tributaries watershed include: soil compaction and large barren core areas, erosion, vegetation loss and tree damage. Many hazard trees are created as a result of recreational related damage. Vehicular access to sites is not limited which attributes to some of the degradation of these sites. Another contributing factor to the condition they exhibit is the amount of use individual sites receive each season due to their popularity or proximity to specific areas of interest such as the Detroit or Tumble Lake.

Dispersed campsites located away from riparian areas do not get the intensity of use or impact.

These are generally located in the upper portions of the watershed, and are used by big game hunters for a short season during the fall. Generally, these sites are often located where existing developments have occurred such as a rock pit, landing, turnout or end of a spur road. Generally, frequency of use is from infrequent to moderate while impact from previous use is light to moderate. Lightly impacted sites are indicated by a fire ring or scar, and no other impact from campers.

Dispersed campsite conditions suggests that scenic quality and user experiences at many sites are being affected by use patterns and behaviors that shape the size and condition of sites.

Popular locations often lead to concentrated campsites within a confined area which leads to campsites located within sight and sound of each other (e.g. French Creek, Southshore). At these popular dispersed sites, sanitation, litter, and conflicts between campers is a common occurrence. Generally, campsites occupied by large groups tend to have more resource impacts to the site than small groups which have been apparent at some of the sites.

Dispersed site conditions within the watershed exhibit other characteristics that are a function of visitor behavior. It is common to find human waste proximal to dispersed sites. In addition, often waste associated with the camping experience; product containers, cigarette butts, discarded hygiene products, retired camping equipment and furniture, and other assorted goods, are left behind at the site.

This residue left by dispersed users is a concern in terms of public health and safety, particularly during periods of peak concentrated use. During this period the presence of human waste and other debris around dispersed camp areas may pose a threat to the health and safety of the users present. While visitation is of relative short duration and seasonal nature, effects to lake water quality is unknown.

The presence of human waste and debris, tree damage and loss, denuded and compacted camp areas, suggests that both the scenic quality and the intended recreation experience opportunity have been diminished for a significant number of sites within the watershed.

The Detroit Lake CAMG recommends phasing out of dispersed camping around the lake, and accommodating people in developed campgrounds as the highest management priority. Not all dispersed camp users will camp in a fee campground, and prefer a more primitive camping experience.

Dispersed Recreation Trend

The primary recreation emphasis on the Forest is on the management of dispersed recreation opportunities.

With projections of increased population growth for the mid-Willamette Valley and Portland Metropolitan areas, increased recreation use of the Detroit Tributaries watershed can be expected for a wide range of dispersed recreation activities. For the period of 1980-1989, the Forest experienced an average 2.7% yearly increase in all forms of dispersed recreation use. With projections of increased use of 1.7-4.9% for all the different forms of dispersed recreation found in the Detroit Tributaries, an increased demand for dispersed activities is anticipated. Based on these factors and the general trends of past use, it seems appropriate to assume that future participation in dispersed activities in the Detroit Tributaries will increase as long as opportunities are provided.

The watershed will continue to receive a high intensity of dispersed use within accessible riparian reserves resulting in further needed management actions to resolve resource and social impacts.

The demand will place additional pressure on the resources of the Detroit Tributaries watershed and amplify the need for intensive management of recreational use within the watershed. A response to future use may require new strategies for responding to situations where human use exceeds ROS standards for extended periods of the normal use season or if resource degradation becomes a concern. This may possibly include: a change to a management area with standards more closely aligned with the type of use taking place or altering kinds of use based on resource driven issues; or hardening or development of the area to better accommodate the type and level of use.

Data Gap

Dispersed campsite inventories were conducted in 1988. In order to more accurately monitor campsite conditions, a need exists to reinventory the sites for more current information. It would also benefit to include other sites such as non-system access roads and social trails.

In addition, dispersed use data is insufficient to give an accurate picture of the kind of use patterns that occur on a watershed scale. Sampling dispersed use information within each opportunity class by watershed would enable managers to track the conditions and use patterns/trends in order to make better management decisions.

Water quality studies need to be conducted and monitored especially in areas that receive intensive use (e.g. Detroit Lake).

USER CONFLICTS

More people sharing a "static" resource is leading to increasing user conflicts. These conflicts arise from sheer numbers, different perceptions of what is an appropriate setting, user etiquette and user impacts on the recreation resource. Most of the conflicts occur between users at Detroit Lake.

According to the Detroit Lake CAMG, visitors perceived boating issues such as boat launch congestion, boater conduct and lake congestion as serious problems. Visitors also indicated better boater safety and law enforcement is needed. Boat crowding exists in desirable locations such as Hoover Arm and impacts are greater in these narrow arms of the reservoir. Instances occur when jet skiers will disregard the five mile per hour rule in the designated areas of the lake and upset those that are fishing from boats or shore. Jet skiers and water skiers like to play in the area adjacent to Detroit residents and Detroit Flats which causes conflicts in regards to noise. Non-boaters and adjacent residents feel excessive boat noise, boater conduct, boat speeds are problems. Poor conduct by a few jet skiers can affect the experience of many. Poor boating conduct has resulted in a no water play area in front of Kane's Marina. Jet skiers seek wakes for jumping and has caused safety issues with other boaters.

A variety of boating types and experiences occur on the lake which causes conflicts between the different boaters. Fifty percent of the visitors surveyed also favored more areas that restrict powerboat use or speed. The Detroit Lake CAMG recommended designating an area for jet skiing west of Piety Island.

The limited number of day-use and swimming areas, and their location next to boat launches crowd boaters and day users into the same areas, causing conflicts, safety issues and intimidation towards non-boaters.

Forest Service campgrounds are used by day use visitors which conflicts with campground occupants. For example, Hoover Campground receives the overflow of boat launch demand from Mongold and creates heavy traffic through the middle of the campground. Visitors also use the campground boat launch to avoid paying fees at Mongold. Day users occupy parking spaces and boat launch facilities that were designed for campground visitors. Constant traffic through the campground can diminish experiences of campground occupants.

In concentrated dispersed areas such as French Creek or Hoover Arm or the dispersed campsite adjacent Southshore Campground, conflicts exist when individuals and groups of people exhibit disruptive and disrespectful behavior to others and the resources. These include loud parties, fireworks, nuisance ORV use, and discharging of firearms in vicinity of other visitors.

Areas adjacent town residents such as Detroit Flats are sensitive to disruptive behaviors and nuisance ORV use in the area. In the past, this has been a serious problem. Although these are problems are improving, there are still occasions when these problems still arise. This use has caused resource damage.

According to law enforcement incidences documented by the Oregon State Marine Board, Detroit Lake shows as one of the highest incidences of excessive boat noise, violation of boat speeds and no-wake zones, careless and reckless boaters when compared to other waterbodies in the state. The 1996 report concluded that Detroit Lake is one of the top Oregon waterbodies with the most serious law enforcement problems. Detroit Lake has numerous incidences reported of boats that had an actual or near collision with floating and fixed objects, and other boats.

Future challenges will concern a wider range of visitors who demand high quality experiences. Their diverse interests will cause conflicts among users and uses to increase.

b. Reference Condition - All Uses***iv-5. *What are the major historical human uses in the watershed, including tribal and other cultural uses?***

Detroit Tributaries-Past Human Uses: The Detroit Tributaries Watershed has been the setting for human activities for thousands of years. Evidence for prehistoric use exists in the form of obsidian and crypto chrysaline silicate lithic scatters. Euro-American use of the area is documented in the archives as occurring in the early 1800's. However, historic sites in this watershed range in time from the 1880's to around 1950. Historic sites include trails, wagon roads, railroads, telephone lines, fire lookouts, homesteads, shelters, mining and logging camps, bridges, and the historic town of Detroit.

PREHISTORY

Historically, the Molalla are reported to have inhabited the western slopes of the Oregon Cascade Range (Nilsson 1989, Snyder 1987). The Molalla were comprised of the following three subgroups: the Northern Molalla, Southern Molalla, and the Upper Santiam Molalla. The Detroit Tributaries area lies within the tribal area of the Upper Santiam Molalla (Nilsson 1989).

Additional human groups believed to have passed through the Detroit Tributaries Watershed area include the Warm Springs, Northern Paiute, Tenino, and Kalapuya Indians (Minor and Pecor 1977:95). The seasonal hunting, fishing, and plant resources would have drawn these groups to the area. The Detroit Tributaries watershed contains an abundance of culturally significant plant species which include the following: Alaska bunchberry, big huckleberry, dogwood bunchberry, and dwarf Oregon grape for food as well as, beargrass, Oregon grape, fool's huckleberry, and vine maple for utilitarian items. Twin flower and oxalis may have been used for medicine.

HISTORY

Euro-Americans appeared in the area in the early 1800's. Although they were not homesteading the Detroit Tributaries area, they were extracting natural resources from the mountains and utilizing the forest for recreational purposes (Minor and Pecor 1977:14).

In 1889, the Oregon-Pacific Railroad began to lay tracks along the north shore of the Santiam River. The small settlement of Coe was a result of this railway expansion. When the post office was officially established on October 16, 1891 the community was named Detroit to avoid confusion with the eastern Oregon town of Cove (Maxwell 1963). The name "Detroit" was chosen for the large number of immigrants from Michigan.

A historic 1891 map shows a number of homesteads and early trails in the Detroit Tributaries area. Among 2 unnamed cabins, were the homes of C.B. Winn, E.S. Hanson, Miss Hall, John Sinsbey, Neil McRay, a structure known as Hughe's cabin, and W.L. Maple's Stone Quarry. Additional homesteads were settled along the banks of French Creek. At the turn of the century, Detroit had a store owned by E.S. Hanson, four sawmills, and a population of 100.

In 1951 the town of Detroit was moved in order to construct a water reservoir and dam. Over 200 people and businesses moved from the south side of Peity Island to its present location on the northeast side of the lake.

TRAILS

To access these areas trails needed to be blazed. The earliest documented route to this area is the 1880 Minto Pass Trail also known as the Marion and Wasco Wagon Road. This feature is shown on the 1891 map as starting west of Niagra and ending about a mile south of the confluence of Sardine Creek and the North Santiam River. Additional early trails include the Settler's Trail from Santiam, a pack trail, and the Quartzville Wagon Road which was later called the Quartzville Trail. The 1937 Santiam Forest Map had a series of trails with and without insulators primarily transecting to lookout locations. Additional trails include the Cooper Ridge Trail which is also believed to be an earlier Native American route.

LOOKOUTS

Seven historic lookouts are located within or on the boundary of the Detroit Tributaries Watershed. The 1937 map indicates the presence of the Kinney Ridge Lookout, Whitman Ridge Lookout, Monument Peak Lookout, Slate Rock Lookout, Rocky Top Lookout, Dome Rock Lookout, and the Hoover Ridge Lookout. The Kinney Ridge Lookout was established as a cabin in 1936 and destroyed in 1950. Monument Peak had a camp in 1916, a cabin in 1921, and a L-4 cab atop a middle summit in 1942. In 1973 the Monument Peak Lookout was destroyed. The earliest record of the Slate Rock Lookout is the presence of a L-4 cab in 1935. All of these lookouts no longer exist.

CAMPS

The known camps in the Detroit Tributaries Watershed include Berry Forest Camp, Hall's Camp, Mardie Dunham Camp, and Camp Mongold. Camp Mongold was built prior to 1949 to house the workers and their families during the construction of the Detroit Dam. The camp consisted of forty-eight apartments, a mess hall, fire department building, and 48 trailer houses to accommodate 350 to 400 people.

SUSTAINABLE COMMUNITIES

Surrounded by forests, it was timber that drew the first white settlers to the North Santiam Canyon. While timber has been the backbone of the region's economy, it has been a fickle one. As early as 1893, the community had to adjust to mill closures, then boom periods of little or no unemployment.

The railroad provided a link between the communities when roads were impassable, making it possible to take logs and lumber down to the Willamette Valley, and bring goods and passengers back up the canyon. The earliest timber harvest occurred in this watershed during the first decade of the 1900's (see figure below). Watershed occupants relied on timber harvesting for their livelihoods and the forests - wood, fish and game - for their sustenance. In 1926, a road was constructed between Niagara and Detroit.

Access to the watershed was primitive and in places, very difficult to negotiate. Scenic quality was heavily altered early due to timber harvesting and history of large wildfires which is still evident today.

From the 1940's, the timber industry expanded, bringing more work and more residents to the canyon community. The local economy within the canyon has gone through boom and bust cycles since the 1940's and is very closely tied to a timber economy. Dependence on timber fueled, if not caused the boom and bust cycles of the economy, and consequently the local economy has been sensitive to changes in forest policy.

Table IV-2: Decade Timber Harvest in Detroit Tributaries

Year	Clearcut Acres	Shelterwood Acres	Commercial Thinning Acres	Total Acres
1901-1910	1335	0	0	1335
1911-1920	594	0	0	594
1921-1930	438	0	0	438
1931-1940	885	0	0	885
1941-1950	175	0	0	175
1951-1960	1186	0	0	1186
1961-1970	2164	0	0	2164
1971-1980	1329	28	47	1404
1981-1990	1397	20	909	2326
1991-1997	325	349	349	1023
Totals	9828	397	1305	11530

Beginning in the 1960's, increasing conflicts arose as land policy changed. In the 1980's the combination of high-tech mills requiring fewer workers, and a decrease in the timber harvest caused by environmental concerns over spotted owl habitat, significantly cut employment opportunities in the timber industry.

The region was left with few employers that offered wages which could support families and unemployment began to rise. Communities began to realize the recreational potential of the area and have relied increasingly on tourism for their economic diversity and sustainability.

RECREATION

Historically, the Detroit Tributaries watersheds did not provide opportunities that were unique, when compared to other parts of the District that were already developed eg. Breitenbush Hot Springs, Mt. Jefferson Primitive Area. From the early 1900's through the 1950's, the Detroit Tributaries area was covered by an extensive trail network connecting trail shelters, guard stations and fire lookout stations. The primary use for the trail network and structures were for fire detection and control purposes rather than for recreation. Some of these trails are part of the recreational trail network that hikers enjoy today.

Prior to the 1950's, recreational activities were primarily enjoyed by local people for hunting and fishing. Hunting and dispersed camping opportunities expanded as the network of roads were created.

It wasn't until after completion of the new North Santiam Highway during 1948 and construction of Detroit and Big Cliff Dams in 1953, that created a significant change in recreation use in this watershed. In the first decade of the reservoir's existence, fishing from boats was the primary activity that occurred on the lake.

In the late 1950's, the Forest Service began to responding to the recreation need along the reservoir by developing Hoover and Southshore Campgrounds, and making Stahlman summer home tracts available to lease by the public. During the 1960's, visitors, typically family groups from the Santiam Canyon and mid-Willamette Valley, began to come to the lake for camping, waterskiing and swimming activities.

Since most recreational developments occur within the flood plains, many structures and facilities were affected or destroyed by the Flood of 1964. In 1996, Hoover Campground was impacted by a large mudslide.

Recreation use of the lake has steadily increased over the decades and changed with new equipment technology, and facilities upgraded to accommodate use.

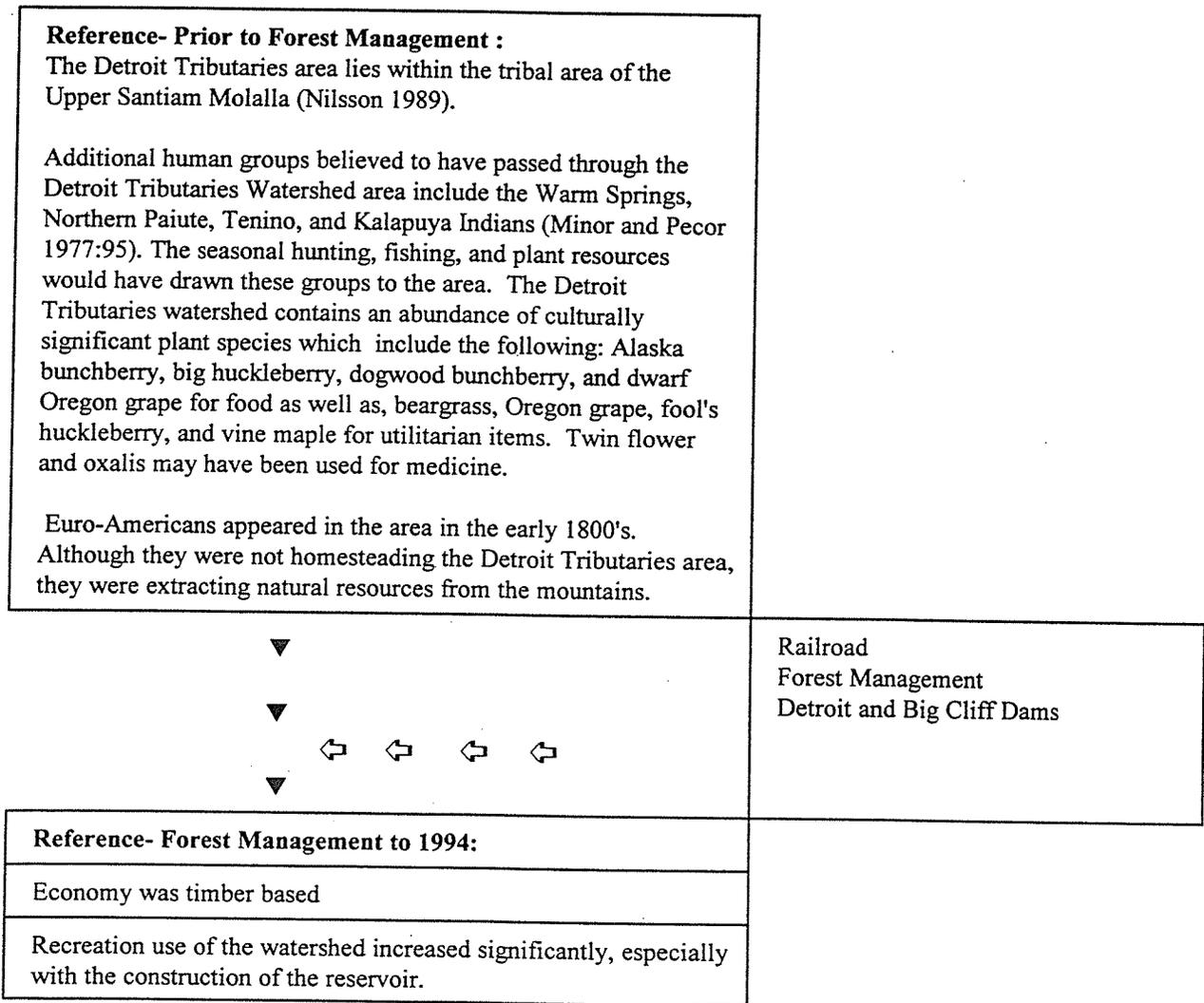
c. Comparison of current and reference condition

- **Socio-economic Uses (e.g. sustainable communities, tourism, etc)**

*iv -6. *What are the causes of change between historical and current socio-economic uses?*

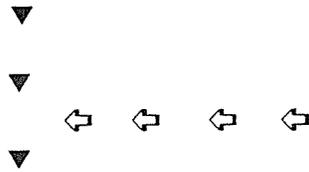
Conditions

Major Causes of Change



Conditions

Major Causes of Change



Change in management practices and policies
 Amount of timber sold to mills
 Technology in the mills require less people
 Communities recognizing the recreational potential of the area

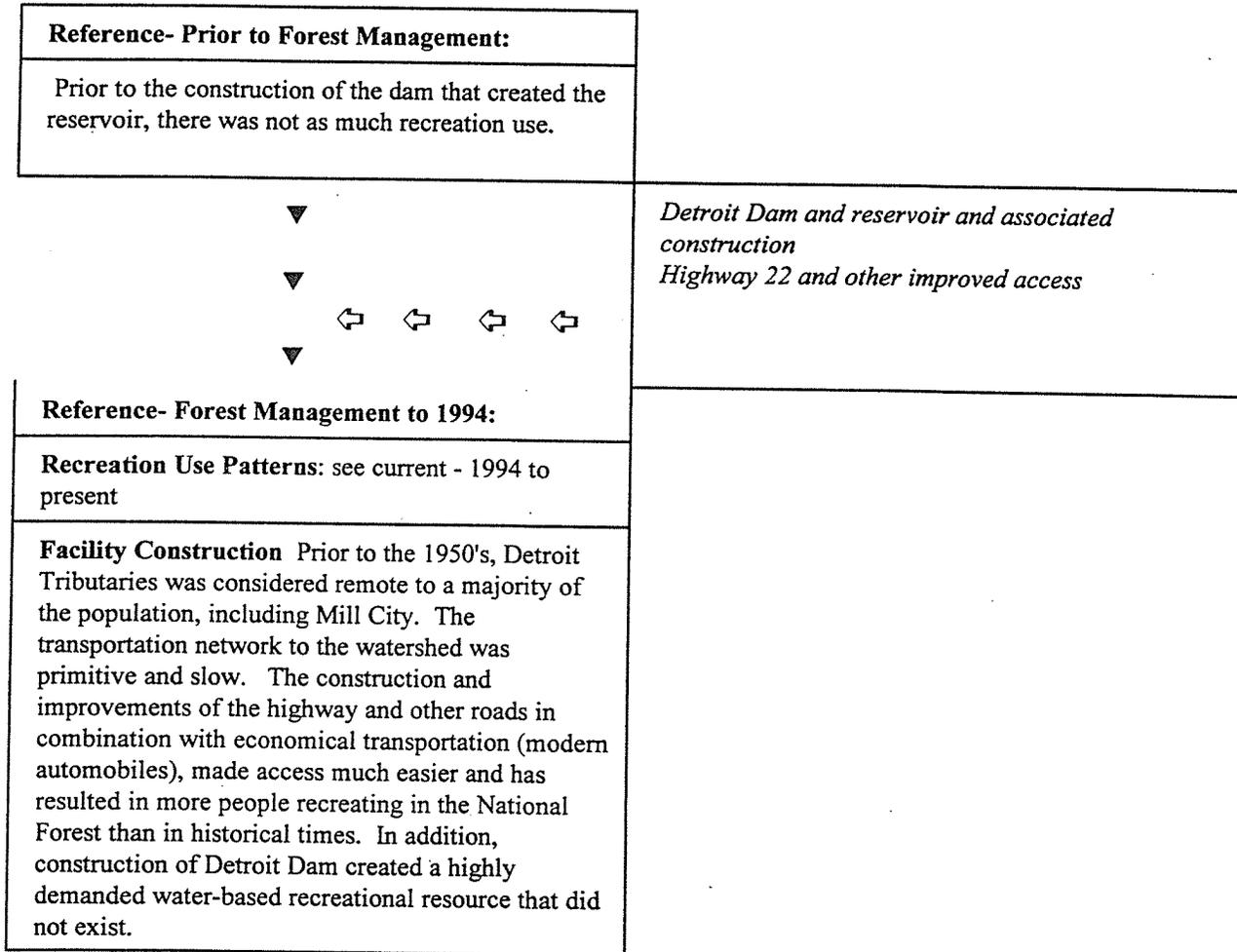
Current - 1994 to Present:
Timber from public lands is being offered in much smaller quantities than in the past.
The percentage of high-wage forest product industry jobs has decreased over time.
Local communities are starting to diversify their economies more than they have in the past. New businesses are mostly associated with tourism at this time, but additional diversification is being investigated.
Special forest products offered from this watershed are on the increase and will likely continue to increase in the near future.
Recreation use of the watershed has increased significantly, especially with the construction of the reservoir. The tourism economy associated with recreation has increased and are likely to continue to increase over time.
Increased use of the watershed has created a need for improved infrastructure.

● **Recreational Uses**

*iv-7. *What are the causes of change between historical and current recreation uses?*

Conditions

Major Causes of Change



Conditions

Major Causes of Change

<p>Reference- Prior to Forest Management (continued):</p>	
<p>Promotion of Recreation Opportunities/Increasing Use: In the 1920's-1950's, early national and regional efforts promoted National Forests for people to come and enjoy. Intensive use was not an issue as it is today. Conditions affecting leisure time and its use have changed quickly during the last 40 years. People began to have more leisure time, and better mobility through improved access and economical transportation. Considered Willamette Valley's "back yard," the watershed is receiving increase use.</p>	
<p>Changing Demographics and Recreational Demand: Changing demographics reflects on changing and increasing recreational use and demands. In 1910, the U.S. operated on a rural economy that had 90 percent of its population living in rural areas. The population had not achieved the mobility or the freedom from sustenance requirements that would give the time and means for recreation. After World War II, society became more affluent, urban growth started to boom, transportation systems improved and industrialization has been replaced by the information society resulting with more leisure time. Rapid population growth has the most dynamic influence on recreational use.</p>	
<p>New Technology and Recreational Demand: Prior to World War II, recreation uses were traditional, e.g. hunting and gathering, fishing and camping. Post World War II was marked by major changes in American recreational habits. The interest in various types of recreation has varied as the population's way of living has varied.</p>	
<p style="text-align: center;">▼ ▼ ← ← ← ← ▼</p>	<p><i>Increase of use and population growth</i> <i>Access - backyard destination area for the Willamette Valley</i> <i>Regional recreation area</i> <i>Changing technology</i></p>

Conditions

Current - 1994 to Present:

Recreation Use Patterns: Essentially we use the same corridors today that American Indians used for thousands of years, although we have changed their character greatly. Campgrounds, resorts and trails were developed in areas where prehistoric and historic uses occurred. People have always been drawn to areas along water, meadows, unique topographical features and vista points, whether for recreation, sustenance or cultural values. Future use patterns will likely follow the same corridors as long as access is provided and management direction allows use to continue.

Facility Construction: see reference - Forest Management to 1994

Promotion of Recreation

Opportunities/Increasing Use: Local communities, with the decline of the timber industry, are trying to build strong, diversified rural economies by promoting tourism and recreational opportunities in the area. Areas in the watershed have reached or nearing capacity levels. The information highway is paving the way for promoting recreation opportunities on the Internet. Promoting and encouraging use can have adverse affects on the resources or create social issues within the watershed.

Changing Demographics and Recreational

Demand: Many societal changes have occurred in the last few decades. Our society is becoming increasingly older, better educated and ethnically diverse. Americans are becoming increasingly concerned with environmental quality, quality of life, and the responsiveness of government to public needs. There is heightened concern with fitness and health. Americans are more urban and mobile, many wanting higher levels of services, developments, and conveniences. Changing lifestyles include smaller families, two-income family households, single-parent households, and non-family households. With new legislation and accessible technology developments, people with disabilities are more "mobile" and able to visit the National Forest.

Conditions

New Technology and Recreational Demand:

Accelerating technological advances, including the development of equipment, transportation, and sports, necessitated more space, and the need to set aside specialized areas for activities such as jet skis and water sports, cross-country skiing, snowmobiling, para/hanggliding, trail/mountain bikes, off-road vehicles, hi-tech backpacking/mountain climbing, whitewater boating, RV camping, and stream and lake fishing. This meant a need to develop more facilities for recreational groups enjoying the forest. Although difficult to predict, new uses will emerge in the future, but historical uses will continue. People have strong ties to traditional, long-standing activities and places they enjoy.

Funding Levels: Funding levels are decreasing and demand for recreation opportunities are increasing. In order to fulfill this demand, federal agencies are looking at new ways to provide recreational opportunities such as user fees and "privatization" of operation of facilities (concessionaires).

IV. SOCIAL DOMAIN

B. Facilities

1. Characterization

The transportation network, including roads, trails, accompanying drainage structures and bridges make up a large portion of the facilities in the Detroit Tributary watersheds. Other components include structures such as summer homes, and other improvements such as camp grounds, water systems, power lines, signs and gates, etc.

Roads have provided unlimited access to the forest lands for the forest users both recreational and commercial. The users of the forest lands became used to the good quality roads that allowed them travel almost any place in the forest with ease. In the three subwatersheds; Lower Detroit Reservoir, Upper Detroit Reservoir and French Creek GIS shows 317.93 kilometers (197.47 miles) of road. The roads are made up of a state highway, portions of two double lane forest roads and a network of arterial, collector and local forest roads.

Keeping the road systems maintained is becoming more and more difficult in light of reduced timber targets, resulting in less maintenance dollars for roads under cooperative maintenance. Roads that are maintained by the timber purchaser as prehaul, haul and posthaul maintenance all contribute to possible deficient sales. Limited appropriated road maintenance dollars is reducing the size of force account maintenance crews. All of these things contribute to the deterioration of forest roads.

To reduce the number of roads and miles of roads per square mile in this watershed, the obliteration or decommissioning of roads is necessary. By obliterating and decommissioning roads, we can reduce the miles of roads to maintain, improve water quality, and reduce the stress on all wildlife. The limited road maintenance dollars can then be used to maintain other system roads.

2. What values are associated with facilities?

- a. Commercial, administrative, private and public access to National Forest lands is valued for the opportunities it provides for recreation, commercial, and administrative operations, etc.
- b. Recreation facilities are valued for the comfort, safety and shelter they provide, as well as, for aesthetic and historic reasons.

3. What are the highest priority issues or resource concerns associated with facilities?

- a. Conflicting management objectives and/or resource impacts resulting from construction, maintenance, protection and use of various facilities.
 - Many roads, bridges and recreation facilities in the watershed are located in riparian reserves. Managing these facilities may be in conflict with Aquatic Conservation Strategy objectives.
 - Some facilities were damaged in recent flood events, repair of these facilities may be in conflict with other resource objectives.
- b. The ability to adequately maintain facilities and provide for public safety, given shrinking budgets.
- c. Public access to public lands in light of reduced road maintenance budgets, etc.

4. **What are the management direction/activities, human uses or natural processes that affect facilities?**

a. *Current condition*

*iv-8*What is the existing condition and trends of the facilities within the watershed? (Transportation facilities, road management, campgrounds, special uses, signs/gates, power lines, trails, Detroit domestic water intake, etc.)*

1. **Transportation Facilities and Road Management:**

State Highway 22 divides the Detroit tributary watersheds north to south. Access is provided to these watersheds by the following roads (*Table IV-3*):

Table IV-3:

Portion of the Watershed	Road
Northwest one third	State Forest Road named Rocky Top
North (center) one third	Forest Road 2223
Northeast one third	Forest Roads 46 and 4695
Southeast half	Forest Road 10 and 1003
Southwest half	Forest Road 2212 and 2212-610

The remaining system of collector and local roads provides access to federal and private lands for public use, resource management and protection. The Forest Service maintains 212 kilometers (132 miles) that access 31,826 acres Forest Service land. Other owners within the watershed are County with 61 acres, State with 6,741 acres, Coups of Engineers 1,126 acres and Private 9,581 acres for a total of 49,335 acres within the Detroit tributary watersheds.

Table IV-4 shows the total miles of road by category kilometers/miles are based on the GIS transportation data base.

Table IV-4: Total Kilometers and Miles of Road by Category

Road Owner	Kilometers of Road	Miles of Road	System Roads	Road Category
Forest Service	8	5	Yes	Arterial Roads
Forest Service	76	47	Yes	Collector Roads
Forest Service	129	80	Yes	Local Roads
Forest Service	34	21	No	Temporary roads not obliterated, power line access roads and roads to dispersed recreation sites, etc.
Private	45	28		N/A
State	26	16		N/A
Total	318	197		

There are probably additional kilometers/miles of private road and non-system Forest Service roads in the analysis area, but they have not been inventoried or tracked. Road miles included in this analysis area are those miles that are on the GIS system, TRAN layer. This information has not been field verified.

Highway 22: Highway 22 is a major east/west access route from the mid-Willamette Valley. Highway 22 is designated as an Access Oregon road which is targeted for improvements that will help move goods, services and travelers from one part of the state to another. These highway upgrades will continue to make it easier for people to make the trip from the valley to the lake. The road currently provides access for about 4000 cars a day.

People use many of the pull-off areas for parking and to enjoy the views. One of these turnouts provides an excellent view of Mt. Jefferson which could be formally developed as a viewpoint. This is the first place along the highway that affords eastern bound traveller a view of the mountain. Travelers have limited views of the reservoir due to vegetative screens except where vegetation has been managed along the highway. Because of limited parking opportunities around the lake, many people use the edge of the highway for parking although many areas are signed prohibiting this. According to the Detroit Lake Composite Area Management Guide, visitors surveyed indicated parking, safety on Highway 22 and automobile congestion are serious problems and needs improvement.

The Highway 22 committee, a citizens committee, made several recommendations for the Highway within the watershed to improve safety. They include: 1) constructing barriers or provide screening to prevent rocks from falling on the road. Some of this has been completed. 2) Bring Highway 22 shoulders to state standards and eliminate undersized turnouts. Define egress and ingress to the remaining turnouts. 3) Improve sightliness at the Blowout Road/Highway 22 intersection. 4) Improving pedestrian access on Blowout Road and Highway 22. The Detroit Lake CMAG also recommends providing additional parking along Highway 22 that is defined, paved and screened from the road.

Road Management: Management of the transportation system includes road resources protection, as well as, providing a variety of recreational experiences and management opportunities. Road Management Objectives determine purpose and use of each road, regulate traffic use during wet weather to prevent damage to riparian resources and the road infrastructure. *Tables IV-5a and 5b* show functional classes and road surfaces for these watersheds. *Tables IV-6a and 6b* show maintenance classes. Maintenance levels are based on the type and amount of use on each road.

Table IV-5a: Surface Types and Functional Classes (in Kilometers) for Forest Service Roads.

Subwatershed	Asphalt Surface	Aggregate Surface	Improved Surface	Native Surface	Total KM by Surface Type	Functional Class: Arterial	Functional Class: Collector	Functional Class: Local	Total KM by Functional Class
French Creek	6	40	9	4	59	N/A	35	24	59
Upper Detroit Reservoir	16	54	16	14	100	N/A	32	68	100
Lower Detroit Reservoir	12	28	10	5	55	8	10	37	47
Total	34	122	35	23	214	8	77	129	206

Table IV-5b: Surface Types and Functional Classes (in Miles) for Forest Service Roads

Subwatershed	Asphalt Surface	Aggregate Surface	Improved Surface #	Native Surface	Total Miles by Surface Type	Functional Class: Arterial	Functional Class: Collector	Functional Class: Local	Total Miles by Functional Class
French Creek	4	25	5	2	36	N/A	21	15	36
Upper Detroit Reservoir	10	34	10	8	62	N/A	20	42	62
Lower Detroit Reservoir	7	17	6	3	33	5	6	23	29
Total	21	76	21	13	131	5	47	80	127

Improved denotes a surface type of Pit Run or Grid-Rolled material other than crushed aggregate. Road could have only spot rock or be surfaced with this material full length

Table IV-6a: Road Maintenance Levels (in Kilometers) for Forest Service Roads.

Subwatershed	Maintenance Level 1	Maintenance Level 2	Maintenance Level 3	Maintenance Level 4	Maintenance Level 5	Total KM for Forest Service Roads
French Creek	15	29	14	N/A	N/A	58
Upper Detroit Reservoir	35	40	25	N/A	N/A	100
Lower Detroit Reservoir	16	15	14	10	less than 1 km	56
Total	67	86	56	10	less than 1 km	214

Table IV-6b: Road Maintenance Levels (in Miles) for Forest Service Roads.

Subwatershed	Maintenance Level 1	Maintenance Level 2	Maintenance Level 3	Maintenance Level 4	Maintenance Level 5	Total Miles for Forest Service Roads
French Creek	10	18	8	N/A	N/A	36
Upper Detroit Reservoir	22	24	16	N/A	N/A	62
Lower Detroit Reservoir	40	9	9	6	less than 1 mile	65
Total	72	51	33	6	less than 1 mile	163

Road Construction: During the planning phase of a district project (e.g. timber sale), access needs are determined. If road construction is necessary, a determination is made whether the road will be added to the transportation system, specified road construction, or if the road will be decommissioned /obliterated after harvest, temporary road construction. Less specified road construction is being done due to concerns about road densities, and because small timber sales do not create significant amounts of purchaser credits to construct or reconstruct the existing roads for removal of timber. One option that is available, is to construct the required roads as temporary roads and obliterate or decommission them after the timber has been removed. Temporary roads cost less to build than system roads and compensation is part of the timber appraisal.

Shrinking road maintenance funds has resulted in not being able to maintain the entire road system to Forest road standards. To provide safe access and reduce the probability of further damage to the roadways from heavy trucks, weather, etc., road reconstruction for project access is becoming more common.

Road Reconstruction: Reconstruction of forest roads is considered when any of the following conditions are encountered.

- For maintenance level 3, 4, and 5 roads when they are in noncompliance with the Highway Safety Standards Act.
- For maintenance level 2 roads that have unsafe conditions that will not allow commercial use.
- For maintenance level 1 roads if the road is to be used for commercial use.
- For any road that with continued use; commercial or public, will compromise the underlying framework or features such as the subgrade, base course and drainage structures.
- Roads damaged by storms that create any of the situations in the scenarios above.

Flood's Effects to Road System: The Detroit Tributary watersheds road system provides a broad range of access to areas within the watershed. The floods of 1996 has changed this scenario to some extent. At the present time a few assessments remain to be made although the majority of the assessments have been made. The full extent of damage will not be totally known until all assessments have been completed. *Map IV-3* illustrates where in the watershed damage to roadways is the most severe. The damage was not so severe as to close the roads 2207, 1003 and 2212-530 to travel, but these roads are to be traveled with caution. Many roads that were traversable by passenger car last year are now accessible only to high clearance vehicles.

In reality, the storms of 1996 have just accelerated the trend of roads closing due to lack of maintenance and use. The floods of 1996 damaged roads in all three of the subwatersheds; however, only the Upper Detroit Reservoir subwatershed sustained enough damage for sites to qualify for ERFO (*Emergency Relief [for] Federally Owned [roads]*) funding. There are 6 sites on road 1003 which is located on the South side of the reservoir and 2 sites on road 2207 on the North side of the reservoir. All 8 sites are scheduled to be repaired in 1998. Until all repairs are made travel on these roads will be restricted.

Access and Travel Management

Current Road Densities: Table IV-7. Average densities of roads on Forest Service in Miles per Square Mile by Subwatersheds.

Subwatershed	Road Densities
	Miles per square mile
French Creek (031)	3.05
Lower Detroit Reservoir (032)	2.39
Upper Detroit Reservoir (781)	2.45

Future Road Network: Access to the watershed in the future will be determined by an Access and Travel management plan. Such a plan will not be done at this time, however, the following factors need to be considered in the development of this plan:

- User Needs and Access Conditions,
- Resource Protection,
- Road Maintenance Funding

User Needs and Access Conditions:

Below is a generalized description of user needs and access conditions

Fire:

- Response time for initial attack situations will increase until damage from the storm can be repaired.
- Although roads are decommissioned access would still be possible. Roads would need to be opened by a piece of heavy equipment.
- Most pump chance access roads are still open.

Administrative:

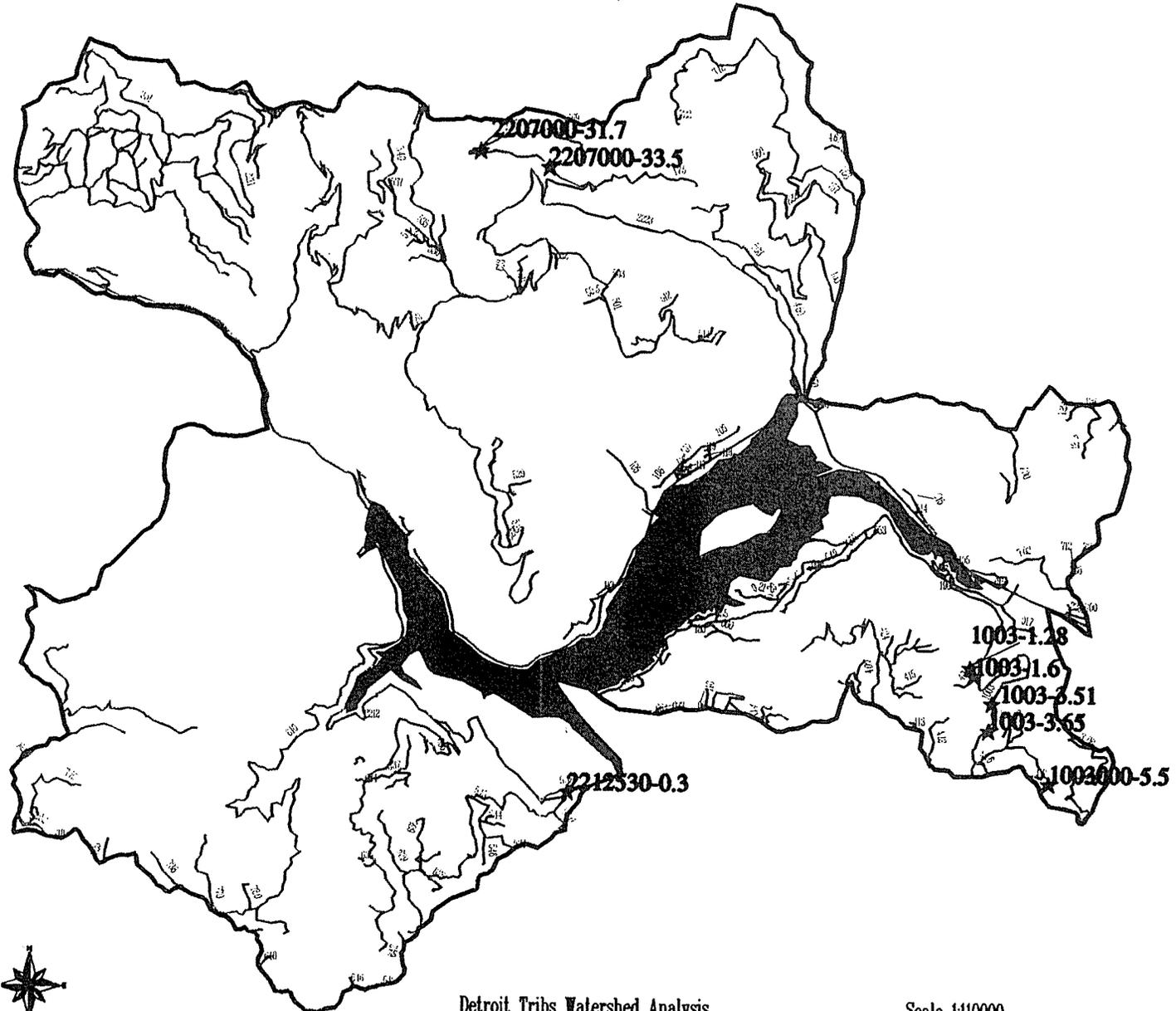
- Preparation for commodities harvest;
- silvicultural and fuels treatments of managed stands;
- wildlife species and stream conditions surveys;
- habitat enhancement, mitigation and restoration projects are just examples of management activities that are impacted. There will be an increase in costs in performing almost all aspects of resource management activities. This was a trend already being felt.

Recreation: The road system provides for a broad range of recreational opportunities in a variety of settings.

Flood Impacted Roads

Legend

-  Detroit Reservoir
-  Flood Damage Site



The absence or presence of roads is one of the most critical aspects of a setting that affects people's recreation experience. Currently, there are more than enough roaded opportunities to support the current and future demand.

The key is to provide a variety of opportunities which encompass all ranges of roaded and unroaded settings, that is consistent with use patterns, public demand and resource objectives.

Currently, there is access to all developed campsites and trail heads, though there is some localized damage to the roads that calls for extra caution by travelers. Forest Road 10 is open and provides access to Hoover camp ground, Southshore camp ground and the new Cove Creek camp ground at km. 5.64 (mi. 3.5). Forest Road 10 is closed at km 11.27 (Mi. 7.0) and will remain closed through the year 1999. The 7.08 km. (4.4 mi.) of road beyond will be obliterated and a new single lane route will be reconstructed and constructed higher up the hill, planned completion date late 1999.

Dispersed recreational opportunities have been reduced in areas behind gates that prohibit motorized travel due to wildlife or other resource concerns.

Conditions of roads play a factor in whether or not a visitor has a satisfactory experience. Visitors driving for pleasure in a standard automobile or RV would require a well-maintained route while off road vehicles would prefer a more rugged experience. Driving for pleasure is a growing and popular activity within the Detroit Tributary watersheds. Safety of roads is a concern within the roaded recreation settings. Currently, lack of maintenance from decreasing road maintenance funding is resulting in many roads becoming unsafe, requiring extra caution or closed to access.

In contrast these closed roads have increased opportunities to bike and hike free from interference with motorized vehicles. "Roads to trails" opportunities could arise for mountain biking, horseback riding or lowering standards for maintenance could provide opportunities for off-road vehicles use such as trail bikes or all-terrain vehicles.

Private Land: Access to private land is adequate at this time. With the decreased ability to maintain roads there is a need to renegotiate cooperative agreements to help meet the needs and management objectives of all parties.

Resource Protection:

Road management is especially important to implement Forest Plan standards and guidelines for wildlife and watershed protection.

Road Maintenance Funding:

Declining maintenance dollars are resulting in reduced access for all users in many areas of the watershed. Few of the local system roads receive annual maintenance. Over all, less surface, drainage and roadside maintenance is being done. At present roads are closing themselves through cut or fill slope failures, stream crossing failures and brush encroachment. These "closures through neglect" do not provide protection against resource damage or protection of the large capital investment made when the roads were constructed. Over time, only those roads where maintenance is performed will remain open.

Other roads may remain open depending on:

- Level of use that will discourage brush encroachment.
- Vegetative type not prone to brush encroachment.
- Soil stability or back and fill slopes that are not prone to sloughing of material that can block drainage or road prism.
- The condition and functionality of the drainage system.

The road network should be no larger than necessary to achieve management objectives consistent with legal requirements, user safety, environmental considerations and economics. Based on objectives and the ground conditions. Following are various techniques to be utilized.

Road Closures: No data is in GIS data base on how many kilometers/miles of road has been closed in these three subwatersheds. Road closures have not been widely implemented in this area but some roads have been closed.

- Roads are closed by a verity of devices including locked gates, guardrail barricades and aluminum non-locking pole closures.
- Motorized travel in most closure areas is restricted for the public, but administrative travel is not.

- Vandalism on closure devices is high and maintenance is expensive. Because of the reduction of maintenance funding maintenance is inadequate.
- Enforcement of closure, due to the condition of closure devices, lacks of adequate signing and the tendency for closures to be left open for long periods of time, is difficult.
- Roads behind closures have not been decommissioned to reduce maintenance obligations.

Road Decommissioning: Due to continued reductions in road maintenance funding and road kilometers per square kilometer (miles per square miles) is greater than the desired density decommissioning is a tool to be used to help restore the hydrologic features and reduce the kilometers/miles of road maintenance. Following is a discussion about what decommissioning is and how it can be accomplished.

- **Entrance closure:** This is accomplished in a variety of ways; earth berms, tank trap, barricade with logs and stumps, etc.
- **Aggregate removal:** This consists of windrowing aggregate surfacing for loading and hauling to stockpiles for later use.
- **Water barring:** The cutting of drainage ditches across the road to intercept water and get it off the road surface to prevent erosion. Usually includes intercepting the drainage ditches paralleling the road.
- **Scarification:** Scarify the road surface to facilitate establishment of vegetation.
- **Revegetation:** This usually consists of planting and seeding to control erosion and sedimentation and/or planting trees.
- **Culvert removal:** In drainage's with live streams, culverts are some times removed to eliminate risks of catastrophic failure should the culvert become plugged at a later date. Fills are normally removed to restore the natural channel and ensure stability.

- **Overflow ditches:** Sometimes used as an alternative to culvert removal in situations with low risk of culvert failure and high cost of culvert removal. This treatment consists of lowering grade over culverts so that if they ever plug the water will stay in the channel and not run down the decommissioned roadway. Rock or wood and brush may be placed in the overflow channel to prevent erosion.
- **Sidecast pullback:** Excavation of side cast road construction material that is now settling and/or failing. Priority for the pullback is normally in areas adjacent to anadromous fish habitat streams. The material may be placed along the road against the cut slope or transported to a permanent waste storage area, depending on site conditions. Settlement and failure may be the result of decaying construction slash and vegetation buried within embankments.

Any or all of these techniques may be used on any given road segment.

The following categories of roads should be decommissioning priorities within this watershed:

- Roads adversely impacting riparian functions need to be upgraded or decommissioned.
- Where public safety is a concern.
- Where lack of maintenance is causing damage to the road investment.
- Road densities having an adverse effect on big game and hydrologic recovery.

Scenic Byways

A portion of the Oregon West Cascade Scenic Byway, along Highway 22 east of Detroit bisects the watershed. Communities are supporting these designations as a means to increase tourism, and to improve and diversify local economies. The most popular dispersed recreation activity in Oregon is scenic driving. This activity will continue to increase and bring more people into the watershed. The Byways will be marketed through various state tourism media and maps.

3. Developed Recreation Facilities

Developed recreation sites including campgrounds, day use areas, the Sportsmens Club and summer homes occupy approximately 400 acres and are located partly within riparian reserves. The area in riparian reserves dedicated to developed recreation facilities and use is 185 acres.

Developed sites are vulnerable to vandalism at times, and receive normal "wear and tear" through use and age, and incidental damage from weather events. The condition of developed recreation facilities is assessed annually and documented in the District's Infrastructure database. This assessment documents the specific conditions of all the facilities within a developed site area and identifies and schedules needed maintenance or replacement. Many of the pit/vault toilets are old and in need of replacement. A complete list of the facility condition assessment of individual sites in the Detroit Tributaries can be obtained from the District database.

According to the Detroit Lake CAMG, visitors surveyed responded condition of existing restrooms or lack of sanitary facilities in undeveloped areas as a problem. In addition, visitors desire for more extensively developed campsites and day use areas, including RV hookups, flush toilets, and showers.

The State Park's sewer system is presently operating over capacity. The State Parks system uses holding tanks to distribute the peak weekend flows.

In addition to natural causes, hazard trees are created as a result of recreational related damage. Public safety and liability is a concern within all developed sites including campgrounds, administrative sites, summer homes, trailheads, parking areas, and minimally developed dispersed sites. These areas receive highest priority for falling hazards to protect visitors.

Traditional appropriated funding for campground operation and maintenance is declining. Budget reductions may inhibit maintaining facilities to the levels of use they receive. The Forest Service is looking to the private sector to manage public campgrounds in order to keep campgrounds open. The "savings" incurred will allow the Forest Service to continue to manage the smaller, less "profitable" campgrounds.

Campground, trail and other facility construction and reconstruction have been funded through the Capitol Investment Program which too is facing cutbacks. Recreation managers will need to look at alternative ways of funding recreation development in the future. User fees will be implemented on National Forests in the future as a means to support recreation use on federal forests.

4. Detroit and Big Cliff Dams

Detroit and Big Cliff Dams provide flood control, hydroelectric power generation, agricultural irrigation, reservoir and downstream recreation, and water supply to municipal and industrial users. These dams are part of the Willamette Basin Reservoir System which consists of 13 water resources projects. The season of major flooding generally extends from mid-November through February. This is when maximum flood control storage space is provided in the Detroit Reservoir. The space reserved for flood storage is gradually filled to the maximum conservation pool by early May. During summer months, water may be released from the dam for meeting mainstem flow requirements. However, due to Detroit's high recreation demand, the reservoir is used last for this purpose. Currently, the Army Corps of Engineers and the Water Resources Department, is conducting a Willamette Basin Reservoir Study. The goals and objectives of the study focus on developing operational modifications to meet future water demands during the conservation season in the summer. Later an Environmental Impact Statement will be developed based on the findings of the feasibility study. Recreation activity associated with Detroit Lake is a major contributor to the local economy so maintaining maximum pool levels is desirable.

5. Power Lines

Two power line corridors maintained by Bonneville Power Administration (BPA) and Portland General Electric (PGE) transect the length of the watershed. BPA and PGE are concerned about maintaining the corridor free from trees and access to their facilities. BPA and PGE constructed system of spur roads to access the power line and towers for construction and maintenance. It is unknown how many miles of roads exists or their condition. Management of the power lines is done through Memorandums of Understandings between these agencies and the Forest Service. These Memorandums were last updated in 1982 and need to be revisited.

According to the agreements, BPA and PGE are responsible for all maintenance of the transmission line access roads which are not part of the Forest Service system. Most of these power line access roads have not been incorporated to the Forest Development Road System. maintenance by BPA and PGE should include water-barring of roads and seeding and fertilizing of cut banks or fills. As per agreement, Forest Service activities may not close or hamper access to transmission lines or towers for maintenance or emergency use.

The area under the power line is commonly used for ATV use, hunting, biking, camping and target shooting. The power line corridor is a concern because it detracts from overall scenic quality in the Detroit Tributaries watershed.

As per agreement, Forest Service activities may not close or hamper access to transmission lines or towers for maintenance or emergence use.

6. Public Water Use

The Detroit Tributaries serves as a domestic water source for the City of Detroit, watershed campgrounds, organization sites and summer homes, administrative sites, so water quality is very important to people. Detroit's water intake is located on Mackey Creek. The Flood of '96 brought some wood debris down the creek and blocked the intake. Detroit's water system is relatively new, however, the City lacks adequate water storage facilities to supply water volume during high use periods in the summer. Once a sewer system is constructed, housing developments will increase placing additional pressure on water needs. Detroit's water distribution system is old and needs to be replaced. Detroit's water needs projects are addressed in the North Santiam Canyon Economic Strategic Plan. Idanha received federal grants to construct a new water treatment and distribution system.

7. Sewer

Watershed cities and facilities are not currently served by a community sewer system. Individual campgrounds, residents, administrative sites and businesses have their own on-site sewer facilities. These facilities range from new septic systems, built according to state standards, to substandard cess-pools and seepage pits. A majority of Detroit and Idanha systems were installed prior to the revision of statewide DEQ requirements and therefore would not adhere to today's standards. Many residential, commercial and industrial lots cannot be developed due to insufficient lot size to accommodate on-site sewage treatment. The Detroit Lake State Park's system is presently operating over capacity. The State Park system uses holding tanks to distribute the peak weekend flows because drain fields cannot absorb the current capacity.

A Upper North Santiam River Canyon Sewage Treatment Feasibility Study was conducted and raised concerns about public health and water quality, especially during the peak recreation period. The study recommended an area-wide sewage collection and treatment system to serve the area. The report encompasses the alternatives for sewage collection, treatment and disposition within the cities of Detroit and Idanha, and all Oregon State Parks facilities and Forest Service, Detroit Ranger Station.

The study recommended the treatment site alternative located above French Creek. The collection system is a combination of gravity sewers and pumping stations within road rights of way. Treatment is provided by a facultative sewage lagoon augmented in the summer with surface aeration to accommodate seasonal loadings. Treated wastewater is stored during winter low-flow times and irrigated on forest land during the summer growing season. The states Three Basin Rule prohibits the point source discharge of sewage to the North Santiam River or it's tributaries.

8. Rock Quarries/Mining

The Detroit Tributaries area contains # developed quarries that provide rock material for administrative use. The area also has several locations where crushed rock is produced and stored for road maintenance purposes. Some quarries are frequently used for recreational target shooting and camping. One placer mining claim exists on Dry Creek.

9. Shoreline Stability

Shorelines along the east side of Detroit Lake are eroding from wave action caused by wind and boating. It is posing a threat to private landowners property and facilities. The shoreline is owned by the Army Corps. of Engineers and is managed by the Forest Service. In the past, the Corps of Engineers has restored and riprapped banks that eroded onto private property. Some adjacent land owners have received permission to harden banks at their own expense.

b. Reference condition

*iv-9. *What were the major historical facilities in the watershed?*

Road network: Development of this transportation system has occurred primarily in the last 50 years. Prior to the 1940's most of the timber lands was accessible through a large trail system. Below is a synopsis of the major transportation events of the last 100 years that contributed to the development of the current Detroit Tribs transportation system.

Highway 22 splits the watershed in half and made possible to development of access into the Detroit Tributary watersheds. The following is a chronology of highway 22 development:

1913: Road in current Highway 22 location ending in Niagara.

1926: A road was constructed from Niagara to Detroit. Road was primitive and in places, very difficult to negotiate. Rail still the major access mode.

1935: Approximate time highway was built at present location from Detroit East through to the Santiam Junction. Access from the prior to this time was only by trail.

1948: The highway was built on its present location from Gates to Detroit. This event opened up the upper canyon country as auto and truck access had been very difficult until then. When the highway was finished the railroad was dismantled at the site of the dam.

Road Construction 1950,s

In the 1950's roads began to be constructed into the forest using timber to pay for the road construction. Construction practices were to cut the right of way; remove the trees, side cast the excavation; (no mater how steep the side slopes) install the culverts and throw on some rock. The roads were built only for the removal of timber. Road construction cost; estimated by the Forest Service, was amortized out of the cost of the timber to the purchaser. Under this contract the Purchaser was very much in control of how the roads were constructed. The survey on many of these roads was a grade line marked with tags and located either by the Forest Service or the Purchaser. The contract was administered by the timber sale officer. During this time period road building was not well controlled by the Forest Service. No changes could be made with out agreement of both parties. Then the estimated dollar amount for road construction could not be changed, if the change resulted in additional work the purchaser's profit would be reduced. Under these conditions it was difficult to get both parties to agree. The kilometers of road construction in the 1950's was relatively small when compared to what was to come.

Road Construction 1960,s

In the early 1960's a new contract for Timber Sale Road Construction was implemented. The specifications were not a lot different than the previous contract but there were changes in how timber sale road construction was paid for and provisions were provided for the increase or decrease of dollars for the changes that were allowed to be made to the road construction costs estimated by the Forest Service. During this time, the construction practices of the 1950's did not change much for roads using timber generated dollars (Purchaser Credits). Under this contract the purchaser had less control over how the road was constructed than in the 1950's.

Appropriated dollars from Congress was becoming available for the construction of forest roads administered under Public Works Contracts, these contracts were held to higher standards than the timber sale contract. Most of the road surveys and all of the road design was accomplished by the Forest Service. Under this contract the road construction was better controlled by the Forest Service. Typically, the single district timber sale inspector would have all the on going timber sales on the district, be it 1 or 15 with no extra help. Each public works contract would have 1 to 3 inspectors depending on what work was going on. The kilometers of road constructed during 1960's was greater than those of the 1950's.

Road Construction 1970,s to Middle 1980,s

In the early 1970,s a new contract was implemented that could be used with both the Timber Sale contract and the Public Works contract. This new contract changed the way timber sale roads were constructed. The Forest Service now had control of how timber sale roads were constructed. The lines of contracting authority for the timber sale contract were changed giving engineering the road portion of the Timber Sale contract.

Some of the other major changes that allowed for control of the construction practices were:

- Clearing options that could be specified to best fit the needs of the area.
- Construction tolerances with maximum deviation from the lines and grades as staked.
- Compaction requirements for embankment materials.
- The haul and placement of excavated materials as a Pay Item.

It was determined that the Highway Safety Standard Act applied to all forest roads existing and new must comply with this act. The price of timber sale road construction increased greatly due to this determination and the use of the contract new options. Construction practices were improved by the use of the construction options and compliance with the Highway Safety Standards Act.

Control of the contract was established by the change in the contract lines of authority and an organizational change to zone engineering that provided additional personnel. Inspectors now had only 1 or 2 timber sales to inspect which allowed more time on the ground for each sale. From the early 1970,s to the middle 1980,s the construction of forest roads was at its height.

Road Construction Middle 1980,s to Present

In the middle 1980,s a Memorandum of Understanding between the Forest Service and the National Transportation Board was signed. This memorandum is an agreement that forest roads which are maintenance level 1 and 2 would not be required to meet the requirements of The Highway Safety Standards Act. Maintenance level 1 and 2 roads are maintained for travel by high clearance vehicles (pickups) and public travel is not encouraged. Maintenance level 3, 4 and 5 roads are maintained for low clearance (passenger cars) public travel is encouraged and must meet the requirements of The Highway Safety Standards Act. The 1970,s road construction contract has been revised three times since it was first implemented. The first and second revision; in 1979 and 1985, were minor not changing the basic requirements of the contract. The third revision in 1997 again did not change the basic requirements of the contract but it was rewritten in the Imperative Mood and the Method of Measurement was changed to Metric. The contract has always been very versatile providing the necessary specification to allow the Forest Service to construct any type of road needed. We are no longer building as many kilometers (miles) of road each year as in the past. Roads are still being built but they are short local roads, mostly less than a 1.6 kilometers (1 mile) long. Because of shrinking road maintenance funds it is not possible to maintain all of the system roads in our inventory For this reason existing roads in maintenance level 1 and 2 are bring considered for decommissioning. **The heydays of building kilometers and kilometers of forest roads every year is over.**

Road Maintenance: Past emphasis on timber management has resulted in a large road system to gain access to timber and other Forest commodities. Timber sale revenues paid for the majority of road construction, reconstruction, and maintenance. As timber harvest activities have decreased so have the traffic generated funds for maintenance. In conjunction with timber revenue decreases, appropriated dollars from Congress are decreasing also.

c. Comparison of current and reference condition

*iv-10. *What are the natural and human causes of change between historical and current facilities?*

Conditions

Major Causes of Change

<p>Reference- Forest Management to 1994: Detroit and Big Cliff Dams were constructed in 1953 to meet the needs of a growing population living in the floodplains of the Willamette Valley.</p>	
<p>Highway 22, constructed in 1948, provided access to the east side, these watersheds, and the North Santiam communities.</p>	
<p>The development of the current forest road network began in the 1940's to extract timber and provide access to remote areas.</p>	
<p>The powerline corridor was constructed in 1960 to provide electricity to the Northwest.</p>	
<p style="text-align: center;">▼ ▼ ← ← ← ← ▼</p>	<p><i>Declining road funds generated by timber sales due to less volume harvested resulting in declining appropriated road maintenance dollars Increased demand for facilities</i></p>
<p>Current - 1994 to Present:</p> <p>Declining maintenance funding for publicly owned facilities are resulting in the degradation of facilities or closing of roads</p> <p>Demand for accessibility, barrier-free access laws, resource protection, and change in user needs and preferences creates a need for upgrading and improvement of facilities.</p> <p>Facility condition has been affected by age, natural elements and process (wind, floods), and human use, including normal "wear and tear" and vandalism.</p>	

Conditions

Current - 1994 to Present (continued):

Increasing use has placed pressure on existing septic systems raising concerns about public health and water quality. Community growth and economic diversification is dependant on adequate infrastructure.

Road Management: Management of the road system is changing due to current and projected federal road maintenance budget declines and multiple resource objective needs described in the amended Forest Plan.

Economics: Decreases in annual maintenance budgets are down 80% from 1989 through 1997. A direct correlation brings the kilometers/miles that can be maintained in this watershed from 213 Km. (132 Mi.) to an estimated 43 Km. (26 Mi.).

This 43 Km. (26 Mi.) is approximately 50% of the total length of the system of arterial and collector roads in this watershed. Based on this information approximately half of the collector roads would receive very little if any maintenance and the local roads which are 129 Km. (80 Mi.) of the total road system would receive no annual maintenance. As a result roads are closing themselves through cut or fill slope failures, stream crossing failures and brush encroachment.

Some of the damage that occurred in the 1996 storms events can be linked to the lack of adequate maintenance.

Increasingly roads will be closed for a variety of reasons or will naturally close themselves due to the absence of maintenance from decreasing road budgets. With declining road maintenance budgets, and concerns related to watershed quality and wildlife habitat effectiveness, road decommissioning and obliteration will be common in the future. Closed access will remove some roaded dispersed opportunities that presently exist.

Conditions

Major Causes of Change

Current - 1994 to Present (continued):

As roads are closed, more pressure may be placed on roaded areas outside of closures, and former roaded dispersed areas will probably not receive the use that previously existed. "Established" users of an area may be displaced to other areas that remain accessible. Roads with the highest use will result with the most significant impact on users. The public perception of access is that they have grown accustomed to the current access and may expect the same level of service.

IV. SOCIAL DOMAIN

C. Scenic Quality

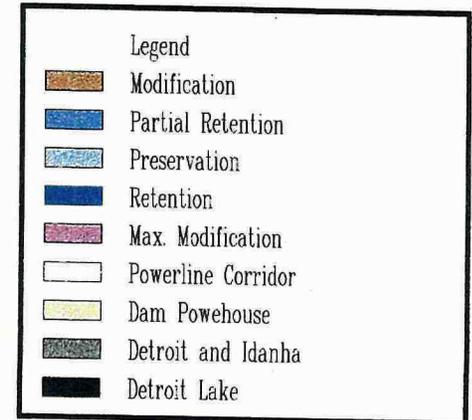
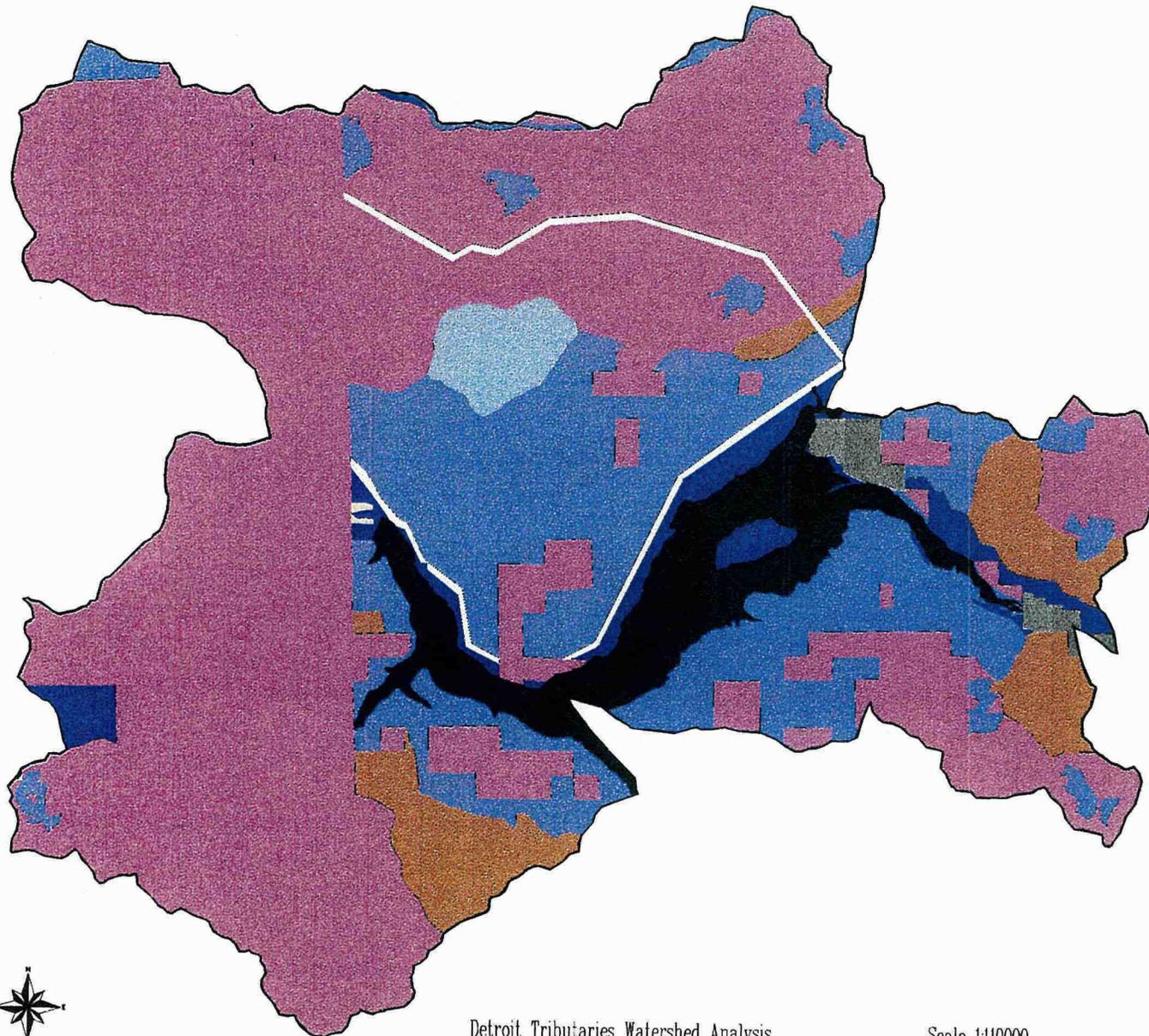
1. Characterization

- The Forest Plan identifies the North Santiam Viewshed which is a dominating theme within this watershed, and is to be managed for a high level of scenic quality (see management allocation map). However, with the diverse land ownership within this watershed, it makes achieving overall scenic quality more difficult.
- The quality of the Forest's scenic resource is important to the existing local tourism economy.
- Scenic features of this watershed include:
 - Detroit Lake
 - The first prominent viewpoint of Mt. Jefferson eastbound on Highway 22 overlooking Detroit Lake
 - Tumble Lake and Falls (Old Growth Grove)
 - Monument Peak Botanical Special Interest Area
 - Niagra Falls
 - Rock/geologic features, such as Phantom Bridge Special Interest Area, Stahlman Point and Dog Tooth, Elephant, Dome and Needle Rocks.
- Portions of the West Cascades Scenic Byway and Breitenbush-Clackamas National Scenic Byway lies within the watershed. It provides an alternative scenic driving route to Interstate 5.

Table IV-8: Visual Quality Objectives by Management Allocations (see Maps I-4, IV-4)

Management Allocation	Visual Quality Objective	Acres	Percent of Watershed		
Tumble Lake Old Growth Groves (MA-7)	Preservation	827	2		
Monument Peak and Phantom Natural Bridge Special Interest Areas (MA-5a)	Retention	1,598	3		
Scenic Retention Foreground (MA-11f)					
Scenic Partial Retention Middleground (MA-11c)	Partial Retention	10,862	22		
Scenic Partial Retention Foreground (MA-11d)					
Developed Recreation Sites (MA-12a/b)					
Corps of Engineers Land					
Administrative Sites (MA-13b)					
LSR/Riparian Reserves - Former Modification Allocations (General Forest and Scenic Modification Middleground)					
Scenic Modification Middleground (MA-11a)	Modification	2,970	6		
General Forest (MA-14a)	Maximum Modification	28,853	58		
Private & State Timber Lands					
Power line Corridor				468	1
Detroit Lake/Dam Powerhouse				3,318	7
Detroit and Idanha				440	1
Totals		49336	100		

Visual Quality Objectives



2. What are the highest priority issues or resource concerns associated with scenic quality?

- a. Given existing vegetation patterns and land allocations, an important issue is the management of the landscape to maintain and/or enhance the inherent beauty of the North Santiam Viewshed. In some places, the current land allocation does not meet the intent of scenic resource management.
- b. Private lands visible from Detroit Lake are managed intensively for timber production, and do not consider the scenic sensitivity of the surrounding area. People often confuse these lands as being federally owned.
- c. An important issue to reservoir users and highway travelers is preservation of the scenic backdrop of Detroit Lake, an important aspect of Detroit's economic well-being.
- d. The power line corridor is a concern because it detracts from overall scenic quality in the Detroit Tributaries watershed.
- e. US Army Corps of Engineers owns much of the land surrounding the reservoir, however, the land and its resources are managed by the Forest Service. Although management of these lands has considered scenic resources, no Management Area Standard and Guidelines have been officially adopted to these areas.

3. What are the management direction/activities, human uses or natural processes that affect scenic quality?

a. Current condition

iv-11: What is the existing condition of the scenic resource, and how do we manage the landscape to maintain and/or enhance the inherent beauty of the Detroit Tributaries viewshed?

Existing Visual Condition

At this time, 32% of the Detroit Tributaries is composed of stands in a mid seral stage with pole and small size tree classes (Table IV-9). Seventeen percent of the watershed comprises a early seral stage with seedlings and sapling size stands while 15% of the area contains a mix of medium and large size trees in a late seral stage. Since size classes on private and state lands are not tracked, their condition is unknown for 27% of the watershed. Ten percent of land is non-forested such as lakes and meadows. Approximately, 5% of the total area has relatively new harvest units considered in disturbed condition.

Table IV-9: Existing Visual Condition - Size classes by Management Allocation

Mgmt Area	Early Seral		Mid Seral		Late Seral		Non-Forest	Un-known	Total Acres
	Seed-lings	Sap-lings	Poles	Small Trees	Med. Trees	Large Trees			
5a	0	5	0	202	47	0	32	0	286
7	2	112	55	172	331	0	155	0	827
11a	213	794	340	806	807	0	9	0	2,969
11c	127	1025	1984	2467	1125	0	188	0	6,916
11d	2	39	31	1109	112	0	31	0	1,324
11f	52	11	89	712	27	0	116	0	1,007
12a	0	0	8	107	0	0	2	0	117
12b	0	0	0	205	0	0	23	0	228
13a	3	126	108	196	1	0	50	0	484
13b	0	0	9	35	0	0	33	0	77
14a	1480	3522	1196	2397	3535	98	577	0	12,805

Mgmt Area	Early Seral		Mid Seral		Late Seral		Non Forest	Unknown	Total Acres
	Seedlings	Saplings	Poles	Small Trees	Med. Trees	Large Trees			
16a	0	95	0	7	39	0	1	0	142
16b	24	13	77	290	924	2	10	0	1,340
Private	359	318	865	418	8	0	152	7491	9,611
County	26	0	18	105	0	0	0	0	149
State	2	8	340	493	150	0	23	5726	6,742
COE	61	180	103	601	14	0	51	0	1,010
water	0	0	0	0	0	0	3300	0	3,300
Acres	2,351	6,248	5,223	10,322	7,120	100	4,753	13,217	49,334
Percent	5%	12%	11%	21%	14%	<1%	10%	27%	100%

Detroit Lake is a prominent scenic attraction within this watershed. Views of the lake and surrounding landscape, including nearby Mt. Jefferson, can be seen from many points along Highway 22. Since the construction of the dam, many views are being obstructed by vegetation growth. Viewing opportunities have been created by implementing various vegetation management practices including, thinning, regeneration harvests and pruning.

The Power line corridor occupies 468 acres. This unnatural feature along with its high contrast towers dominates many segments along the highway. The wide clearances are noticed in several areas such as from Detroit Lake where the casual viewer can see an expansive view of the landscape. Areas where the electric transmission line is visible from the highway would normally be classified as retention foreground. It is obvious that these areas will never achieve this objective but modification at best.

Approximately 1,126 acres of land surrounding Detroit Lake is owned by Army Corps. of Engineers or are Forest Service lands withdrawn for COE purposes. The Forest Service administers these lands, however, no formal standards and guidelines have been developed for these areas within the Forest Plan. These lands are an important scenic resource and should be managed to maintain Visual Quality Objectives of retention to partial retention.

There are areas within the North Santiam Viewshed that are inconsistent with scenery management principles set forth by current handbook direction. For example, middleground land visible from the town of Detroit currently has a general forest allocation and meets all the criteria for scenic middleground management. Detroit Lake is a visually sensitive area due to the amount and nature of use it receives, and expansive views from the lake surface. In some areas, land allocation designations were not applied from the perspective of the lake. On the other hand, there are also areas within the Viewshed that are not visually sensitive due to their juxtaposition within the landscape, and currently have a designated scenic allocation.

The Detroit Tributaries has a history of large stand replacement fires which is still evident today. In the event of large fire or landslide, the visual character can dramatically change the landscape. In high risk areas for large events, short term visual degradation can occur until the area recovers with new regeneration.

Viewshed Condition Analysis

The Forest Plan's goal for scenic management areas are to "maintain desired visual characteristics of the forest landscape through time and space." Achieving long-term visual quality goals in a forest environment works in direct proportion to how well time and space are managed. Time sequence over a landscape involves combinations of old growth and younger age classes. This provides visual variety but will shift in location as trees are harvested and new ones grow to take their place. Planning this dynamic situation through space and time is important to achieve an attractive sequence of views. To address the time and space component, maximum disturbance rates and harvest rate objectives for each allocation was assigned to each subdrainage to determine area available for harvest over the landscape (*Table IV-10*).

HRO = Harvest Rate Objective outlined in Forest Plan Standards and Guidelines

EDC = Existing Disturbed Condition

MDC = Maximum Disturbed Condition

FP = Forest Plan

PP = President's Plan

Note: Those subdrainages that have existing disturbed condition and harvest rates shaded, have rates in excess of the standard within that allocation.

Table IV-10: North Santiam Viewshed Condition Analysis

Mgmt Area/Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Disturbed Allowed Acres (FP)	Max Disturbed Allowed Acres (PP)	Visually Disturbed Acres (FP)	Visually Disturbed Acres (PP)	Avail. Harvest MDC (FP)	Avail. Harvest MDC (PP)	Harvest Rate Objective Acres (FP)	Harvest Rate Objective Acres (PP)	Current Decade Harvest FP	Current Decade Harvest PP	Avail. Harvest (HRO) FP	Avail. Harvest (HRO) PP
11a	0.12	0.114	0.193	0.24	17810	12986	4894	3117	1175	1486	944	1631	231	1558	587	0	0	1558	587
*03I	0.12	0.00	0.00	0.24	65	23	20	6	5	0	0	6	5	3	2	0	0	3	2
*03J	0.12	0.10	0.11	0.24	1024	839	733	201	176	84	82	117	94	101	88	2	0	99	88
*03K	0.12	0.00	0.00	0.24	241	218	192	52	46	0	0	52	46	26	23	0	0	26	23
*03M	0.12	0.00	0.00	0.24	52	52	52	12	12	0	0	12	12	6	6	0	0	6	6
07U	0.12	0.47	0.40	0.24	1964	529	502	127	120	249	202	-122	-82	63	60	2	0	61	60
*78B	0.12	0.00	0.00	0.24	877	489	348	117	84	0	0	117	84	59	42	0	0	59	42
78C	0.12	0.00	0.00	0.24	207	108	76	26	18	0	0	26	18	13	9	0	0	13	9
78D	0.12	0.26	0.61	0.24	1080	605	102	145	24	159	62	-14	-38	73	12	45	1	28	11
78E	0.12	1.83	0.00	0.24	140	35	0	8	0	64	0	-56	0	4	0	0	0	4	0
78F	0.12	0.04	0.06	0.24	1304	846	18	203	4	35	1	168	3	102	2	2	1	100	1
78G	0.12	0.15	0.18	0.24	703	434	301	104	72	66	55	38	17	52	36	1	1	51	35

Mgmt Area/ Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Dis- turbed Allowed Acres (FP)	Max Dis- turbed Allowed Acres (PP)	Visu- ally Dis- turbed Acres (FP)	Visu- ally Dis- turbed Acres (PP)	Avail. Har- vest MDC (FP)	Avail. Har- vest MDC (PP)	Har- vest Rate Objec- tive Acres (FP)	Har- vest Rate Objec- tive Acres (PP)	Cur- rent De- cade Har- vest FP	Cur- rent De- cade Har- vest PP	Avail. Har- vest (HRO) FP	Avail. Har-vest (HRO) PP
78H	0.12	0.08	0.14	0.24	308	184	102	44	24	14	14	30	10	22	12	15	14	7	-2
78I	0.12	0.03	0.04	0.24	816	611	429	147	103	16	16	131	87	73	51	0	0	73	51
*78J	0.12	0.11	0.13	0.24	592	370	300	89	72	39	39	50	33	44	36	39	39	5	-3
78L	0.12	0.11	0.05	0.24	453	163	101	39	24	18	5	21	19	20	12	11	2	9	10
78S	0.12	0.00	0.01	0.24	764	614	399	147	96	3	3	144	93	74	48	0	0	74	48
78T	0.12	0.02	0.00	0.24	679	380	2	91	0	6	0	85	0	46	0	0	0	46	0
78W	0.12	0.04	0.00	0.24	769	605	0	145	0	24	0	121	0	73	0	0	0	73	0
79A	0.12	0.00	0.00	0.24	457	367	0	88	0	0	0	88	0	44	0	0	0	44	0
79B	0.12	1.00	0.00	0.24	290	2	0	0	0	2	0	-2	0	0	0	0	0	0	0
79C	0.12	0.09	0.00	0.24	716	233	0	56	0	21	0	35	0	28	0	0	0	28	0
79D	0.12	0.00	0.00	0.24	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79E	0.12	1.69	1.82	0.24	492	86	65	21	16	145	118	-124	-102	10	8	0	0	10	8
79F	0.12	0.63	0.58	0.24	1000	449	336	108	81	282	196	-174	-115	54	40	4	0	50	40
79G	0.12	0.30	0.40	0.24	319	210	127	50	30	62	51	-12	-21	25	15	0	0	25	15
79H	0.12	0.15	0.18	0.24	716	484	304	116	73	74	55	42	18	58	36	5	4	53	32
79I	0.12	0.03	0.04	0.24	451	336	266	81	64	10	10	71	54	40	32	0	0	40	32

Mgmt Area/ Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Disturbed Allowed Acres (FP)	Max Disturbed Allowed Acres (PP)	Visually Disturbed Acres (FP)	Visually Disturbed Acres (PP)	Avail. Harvest MDC (FP)	Avail. Harvest MDC (PP)	Harvest Rate Objective Acres (FP)	Harvest Rate Objective Acres (PP)	Current Decade Harvest FP	Current Decade Harvest PP	Avail. Harvest (HRO) FP	Avail. Harvest (HRO) PP
79J	0.12	0.32	0.30	0.24	379	191	114	46	27	62	34	-16	-7	23	14	0	0	23	14
79K	0.12	0.09	0.25	0.24	855	583	4	140	1	51	1	89	0	70	0	7	0	63	0
92Q	0.12	0.00	0.00	0.24	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0
11C	0.10	0.141	0.130	0.20	12984	7063	3509	1413	702	994	456	419	246	706	351	0	0	706	351
*03A	0.10	0.00	0.00	0.20	47	40	40	8	8	0	0	8	8	4	4	0	0	4	4
*03B	0.10	0.00	0.00	0.20	604	288	241	58	48	0	0	58	48	29	24	0	0	29	24
*03C	0.10	0.14	0.12	0.20	949	464	312	93	62	65	38	28	24	46	31	0	0	46	31
*03D	0.10	0.08	0.13	0.20	897	534	339	107	68	43	43	64	25	53	34	23	23	30	11
*03E	0.10	0.03	0.04	0.20	1555	652	437	130	87	17	17	113	70	65	44	5	5	60	39
*03F	0.10	0.02	0.02	0.20	812	309	230	62	46	5	5	57	41	31	23	2	2	29	21
*03I	0.10	0.00	0.00	0.20	79	33	14	7	3	0	0	7	3	3	1	0	0	3	1
*03J	0.10	0.21	0.17	0.20	444	380	326	76	65	81	57	-5	8	38	33	4	0	34	33
*03M	0.10	0.00	0.00	0.20	202	150	132	30	26	0	0	30	26	15	13	0	0	15	13
*78A	0.10	0.00	0.00	0.20	305	231	167	46	33	0	0	46	33	23	17	0	0	23	17
*78B	0.10	0.00	0.00	0.20	118	98	92	20	18	0	0	20	18	10	9	0	0	10	9
78D	0.10	0.28	0.18	0.20	1077	465	106	93	21	128	19	-35	2	47	11	72	19	-26	-8

Mgmt Area/Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Disturbed Allowed Acres (FP)	Max Disturbed Allowed Acres (PP)	Visually Disturbed Acres (FP)	Visually Disturbed Acres (PP)	Avail. Harvest MDC (FP)	Avail. Harvest MDC (PP)	Harvest Rate Objective Acres (FP)	Harvest Rate Objective Acres (PP)	Current Decade Harvest FP	Current Decade Harvest PP	Avail. Harvest (HRO) FP	Avail. Harvest (HRO) PP
78E	0.10	0.00	0.00	0.20	97	87	0	17	0	0	0	17	0	9	0	0	0	9	0
*78J	0.10	0.00	0.00	0.20	104	102	81	20	16	0	0	20	16	10	8	0	0	10	8
*78K	0.10	0.00	0.00	0.20	967	560	346	112	69	0	0	112	69	56	35	0	0	56	35
78L	0.10	0.00	0.00	0.20	115	50	28	10	6	0	0	10	6	5	3	0	0	5	3
78S	0.10	0.00	0.00	0.20	27	12	8	2	2	0	0	2	2	1	1	0	0	1	1
78T	0.10	0.03	0.00	0.20	245	166	1	33	0	5	0	28	0	17	0	0	0	17	0
78V	0.10	0.05	0.00	0.20	354	272	0	54	0	14	0	40	0	27	0	0	0	27	0
78W	0.10	0.14	0.00	0.20	489	257	0	51	0	35	0	16	0	26	0	0	0	26	0
79A	0.10	0.05	0.00	0.20	542	442	0	88	0	22	0	66	0	44	0	1	0	43	0
79B	0.10	0.00	0.00	0.20	22	21	0	4	0	0	0	4	0	2	0	0	0	2	0
79C	0.10	0.58	0.00	0.20	567	133	0	27	0	77	0	-50	0	13	0	0	0	13	0
79D	0.10	0.36	0.61	0.20	195	115	59	23	12	41	36	-18	-24	12	6	0	0	12	6
79E	0.10	0.35	0.40	0.20	1379	777	491	155	98	269	196	-114	-98	78	49	0	0	78	49
79F	0.10	0.80	0.78	0.20	113	70	58	14	12	56	45	-42	-33	7	6	0	0	7	6
79K	0.10	0.38	0.00	0.20	678	354	0	71	0	136	0	-65	0	35	0	19	0	16	0
11F	0.05	0.096	0.149	0.10	6396	4498	1845	450	185	433	274	17	-90	225	92	0	0	225	92

Mgmt Area/Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Disturbed Allowed Acres (FP)	Max Disturbed Allowed Acres (PP)	Visually Disturbed Acres (FP)	Visually Disturbed Acres (PP)	Avail. Harvest MDC (FP)	Avail. Harvest MDC (PP)	Harvest Rate Objective Acres (FP)	Harvest Rate Objective Acres (PP)	Current Decade Harvest FP	Current Decade Harvest PP	Avail. Harvest (HRO) FP	Avail. Harvest (HRO) PP
*03B	0.05	0.00	0.00	0.10	47	13	12	1	1	0	0	1	1	1	1	0	0	1	1
*03C	0.05	0.00	0.00	0.10	27	1	1	0	0	0	0	0	0	0	0	0	0	0	0
*03D	0.05	0.11	0.10	0.10	170	93	68	9	7	10	7	-1	0	5	3	10	7	-5	-4
*03E	0.05	0.00	0.00	0.10	28	22	14	2	1	0	0	2	1	1	1	0	0	1	1
*03F	0.05	0.00	0.00	0.10	159	78	47	8	5	0	0	8	5	4	2	0	0	4	2
*03I	0.05	0.00	0.00	0.10	25	20	17	2	2	0	0	2	2	1	1	0	0	1	1
*03J	0.05	0.00	0.00	0.10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
*03M	0.05	0.00	0.00	0.10	28	2	2	0	0	0	0	0	0	0	0	0	0	0	0
07U	0.05	0.38	0.32	0.10	390	348	311	35	31	131	101	-96	-70	17	16	2	0	15	16
78A	0.05	0.00	0.00	0.10	20	18	12	2	1	0	0	2	1	1	1	0	0	1	1
*78B	0.05	0.19	0.25	0.10	329	166	123	17	12	32	31	-15	-19	8	6	0	0	8	6
*78C	0.05	11.00	0.00	0.10	12	1	1	0	0	11	0	-11	0	0	0	0	0	0	0
78D	0.05	0.19	0.18	0.10	702	356	100	36	10	67	18	-31	-8	18	5	24	0	-6	5
78E	0.05	0.00	0.00	0.10	101	37	0	4	0	0	0	4	0	2	0	0	0	2	0
78F	0.05	0.11	0.00	0.10	289	228	51	23	5	26	0	-3	5	11	3	0	0	11	3
78G	0.05	0.00	0.00	0.10	91	62	38	6	4	0	0	6	4	3	2	0	0	3	2

Mgmt Area/ Psub	HRO	EDC (FP)	EDC (PP)	MDC	Total Acres	Suited & Avail. (FP)	Suited & Avail. (PP)	Max Dis- turb- ed Allow- ed Acres (FP)	Max Dis- turb- ed Allow- ed Acres (PP)	Vis- ually Dis- turb- ed Acres (FP)	Vis- ually Dis- turb- ed Acres (PP)	Avail. Har- vest MDC (FP)	Avail. Har- vest MDC (PP)	Har- vest Rate Objec- tive Acres (FP)	Har- vest Rate Objec- tive Acres (PP)	Cur- rent De- cade Har- vest FP	Cur- rent De- cade Har- vest PP	Avail. Har- vest (HRO) FP	Avail. Har-vest (HRO) PP
78H	0.05	0.00	0.00	0.10	11	8	3	1	0	0	0	1	0	0	0	0	0	0	0
*78K	0.05	0.00	0.00	0.10	153	118	17	12	2	0	0	12	2	6	1	0	0	6	1
78V	0.05	0.02	0.00	0.10	447	335	0	34	0	7	0	27	0	17	0	0	0	17	0
78W	0.05	0.00	0.00	0.10	96	85	0	9	0	0	0	9	0	4	0	0	0	4	0
79A	0.05	0.06	0.00	0.10	205	141	0	14	0	8	0	6	0	7	0	0	0	7	0
79C	0.05	0.00	0.00	0.10	546	410	1	41	0	1	0	40	0	21	0	0	0	21	0
79D	0.05	0.03	0.04	0.10	90	75	28	8	3	2	1	6	2	4	1	0	0	4	1
79E	0.05	0.08	0.13	0.10	1564	1190	720	119	72	100	91	19	-19	60	36	0	0	60	36
79F	0.05	0.12	0.27	0.10	312	247	92	25	9	30	25	-5	-16	12	5	0	0	12	5
79G	0.05	0.00	0.00	0.10	33	32	8	3	1	0	0	3	1	2	0	0	0	2	0
79H	0.05	0.00	0.00	0.10	89	79	35	8	4	0	0	8	4	4	2	0	0	4	2
79I	0.05	0.00	0.00	0.10	70	55	26	6	3	0	0	6	3	3	1	0	0	3	1
79J	0.05	0.00	0.00	0.10	162	133	62	13	6	0	0	13	6	7	3	0	0	7	3
79K	0.05	0.11	0.00	0.10	119	72	1	7	0	8	0	-1	0	4	0	0	0	4	0
92A	0.05	0.00	0.00	0.10	15	13	10	1	1	0	0	1	1	1	1	0	0	1	1
92Q	0.05	0.00	0.00	0.10	65	59	45	6	5	0	0	6	5	3	2	0	0	3	2

Overall existing disturbed condition for all Scenic allocations within the North Santiam Viewshed is consistent with Forest Plan Standards. Currently within the North Santiam Viewshed, MA-11f has met the maximum disturbed condition percentage, and no regeneration harvests can take place until this management area recovers. An analysis was completed looking at existing disturbed conditions within Detroit Tributaries watershed by subdrainage to see how regeneration harvests were distributed (*Table IV-10*). Overall, Heater (03j), Hall's Ridge (03d), and Dry (78b) have the highest disturbed condition rate indicating where the most recent harvest activity has occurred. These subdrainages are above desired disturbed condition. The most restrictive acreage between harvest rates and maximum disturbance allowances should be used as a guideline for planning future regeneration harvests in the Detroit Tributaries in order to best distribute management activities. A portion of MA-11d along the French Creek Trail lies within this watershed. Currently, there are no created openings within this management area, and seven acres are potentially available for regeneration harvest.

Although recent harvest activities are currently consistent with Forest Plan standards, the sizes, arrangements, and geometric character of treatments over the past fifty years have had a lasting effect on the scenic quality of the area. The visibility, distribution and concentration of various treatments in contrast with older uncut stands contribute significantly to the current quality of the scenic resources. Currently, 206 stands are inconsistent with 1990 Forest Plan standards for maximum created opening sizes due to regeneration harvest activities. These stands were harvested prior to the current Forest Plan, primarily during the 1980's. Total acreage of these stands is 2,463 acres. To the casual viewer, the Existing Visual Condition of the landscape in the Detroit Tributaries can be described as ranging from Slightly to Heavily Altered.

Trend

The future visual condition of the watershed is expected to improve over current conditions when considering several developments and trends affecting Forest land management activities. As Forest managers begin to focus more attention on balancing human use and product extraction with management of natural processes the appearance of the watershed, in time, is expected to approach a Visual Condition of Moderately to Slightly Altered.

With the development of the Forest Plan and associated standards for management of scenic resources, including the control of harvest rates, unit sizes and shapes, treatment alternatives, and methods such as thinning and individual tree selection, the design and distribution of activities within the watershed are expected to be less apparent to the casual viewer.

Implementation of the Forest Plan as amended by the 1994 President's Plan; which allocated land for the preservation of Late Successional Reserves, increased the size of riparian reserves, reduced annual harvest rates, and established standards for management of a wide range of forest resources, is expected to have a beneficial effect on the quality of the scenic resources in the future.

This watershed contains many acres of second growth within scenic allocations. These stands will primarily have commercial thinning treatments prescribed which is less likely to impact the scenic resource than regeneration harvests.

c. Reference condition

iv-12. What is the historical scenic condition in the watershed?

Scenic quality was heavily altered early due to timber harvesting and history of large wildfires which is still evident today. For more information, refer to the reference conditions under Human uses.

d. Comparison of current and reference condition

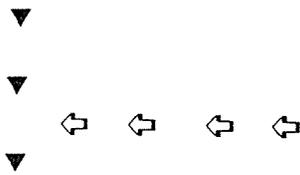
iv-13. What are the natural and human causes of change between historical and current scenic conditions?

Conditions

<p>Reference- Prior to Forest Management: Fire was the predominant mechanism controlling scenic quality.</p>
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Conditions

Major Causes of Change



Construction of Detroit and Big Cliff dams, Highway 22 and the powerline corridor.

Settlement within the local area created the need for timber and jobs

Improved Access and resources for fire fighting

Demand for timber

Reference- Forest Management to 1994:

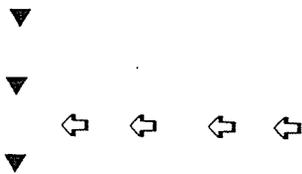
Scenic quality was heavily altered due to timber harvesting and a history of large wild fires.

Human made features, such as the dams, Highway 22, and the powerline corridor significantly altered the landscape.

Wild fires smaller than in the past due to improvements in access and resources.

Private lands do not have scenic quality standards, and private timber management as an effect on the scenic quality of the watershed.

As of 1990, visual land allocations have changed the way visually sensitive areas are managed



Timber Management and Road Construction

1990 Forest Plan

Current - 1994 to Present:

See Reference- Forest Management to 1994

Created opening size: Opening size, especially in visual allocations, limit options for current regeneration harvest due to past harvest activity.