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## SECTION 3

### IMPLEMENTATION PLAN

#### DECADE BY DECADE VIEW OF THE FOREST

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##### Introduction

The previous section (2) described general and specific landscape objectives. The next section (4) describes management guidelines designed to support these objectives and achieve desired future conditions.

The purpose of this section (3) is to describe how the objectives and guidelines will be implemented over time to make the desired future conditions a reality.

Implementation of this plan will result in long-term productivity of school trust lands and produce collateral benefits to other resources. To the fullest extent possible, consistent with the Department's trust obligations, the implementation plan will integrate the recommended goals and objectives for the 10 key resources identified by the Citizen Advisory Committee. Management activities will be consistent with trust obligations and Forest Resource Plan policies.

Trust obligations are of primary concern. Meeting these obligations requires significant short-term harvest of at-risk and dead timber without precluding options for long-term management.

The Department used several computer systems and models to assist in developing the specifics for plan implementation. Most notable was the Scheduling Network and Analysis Program (SNAP). This modeling allowed the Department to depict, over space (the forest) and time (80 years), various outcomes based on differing proposed land management activities and limitations. This model was not available for eastern Washington forests until it was developed as a planning tool for the Loomis planning effort. Had it been available at the same time as it was for western Washington forests, the beetle infestation would have been more easy to respond to.

Due to the size of the project and complexity of the issues, use of SNAP and other systems was essential in order to come up with the preferred draft landscape planning scenario described in this document. The modeling results are approximate and will be refined based on site-specific analysis of issues as actual operations are carried out. It is necessary to add here that, as with

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any model, it is limited by the actuality of what happens on the land. Over time, we expect to achieve the results as modeled, but long term monitoring will determine what management adjustments need to be made.

The environmental impact statement that accompanies this plan displays in detail the analysis of the proposed landscape plan and its potential impacts. Following are the major planning strategies and assumptions used in developing the proposed plan.

### **Harvest Scheduling**

A major consideration in harvest scheduling is the mountain pine beetle infestation in the lodgepole pine stands. Harvest operations in these stands need to be economically sound, operationally feasible, and environmentally reasonable. Operations will focus on at-risk and dead stands during the first decade, with heightened activity during the first half of the decade. Economic factors, such as road costs and timber markets, and environmental factors, per the Lynx Management Plan and the Forest Resources Plan, will help determine which areas will be harvested and when. This plan assumes that:

- \* Most dead wood is limited to pulp value after five years unless a specialty market for (house logs) material is available.
- \* Harvests will be primarily even-aged, with a secondary focus on partial cuts in conjunction with even-age harvest to take advantage of economic and operational efficiencies.
- \* Even-age harvest in dead stands reduces the potential for major fires and increases the opportunity for effective fire control activities.

### **Harvest Unit Sizes**

A variety of unit harvest sizes were considered. The option of up to 100-acre even-age units, with exceptions up to 200 acres, allows the Department to better disperse operations over the landscape while limiting road construction. Harvest units of 100 acres may encompass two or more units that are harvested sequentially. Combining nearby partial-cut units along with these even-age units will provide for economical harvest operations and increased financial return to the trust. Other advantages include:

- \* Larger unit size causes less habitat fragmentation than smaller unit size.
- \* Less environmental impacts associated with up to 100-acre units rather than larger units, with more flexibility for location and hydrologic maturity needs.
- \* Size is large enough to begin developing reasonable age-class mosaics across the landscape.
- \* Unit size is more economically efficient for carrying road construction and yarding costs than smaller units.

### **Late Successional Habitat**

The plan assumes that 25 percent of each subalpine fir zone (mesic and wet) and Douglas fir zone will be managed to provide late successional forest interior characteristics. It is anticipated that this habitat will be capable of sustaining wildlife communities dependant on this habitat structure and reduce the risk of species being listed as endangered or threatened under the federal Endangered Species Act. While this complicates operations, it protects the trust by

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decreasing the chance that future harvest operations will be more severely restricted due to problems with individual species, as is now occurring with the lynx. This approach implements Forest Resource Plan Policy No. 22 (pages 37-38).

### **Riparian Management Zones**

Variable-width riparian management zones (RMZ) are needed to provide minimum protection for fish and wildlife habitat, as required through Forest Resource Plan Policy No. 20 (pages 35-36). They also provide wildlife habitat corridors. Experts consulted during the planning process helped determine the following requirements:

- \* Post-harvest RMZ species composition and diameter distribution will reflect the pre-harvest stand.
- \* RMZs in lynx analysis units will contain a minimum of 180 trees per acre, and will be 300 feet wide when associated with wildlife travel routes.
- \* Generally RMZ widths will average 100 feet on each side of type 1-3 waters, 50 feet for type 4 waters, and as needed for type 5 waters to protect slope stability.
- \* Up to 30 percent volume removal will be allowed in RMZs, provided riparian functionality is not compromised.

### **Leave Trees**

The plan calls for approximately 13 leave trees per acre, including eight green trees per acre and five wildlife trees per acre in shelterwood harvest units. The green trees may be low-value, deformed trees representative of the stand, while the wildlife trees can be dead trees if any are available. This provision is also based on Policy No. 22 of the Forest Resource Plan, which attempts to maintain populations of wildlife species and reduce the risk of their being listed as endangered or threatened. Leave trees can help accomplish this goal by providing:

- \* Necessary habitat for cavity nesters.
- \* Development of late successional characteristics in some harvest units.

### **Hydrologic Maturity**

Hydrologic maturity refers to rates of evapotranspiration, interception of precipitation, and the influencing of snowmelt processes. As opposed to fully stocked or mature timber stands, new clearcut and shelterwood harvests are considered open and hydrologically immature, as are dead stands. A hydrologic maturity threshold of 60 percent has been established as necessary to meet water quality and quantity needs, limit peak flows, and limit stream channel degradation from abnormal peak flows.

### **Lynx Habitat**

Lynx habitat guidelines have been established in the Department's draft Lynx Management Plan. That plan, combined with the operations described in this Landscape Plan, provides a long-term strategy with respect to managing lynx habitat. Application of these guidelines will help preclude impacts on the trust from the possible future listing of lynx as endangered and avoid potential added regulatory restrictions. Key provisions include:

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- \* Harvest units that create forage habitat will generally not exceed 100 acres.
  - \* A minimum of 70% of the forested habitat in each LAU will be maintained as forage, travel, and denning habitat for lynx.  
(Natural openings are not counted as part of the non-lynx habitat constraint.)
  - \* Reproduction must reach seven feet tall in post harvested units (or aggregated blocks of harvest units equaling 200 acres) before adjacent harvest units can be even-age harvested.

### **Roads**

Roads are integral to management of the forest and are evaluated at the landscape level for planning purposes. Major planning considerations can be broken down into road design, construction, and maintenance.

- \* For economic and environmental reasons, road construction and active use will be limited to the minimum needed for forest management (see Potential Transportation Activity by Decade-page 38).
- \* Roads will be designed to fit the harvest strategy for the entire forest. Road systems serving only partial-cut harvests in lodgepole pine stands are generally not economical, and must be combined with shelterwood harvest units.

The rest of this section highlights the key strategies and limitations to be applied across the landscape, decade by decade, as the plan is implemented. It has taken years for the forest to reach its current state and it will take many years to successfully reach the desired future conditions outlined in this plan.

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**DECADE ONE**  
(July 1, 1996 - June 30, 2006)

Because of the current mountain pine beetle infestation, the Department's priority objective in protecting trust assets is to focus primarily on the harvest of at-risk and dead lodgepole pine affected by mountain pine beetle. Addressing forest health issues in other forest vegetation zones will be secondary. Harvest in this decade will be above historic levels and above what would be a sustainable harvest level. The harvesting of dead and dying timber above sustainable levels is consistent with State law and with the Forest Resource Plan Policy No. 4 as dead stands do not contribute to the calculations. (See Section 4 Timber Resource for further discussion.) At the same time, during this first decade, we will be working to improve habitat conditions for the lynx. Timber harvest plans will be carefully developed to meet lynx guidelines as proposed by the Department.

To achieve our objectives for forest health and revenue generation, the following harvest strategies will be followed. In order to capture as much value as possible from the dead and at risk timber, it is expected that more timber harvest will occur during the first half of the decade, and less during the second half. Through monitoring of mountain pine beetle spread and timber market values, harvest levels for any given year may be adjusted

**Subalpine fir and Douglas fir zones:**

Strategy: Harvest as much at-risk and dead timber as is operationally and economically feasible and within the range of acceptability for all planning strategies, including lynx protection.

- Harvest approximately 20 million board feet per year (20 MMBF/yr) the first five years, and approximately 14 MMBF/year for the second 5 years.
- It is anticipated that about 7,200 acres of dead stands and 2,500 acres of at risk stands will be shelterwood harvested, and an additional 1,500 acres of at risk stands will be partial cut during the first five years. Approximately 5,300 acres of at risk stands will be shelterwood harvested, and an additional 6,000 acres of at risk stands will be selection harvested during the second five years of the first decade.

**Ponderosa pine zone:**

- Uneven-aged harvest approximately 250mbf/year on about 50 acres per year.

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Sales will be designed to limit value losses from the mountain pine beetle by combining shelterwood harvest of dead or high at risk timber with partial cut harvesting of adjacent at risk stands (approximately 2-3mbf/acre removal of lodgepole pine > 8" dbh). This strategy will allow for removing dead and at risk lodgepole in the most economical and operationally feasible manner. SNAP computer modeling will be updated as new information is available and re-run to assist in economical harvest scheduling.

Approximately 20,000 acres of lodgepole pine are currently classified as dead stands (where trees killed by the mountain pine beetle equal at least 40% of the stand); approximately 28,000 acres are at risk of infestation and some percentage of mortality within this decade. Harvests will also address mistletoe, root rot and other pest and disease problems as needed.

A variety of harvest unit sizes and numbers of leave trees will be used to accommodate native wildlife habitat conditions in all vegetation zones. Harvest unit and road design will incorporate established guidelines for all resources and site specific recommendations from department specialists as needed. Shelterwood unit sizes will vary depending on site specific conditions. Normally, they will not exceed 100 acres.

Because most harvest activity will take place in lynx habitat, harvest units will be located and scheduled to maintain a network of forested corridors on either side of at least 300 feet wide along identified travel routes involving key ridgetops, riparian areas and saddles. Timber harvesting will be designed to improve lynx forage habitat over time. Currently, there is a critical shortage of lynx forage habitat in all lynx analysis units. Adequate forest cover for lynx (not less than 180 trees per acre) will be maintained through selective harvests. Existing denning habitat will be maintained or created during harvest operations.

Expansion of the road network will be necessary to provide access for forest management and forest protection needs. New roads will be built in accordance with landscape plan wildlife guidelines and maintained or closed to preserve water quality and reduce wildlife disturbance. Potentially 65 miles of secondary roads, plus most of the 200 miles of new roads will be closed when no longer needed for management activities. New roads will be restricted to forest management entry only (general public will be able to enter with only non-motorized vehicles.)

Timber harvest will re-establish hydrologic maturity more quickly than timber stands that die naturally over time from mountain pine beetles. Section 4 identifies guidelines for harvesting that will reduce the chances of soil erosion and mass wasting to protect the soil, water and fish resources. Harvests will also reduce fuel loading and long-term fire potential.

Certain field foresters will be trained to identify archaeological/cultural sites to ensure a higher likelihood of protection as management activities occur. Funding will be sought for the Department to take a more proactive role in surveying for archaeological and historical sites.

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Cattle grazing opportunities may increase as new harvest areas and roads increase available forage and mobility. A general increase in Animal Unit Months (AUMs) is not expected. Rather, there will be better dispersal and rotation of cattle. New guidelines for pasture rotation, stream protection, etc. will be implemented through the Coordinated Resource Management Plan (CRM) process where appropriate and monitored for desired results. Increased emphasis on inventory of stream and range conditions has already started and will be continued to determine where restoration is needed.

Recreation opportunities such as driving for pleasure remain constant as existing primary roads continue to be open to historic use. There will be an increased number of gates on secondary roads for protection of wildlife and water quality, and to help control the spread of noxious weeds. Scenic guidelines may be developed, and a formal recreation survey conducted if funding is available.

Proposed mineral activity will be assessed on a case by case basis and subject to SEPA. As inventory work identifying key wildlife habitats, riparian areas, sensitive plant communities, etc. is conducted, a database can be created that will provide more certainty for benefit/costs analysis of any proposals.

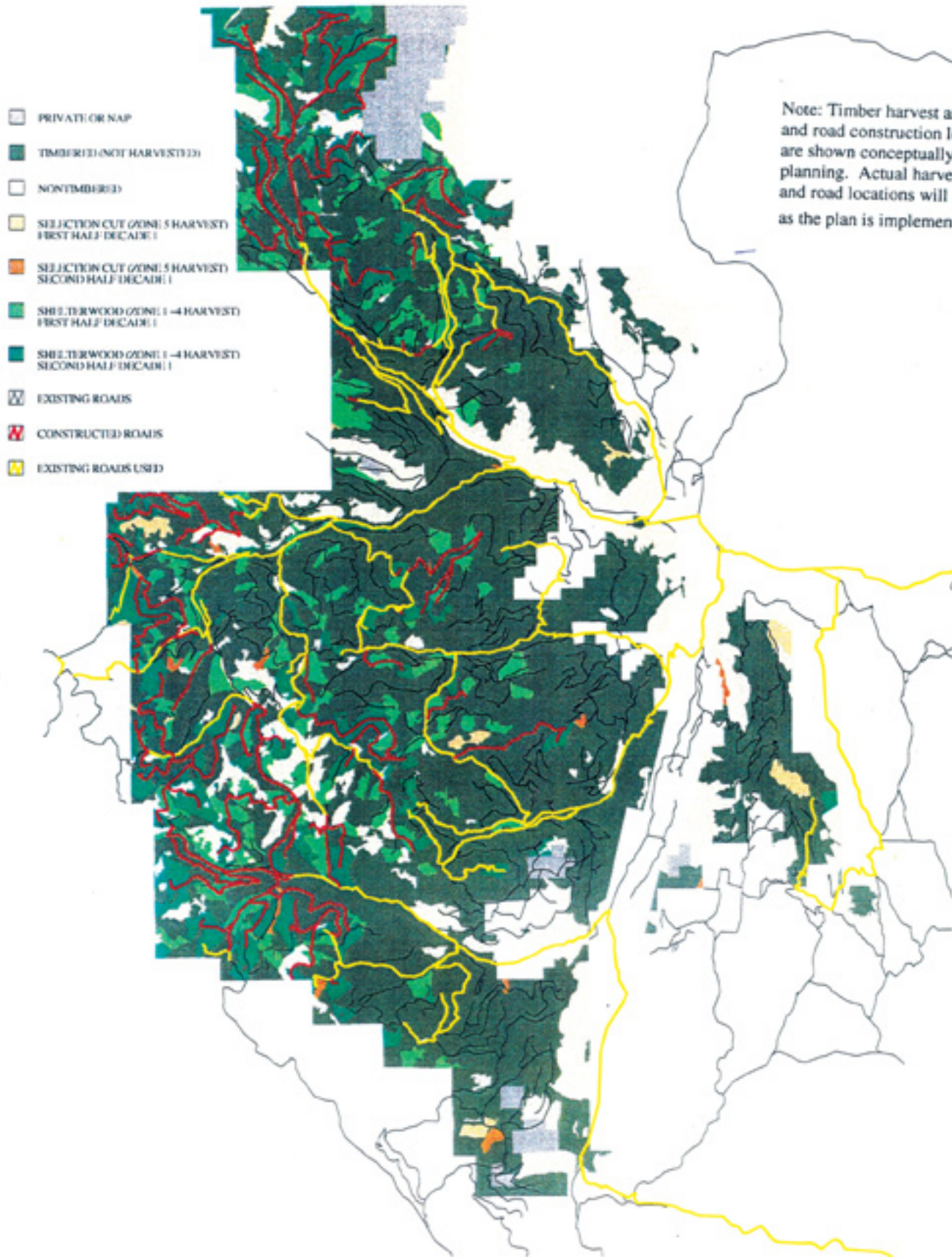
A number of funding issues discovered during planning will be pursued during the first decade. Funding will be necessary to complete watershed analysis projects, recreation inventory and survey work, archaeological and historical survey work, an improved soil inventory, and an evaluation of mineral potential. Additionally, alternative sources of funding will be sought for recreation and grazing improvements.

The following two maps depict:

- 1) A conceptual display of areas of harvest activity and road development during Decade One of the Planning Period based on landscape planning assumptions and guidelines. This map is not intended to show actual harvest locations, harvest acres, road locations and road miles.
- 2) Age class distribution across the landscape at the end of Decade One based on conceptual harvest assumptions.

# CONCEPTUAL HARVEST & ROAD NETWORK

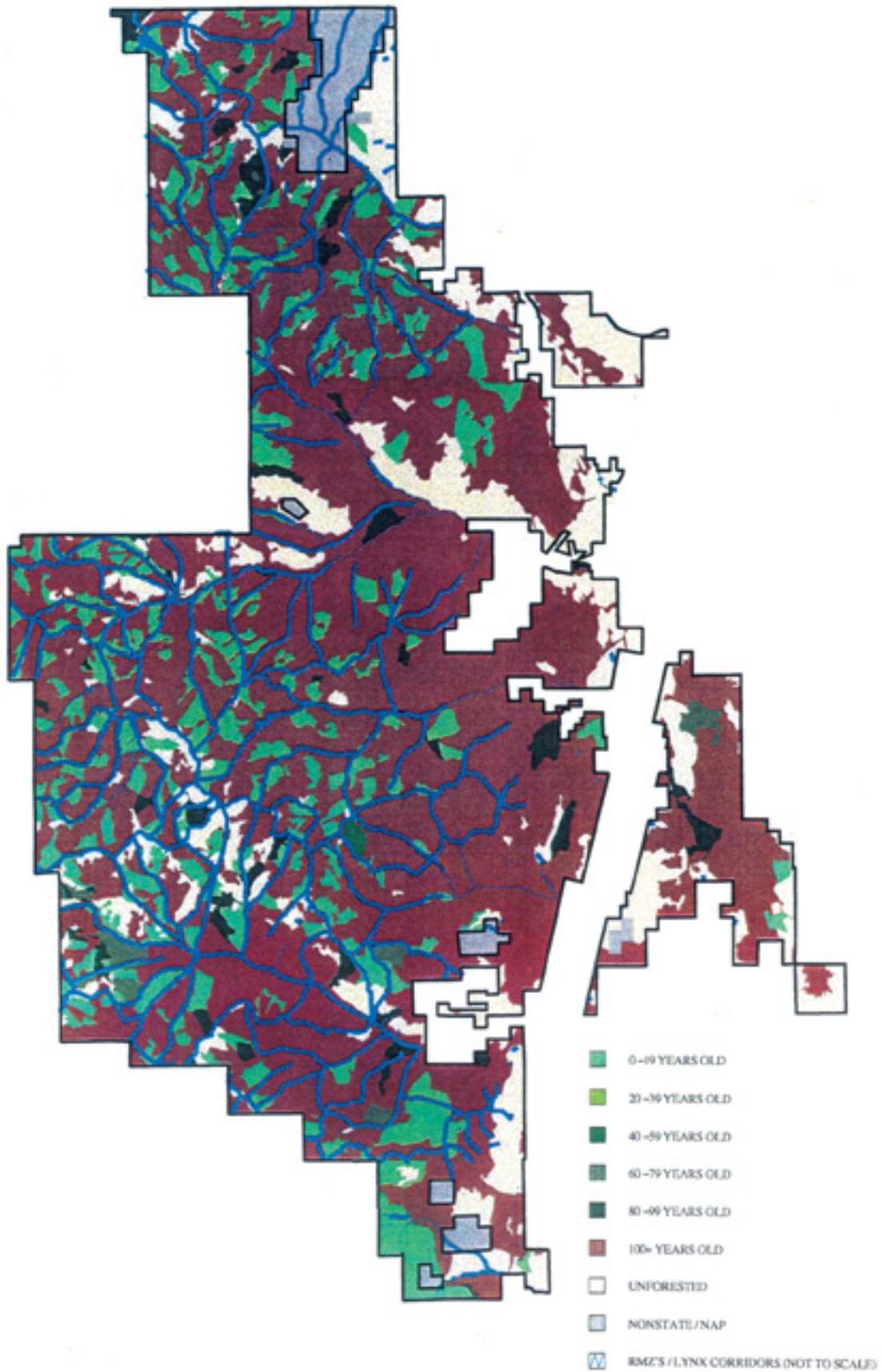
## DECADE 1



Note: Timber harvest areas and road construction locations are shown conceptually for planning. Actual harvest unit and road locations will be determined as the plan is implemented.



# YEAR 10 AGE CLASS MAP



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DECADE TWO  
(July 1, 2006 - June 30, 2016)

During this decade timber harvesting will continue with a forest health emphasis in all vegetation zones. Primary activity will shift from the subalpine fir zone to the Douglas fir zone, using shelterwood harvests to improve health-related conditions (stand structure, composition and function).

The following harvest strategies have been established:

**Subalpine fir and Douglas fir zones:**

- Strategies: Harvest using the appropriate silvicultural methods to recover value, reduce beetle risk and other forest health problems and maintain lynx forage.
- Shelterwood harvest approximately 8MMBF/year on approximately 1,000 acres annually, of which approximately 250 acres per year will include final harvest of “at risk” lodgepole pine stands that were initial section cut in Decade 1.

**Ponderosa pine zone:**

- Uneven-age harvest approximately 1MMBF of timber on 400 acres annually.

Harvest scheduling and site-specific designs will cultivate late seral characteristics and avoid future fragmentation in parts of the forest benefitting wildlife associated with late successional forests.

Harvest regimes will continue to be implemented. In the Douglas fir zone, root rot pockets and mistletoe infestation areas will be focused on for harvest. Harvesting in the ponderosa pine zone will remove Douglas fir invasions, convert areas back to ponderosa pine, and increase ponderosa pine spacing to reduce competition and susceptibility to the western pine beetle.

Stands harvested during the 1980's and the first decade are beginning to provide improved lynx habitat towards the end of the second decade. At the same time, management activities are maintaining and improving habitat of other wildlife species. Implementation of RMZ guidelines continue and progress is made towards the desired future condition of both fish and wildlife habitat.

As harvest locations change, approximately 150 miles of new road construction is anticipated. The majority of these roads, plus up to 40 miles of existing road will be closed to general public motorized use to reduce potential impacts to wildlife. The landscape objective of maintaining no more than 300 - 350 miles of active road at any one time in the forest should be achievable.

As funding becomes available, the Department continues to work with the Colville Confederated Tribe on identifying cultural sites through an archeological survey or other means. Identified sites will be protected in accordance with plan and site specific guidelines.

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Expanded access capabilities may make mineral exploration more feasible. Mineral activities would be handled on a case by case basis, subject to SEPA and all resource guidelines in this plan. Sensitive area information collected during the first decade should be available for further defining mineral exploration and mining needs or restrictions. Recreation survey information collected during the first decade should be available this decade for a final decision on recreational gold panning in the forest.

Grazing guidelines (Section 4) implemented voluntarily during the first decade now become permit requirements. Animal Unit Months (AUMs) may be recalculated, and increased or decreased based on range conditions. A relatively even distribution of timber harvesting throughout vegetation zones outside of late successional forest blocks may allow for improved grazing rotation.

Hydrologic maturity is improving in all watersheds. Continued rehabilitation of sediment sources as well as implementation of other guidelines (road maintenance and closure, soil erosion) should maintain water quality and fish habitat at acceptable levels and progress towards desired future conditions.

As recreation demands increase, baseline information from the recreation survey can be used to make appropriate accommodations, consistent with all resource guidelines and trust obligations. If statewide procedures are completed for scenic management and public use decisions, scenic guidelines can be developed for the Loomis Forest.

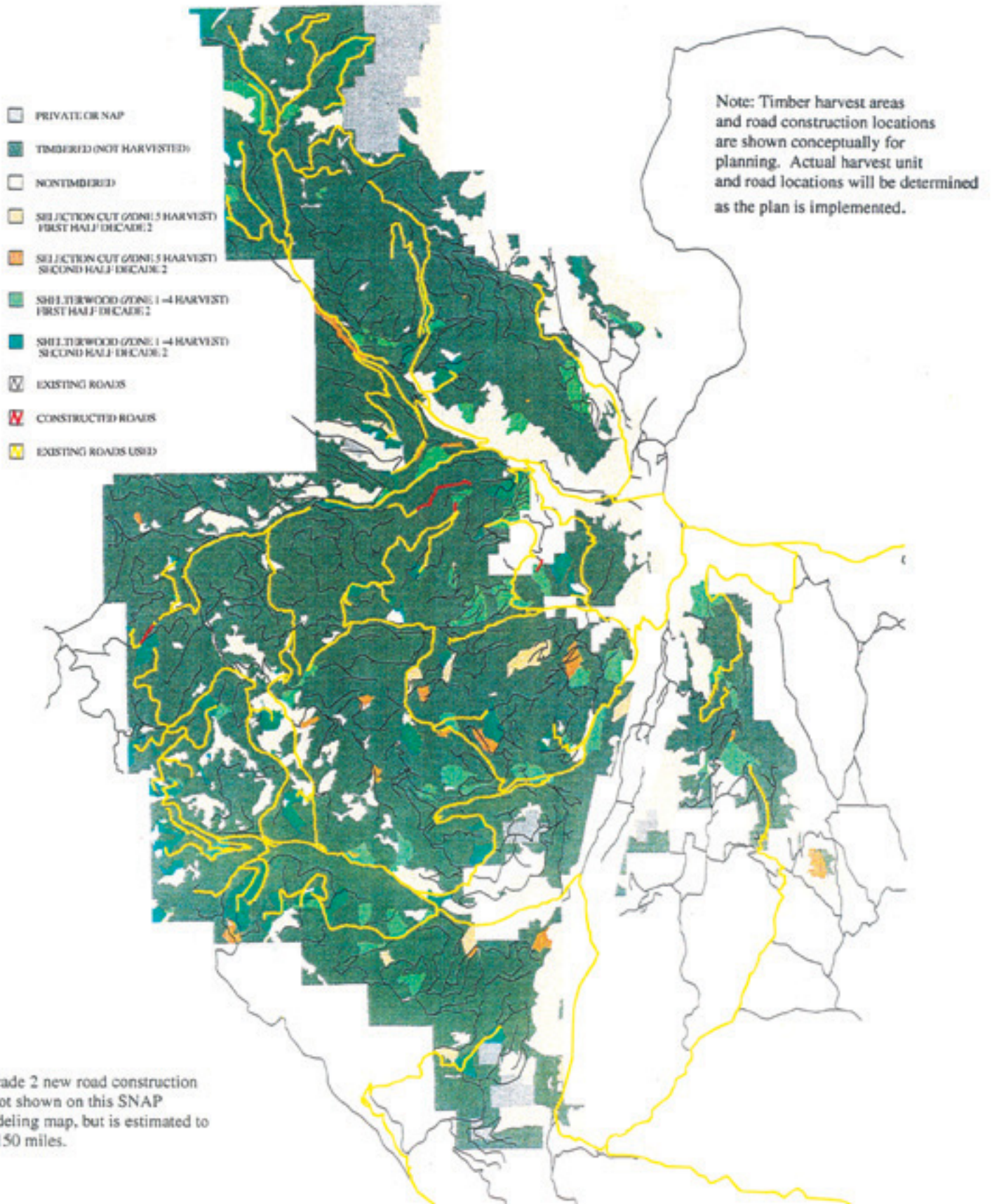
Watershed conditions, wildlife habitat, rangeland conditions, cattle impacts, and effectiveness of landscape guidelines are monitored to determine outcomes and needs for management changes.

The following two maps depict:

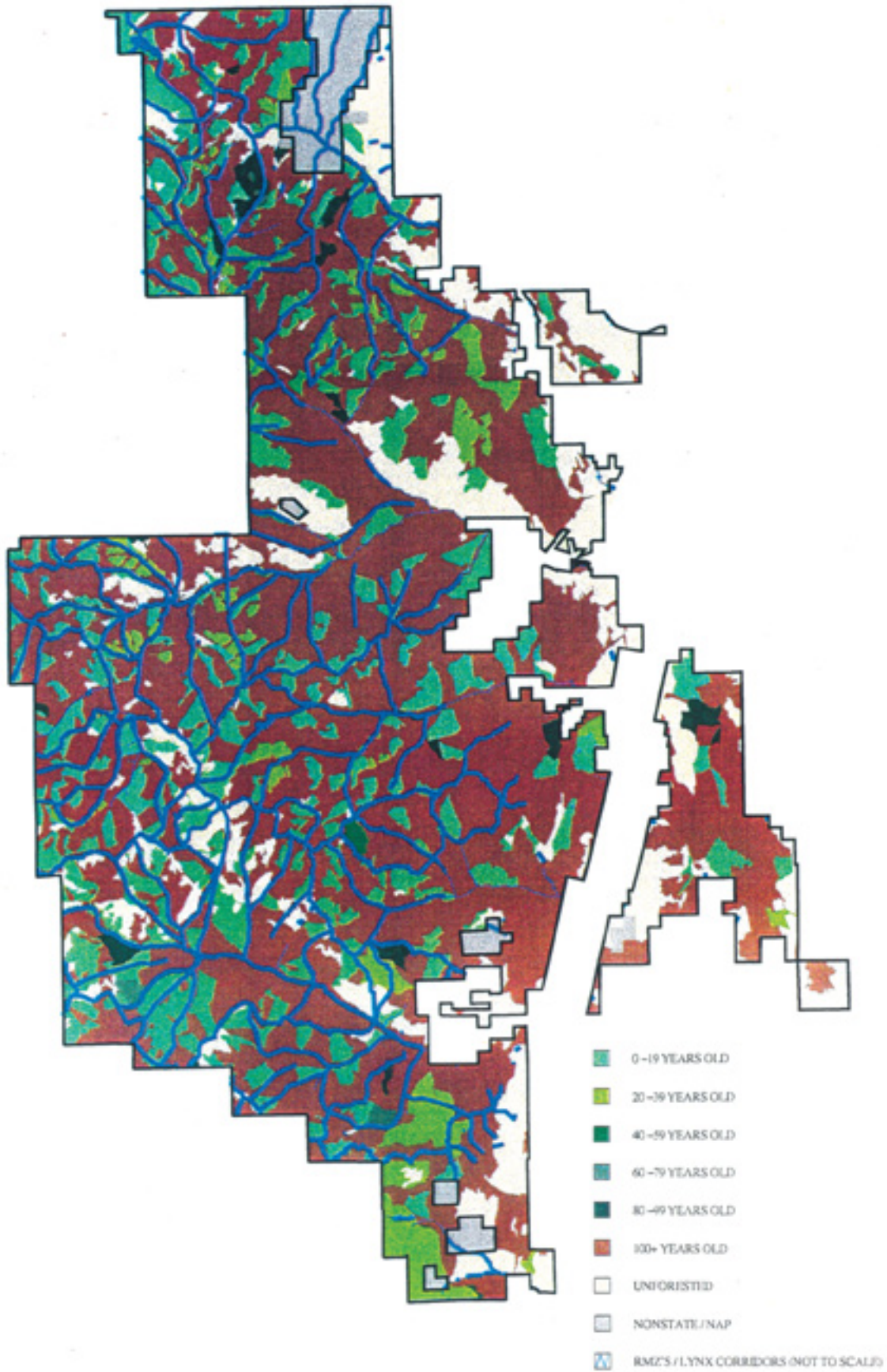
- 1) A conceptual display of harvest activity during Decade Two of the Planning Period based on landscape planning assumptions and guidelines. This map is not intended to show actual harvest locations, harvest acres, road locations and road miles. (The anticipated locations of new road construction has not been determined through SNAP modeling, but is estimated to be 150 miles.)
- 2) Age class distribution across the landscape at the end of Decade Two based on conceptual harvest assumptions.

# CONCEPTUAL HARVEST & ROAD NETWORK

## DECADE 2



## YEAR 20 AGE CLASS MAP



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**DECADES THREE - FIVE**  
(July 1, 2016 - June 30, 2046)

The level of management activity should remain fairly constant through these three decades as monitoring and adaptive planning continue and the forest progresses towards the desired future condition.

With forest health improved, timber harvest continues within sustained yield calculations and harvest proportionally equal in all vegetation zones. The forest is beginning to develop a mosaic of age classes across time and space that maintain wildlife habitat needs as outlined in wildlife landscape guidelines, including lynx habitat. Hydrologic maturity and riparian protection will be maintained according to landscape plan guidelines.

The following harvest strategies have been established:

**Subalpine fir and Douglas fir zones:**

- Shelterwood harvest 8MMBF/year on 800 acres annually. Approximately 400 acres/year in the Third Decade, will include final harvest of “at risk” lodgepole pine stands that were initially partial cut in Decade 1. The remainder of Decade 1 selection cut acres will be harvested in Decade 4.
- Small wood thin approximately 2MMBF/year on 500 acres annually.

**Ponderosa pine zone:**

- Uneven-aged harvest approximately 1MMBF/year of timber on 400 acres annually.

Harvest regimes will continue to be implemented. Modification of regimes and harvest methods will occur if necessary based on monitoring and adaptive management.

Minimal new road construction will be needed at this point in time. Some inactive closed roads may need to be temporarily reactivated to allow for small wood thinning harvests in portions of the subalpine fir zone.

Grazing monitoring and restoration projects should have reduced or avoided site specific damage concerns. Management actions will focus on improvement of native plant distribution and health.

All archaeological, cultural and historical sites in the forest should have been identified, with appropriate protection and recording measures in place.

Public recreation trends and needs will continue to be monitored as will recreation impacts on the forest. Necessary changes will be made consistent with plan guidelines for all resources based on monitoring and adaptive management.

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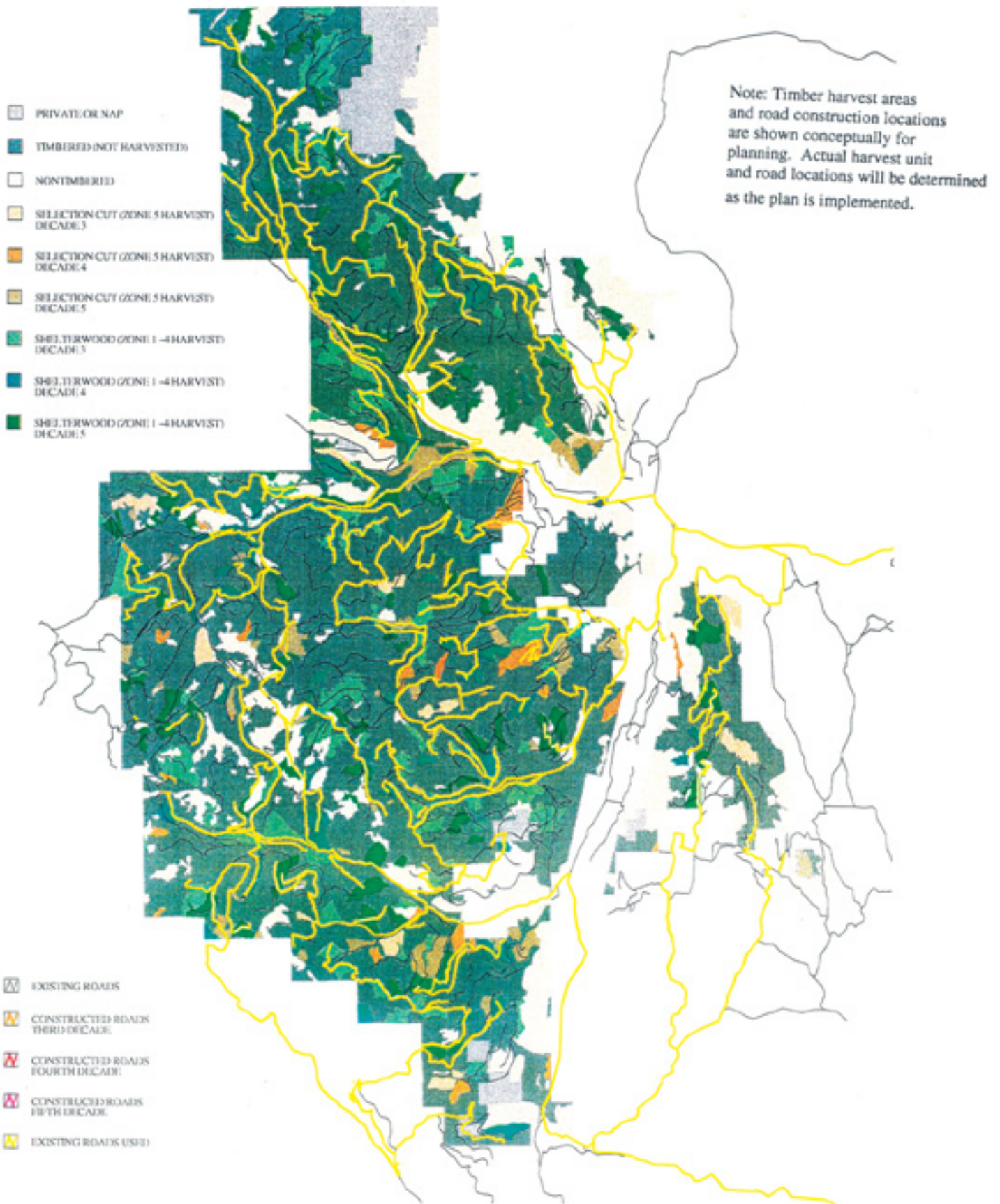
Mineral extraction, if any, will continue to be allowed under procedures and guidelines determined on a site specific basis. As technology changes, management strategies will be revised accordingly.

The following two maps depict:

- 1) A conceptual display of harvest activity during Decades Three through Five of the Planning Period based on landscape planning assumptions and guidelines. This map is not intended to show actual harvest locations, harvest acres, road locations and road miles.
- 2) Age class distribution across the landscape at the mid-point of Decades Three through Five and the mid-point of the planning period based on conceptual harvest assumptions.

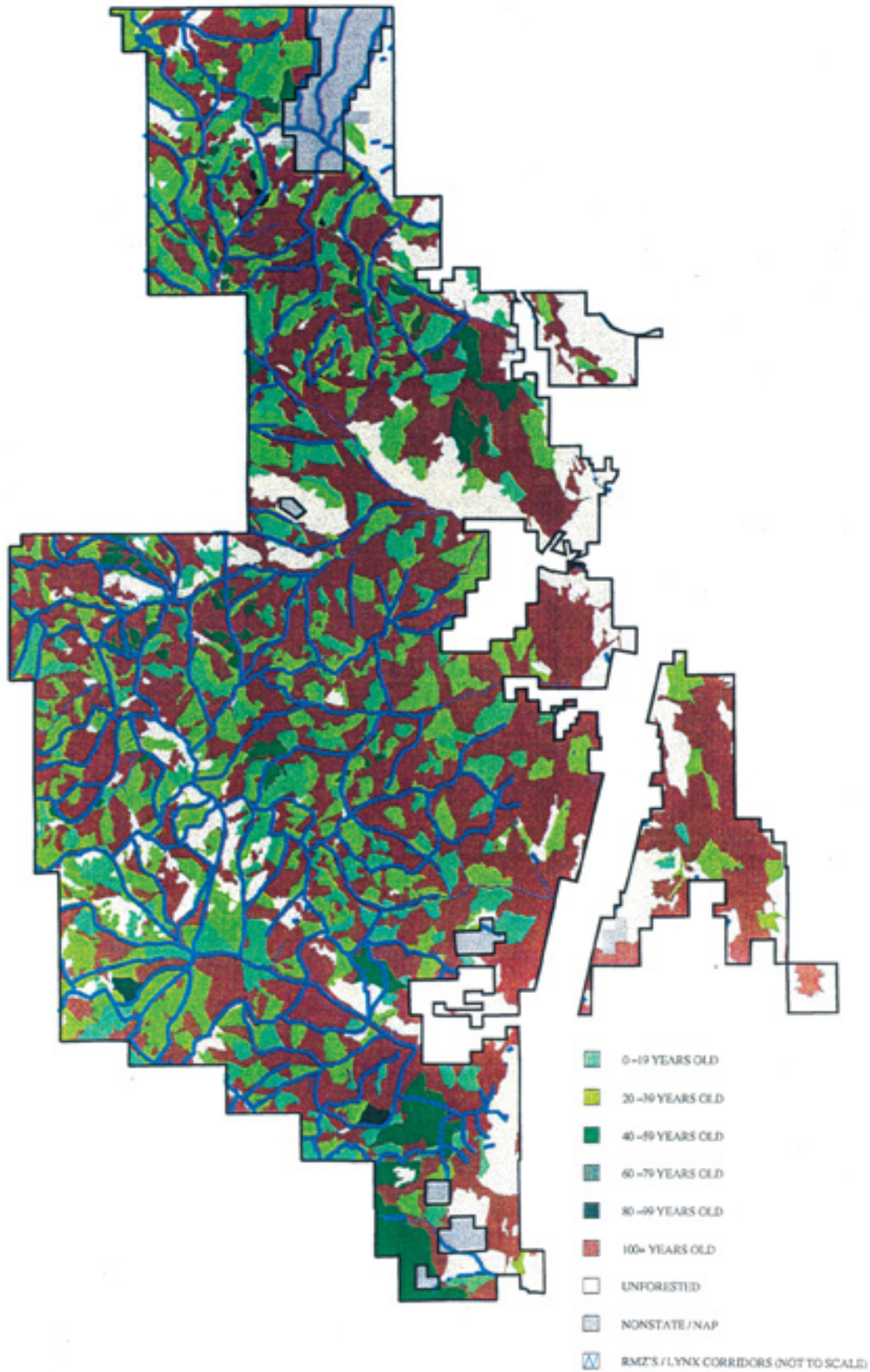
# CONCEPTUAL HARVEST & ROAD NETWORK

DECADES 3, 4 & 5





# YEAR 40 AGE CLASS MAP



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**DECADES SIX - EIGHT**  
(July 1, 2046 - June 30, 2076)

Implementation of this landscape plan has resulted in significant progress towards the desired future conditions of all resources.

Timber harvests will continue to address stand structure and species composition appropriate for each vegetation zone. It is likely that the healthier forest with managed stands will have much higher sustainable volume that currently identified. The following harvest strategies have been established:

**Subalpine fir and Douglas fir zone:**

- Shelterwood harvest 8MMBF/year on 700 acres annually.
- Small wood thin approximately 2MMBF/year on 500 acres annually.

**Ponderosa pine zone:**

- Uneven-aged harvest approximately 1MMBF/year on 400 acres annually.

Timber harvest designs will continue to create a vegetation and age class mosaic across the forest that provides a more resilient and resistant forest to avoid large scale insect and disease problems. Part of this landscape mosaic will include five large blocks of timber that have been managed in a manner to retain late successional characteristics for wildlife dependant on late successional habitat. Habitat for a wide variety of wildlife continues to be maintained.

Implementing management regimes and guidelines together with continued monitoring of resource conditions and adaptive management is attaining the desired future.

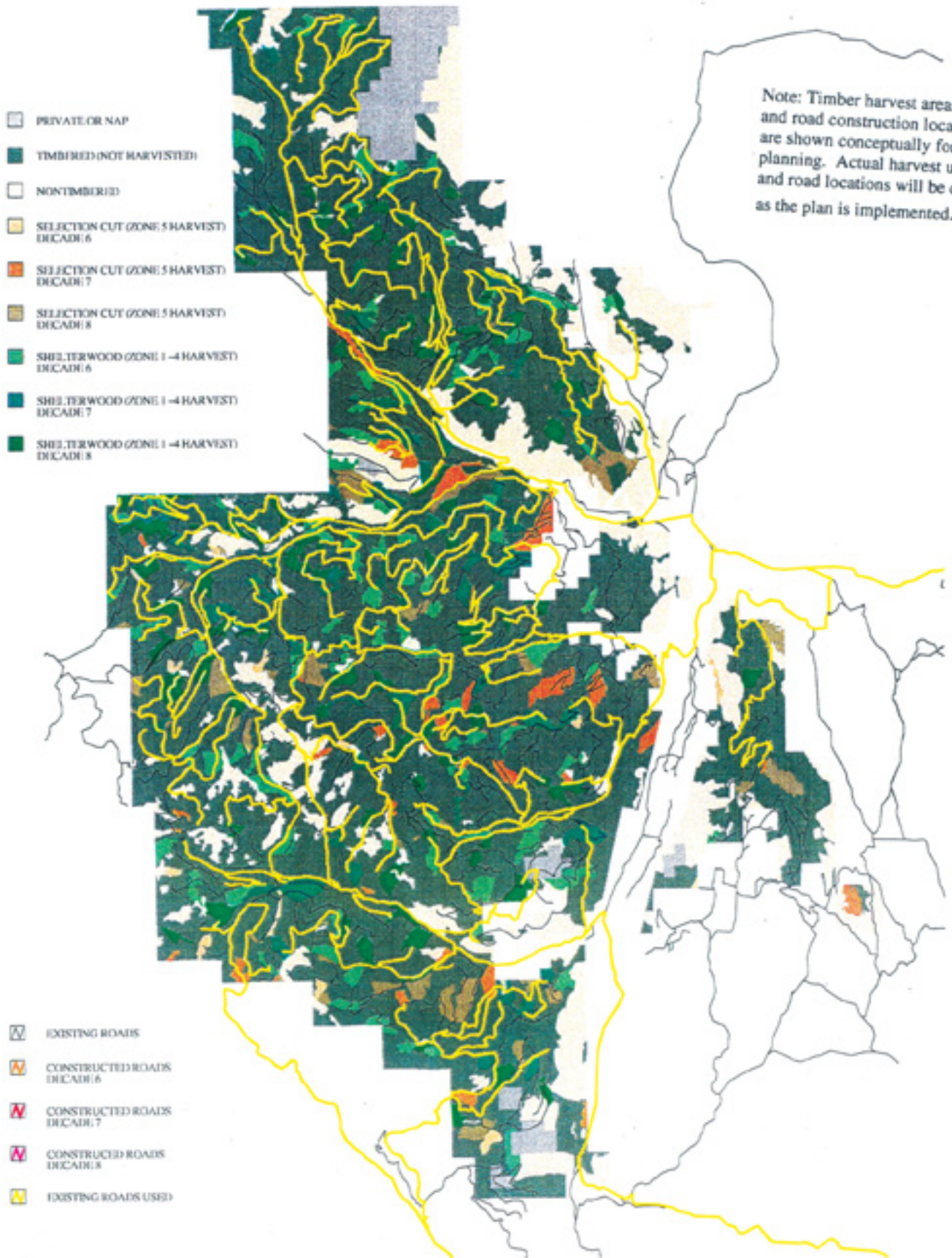
Monitoring of rangeland conditions will determine any changes in grazing AUMs and practices.

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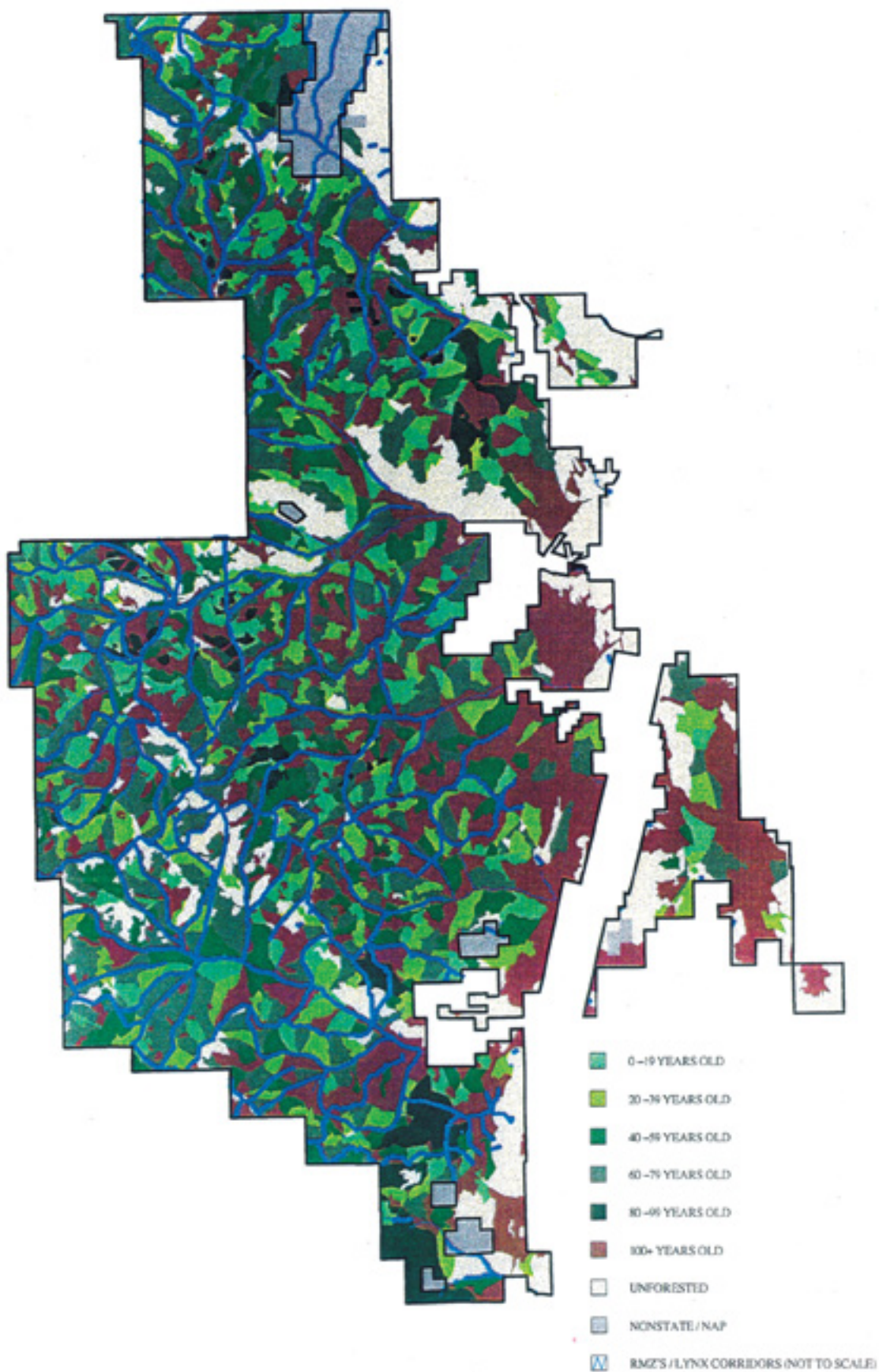
- 1) A conceptual display of harvest activity during Decades Six through Eight of the Planning Period based on landscape planning assumptions and guidelines. This map is not intended to show actual harvest locations, harvest acres, road locations and road miles.
- 2) Age class distribution across the landscape at the end of Decade Eight and the end of the planning period based on conceptual harvest assumptions.

# CONCEPTUAL HARVEST & ROAD NETWORK

DECADES 6, 7 & 8



# YEAR 80 AGE CLASS MAP



## Harvest Targets by Decade and Vegetation Zone

	Decade 1	Decade 2	Decades 3 - 5	Decades 6 - 8
Subalpine fir and Douglas fir zones	<p>First 5 years- 20mmbf/year Shelterwood (2,000 acres/year) and partial cut (300 acres/year)</p> <p>Second 5 years- 14 MMBF/year Shelterwood (1,000 acres/year) and partial cut (1,200 acres/year)</p>	8mmbf/year Shelterwood harvest on 1000 acres per year	<p>8mmbf/year Shelterwood harvest on 800 acres/yr</p> <p>2mmbf/year smallwood thin</p>	<p>8mmbf/year Shelterwood harvest on 700 acres/yr</p> <p>2mmbf/year smallwood thin</p>
Ponderosa pine zone	250mmbf/year uneven age on 50 acres/year	1mmbf/year uneven age on 400 acres/yr	1mmbf/year uneven age on 400 acres/yr	1mmbf/year uneven age on 400 acres/yr

## Potential Transportation Activity by Decade

Decades	Existing	1st 1996 - 2005	2nd 2006 -2015	3rd - 5th 2016 - 2045	6th - 8th 2046 - 2075
Potential Road Construction		200 miles	150 miles	*	*
Potential New Road Closure		200 miles	150 miles new plus 40 existing		
Total Road Closure Miles	65 miles	265 miles	455 miles	455 miles	455 miles
Target Level for Open/Active Roads	350 miles	350 miles	310 miles	310 miles	310 miles
Total Road Miles Open and Closed	415 miles	615 miles	765 miles	765 miles	765 miles

\* Future road needs expected to be minimal.