Appendix 32
Historic Vegetation Conditions
From Historical Vegetation In Region One By Climatic Section By B. John Losensky 1993

CLIMATIC SECTION 10 - LOWER FLATHEAD
This area includes most of the Flathead Indian Reservation, and includes Flathead Lake northwesterly to Columbia Falls and Eureka and from Plains to Libby to the Canadian boundary. It covers portions of Lincoln, Flathead, Sanders, Mineral and Lake Counties. Portions of the Kootenai, Flathead and Lolo Forests are included.

While the area is dominated by the maritime climatic influence it is subject to intrusions of cold arctic air in the winter. As a result Climatic Section 10 is cooler than Section 9 and species such as western hemlock are found only on cove or sheltered areas. Precipitation ranges from a low of about 18 inches in the valley bottom to a high of over 100 inches on the Continental Divide. Moisture is adequate for tree growth on all but the dries t sites in the major valley bottoms. While winters are still relatively mild, occasional blasts of cold arctic air can cause frost damage on the more sensitive species associated with the maritime belt. Glacial deposition dominates both valley bottoms and mountain slopes over most of the area. Some of the steeper slopes along the Continental Divide are on belt rocks which show ice scouring.

Major vegetative impacts probably began with the arrival of the Great Northern Railroad in the 1890's. This event plus the demand for wood products in the Great Falls area to support the smelting industry caused rapid change. By the time the timber inventory was conducted in the mid 1930's about 16 percent of the Climatic Section was harvested. The majority of this cutting occurred on private lands in the major valley bottoms where 19 percent of the ponderosa pine type was harvested. About 14 percent of the white pine stands had been entered and 13 percent of the other forest types. Approximately seven percent of the Forest Service ownership was harvested.

Major Cover Types
Forested Types (84 percent)
Western white pine - Stand structure was more or less equally divided among the age classes with about 48 percent less than 40 years in age and 22 percent meeting the old growth definition. This distribution is typical for western Montana. The type reaches its eastern boundary in the Section and only covers about five percent of the land area.

Larch-Douglas-fir - The stands generally were evenly distributed over the various age classes with 39 percent less than 40 years. About 30 percent met the old growth definition. Stand conditions were typical of western Montana and the type was found on 27 percent of the area. This type was the most common cover type found in the Section.

Douglas-fir - This type was commonly found on cooler and drier sites often at mid slope. Stands were dominated by mid aged conditions with 22 percent less than 40 years and 16 percent old growth. These conditions indicated a more mature cover type than normally found over the remainder of western Montana. The type covered about one percent of the area.

Lodgepole pine - About 91 percent was less than 100 years of age and 70 percent less than 40 years of which about 27 percent were nonstocked. A little less than three percent was old growth. While the percent of old growth was similar to the average for western Montana there was significantly

more area in stands less than 40 years of age. The area nonstocked also was about 10 percent higher than the average. This was an important type covering about nine percent of the area.

Engelmann spruce - About eight percent was under 40 years of age and 48 percent met the old growth definition that is the average for the Climatic Section. While the inventory suggested the type only represented three percent of the area, major areas are shown on the Regional vegetation map. Because of the mixed composition of stands in this Climatic Section some of these mapped sites were likely inventoried as larch-Douglas-fir types.

Riparian Area Cover Types
Western hemlock-Grand fir - It was dominated by mature stands with 51 percent meeting old growth and 12 percent less than 40 years of age. Western hemlock is found only on protected sites within the Section and represented only a trace in coverage.

Western redcedar - This is a minor type found along the larger drainages. About 19 percent were under 40 years of age and 65 percent considered old growth. This type also was found only in trace amounts.

Western redcedar-grand fir - Age structure was more or less evenly distributed with old growth stands occupying about 33 percent of the area and about 24 percent less than 40 years of age. It occurred in trace amounts.

These three cover types plus the cottonwood type are not mapped on the Regional Vegetation map because of their limited coverage. While minor amounts of cedar may be mixed in with other cover types only narrow stringers along the drainages supported enough cedar to type as a cover type. The cottonwood type found along the major valleys was the most common riparian type. About half of the area was classed as saw timber with the remaining shown as seedling, sapling or poles. The combined area of the four types was less than one percent of the land area.

Alpine and noncommercial - These types covered about 17 percent of the area. Lodgepole pine, whitebark pine or mixtures of subalpine fir and spruce dominated the area. Age data was not available for this type, however, about 17 percent of the Forest Service acreage was shown as burned. It is most likely that much of this burn was a result of the 1910 or 1889 fire years.

Other - an additional three percent was listed as old burns with no cover type noted. These areas were probably associated with sites that were marginal for tree growth as a result of limited soil or moisture holding capability.

Nonforested Types (16 percent)
The remaining area was composed of a mixture of various vegetation types and represented about 16 percent of the Section. Areas typed as rock or barren, brush or grass or cultivated areas mode up this type. About five percent of it may have been in a grass type. The grass community was composed principally of the wheatgrass-fescue type and was found primarily southwest of Flathead Lake plus other dry exposure. Vegetative composition of the drier sites was dominated by bluebunch wheatgrass, rough fescue and neddle-and-thread grass. On moister sites rough fescue was the dominant species along with Idaho fescue and bluebunch wheatgrass. Big sagebrush was the major shrub on both conditions. These two types were equally represented in the Section.

Table 7. Percent acres by age class by cover type for climatic section (based on Forest Service acres)

Cover Type	Non Stocked	Seedling Saplings 1-40 Yrs	Poles 41-60 Yrs	Immature 61-100 Yr	Mature 101-var	Potential Old Growth 121+* Yrs
W. White pine	24.8	23.5	3.4	6.0	19.9	22.4
Ponderosa p	9.4	9.6	8.3	7.2	12.2	53.3
Larch-Douglas-fir	16.7	22.4	6.9	7.2	17.2	29.6
Hemlock-Grand fir	1.6	10.7	9.8	0	26.8	51.1
Douglas-fir	7.2	14.6	4.6	13.8	43.5	16.3
Engelmann s	3.0	4.5	1.2	3.6	39.7	48.0
Lodgepole P	27.6	42.2	13.7	7.3	6.6	2.9
W.Redcedar	11.0	8.1	0.8	9.1	6.2	64.8
W. Redcedar- Grand fir	10.4	13.8	30.2	2.3	10.4	32.9
Cli. Sec 10	17.8	24.4	8.1	7.0	16.5	26.2

CLIMATIC SECTION 11 - BITTERROOT-BLACKFOOT

This area represents a transition zone between the pacific maritime zone of northwest Montana and northern Idaho and the Continental climatic zone east of the Continental Divide. It includes all of Ravalli and portions of Missoula, Mineral, Sanders, Lake, Flathead, Granite, Powell and Lewis and Clark Counties. The area in Lake and Sanders Counties is all part of the Flathead Indian Reservation. Portions of the Bitterroot, Lolo, Flathead and Helena Forests are included.

Precipitation ranged from over 80 inches on the Bitterroot Divide to less than 14 inches in the valleys. Climatic conditions are cooler and drier than Section 10 and other than western hemlock all species associated with the Pacific Coast forest reach their southeastern limits within the Section. Over much of the Section these species are restricted to moist environments such as the canyon bottoms along the Bitterroot Mountains. Significant acreages of grass types are found on the warm slopes at low elevations east of the Bitterroot River. The preponderance of the soils are associated with the Belts or areas impacted by alpine glaciation. Major valleys contain glacial deposits and high ridgelines have been subjected to glacial scouring. While glacial activity is present it did not impact the landscape to the same degree as in Section 10 and therefore slopes tend to be steeper with narrow valley bottoms.

Some of the earliest settlement in the state occurred in the Section in the 1840's, however, it wasn't until the arrival of the railroad and development of the mines in Butte and Anaconda in the 1880's that there was any significant impact on the forest structure. By the 1890's major portions of the Clark Fork and Bitterroot Valleys had been logged and by the 1930's almost 22 percent of the Section was logged. This included 40 percent of the ponderosa pine cover type, 17 percent of the white pine type and 14 percent of other types. About 14 percent of the Forest Service holding was affected. Other than the area immediately adjacent to Butte this unit experienced some of the earliest impact from man's activities particularly in the ponderosa pine cover type.

Major Cover Types

Forested Types (82 percent)

Western white pine - Only trace amounts of this cover type are found in the Section as it reaches its climatic limits. Stand structure tends to be concentrated in the mature class with about 21 percent less than 40 years in age and 22 percent old growth, which is typical for the type.

Ponderosa pine - Stands tended to be mature with about 60 percent in an old growth condition and 16 percent less than 40 years of age. The amount of old growth is somewhat higher than the average for western Montana and probably reflects the drier environment where light underburning would be more prevalent. This was one of the major components of this Section representing about 17 percent of the land area.

Larch-Douglas-fir - While still an important component representing about 10 percent of the Section this type reaches its southeastern limits within the Section. The stands tended to be evenly distributed over the various age classes with 30 percent less than 40 years and 35 percent old growth. This represents a slightly older structure than the average for western Montana again representing the drier conditions and more opportunity for light underburns.

Douglas-fir - Because much of the Climatic Section is outside the natural range of larch the pure Douglas-fir cover type becomes more important representing about nine percent of the Section. Stands were generally dominated by mid aged conditions with 22 percent less than 40 years and seven percent old growth. While the old growth component is typical for western Montana the younger aged stands are significantly less. This may represent a lesser impact from the 1889 and 1910 fire years in this area.

Lodgepole pine - The lodgepole pine cover type occupies slightly less area than ponderosa pine (13 percent) increasing in amount toward the south end of the Section. On 61 percent of the area lodgepole pine was less than 40 years of age and 92 percent less than 100 years which is less than the average for western Montana, however, less than one percent was old growth which is half of the average for western Montana. Leiberg's work (1899) suggests that about 80 percent was less than 40 years of age in the 1890's which would generally agree with the above considering the different time periods. Older stands seemed to be more prevalent at the southern end of the Section.

Engelmann spruce - This type becomes less important compared to Climatic Section 10 and 12 occupying about one percent of the Section. About six percent were under 40 years of age and 51 percent were old growth, which is about the average for western Montana. Much of the type was found in high elevation basins and was typed as alpine type during the timber inventory therefore the regional vegetation map shows more area for the type. Under these conditions stands may have been older and the structure for the group may be biased by the lower elevation stands.

Riparian Area Cover Types

Western hemlock-grand fir; Western redcedar; Western redcedar-grand fir - Because of the limited acreage that these three types represent in the Section they have been treated as one. Stands typically are found in riparian areas or moist benches primarily west of the Clark Fork and Bitterroot Rivers. Stands tend to be mature with 50 percent meeting the old growth definition. Only 17 percent were less than 40 years of age. These types are found only in trace amounts. Adjacent to the Bitterroot and Clark Fork Rivers is found a narrow band of cottonwood type that is also limited in area. About 80 percent of these stands were seedling, sapling or pole sized with the remaining 20 percent considered saw timber sized. The sum of these four types is less than one percent of the land area.

Alpine and noncommercial forest - These types covered about 30 percent of the Section and were particularly important along the Bitterroot Mountains. Lodgepole pine, whitebark pine, alpine larch or mixtures of subalpine fir and spruce dominated the area. Age data was not available for this type,

however, present stand structure suggests that well stocked mature to old growth spruce basins were present. These were surrounded by stands of lodgepole or other species of various ages.

Other - An additional two percent was listed as old burns with no cover type associated with them.

Nonforested Types (18 percent)
Other - The remaining area was composed of a mixture of brush, grass, barren or cultivated types and represented about 18 percent of the Section. About 15 percent of these types would have been in the wheatgrass-fescue cover type. The drier types east of the Bitterroot River to near Sleeping Child Creek were dominated by bluebunch wheatgrass and rough fescue along with varying amounts of needle-and-thread, junegrass, needlegrass and basin wild rye. In the upper valley and west of the river where moisture was more abundant rough fescue was the dominant species along with Idaho fescue and bluebunch wheatgrass. Big sagebrush was probably a scattered shrub on both sites along with a variety of forbs such as yarrow and native legumes.

Table 8. Percent acres by age class by cover type for climatic section 11 (based on Forest Service acres).

Cover Type	Non Stocked	Seedling Saplings 1-40 Yrs	Poles 41-60 Yrs	Immature 61-100 Yr	Mature 101-var	Potential Old Growth 121+* Yrs
W. White pine	10.0	2.3	2.5	14.0	45.9	25.3
Ponderosa p	7.8	9.4	4.3	3.4	18.7	56.4
Larch-Douglas-fir	14.4	16.6	7.1	9.2	20.2	32.5
Hemlock-Grand fir	0	0	93,3	0	1.1	5.6
Douglas-fir	3.6	19.7	7.9	29.2	32.2	7.4
Engelmann s	.4	2.2	2.1	13.4	50.0	31.9
Lodgepole P	10.7	37.0	10.9	30.6	7.9	2.9
W.Redcedar	20.5	45.2	0	22.3	0.6	11.4
W. Redcedar- Grand fir	5.5	7.9	13.4	28.6	14.7	29.9
Cli. Sec 11	9.1	22.7	8.0	19.9	18.4	21.9

CLIMATIC SECTION 12 - UPPER FLATHEAD

Included is the area east of Flathead Lake to the Continental Divide from the Canadian boundary south to the Swan River-Clearwater River Divide. It includes portions of Flathead, Lake, Missoula and a minor portion of Powell Counties. Portions of the Flathead and Lolo National Forests and the western port of Glacier Park are included.

Climatic conditions are similar to Climatic Section 9; however, while white pine stands dominate Section 9, western larch is the major cover type in Section 12. Occasional movements of arctic air can also invade the area during the winter months resulting in death or frost damage to the sensitive species associated with the maritime climate. As a result these species are confined to protected areas or sites influenced by Flathead Lake. Precipitation ranges from 16 inches along Flathead Lake to more than 100 inches on the Continental Divide. The Swan Valley averages about 30 inches. The entire area has been impacted by continental or alpine glaciation with the valleys composed of glacial deposition. Most areas are underlain with belt or carbonate rock shaped by glacial activity. Slopes are moderate to steep with some mountains of glacial material being low to moderate in steepness.

The arrival of the Great Northern Railway in 1892 had the most impact on the forested areas particularly adjacent to the right-of-way. By the 1930's almost 19 percent of the Section had been logged. About 31 percent of the ponderosa pine cover type had been entered and 16 percent of the other types which would have largely represented the larch communities. Nine percent of the white pine had also been entered. Of the Forest Service ownership over five percent had been harvested during the same time period.

Major Cover Types

Forested Types (96 percent)

Western white pine - Stands tended to be concentrated in the mature class with about 21 percent less than 40 years in age and 22 percent old growth, which is typical for western Montana. The type reaches its most eastern extension and is not well represented making up only about two percent of the land area.

Ponderosa pine - Found on two percent of the Climatic Section the type is not as important as on the drier portions of Sections 10 and 11. Because of the moister conditions larch is commonly found in the large valley bottoms occupied by ponderosa pine elsewhere. Stands tended to be mature with about 60 percent in old growth and 16 percent were less than 40 years of age which represents slightly older conditions than average.

Larch-Douglas-fir - This type is the major cover type in the Section covering about 24 percent of the area. Stands tended to be evenly distributed over the various age classes with 30 percent less than 40 years. About 35 percent met the old growth definition. These percentages are slightly older than average for western Montana and may be the result of more open grown stand conditions in the valley floors that permitted more underburning.

Douglas-fir - Stand s were dominated by mid aged conditions with 22 percent less than 40 years and seven percent old growth. The type is only a minor component representing about two percent of the area.

Lodgepole pine - The second most important cover type was the lodgepole pine type occupying about 20 percent of the area. About 61 percent was less than 40 years of age and 92 percent less than 100 years. Less than one percent was in old growth. These age conditions were younger than the average for western Montana and probably represent the influence of the better growing conditions that permitted more biomass accumulation and subsequently more severe and frequent fires. Early observations by investigators such as Ayres (1899) suggest that the coverage of the larch and lodgepole types may have fluctuated significantly over time based in large part on the severity of the last fire and the cone crop of western larch.

Engelmann spruce - The Engelmann spruce type is found on a significant portion of the area in broad riparian areas or moist benches and represents about eight percent of the land area. About six percent of the type was under 40 years of age and 51 percent old growth that represents slightly more old growth than the average for western Montana.

Riparian Cover Types - Only a trace of these cover types were found and they are typically not mapped because of their limited size. Western hemlock-grand fir, western redcedar, western redcedar-grand fir types are typically found in riparian areas or moist benches. Stands tend to be mature with 50 percent meeting the old growth definition. Only 17 percent were less than 40 years

of age. In addition, minor amount of cottonwood cover type were found in the major valleys with 69 percent shown as saw timber and 31 percent other age classes in the 1930's.

Alpine and Noncommercial Forest - These types cover the largest portion of Climatic Section 12 and were found on about 35 percent of the area. Age data is not available for this type nor information on species composition. Lodgepole pine, whitebark pine and Engelmann spruce did represent major species within the zone along with lesser amounts of subalpine fir and alpine larch.

Other - An additional four percent was listed as old burns, however, the cover type was not indicated. These areas were probably associated with sites that were marginal for tree growth as a result of limited soil or moisture holding capability.

Nonforested Types (4 percent)
The remaining four percent of the land area was occupied by nonforest vegetation with the grass types representing less than one percent of the area. Much of this type would have been found in the major valleys and the high elevations along the Continental Divide. Grass communities in the valley bottoms would have been similar to those found in Section 10. Many of the high elevation sites are moist environments and are dominated by hairgrass or sedges. Other species that may be present are oatgrass, alpine timothy, bentgrass or rushes. The remaining area was composed of rock covering about three percent and shrubs particularly in avalanche chutes covering the remaining one percent of the area.

Table 9. Percent acres by age class by cover type for climatic section 12 (based on Forest Service acres)

Cover Type	Non Stocked	Seedling Saplings 1-40 Yrs	Poles 41-60 Yrs	Immature 61-100 Yr	Mature 101-var	Potential Old Growth 121+* Yrs
W. White pine	11.7	9.7	1.2	4.6	51.0	21.8
Ponderosa p	3.5	12.5	6.2	5.0	10.0	62.8
Larch-Douglas-fir	11.4	18.8	5.6	9.8	17.8	36.6
Hemlock-Grand fir	0	0	64.5	0	10.7	24.8
Douglas-fir	2.1	19.8	10.0	21.5	38.7	7.9
Engelmann s	1.9	4.2	4.8	3.5	28.6	57.0
Lodgepole P	18.2	43.0	12.4	18.2	7.4	0.8
W.Redcedar	7.4	11.9	0.5	6.2	5.6	68.4
W. Redcedar- Grand fir	12.0	9.2	31.3	0.5	10.9	36.1
Cli. Sec 12	10.5	21.6	7.2	10.6	18.0	32.1

From: Historical Vegetation Types Of The Interior Columbia River Basin By B. John Losensky. 1995

SECTION M333B
The Section occupies the area between Flathead Lake in Montana westward to the Kootenai River in northern Idaho and from Missoula, Montana north to the Canadian border. While the area is dominated by the maritime climatic influence it is subject to intrusions of cold arctic air in the winter. As a result west coast species such as western

hemlock are confined to the northwest corner of the section in coves and sheltered areas. Forested cover types are found on 80 percent of the area with the largest non-forest area found in the southwest portion by Flathead Lake. The larch-Douglas-fir type represented about half of the forest cover type and exhibited the best development of this type in the CRB. In the valley bottoms these stands were commonly dominated by open grown, mature to overmature larch with a second story of Douglas-fir, grand fir, lodgepole pine and other species found in the area. On steeper slopes larch tended to be younger in mixture with other species generally of the same age. While the more gentle terrain was maintained in a somewhat open condition by frequent underburns upper slopes were much more brushy and dense and subject to partial or stand replacement fires. Ponderosa pine was confined to the lower dry slopes usually in mixture with Douglas-fir or other species. The white pine type was found primarily in the northwest corner of the Section commonly growing in mixture with western redcedar, western hemlock, grand fir and other mesic species. The lodgepole pine type was scattered throughout the section on upper slopes and it graded into the subalpine type on the ridge tops. As usual the spruce-fir type was confined to riparian zones along streams or moist basins in the drainage heads. The wheatgrass-fescue type was the major non-forested type and occurred in the large valleys. Rough fescue, bluebunch wheatgrass and Idaho fescue were the major components. Some scattered big sagebrush was present on some sites.

Development in this area was relatively late and significant timber harvest did not occur until the construction of the Great Northern Railroad in 1892. Ayres (1900) indicated only limited development with only scattered agricultural activity in the main valleys. Large scale logging for export started about 1900.

Table 49. Percent acres by cover type for section M333B

COVER TYPE	PERCENT COVER	COVER TYPE	PERCENT COVER
2 - PONDEROSA PINE	17.0	8 - SPRUCE-FIR	0.7
5 - L-DF	41.7	9 - SUBALPINE	6.7
6 - WHITE PINE	4.0	14 - WHEAT-FESCUE	17.0
7 - LODGEPOLE PINE	10.4	26 - WATER	2.5

Table 50. Age structure in 1900 for major forest cover types in section M333B.

COVER TYPE	NON-STOCKED	SEED-SAP 1-40	POLES 41-100	MATURE 101-150	OVER MATURE 151+
PP	5.9	11.0	11.9	7.1	64.1
DF	15.1	22.0	13.0	13.2	36.7
LP	27.3	44.7	19.2	6.8	2.0
WP	23.3	26.0	9.1	9.2	32.4
S-F	2.9	7.2	5.9	23.5	60.5

All of the types except the spruce-fir type show a considerable amount of area less than 40 years of age. Lodgepole pine and ponderosa pine contained twice as much as the average for the CRB. This structure could be the result of the widespread fires of 1890 that affected a major portion of this Section. Other than lodgepole pine the overmature portion for the types is about average. Lodgepole pine is significantly below average.

Table 51. Percent cover type by structural development stages

COVER TYPE	FOREST STAND STRUCTURAL DEVELOPMENT STAGES*						
	ST INI	ST EXO	ST EXC	UN REI	YF-MST	OF-MST	OF-SS
PP	11.4	24.5				16.0	48.1
DF	26.1	18.6	18.6			18.4	18.3
LP	49.6		41.6	6.1	1.7	1.0	
WP	36.3		26.7	4.6		32.4	
S-F	6.5		9.5		23.5	60.5	
SUB	40	5	5	5	10	15	20

* See Appendix C for descriptions and definitions.

Table 51. Percent cover type by structural development stages

COVER TYPE	RANGE STRUCTURAL DEVELOPMENT STAGES*						
	21	22	23	24	25	26	27
14	80	20					

SECTION M333C

The Section includes the area between Flathead Lake and the Continental Divide and from the Canadian boundary south to the Missoula, Montana area. The north end of the Section is under the influence of the maritime climate however occasional movements of arctic air can invade the area during the winter months resulting in death or frost damage to the sensitive species associated with the maritime climate. As a result these species were confined to protected areas or sites influenced by Flathead Lake. Other than some inclusions of grass type on the south boundary of the Section the area was covered with forest vegetation. The major type was larch-Douglas-fir which occupied the valleys and lower to mid slope positions. Lodgepole pine was a close second and was found on slopes above the larch-Douglas-fir type. There was an area between these two types where dominance shifted back and forth depending of fire severity and seed production of larch. Spruce-fir was found on moist benches, riparian areas and high basins. White pine was located in protected areas and included an array of species including western redcedar and grand fir. Ponderosa pine was found mainly near the southern boundary of the Section in the Clark Fork Valley or on dry southwest slopes. Douglas-fir was located on cool, dry sites generally above the limits of ponderosa pine. The wheatgrass-fescue type was found along the southern boundary and dominated by rough fescue, bluebunch wheatgrass and Idaho fescue. Limited sagebrush occurred in this type. The arrival of the Great Northern Railway in 1892 had the first major impact on the forested areas particularly adjacent to the right-of-way. By 1900 major logging for export was underway. One of the first large scale forest service timber sales was made in this section about 1908.

Age structure for the larch-Douglas-fir is composed of slightly less young aged classes and a greater percentage of overmature stands as compared to the averages for the CRB. This was probably the result of the extensive stands in the Valleys of the Swan and Clearwater drainages that take on the appearance of open grown ponderosa pine stands as a result of frequent underburns.

Table 52. Percent acres by cover type for section M333C

COVER TYPE	PERCENT COVER	COVER TYPE	PERCENT COVER
2 - PONDEROSA PINE	0.8	7 - LODGEPOLE PINE	27.1
3 - DOUGLAS-FIR	0.4	8 - SPRUCE-FIR	6.4
5 - L-DF	28.4	9 - SUBALPINE	36.4
6 - WHITE PINE	0.5	14 - WHEAT-FESCUE	T

Douglas-fir and lodgepole pine both show the impact of stand replacement fire with lodgepole pine containing a significantly greater percentage in young stands and Douglas-fir having significantly less overmature class.

Table 53. Age structure in 1900 for major forest cover types in section M333C

COVER TYPE	NON-STOCKED	SEED-SAP 1-40	POLES 41-100	MATURE 101-150	OVER MATURE 151+
PP	1.7	11.4	5.9	2.9	78.1
DF	1.8	23.9	38.6	24.4	11.3
L-DF	9.8	13.1	9.9	15.0	52.2
LP	20.7	37.6	28.8	9.0	3.9
WP	0	1.1	28.5	40.4	30.0
S-F	2.4	3.5	8.7	25.7	59.7

Table 54. Percent cover type by structural development stages

COVER TYPE	FOREST STAND STRUCTURAL DEVELOPMENT STAGES*						
	ST INI	ST EXO	ST EXC	UN REI	YF-MST	OF-MST	OF-SS
PP	7.4	14.5				19.5	58.6
DF	13.8	37.5	37.5			5.6	5.6
L-DF	16.4		24.0	7.5		39.1	13.0
WP	0.6		49.2	20.2		30.0	
S-F	4.2		10.4	12.8	12.9	59.7	
SUB	20	5	5	10	20	20	20

* See Appendix C for descriptions and definitions.

Table 54a. Percent cover type by structural development stages

COVER TYPE	RANGE STRUCTURAL DEVELOPMENT STAGES*						
	21	22	23	24	25	26	27
14	80	20					

The spruce-fir type showed a similar pattern to the larch-Douglas-fir that is difficult to explain considering the fire impact on Douglas-fir and lodgepole pine.