

The Working Forest of Mineral County

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ENVIRONMENTAL QUALITY
COUNCIL. 2013-14

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Common & Unique Attributes of Mineral County

▶ Mineral County

- Mineral 2010 Census (4,223) – 38th of 56 Counties
- Larger area than the State of Rhode Island
- Largely dependent on Forest Resources (Common)

▶ Mineral County

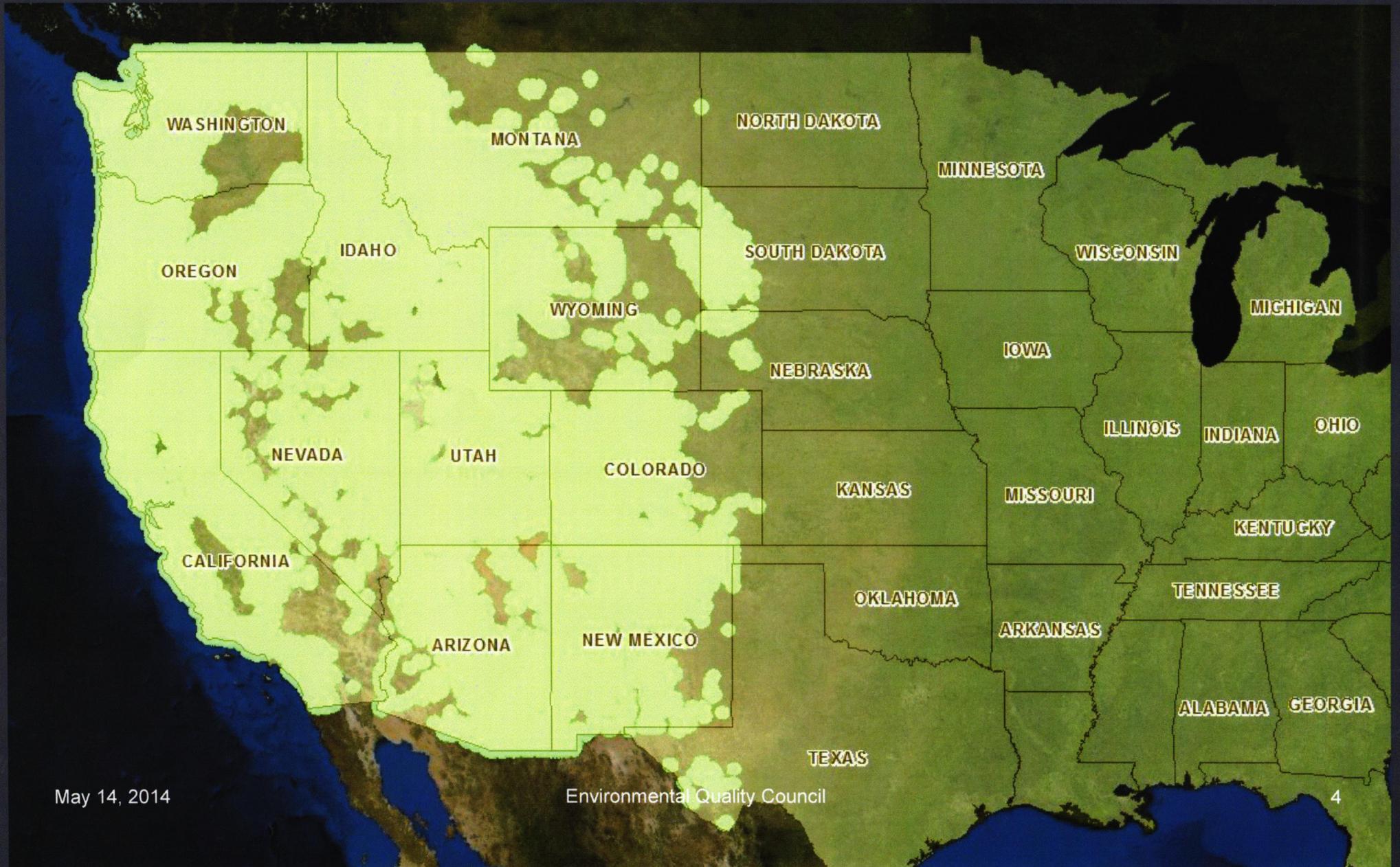
- Major Interstate linkage West ↔ East Commerce
- Western Gateway to Glacier, Flathead, Yellowstone
- A Strong Sense of Self-determination (Western Ethic)
- A Climate and Landscape desired by most Americans

The Concept of Working Forests

▶ Mineral County is Timber-Dependent

- As Most Rural Counties in Six Western States
- Prior to 1980, 25-30% of USFS Revenue => Counties for Roads & Schools
- Shifted to "Secure Rural Schools Act" for Revenue
- Federal Money is running out – AZ, CO, ID, OR, WA, MT
- Forests are Over-mature – Disease, Insects, Fire
- USFS "Desired Condition" is wrong Objective
 - ▶ Forests are Dynamic, not Static in Time

Forest Cover in the West



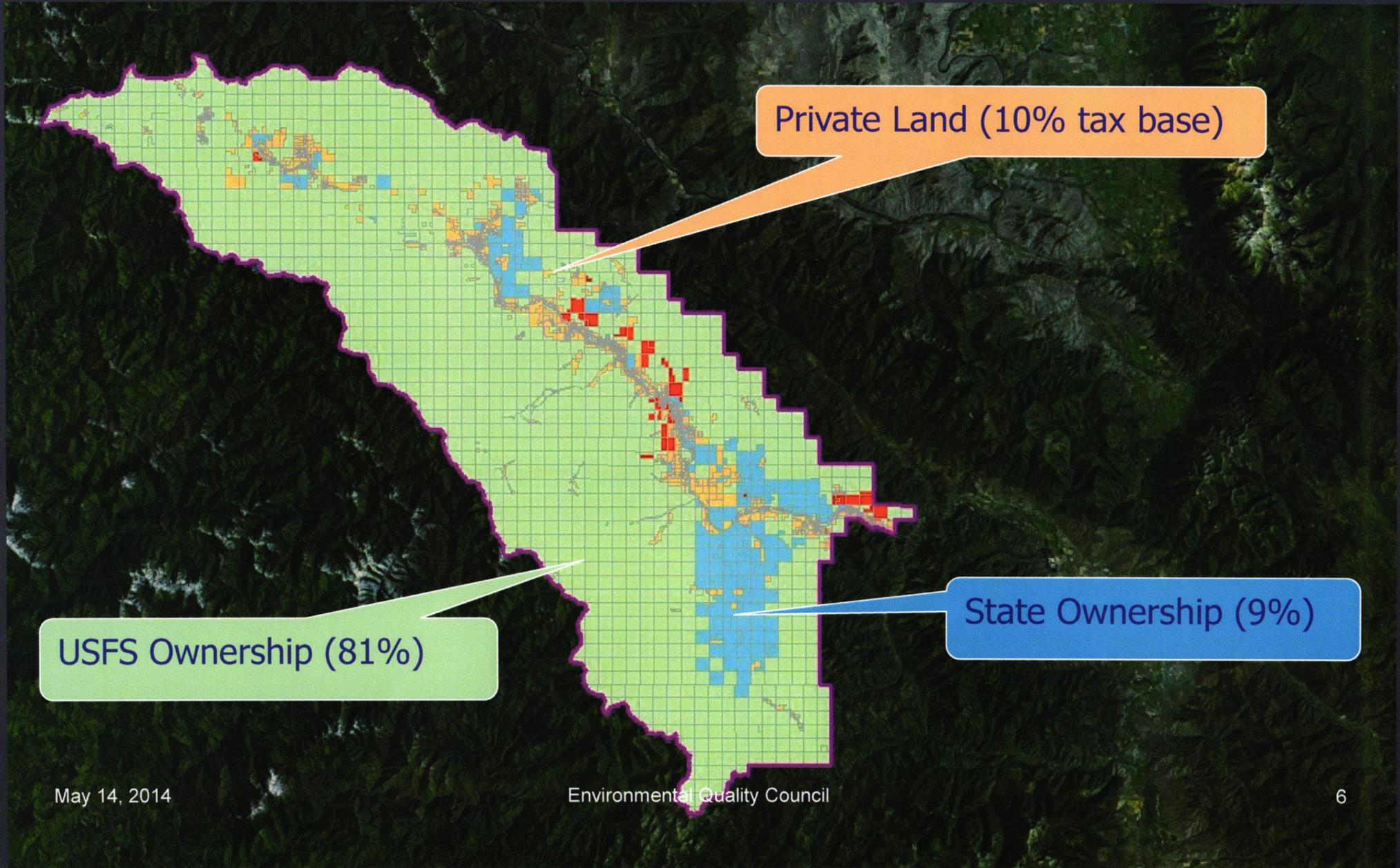
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Federal Lands in the West



Mineral County Ownership



Mineral County Ownership

Year-end 2013 Acreages

▶ Lolo National Forest	555,640	(80.8%)
▶ State of Montana	63,197	(9.2%)
▶ Plum Creek (Transfer)	9,549	(1.4%)
▶ Private Lands	58,258	(8.5%)
▶ County & Exempt	644	(0.1%)
▶ Total Mineral County	687,309	



Lolo National Forest Middle Clark Fork Geographic Area

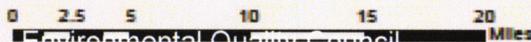
Figure 7

Timber Production Goal
2006 USFS Plan
449,000 Acres

Legend

- Geographic Area
- Management Areas**
- 1.1 Designated Wilderness
- 1.2 Recommended Wilderness
- 2.1 Eligible or Suitable Wild & Scenic Rivers
- 2.2a Backcountry (non-motorized travel)
- 2.2b Backcountry (limited motorized travel)
- 3.1 Areas Under Special Management
- 3.2 Research Natural Areas
- 3.3 General Forest Low Intensity Management
- 4.1 General Forest Moderate Intensity Management
- 5.1 General Forest High Intensity Management
- 5.2 Residential Forest Intermix
- 6.1 High Use Recreation Complexes or Use Areas

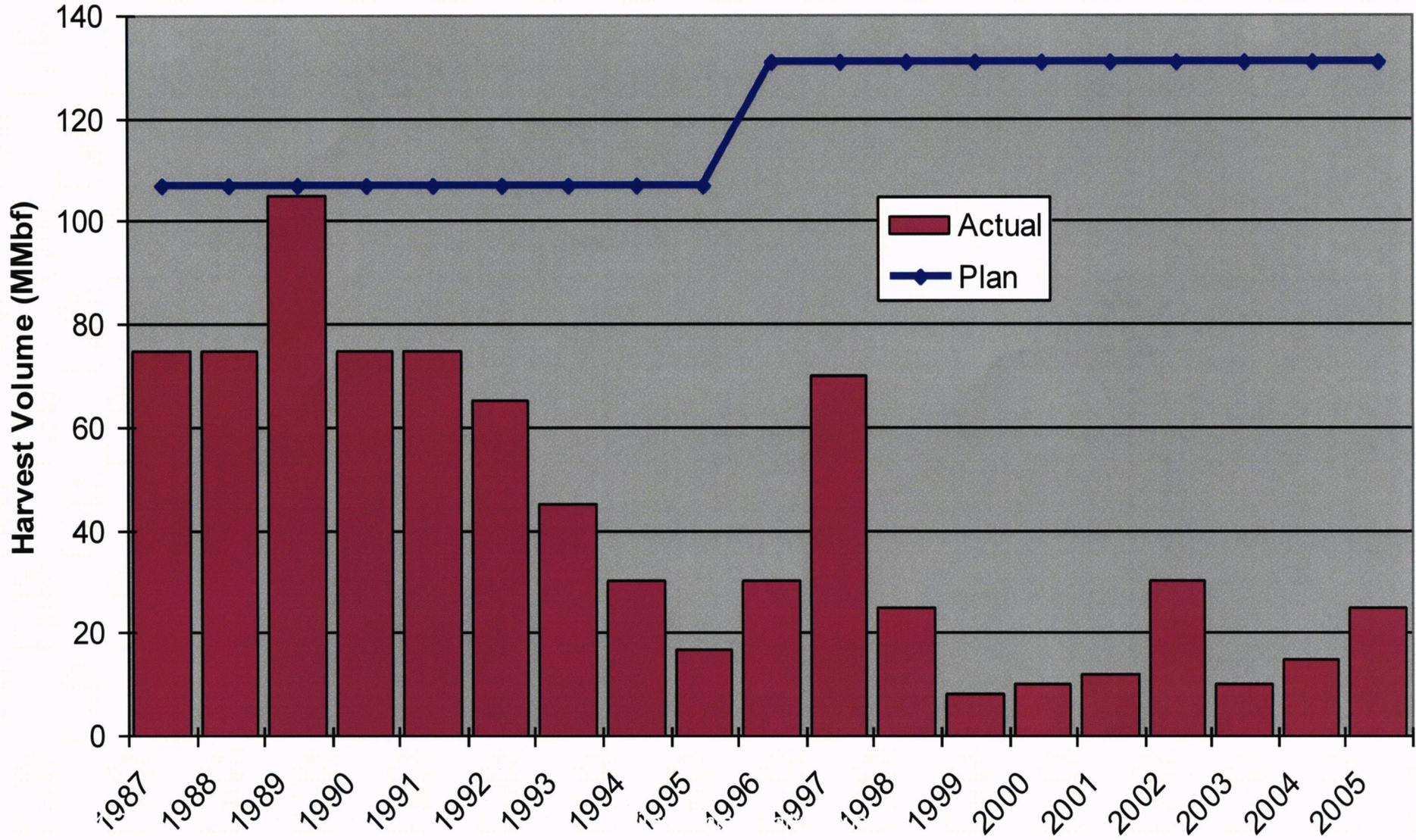
MA	Acres
1.1	0
1.2	77,124
2.1	16,848
2.2A	87,923
2.2B	8,598
3.1	197
3.2	0
3.3	31,319
4.1	298,538
5.1	119,633
5.2	13,440
6.1	3,603
Total	657,216



Lolo National Forest - 1986 Plan (678,214 timber acres)

Board Volume Harvest / Year

1960 to 1990 Average = 115 MMbf / Year



Lolo Forest Dynamics

▶ 1986 Forest Plan

- Productive Forest Lands = 912,837 Acres
- Timber Producing Lands = 592,854 Acres

▶ 2006 Forest Plan

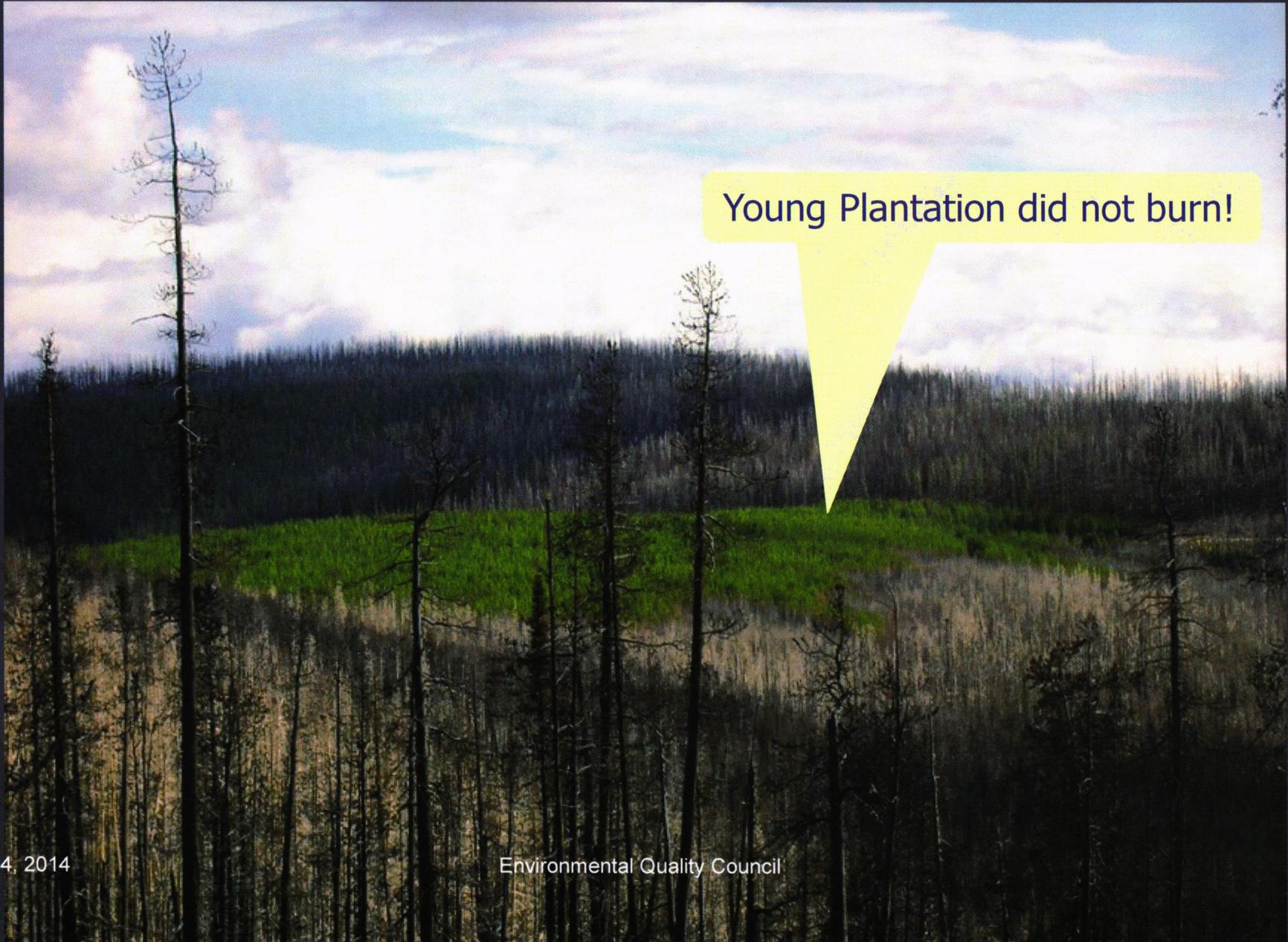
- Timber Producing Lands = 449,488 Acres

▶ Forest Growth = **171,000,000 Bdft/Yr**

▶ **Recent 20-Year Harvest < 9% of Growth**

- Forest has become Over-mature, Diseased
- Rotation to Young-growth will be by Fire
- Rotation to Young-growth will be Cost, not Revenue

Young Plantation vs Wildfire



Young Plantation did not burn!

Mineral County Capacity

▶ Mineral Working Forest – 449,000 Acres

- Average 70-year Rotation at 3,600 Acres/Year
- Average Harvest = 26,000 board-feet/Acre
- Annual Harvest = 78,000,000 board-feet
- Annual Sequestered CO₂ = 390,000 Metric Tons
- Annual Net Value = \$23,400,000 / Year

▶ Sustainability

- Forest Health & Public Safety (low wildfire risk)
- Solid Economic Tax Basis – Schools, Roads

USFS Forest Management

- ▶ **County Commissioners Meeting – April 17**
 - **Faye Krueger – Regional Forester**
 - **Tim Garcia – Lolo Forest Supervisor**
 - **USFS Acknowledged:**
 - ▶ **Lolo Forest is Over-Mature**
 - ▶ **Mortality and Decay exceeds Growth**
 - ▶ **Wildfire Risk is Extreme**
 - ▶ **Management will continue as in Previous Years**
- ▶ **Mineral Working Forest – 449,000 Acres**
 - **Annual Death & Decay = -90,000,000 board-ft**
 - **Annual Released CO₂ = -414,000 Metric Tons**
 - **Annual Net Value = \$ 0 / Year**

Forest Resources of Mineral County

Lolo National Forest public lands – Year-end 2013 Statistics

Basic Statistics for Mineral County:

Acres by Ownership Classification

Lolo National Forest	555,640	(80.8%)	
State of Montana	63,197	(9.2%)	
Plum Creek (Transfer)	9,242	(1.4%)	← Tax base
Private Lands	58,258	(8.5%)	← Tax base
County & Exempt	664	(0.1%)	
Total Acres	687,309		

Lolo Forest Management Areas (acres from Figure 7 attached)

Low Intensity Forest Management	31,319
Moderate Intensity Forest Management	298,536
High Intensity Forest Management	119,633

Lolo Forest 1986 Long-term Sustainable Harvest Plan (attached chart)

Planned Annual Harvest Level	131 million board feet/year
Actual Average Annual Harvest (1999 +)	15 million board feet/year (11%)

Working Forest Acres of Mineral County

Net of Riparian & Wildlife Buffers	256,000 acres
Average Productive Site Capacity	68 feet height at 50 years
Average Harvest Age of Stand	70 years total age
Average Harvest Volume	26,000 board feet/acre
Harvestable Acres / year	3,000 acres
Annual Harvest Volume / year	78,000,000 board feet /year sustainable
Sequestered CO ₂ / year	390,000 metric tons /year sustainable

Existing Mineral Forest – Over-mature, mortality exceeds growth

Lower elevation forest	450,000 acres
Decline exceeds growth	- 200 bdf / acre / year
Decay, rot, disease & insects	- 90,000,000 board feet / year
Metric tons CO ₂	- 450,000 metric tons / year

Existing Mineral Forest – Effect of Wildfire

A Single 10,000 acre wildfire	
Loss in Harvestable volume	- 260,000,000 board feet
Loss in Harvestable value	- \$117,000,000 dollars (2014 values)
Loss to atmosphere	- 1,300,000 metric tons CO ₂

Forest Statistics based on Soils, Climate, Topography and Standing Inventory

Mineral County Forest Growth Capacity

	USFS Acreage: <u>Single Acre</u>	655,065 Gross Acres <u>450,000 Net Acres</u>	
Board feet / year	380	171,000,000	Board feet
Cubic feet / year	75	33,750,000	Cubic feet
Net Value / year	\$ 190	\$ 85,500,000	Dollars
Dry Biomass /year	2,150	967,500,000	Pounds
Carbon / year	0.53	238,500	English tons
CO ₂ / year	1.75	787,500	Metric tons

Mineral County - Current 2014 Forest Growth & Decay

	<u>Single Acre</u>	<u>450,000 Net Acres</u>	
Board feet / year	-200	-90,000,000	Board feet
Cubic feet / year	-40	-18,000,000	Cubic feet
Net Value / year	\$ -	\$ -	Dollars
Dry Biomass /year	-1,130	-508,500,000	Pounds
Carbon / year	-0.27	-121,500	English tons
CO ₂ / year	-0.92	-414,000	Metric tons

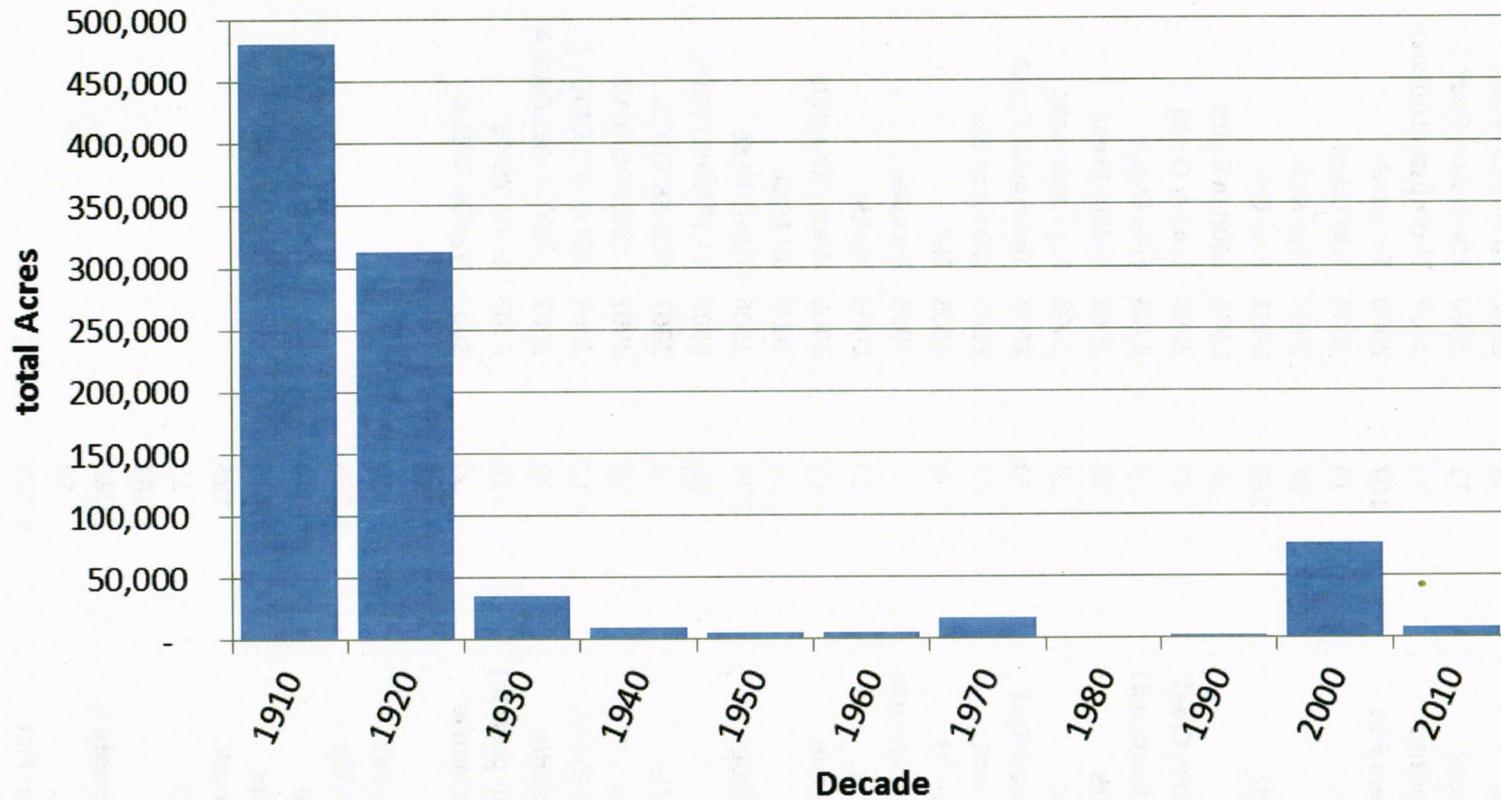
Average Site Growth Capacity: 68 feet at 50 years
 Cubic volume * 62.4 * Specific gravity = Dry Weight
 Dry biomass weight * 49% = Carbon weight
 Carbon weight * 3.667 / 2,204.68 = Metric tons
 Average Harvest Age = 70 years

Mineral County Wildfires (1980 – 2007 acres):

1980	First Creek	13
1980	Rabbit Creek	12
1981	Crystal Springs	31
1983	Jolly Rogers Fire	107
1984	Boyd Mtn.	14
1984	Deer Crk	25
1984	Nemote #2	283
1985	Bald Hill	36
1986	Middle Rock Creek	47
1986	St. Regis Beacon #1	18
1986	Sunrise Crk	26
1987	Gold Deer	27
1988	Mullan Road East	70
1988	Quartz Crk #1	45
1988	Quartz Crk #2	35
1988	West Fork Savenac	9
1991	Deep Creek	10
1991	Johnson Lane	25
1994	Beacon	20
1994	Beaver Slough	779
1994	Big S	25
1994	Burr Saddle	9
1994	Flat Creek	30
1994	Johnson Mouth	12
1994	Pardee Saddle	30
1994	Siam (Lolo portion)	518
1994	Slaughter House	50
1996	Tarkio II	13
1998	Second Creek	10
2000	Alpine Divide	3,595
2000	Freezeout	44
2000	Landowner	5,736
2000	Moore Creek	125
2000	Owl Creek	13
2000	Siamese	1,268
2000	South Nemote 4	1,228
2000	Sunrise	52
2000	Thompson Flat	9,475
2000	Thompson Peak	18

2000	Thompson Peak	21
2000	Thompson Peak 2	9
2000	Thompson Lookout	51
2000	Torino Pk	42
2000	Trio Lakes	68
2000	Van Ness	39
2001	Fish Crk	33
2001	Mullan Gulch	15
2003	Cherry Creek	3,557
2003	Fish Creek	3,005
2003	Indian Creek	14
2003	No Name Lake	144
2003	Thompson Creek	33,653
2005	Alberton East	100
2005	Fish	155
2005	Prospect	3,211
2005	Tarkio	9,477
2005	West Mountain	1,653
2006	12 MILE	39
2006	TRAIL LAKE	5
2007	EAST BOYD MTN.	19
2007	FISHER CREEK	47
2007	FOREST GROVE	144
2007	FOUR MILE RIDGE	94
2007	NORTH DEBORGIA	36
2007	SUNNYSIDE	45
2007	VERDE CREEK	17

Mineral County Wildfires 1900 - 2000



Mineral County Wildfires (1884 – 1980 acres):

1884	13,446	1924	4,216	1953	1,118
1890	3,508	1925	3,546	1956	320
1910	457,092	1926	1,352	1960	3,196
1911	765	1928	3,980	1961	1,190
1914	22,117	1929	17,644	1966	1,437
1915	1,562	1930	818	1967	843
1916	794	1931	9,723	1969	329
1917	74,720	1934	1,687	1970	3,215
1918	6,659	1941	293	1971	473
1919	215,197	1942	2,295	1973	9,870
1920	3,030	1945	4,764	1974	758
1921	2,709	1946	694	1975	337
1922	344	1948	2,148		
1923	2,113	1952	1,298		