Elements of an Ecologically Sound Watershed Recovery Plan for the Elk River Watershed

Presentation to the 11/16/13 Elk River Watershed Forum

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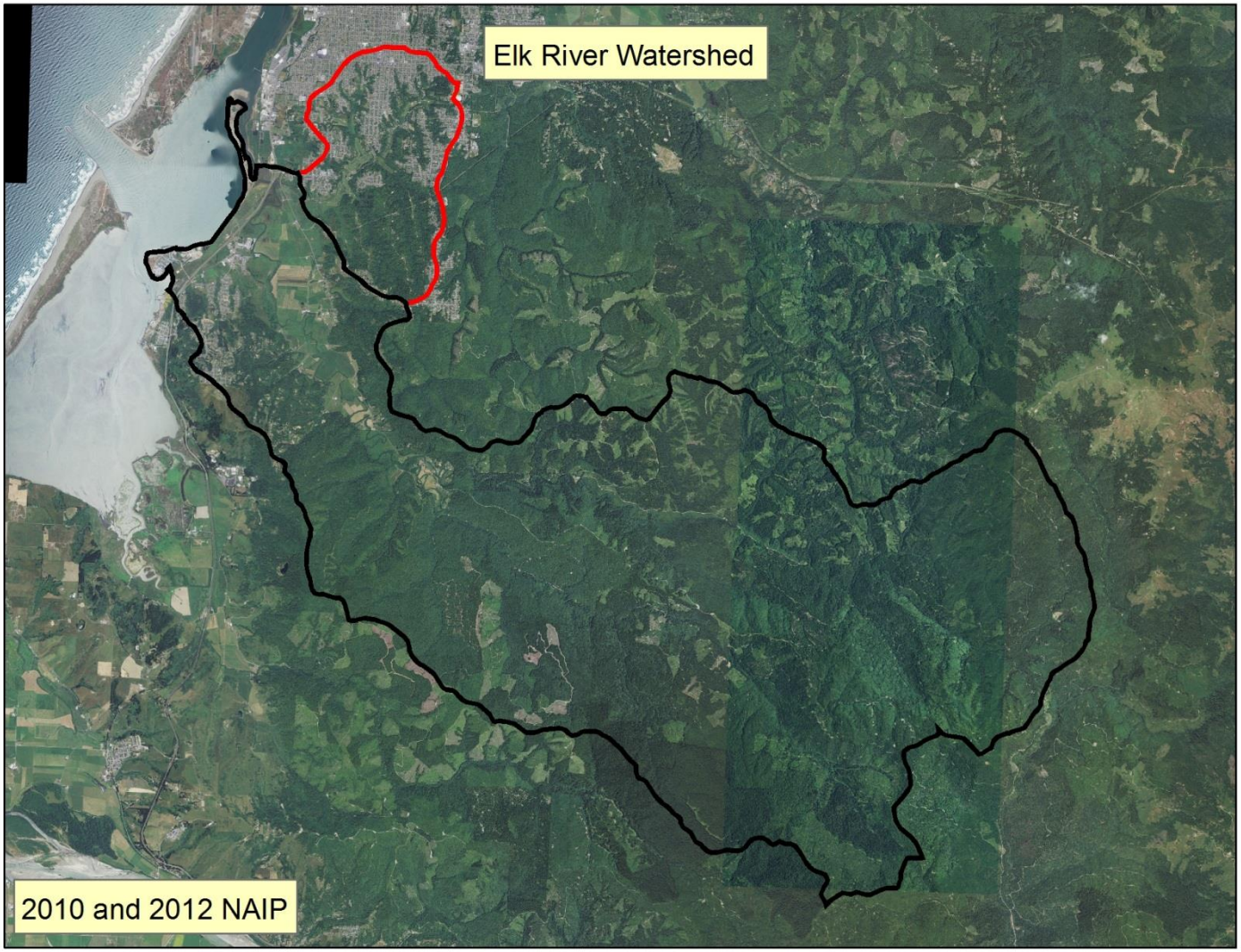
Consulting Foresters

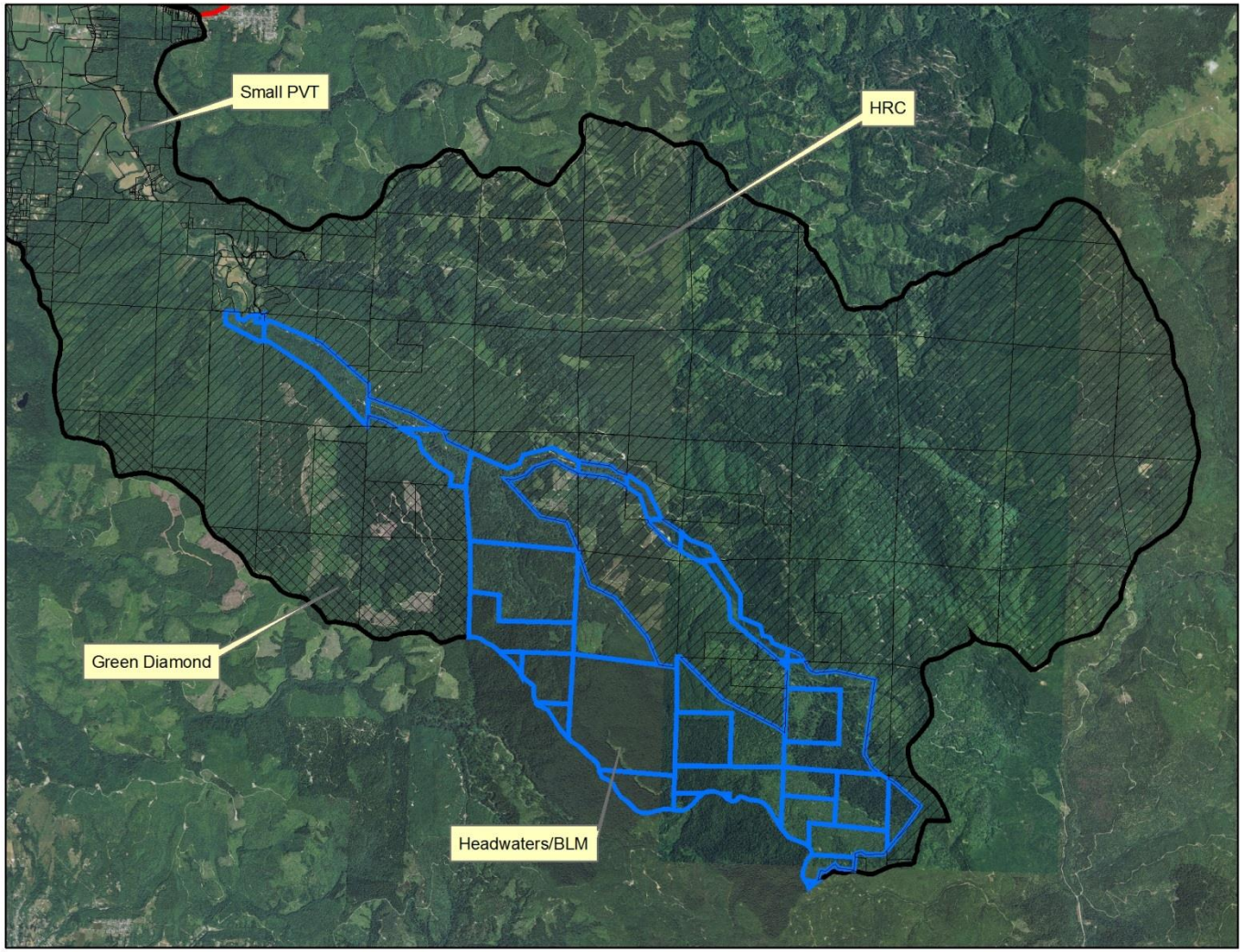
Overview

- How Did We Get Here
- Rural Residential Planning and Impacts to Water Quality
- Subdivision of Timberland and the GPU
- Shifting Silviculture from Even Aged to Uneven Aged
- Timber Volume Output
- Summary of Elements of an Ecologically Sound Watershed Recovery Plan for Elk River Watershed

Elk River Watershed



Elk River Watershed Ownership

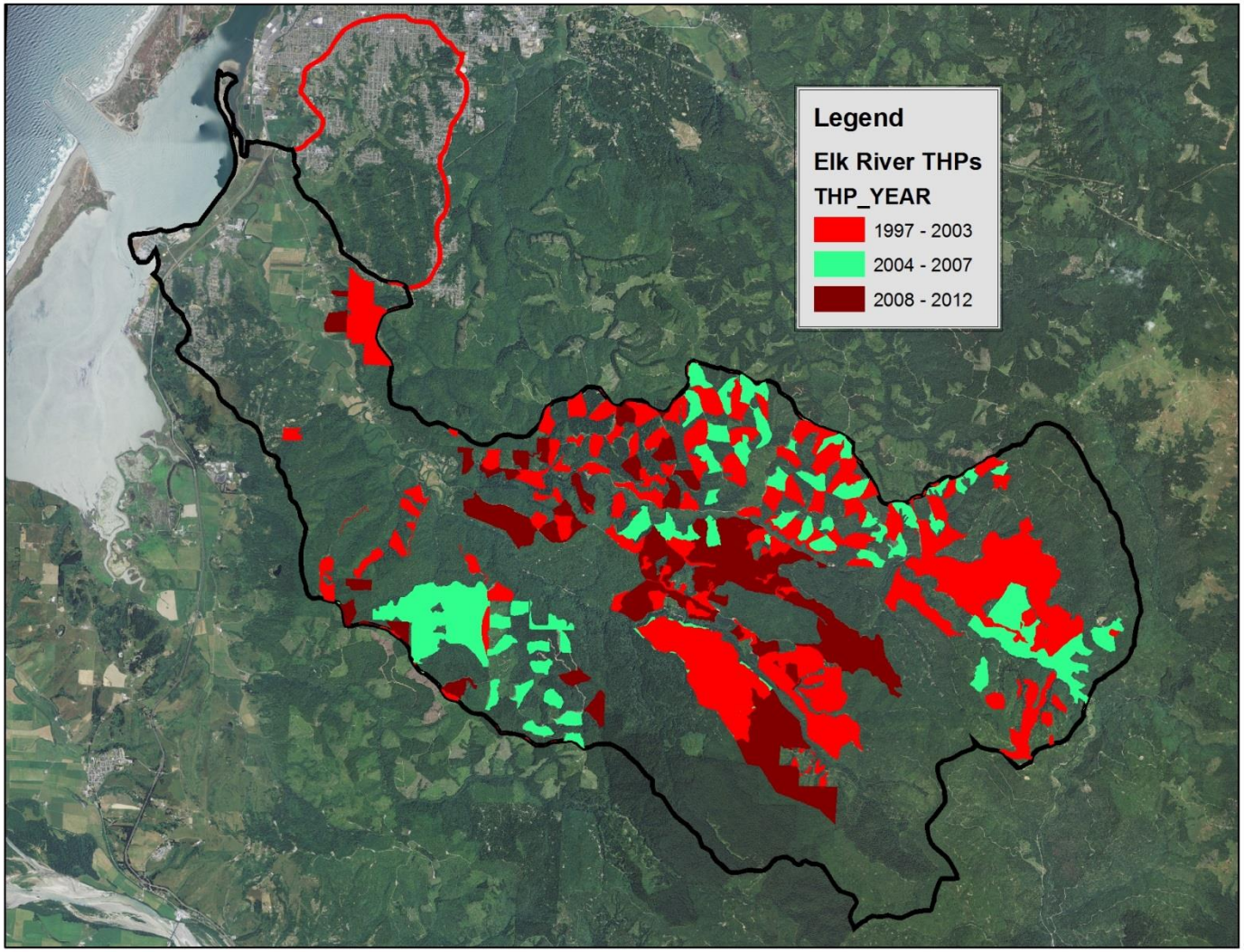


How Did We Get Here

- Tremendous Increase in Harvest Post 1986 Takeover by Charles Hurwitz
- Substantial Increase in Road Density
- Substantial Increase in Projected Clearcutting
- Resulting Impacts to Water Quality as Described in May 2, 2013 Update on Upper Elk River Sediment Total Maximum Daily Load

Accelerated Harvest and Substantial Increase in Road Construction

Harvest 1997 - 2012



2005 PALCO Option A
Elk River Harvest Intensity

			Data				
hyuname	rest_type	rest_class	*Sum of grs_acres*	*Sum of area*	*Sum of tot_vol*	*Sum of con_vol*	*Sum of hwd_vol*
Elk River	No_Restriction	No_Resstriction	13,345	12,770	318,399,517	307,774,276	10,625,241
	No_Restriction Total		13,345	12,770	318,399,517	307,774,276	10,625,241
	NOCUT	MMCA	844	802	30,524,651	29,975,677	548,974
		No_Havest	2,847	2,790	98,736,370	95,023,163	3,713,207
		NSO500	214	208	8,518,589	8,205,726	312,863
	NOCUT Total		3,905	3,800	137,779,609	133,204,565	4,575,044
	SELECTION	No_Resstriction	573	558	18,866,777	18,325,672	541,105
		NSO1000	350	340	11,891,549	11,374,522	517,026
		PARK200	375	359	12,436,806	11,775,997	660,809
		Sel_150BA	678	668	21,227,764	20,513,542	714,223
		Sel_75BA	2,917	2,835	75,699,734	72,601,054	3,098,679
	SELECTION Total		4,893	4,760	140,122,630	134,590,787	5,531,843
Elk River Total			22,143	21,330	596,301,756	575,569,628	20,732,128

- 13,345 acres of PALCO lands slated for clearcutting 308 MMBF of timber
- 2,917 acres slated for removal of 75% of volume = to 6 MMBF of timber

Projected Harvest From PALCO 2005 Option A

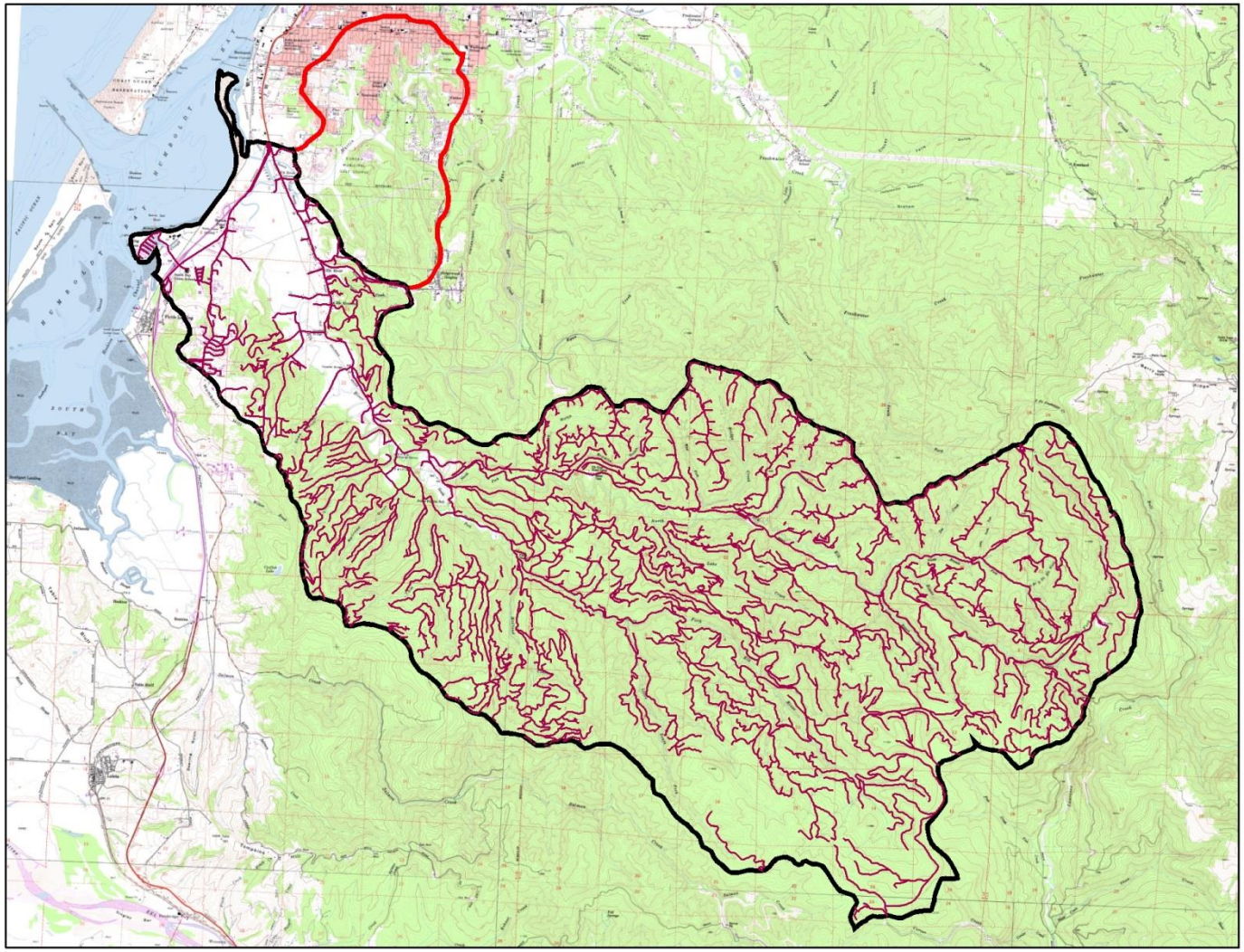
Appendix C

Sensitivity Analysis on Harvest Intensities within WAA's

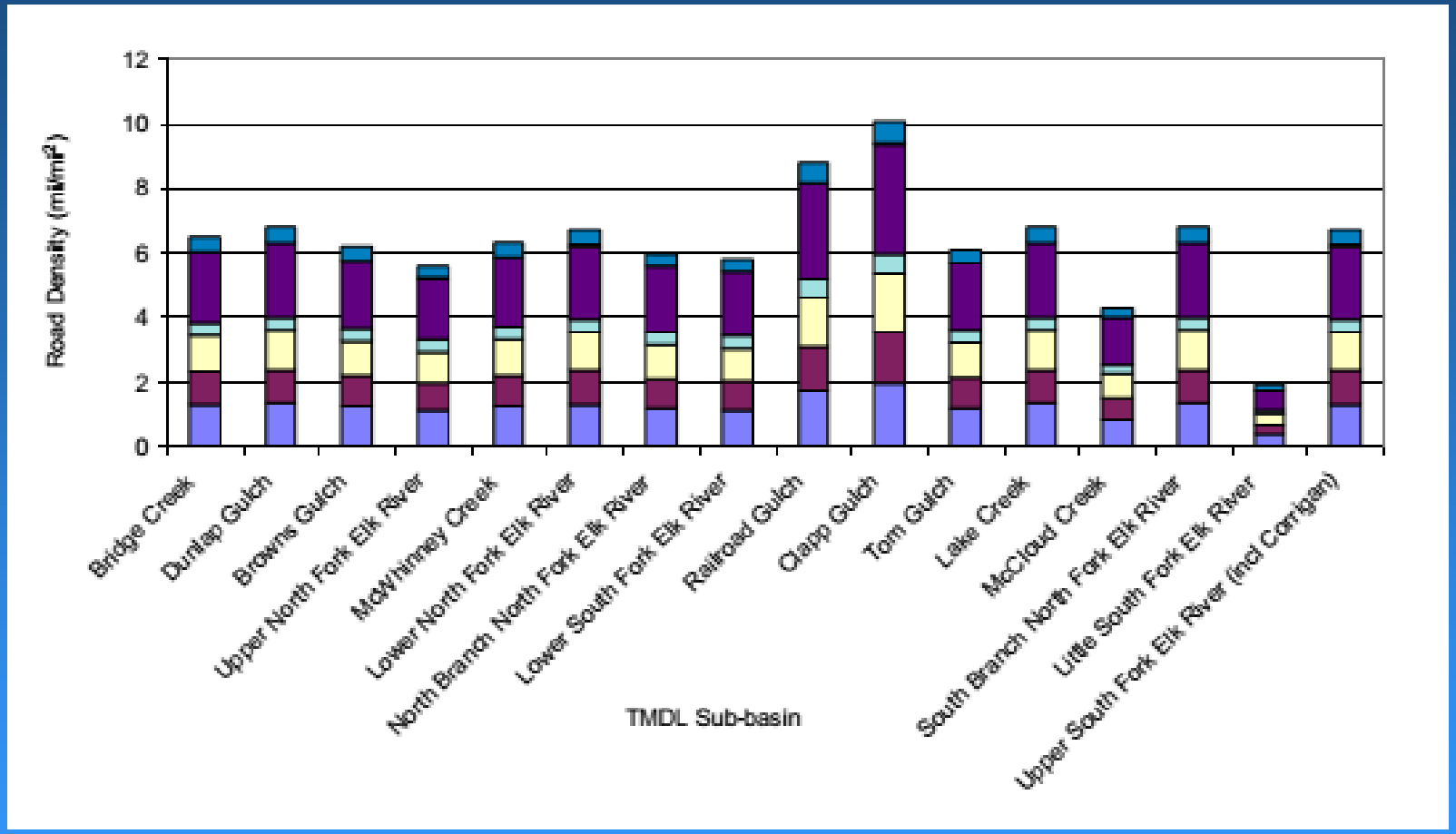
		CC Acres – First Decade Harvest								
WAANUM	WAA	MEAN	Option A	R-1	R-2	R-3	WAA #1	WAA #2	Descend	Ascend
1	Humboldt Bay	6,225	6,561	6,601	6,702	6,528	6,216	4,756	6,354	6,082
2	Yager Creek	1,663	1,743	1,701	1,539	1,995	667	2,325	1,341	1,989
3	Van Duzen	5,113	5,036	4,460	5,334	5,219	6,399	3,832	4,313	6,314
4	Eel River	12,298	12,040	11,720	12,253	12,001	12,012	13,578	11,464	13,313
5	Bear-Mattole	1,486	1,822	2,779	1,385	1,287	826	1,123	1,297	1,368
6	Mad River	203	203	356	130	179	84	379	118	177
	ALL WAAs	26,988	27,405	27,617	27,343	27,209	26,204	25,993	24,887	29,243
	LTSY	180.4	180.1	179.5	180.3	180.1	181.1	181.8	180.1	180.1

- PALCO projected clearcutting around 3,100 acres in Elk River in first decade (2005-2014)

Road Density is an Issue

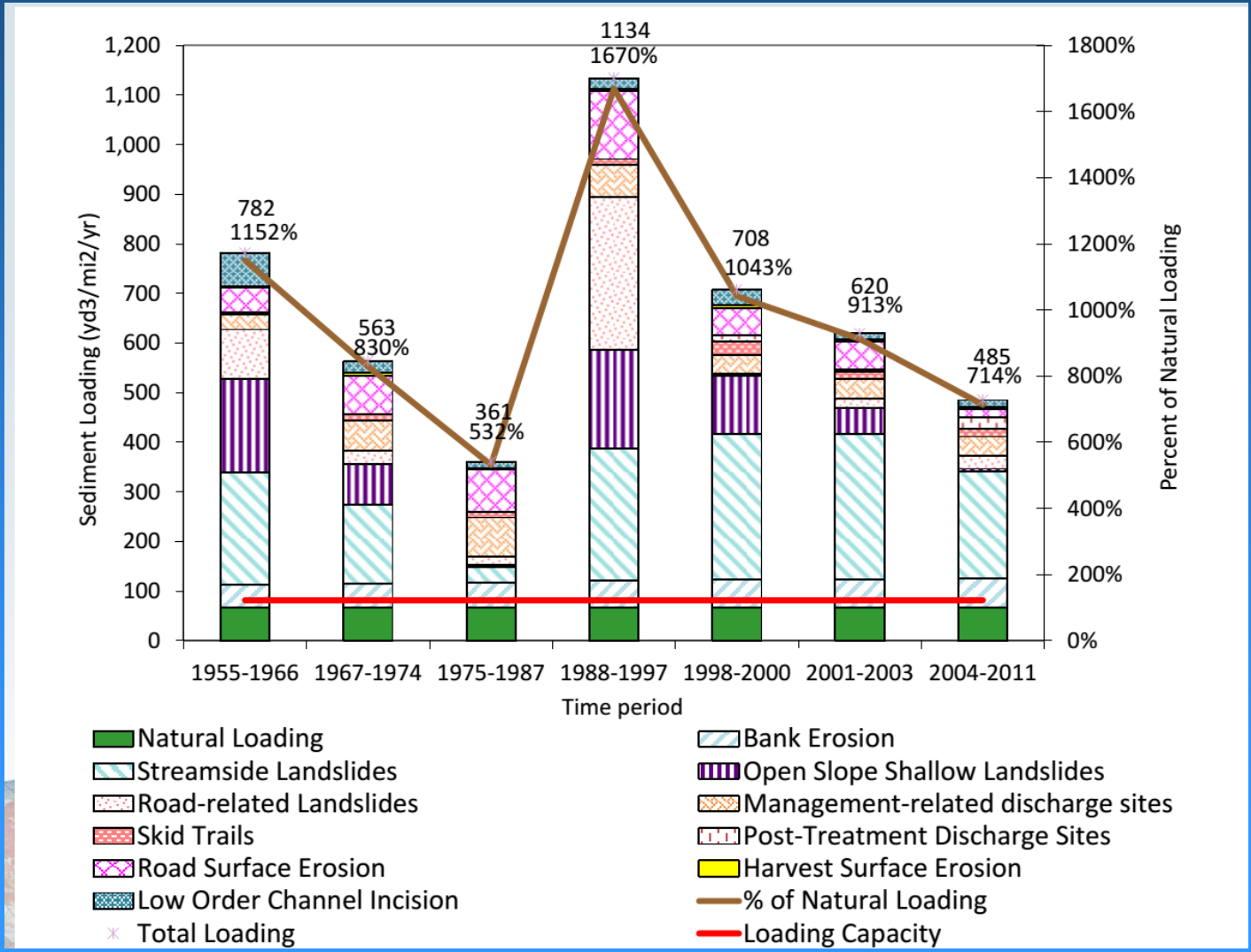


Road Density



- Rule of thumb, cumulative impacts occur at road densities of 4 mi./sq. mi.

Update on Upper Elk River Sediment Total Maximum Daily Load

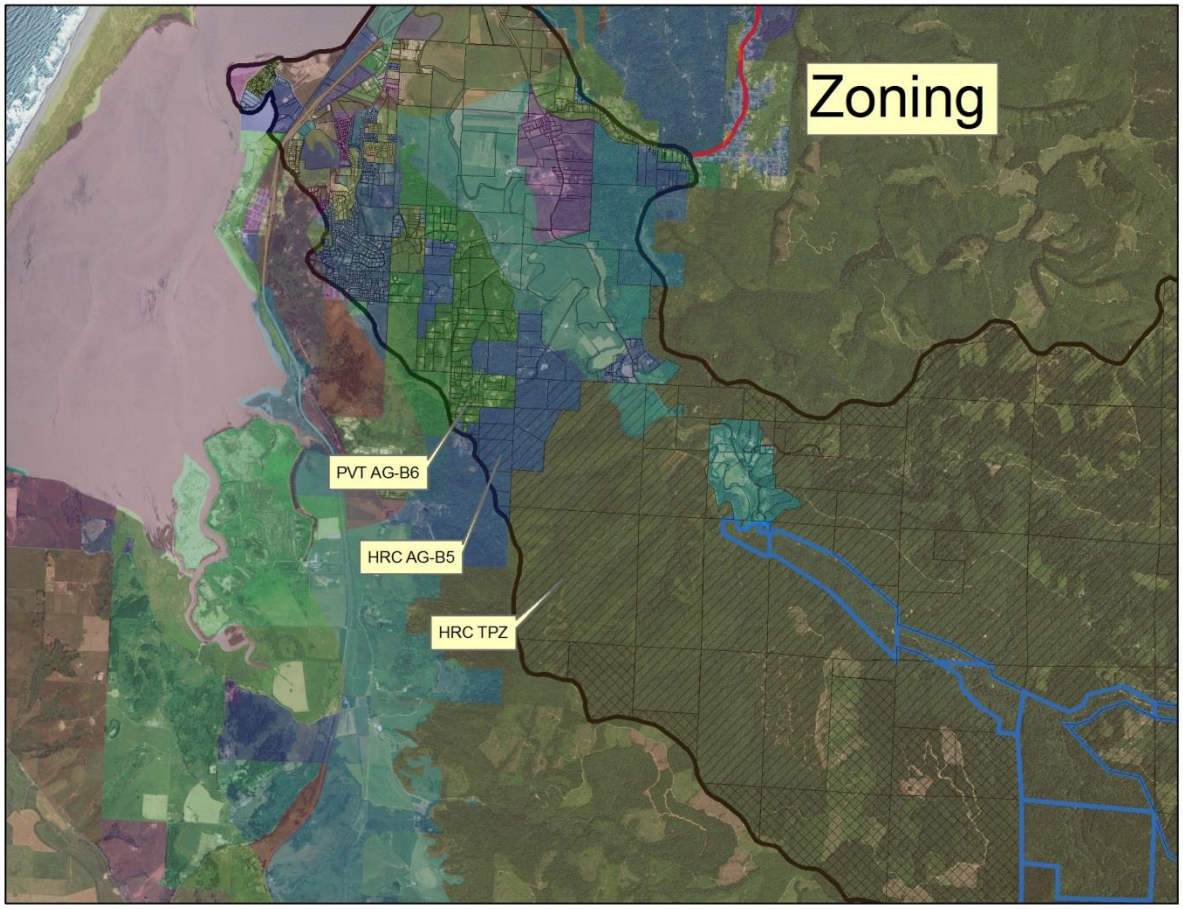


Potential Rural Subdivision Impacts

Elements of an Ecologically Sound Watershed Recovery Plan

- Reduce impacts from rural subdivisions by preventing subdivision of timberland and construction of houses and rural roads on TPZ
- Housing adjacent to properties being managed for timber production GREATLY complicates forest management
- Based on data from NCRLT, parcelization has reduced HumCo timber harvest by 13 MMBF/year 97-08, and over the past 40 years by 37 MMBF/year

Rural Subdivision Roads Often at Higher Densities Than From Timber Harvest



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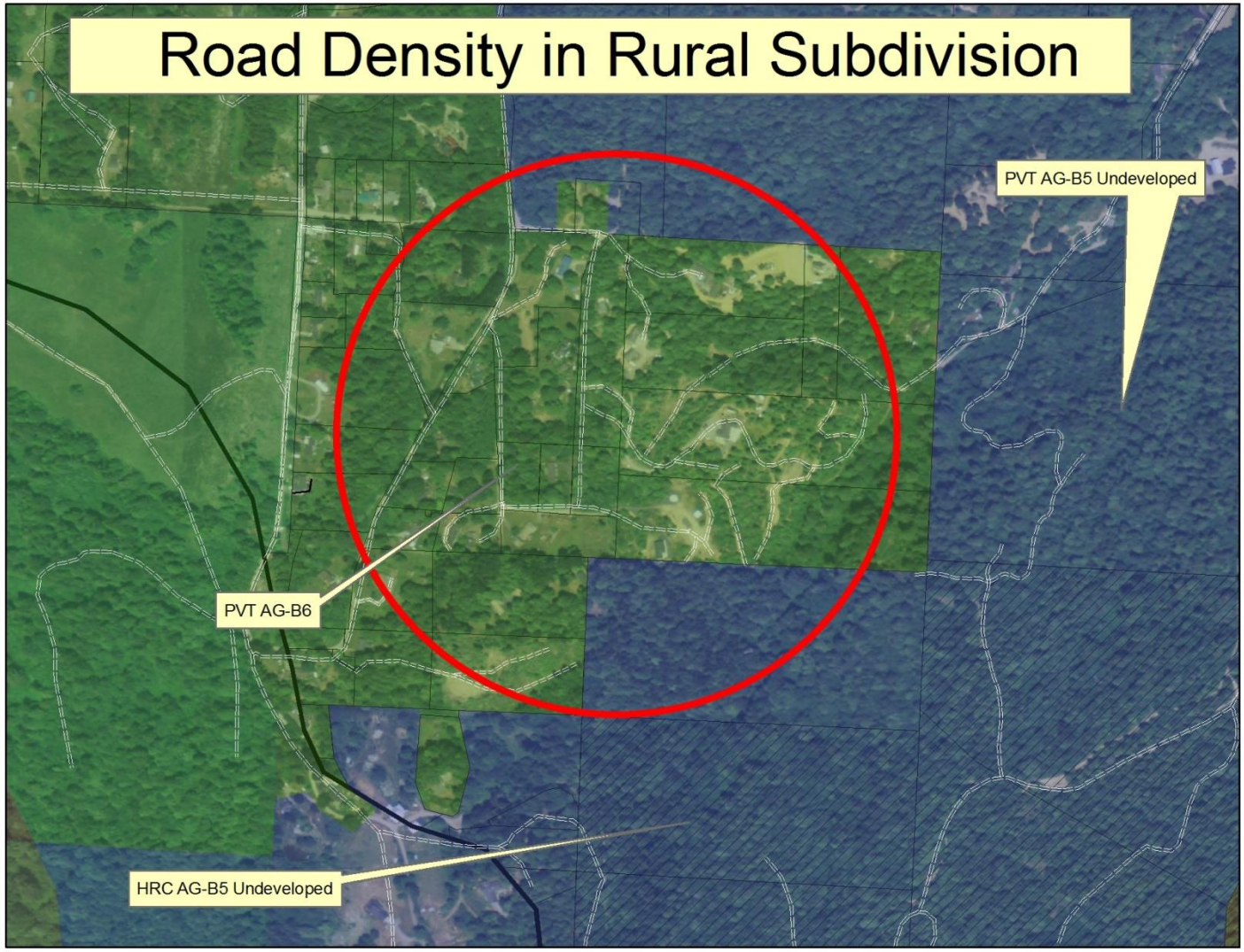

Rural Subdivision Roads Often Not Managed Anywhere Near as Well as Timber Company Roads

- Road Density is a Function of Lot Size, as Lots Get Smaller Road Density Goes Up
- Roads on Residential Parcels are Often Constructed with no Regulatory Control
- Residential Roads Often Not Rocked
- Residential Roads Used in Winter Whereas Timber Companies, NCRWQCB and FPRs all Restrict Winter Use

Change in Harvest Silviculture

Elements of an Ecologically Sound Watershed Recovery Plan

- HRC Shift From PALCO Even-aged Management to Uneven-aged

Shift from PALCO Even-aged to HRC Uneven-aged is Clearly an Element of an Ecologically Sound Watershed Recovery Plan

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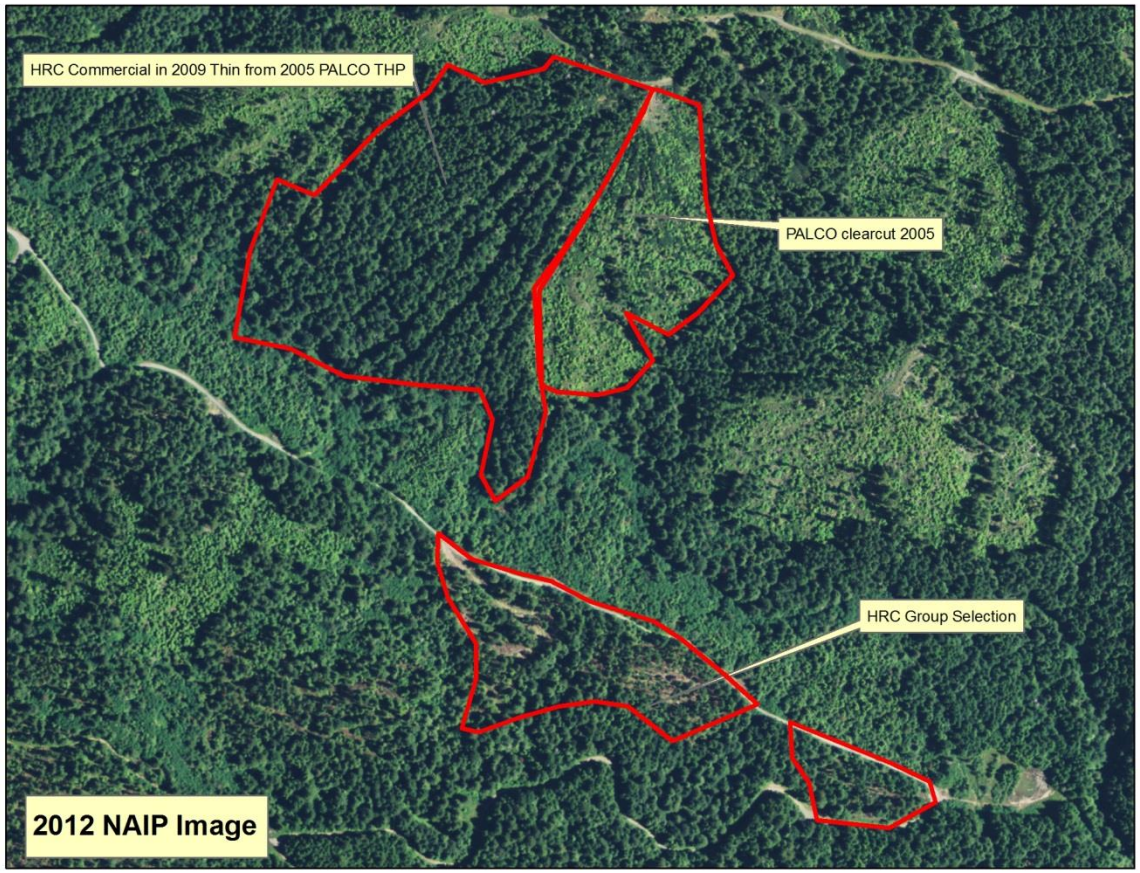
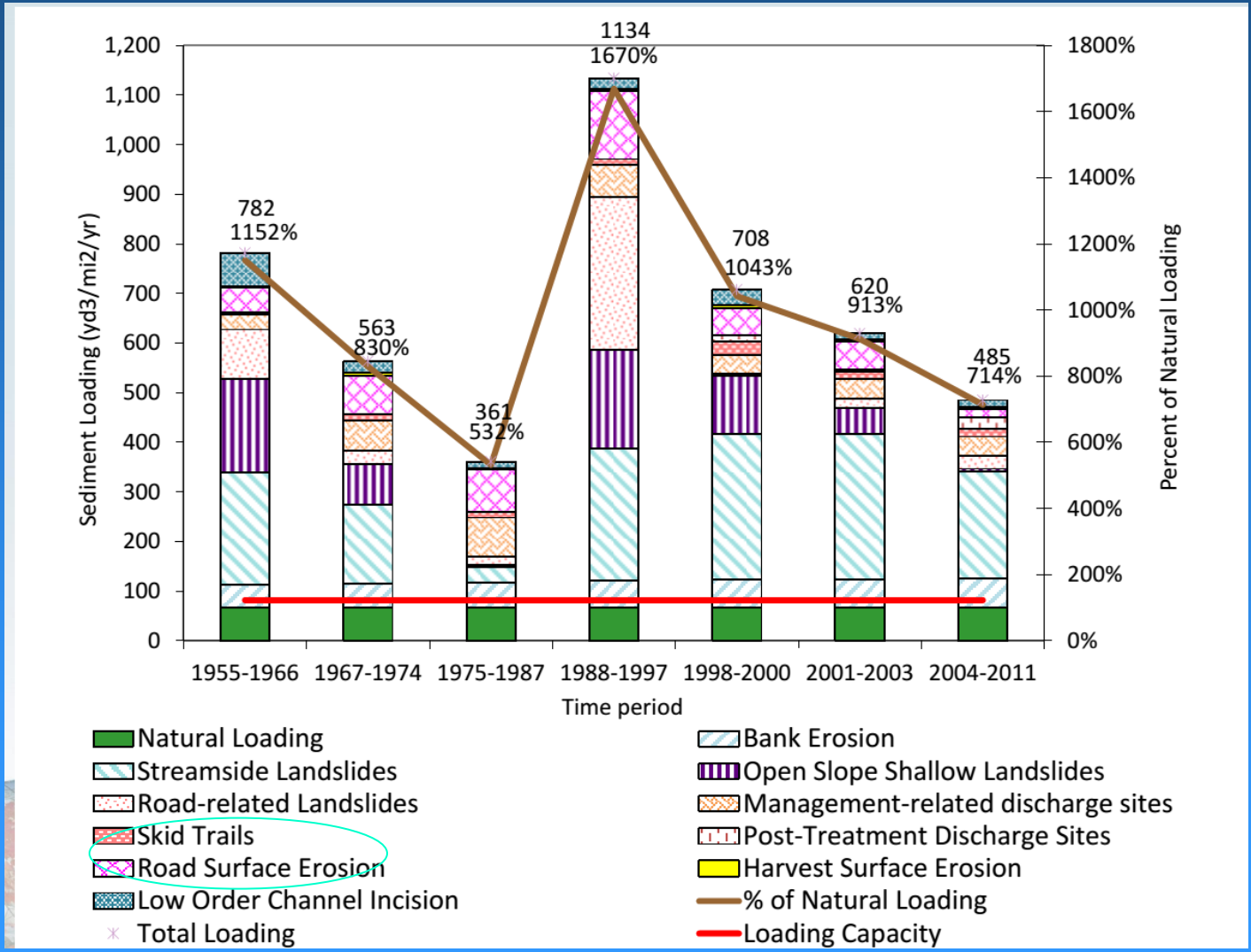


How Can Timber Harvest Contribute to Ecologically Sound Recovery

- Management related sediment is high, but
- Sediment from actual harvest areas, skid trails and road surface erosion is relatively small compared to total Mgmt related sediment

Update on Upper Elk River Sediment Total Maximum Daily Load

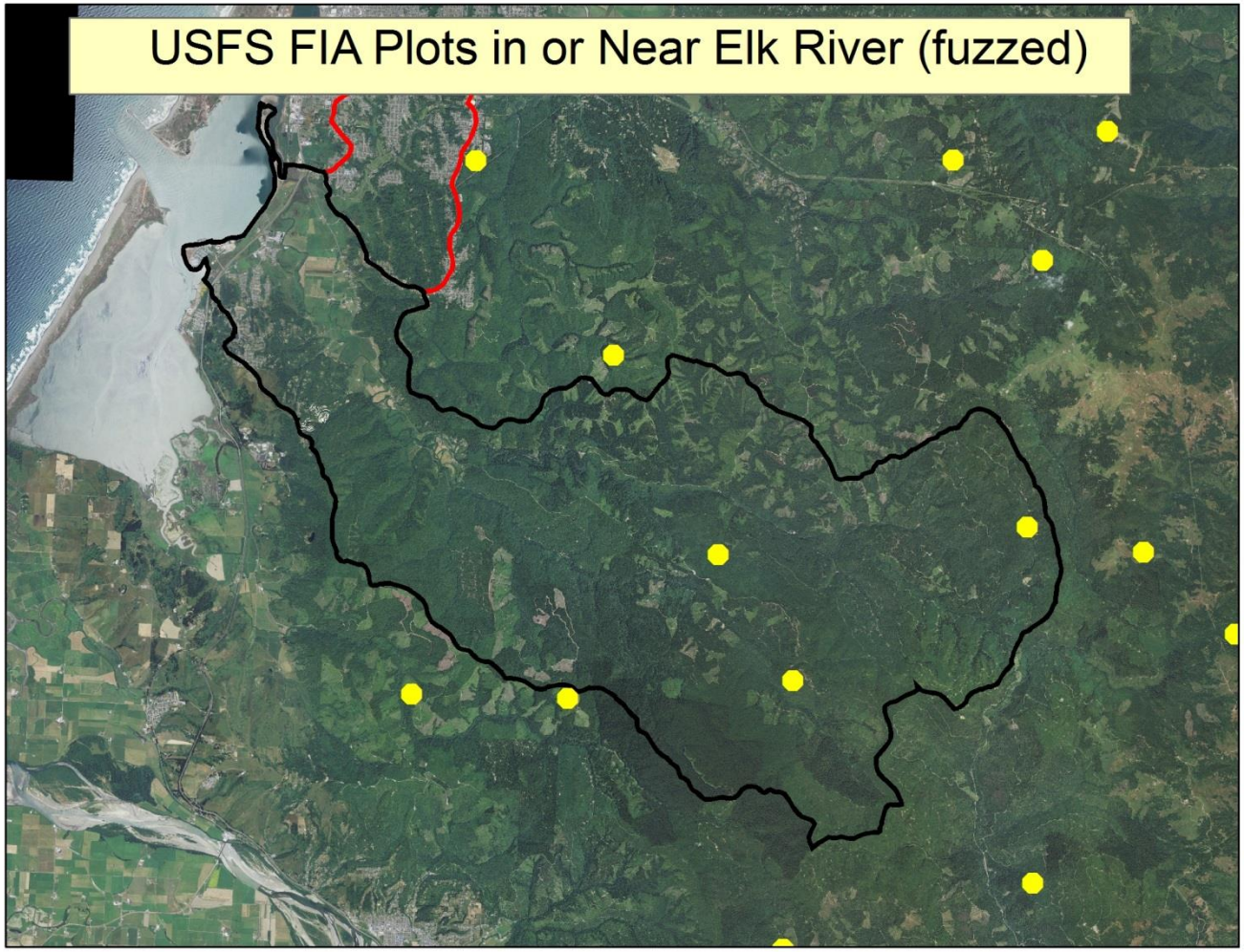


Past PALCO Management Heavy to Clearcutting and Very Heavy Selection

- PALCO proposed clearcutting 3,100 acres in years 2005-2014, and
- Implementing heavy selection on 300 acres in same time period
- Combination of clearcutting and heavy selection would have cut 166 MMBF of timber between 2005 and 2015
- Heavy clearcutting between 1990 and 2015 did, and/or would have created a significant timber gap between 2015 and 2035
- HRC and Humboldt County left with a future legacy of reduced harvest due to overcutting by PALCO

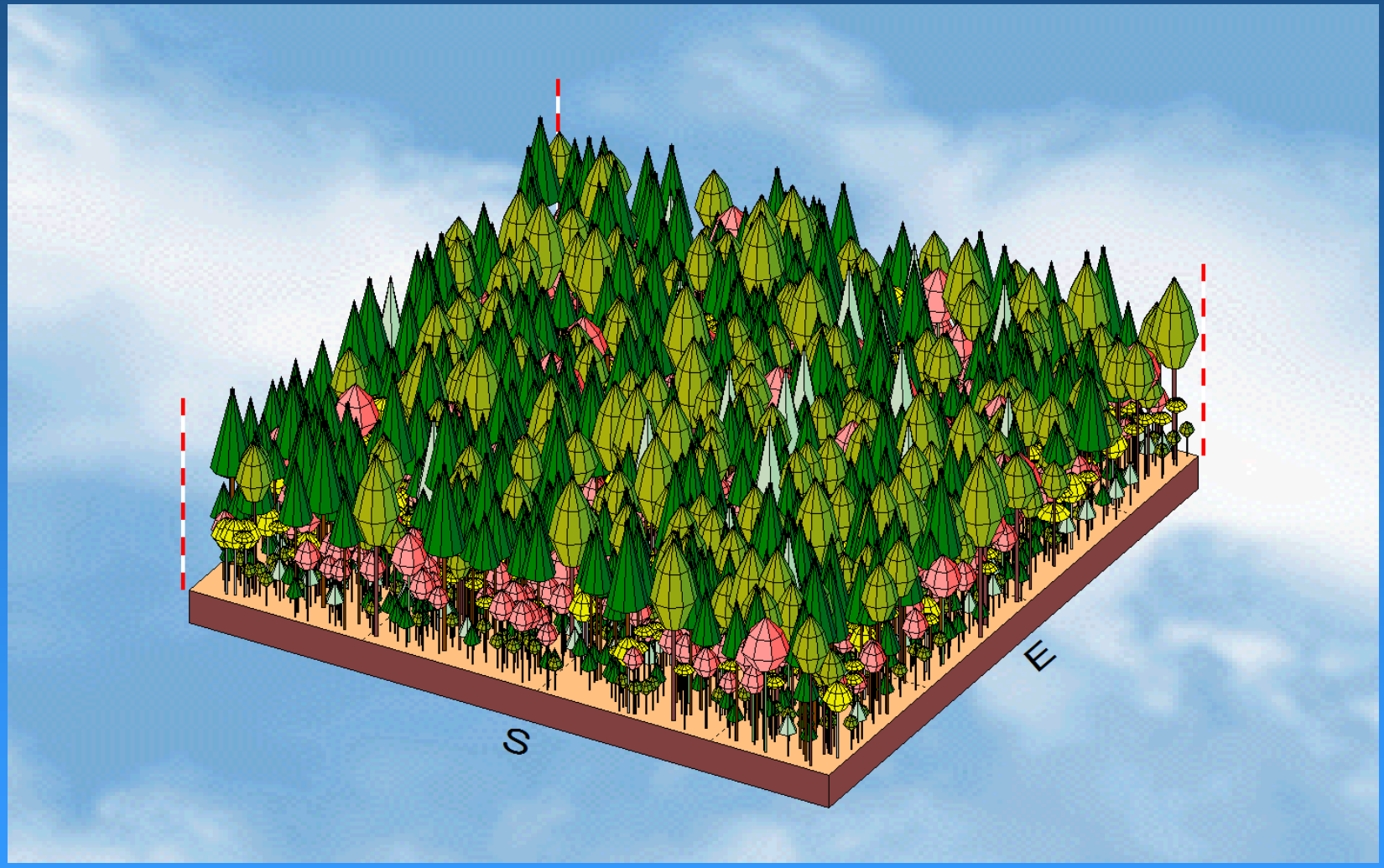
Projecting the Change in Silviculture

Used USFS FIA Plots from Elk River Watershed or Simulating Projections



What PALCO Would Have Been Clearcutting

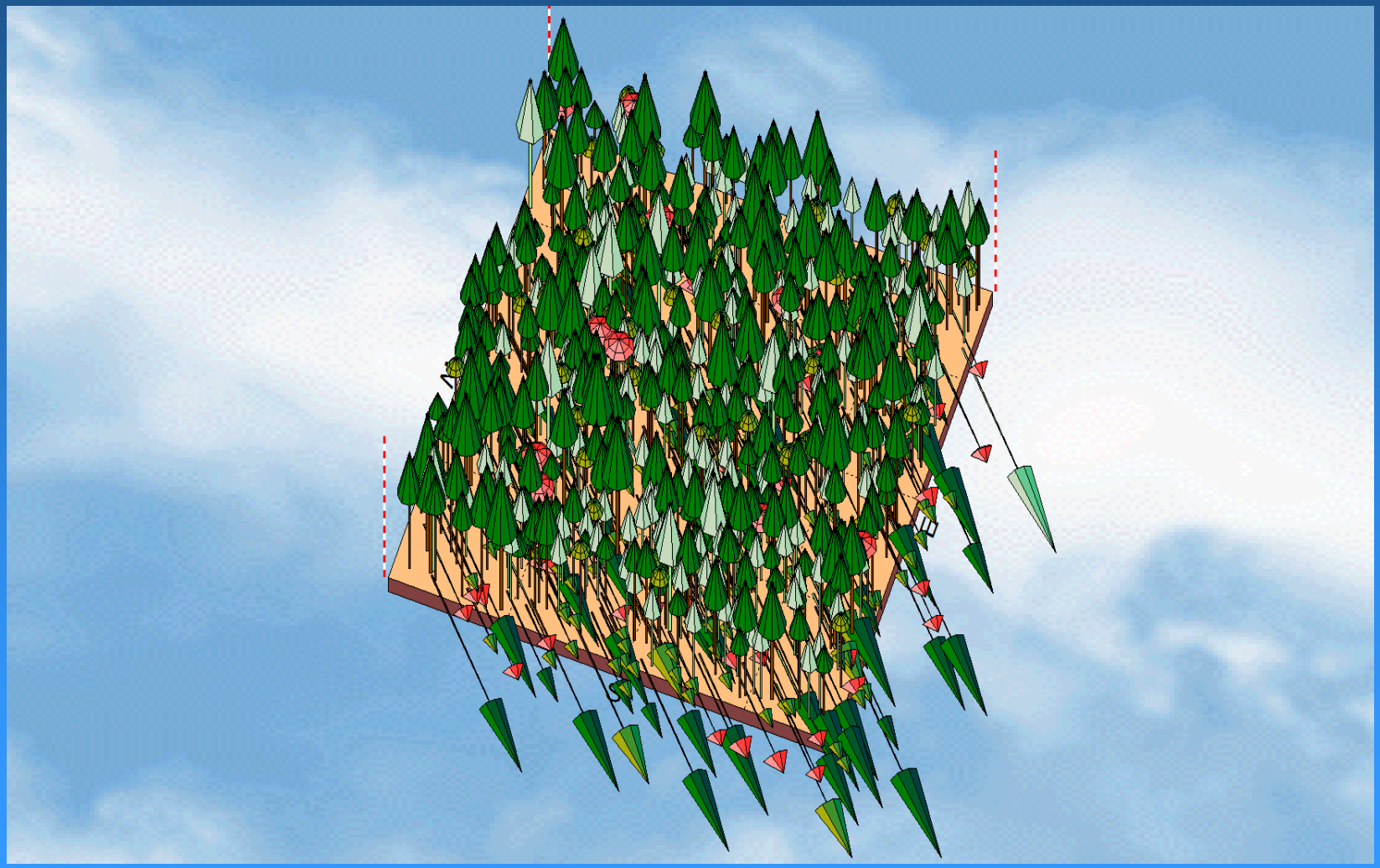
FIA Plot 81534 = 33 yrs old, 30 MBF/Ac (½ RW, ½ DF) similar to the previous slide



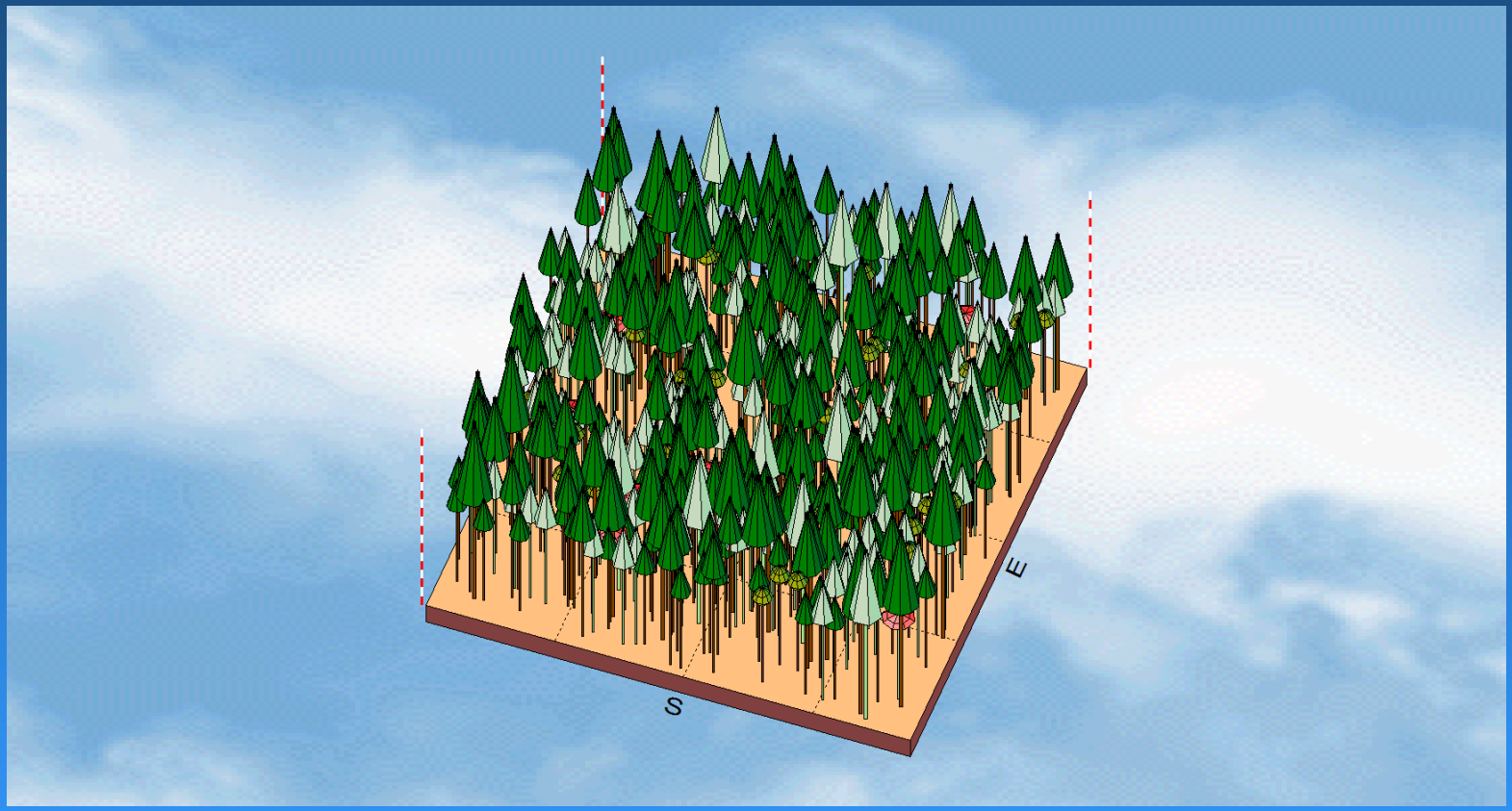
FIA Plot 81534 = 33 yrs old post selection harvest, leave 250 sq. ft., cut 7 MBF/ac

FIA Plot 81534 = Same Stand, 2nd harvest in 15 years
Stocking = 50 MBF/ac, harvest = 17 MBF/ac

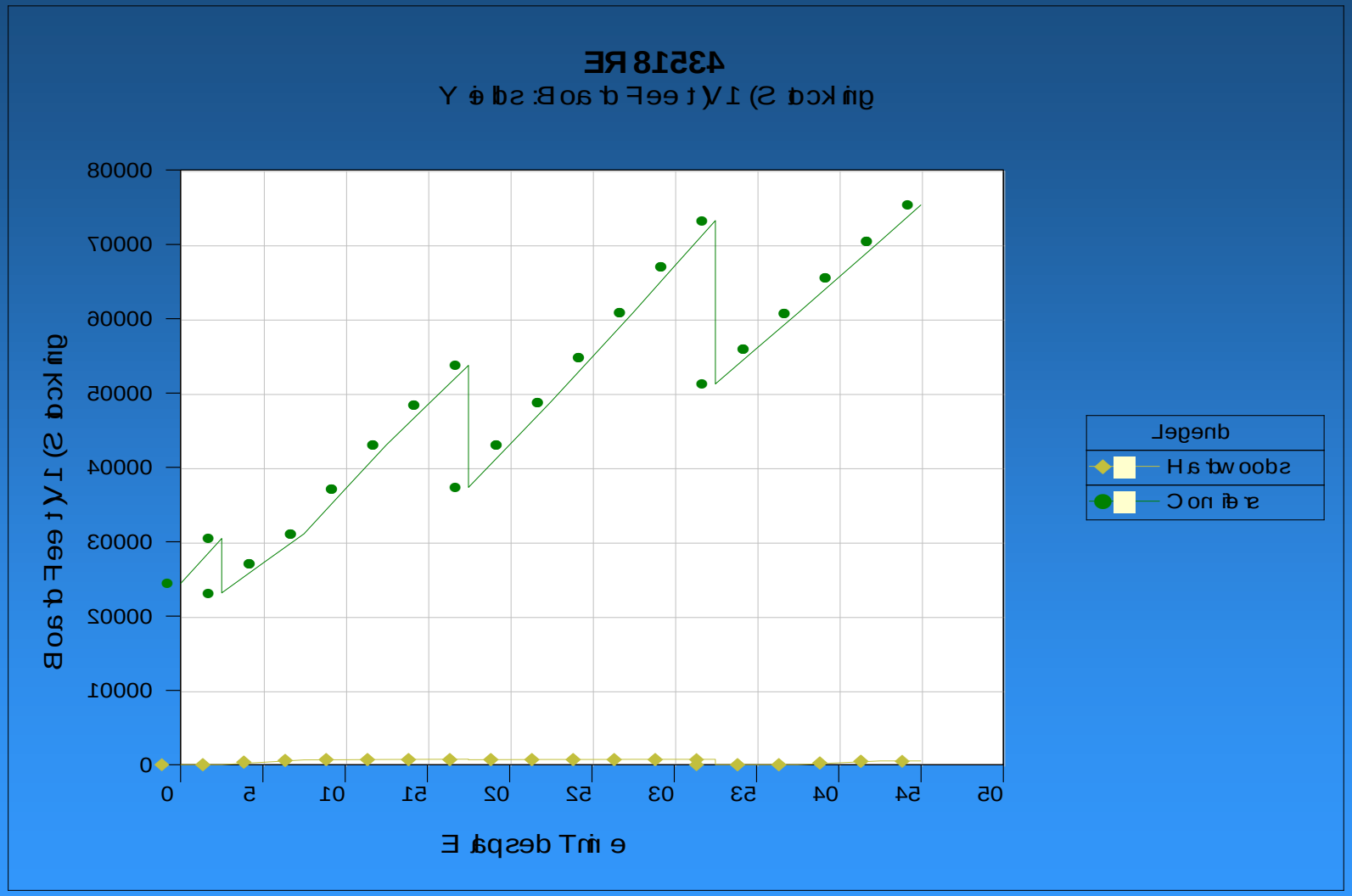
FIA Plot 81534 = Post 3rd harvest stocking=67 MBF/ac, harvest = 26 MBF/ac.



FIA Plot 81534 = 62 years ET condition (stand is 90 yrs old)
Stocking = 116 MBF/ac., 3 harvests of 45 MBF/ac.



FIA Plot 81534 = 45 years ET condition (stand is 75 yrs old)
Stocking = 75 MBF/ac., 3 harvests of 45 MBF/ac.



Possible Yields

- Approximately 26,000 acres of timberland not in Headwaters and not in Lower Elk River

No Restriction	15,600
No Cut	4,600
Selection Only	5,800
	26,000

- Manage all harvestable acreage using selection = 21,400 acres or 1,425 ac/year
- Over 45 years of harvest average yield = 1,000 BF/ac = 14.25 MMBF/year

Possible Yields

- PALCO would have produced about 165 MMBF over the period of 2005-2015
- Selection management might produce 14.25 MMBF/year = 145 MMBF over same period
- Result is much more esthetically pleasing, easier on the environment and better for wildlife and produces a superior lumber product compared to clearcutting

Which Seems More Ecologically Sound

This

Selection Forest Management
Desired Future Condition
50 yr old selectively harvested stand post harvest


Selection Forest Management
Desired Future Condition

Or This

Which is Ecologically Superior

Summary
Elements of an Ecologically Sound Watershed Recovery Plan

- NCRWQCB has outlined sediment source recovery tasks
- Restrict rural subdivisions and rural roads because they impact water quality
- Make sure harvest and road management contribute as little sediment as possible
- Shift silviculture from even-aged to uneven-aged