

# *Red Pine Plantation Management*



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# Rotation Age Review - History

- ▣ 2012 – ERF Stakeholder Meeting
  - DNR agreed to review rotation ages after ERF Policy review was completed.
  
- ▣ Sept 2013 – Forest Economist (Don Deckard) completes a review of three main covertypes:
  - Aspen/Bg, Lowland Black Spruce, Red Pine Plantations
  
- ▣ Jan – March 2014 –
  - Draft goes out for public review.
  - Changes made to the draft to better explain the process used.
  - Review by Division Directors and Asst. Commissioner

# Rotation Age Review - History

- ▣ Prior to 2013 MN DNR used a collaborative process with Divisions of Eco-Waters and Wildlife to set rotation ages for each subsection.
  - The peak of mean annual increment was used as a starting point for collaboration.
  - This approach was based on long-term volume maximization as the basis.
    - ▣ Resulted in a 100 year rotation age for red pine.

# Rotation Age Review - Results

- ▣ Optimum economic rotation age
  - For two major covertypes rotation ages based on optimizing volume vs economic return are very similar
    - ▣ Aspen 45 years (no significant change from current)
    - ▣ Black Spruce 80-120 years (no change)

# Rotation Age Review - Results

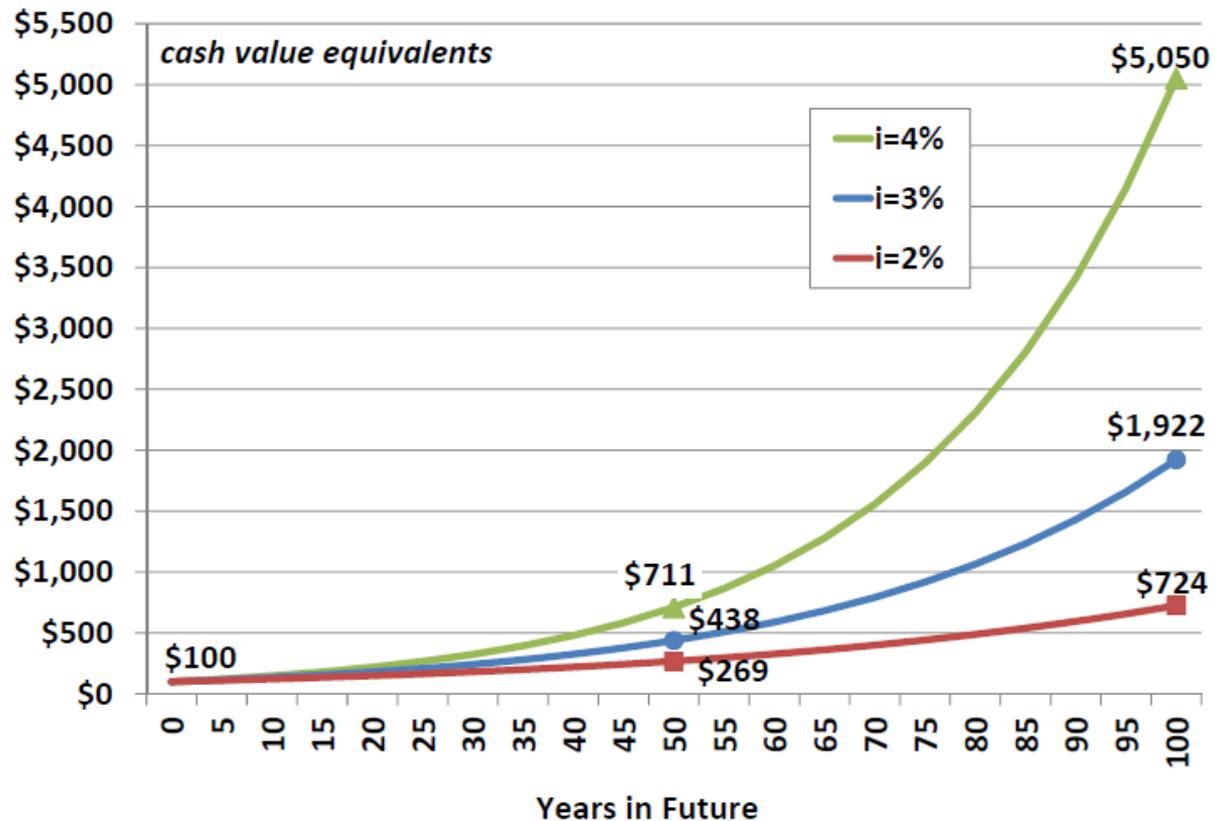
- ▣ Red Pine Plantations
  - 60-70 years (significant change from current SFRMP)
  
  - Based on:
    - ▣ Current markets, prices. Small sawbolts (12" DBH)
    - ▣ 3% Discount rate, the cost of holding plantations longer as growth slows and volumes from thinnings declines.
    - ▣ Establishment costs, secondary spp volumes and thinning volumes are all included in the review.

# Peak MAI for Red Pine

Planted Red Pine Growth & Yield --- Walters & Ek 1993			
	SI=55	SI=65	SI=75
Rotation Age	Cumulative Yield		
50 (with two thinnings)	46.6	53.4	60.5
60 (with three thinnings)	61.8	69.9	78.5
70 (with four thinnings)	76.6	86.0	95.8
80 (with five thinnings)	91.1	101.5	112.6
90 (with max six thinnings)	105.2	116.6	128.8
100 (with max six thinnings)	108.9	121.3	134.5
Rotation Age	MAI (Cumulative Yield Cords / Rotation Age)		
50	0.9	1.1	1.2
60	1.0	1.2	1.3
70	1.1	1.2	1.4
80	1.1	1.3	1.4
<b>90</b>	<b>1.2</b>	<b>1.3</b>	<b>1.4</b>
100	1.1	1.2	1.3

# Time Value of \$

Time Value of Money, Compounding & Discounting



# Implementation – Trust RPP

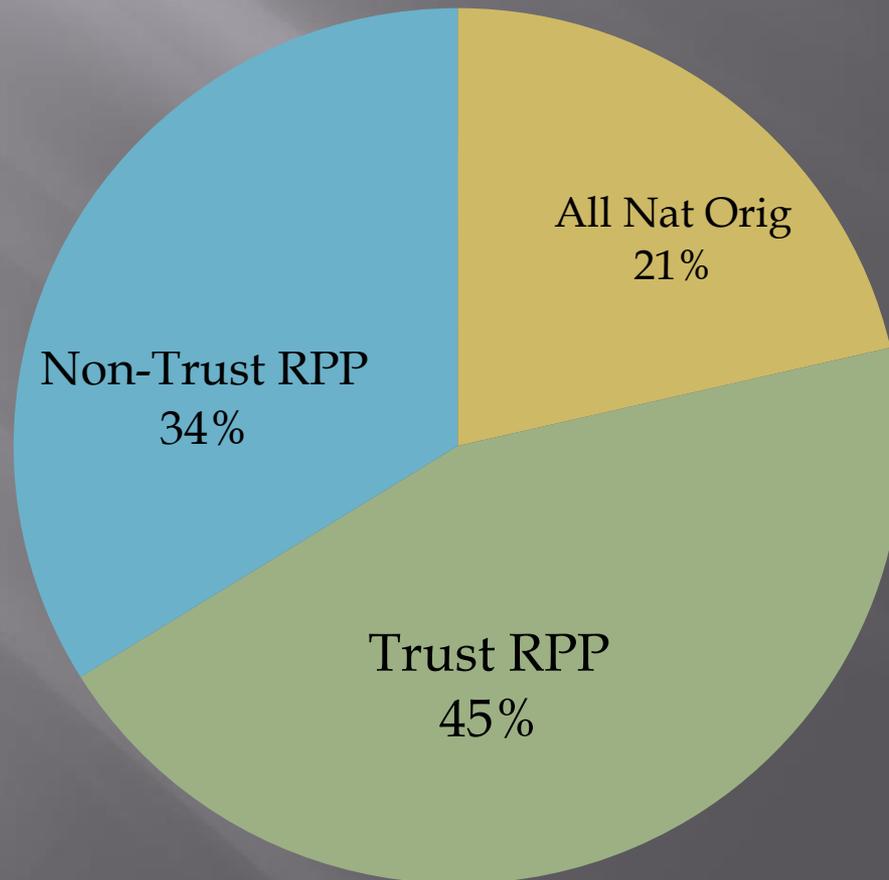
- ▣ Late March 2014 – Division Directors, Asst. Commissioner
  - Implement economic rotation ages on **trust lands red pine plantations only**.
  - Rotation Age Report is still draft.
- ▣ Early April 2014– Direction to Areas to appraise trust lands RPP.
  - Annual stand exam list developed
  - Over-rotation age stands
  - Flexibility language from draft report

# Implementation -Trust RPP

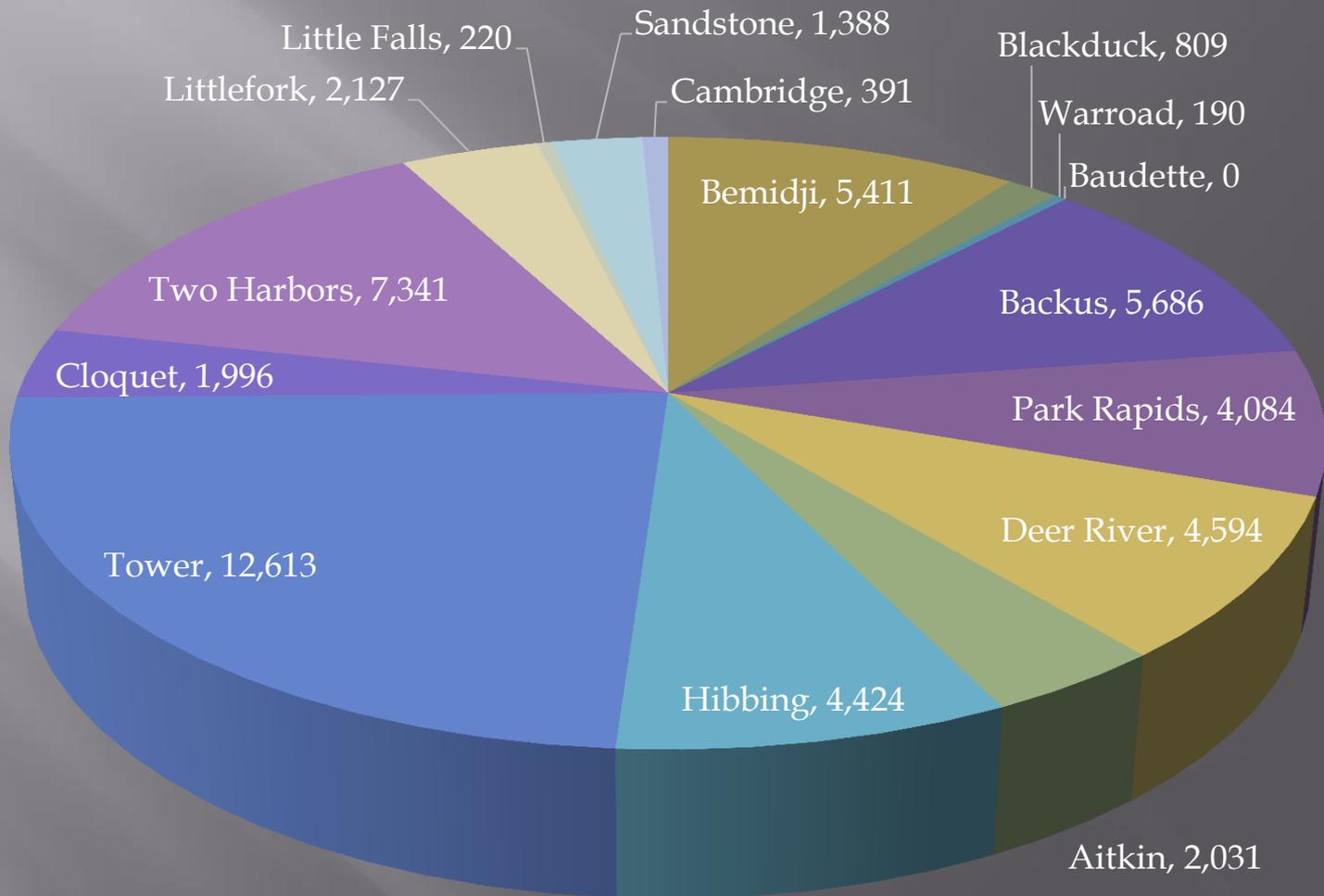
- ▣ April 2014 - 835 acres of trust land RPP added to FY14 and FY15 stand exam lists
  - Calculated the sustainable trust fund lands red pine plantation harvest level by dividing the total acres by the new rotation age. Result 835 acres/year.
  - *Understood that not all of this would result in timber sales.*

# Red Pine Resource

Red Pine Acres by Type  
107,315 total acres

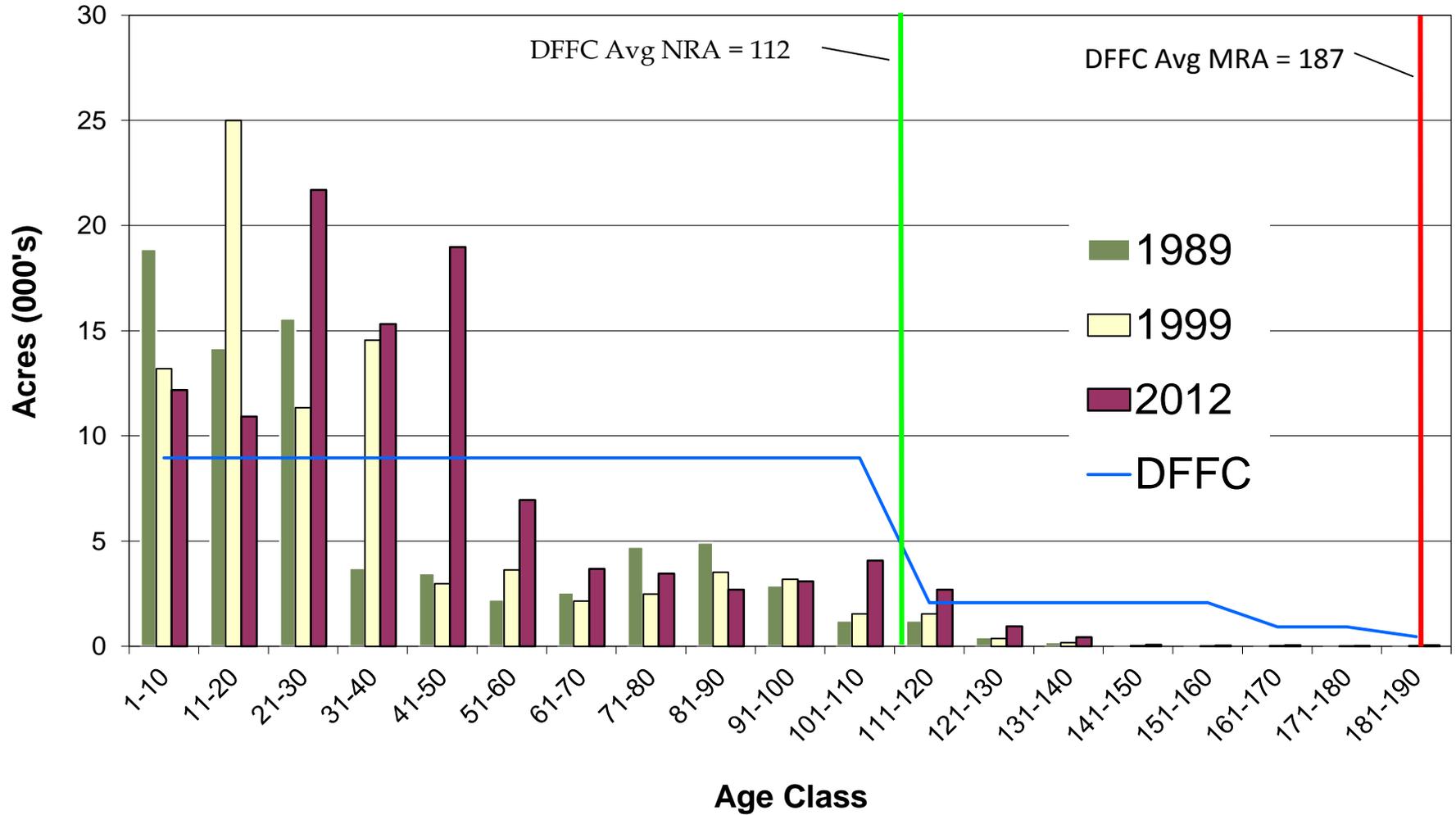


# Trust RPP Acres by Area

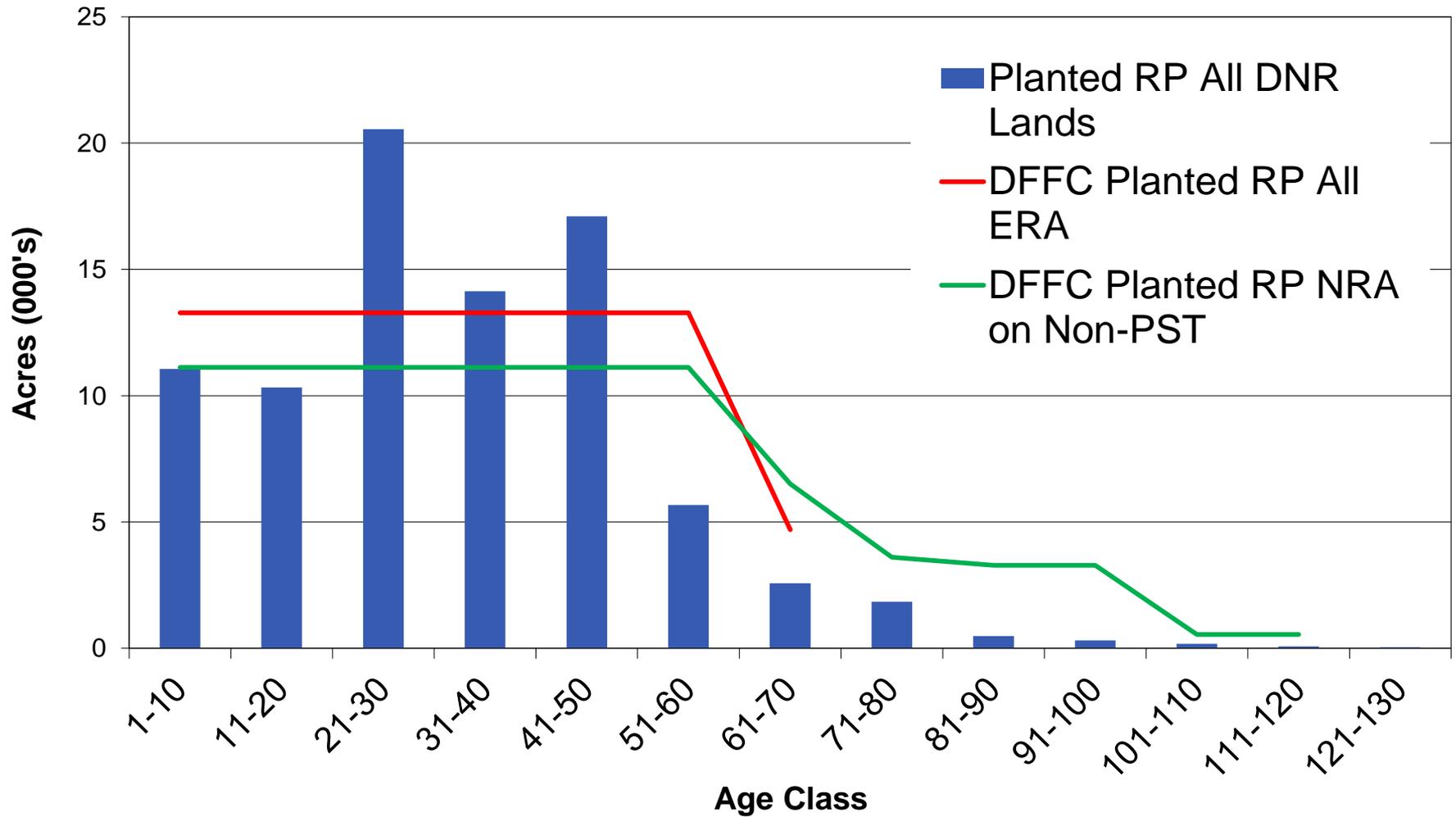


# DNR Red Pine Timberlands

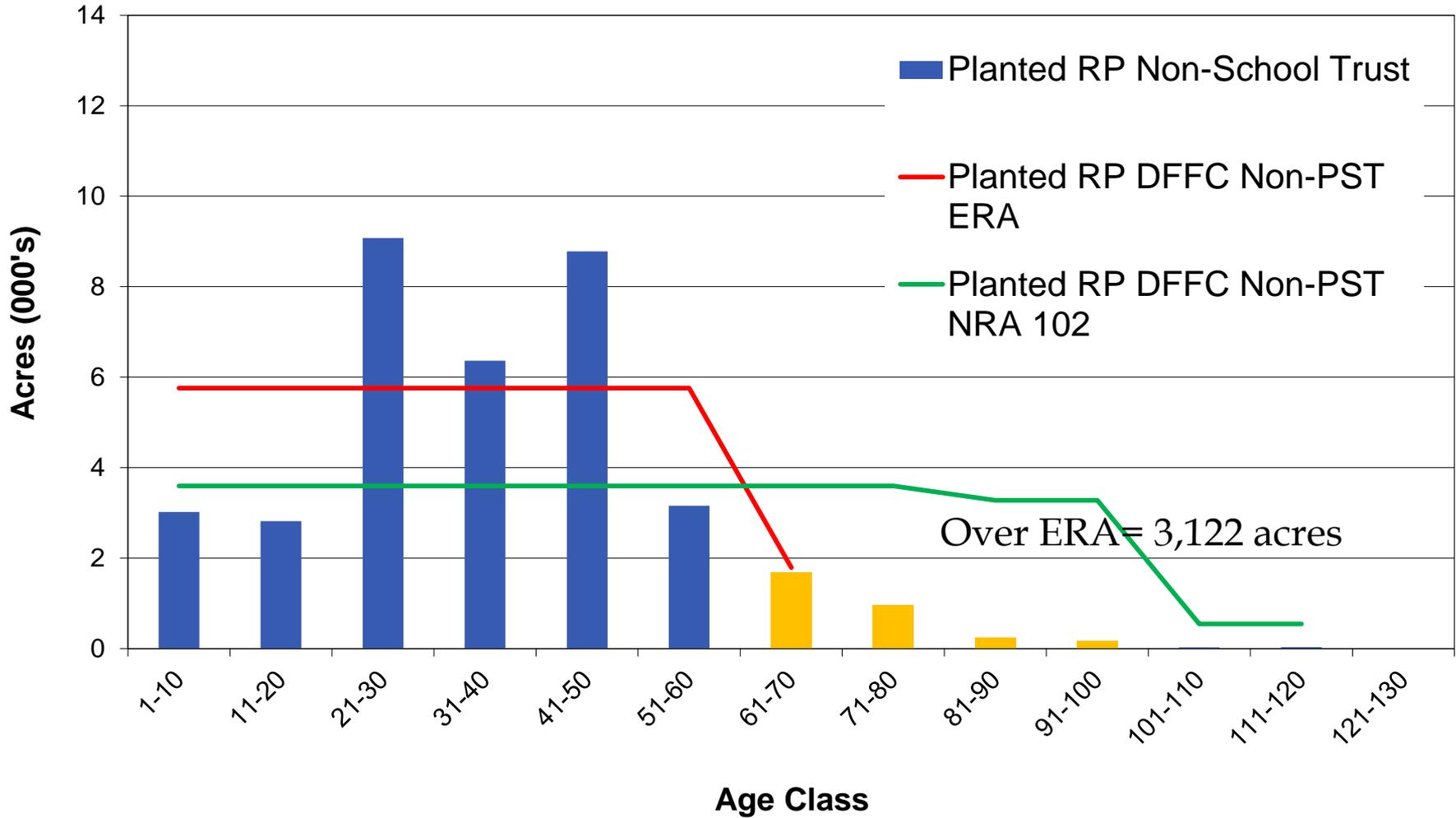
## Statewide 1989-1999-2012 & DFFC



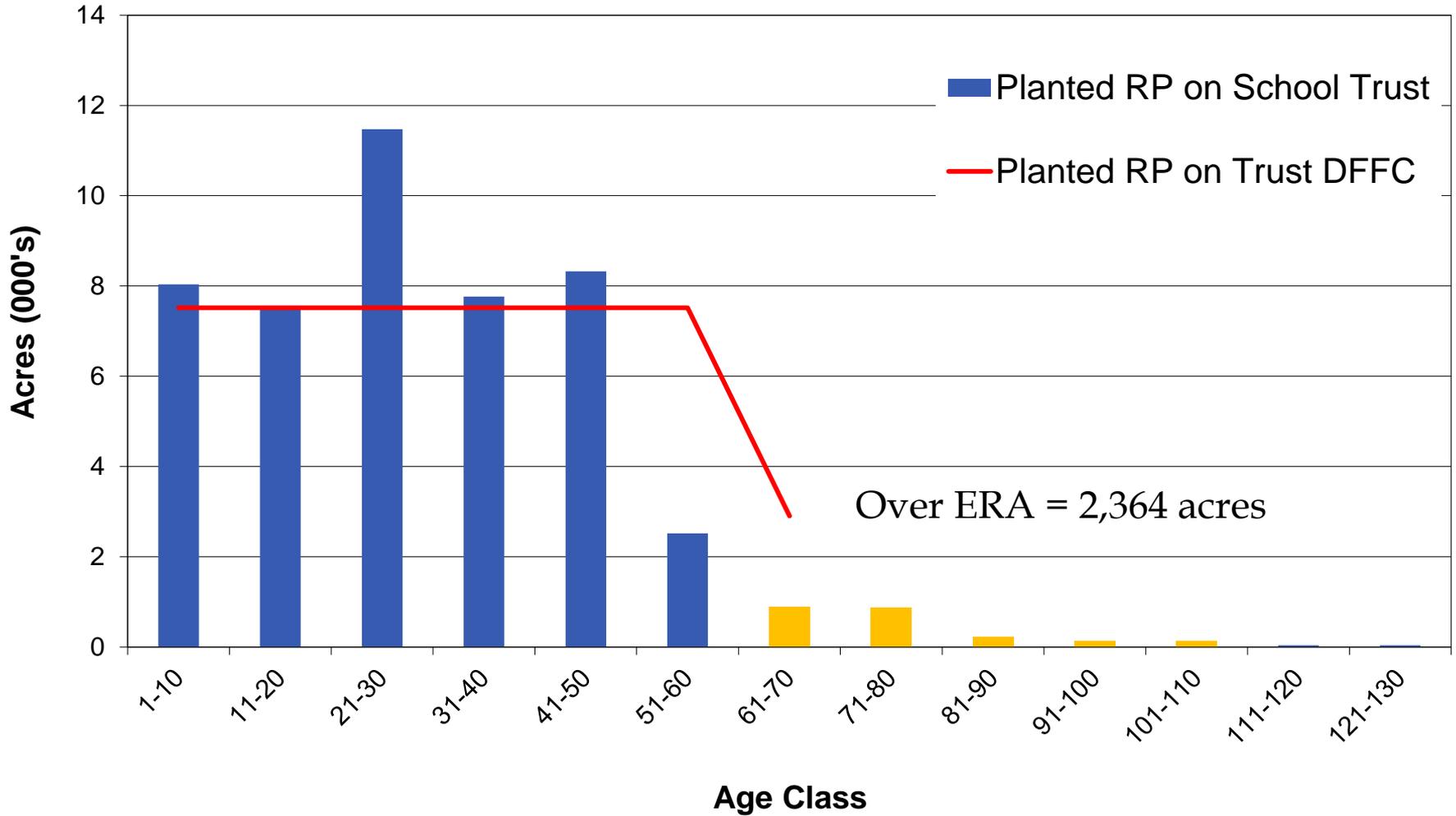
# All Planted Red Pine (84,351 ac) Statewide 2012



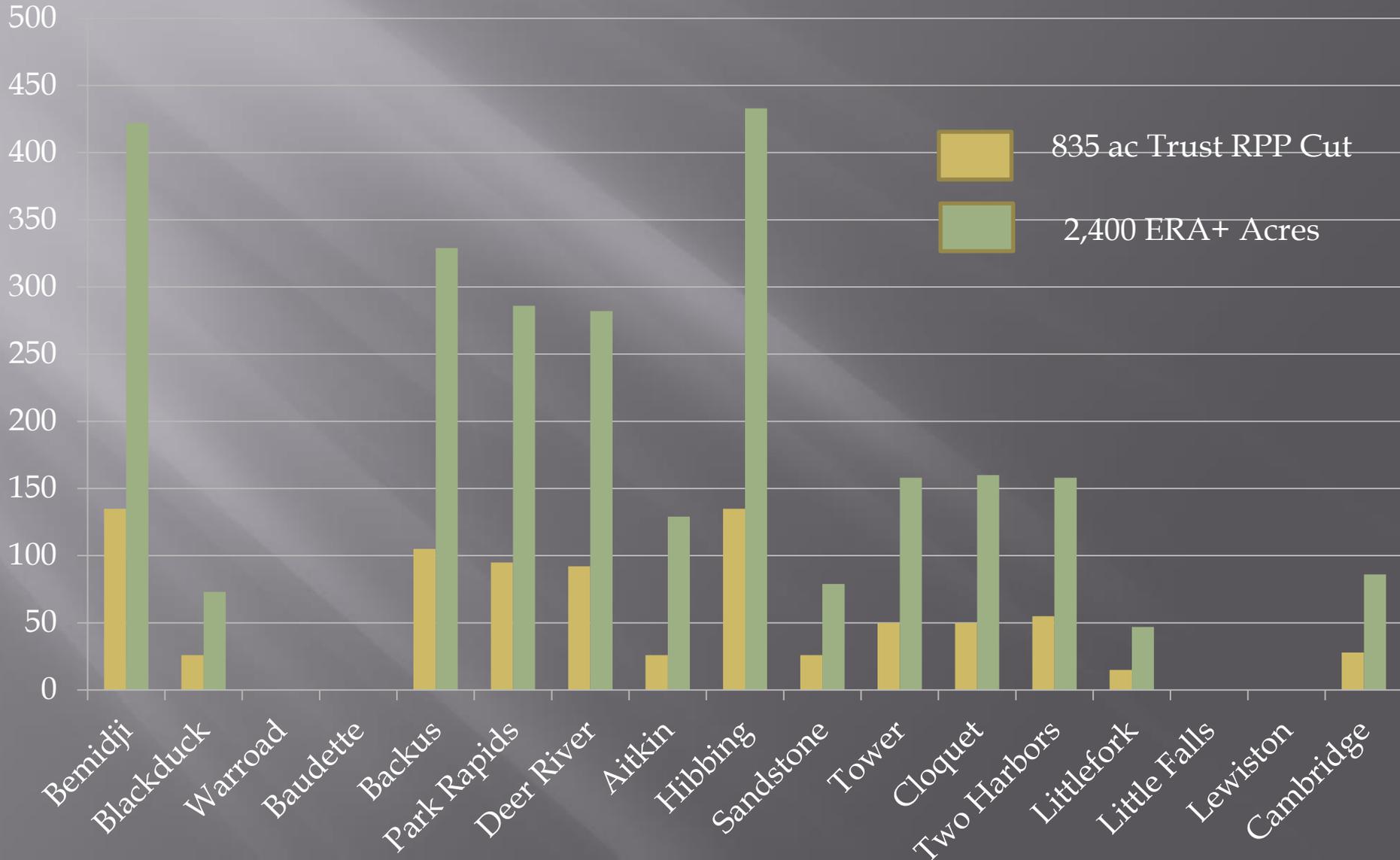
# Non-Trust Planted Red Pine (36,331 ac) Statewide 2012



# Trust Lands Planted Red Pine (48,020 ac) Statewide 2012



# Trust RPP - AnnualExam List



# FY14 Trust RPP Results

## FY14 Economic Rotation Age Red Pine Final Harvest Sales

Area	Permit #	Acres	NP Cords	Spp listed	Product Listed	% pulp	% bolts	% Saw	pine appraised \$	% bid up	NP bid value \$	bid \$/cord
Backus	B012702	19	410	Norway Pine	woodsrun mixed products	27%	28%	45%	\$38.44	101%	\$31,676.60	\$77.26
Backus	X014219	22	525	Norway Pine	woodsrun mixed products	55%	45%	0%	\$23.76	152%	\$31,437.00	\$59.88
Bemidji	X014282	16.7	245	Pine spp	woodsrun mixed products	25%	65%	10%	\$31.05	75%	\$13,313.30	\$54.34
Deer River	X014214	16.1	589	Norway Pine	Woodsrun Mixed Products	15%	37%	48%	\$35.41	82%	\$37,996.75	\$64.45
Aitkin	B012658	16.2	1065	Norway Pine	Woodsrun Mixed Products	25%	45%	30%	\$36.55	121%	\$86,030.70	\$80.78
Hibbing	B012673	4	250	Norway Pine	Woodsrun Mixed Products	15%	85%	0%	\$34.15	87%	\$15,965.00	\$63.86
Hibbing	B012679	22	1005	Norway Pine	Woodsrun Mixed Products	5%	25%	70%	\$48.79	102%	\$99,119.10	\$98.56
Hibbing	X014193	15	400	Norway Pine	Woodsrun Mixed Products	20%	80%	0%	\$32.81	119%	\$28,867.55	\$71.85
Cloquet	B012618	40	1600	Norway Pine	Woodsrun Mixed Products	25%	75%	0%	\$31.45	180%	\$140,896.00	\$88.06
Two Harbors	B012723	57.8	850	Norway Pine	Woodsrun Mixed Products	25%	30%	45%	\$37.31	160%	\$82,458.50	\$97.01
Littlefork	B012692	12.7	680	Norway Pine	Woodsrun Mixed Products	30%	70%	0%	\$37.60	40%	\$35,827.50	\$52.64
Sandstone	B012624	16.5	913	Pine Species	Woodsrun Mixed Products	10%	90%	0%	\$50.00	50%	\$46,100.00	\$75.00
<b>Totals</b>		<b>258</b>	8,532								\$649,688.00	\$73.64

Note: Current statewide sawtimber base price/MBF is \$110.50 or \$55.25/cord.

# FY15 Trust RPP Results

FY15 Economic Rotation Age Red Pine Final Harvest Sales													
Area	Permit #	Acres	NP Cords	Spp listed	Product Listed	% pulp	% bolts	% Saw	pine appraised \$	% bid up	NP bid value \$	bid \$/cord	
Blackduck	X014586	21	975	N.PINE, B.FIR	Woodsrun Mixed Prod.	50%	40%	10%	\$34.38	129%	\$76,761.75	\$78.73	
Bemidji	B012994	13.5	440	Pine Species	Mixed product	10%	30%	60%	61.70	60%	\$27,148.00	98.72	
Bemidji	B012997	10	310	Pine Species	Mixed product	20%	60%	20%	39.60	110%	\$12,276.00	83.16	
Bemidji	B012998	51	850	Mixed Conifer	Mixed product	30%	35%	35%	44.15	81%	\$37,527.00	79.91	
Backus	B012916	4.8	295	Norway Pine	Woodsrun Mixed Products	45%	15%	40%	\$37.00	93%	\$21,065.95	\$71.41	
Backus	B012922	71	2,870	Norway Pine	Woodsrun Mixed Products	20%	30%	50%	\$46.50	120%	\$293,601.00	\$102.30	
Park Rapids	B012939	11	415	Norway Pine	Woodsrun Mixed Products	6%	53%	41%	\$60.60	69%	\$42,500.15	\$102.41	
Hibbing	X014437	30.2	825	Pine Species	Woodsrun Mixed Products	10%	40%	50%	\$44.03	66%	\$60,299.25	\$73.09	
Hibbing	B012859	24	1090	Norway Pine	Woodsrun Mixed Products	5%	25%	70%	\$48.79	65%	\$87,745.00	\$80.50	
Hibbing	B013051	64	2620	Pine Species	Woodsrun Mixed Products	5%	25%	70%	\$65.18	38%	\$235,669.00	\$89.95	
Cloquet	B013042	43	1880	Norway Pine	Woodsrun Mixed Products	16%	34%	50%	\$66.21	25%	\$155,588.80	\$82.76	
Totals		<b>344</b>	12,570								\$1,050,181.90	\$85.72	

Note: Current statewide sawtimber base price/MBF is \$127.50 or \$63.75/cord.

# FY15+ Direction

- ▣ Areas continue to add Trust RPP into annual exam lists as APAs, until;
  - New SFRMP plan that uses the economic rotation age for stand selection.
  - Run out of “over-mature” stands to add to lists.
  - There will be a gap until there is a relatively even flow of mature stands.
  - We have about 3 years worth of available stands now.

# ERA Report - Flexibility

- ▣ “Based on these site visits (and other relevant information), staff will determine whether or not the regeneration harvest occurs now (at the ERA) or is deferred to a later date (but not beyond the normal rotation age for red pine in that subsection). “

# ERA Report - Flexibility

- ▣ “Situations in which other priority management objectives may merit deferring harvest beyond economic rotation age include:
  - Local **specialty markets** exist. For example, house logs or utility poles.
  - The stand is in a **visually sensitive corridor**.
  - The stand is in a **wildlife management area, old forest management complex, old growth special management zone, or in a designated or candidate high conservation value forest**.
  - The stand is within a designated habitat **patch** identified in an SFRMP to be managed for older or other natural forest characteristics.
  - The stand has **not yet reached the target QMD.**”

# ERA Report - Flexibility

- ▣ “Deferring the regeneration harvest of planted red pine stands beyond the identified economic rotation age on School Trust Lands is expected to occur on a very limited basis, with clear justification linked to the situations described above. Any such deferments will need to be reviewed to determine the need for compensation to the school trust.”

# Non-Trust RPP Stands

- ▣ SFRMP will use ERAs for Non-Trust RPP stand selection to develop Stand Exam Lists
  - Site by site decision to harvest at ERA
  - Same flexibility language applies to non-trust RPP
  - If not harvested at ERA, cannot hold past NRA (100)
  - Develop a plan for when to harvest

# Public Review

- ▣ How should DNR alert the public about our change in RPP management?
  - ERA Report went out for public comment
    - ▣ Very specific to change from NRA to ERA
    - ▣ Received stakeholder comments from several groups including Audubon Society and U of MN
  - SFRMPs stand exam lists will go out for public review when new ERAs for RPP are included
  - APAs go out for 30 day public review
  - Local site level review?? Area coordinated??
    - ▣ Are there local interest groups?
      - Lake Associations, trail clubs, x-country ski clubs

# Plantation Mgmt Objective

- ▣ Significant shift in management objective
  - Bolts vs large sawtimber/cabin logs
  - Economic priority for trust lands
  - Allow foresters to assess red pine plantations earlier for regeneration harvests.
    - ▣ Off site plantations, may be regenerated to appropriate species.
    - ▣ Habitat objectives
    - ▣ Low density older stands