

# Reforestation and Site Preparation Results Region III State Lands

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Northern Region Fairbanks, Alaska

Includes Consultation with: Region III Delta Area Forester Al Edgren, Tok Area Forester Jeff Hermanns, and Brian Young



# Fairbanks Management Area

## Methods of Site Preparation

- Dozer Blade (Most Common)



Winter Scarification



# Fairbanks Management Area

## Methods of Site Preparation

- Dozer Blade (Most Common)



Summer Scarification

# Fairbanks Management Area

## Methods of Site Preparation

- Disc Trencher



# Fairbanks Management Area

## Methods of Site Preparation

- Paddle Trencher



# Fairbanks Management Area

## Methods of Site Preparation

- Broadcast burning



# Fairbanks Management Area

## Scarification Techniques

- 50% of area scarified
- Mostly with dozer blade D-6 or smaller
- Scarification is increasingly required in birch units
- Scarification required on a case by case basis on mixed and pure spruce units.

# Fairbanks Management Area

## Tree Planting Techniques

- Currently planting at 300 trees per acre (12 foot spacing), 313B styroblock plugs.
- Planting in spruce and birch sites, all spruce seedlings.
- Earlier years were planting at 680 trees per acre but were finding more than adequate regeneration.
- Tree planting key is to only plant in suitable planting sites where the seedling is likely to survive.
- Plant as soon after logging as possible.

# Fairbanks Management Area

## Tree Planting Techniques



**Properly Planted Seedling**

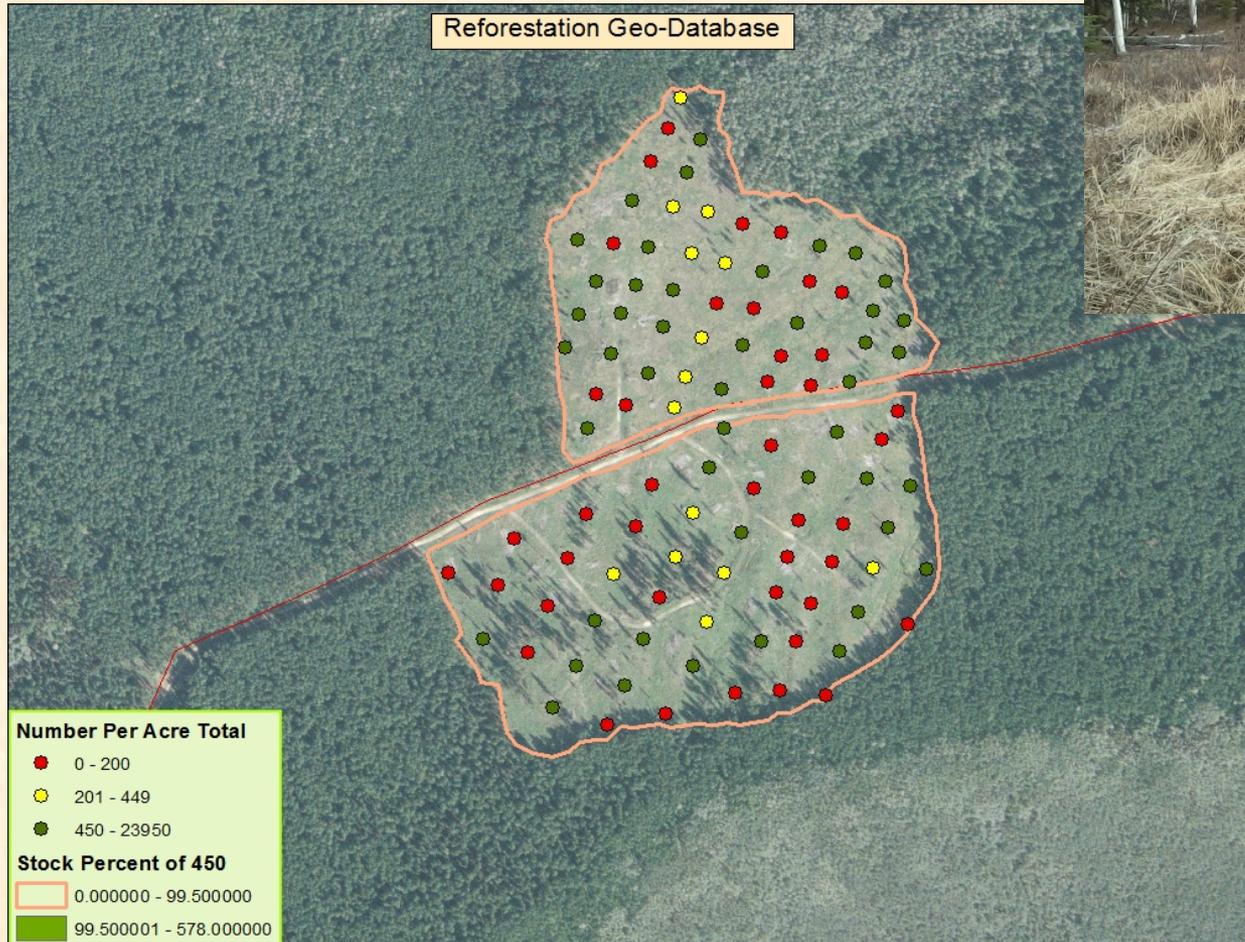


**Fresh Logged Site**



**Styroblock 313B One Year Old Plugs**

# Fairbanks Management Area Reforestation Geodatabase



Identify

Identify from: **Regeneration\_survey**

Regeneration\_survey  
    ... NC-945

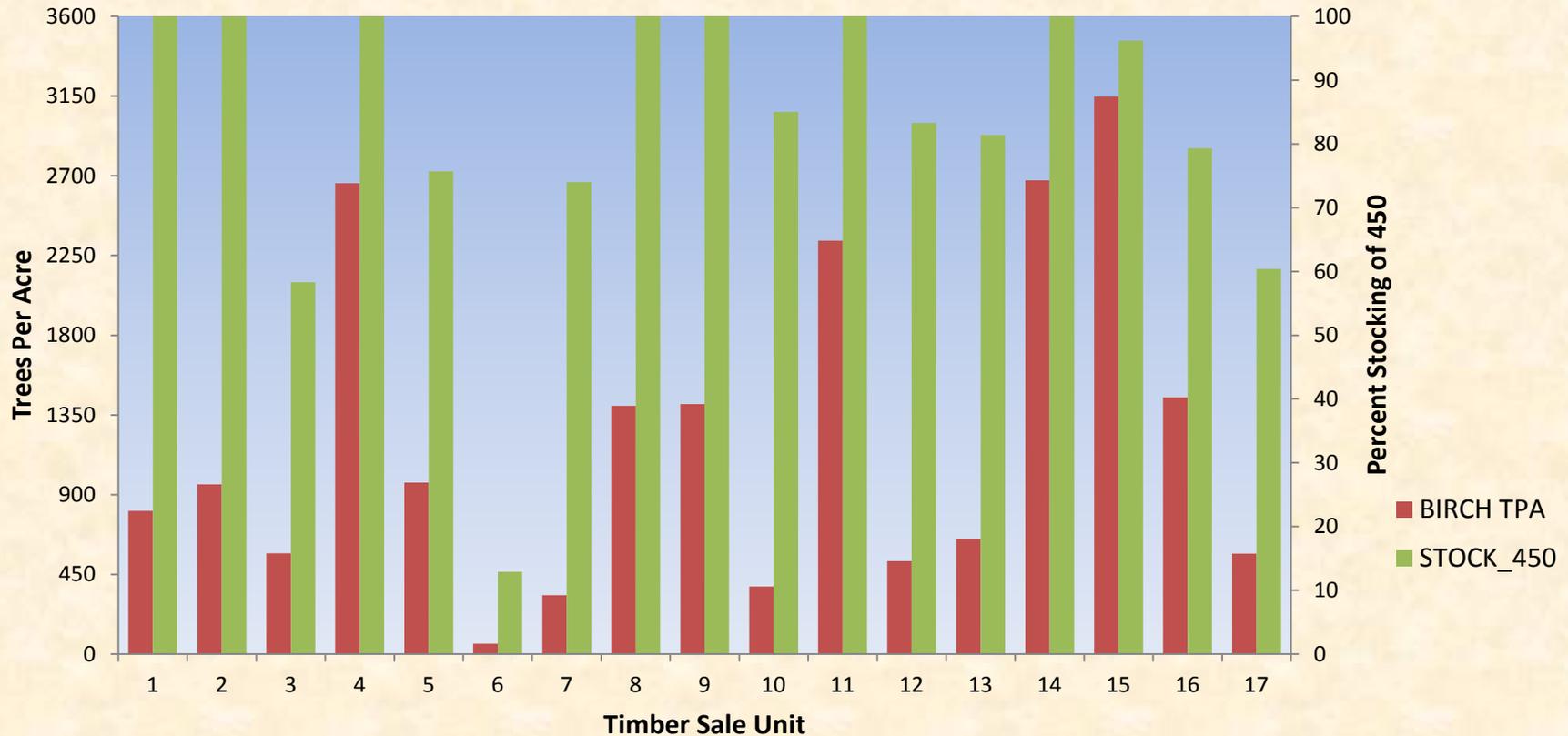
Location: 427,306.295 7,173,534.257 Meters

Field	Value
OBJECTID	239
SHAPE	Point
SALE_NUMBER	NC-945
SALE_UNIT	NC-945-1
Unit	1
DATE_SURVEY	5/19/2008
PLOT_NUMBER	48
NB_PLANTED_WS	9
NB_NATURAL_WS	0
NB_TOTAL_WS	9
NB_NAT_B_PLOT	5
NB_NAT_A_PLOT	0
NB_NAT_BS_PLOT	0
NB_NAT_BP_PLOT	0
NB_PL_PI_PLOT	0
NB_PL_LA_PLOT	0
NB_TOTAL_PLOT	14
NB_ACRE_PL_WS	450
NB_ACRE_NAT_WS	0
NB_ACRE_TOT_WS	450
NB_ACRE_NAT_B	250
NB_ACRE_NAT_A	0
NB_ACRE_NAT_BS	0
NB_ACRE_NAT_BP	0

Identified 1 feature

# Fairbanks Management Area

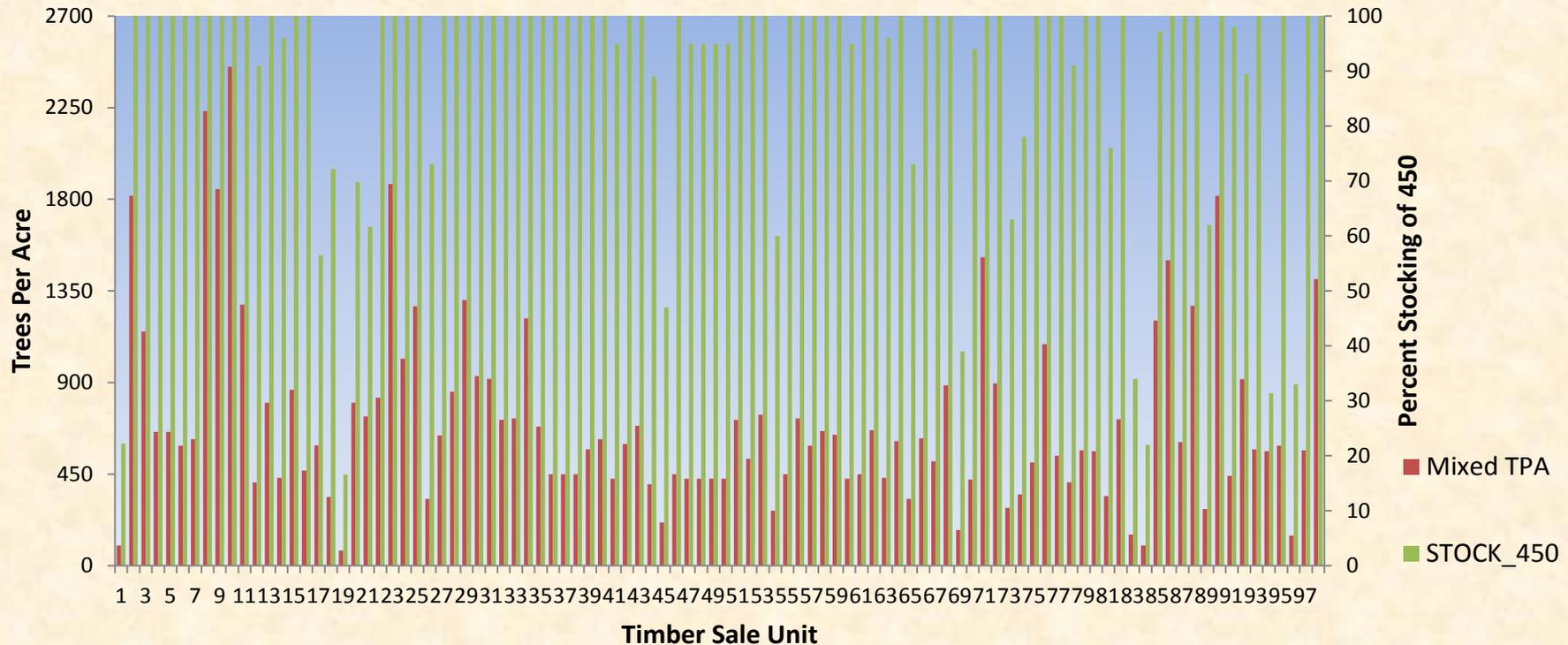
## Reforestation Geodatabase Birch Results



- Total Units sampled = 17
- Birch units overall average trees per acre = 1,229
- Percent of units where plot average is within 90% of 450 trees per acre = 62%

# Fairbanks Management Area

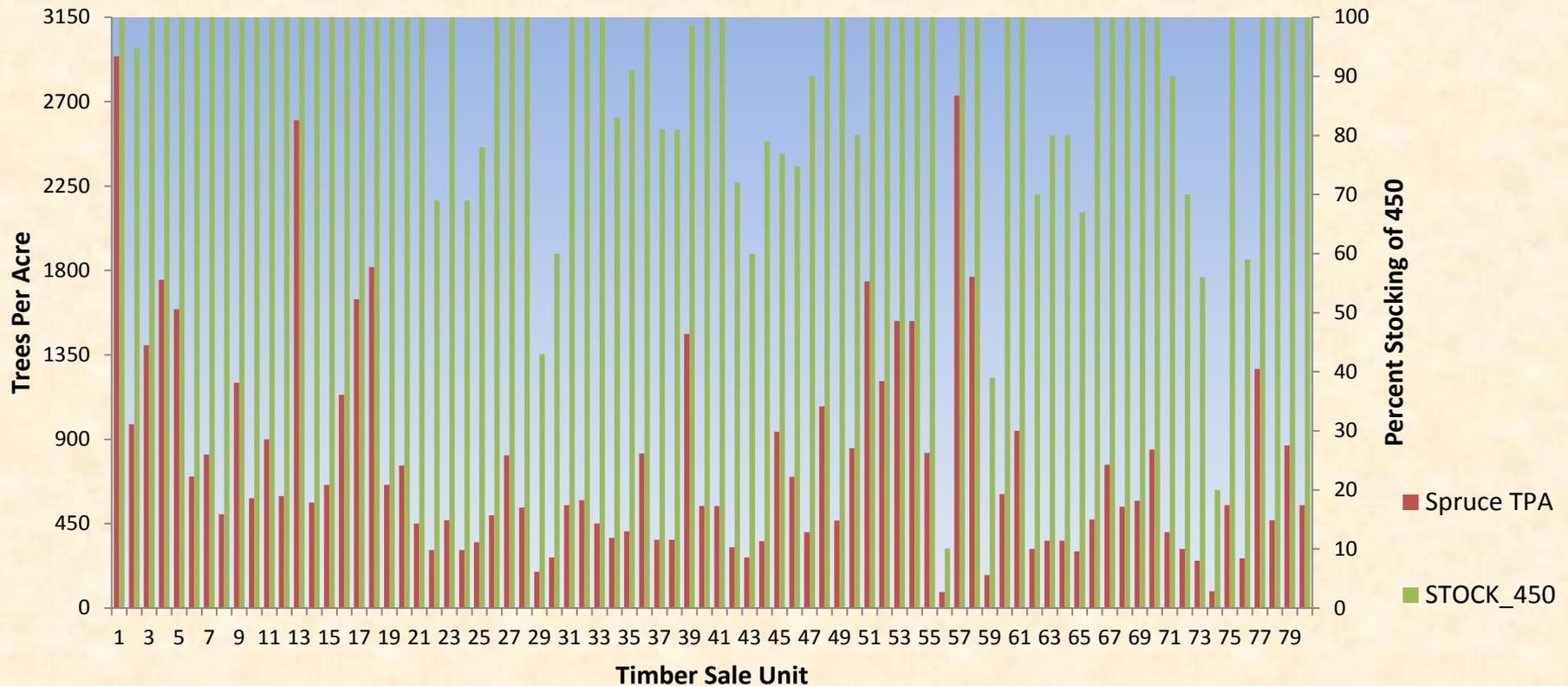
## Reforestation Geodatabase Mixed Results



- Total Units sampled = 98
- Mixed units overall average trees per acre = 715
- Percent of units where plot average is within 90% of 450 trees per acre = 90%

# Fairbanks Management Area

## Reforestation Geodatabase Spruce Results



- Total Units sampled = 90
- Spruce units overall average trees per acre = 770
- Percent of units where plot average is within 90% of 450 trees per acre = 80%

# Fairbanks Management Area

## Adaptive Management Strategies

- Birch stands should be scarified unless understory contains a significant spruce component



# Fairbanks Management Area

## Adaptive Management Strategies

- Spruce floodplain stands should rely on natural regeneration if seed source is present and moss layer is thin



# Fairbanks Management Area

## Adaptive Management Strategies

- Spruce floodplain stand with heavy moss-poor regeneration after scarification and planting



# Fairbanks Management Area

## Adaptive Management Strategies

- Spruce upland stand-plant to increase spruce density



# Fairbanks Management Area

## Other Observations

- Difficult regeneration if grass is a component of birch before harvest
- Note seed availability, if harvest is immediately after a good seed year may have successful natural regeneration
- Harvest of mixed spruce/balsam poplar floodplain stands will have adequate natural regeneration
- Scarification needs to only disturb the organic mat not total removal down to silt layer
- Harvest in spruce or mixed stands will generally have adequate natural regeneration of hardwoods
- Aspen regenerates well naturally from seed and/or roots

# Fairbanks Management Area

- Aspen natural regeneration



# Delta Management Area

## Methods of Site Preparation

- Dozer Blade JD450 with angle blade
- Excavator



# Delta Management Area

## Tree Planting Techniques

- Spot planting 100 trees per acre
- Scarification by harvesting is sufficient



# Delta Management Area

## Observations

- Scarify on winter sales only
- No scarification on summer sales logging disturbance is sufficient
- Gerstle River area is problematic with grass

# Tok Management Area

## Methods of Site Preparation

- Dozer Blade
- Roller Chopper
- Disc Trencher



# Tok Management Area

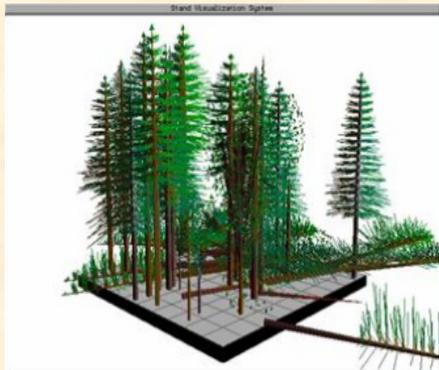
## Observations

- Regeneration surveys overall show over stocked ground, but uneven distribution
- Require scarification on spruce timber sales though there are equipment access issues on winter sales
- Scarification improves stocking levels
- Roller chopper can also stimulate aspen root suckering
- Most cost effective manner of scarification equipment needs to be continually moving forward such as roller chopper or harrow disc.

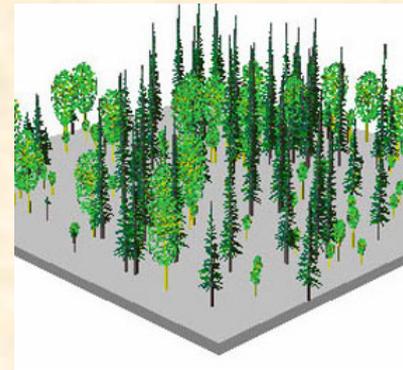
# Overall Observations Concerning FRPA

## 450 Trees per Acre after 7 Years

- Possibly high maybe half this amount
- More than adequate regeneration will fill in with enough trees over the rotation length especially first 20 years
- Should continue with the 7 year time period
- Standards maybe should vary depending on species harvested, (birch vs. spruce)
- Standards maybe should vary depending on site index so as not to invest heavily into poor sites



Good Site



Poor Site