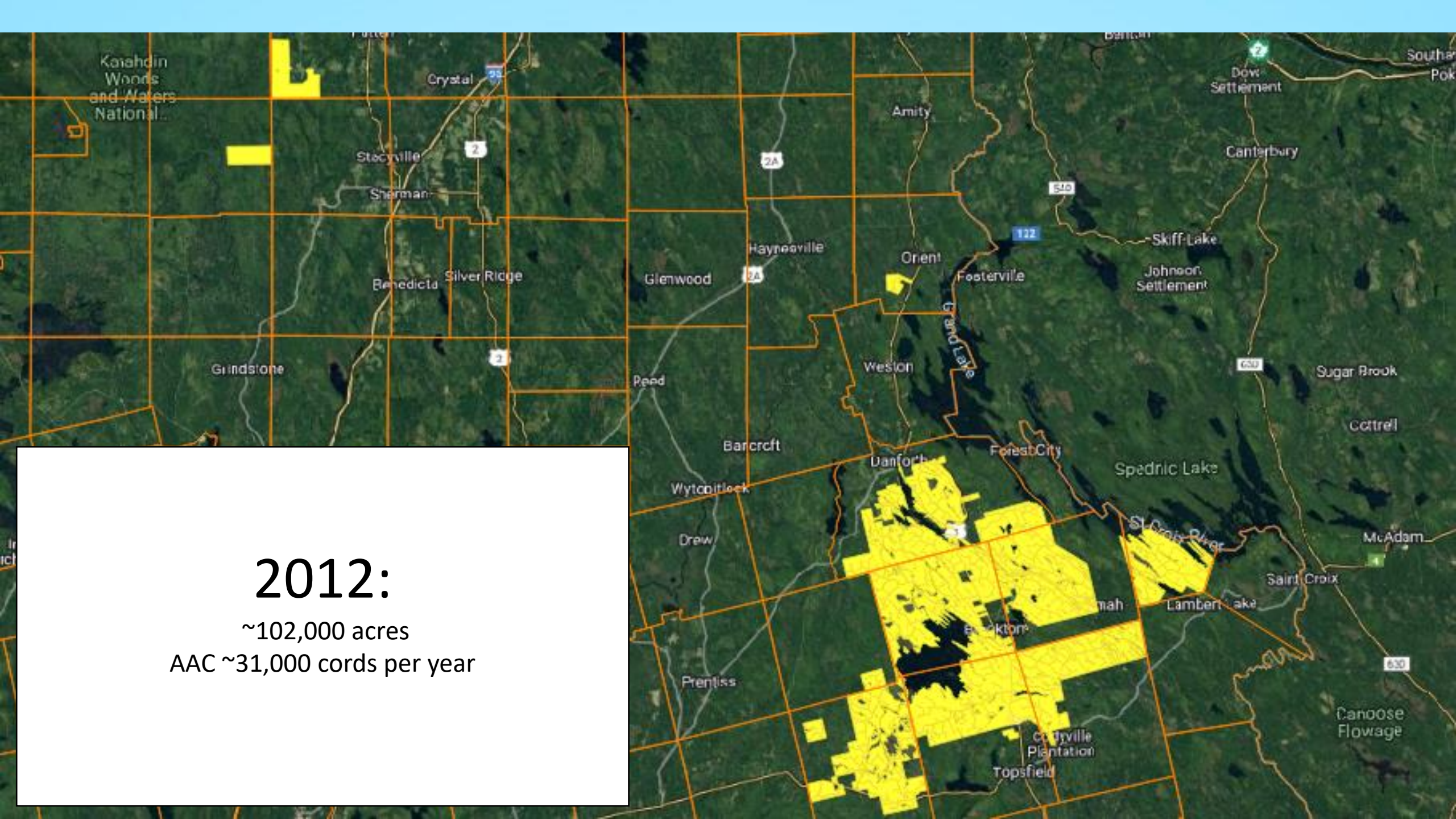
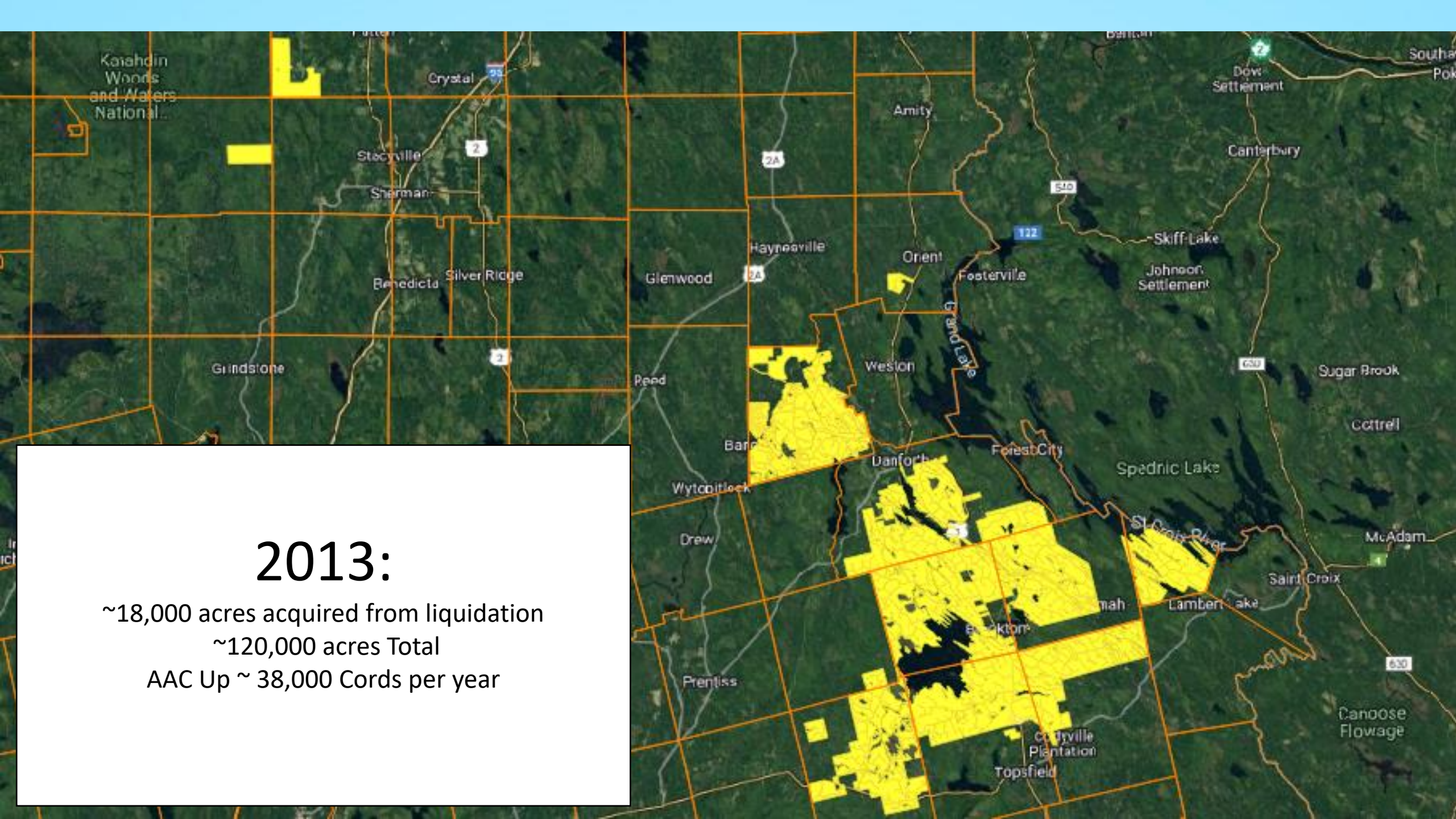


How Carbon Credits Influence Commercial Forest Management

Yale Presentation 11/13/2023



2012:
~102,000 acres
AAC ~31,000 cords per year



2013:

~18,000 acres acquired from liquidation

~120,000 acres Total

AAC Up ~ 38,000 Cords per year

A satellite map of California with several regions highlighted in yellow and orange. The yellow areas are located in the north-central and central parts of the state, while the orange areas are concentrated in the south-central and southern regions. The map shows major highways, cities, and geographical features like the Sierra Nevada mountains and the Central Valley.

2018:

California Compliance Market on “Core” acres

88,000 Acres of 120,000

Sold “Conservation” Credits

AAC dropped to ~31,000 Cords Per year

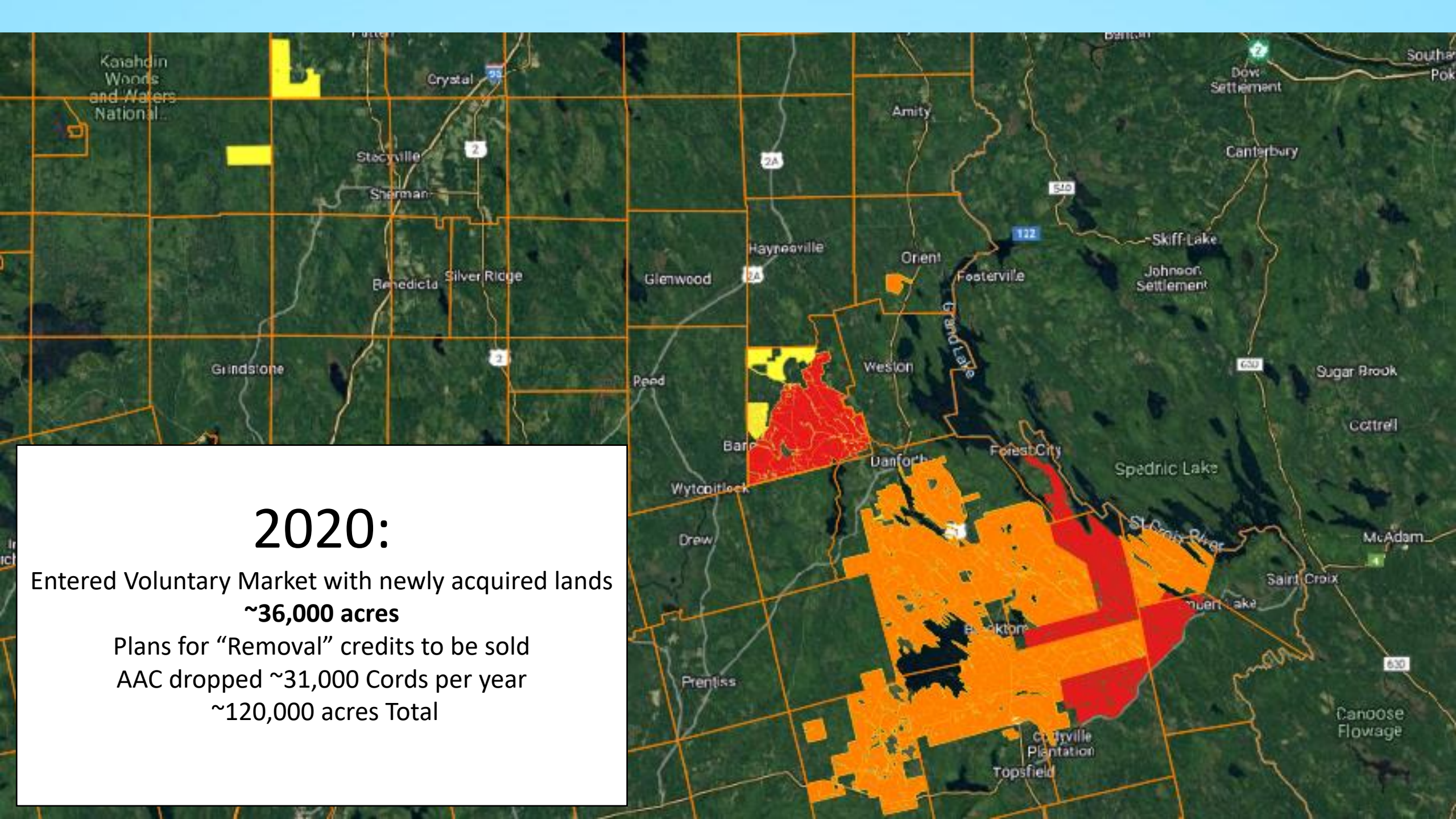
A satellite map of a region in Minnesota, showing land acquisition in 2020. The map is overlaid with a grid of orange lines representing county boundaries. Several areas are highlighted in yellow and orange, indicating land purchased with carbon revenue. A large orange area is centered around the town of Danforth, extending from the town of Barr to the town of Forest City. Other orange areas are scattered in the north and west. A white text box in the bottom-left corner provides summary statistics for the 2020 acquisitions.

2020:

100% Carbon Revenue used to Purchase 24,400
acres

~150,000 acres Total

AAC* Up to ~40,000 cords



2020:

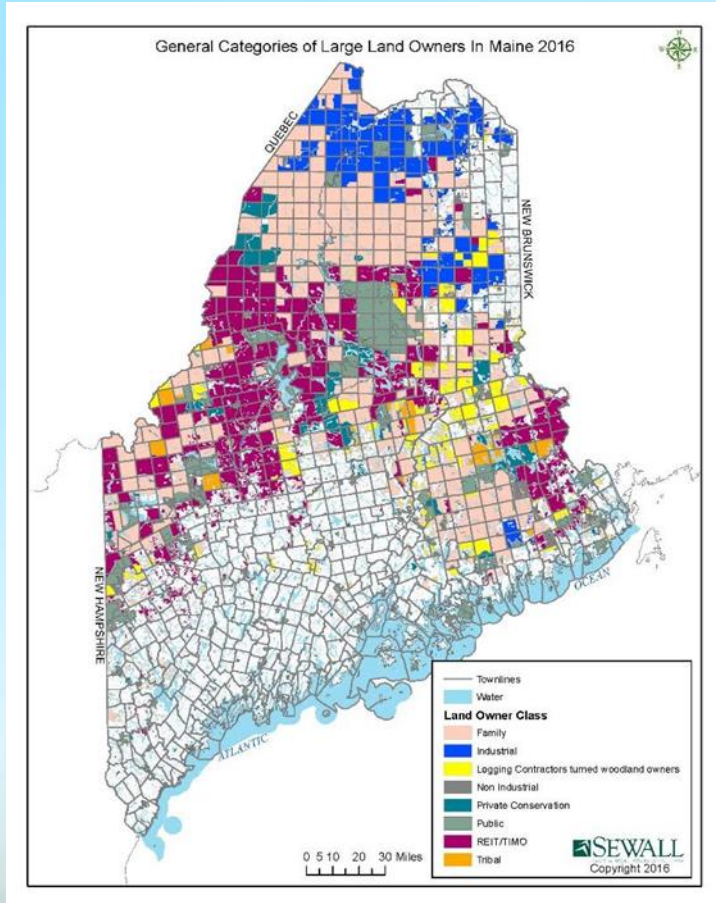
Entered Voluntary Market with newly acquired lands
~36,000 acres

Plans for “Removal” credits to be sold
AAC dropped ~31,000 Cords per year
~120,000 acres Total

Landowner Uncertainty in Maine, SFI Survey

- Length of Commitment
- Risk, Uncertainty
- Forest Protocol Restrictions
- Value of Credits Versus Costs of the Program
- Landownership Type and Culture


How does Baskahegan Compare? Why did it work for Us?



Issue of Concern	Baskahegan
Length of Commitment	👍
Risk, Uncertainty	👍
Forest Protocol Restrictions	👍
Value of Credits Versus Costs of the Program Over 100 Years	👍
Landownership Type and Culture	👍



Length of Commitment

Issue of Concern	Baskahegan
Length of Commitment	


Why It Concerns ~~Others~~ Most

- Resale concerns- Liquidity and price reduction, legacy planning
- Transfer of Knowledge- especially NGOs with projects
- Depending on forecasts and program design, sales period could be short, while commitment is long.

Baskahegan's Position

- Baskahegan just had its 100th year anniversary, 100 years is not forever.
- Baskahegan considers **Conservation** offsets a financial reward for doing good forestry in the past.
- Baskahegan seeks to **BUILD** value of the asset, not just maximizing financial output.
- “**How we make money is just as important as how much money we make**”
- Baskahegan’s current share holders are comfortable limiting the liquidity of the asset for future generations.

Risk, Uncertainty

Issue of Concern	Baskahegan
Risk, Uncertainty	


Why It Concerns ~~Others~~ Most

- Pre-salvaging- Spruce budworm or other diseases. Is it allowed?
- Could sign up, pay expenses, and the market drops out
- Could accidentally create a reversal- VERY Expensive.

Baskahegan's Position

- Baskahegan is at projected low point in our inventory
- Baskahegan has fought a war on balsam fir since the 1960s.
- Our forest for all intents and purposes is fully regulated (i.e. not a lot of mature fir to salvage)
- We have extensively modeled salvaging and can keep up with tree mortality with normal AAC.
- Most of our Carbon motivation was for an initial windfall of credits in year Zero, uncertainty isn't much of an issue with conservation credits.

Forest Protocol Restrictions

Issue of Concern	Baskahegan
Forest Protocol Restrictions	

Why It Concerns Others Most

- Even-aged Management restriction- Block size too small.
 - Spacing of even aged blocks
 - “Green up” time for size and spacing.
- Reporting is burdensome

Baskahegan’s Position

- Baskahegan has been cultivating our forest on a small block size for 30 years.
- While we occasionally treat on a 40+ acre size, we can restrict this size during credit generation periods.
- We are not thrilled with the connection to forest certification....

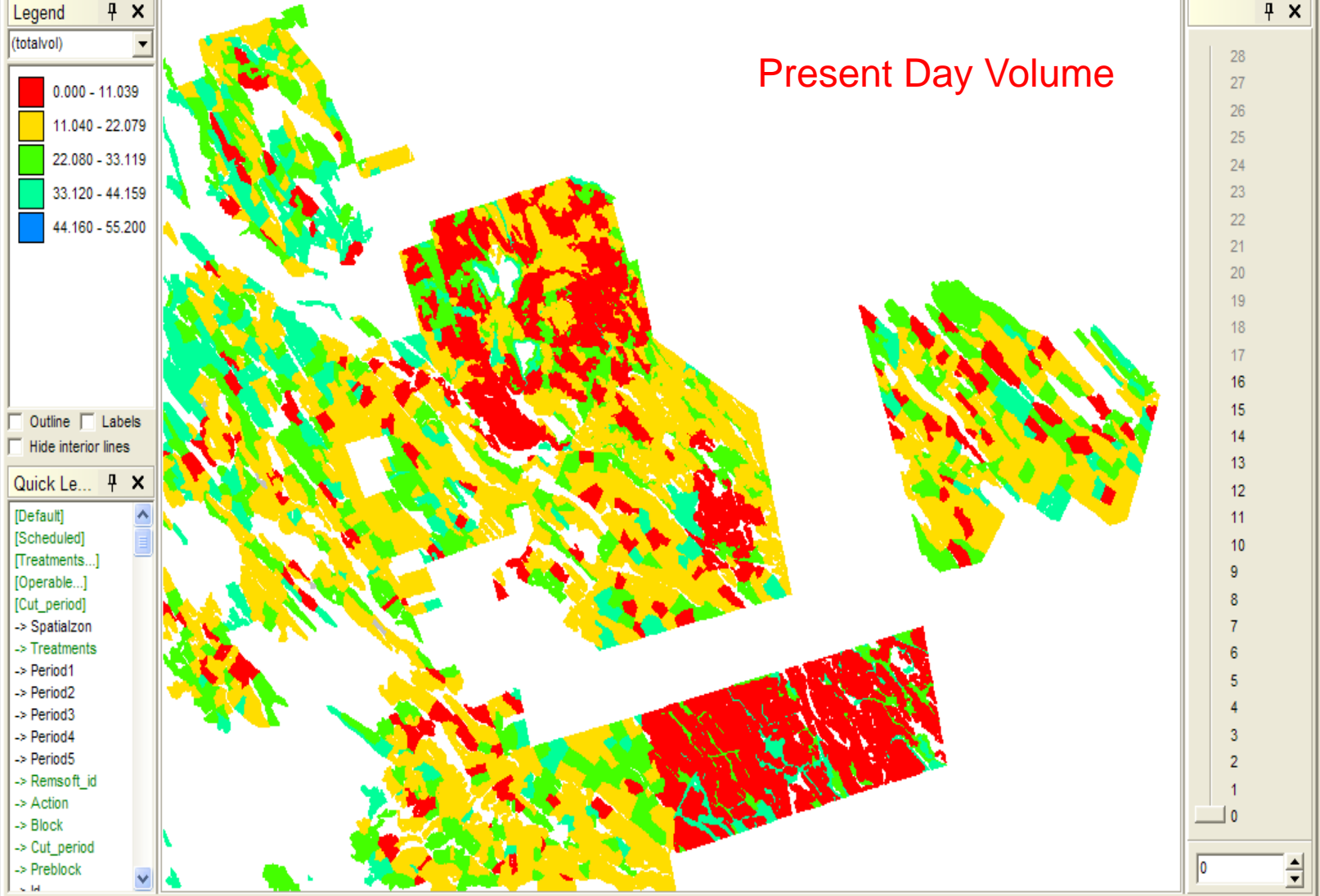
Model View

- Baskahegan'07
 - Actions
 - Areas
 - Constants
 - Control
 - Graphics
 - Landscape
 - Lifespan
 - LpSchedule
 - Optimize
 - Outputs
 - Queue
 - Reports
 - Schedule
 - Transitions
 - Yields
 - Spatial Setup
 - Maps

Legend

(totalvol)

- 0.000 - 11.039
- 11.040 - 22.079
- 22.080 - 33.119
- 33.120 - 44.159
- 44.160 - 55.200



Outline Labels

Hide interior lines

Quick Le...

- [Default]
- [Scheduled]
- [Treatments...]
- [Operable...]
- [Cut_period]
- > Spatialzon
- > Treatments
- > Period1
- > Period2
- > Period3
- > Period4
- > Period5
- > Remsoft_id
- > Action
- > Block
- > Cut_period
- > Preblock

28

27

26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

0

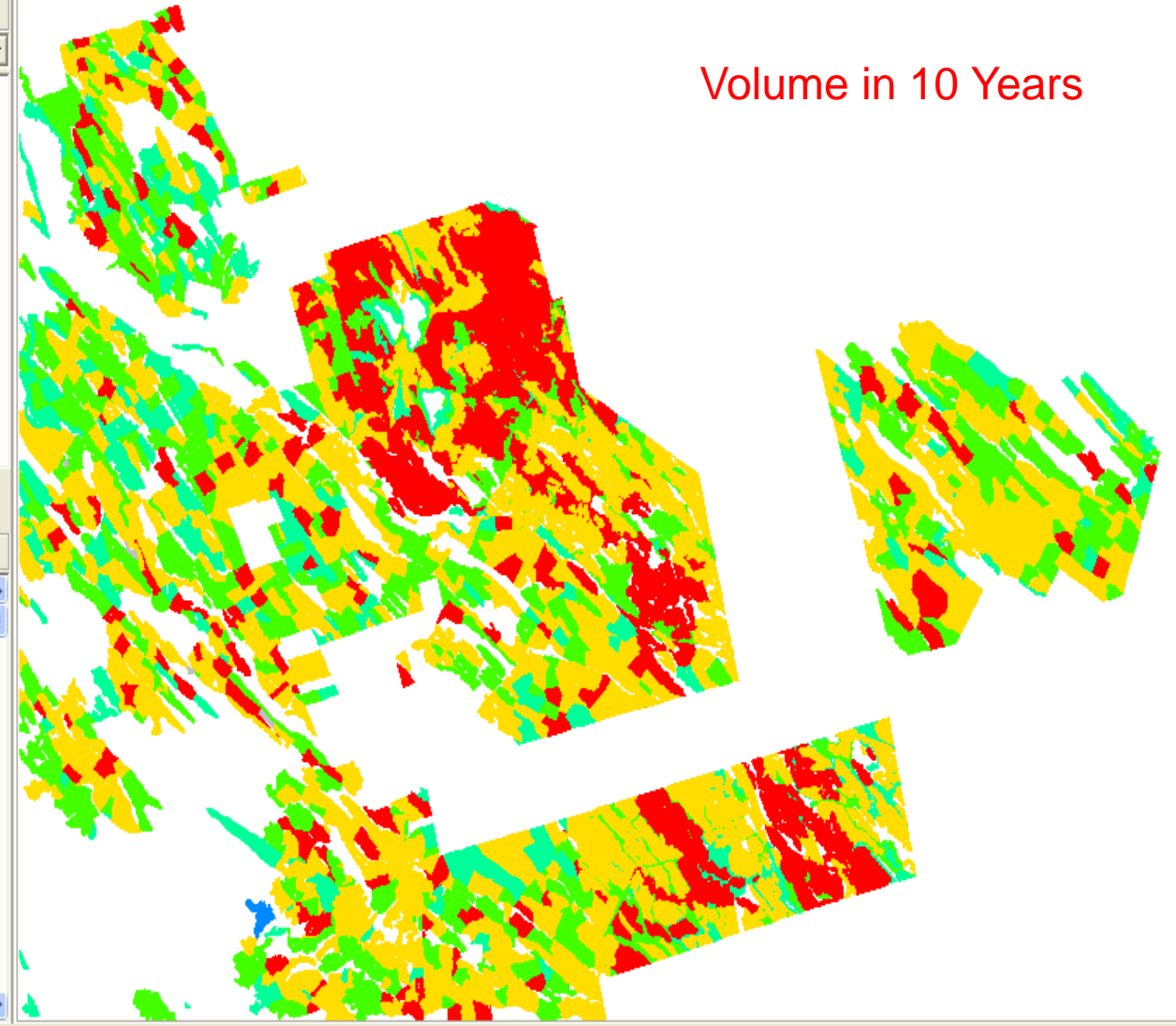
Model View

- Baskahegan'07
 - Actions
 - Areas
 - Constants
 - Control
 - Graphics
 - Landscape
 - Lifespan
 - LpSchedule
 - Optimize
 - Outputs
 - Queue
 - Reports
 - Schedule
 - Transitions
 - Yields
 - Spatial Setup
 - Maps

Legend

(totalvol)

- 0.000 - 10.739
- 10.740 - 21.479
- 21.480 - 32.219
- 32.220 - 42.959
- 42.960 - 53.700



Volume in 10 Years

28

27

26

25

24

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

2

Model Scenarios

Baskahegan'07

Quick Le...

[Default]

[Scheduled]

[Treatments...]

[Operable...]

[Cut_period]

-> Spatialzon

-> Treatments

-> Period1

-> Period2

-> Period3

-> Period4

-> Period5

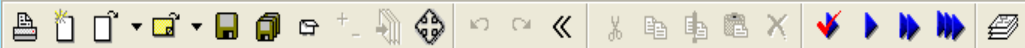
-> Remsoft_id

-> Action

-> Block

-> Cut_period

-> Preblock



Model View

- Baskahegan'07
 - Actions
 - Areas
 - Constants
 - Control
 - Graphics
 - Landscape
 - Lifespan
 - LpSchedule
 - Optimize
 - Outputs
 - Queue
 - Reports
 - Schedule
 - Transitions
 - Yields
- Spatial Setup
 - Maps

Model Scenarios

- Baskahegan'07

Baskahegan'07.pri | Baskahegan'07.seq | Baskahegan'07.opt | Baskahegan'07.run | Maps.View | Baskahegan'07.out | Baskahegan'07.act | Baskahegan'07.trn | Baskahegan'07.are | Baskahegan'07.rep | File.txt



Legend

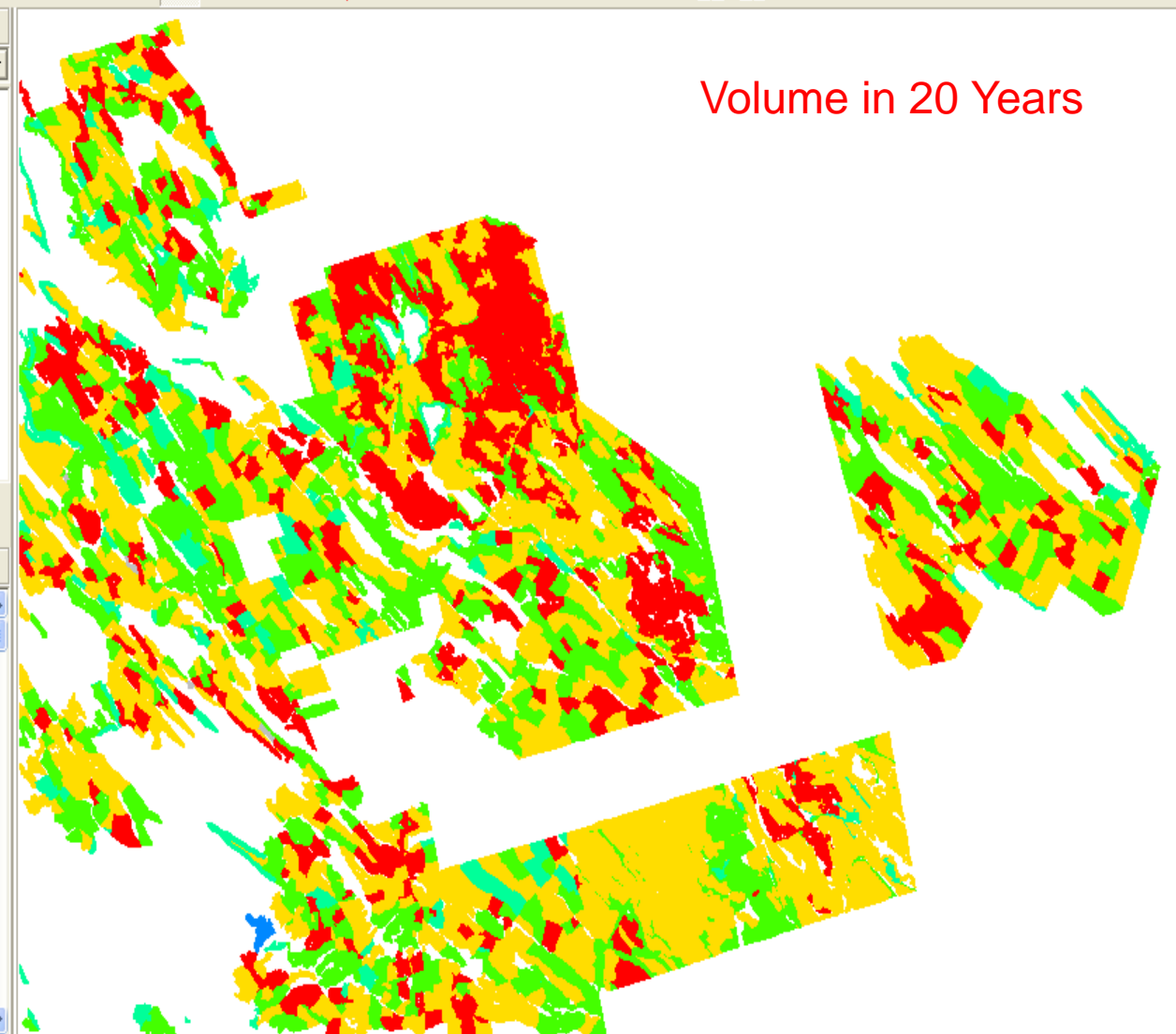
(totalvol)

- 0.000 - 11.059
- 11.060 - 22.119
- 22.120 - 33.179
- 33.180 - 44.239
- 44.240 - 55.300

- Outline
- Labels
- Hide interior lines

Quick Le...

- [Default]
- [Scheduled]
- [Treatments...]
- [Operable...]
- [Cut_period]
- > Spatialzon
- > Treatments
- > Period1
- > Period2
- > Period3
- > Period4
- > Period5
- > Remsoft_id
- > Action
- > Block
- > Cut_period
- > Preblock



1: 1 | 6,445 polygons | Selection = 0 polygons, Area = 0.0 | C:\Arcviewprojects\Model Shapefile\areafile - complete | DEFAULT | X= 614,381.3 y= 5,042,889.0 | Maps



Model View

- Baskahegan'07
 - Actions
 - Areas
 - Constants
 - Control
 - Graphics
 - Landscape
 - Lifespan
 - LpSchedule
 - Optimize
 - Outputs
 - Queue
 - Reports
 - Schedule
 - Transitions
 - Yields
- Spatial Setup
 - Maps

Model Scenarios

- Baskahegan'07

Baskahegan'07.pri | Baskahegan'07.seq | Baskahegan'07.opt | Baskahegan'07.run | Maps.View | Baskahegan'07.out | Baskahegan'07.act | Baskahegan'07.trn | Baskahegan'07.are | Baskahegan'07.rep | File.txt



Legend

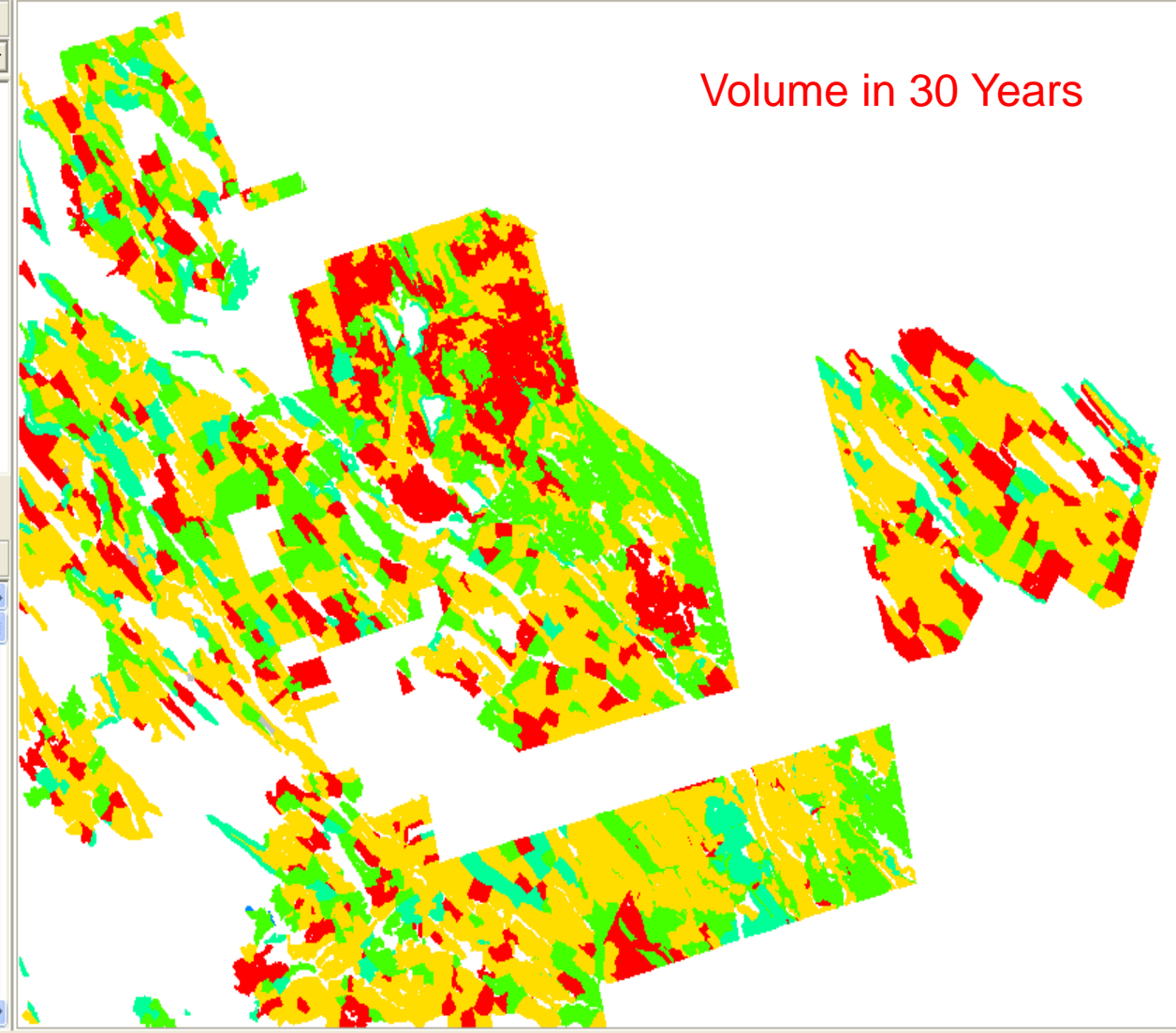
(totalvol)

- 0.000 - 11.059
- 11.060 - 22.119
- 22.120 - 33.179
- 33.180 - 44.239
- 44.240 - 55.300

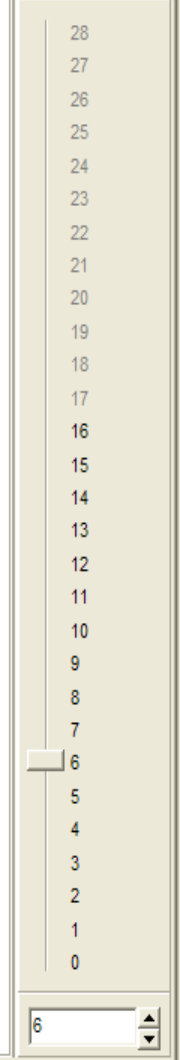
- Outline
- Labels
- Hide interior lines

Quick Le...

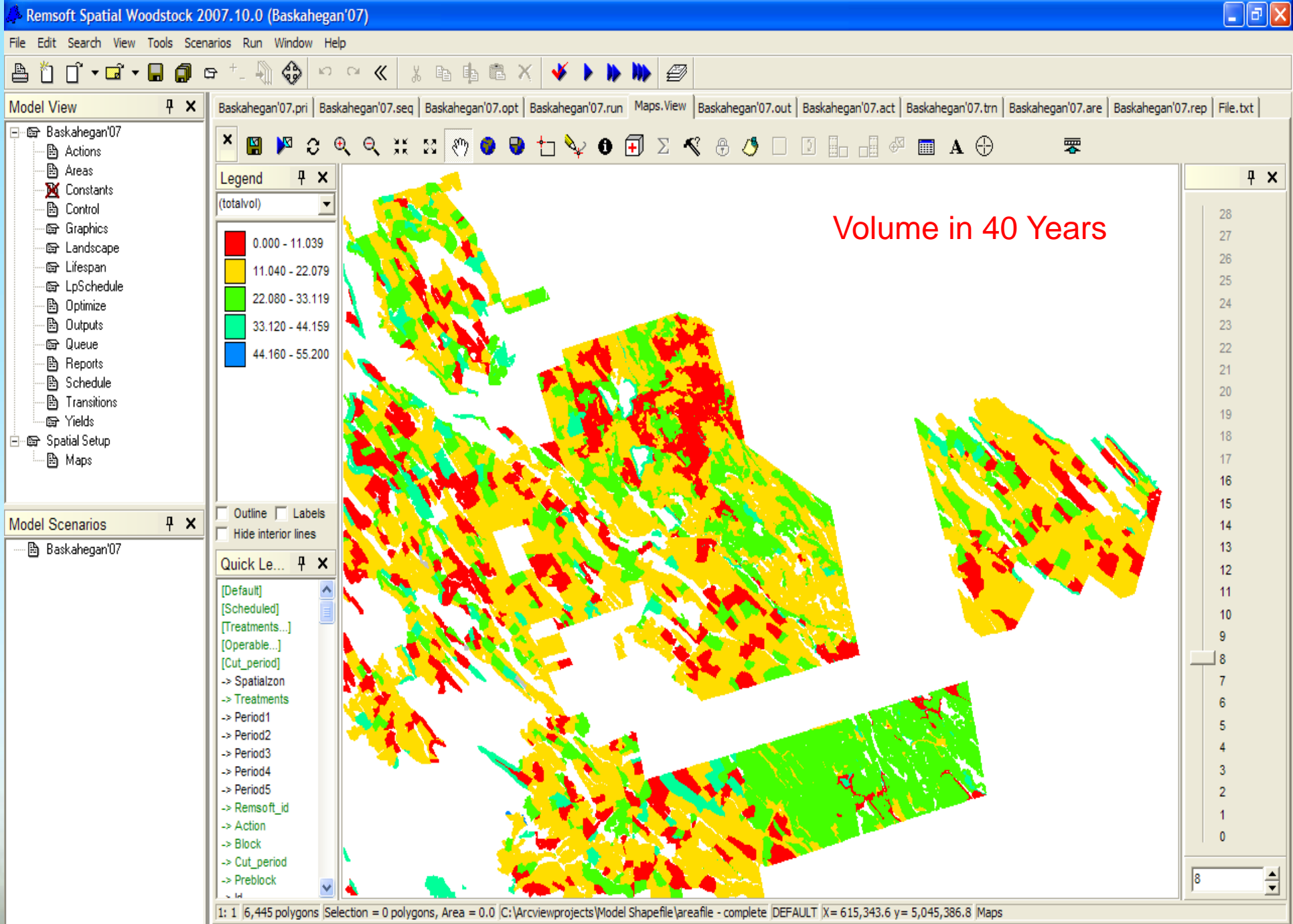
- [Default]
- [Scheduled]
- [Treatments...]
- [Operable...]
- [Cut_period]
- > Spatialzon
- > Treatments
- > Period1
- > Period2
- > Period3
- > Period4
- > Period5
- > Remsoft_id
- > Action
- > Block
- > Cut_period
- > Preblock



Legend



1: 1 | 6,445 polygons | Selection = 0 polygons, Area = 0.0 | C:\Arcviewprojects\Model Shapefile\areafile - complete | DEFAULT | X= 614,580.4 y= 5,041,656.7 | Maps



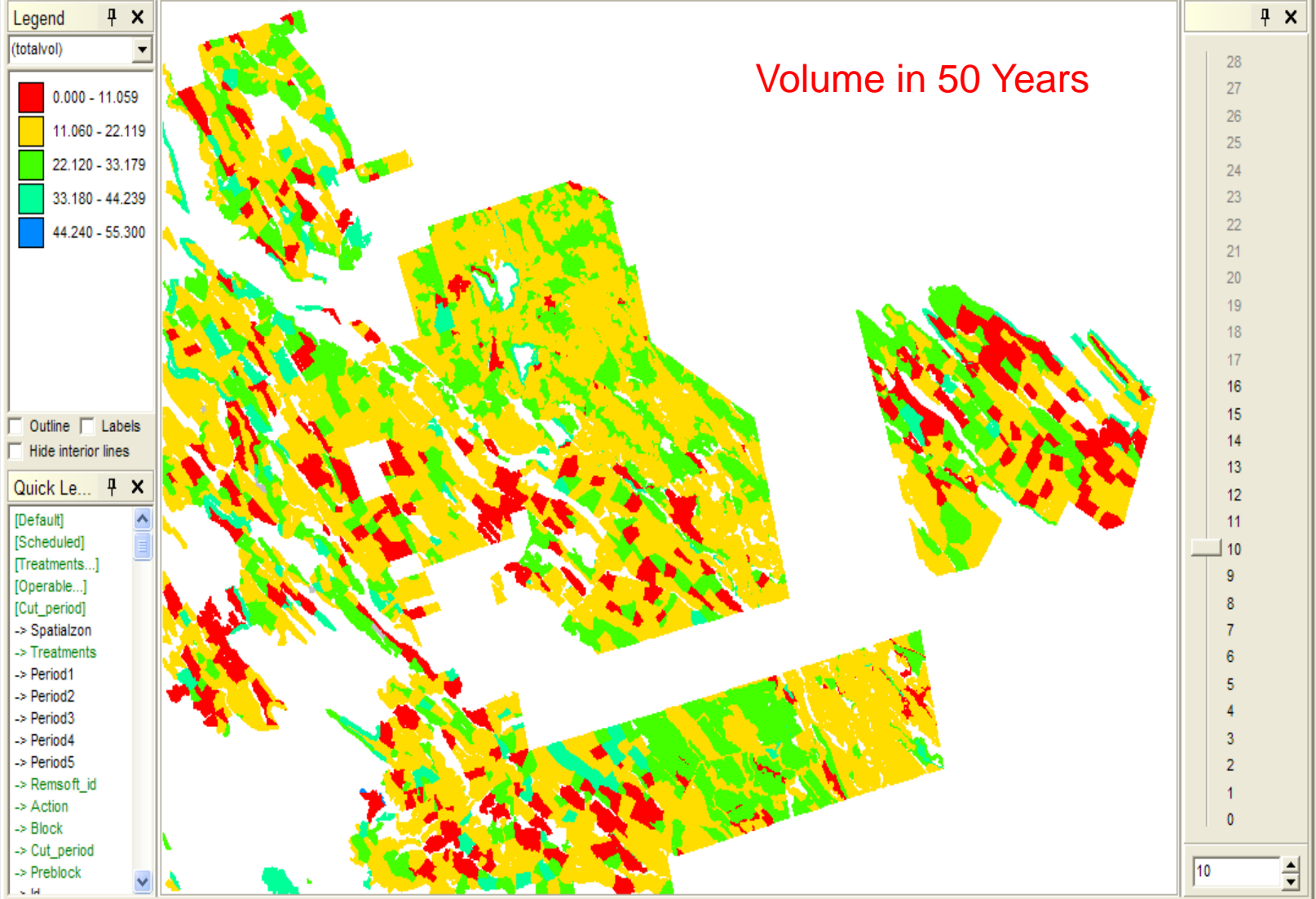
Model View

- Baskahegan'07
 - Actions
 - Areas
 - Constants
 - Control
 - Graphics
 - Landscape
 - Lifespan
 - LpSchedule
 - Optimize
 - Outputs
 - Queue
 - Reports
 - Schedule
 - Transitions
 - Yields
- Spatial Setup
 - Maps

Legend

(totalvol)

- 0.000 - 11.059
- 11.060 - 22.119
- 22.120 - 33.179
- 33.180 - 44.239
- 44.240 - 55.300



Model Scenarios

Baskahegan'07

- [Default]
- [Scheduled]
- [Treatments...]
- [Operable...]
- [Cut_period]
- > Spatialzon
- > Treatments
- > Period1
- > Period2
- > Period3
- > Period4
- > Period5
- > Remsoft_id
- > Action
- > Block
- > Cut_period
- > Preblock

Value of Credits, Cost Over Time


Issue of Concern	Baskahegan
Value of Credits Versus Costs of the Program Over 100 Years	

Why It Concerns Most of Baskahegan's Participants

No Longer An Issue

- Cost of initial project
- Cost over time
- Value of credits were much lower than wood value, until recently
- Most companies didn't have significant volumes of "windfall" conservation credits.
- Baskahegan's project had a windfall in the start, with plenty of money to establish the project and set aside funds for future maintenance.
- While traditional cruising costs will likely continue to go up, we are hopeful technology will allow prices to go down.

Landowner Type and Culture

Issue of Concern	Baskahegan
Landownership Type and Culture	

Why It Concerns ~~Others~~ Most

- Against regulation/oversight of any kind
- Pro-labor- Carbon “takes” Maine Jobs
- *(Repeat)* Resale concerns- Liquidity and price reduction, legacy planning

Baskahegan's Position

- Baskahegan’s management remains virtually unchanged*
- There are much bigger concerns in the industry than carbon influences on wood supply and labor.
- Baskahegan’s current share holders are comfortable limiting the liquidity of the asset for future generations.

Other Thoughts

- Practice Based incentives may be coming- conducting harvests differently, what I call “making a better solar panel”
- Soil carbon is ignored, and its mysterious.
- Carbon Buyers are becoming more educated and are asking project owners hard hitting questions.
- Forest Owners only have so much control over leakage
- Forestry didn't cause climate change, you did.
- Curtailing emissions is essential for an effective credit program.
- Maine's timber economy is not doing well, and its not carbon's fault.
- What you do with the money matters.
- Don't throw the baby out with the bathwater. By design, carbon offset programs have been evolving since their launch.