State of Caribou Ranges

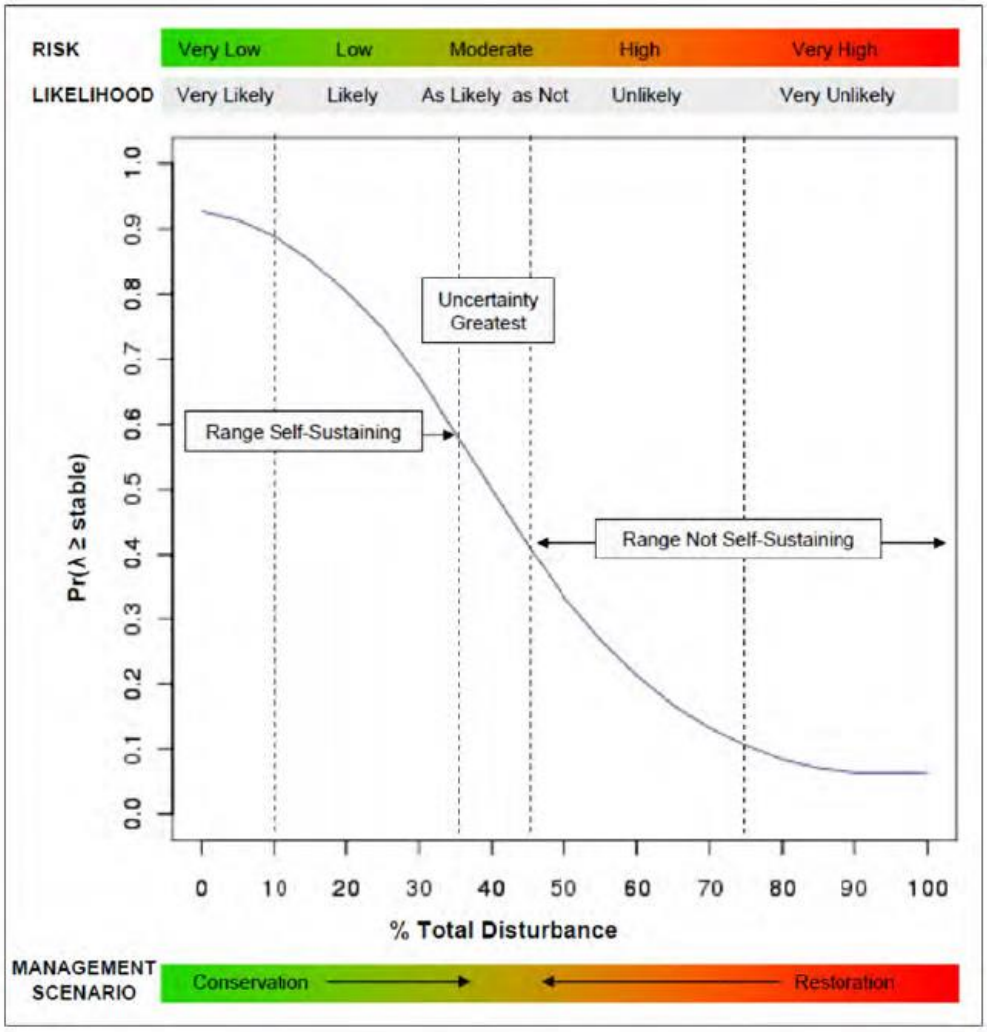
Cumulative Impacts Monitoring
2018 Estimates

Disturbance Models and Simulated Ranges of Natural Variation

Phil Elkie and Kevin Green

Ontario

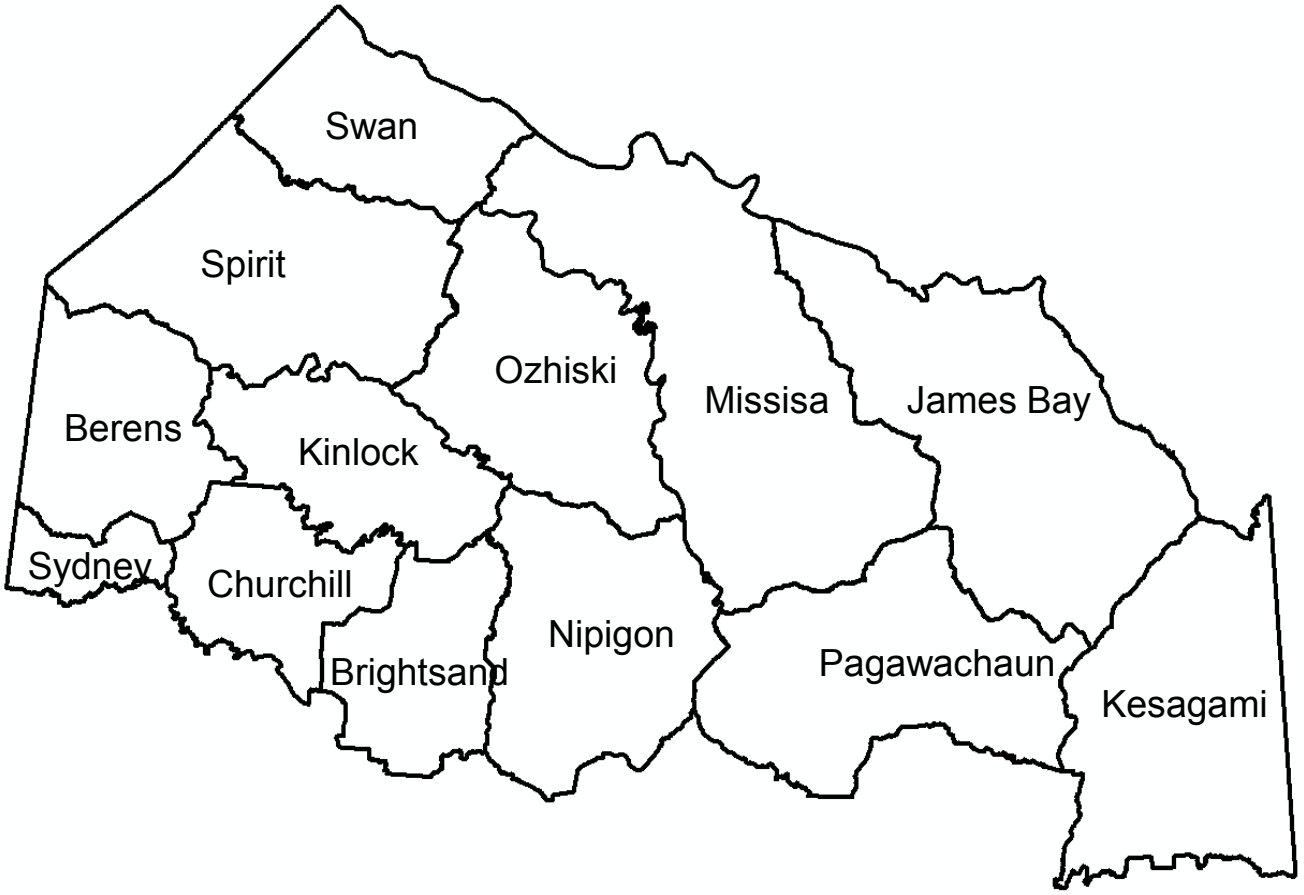
Summary – risk assessment



Probability of observing stable or positive growth (λ ≥ stable) of caribou populations over a 20-year period at varying levels of total range disturbance (fires ≤ 40 years + anthropogenic disturbances buffered by 500 m). Lambda (λ) was calculated using disturbance specific recruitment values from the meta-analysis and a mean annual adult female survival rate of 0.85, consistent with other components of the critical habitat assessment. Certainty of outcome, ecological risk, and management scenarios are illustrated along a continuum of conditions.

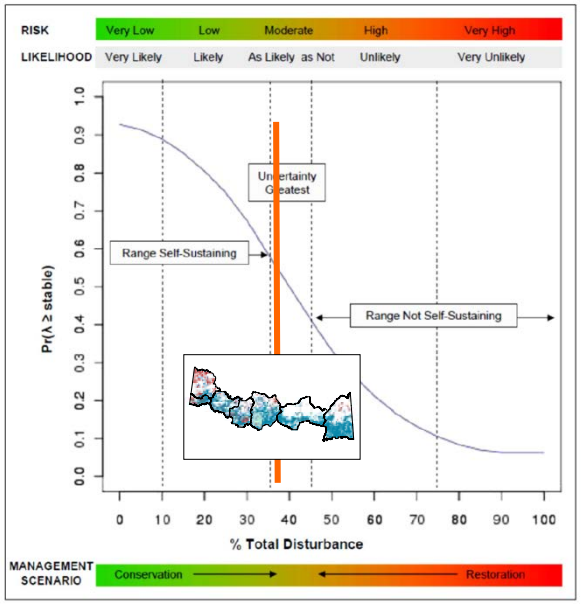
The following disturbance footprint estimates are plotted on the risk assessment graph based on - Environment Canada's – *Scientific Assessment to Inform the Identification of Critical Habitat for Woodland Caribou (Rangifer tarandus caribou), Boreal Population in Canada 2011 update* (**Environment Canada, 2011**)

Caribou Ranges in Ontario



Southern Ranges 2011 Disturbance State

2011

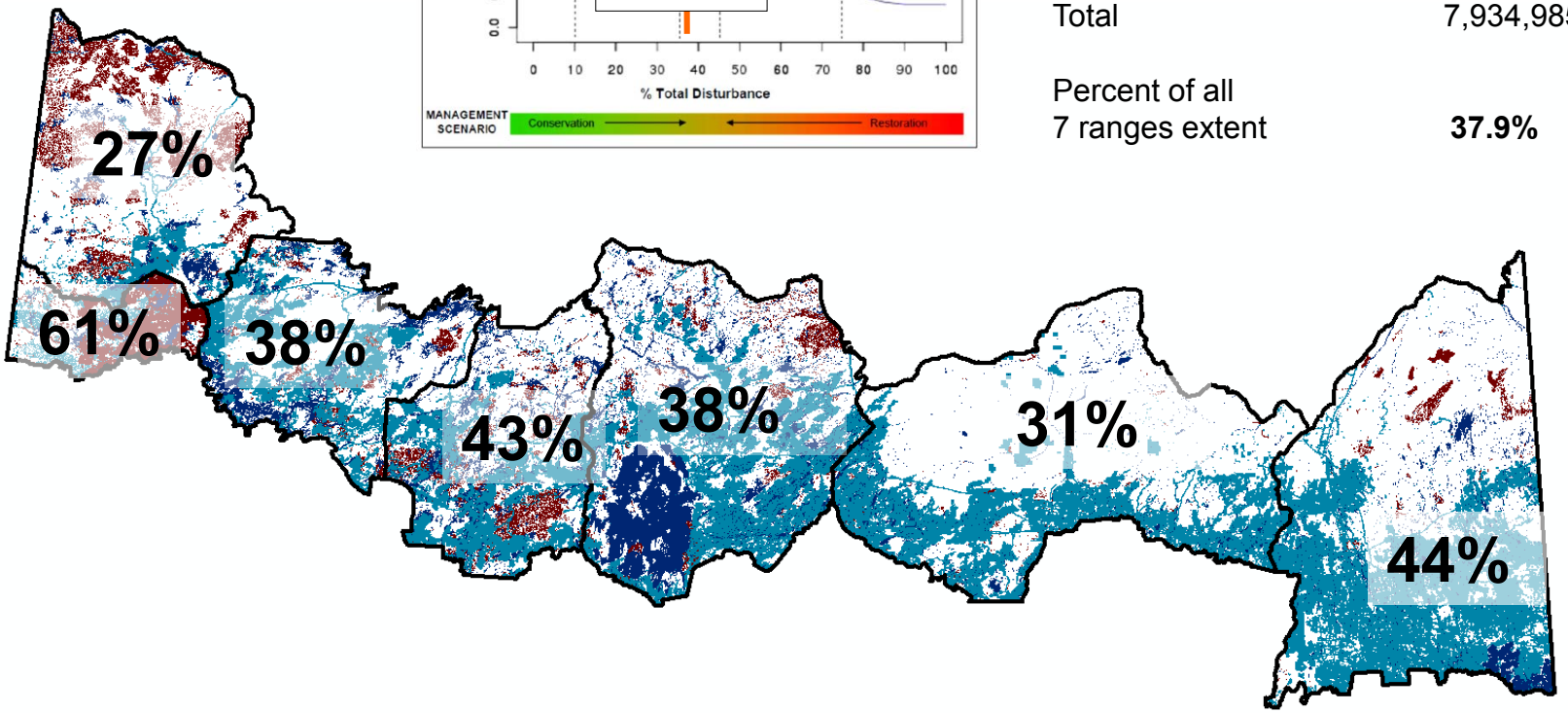


Landscape Statistics (ha)

Southern Ranges Extent:	20,957,927
Water Area:	2,502,776
FRI Extent:	14,584,745
Non-FRI Extent:	6,373,183

Range disturbance indicator

Anthropogenic:*	6,691,608
Natural	1,243,377
Total	7,934,985
Percent of all 7 ranges extent	**37.9%**

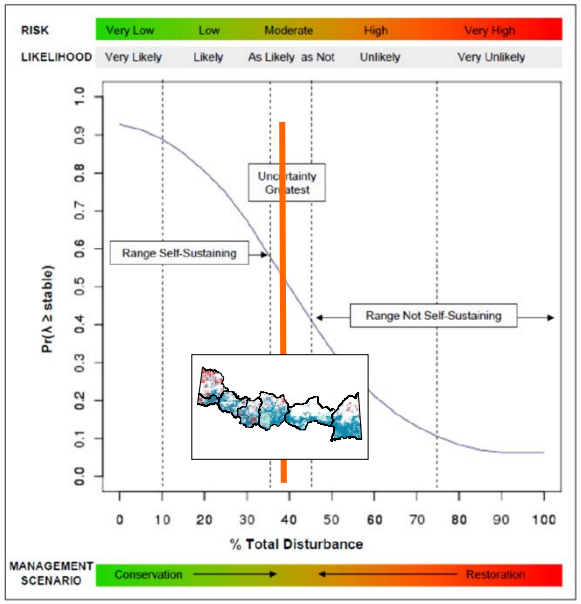


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Southern Ranges 2012 Disturbance State

2012



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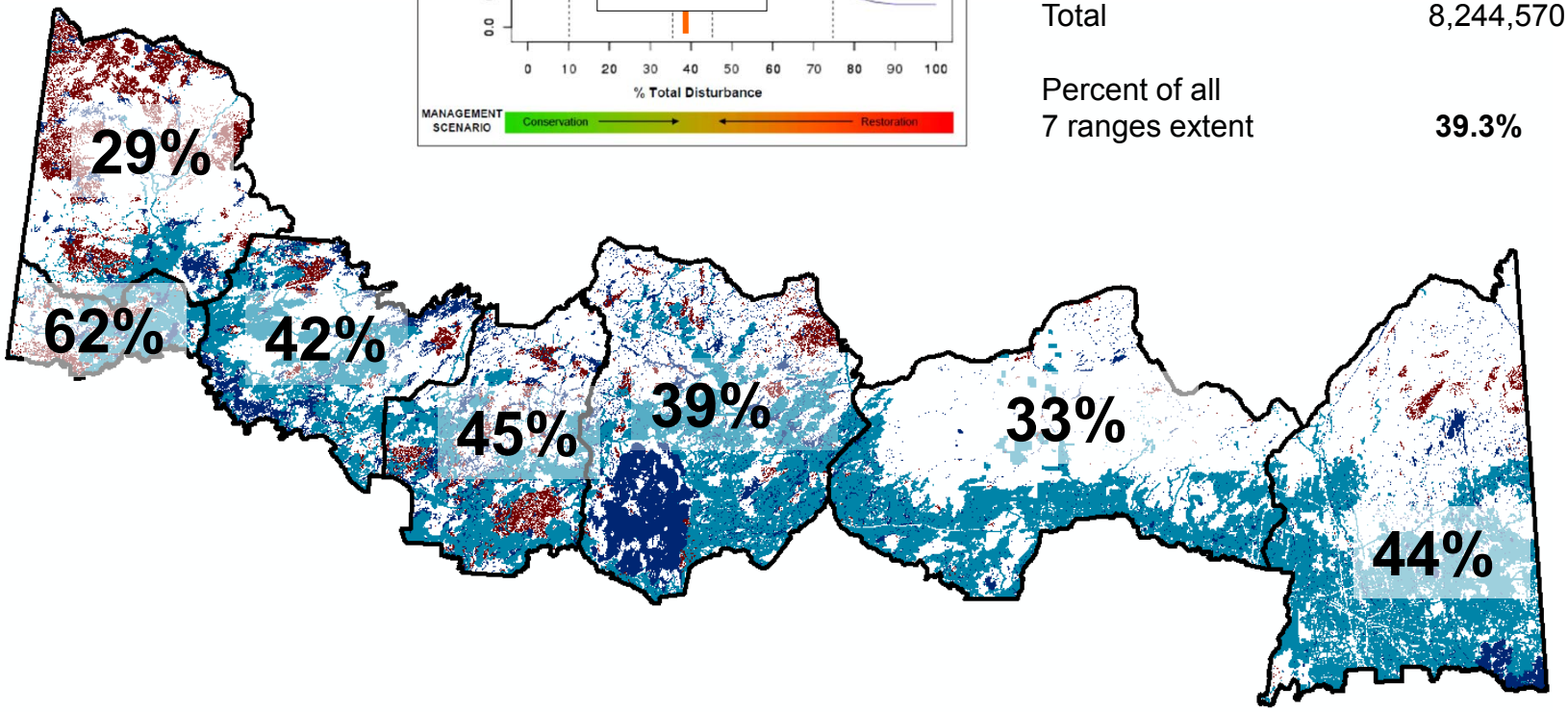
Water Area:	2,502,776
FRI Extent:	14,584,745
Non-FRI Extent:	6,373,183

Range disturbance indicator

Anthropogenic:*	6,975,565
Natural	1,269,005
Total	8,244,570
Percent of all 7 ranges extent	**39.3%**



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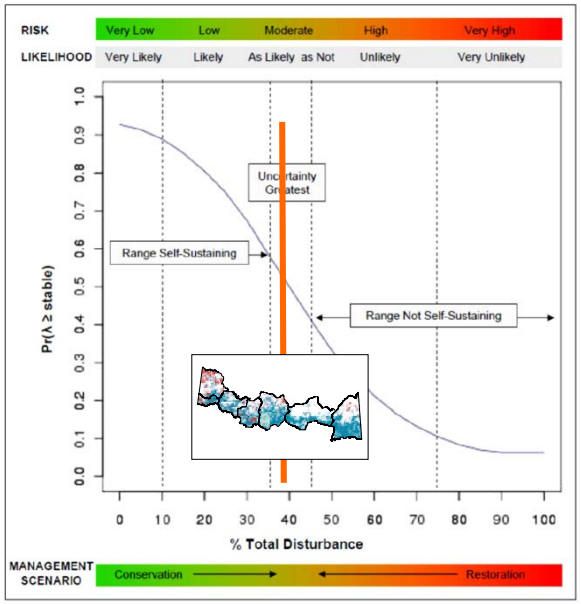
Southern Ranges 2013 Disturbance State

2013



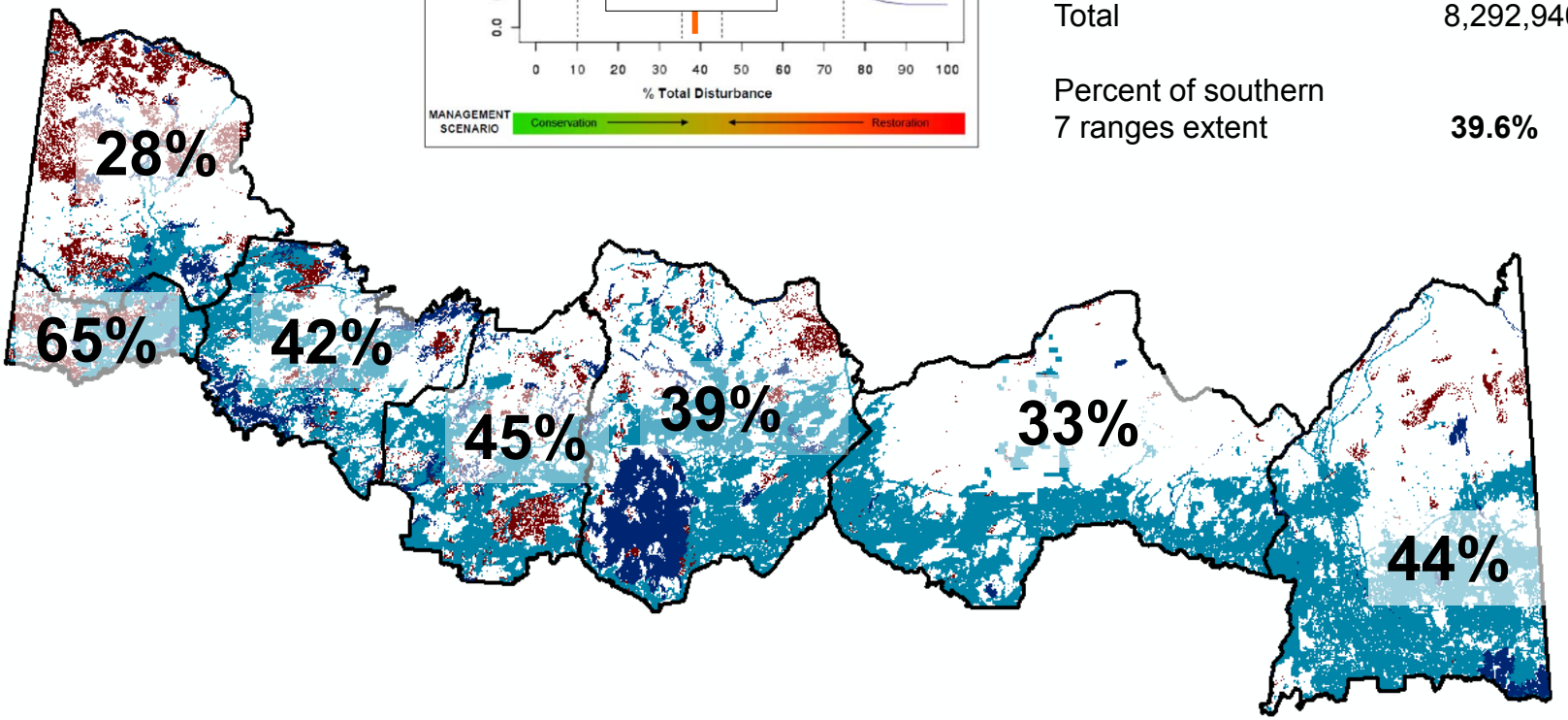
Landscape Statistics (ha)

Southern Ranges Extent:	20,957,927
Water Area:	2,502,776
FRI Extent:	14,584,745
Non-FRI Extent:	6,373,183

Range disturbance indicator

Anthropogenic:*	7,062,237
Natural	1,230,703
Total	8,292,940

Percent of southern 7 ranges extent **39.6%**



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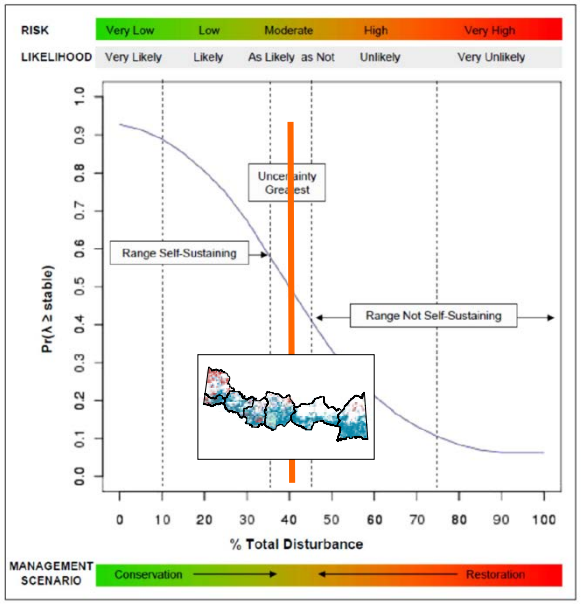
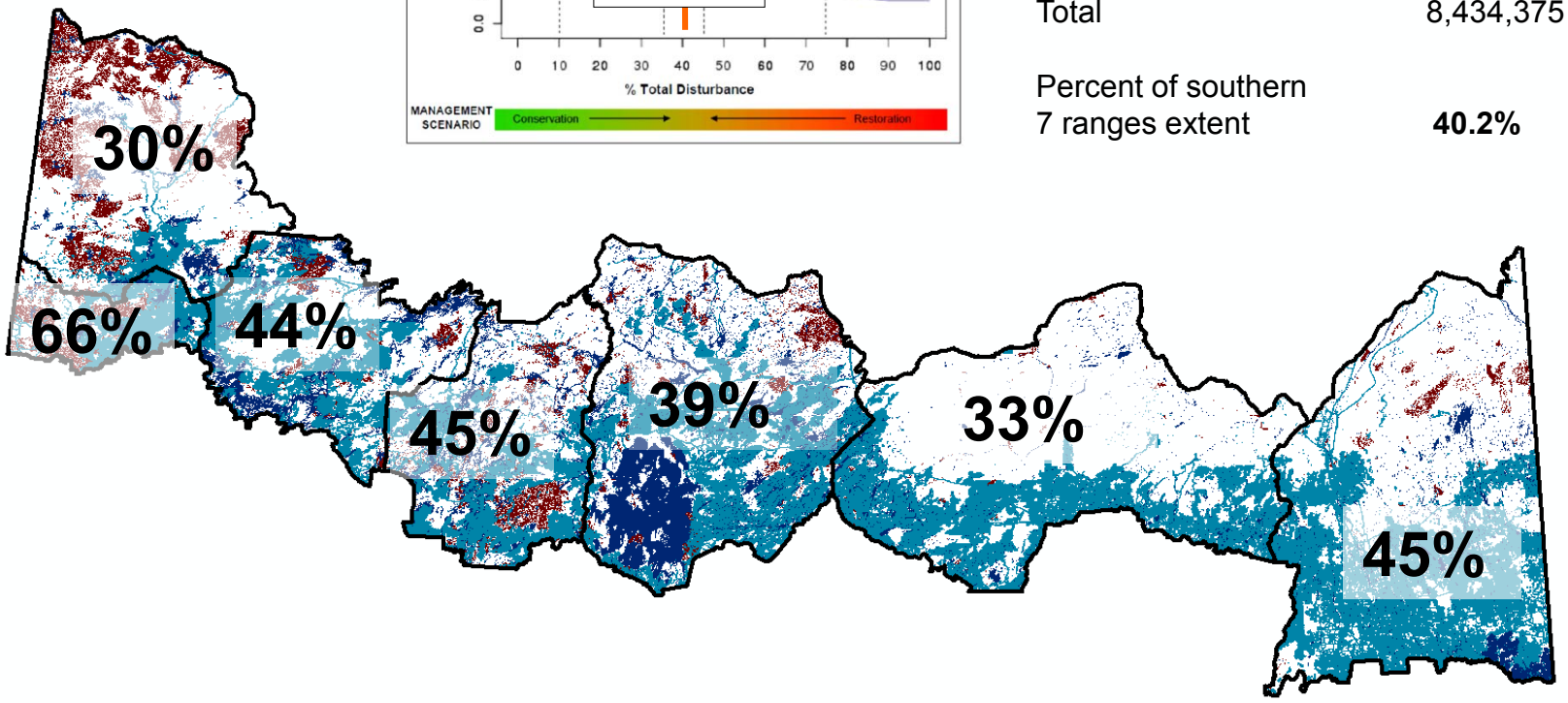
Southern Ranges 2015 Disturbance State

2015





Landscape Statistics (ha)

Southern Ranges Extent:	20,957,927
Water Area:	2,502,776
FRI Extent:	14,584,745
Non-FRI Extent:	6,373,183

Range disturbance indicator

Anthropogenic:*	7,178,409
Natural	1,255,966
Total	8,434,375
Percent of southern 7 ranges extent	**40.2%**

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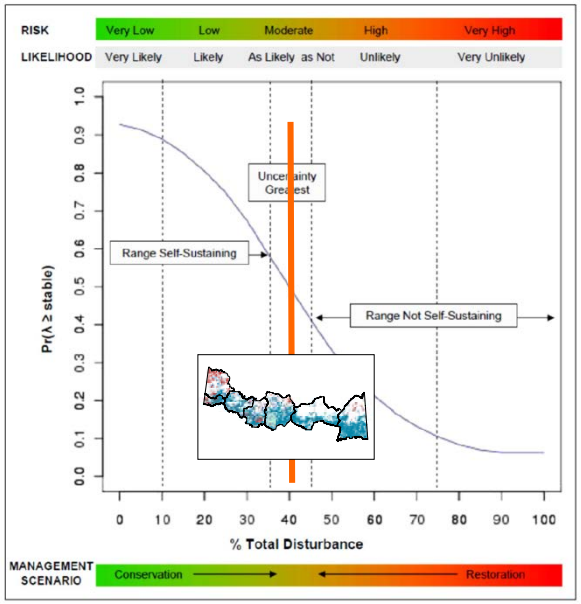
Southern Ranges 2017 Disturbance State

2017



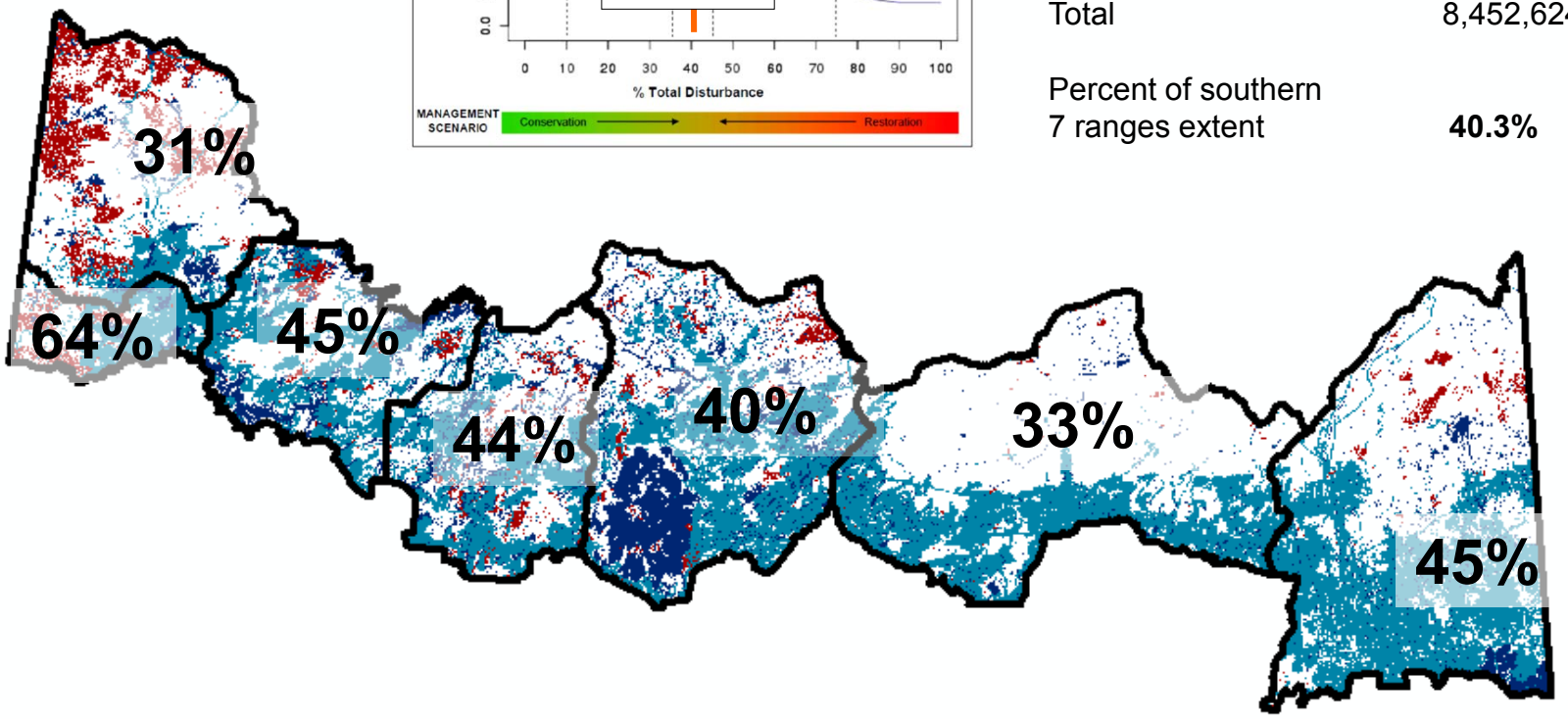
Landscape Statistics (ha)

Southern Ranges Extent:	20,957,927
Water Area:	2,502,776
FRI Extent:	14,584,745
Non-FRI Extent:	6,373,183

Range disturbance indicator

Anthropogenic:*	7,300,814
Natural	1,151,810
Total	8,452,624

Percent of southern 7 ranges extent **40.3%**



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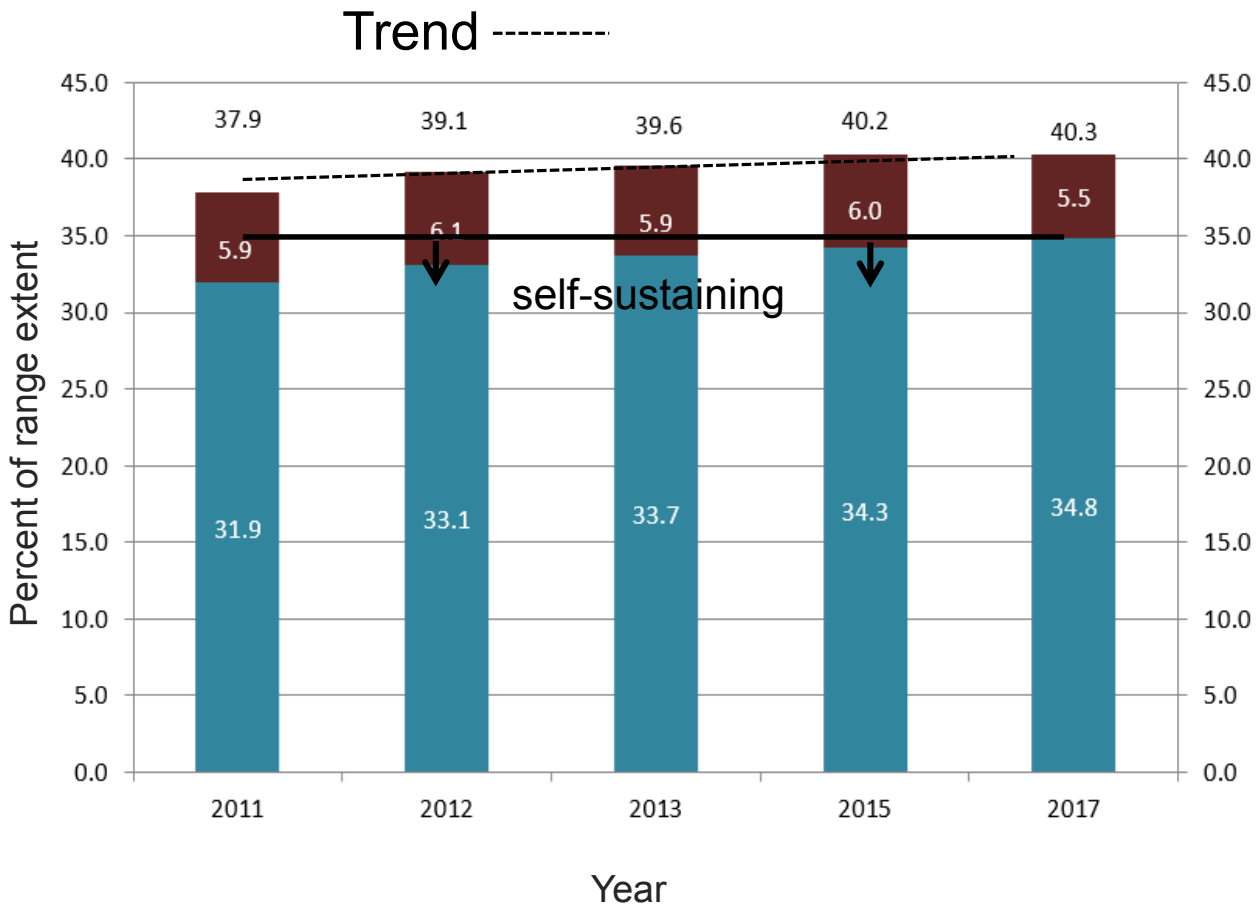
Southern Ranges 2011 - 2017 Disturbance Range Indicator Trend



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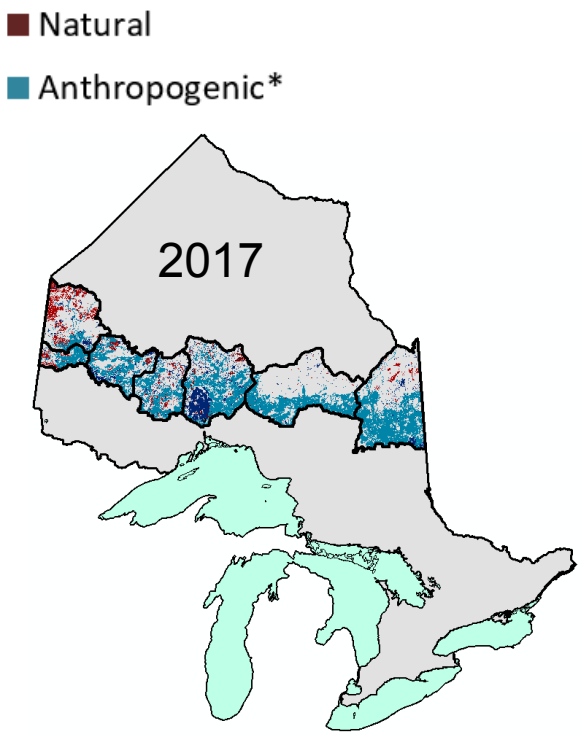

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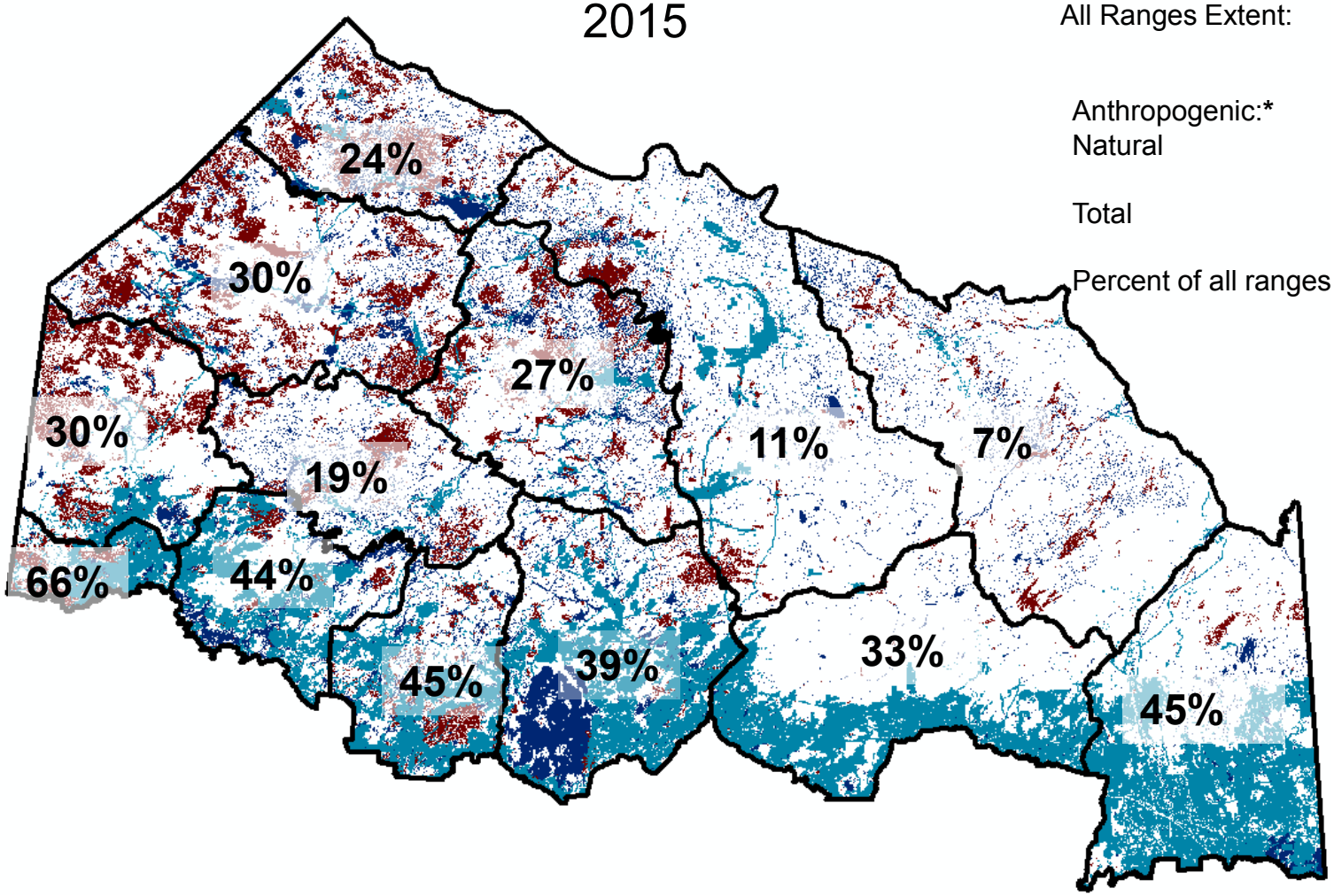
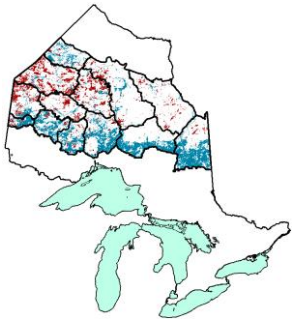
State of Caribou Range - Information Sheet

All Ranges 2015 Range Disturbance Indicator



Landscape Statistics (ha)

All Ranges Extent:	47,683,974
Anthropogenic:*	8,328,208 ha
Natural	4,845,314 ha
Total	13,173,523 ha
Percent of all ranges extent	27.6 %



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State of Caribou Range - Information Sheet

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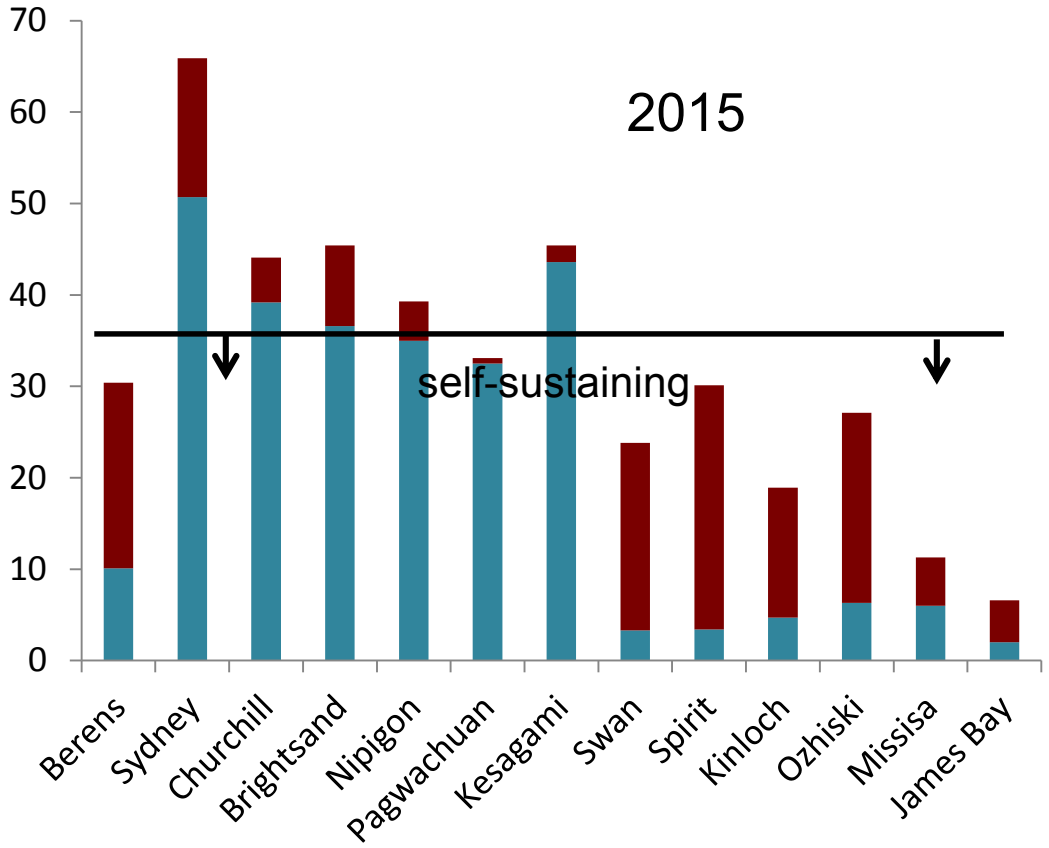

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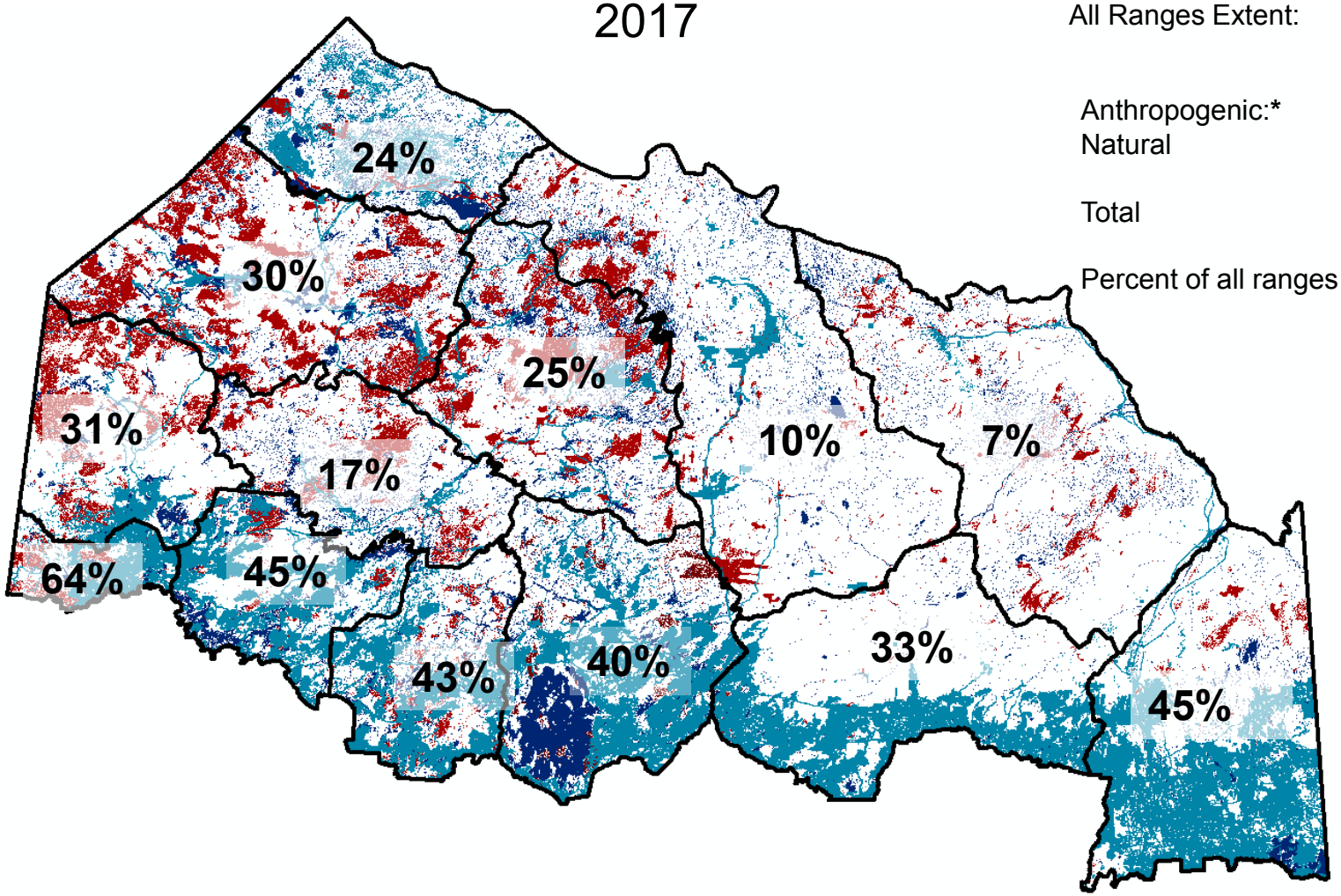
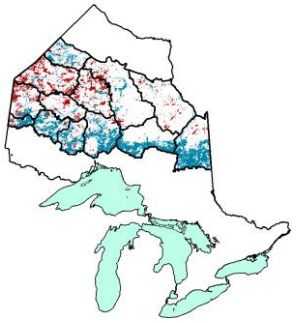
State of Caribou Range - Information Sheet

All Ranges 2017 Range Disturbance Indicator



Landscape Statistics (ha)

All Ranges Extent:	47,683,974
Anthropogenic:*	8,385,207 ha
Natural	4,589,308 ha
Total	12,974,515 ha
Percent of all ranges extent	27.2 %



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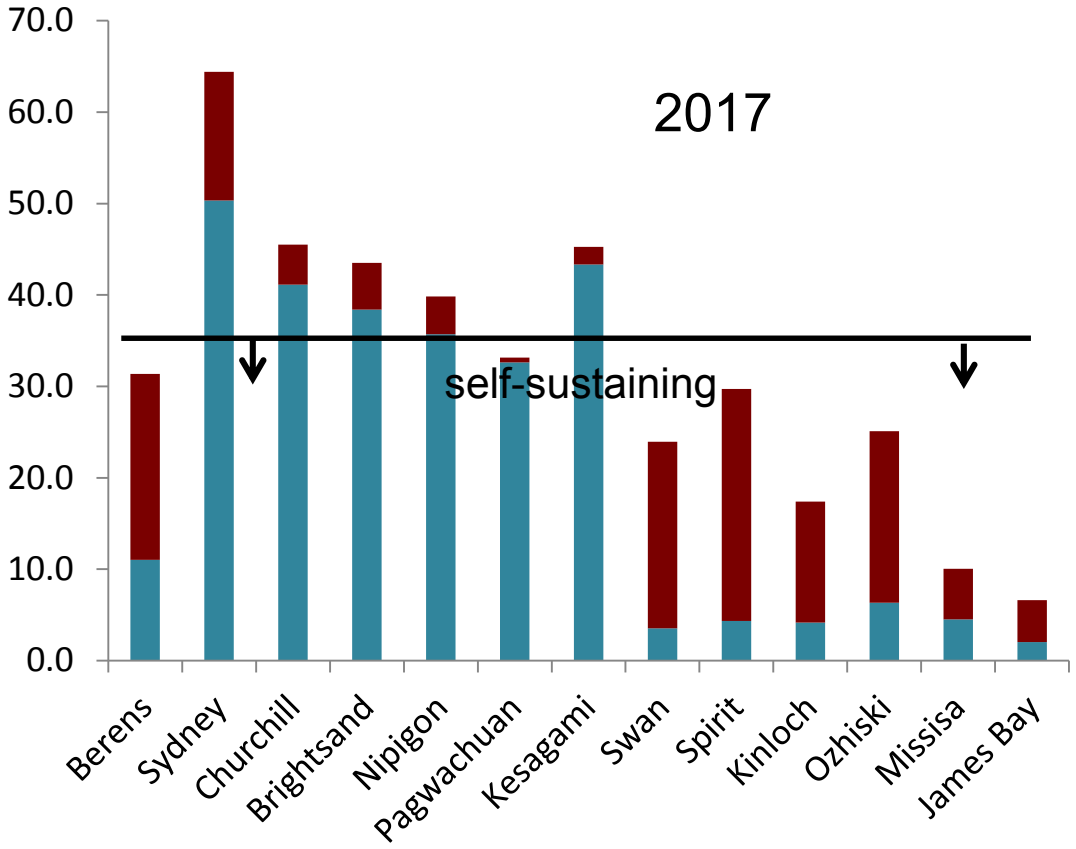
State of Caribou Range - Information Sheet

All Ranges 2017 Range Disturbance Indicator



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Total	12,974,515 ha
Percent of all ranges extent	27.2 %

* Buffered 500 metres.

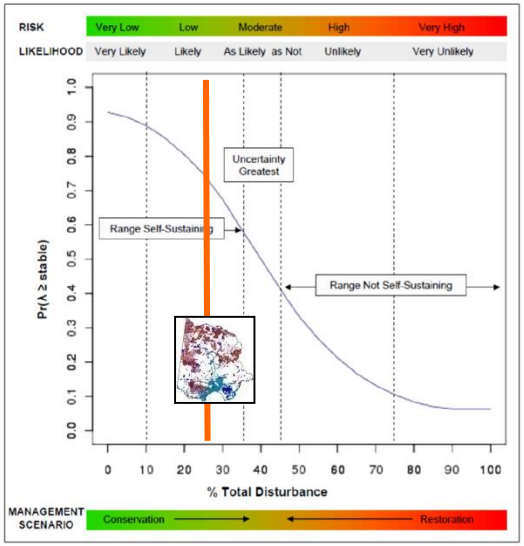
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

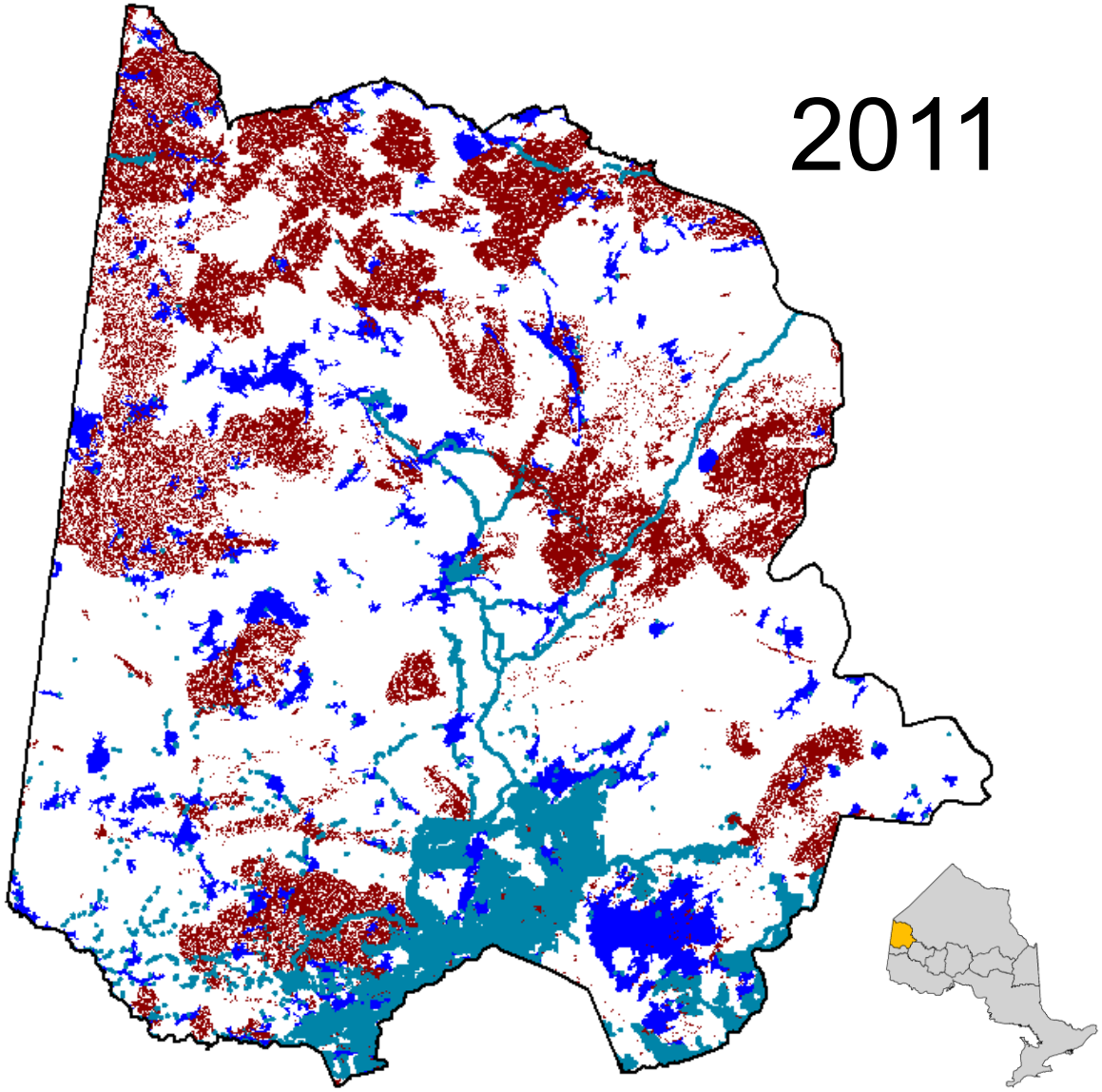
Range 1: Berens 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	252,271
Natural	513,748
Total	766,019
Percent of range extent	27.4%





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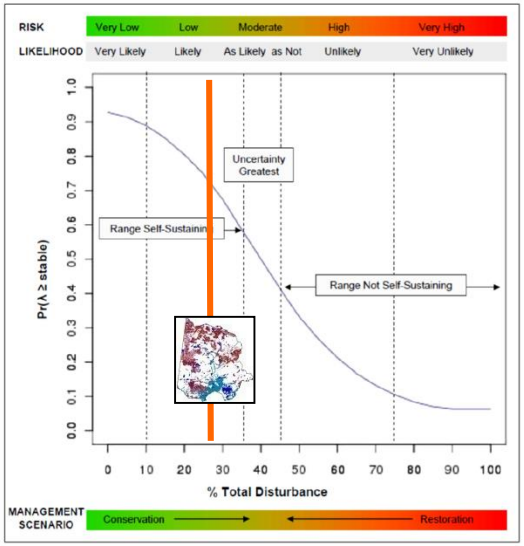
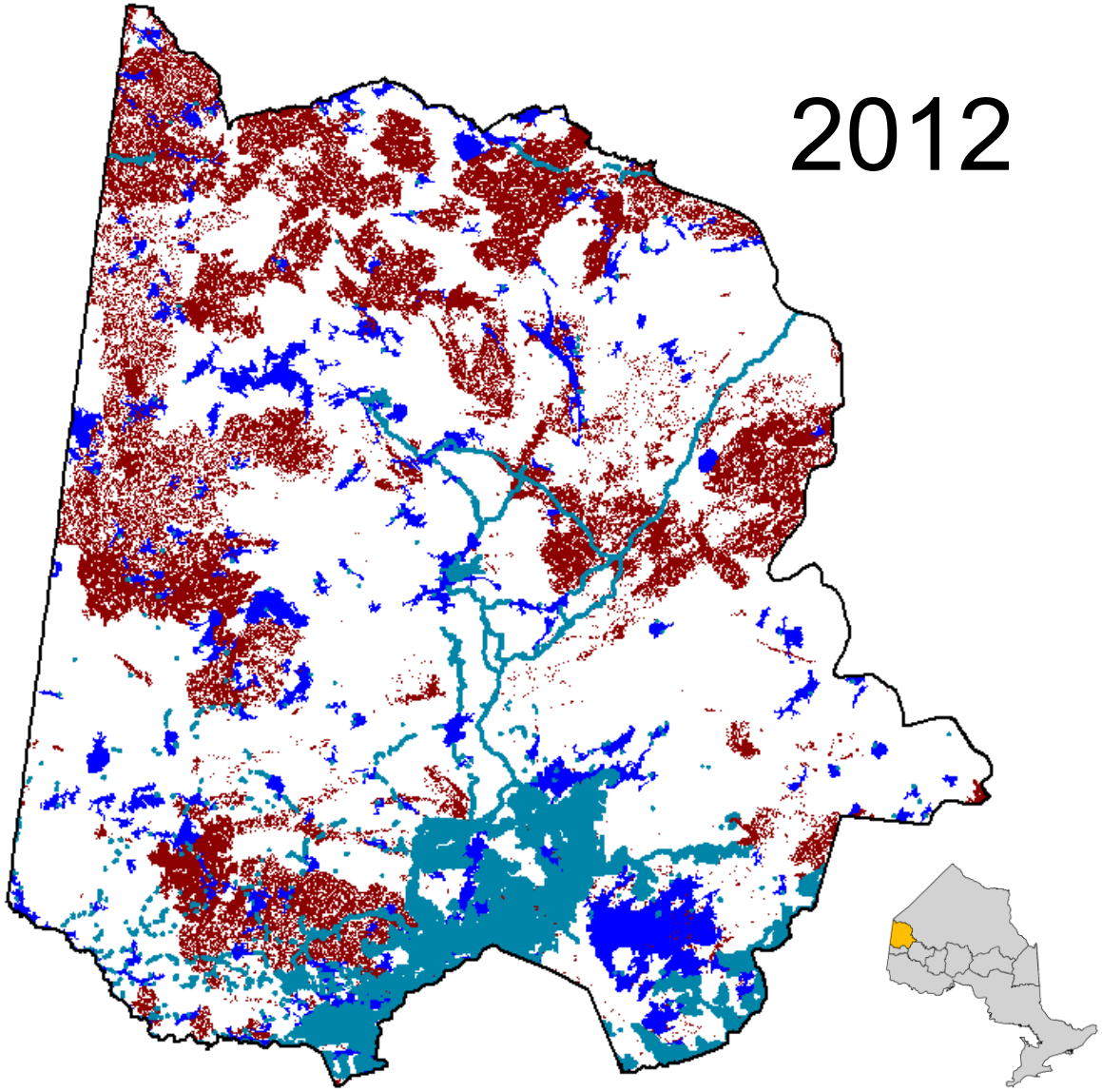
Landscape Statistics (ha)

Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	222,684
Natural	542,019
Total	804,703
Percent of range extent	28.8%





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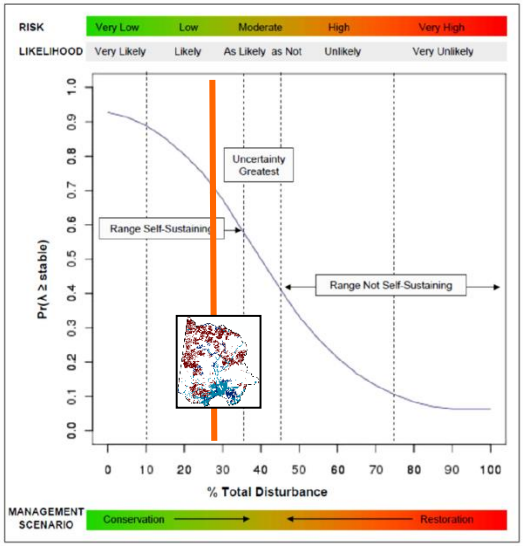
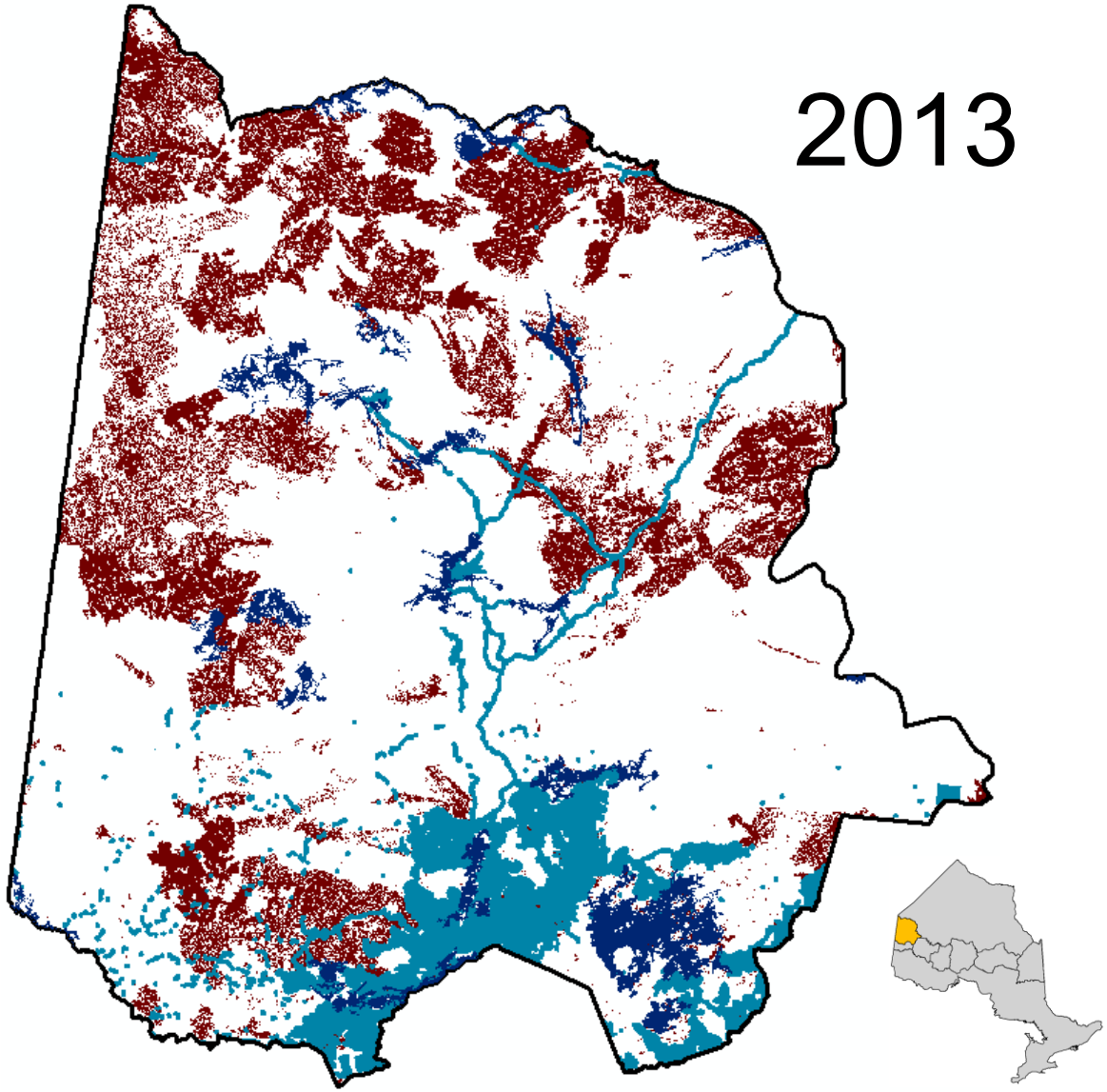
Landscape Statistics (ha)

Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	266,548
Natural	547,077
Total	813,625
Percent of range extent	29.1%





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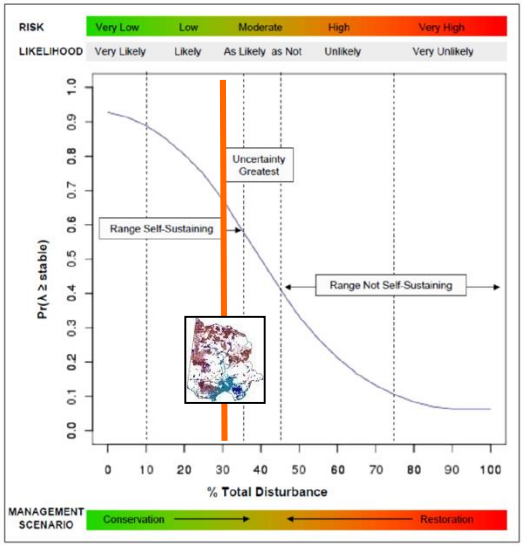
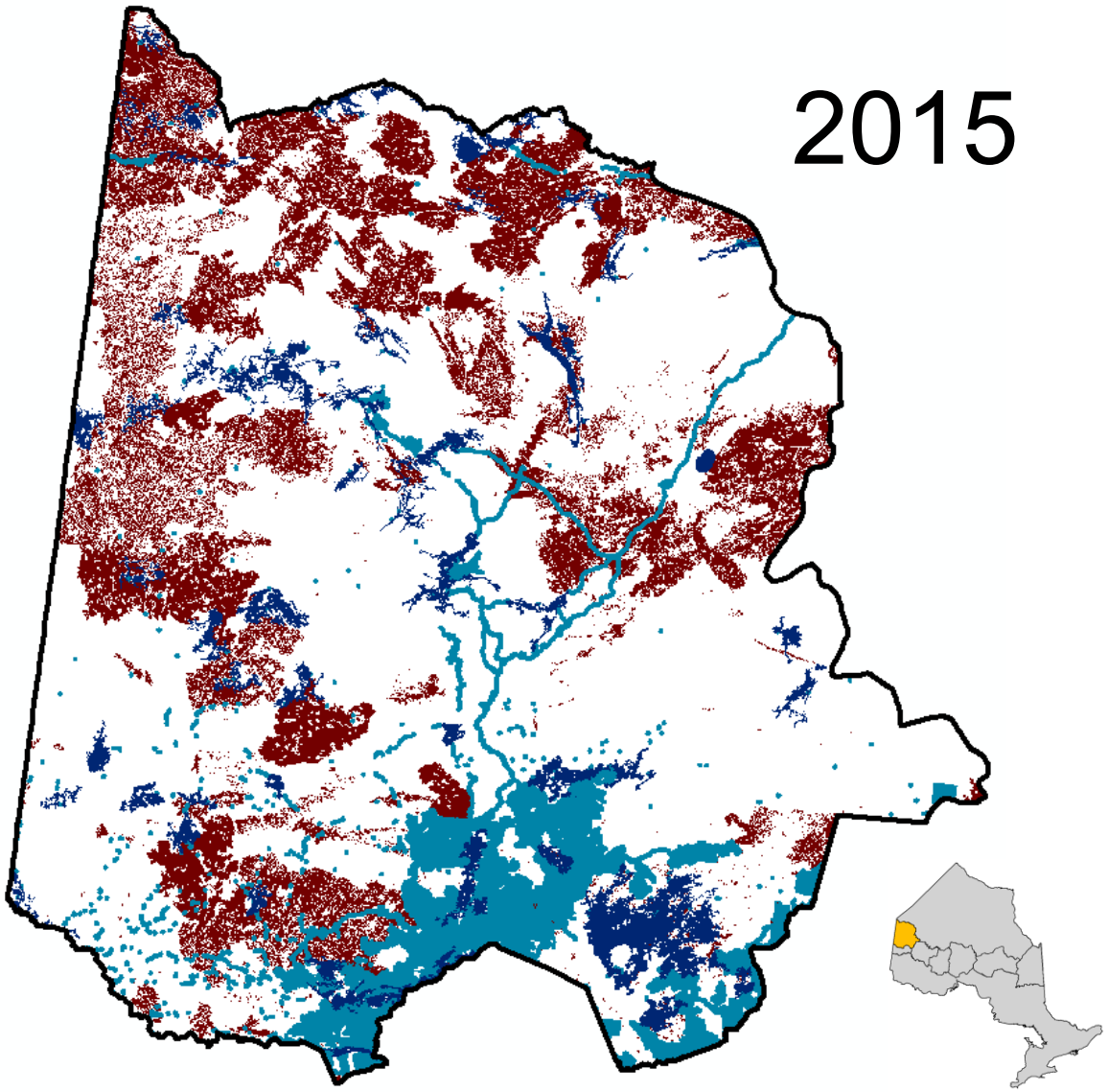
Landscape Statistics (ha)

Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	283,568
Natural	566,737
Total	850,305
Percent of range extent	30.4%





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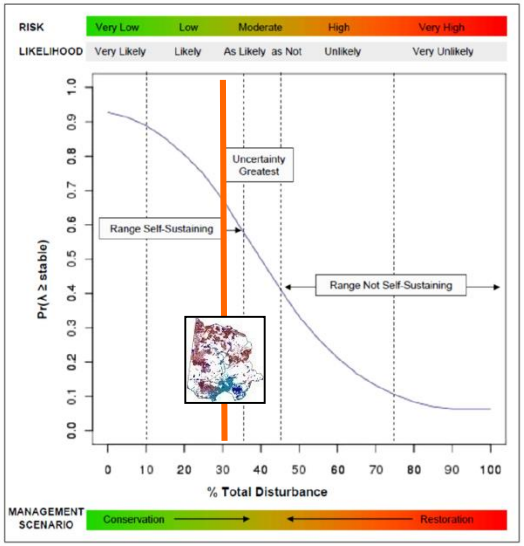
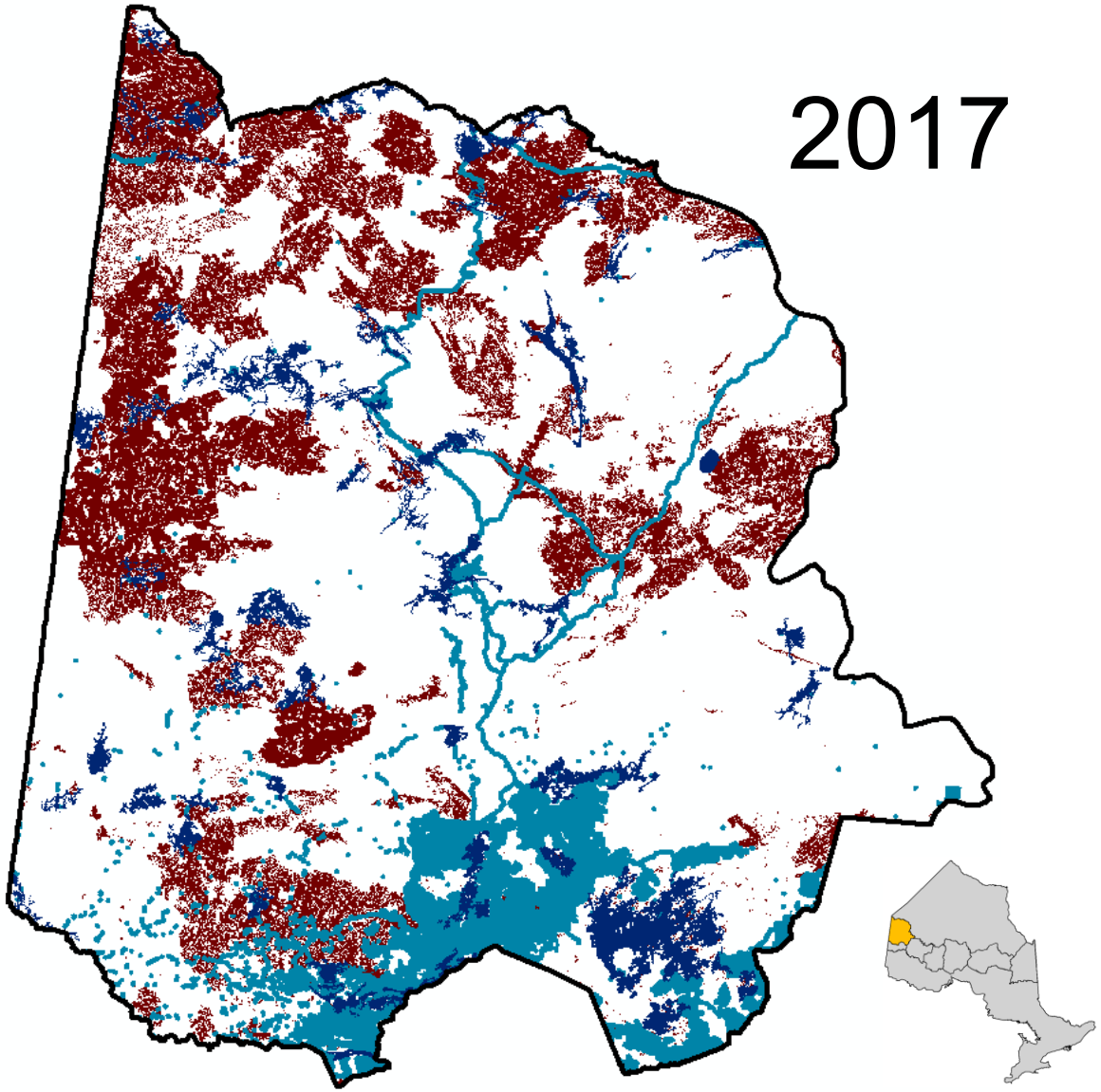
Landscape Statistics (ha)

Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	308,243
Natural	567,944
Total	876,187
Percent of range extent	31.4%





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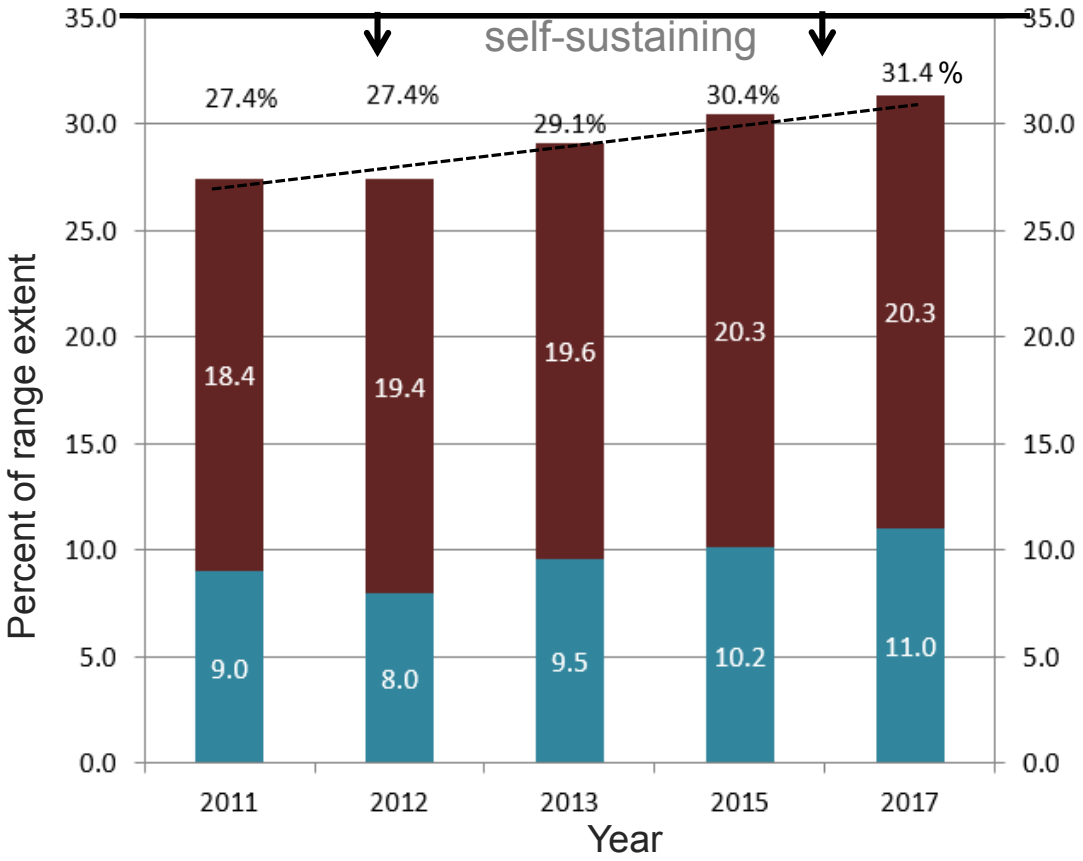
Range 1: Berens 2011 - 2017 Disturbance Range Indicator Trend

Trend



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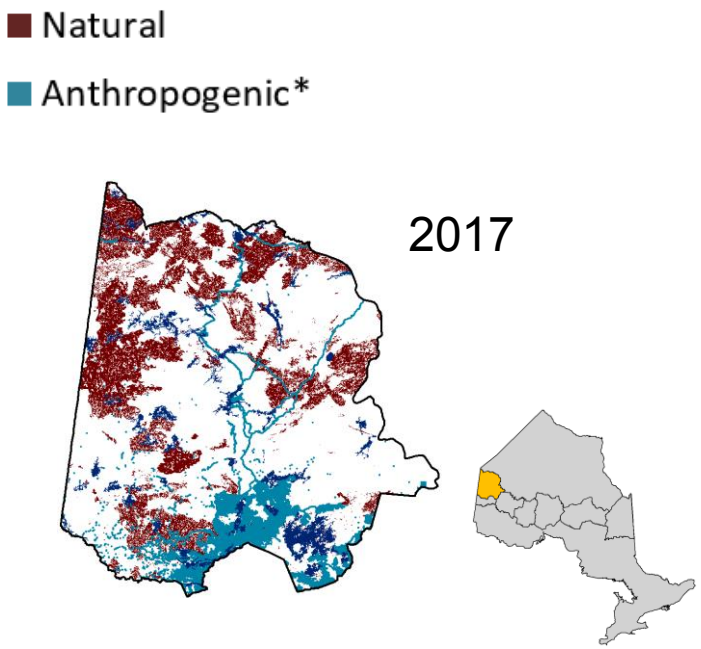

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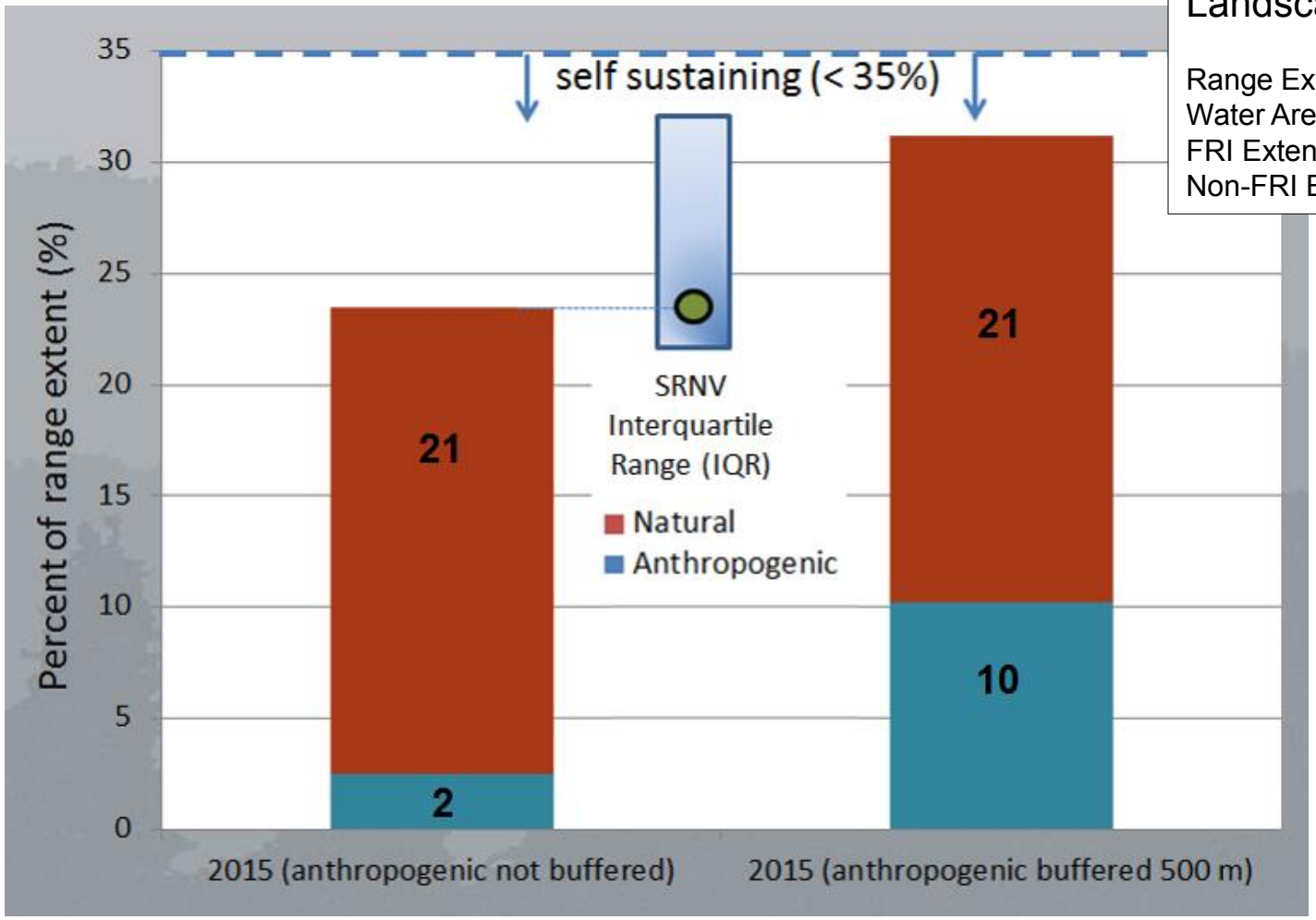
Range 1: Berens 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

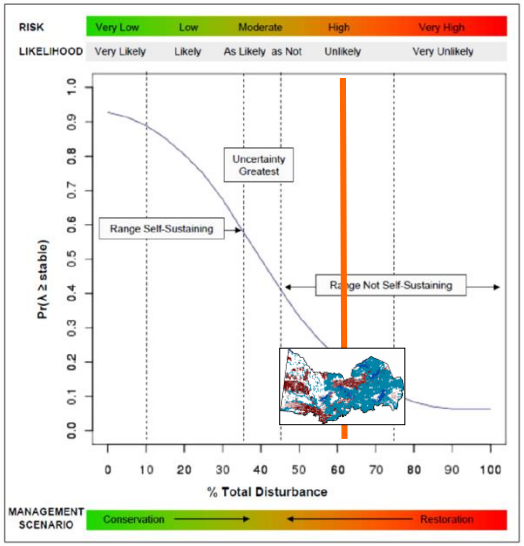
Range Extent:	2,793,021
Water Area:	434,971
FRI Extent:	1,605,737
Non-FRI Extent:	1,187,284

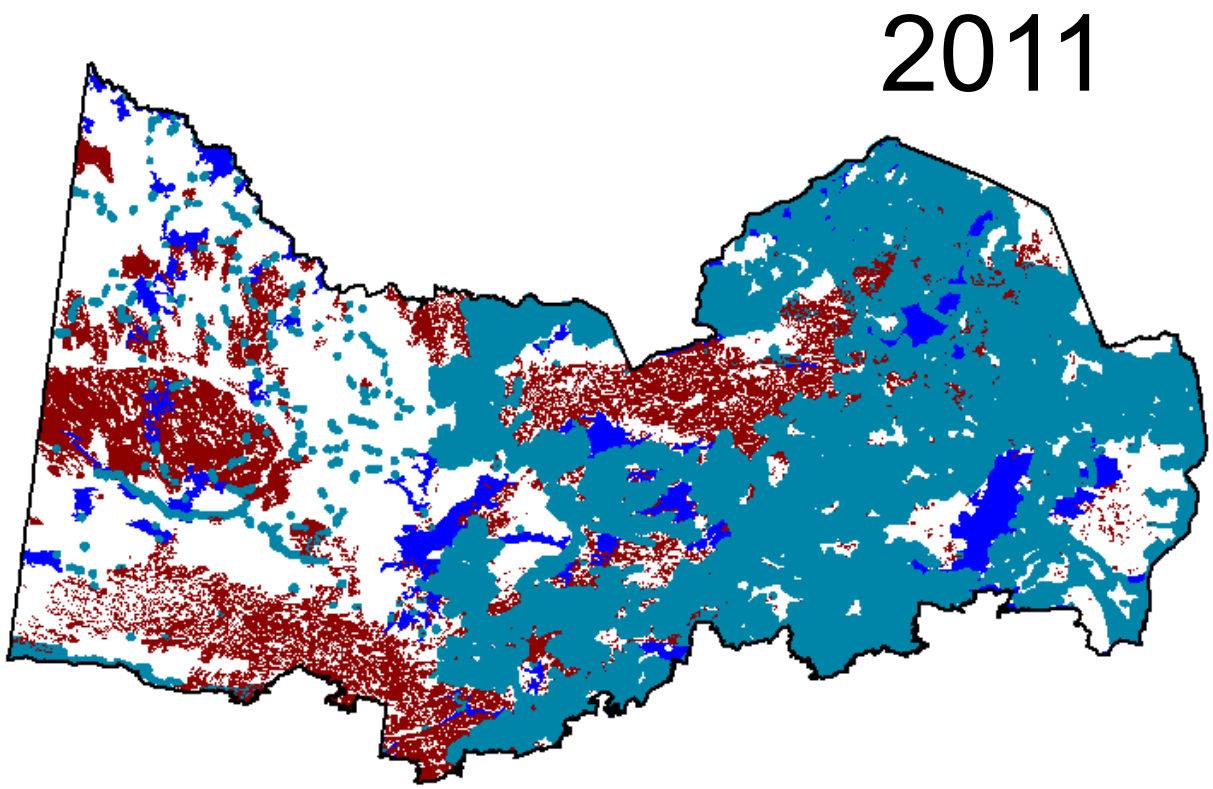
Range 2: Sydney 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

Range disturbance indicator	
Anthropogenic:*	332,240
Natural	125,717
Total	457,957
Percent of range extent	61.2%





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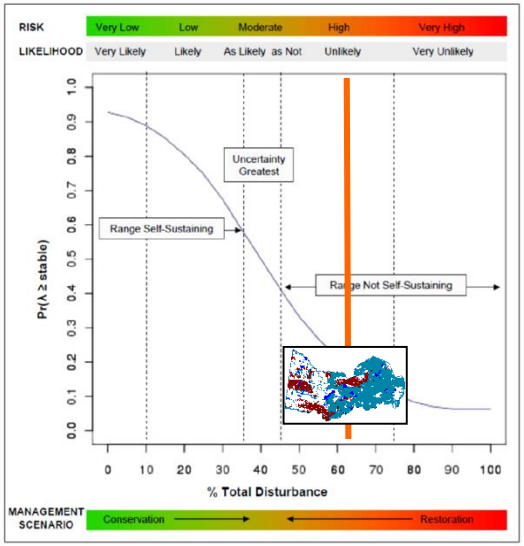
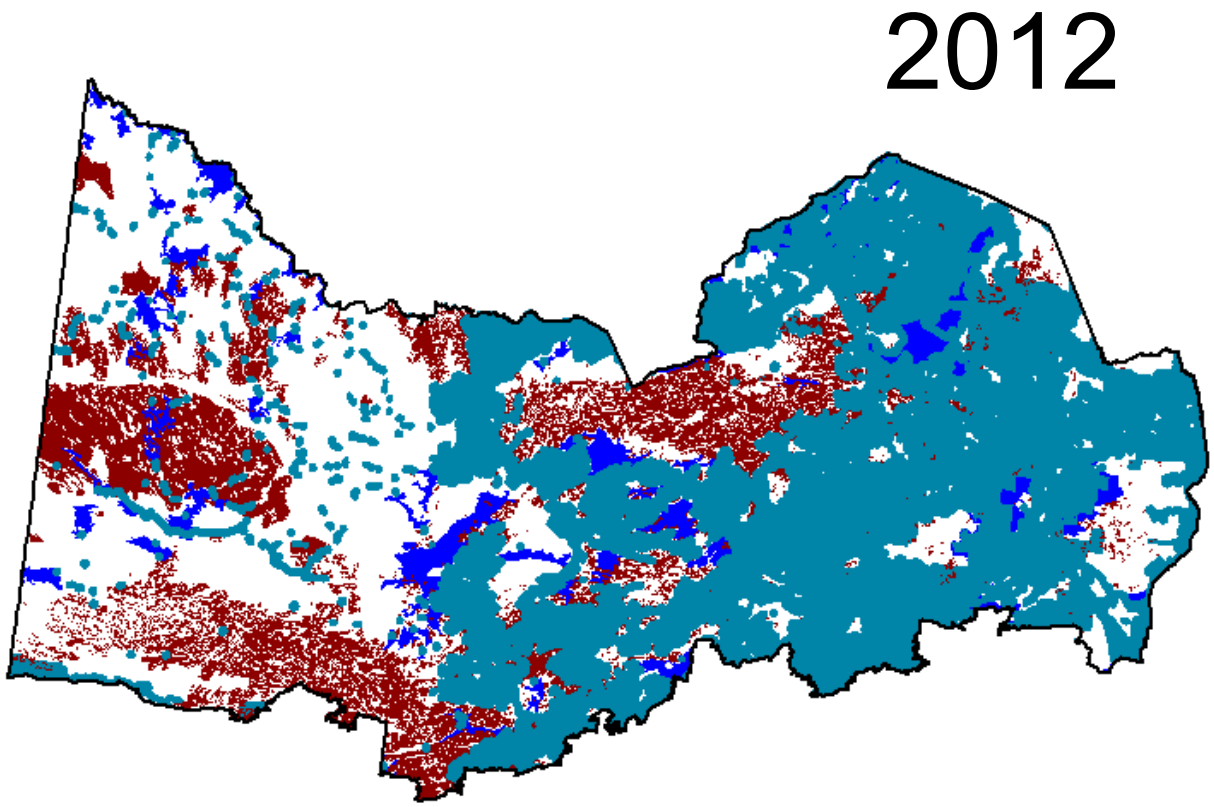
Range 2: Sydney 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

Range disturbance indicator	
Anthropogenic:*	345,617
Natural	120,846
Total	466,462
Percent of range extent	62.4%





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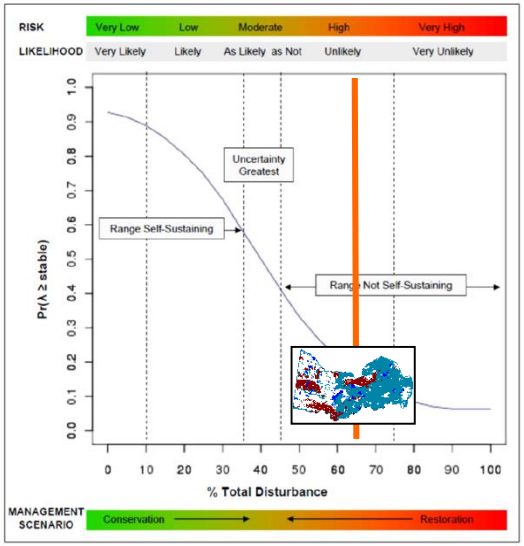
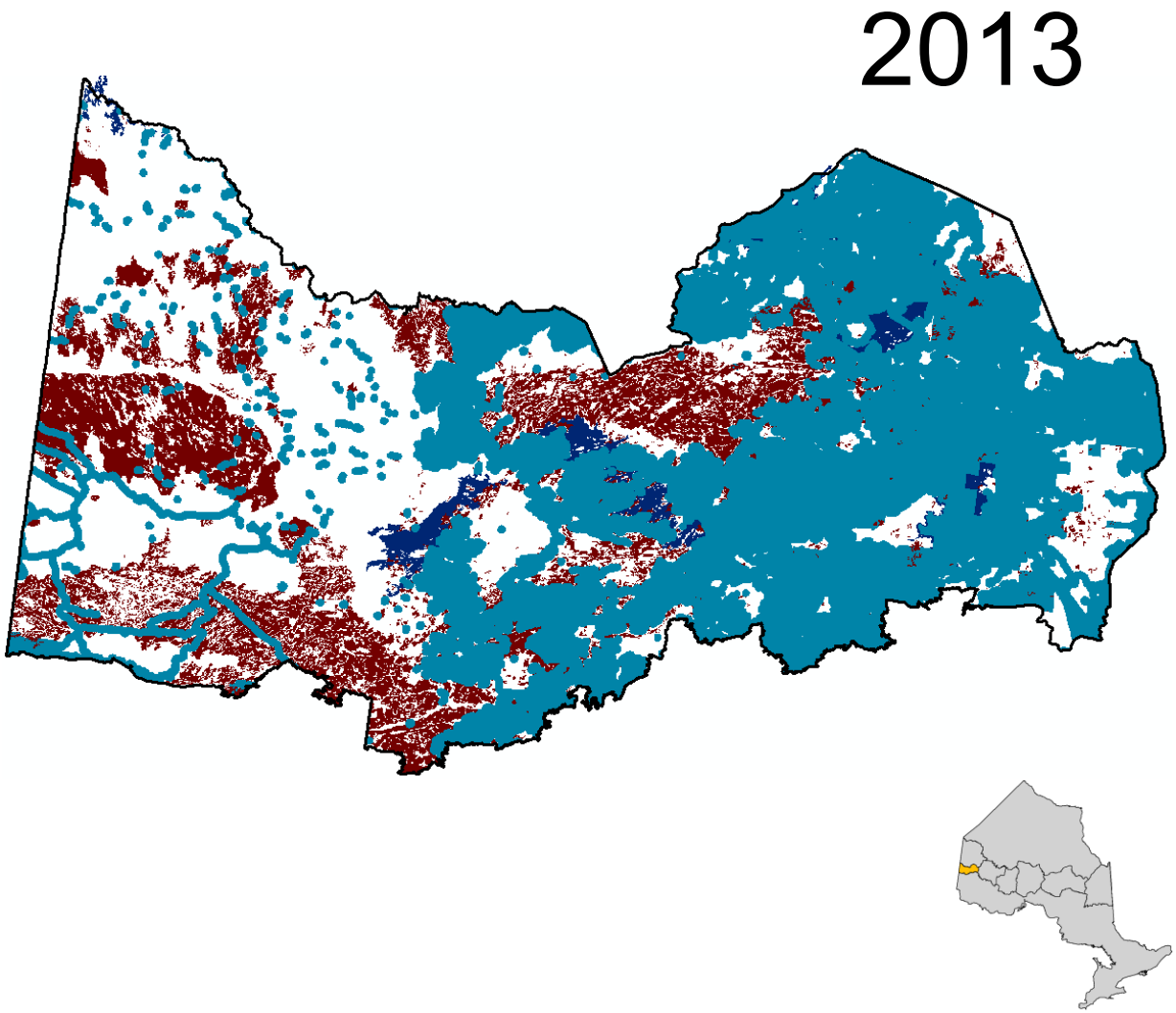
Landscape Statistics (ha)

Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

Range disturbance indicator	
Anthropogenic:*	368,035
Natural	119,670
Total	487,705
Percent of range extent	65.2%





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Landscape Statistics (ha)

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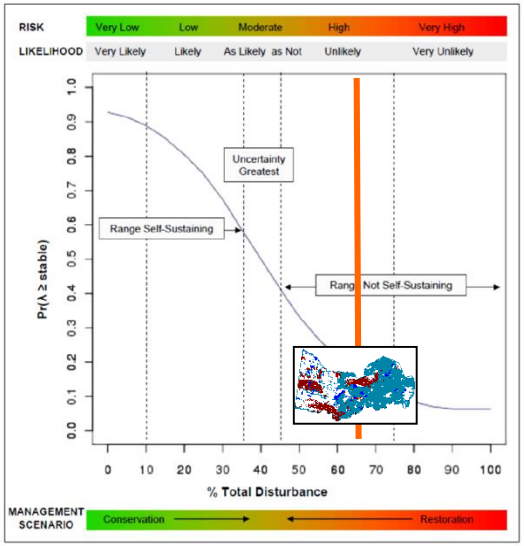
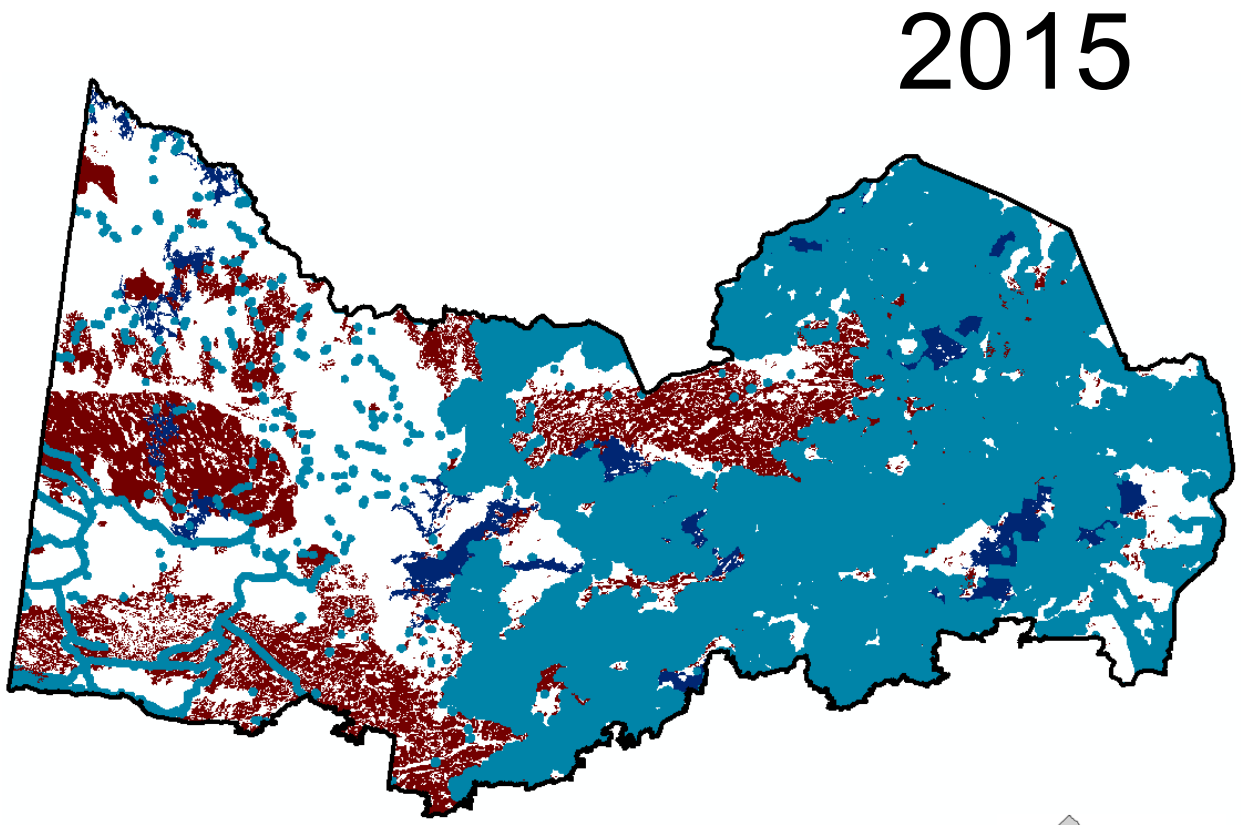
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

Range disturbance indicator	
Anthropogenic:*	379,337
Natural	113.962
Total	493,339
Percent of range extent	66%





* Buffered 500 metres.

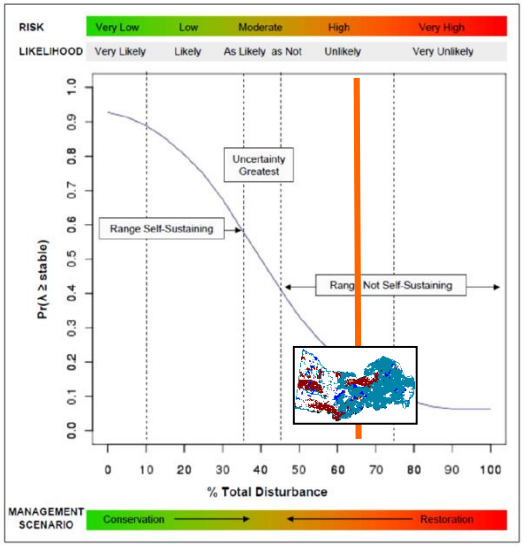
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

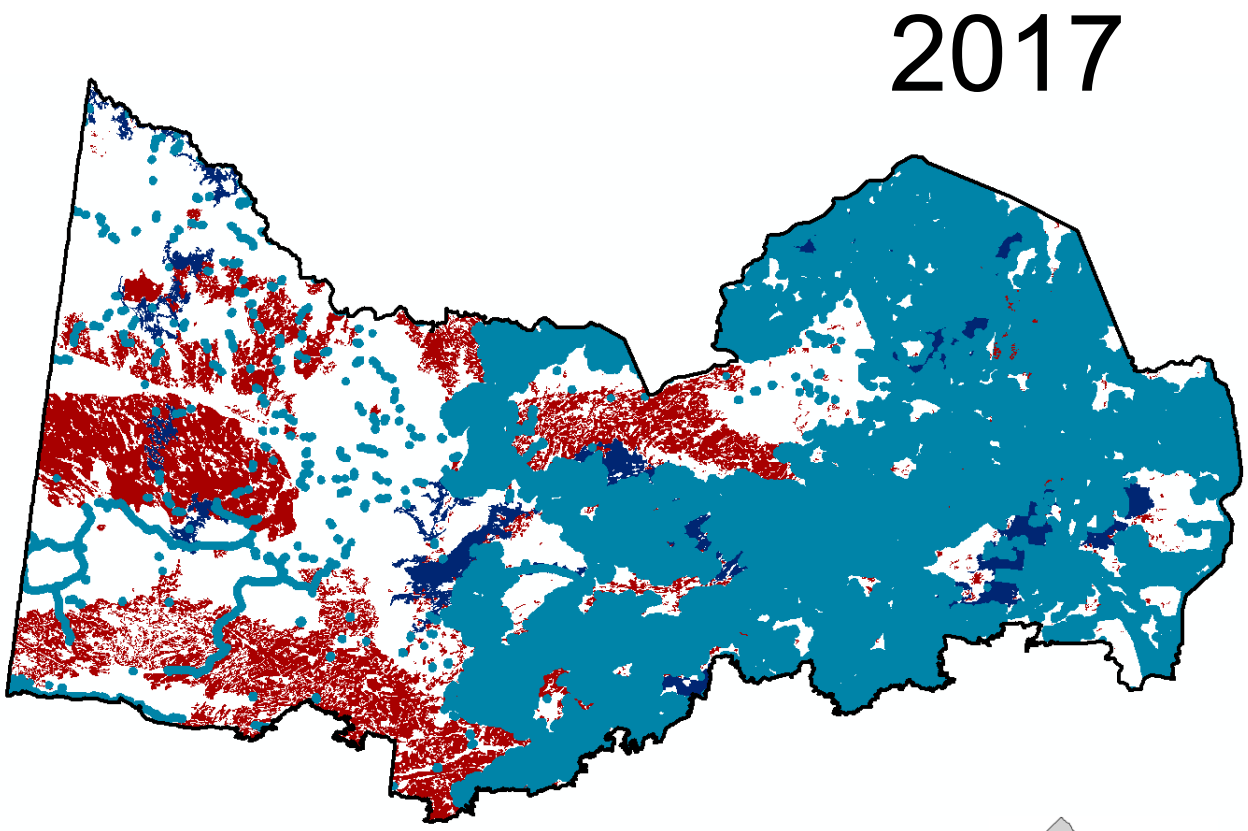
Range 2: Sydney 2017 Disturbance State

Landscape Statistics (ha)

Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

Range disturbance indicator	
Anthropogenic:*	376,260
Natural	105.296
Total	481,556
Percent of range extent	64%



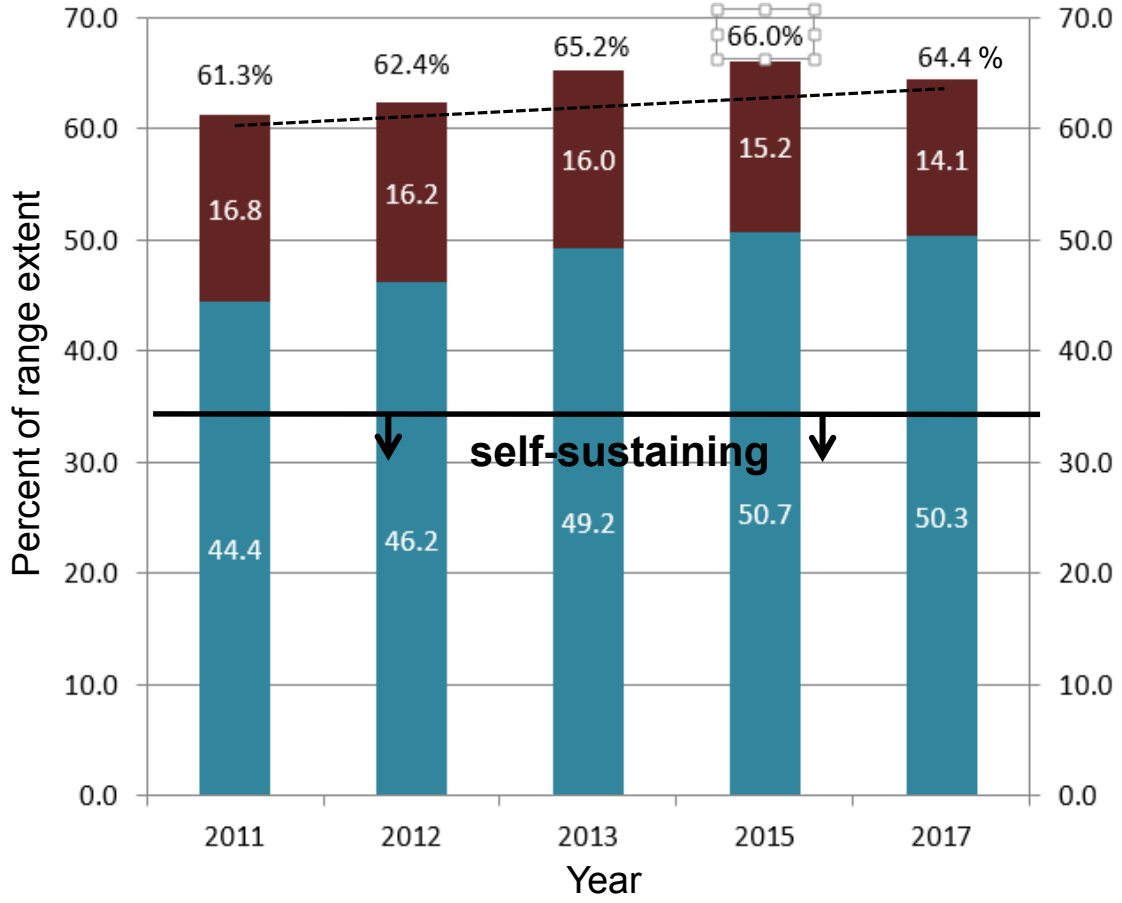


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

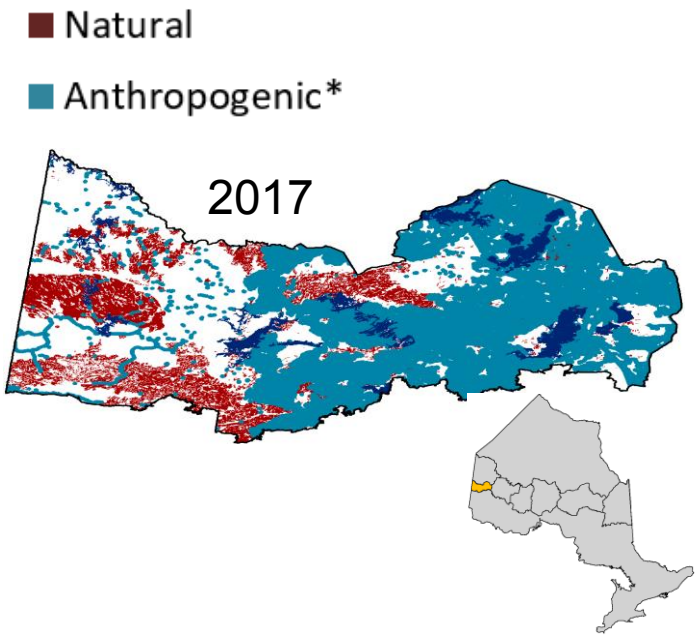
Range 2: Sydney 2011 - 2017 Disturbance Range Indicator Trend

Trend



Landscape Statistics (ha)

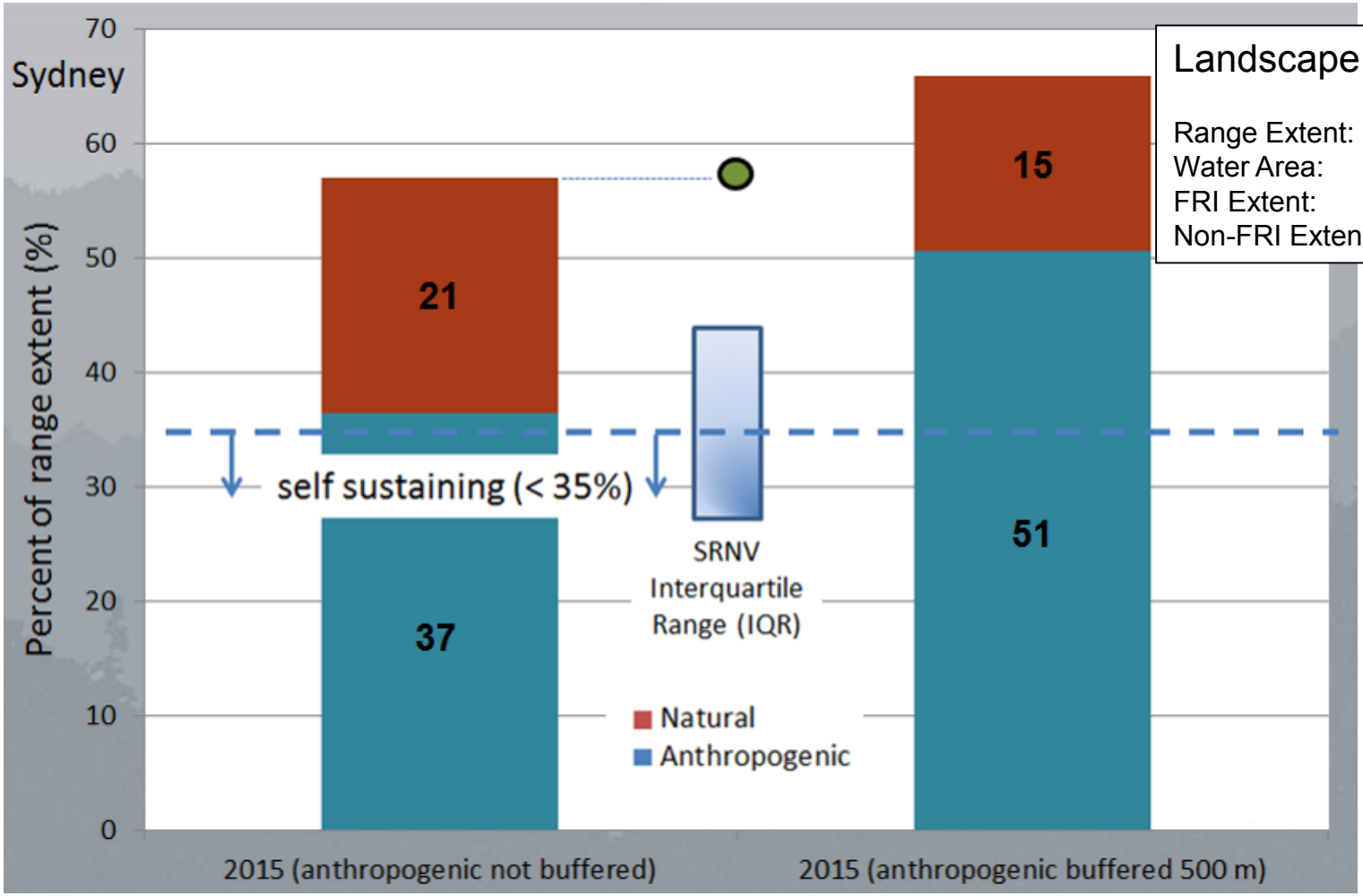
Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690



* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 2: Sydney 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	747,541
Water Area:	127,992
FRI Extent:	575,851
Non-FRI Extent:	171,690

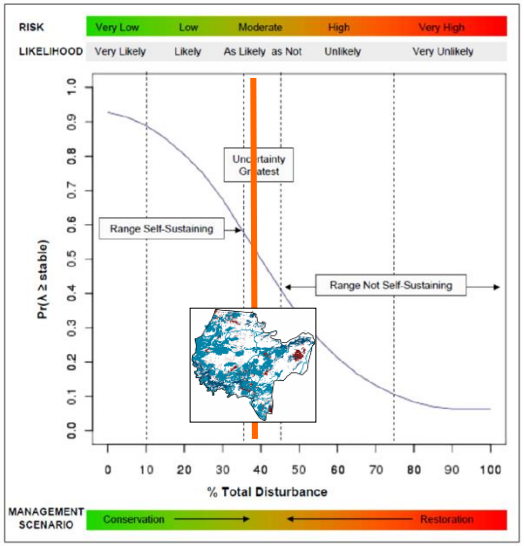
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

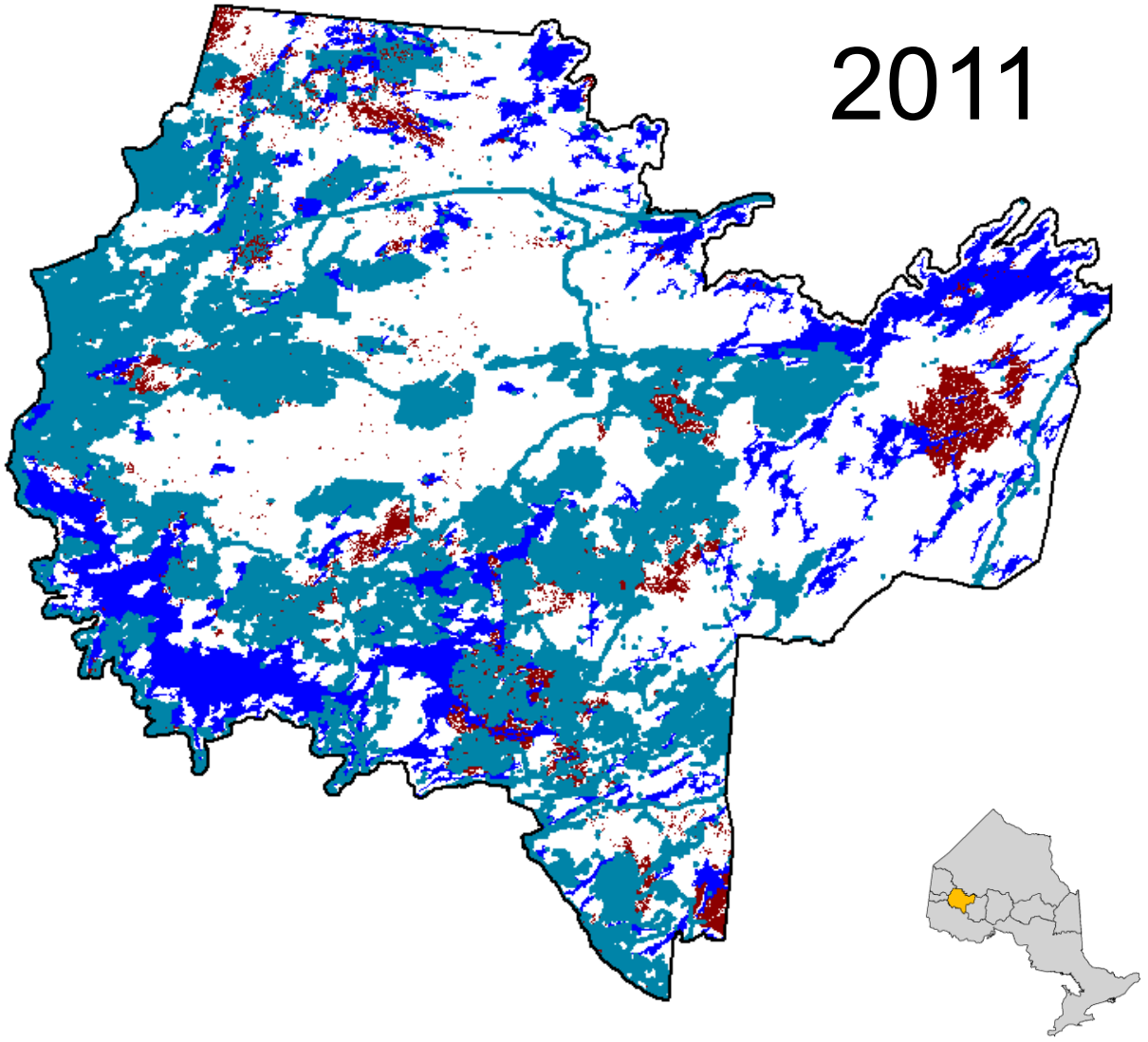
Range 3: Churchill 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

Range disturbance indicator	
Anthropogenic:*	733,978
Natural	82,745
Total	816,723
Percent of range extent	38.4%





* Buffered 500 metres.

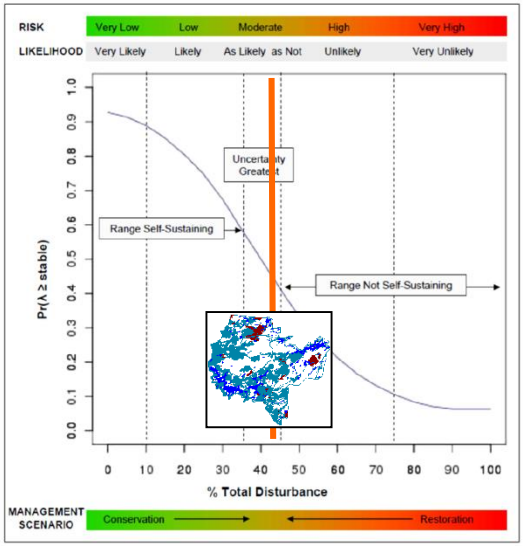
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

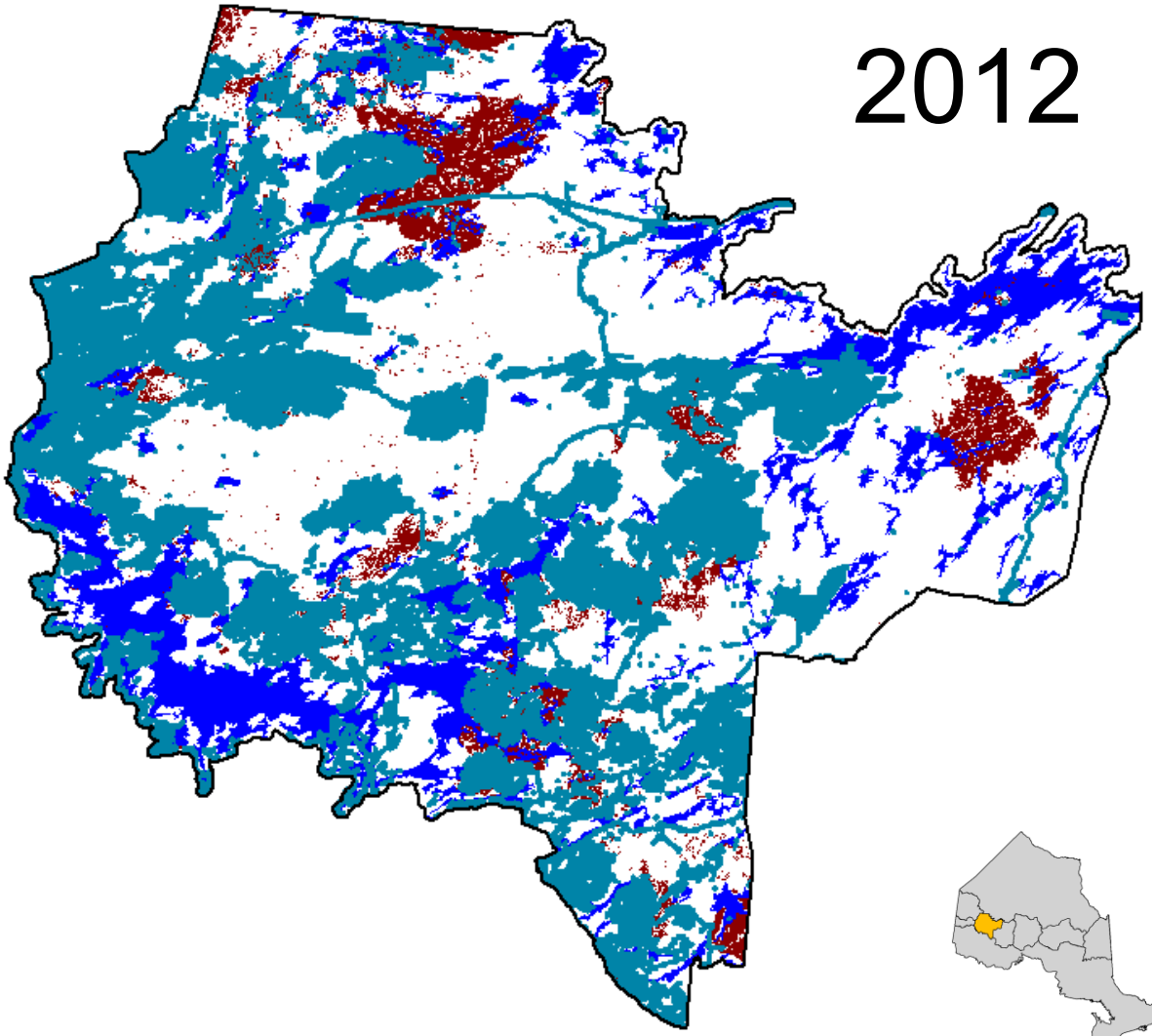
Range 3: Churchill 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

Range disturbance indicator	
Anthropogenic:*	791,159
Natural	110,382
Total	901,542
Percent of range extent	42.3%





* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

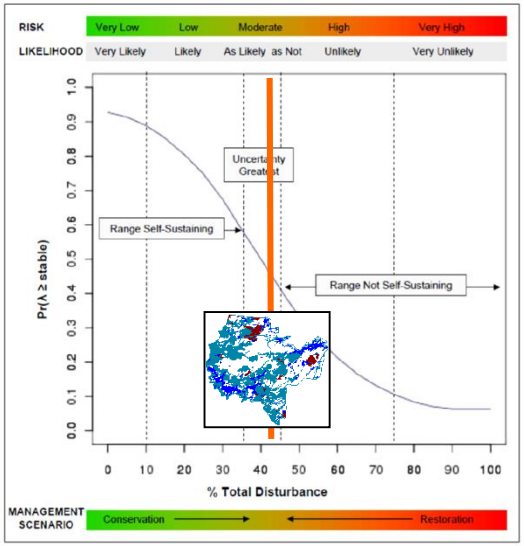
Range 3: Churchill 2013 Disturbance State

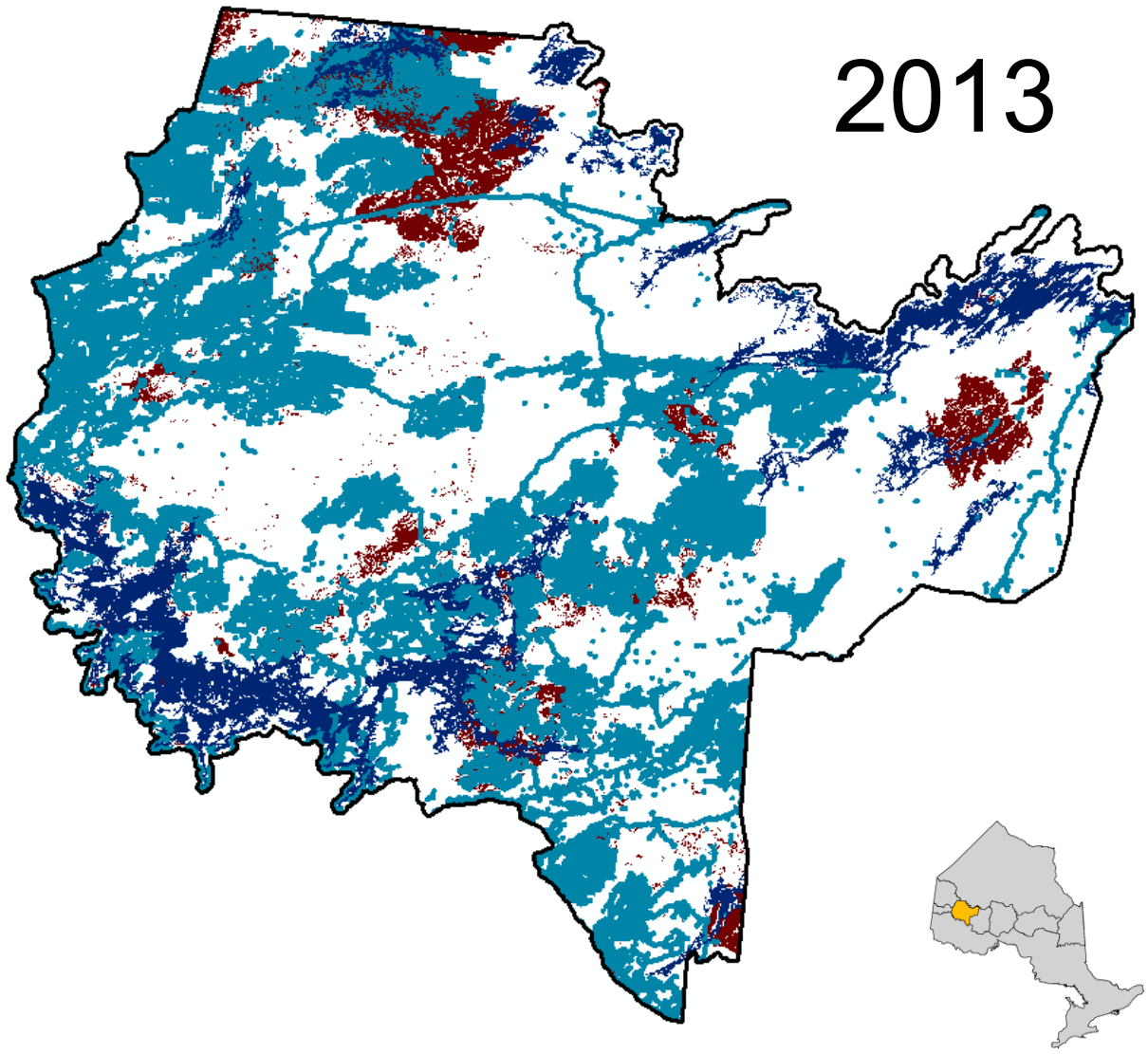
Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

Range disturbance indicator

Anthropogenic:*	779,706
Natural	106,779
Total	886,485
Percent of range extent	41.7%





* Buffered 500 metres.

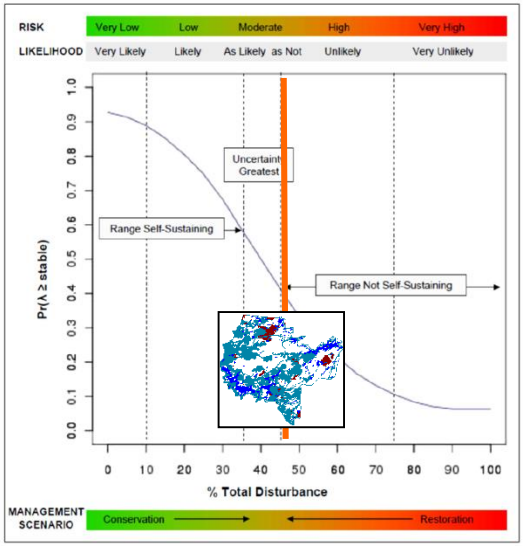
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

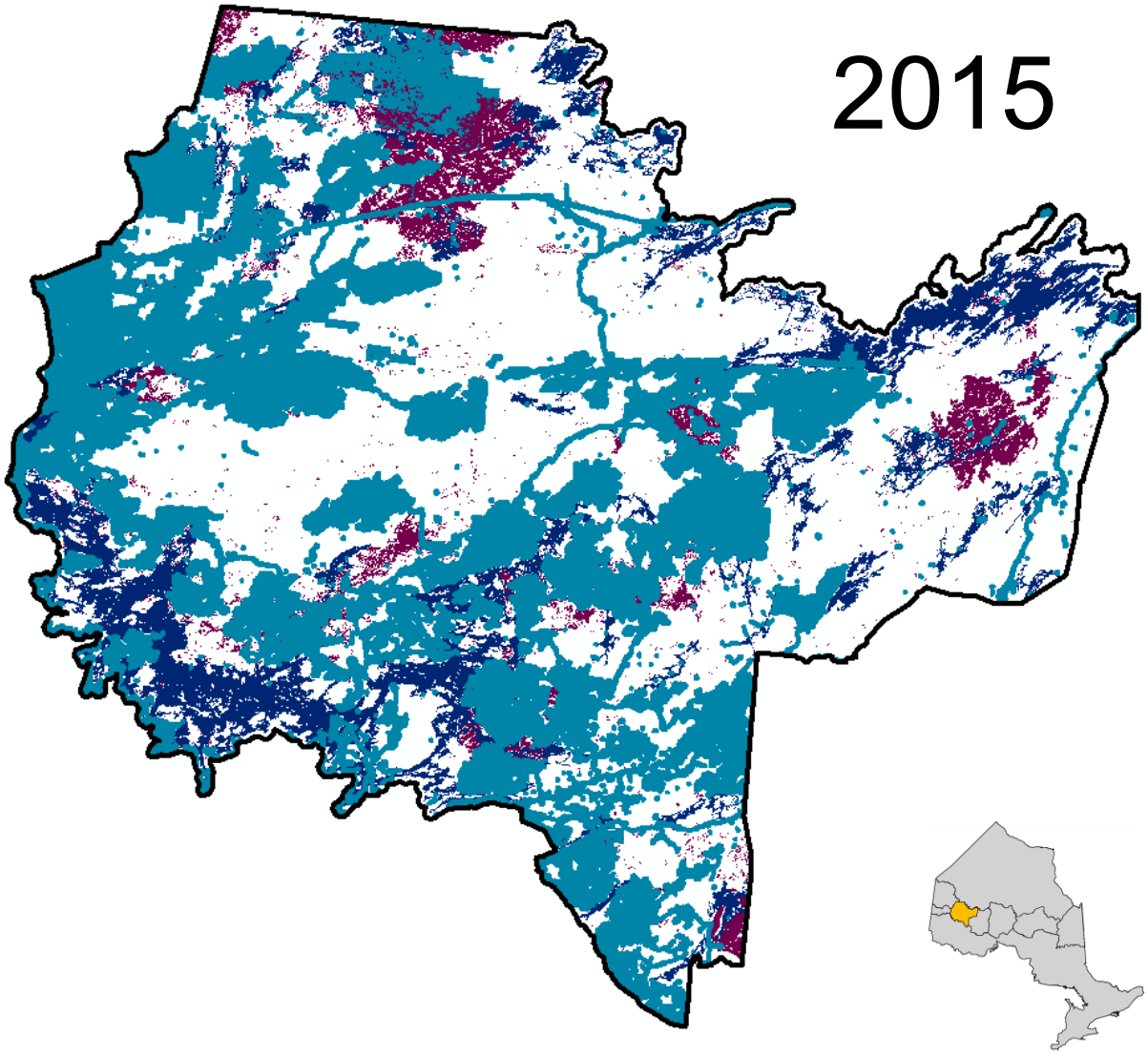
Range 3: Churchill 2015 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

Range disturbance indicator	
Anthropogenic:*	834,216
Natural	103,727
Total	937,943
Percent of range extent	44.1%





* Buffered 500 metres.

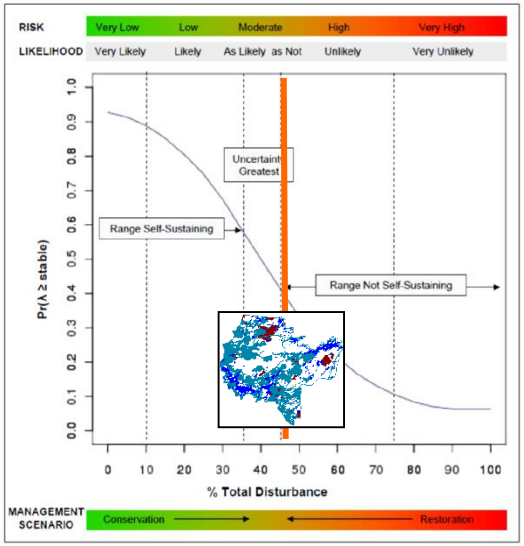
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

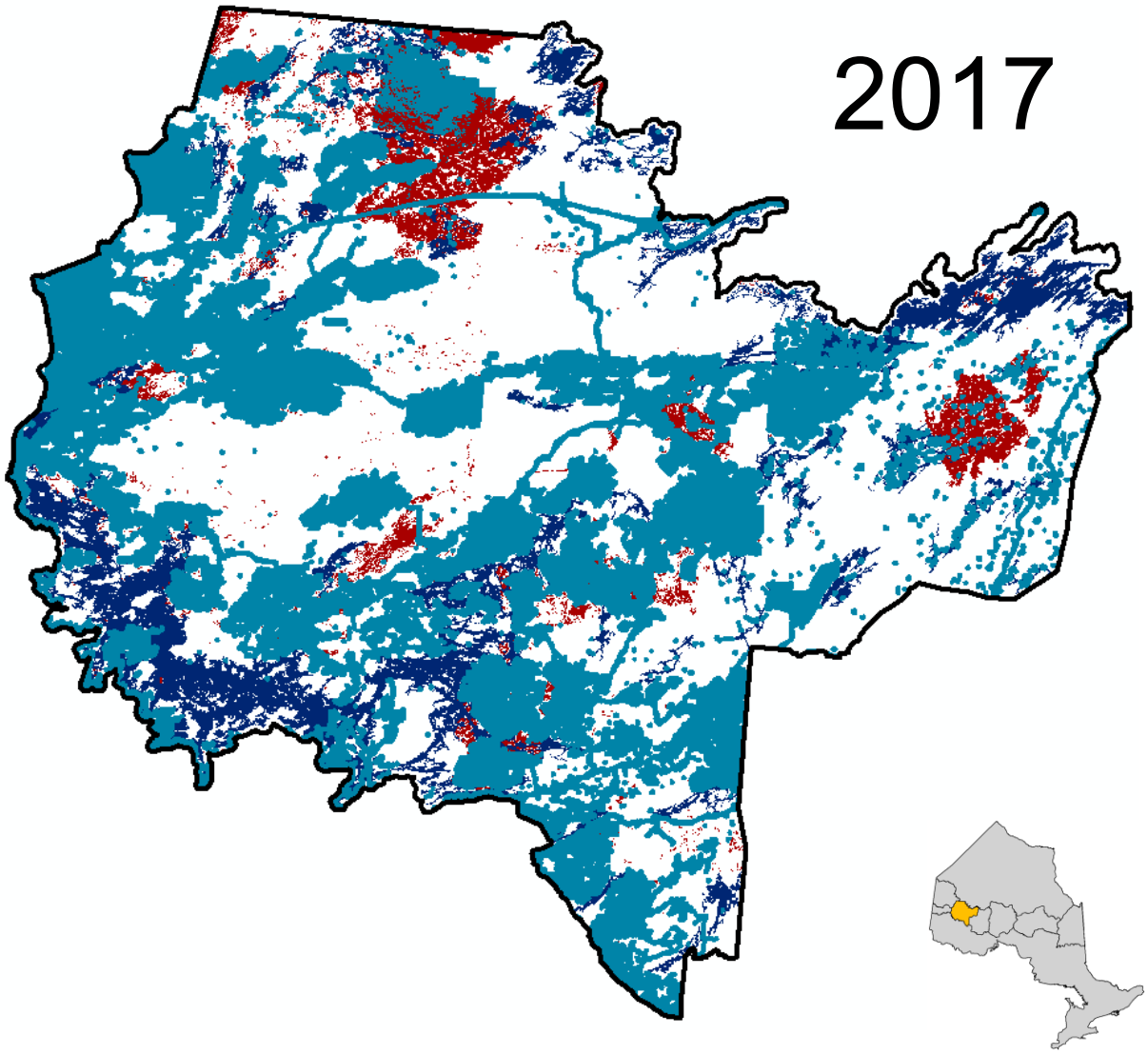
Range 3: Churchill 2017 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

Range disturbance indicator	
Anthropogenic:*	874,750
Natural	92,660
Total	967,410
Percent of range extent	45.5%



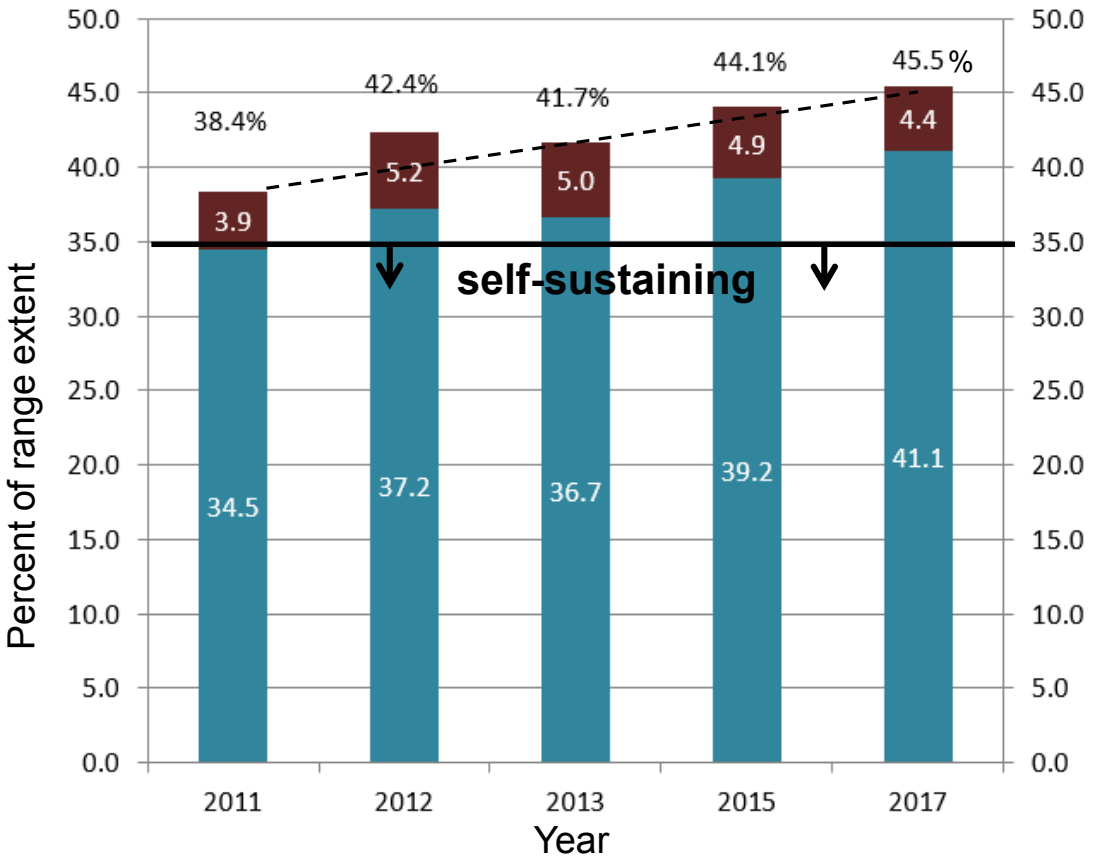


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

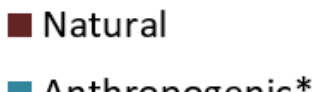
Range 3: Churchill 2011 - 2017 Disturbance Range Indicator Trend

Trend

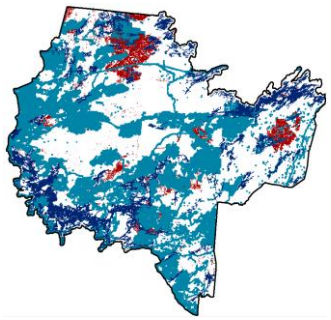


Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580



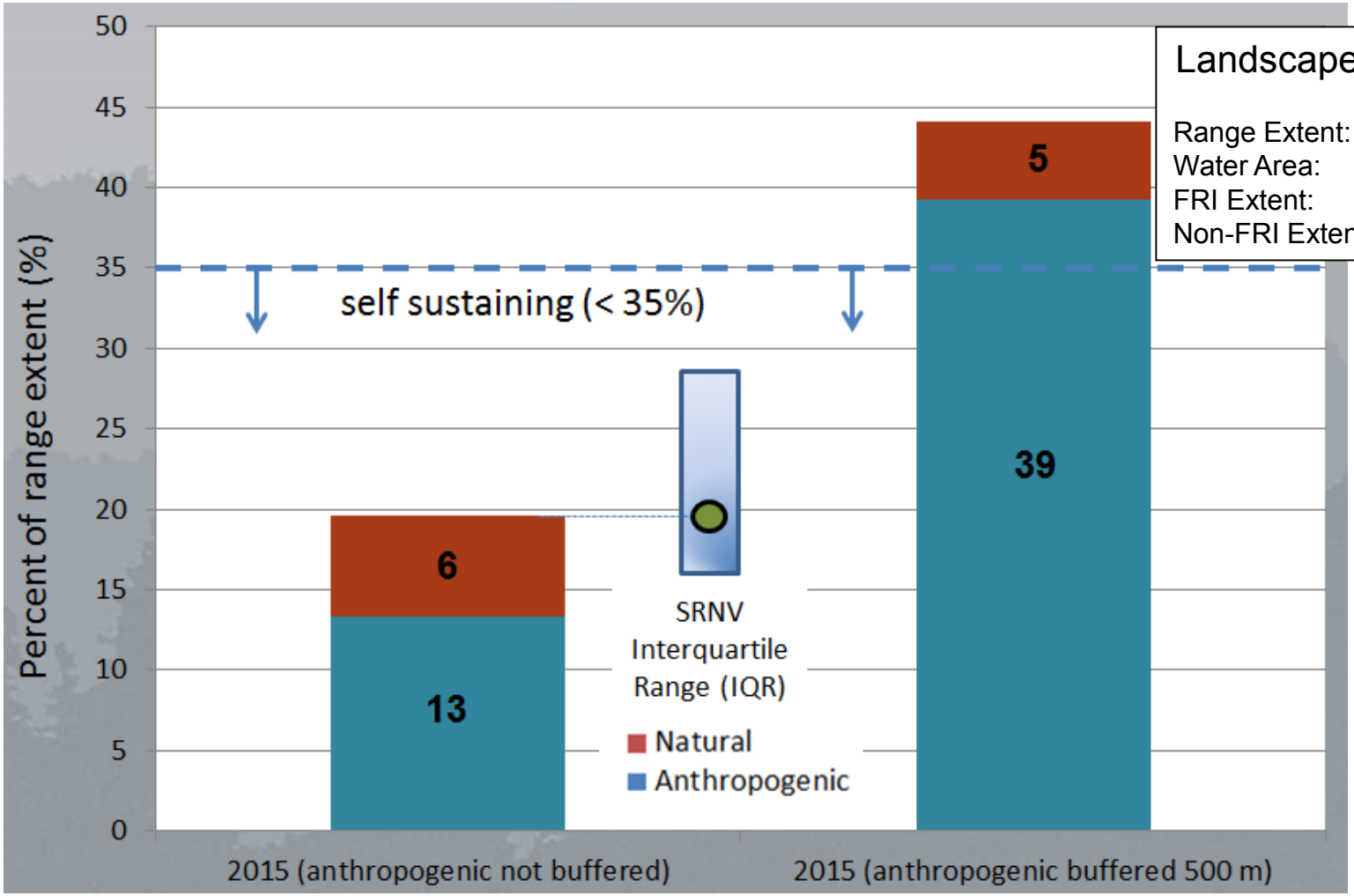
2017



* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 3: Churchill 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	2,126,475
Water Area:	426,464
FRI Extent:	2,010,895
Non-FRI Extent:	115,580

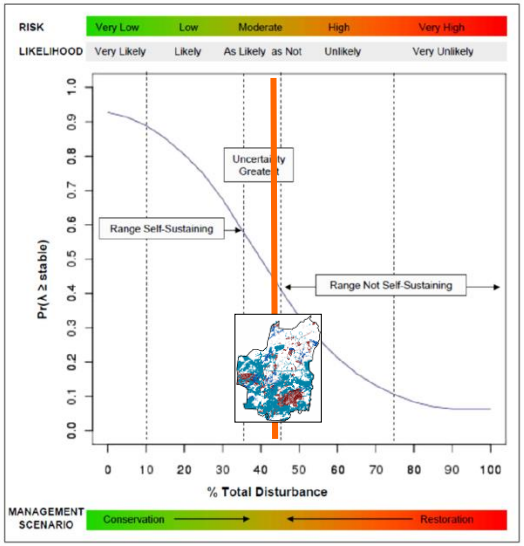
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

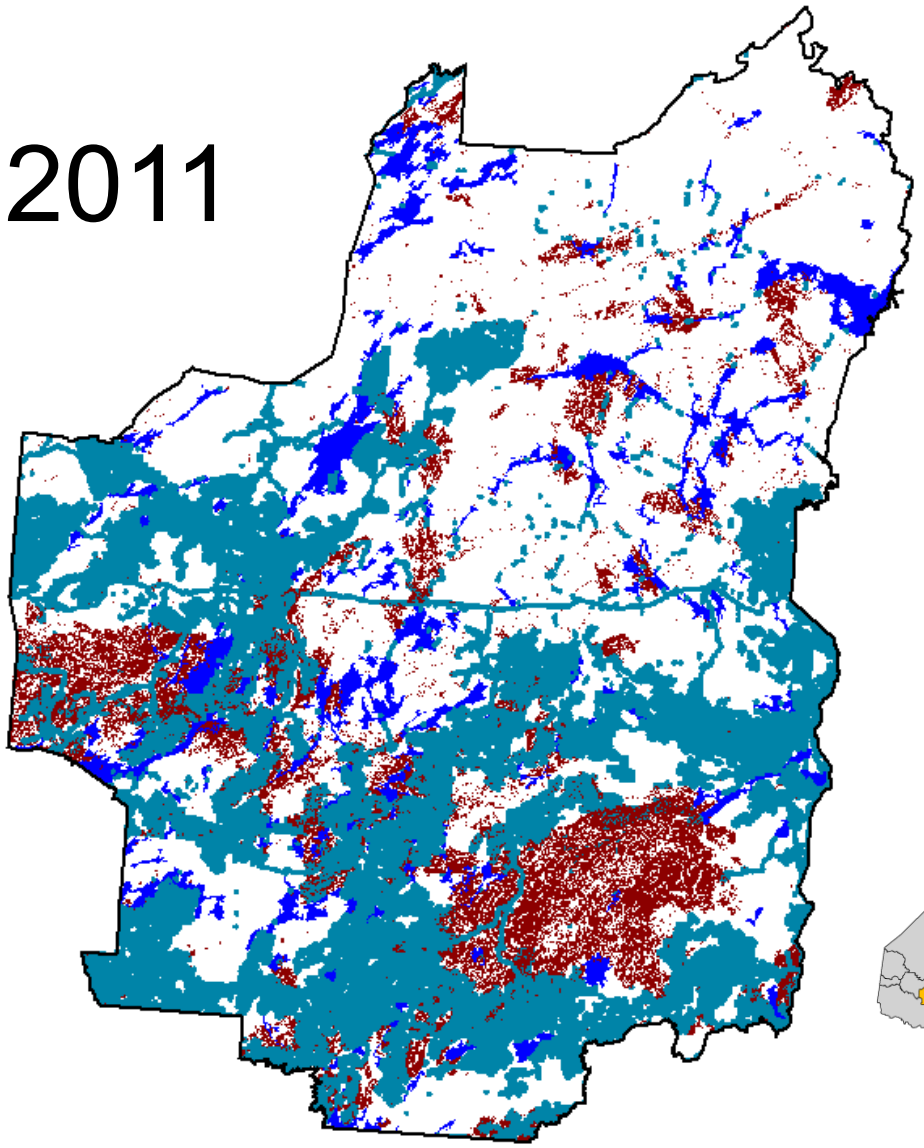
Range 4: Brightsand 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

Range disturbance indicator	
Anthropogenic:*	731,125
Natural	229,483
Total	960,607
Percent of range extent	43.4%





* Buffered 500 metres.

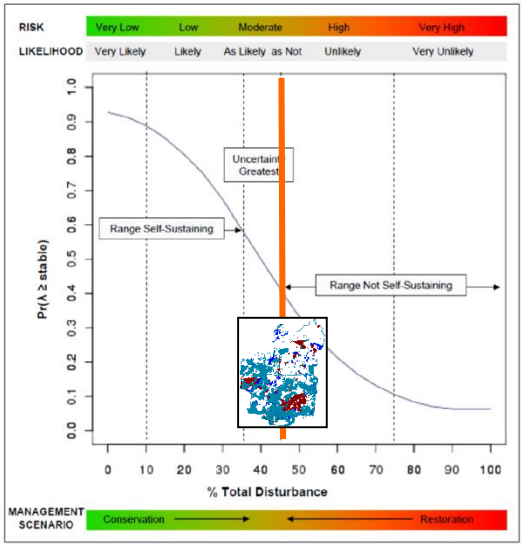
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

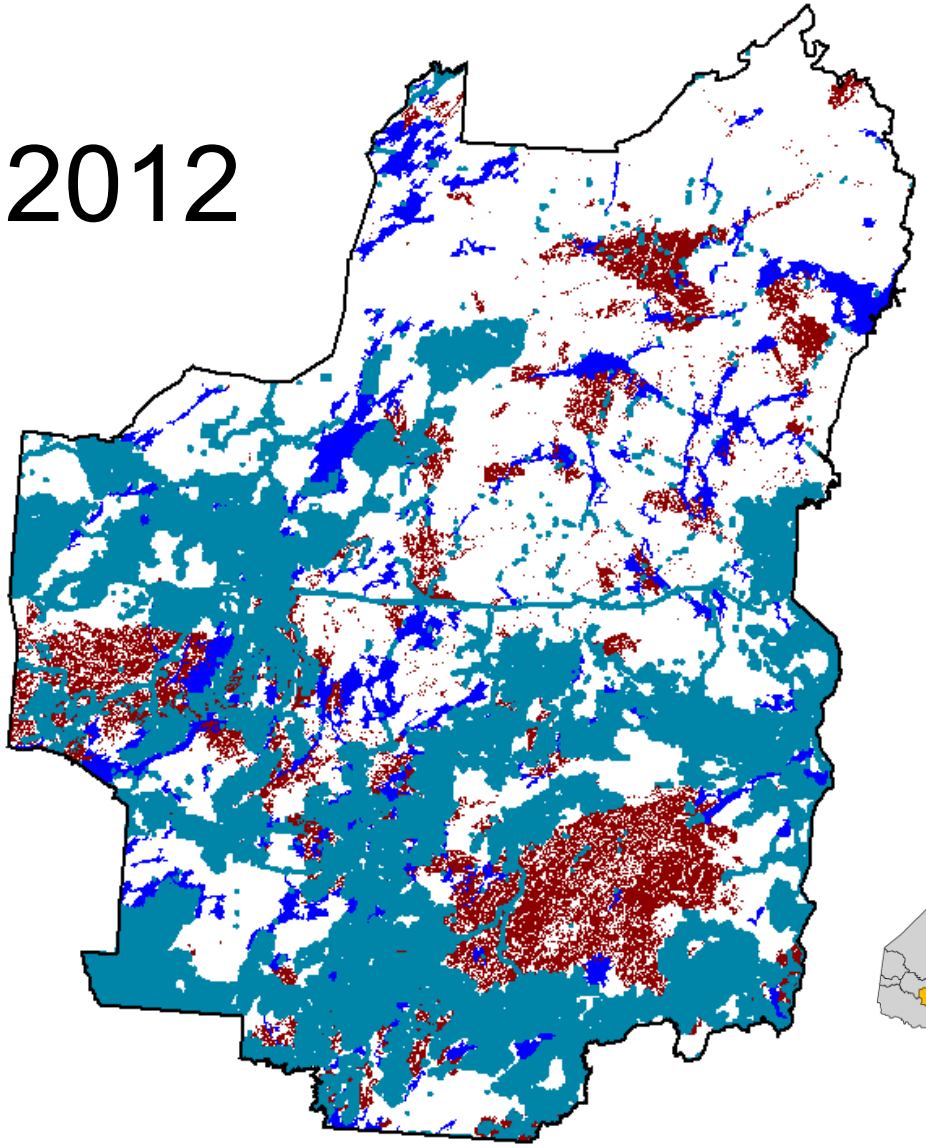
Range 4: Brightsand 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

Range disturbance indicator	
Anthropogenic:*	779,335
Natural	214,801
Total	994,136
Percent of range extent	44.9%





* Buffered 500 metres.

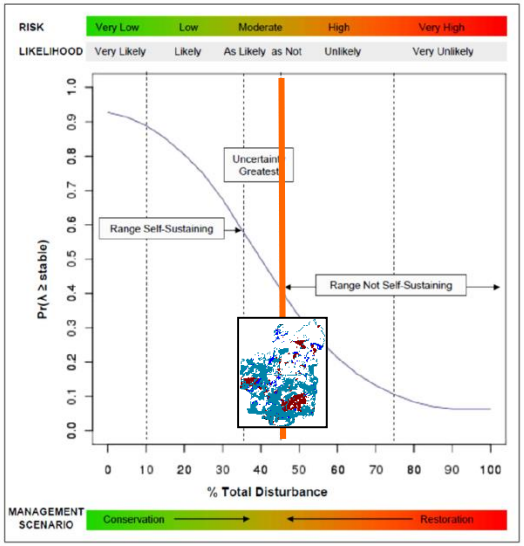
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

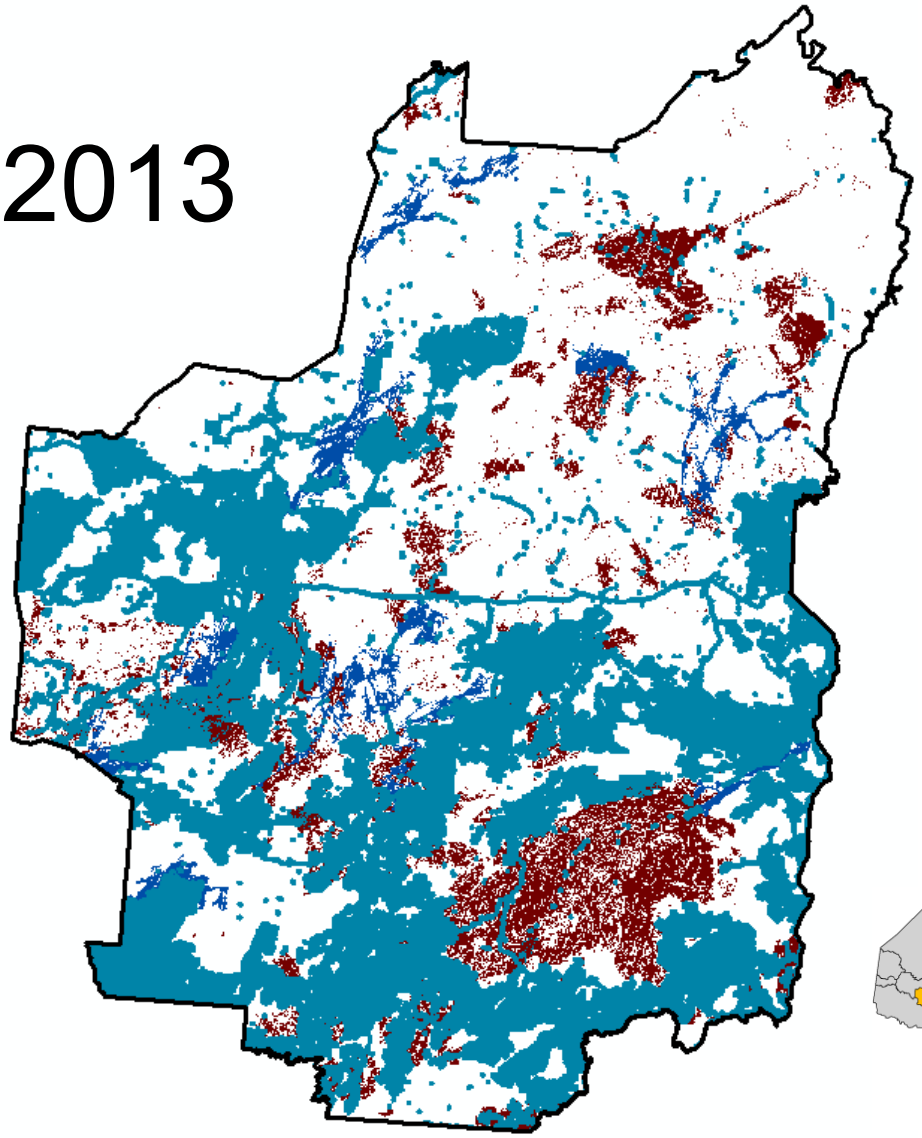
Range 4: Brightsand 2013 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

Range disturbance indicator	
Anthropogenic:*	812,476
Natural	188,895
Total	1,001,372
Percent of range extent	45.3%





* Buffered 500 metres.

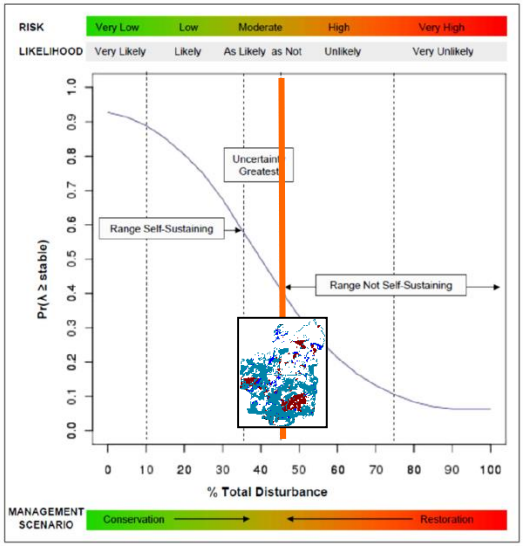
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

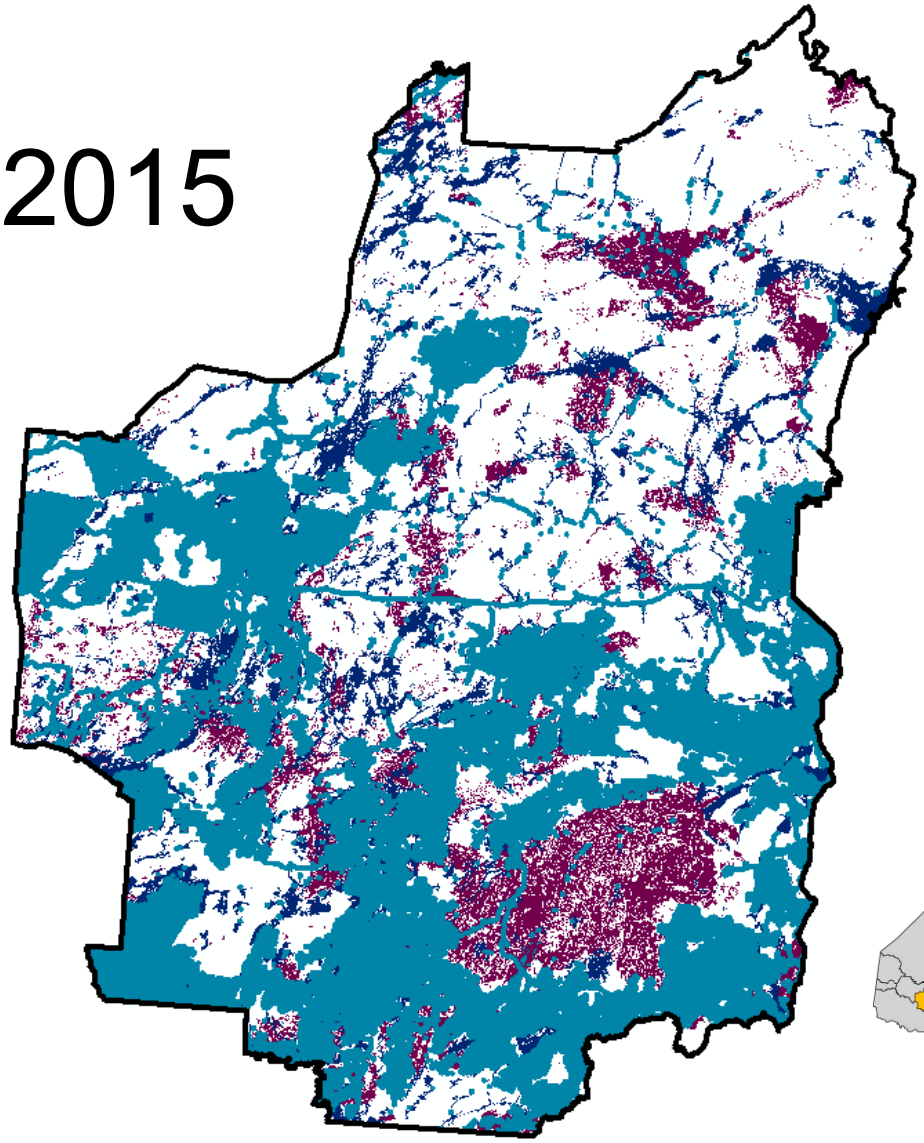
Range 4: Brightsand 2015 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

Range disturbance indicator	
Anthropogenic:*	808,082
Natural	195,274
Total	1,003,356
Percent of range extent	45.4%





* Buffered 500 metres.

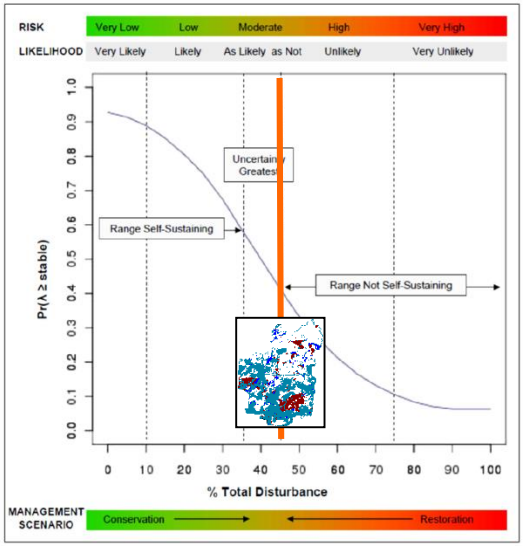
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

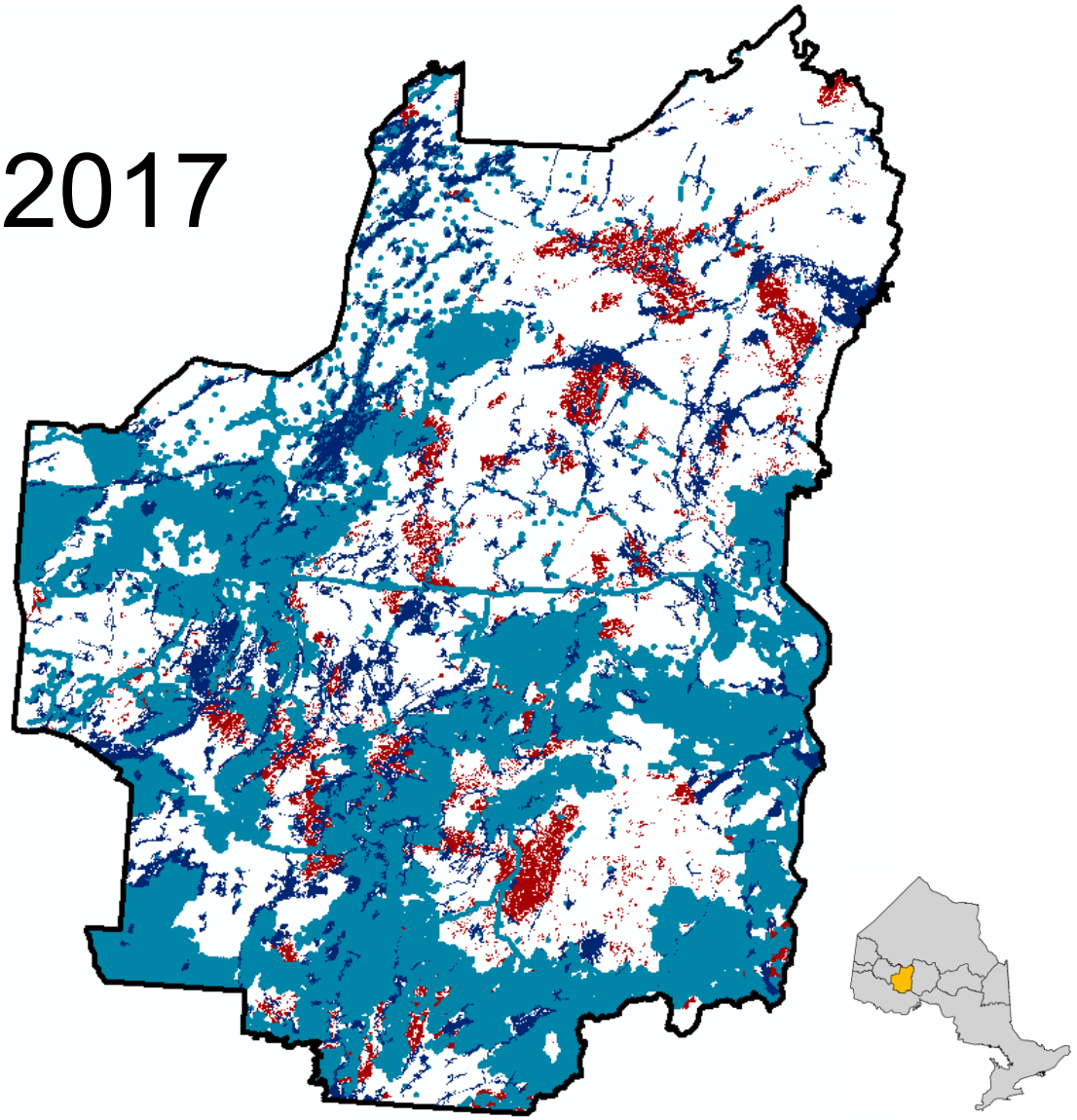
Range 4: Brightsand 2017 Disturbance State

Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

Range disturbance indicator	
Anthropogenic:*	848,713
Natural	113,299
Total	962,012
Percent of range extent	43.5%



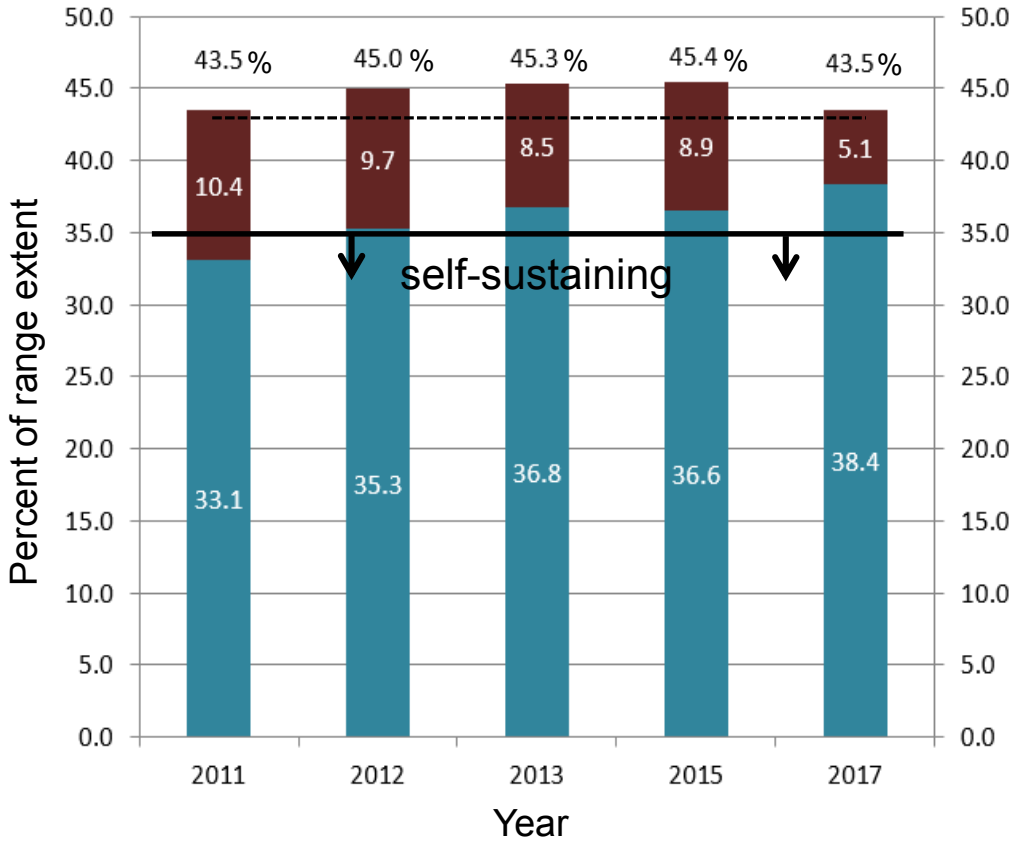


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

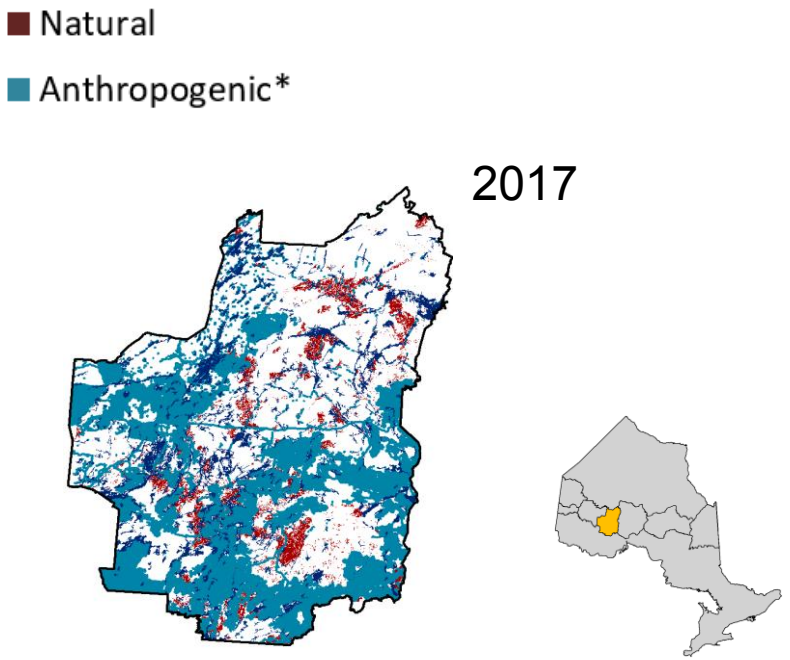
Range 4: Brightsand 2011 - 2017 Disturbance Range Indicator Trend

Trend



Landscape Statistics (ha)

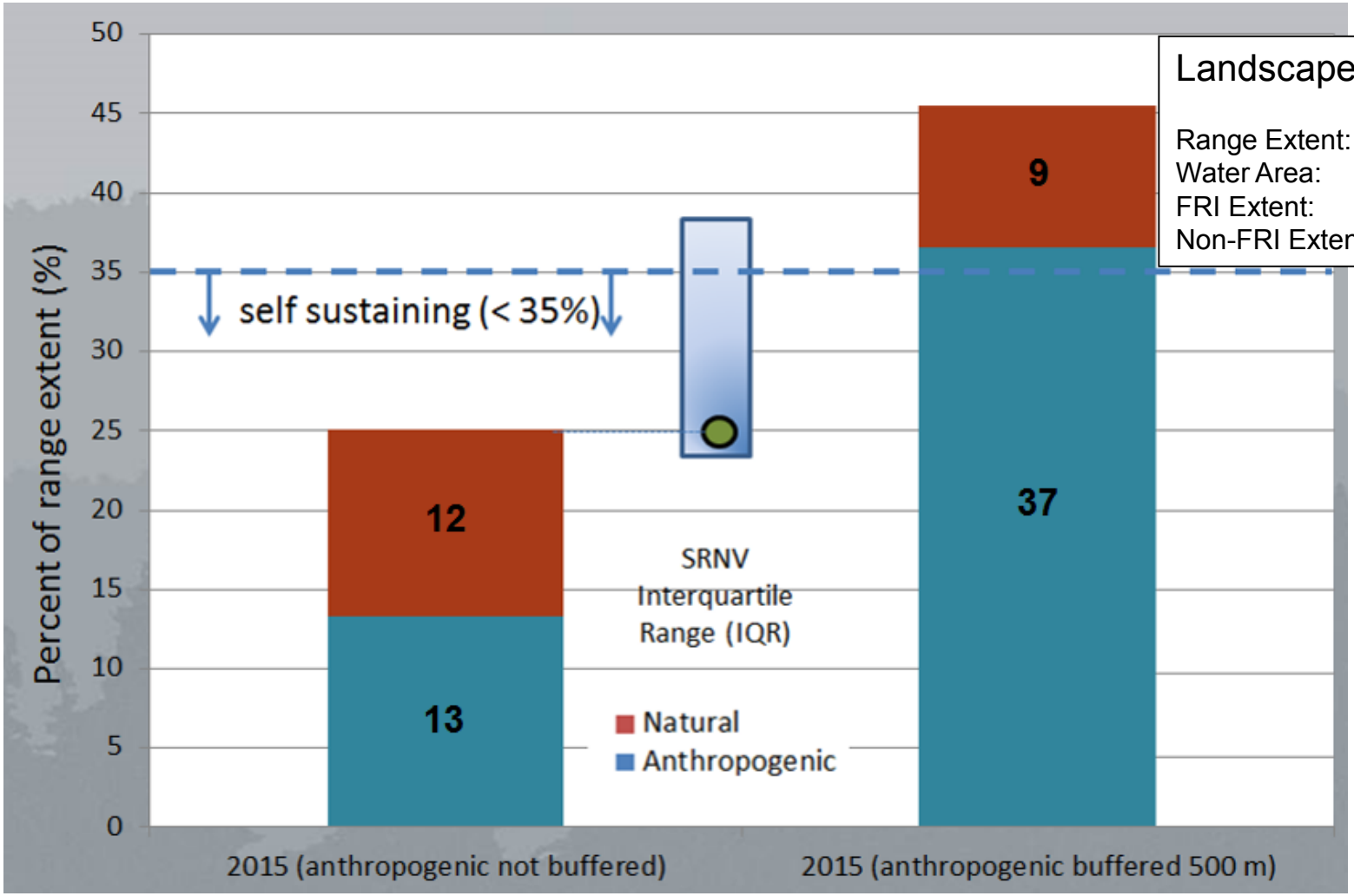
Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848



* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 4: Brightsand 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	2,210,342
Water Area:	343,406
FRI Extent:	1,516,494
Non-FRI Extent:	693,848

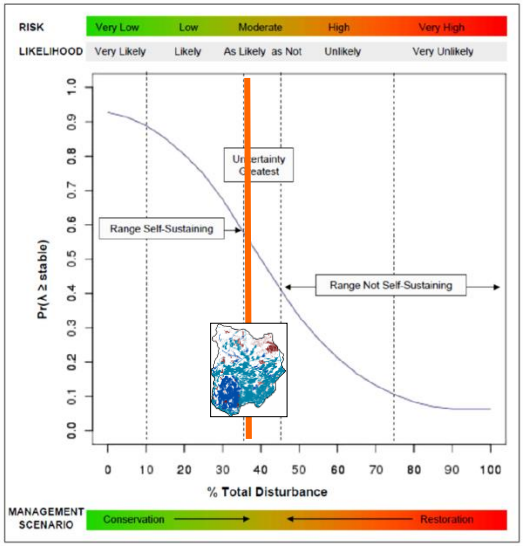
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

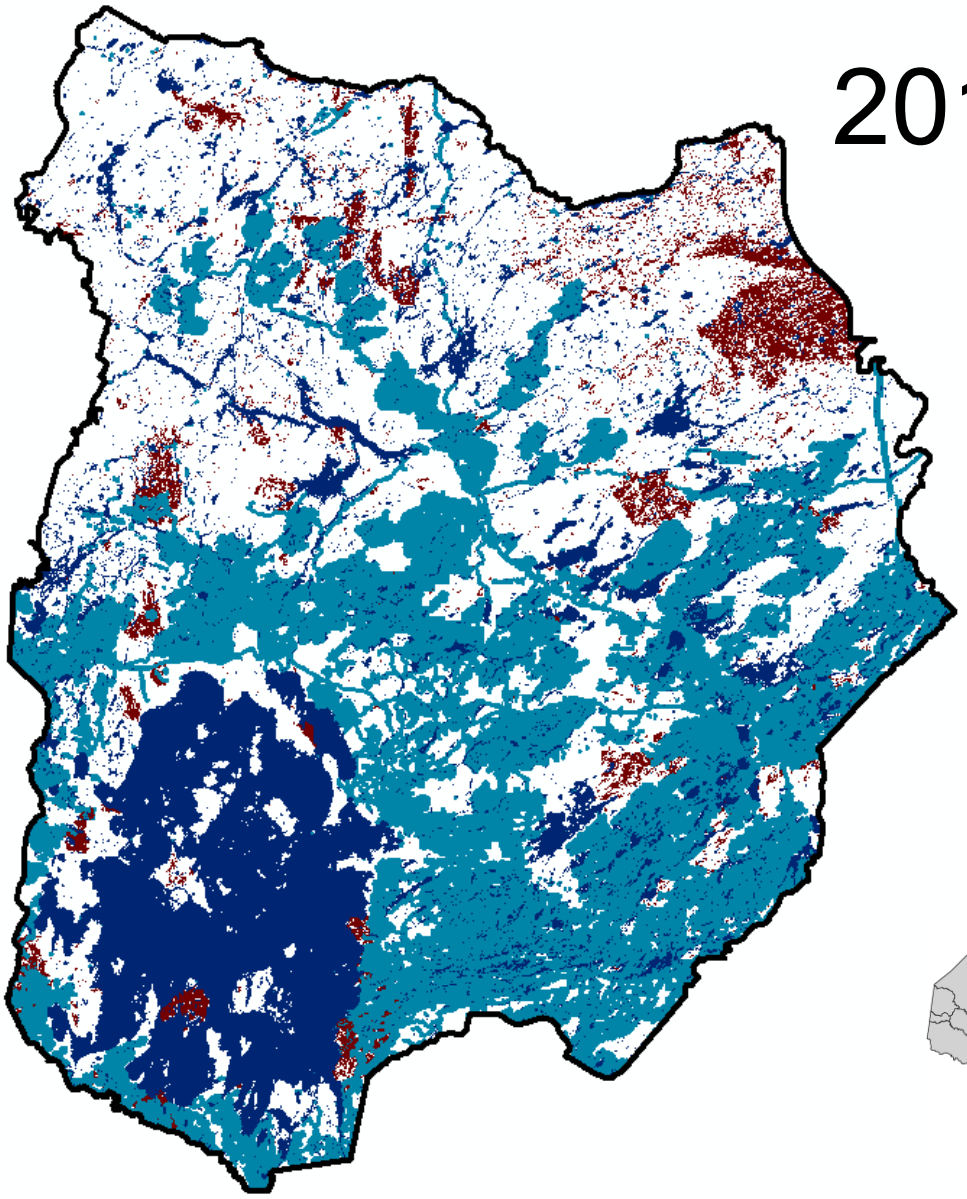
Range 5: Nipigon 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	1,279,614
Natural	180,051
Total	1,459,666
Percent of range extent	37.9%





* Buffered 500 metres.

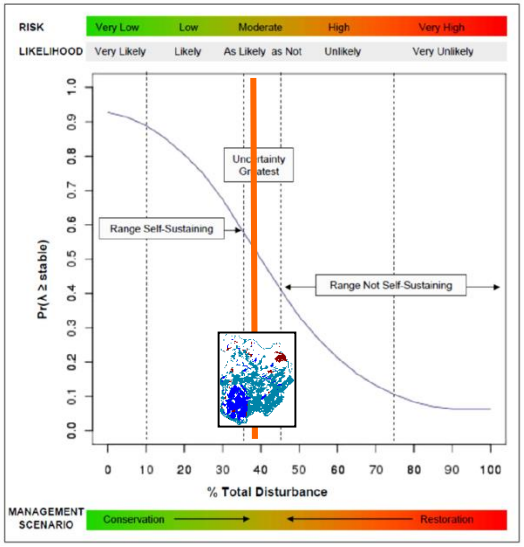
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

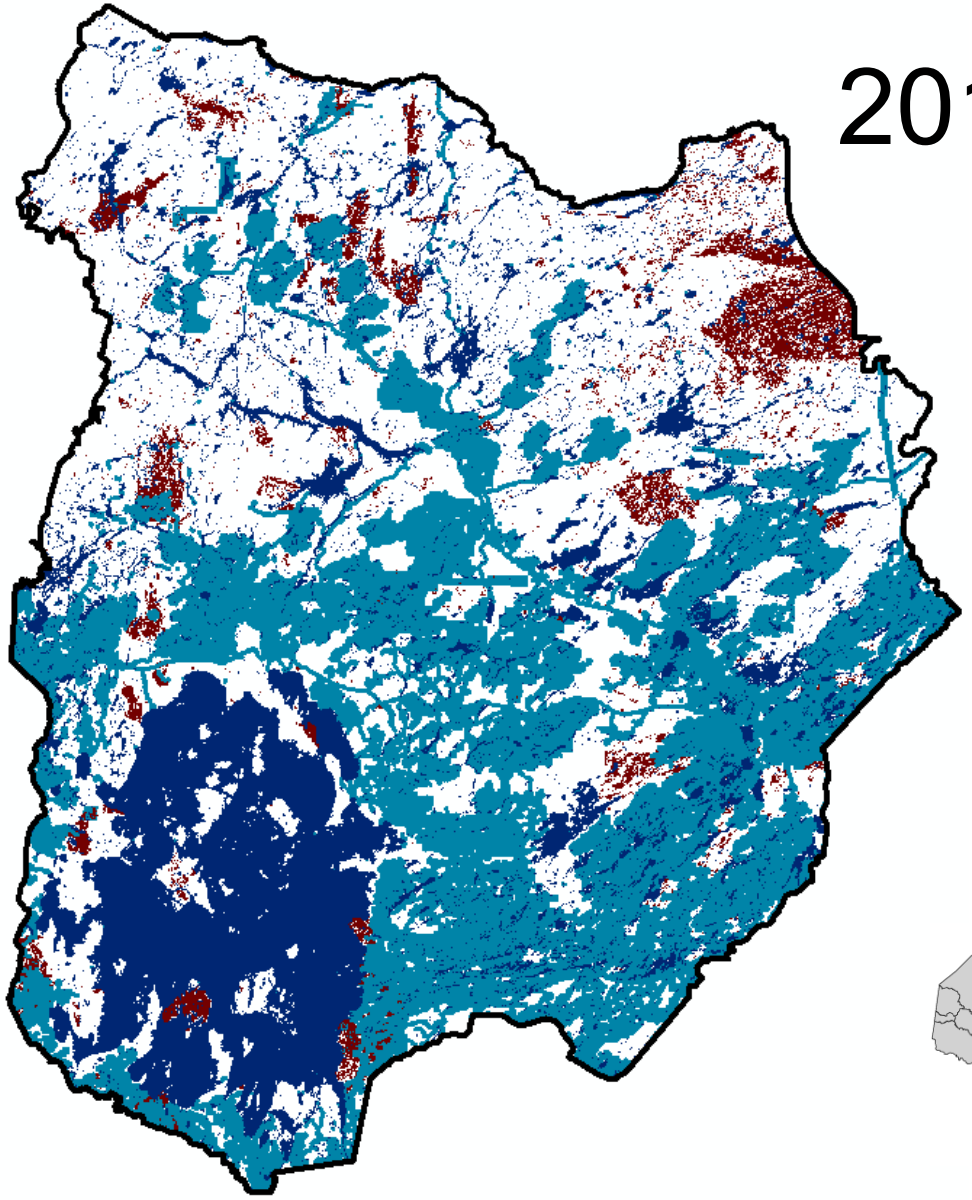
Range 5: Nipigon 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	1,325,934
Natural	166,712
Total	1,493,646
Percent of range extent	38.8%





* Buffered 500 metres.

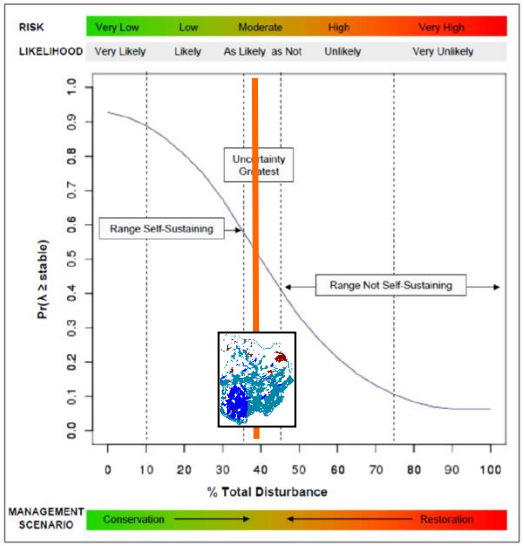
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

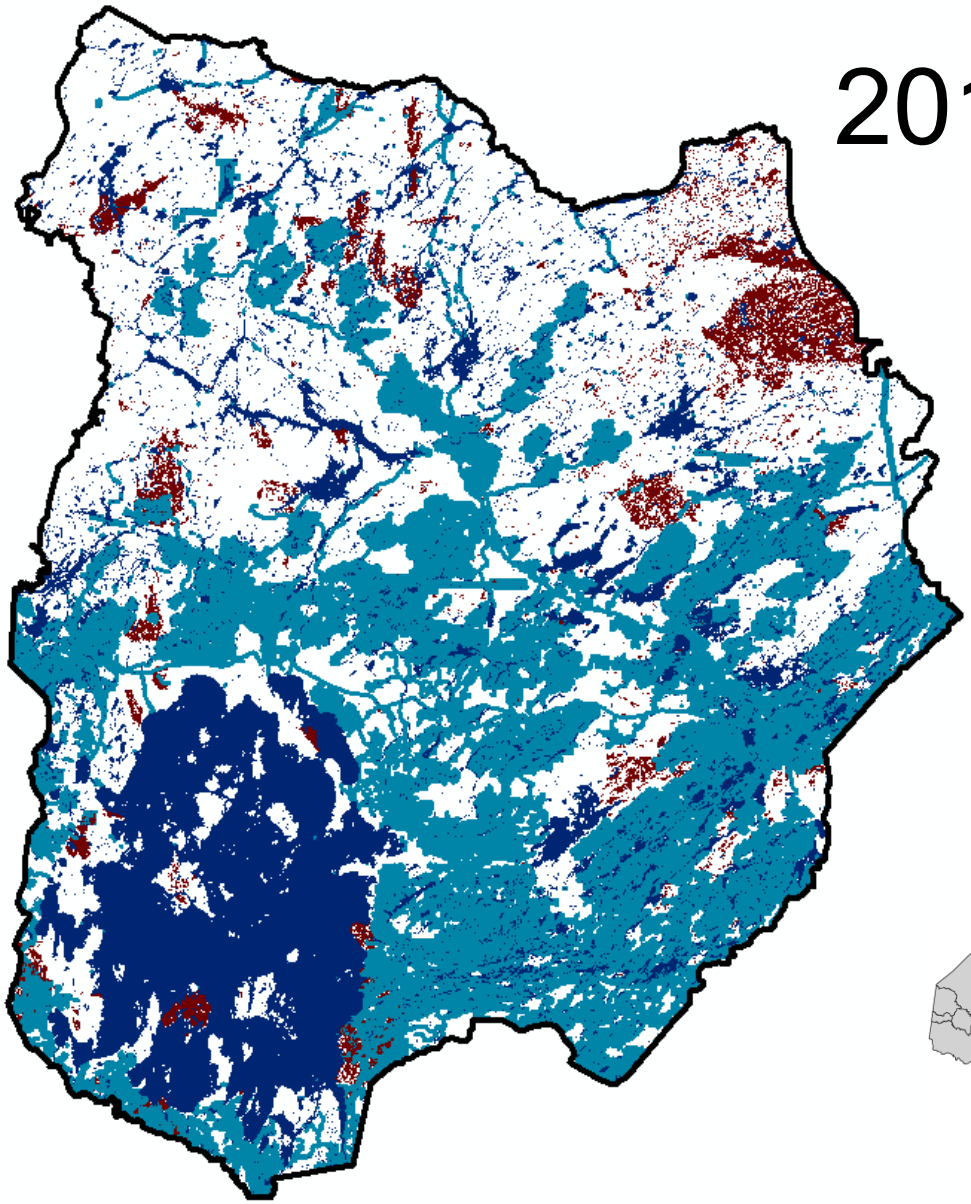
Range 5: Nipigon 2013 Disturbance State

Landscape Statistics (ha)

Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	1,339,589
Natural	159,936
Total	1,499,525
Percent of range extent	39.0%





* Buffered 500 metres.

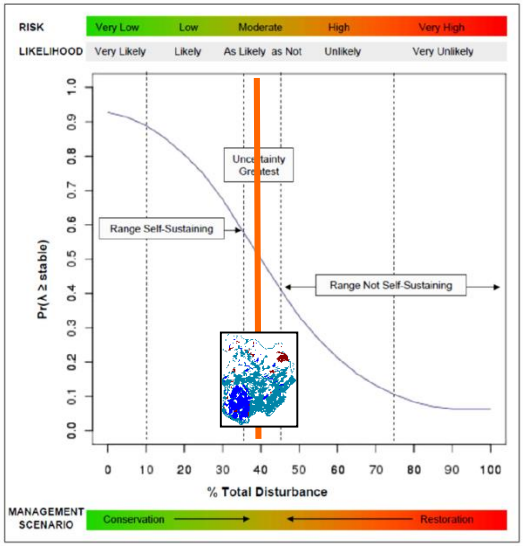
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

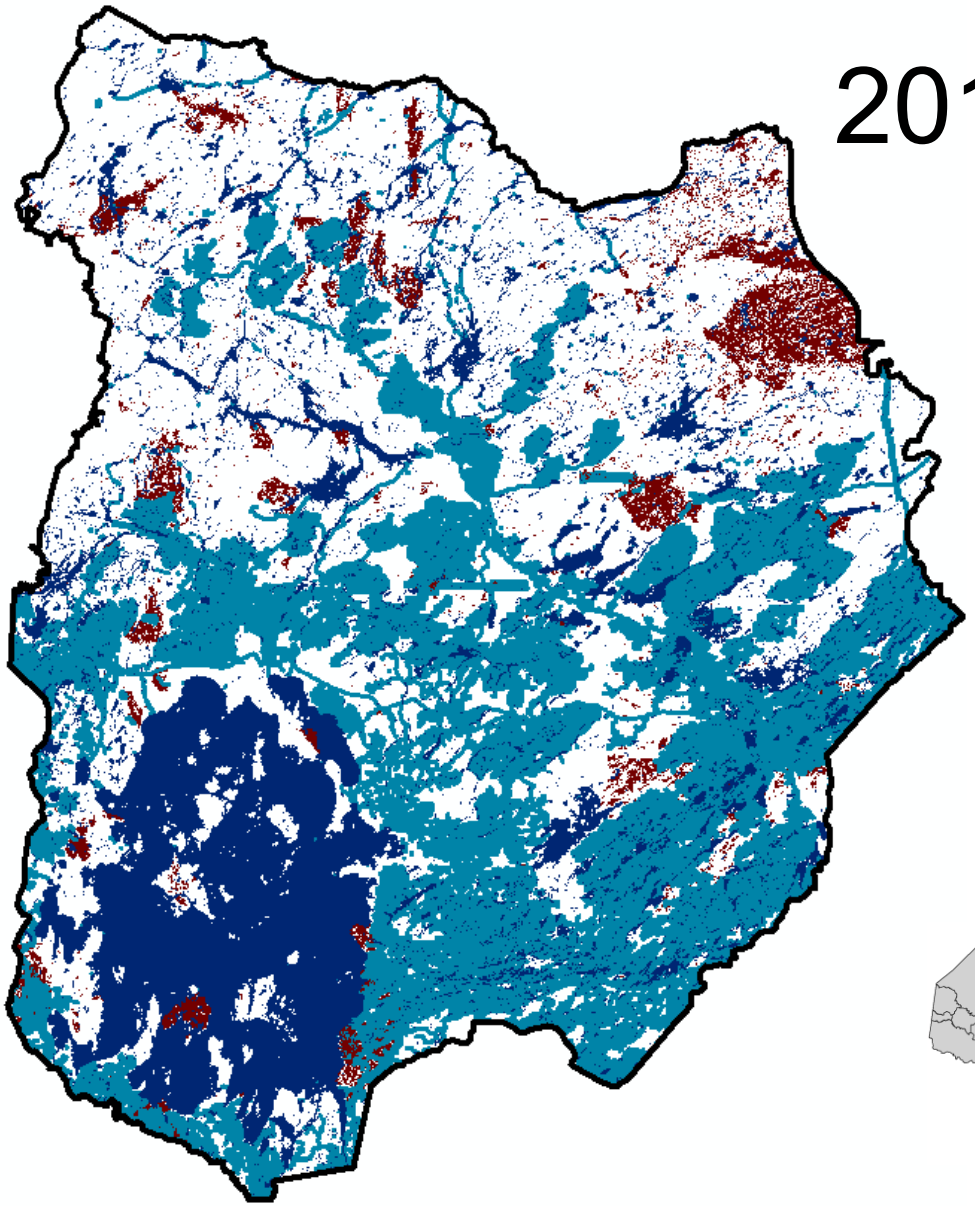
Range 5: Nipigon 2015 Disturbance State

Landscape Statistics (ha)

Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284

Range disturbance indicator	
Anthropogenic:*	1,346,223
Natural	167,171
Total	1,513,394
Percent of range extent	39.3%



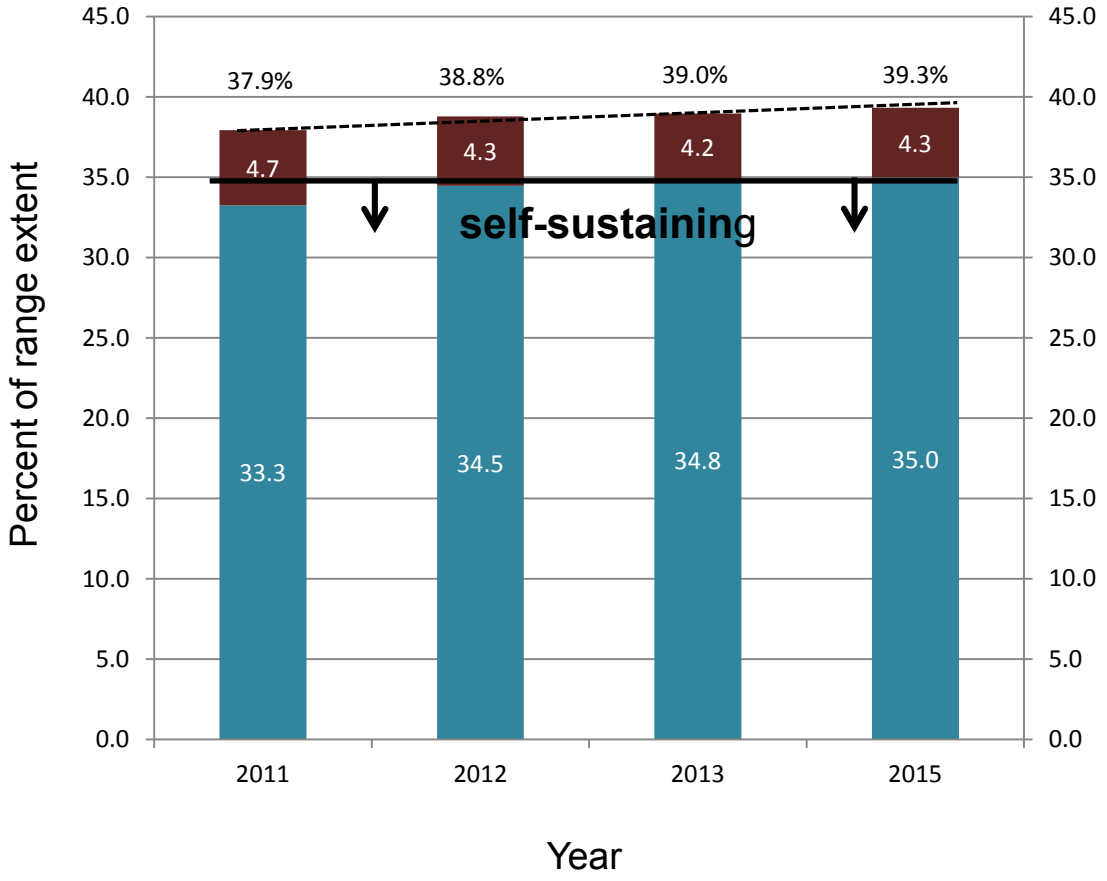


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

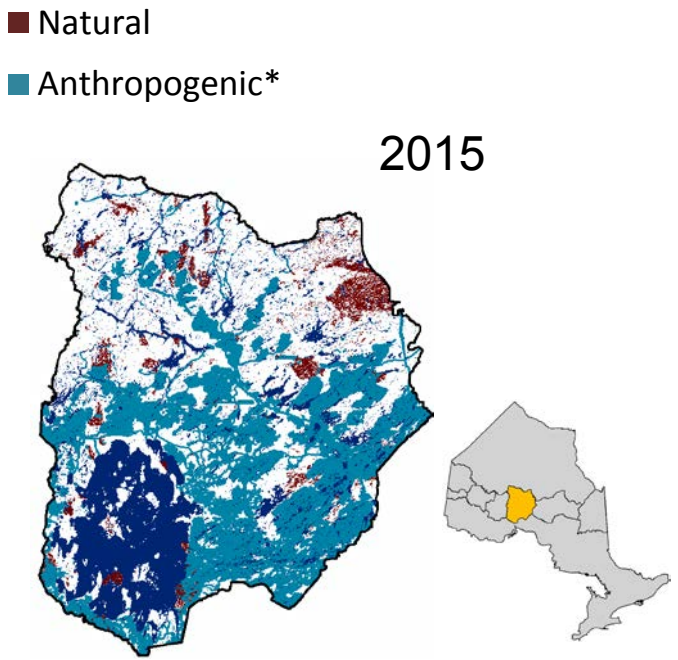
Range 5: Nipigon 2011 - 2015 Disturbance Range Indicator Trend

Trend



Landscape Statistics (ha)

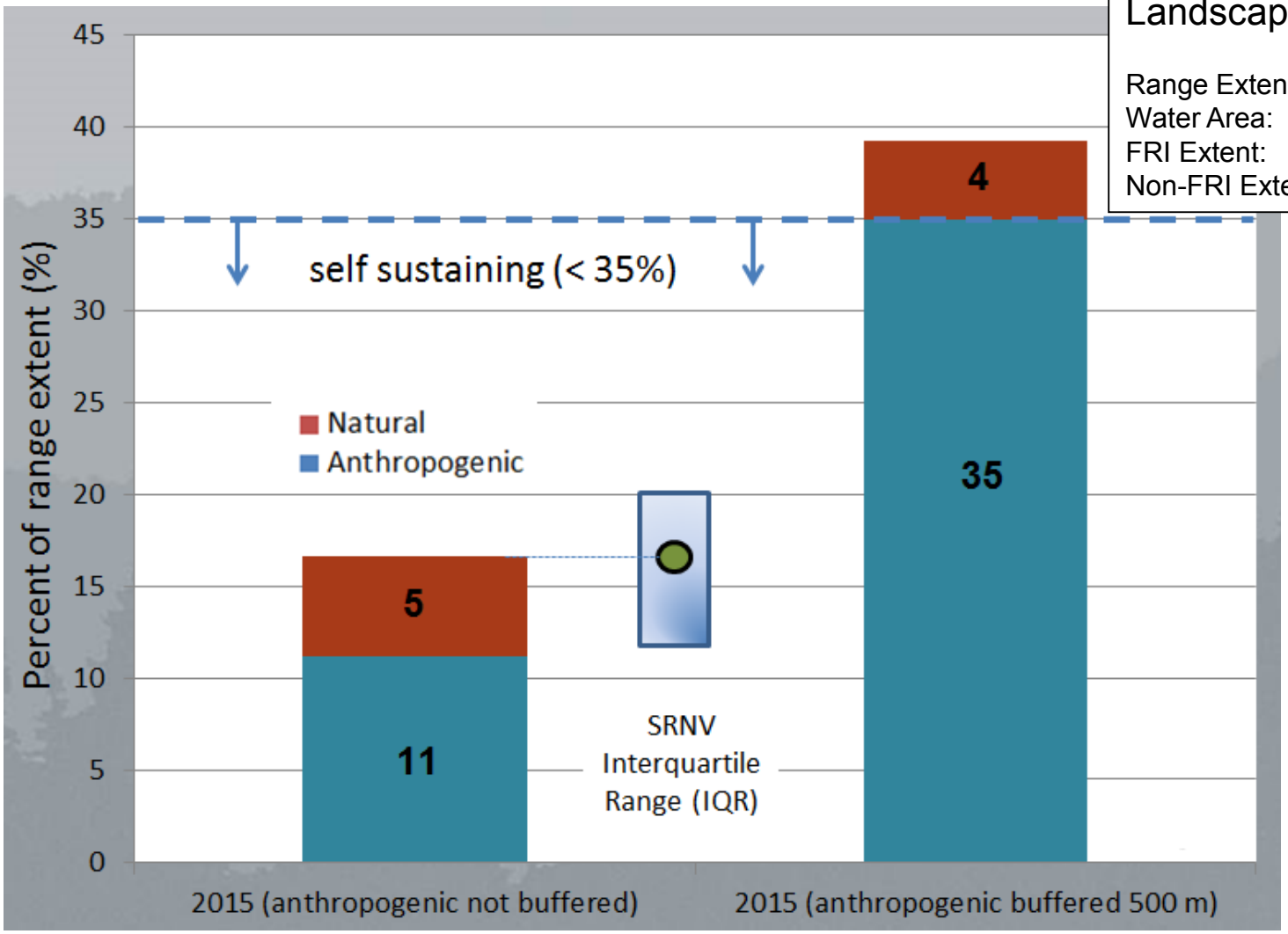
Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284



* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 5: Nipigon 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	3,847,309
Water Area:	781,854
FRI Extent:	3,370,311
Non-FRI Extent:	1,187,284

* Buffered 500 metres.

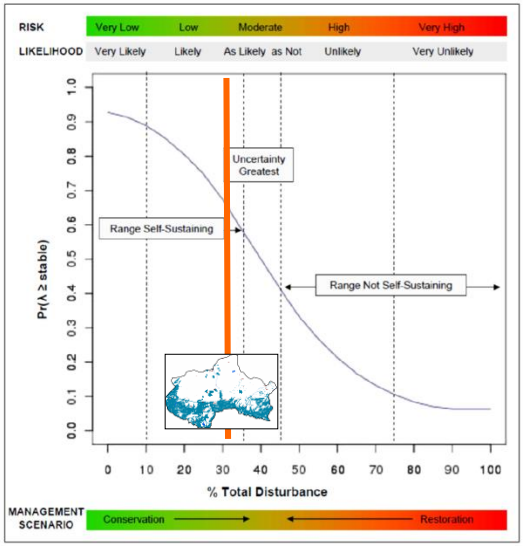
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

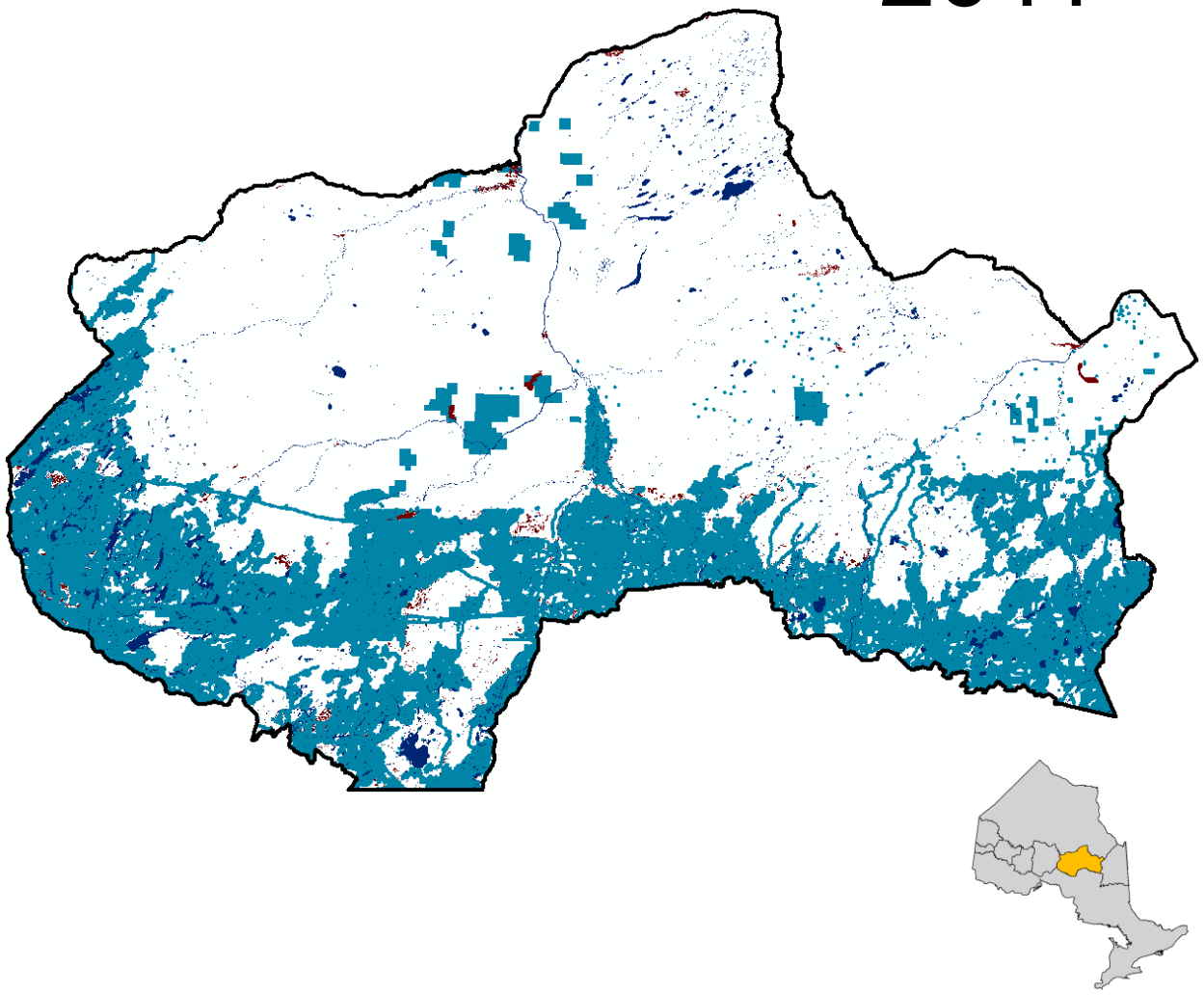
Range 6: Pagwachuan 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

Range disturbance indicator	
Anthropogenic:*	1,375,010
Natural	21,810
Total	1,396,820
Percent of range extent	31.0%





* Buffered 500 metres.

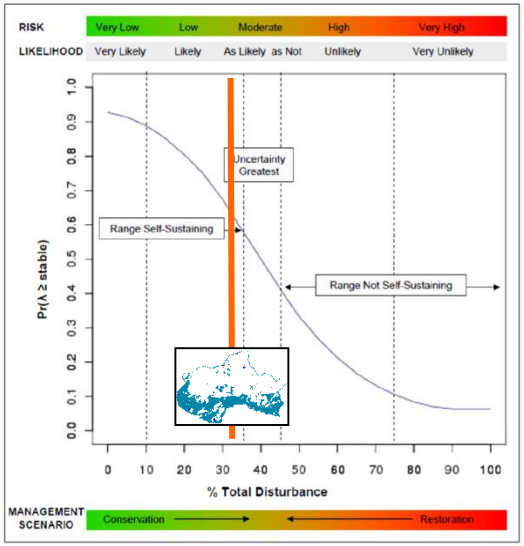
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

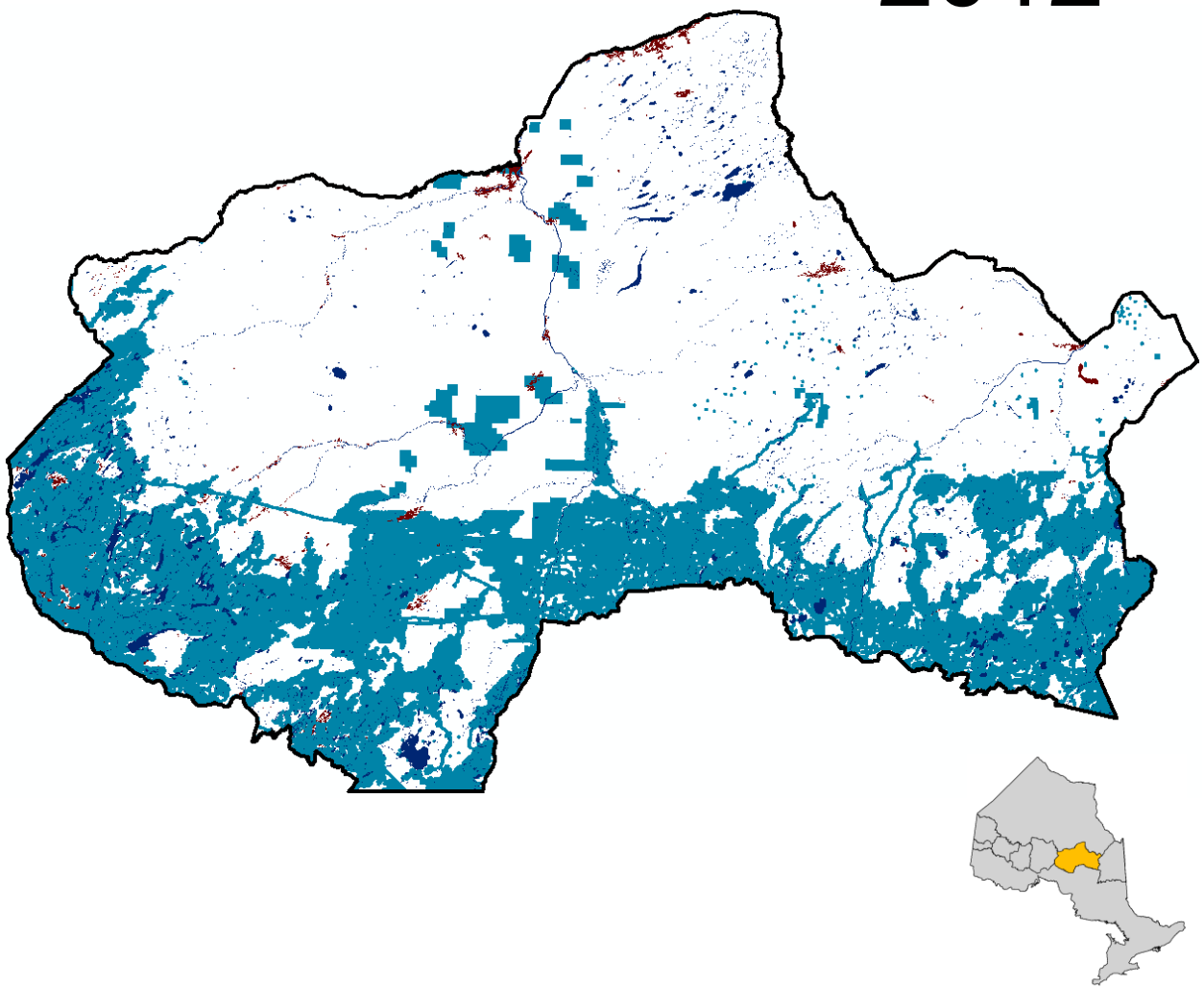
Range 6: Pagwachuan 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

Range disturbance indicator	
Anthropogenic:*	1,452,904
Natural	26,405
Total	1,479,309
Percent of range extent	32.9%





* Buffered 500 metres.

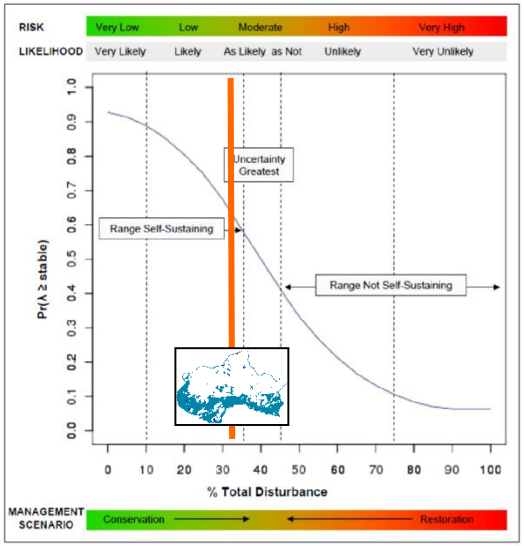
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2013 Disturbance State

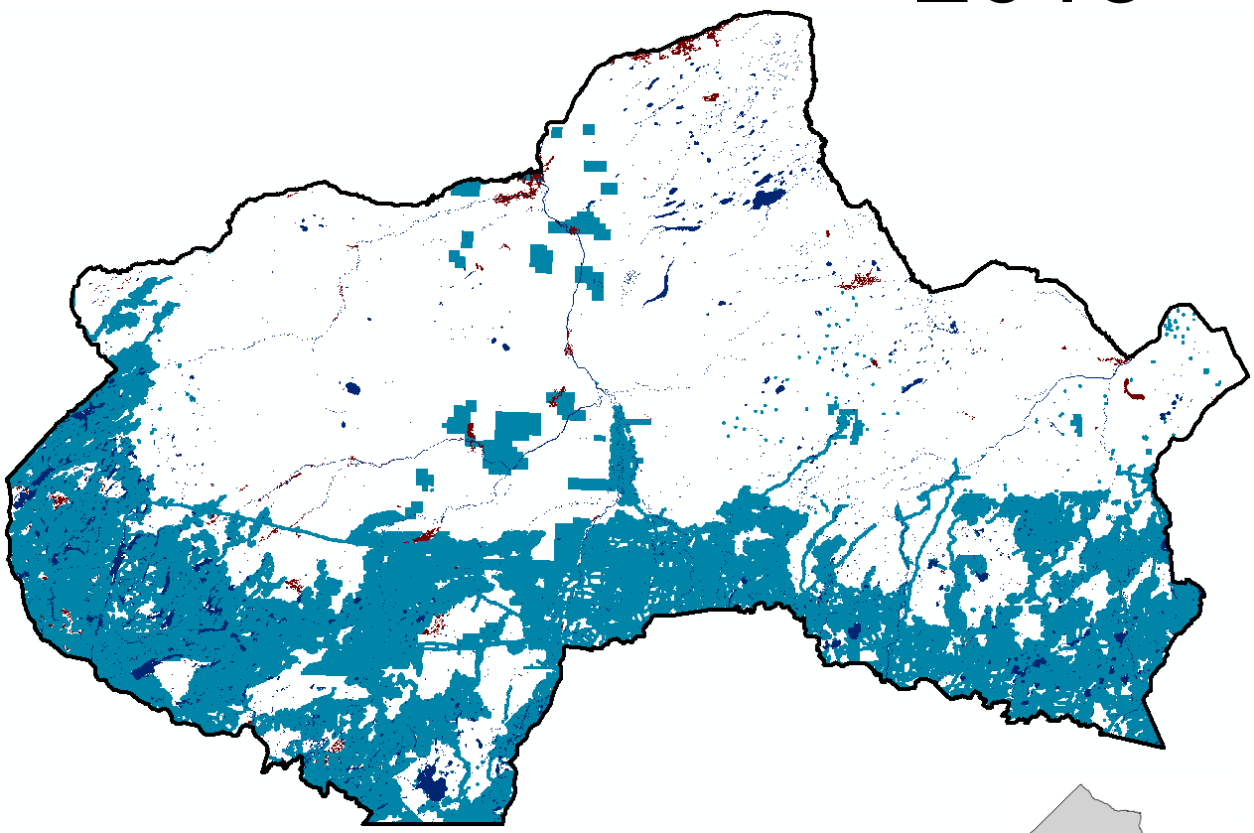
Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

Range disturbance indicator	
Anthropogenic:*	1,474,212
Natural	26,735
Total	1,500,947
Percent of range extent	33.4%



2013



* Buffered 500 metres.

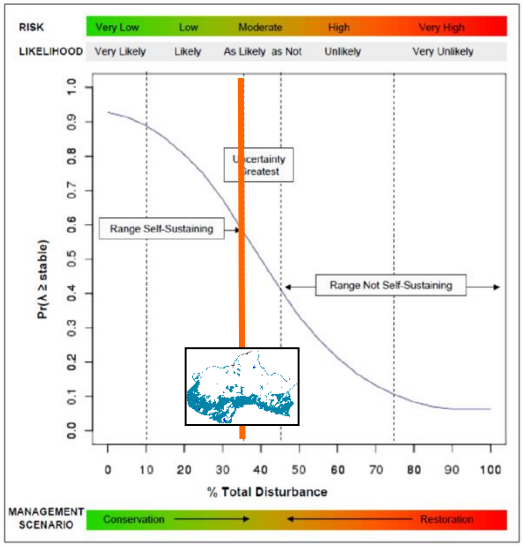
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

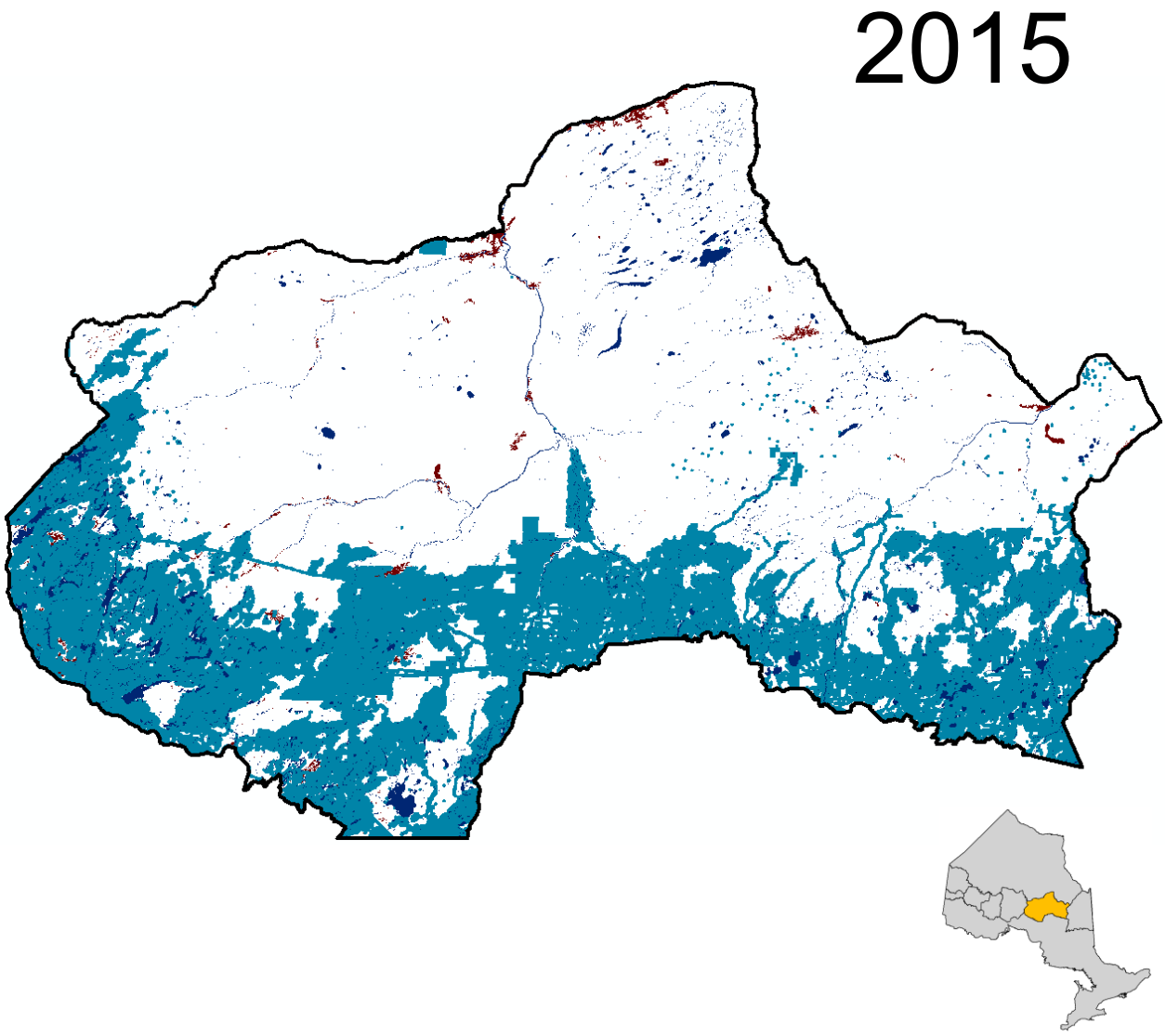
Range 6: Pagwachuan 2015 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

Range disturbance indicator	
Anthropogenic:*	1,462,905
Natural	26,129
Total	1,489,034
Percent of range extent	33.1%





* Buffered 500 metres.

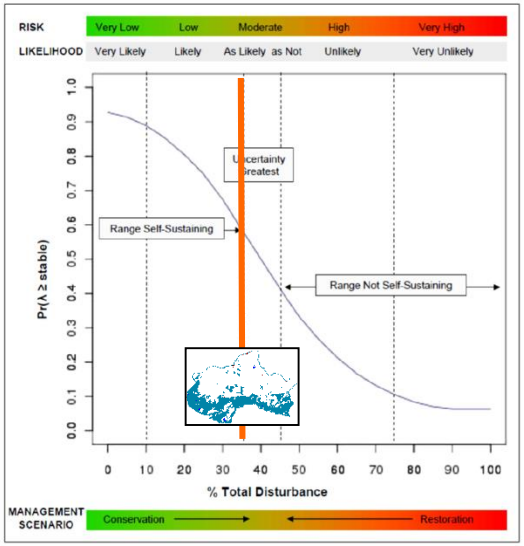
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

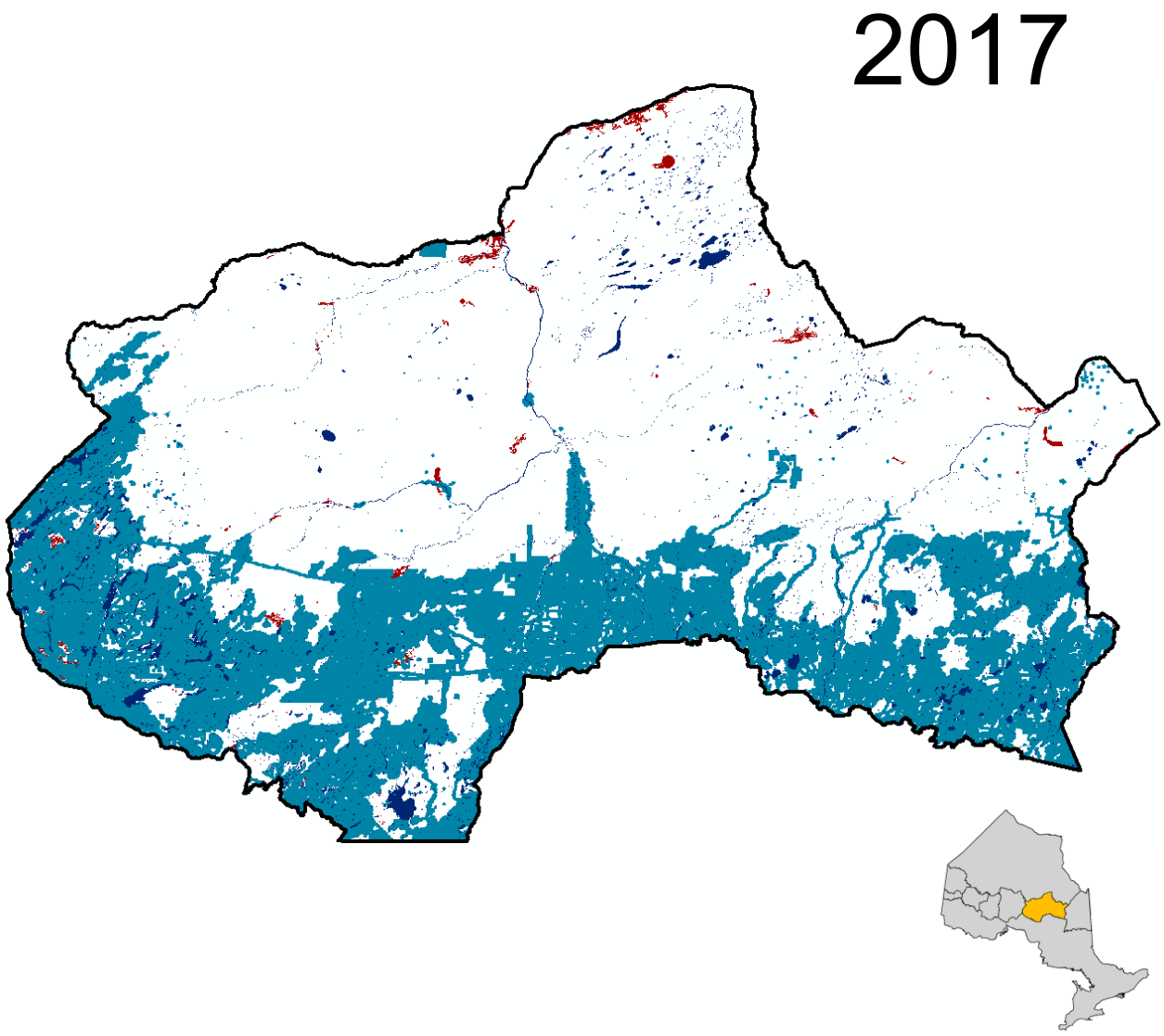
Range 6: Pagwachuan 2017 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

Range disturbance indicator	
Anthropogenic:*	1,467,773
Natural	24,532
Total	1,492,305
Percent of range extent	33.2%



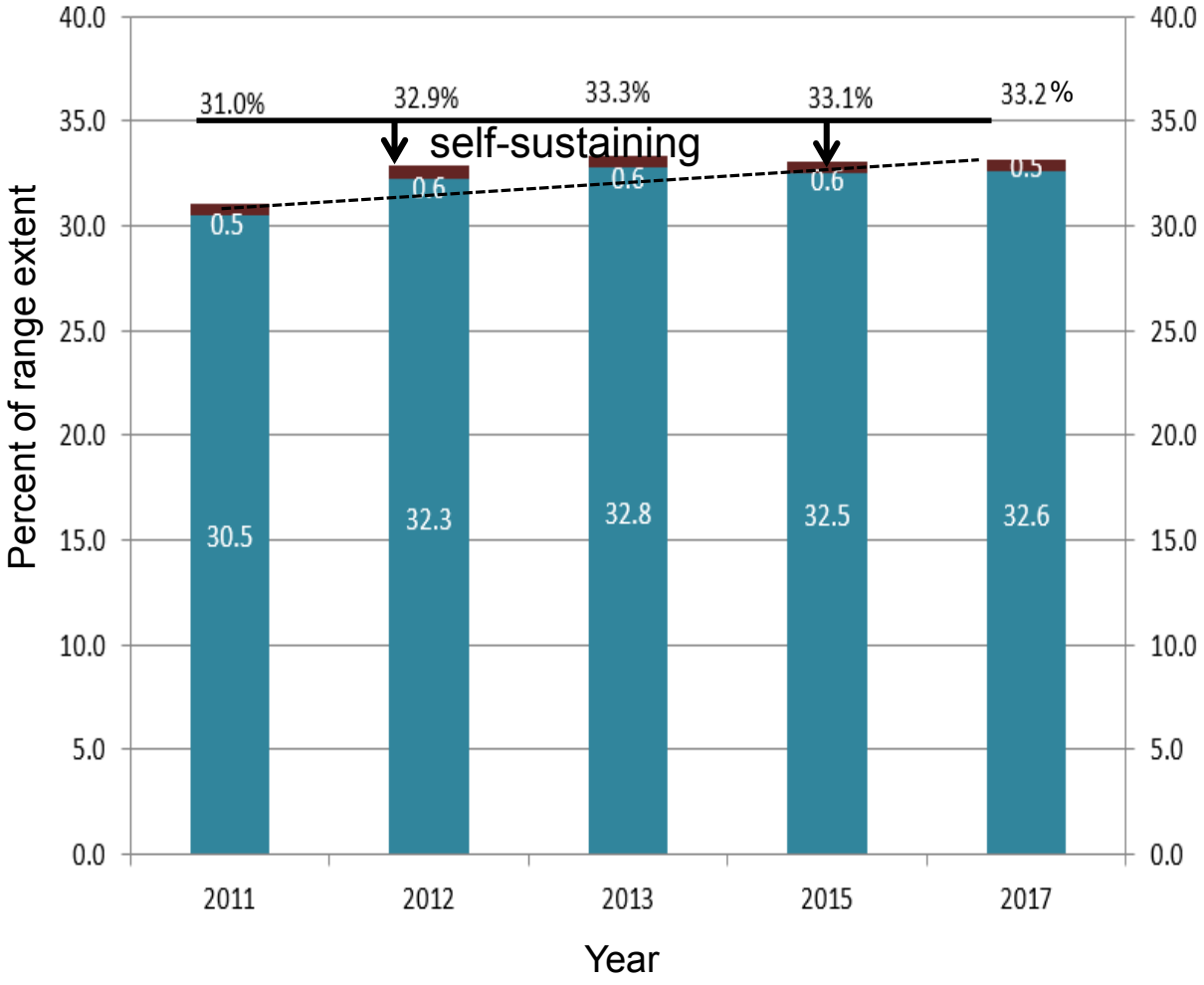


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagawachuan 2011 - 2017 Disturbance Range Indicator Trend

Trend



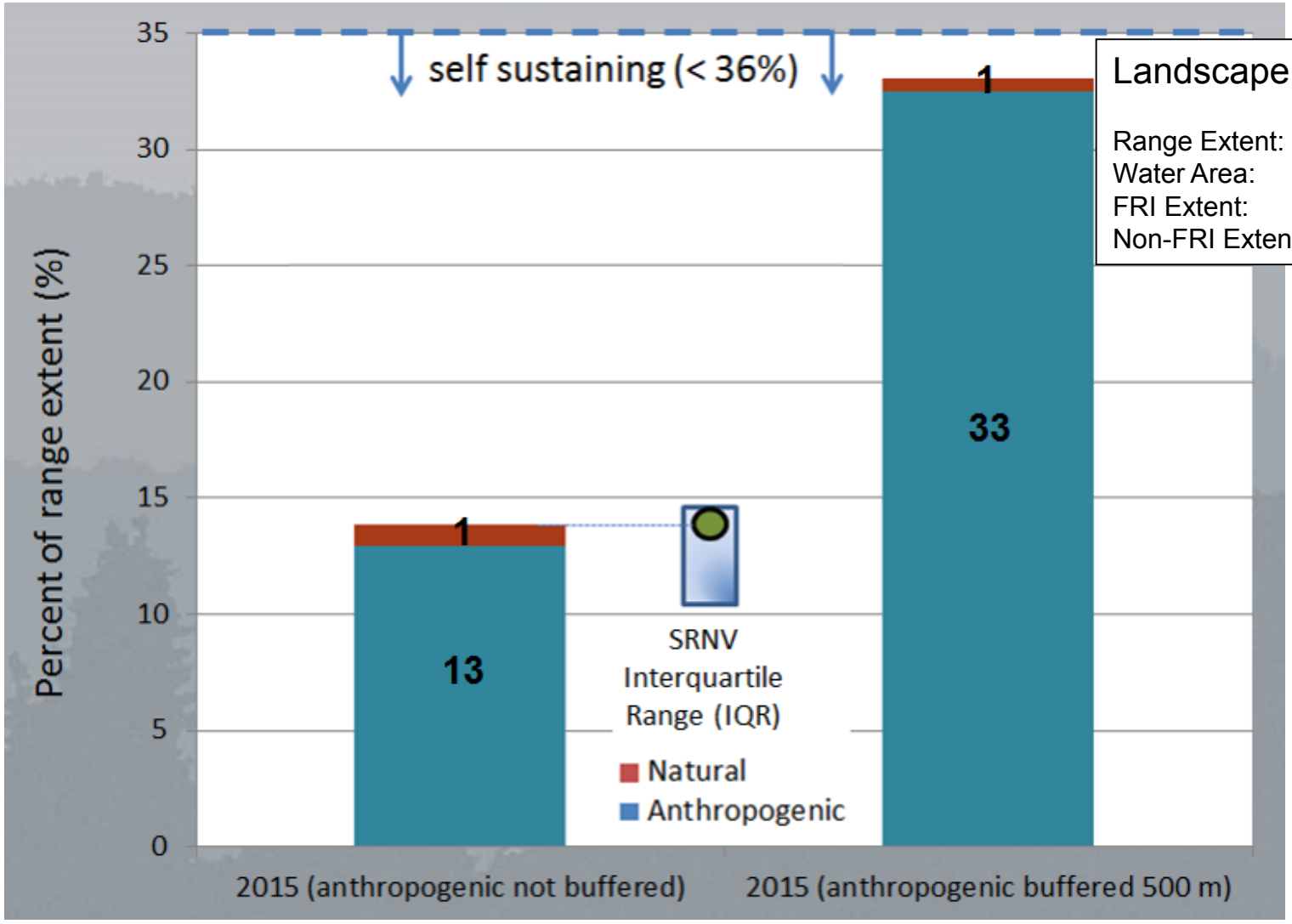
Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagawachuan 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	4,500,854
Water Area:	129,368
FRI Extent:	2,153,125
Non-FRI Extent:	2,347,729

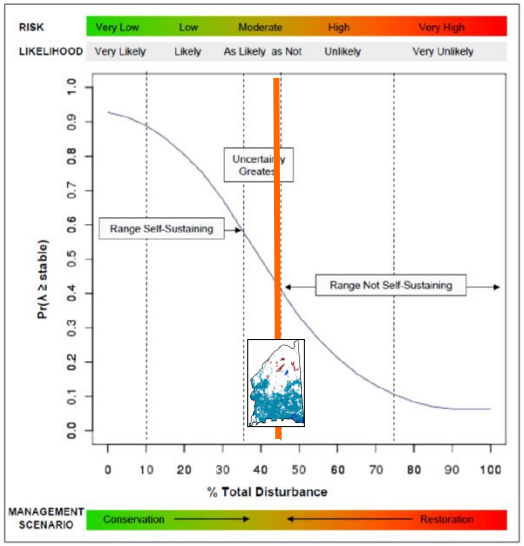
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

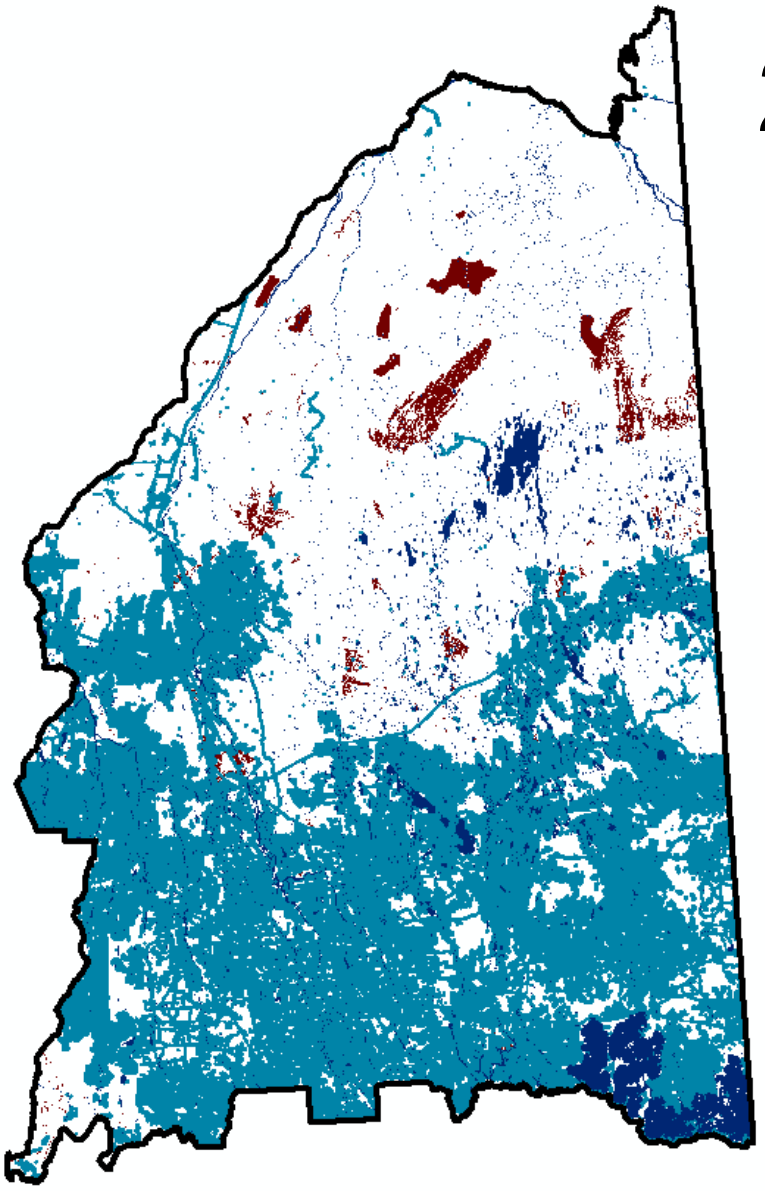
Range 7: Kesagami 2011 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Range disturbance indicator	
Anthropogenic:*	1,987,370
Natural	89,824
Total	2,077,194
Percent of range extent	43.9%





* Buffered 500 metres.

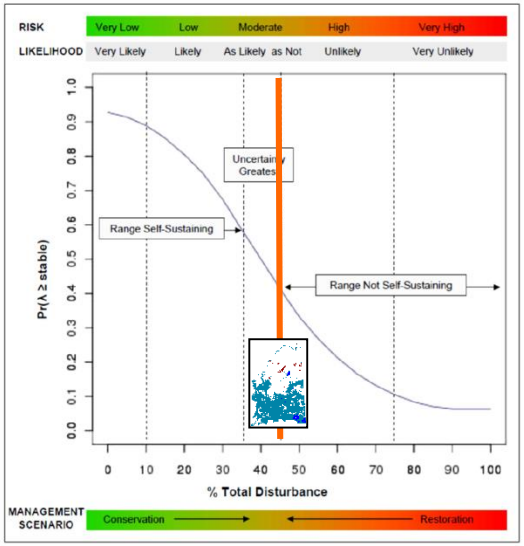
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

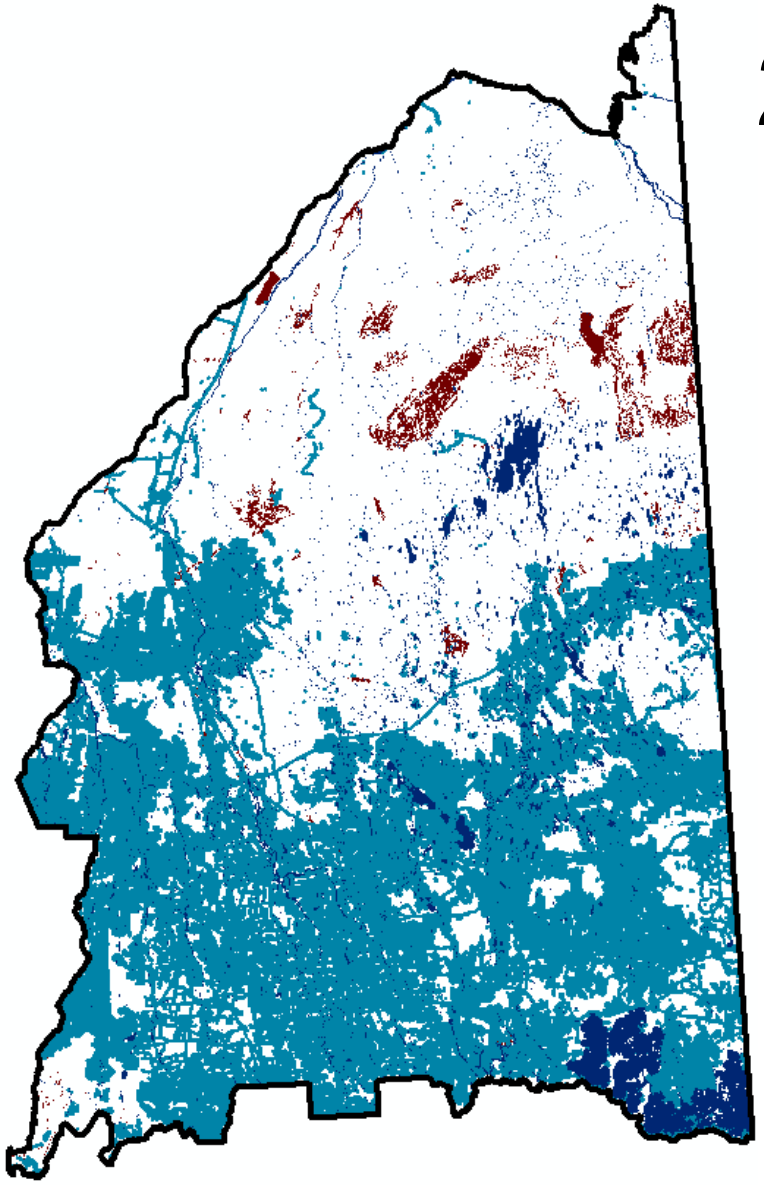
Range 7: Kesagami 2012 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Range disturbance indicator	
Anthropogenic:*	2,017,932
Natural	87,840
Total	2,105,932
Percent of range extent	44.4%





2012

* Buffered 500 metres.

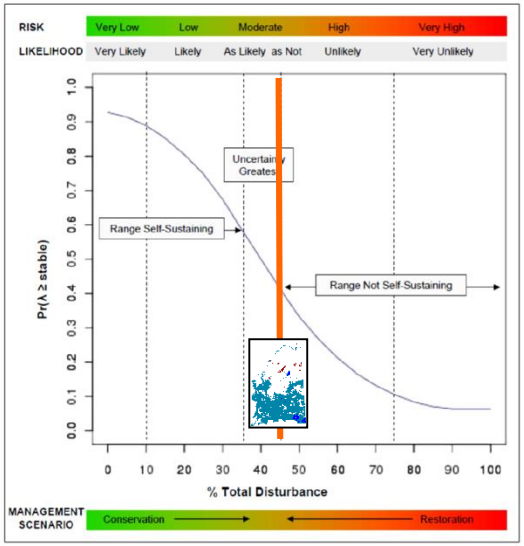
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

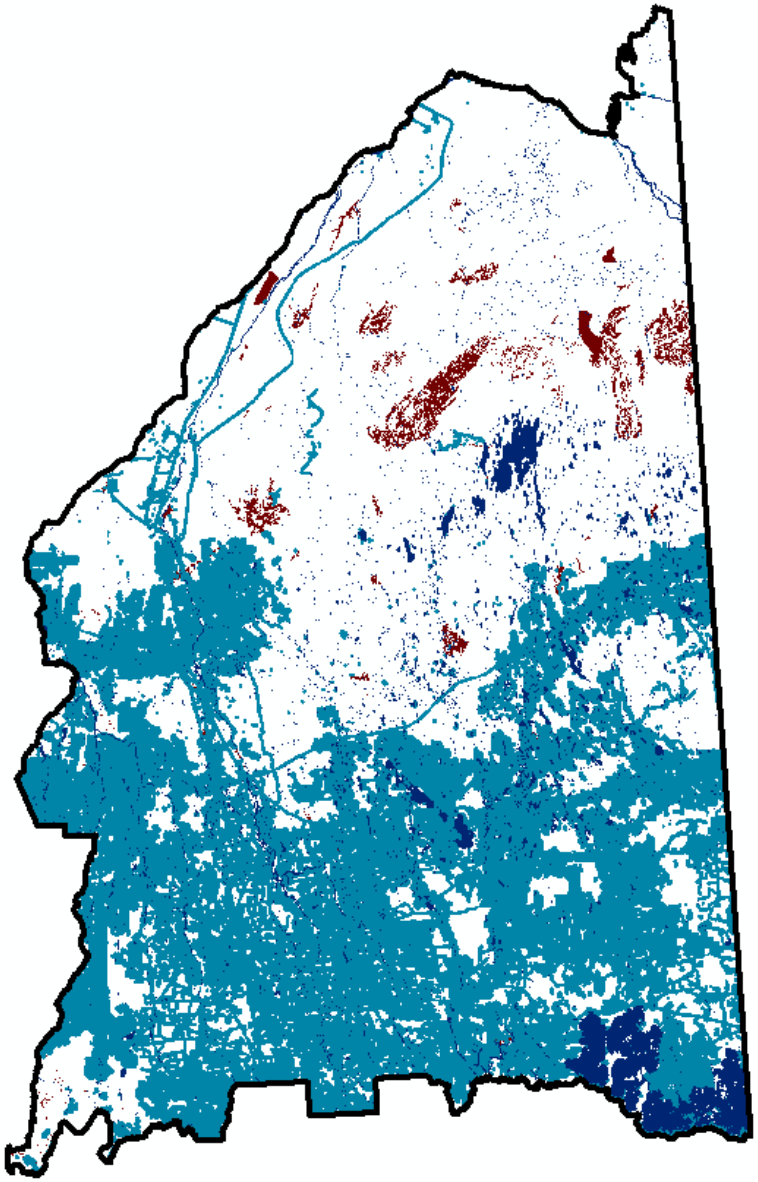
Range 7: Kesagami 2013 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Range disturbance indicator	
Anthropogenic:*	2,021,671
Natural	81,611
Total	2,103,283
Percent of range extent	44.2%





* Buffered 500 metres.

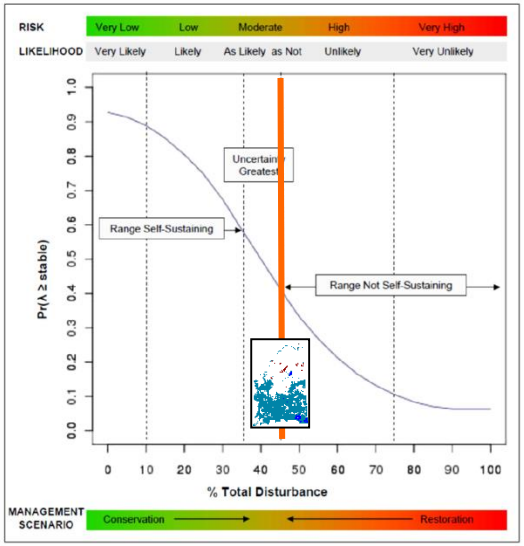
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

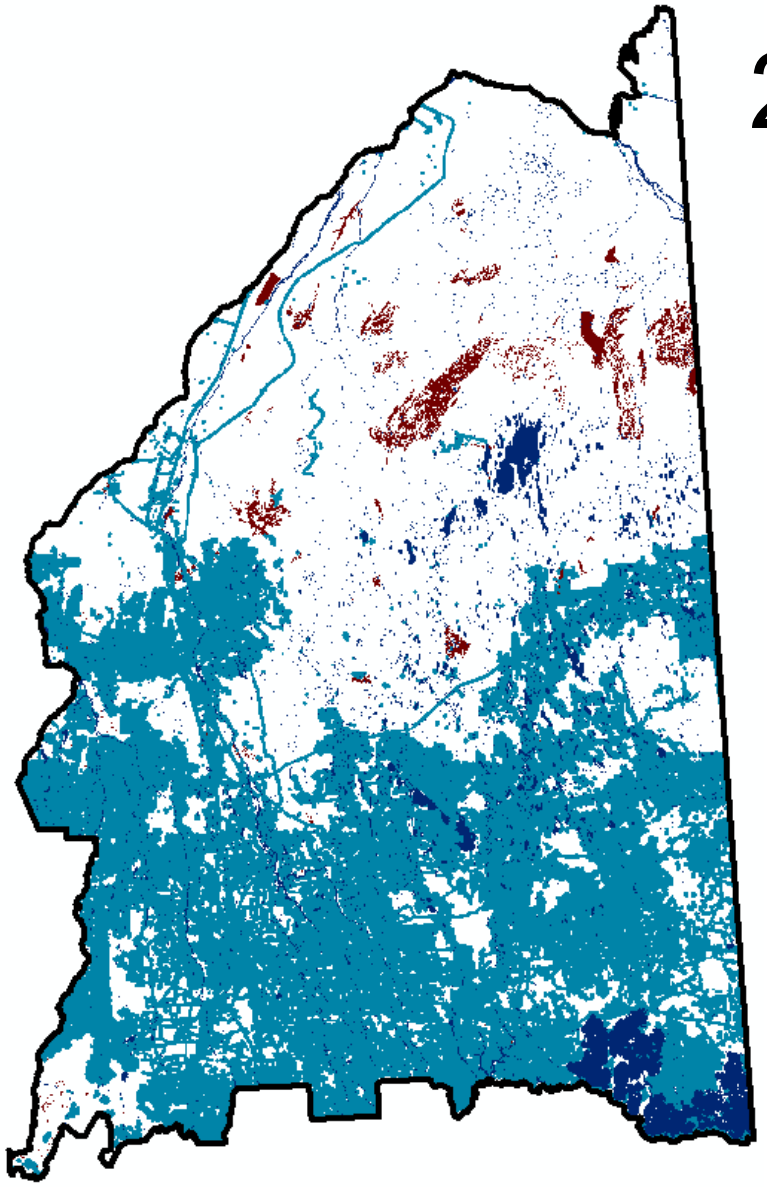
Range 7: Kesagami 2015 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Range disturbance indicator	
Anthropogenic:*	2,064,038
Natural	82,966
Total	2,147,005
Percent of range extent	45.4%





* Buffered 500 metres.

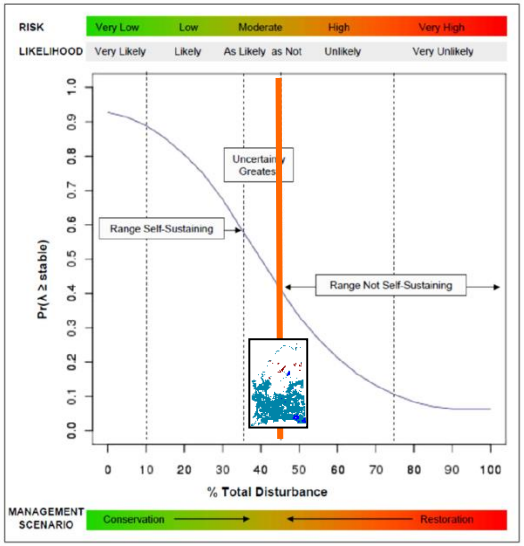
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

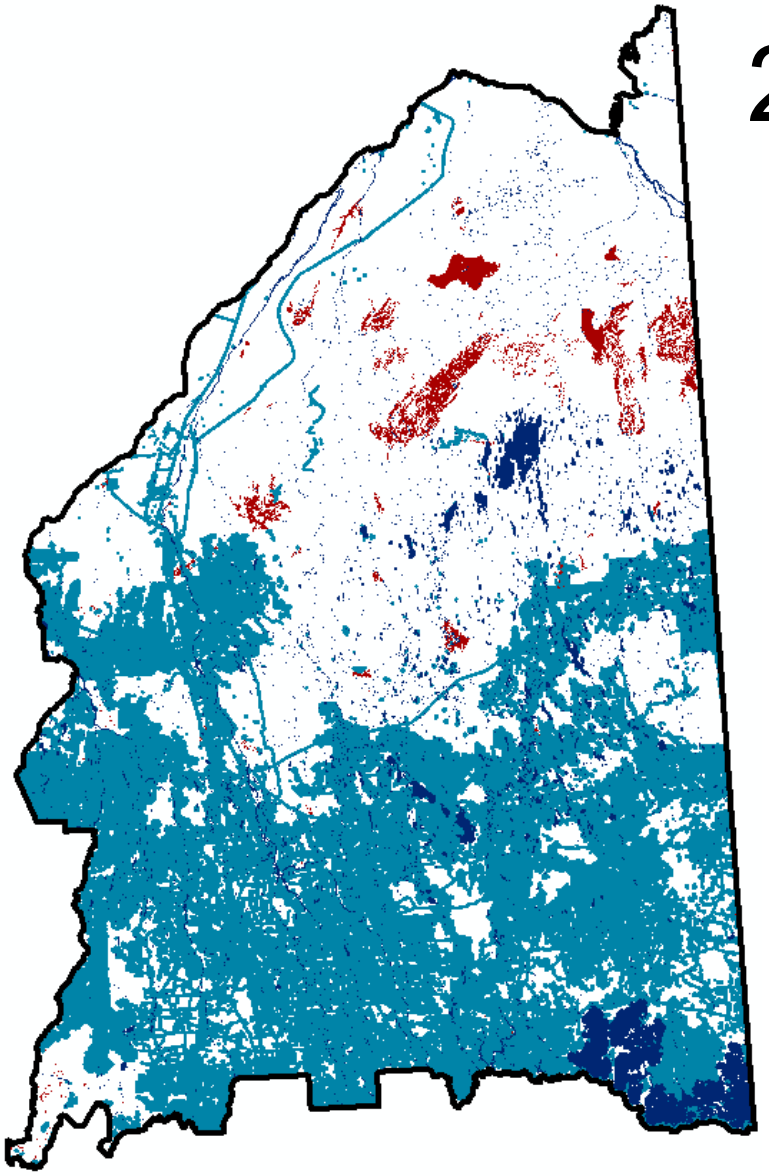
Range 7: Kesagami 2017 Disturbance State

Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Range disturbance indicator	
Anthropogenic:*	2,051,062
Natural	90,016
Total	2,141,078
Percent of range extent	45.2%



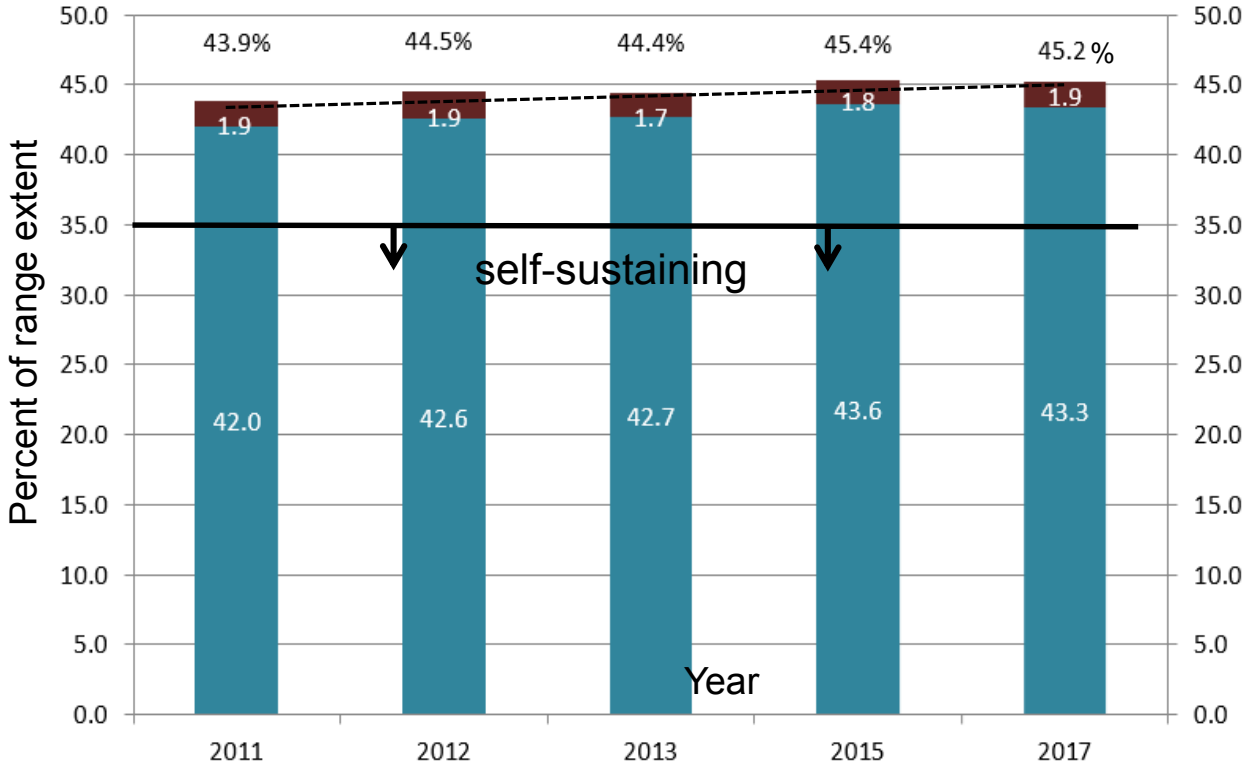


* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

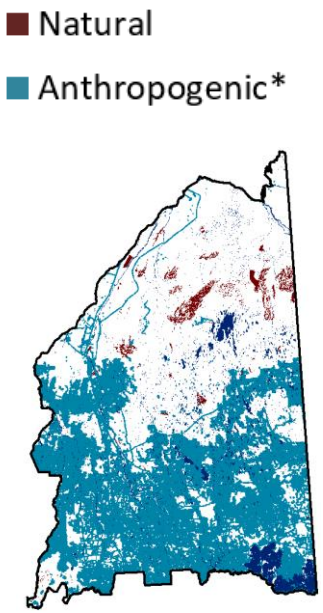
Range 7: Kesagami 2011 - 2017 Disturbance Range Indicator Trend

Trend



Landscape Statistics (ha)

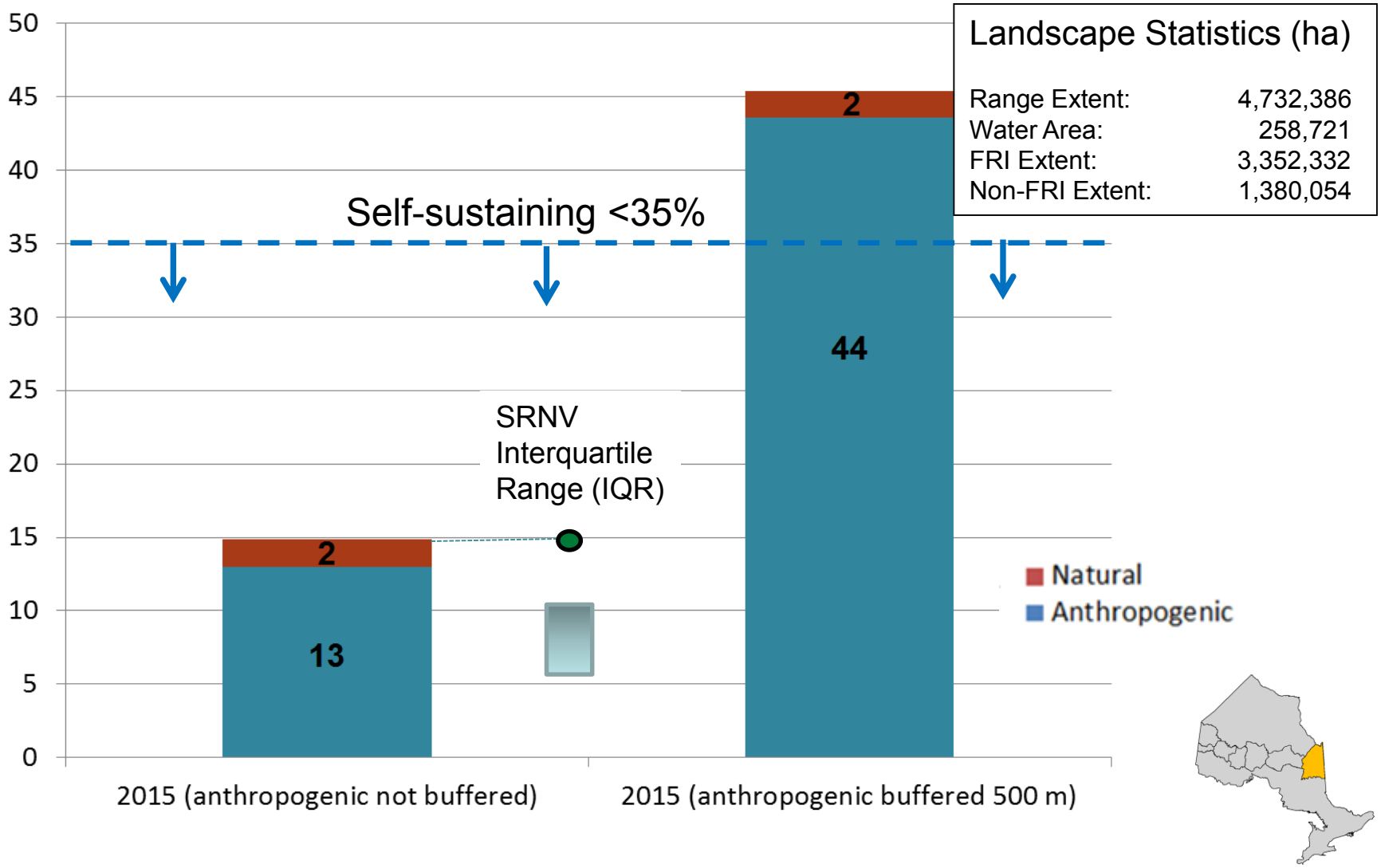
Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054



* Buffered 500 metres.

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 7: Kesagami 2015 Range Disturbance Indicator versus Simulated Range of Natural Variation



Landscape Statistics (ha)

Range Extent:	4,732,386
Water Area:	258,721
FRI Extent:	3,352,332
Non-FRI Extent:	1,380,054

Conventional Boreal Caribou Habitat Model Set

Regional Forest Units	Region	Onset Age for Habitat (years)		
		Winter Useable	Winter Preferred	Refuge
BfDom	NW	not useable	not preferred	61
BwDom	NW	not useable	not preferred	not refuge
ConMx	NW	not useable	not preferred	71
HrdMw	NW	not useable	not preferred	not refuge
HrDom	NW	not useable	not preferred	not refuge
OcLow	NW	51	not preferred	always
OthHd	NW	not useable	not preferred	not refuge
PjDom	NW	41	61	always
PjMx1	NW	41	61	41
PoDom	NW	not useable	not preferred	not refuge
PrwMx	NW	not useable	not preferred	not refuge
SbDom	NW	61	not preferred	41
SbLow	NW	41	101	always
SbMx1	NW	61	not preferred	41
SF1	NE	not useable	not preferred	61
BW1	NE	not useable	not preferred	not refuge
MW1	NE	not useable	not preferred	71
MW2	NE	not useable	not preferred	71
LC1	NE	51	not preferred	always
LH1/TH1	NE	not useable	not preferred	not refuge
PJ1	NE	41	61	always
PJ2	NE	41	61	41
PO1	NE	not useable	not preferred	not refuge
PW1/PR1/PWR	NE	not useable	not preferred	not refuge
SP1	NE	61	not preferred	41
SB1	NE	41	101	always
SBOG	NE	41	101	always

This table represents the forest unit based habitat models used in conventional boreal landscapes. These models include both a refuge (all year) and winter model. Winter is broken into two classes; useable (relatively low quality) and preferred (relatively high quality) habitats. Originally, as part of the Landscape Guide Project, simulated ranges of natural variation were estimated only in areas where forest management planning occurred. Consequently provincial landcover surfaces were used to estimate the natural condition outside of the forest management planning area. Provincial landcover surfaces do not contain the same thematic resolution as forest resource inventories. Useable and preferred winter habitat were grouped together for the purpose of estimating ranges of natural variation at the range level.

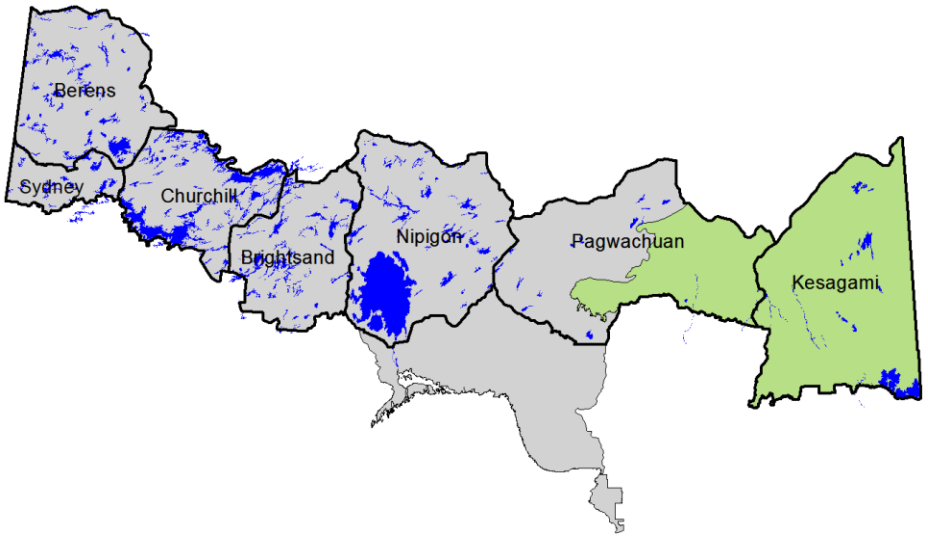
Clay-belt Boreal Caribou Habitat Model Set

		Onset Age for Habitat (years)	
Regional Forest Units	**Region**	**Winter Suitable**	**Mature Conifer**
PR1	NE	not winter suitable	not mature conifer
PW1	NE	not winter suitable	not mature conifer
PRW	NE	not winter suitable	not mature conifer
LH1	NE	not winter suitable	not mature conifer
SBOG	NE	always	not mature conifer
SB1	NE	51	101
PF1	NE	41	71
LC1	NE	51	not mature conifer
PJ2	NE	41	71
SP1	NE	51	not mature conifer
SF1	NE	not winter suitable	not mature conifer
PO1	NE	not winter suitable	not mature conifer
BW1	NE	not winter suitable	not mature conifer
MW1	NE	not winter suitable	not mature conifer
MW2	NE	not winter suitable	not mature conifer
TMS	NE	always	not mature conifer
RCK	NE	always	always

This table represents the forest unit based habitat models used in clay-belt boreal landscapes.
The models include both winter suitable and mature conifer.
Originally, as part of the Landscape Guide Project, simulated ranges of natural variation were estimated only in areas where forest management planning occurred. Consequently, for winter suitable, provincial landcover surfaces were used to estimate the natural condition outside of the forest management planning area. Provincial landcover surfaces do not contain the same thematic resolution as forest resource inventories and therefore the mature conifer model was used only in areas that contained forest resource inventories.

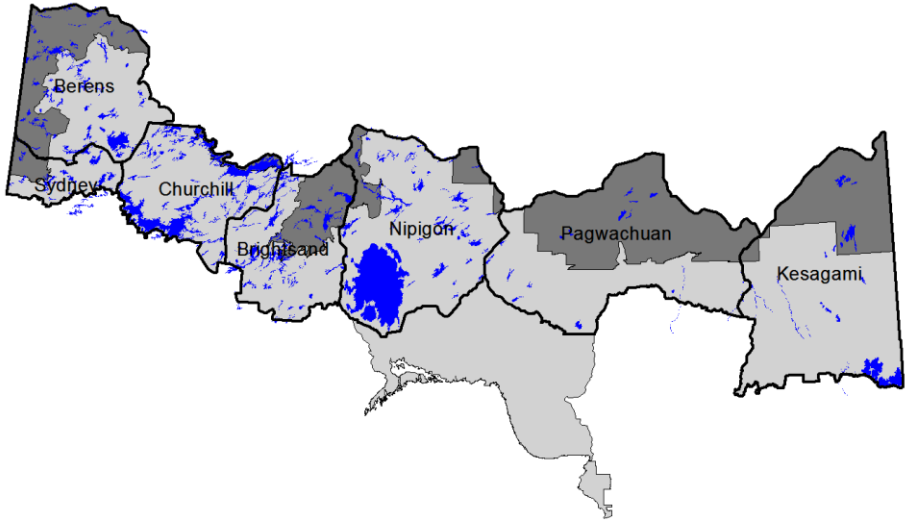
Geographic Model Application

Boreal East Forest Region Caribou



The seven caribou ranges and discontinuous zone. The conventional boreal models are used in the grey areas and the clay-belt models are used in the green area.

In areas where forest management occurs forest resource inventories are used. In areas where forest management does not occur provincial land cover is used.



Non-FRI, Provincial Landcover Caribou Habitat Model Sets

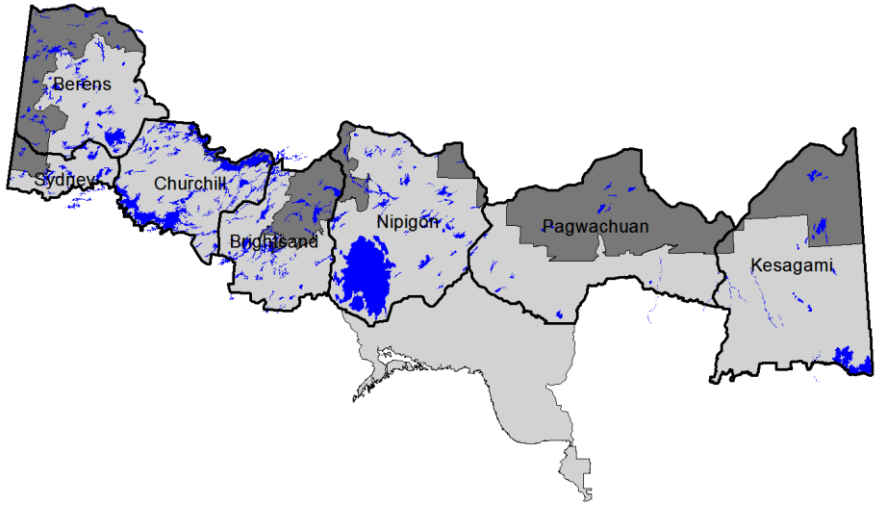
Conventional Boreal Model

Winter habitat: Forest Dense Coniferous, Forest Sparse*, Bog Treed, Treed FEN,
Refuge Habitat: Forest Dense Coniferous, Forest Sparse*, Forest Dense Mixed, Bog Treed, Treed FEN.
*Note: Range 1 and 2 forest sparse, unlike other ranges, is young open forest which resulted from recent burns and consequently is not considered habitat.

Clay-belt Boreal Model

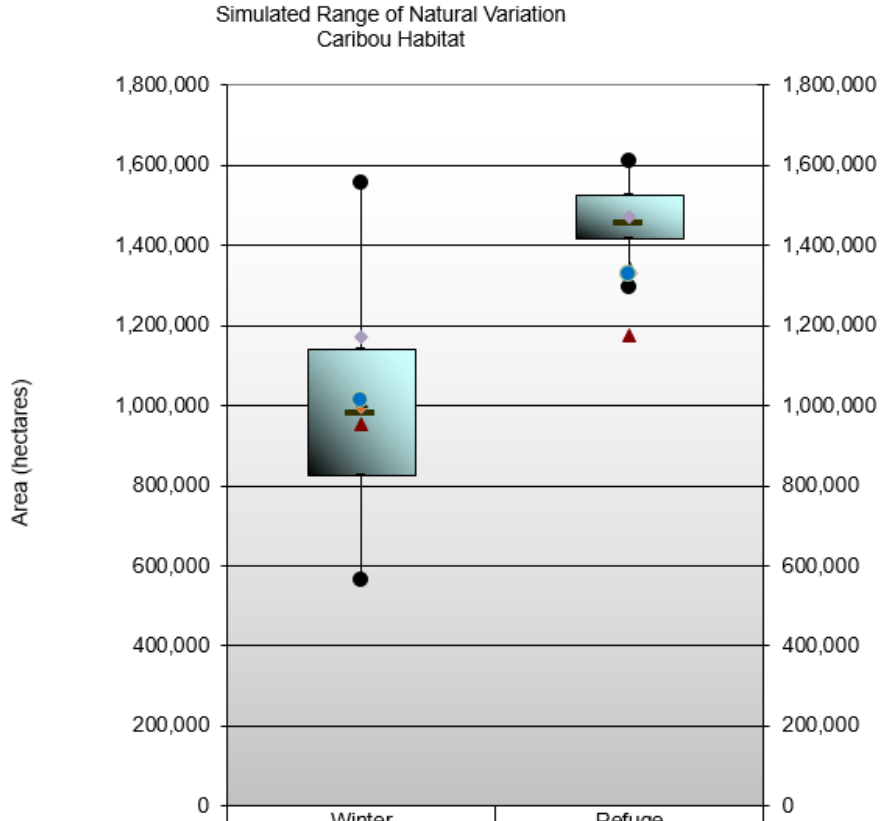
Winter Suitable: bedrock, sparse forest, dense coniferous, open fen, treed fen, open bog, treed bog.
Mature Conifer: Mature conifer is older conifer which is age dependant and consequently we were unable to classify from Landcover.

In areas where forest management occurs ▫ forest resource inventories are used. In areas where forest management does not occur ■ provincial land cover is used.



State of Caribou Range - Information Sheet

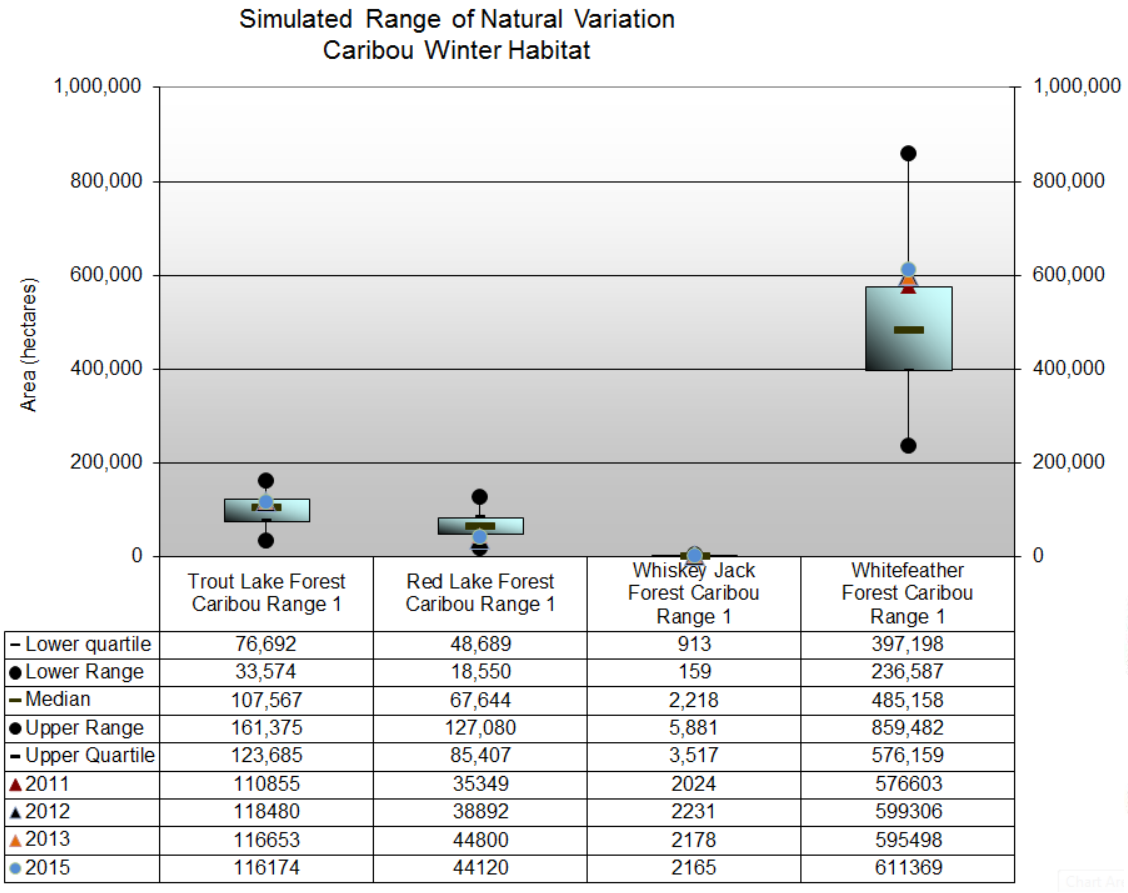
Range 1: Berens 2011 – 2017, Habitat SRNV



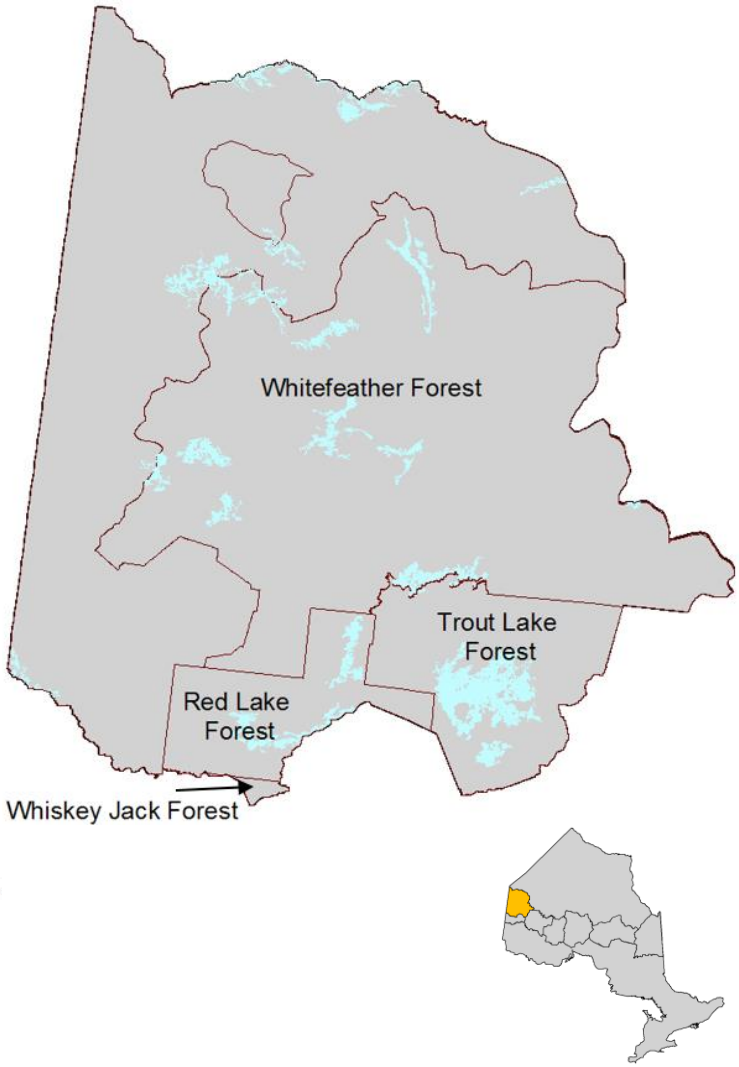
	Winter	Refuge
– Lower Quartile	826,655	1,415,984
● Lower Range	564,156	1,296,933
– Median	981,266	1,456,688
● Upper Range	1,555,831	1,612,586
– Upper Quartile	1,140,489	1,526,549
▲ 2011	954,614	1,174,434
▲ 2012	1,010,422	1,343,992
◆ 2013	997,052	1,330,900
● 2015	1,012,556	1,328,704
◆ 2017	1,173,292	1,472,654

The most recent year results may contain estimates from forest management annual schedules.

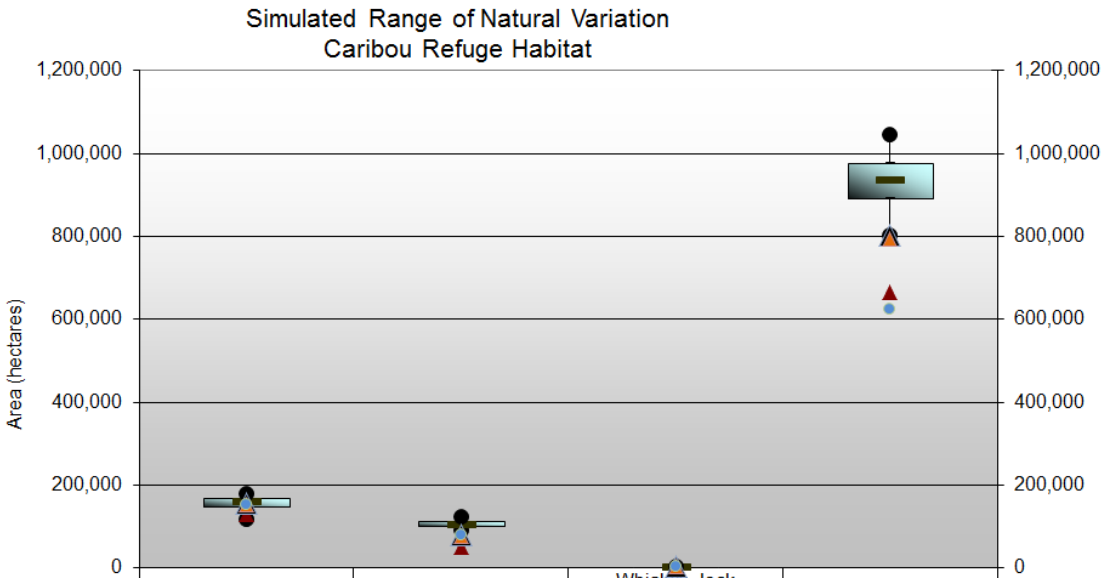
Range 1: Berens 2011 – 2015, Winter Habitat SRNV by FMU



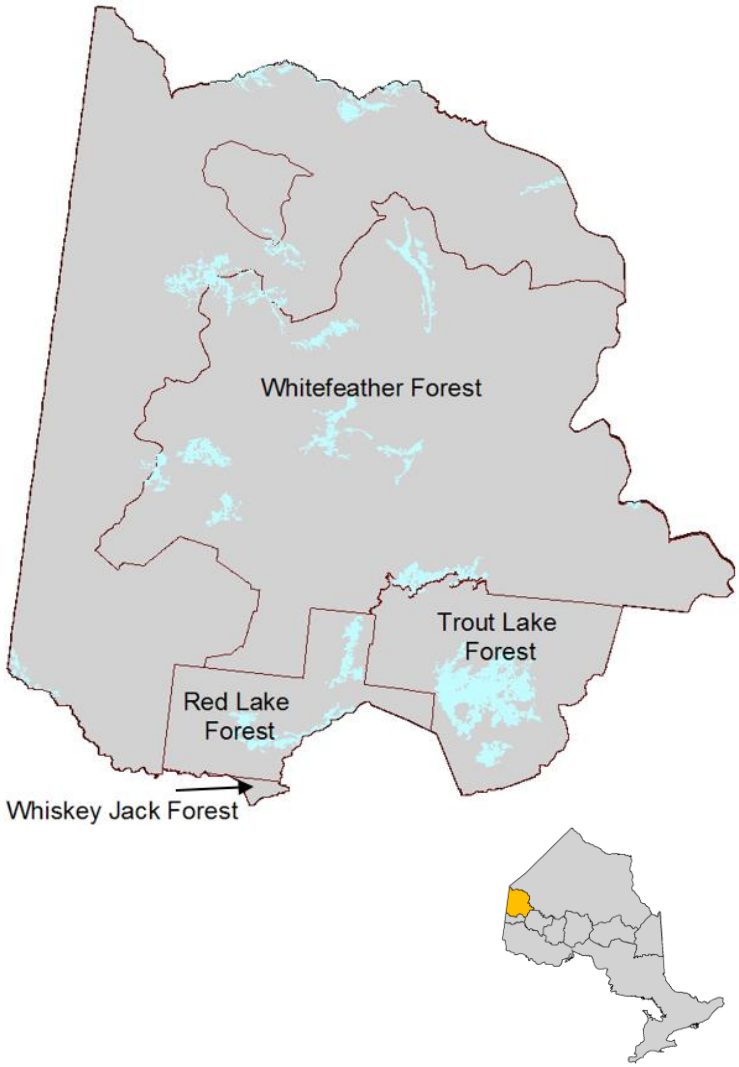
	Trout Lake Forest Caribou Range 1	Red Lake Forest Caribou Range 1	Whiskey Jack Forest Caribou Range 1	Whitefeather Forest Caribou Range 1
– Lower quartile	76,692	48,689	913	397,198
● Lower Range	33,574	18,550	159	236,587
– Median	107,567	67,644	2,218	485,158
● Upper Range	161,375	127,080	5,881	859,482
– Upper Quartile	123,685	85,407	3,517	576,159
▲ 2011	110855	35349	2024	576603
▲ 2012	118480	38892	2231	599306
▲ 2013	116653	44800	2178	595498
● 2015	116174	44120	2165	611369



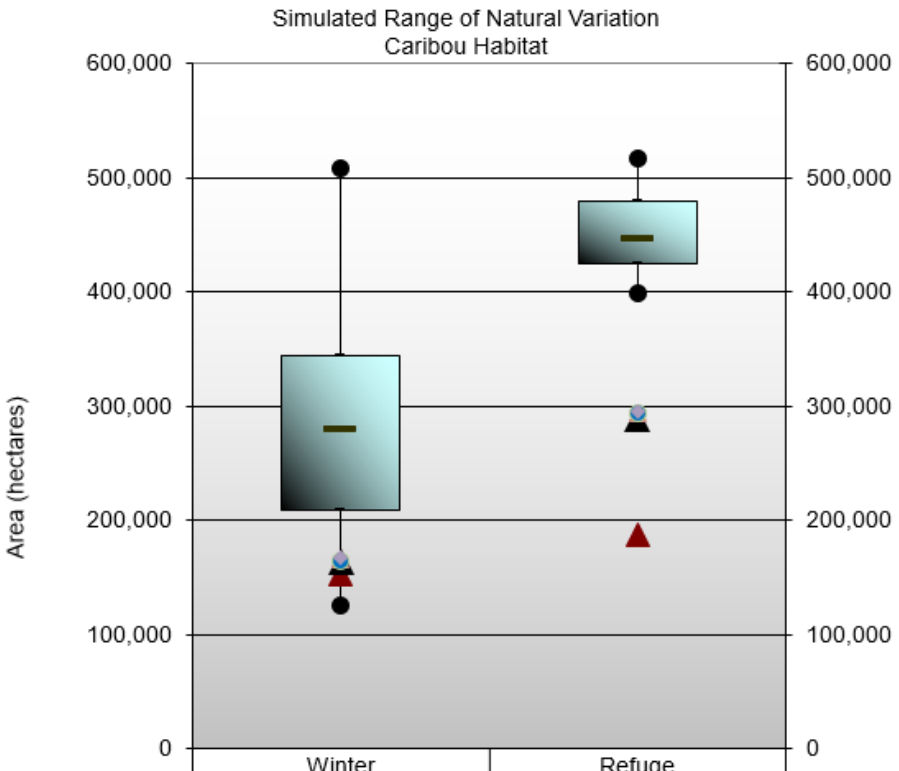
Range 1: Berens 2011 – 2015, Refuge Habitat SRNV by FMU



	Trout Lake Forest Caribou Range 1	Red Lake Forest Caribou Range 1	Whiskey Jack Forest Caribou Range 1	Whitefeather Forest Caribou Range 1
– Lower quartile	148,140	103,374	2,952	890,764
● Lower Range	118,093	91,232	1,786	801,654
– Median	161,420	107,351	3,564	937,037
● Upper Range	178,509	122,724	4,221	1,045,539
– Upper Quartile	168,215	112,914	3,846	976,530
▲ 2011	128823	52072	2214	665585
▲ 2012	156233	79655	2923	801449
▲ 2013	154277	77696	2788	794435
● 2015	153700	78749	2806	623000



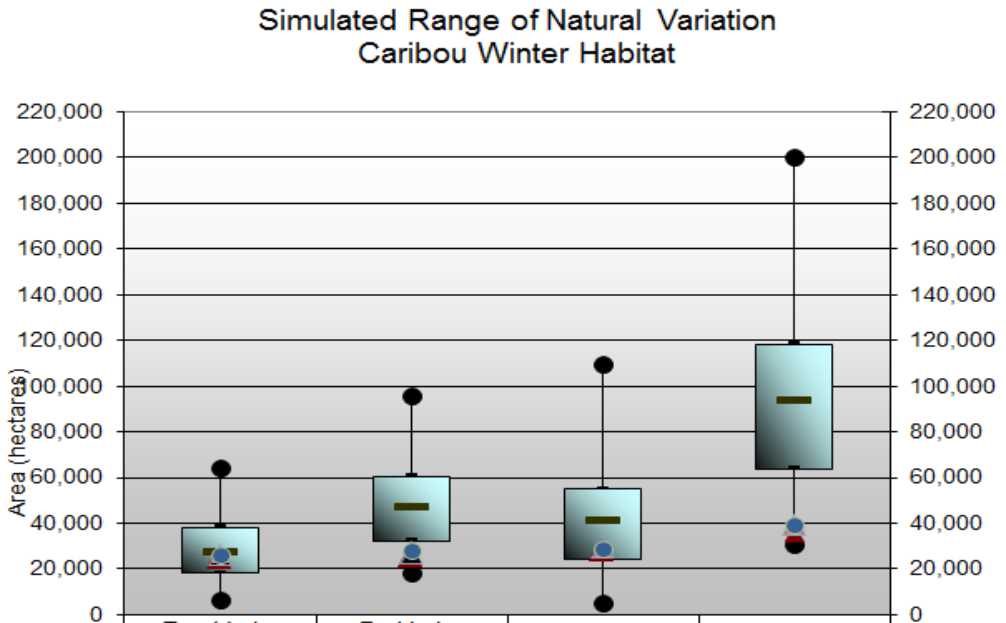
Range 2: Sydney 2011 – 2017, Habitat SRNV



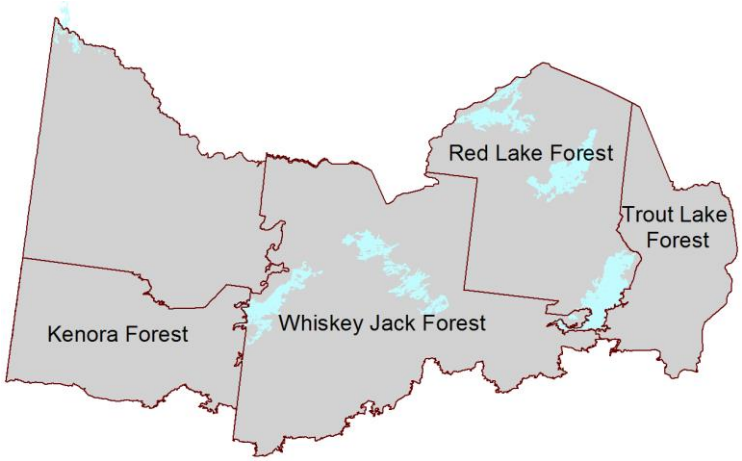
	Winter	Refuge
Lower Quartile	209,612	424,324
Lower Range	125,113	399,333
Median	278,872	446,740
Upper Range	507,590	516,741
Upper Quartile	344,657	478,858
2011	152,295	186,835
2012	163,195	289,249
2013	165,425	294,140
2015	164,561	293,759
2017	166,716	295,319

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

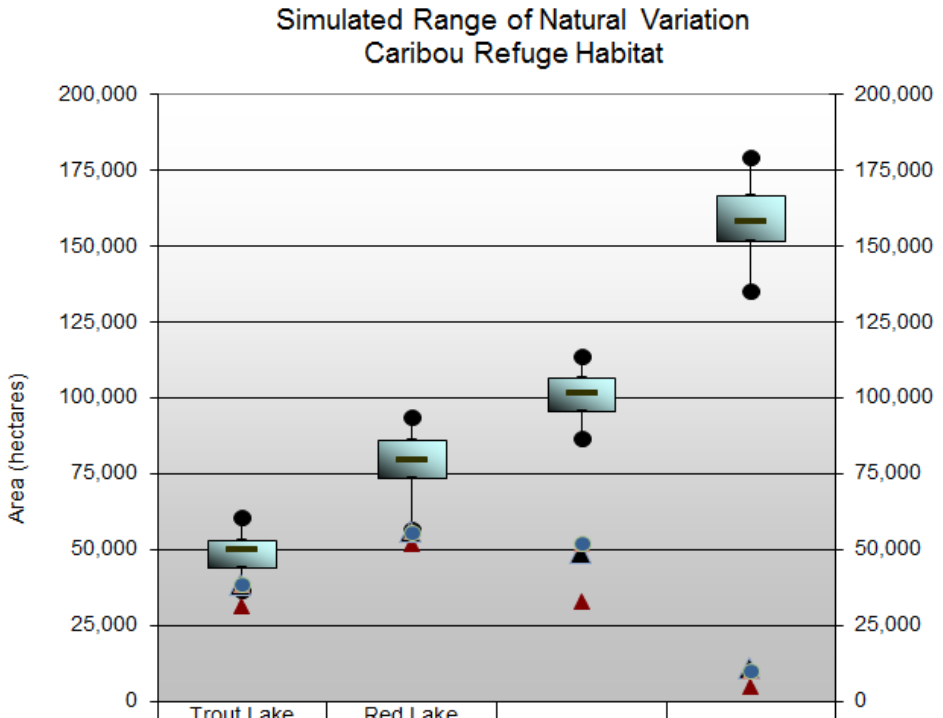
Range 2: Sydney 2011 – 2015, Winter Habitat SRNV by FMU



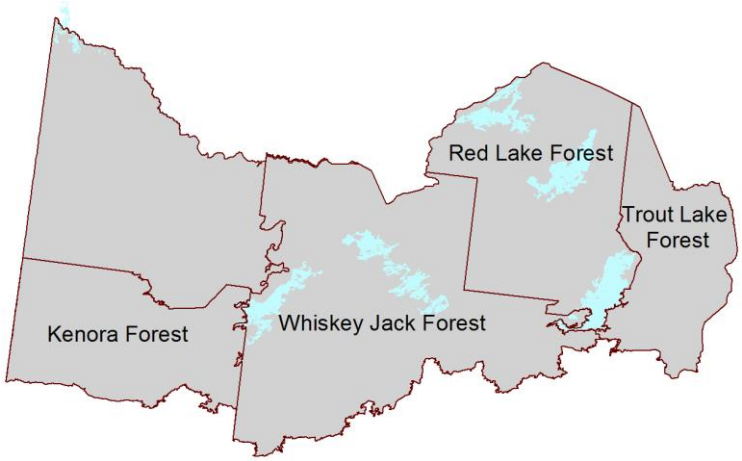
	Trout Lake Forest Caribou Range 2	Red Lake Forest Caribou Range 2	Kenora Forest Range 2	Whiskey Jack Forest Range 2
– Lower quartile	18,224	32,611	24,350	64,097
● Lower Range	6,576	18,275	5,271	30,849
– Median	27,424	47,082	41,349	93,873
● Upper Range	64,597	95,813	109,406	200,439
– Upper Quartile	38,341	60,838	55,242	118,698
▲2011	24757	25489	28042	35472
▲2012	26466	26798	29172	39342
▲2013	26470	29118	29033	38941
●2015	26489	27977	29033	39189



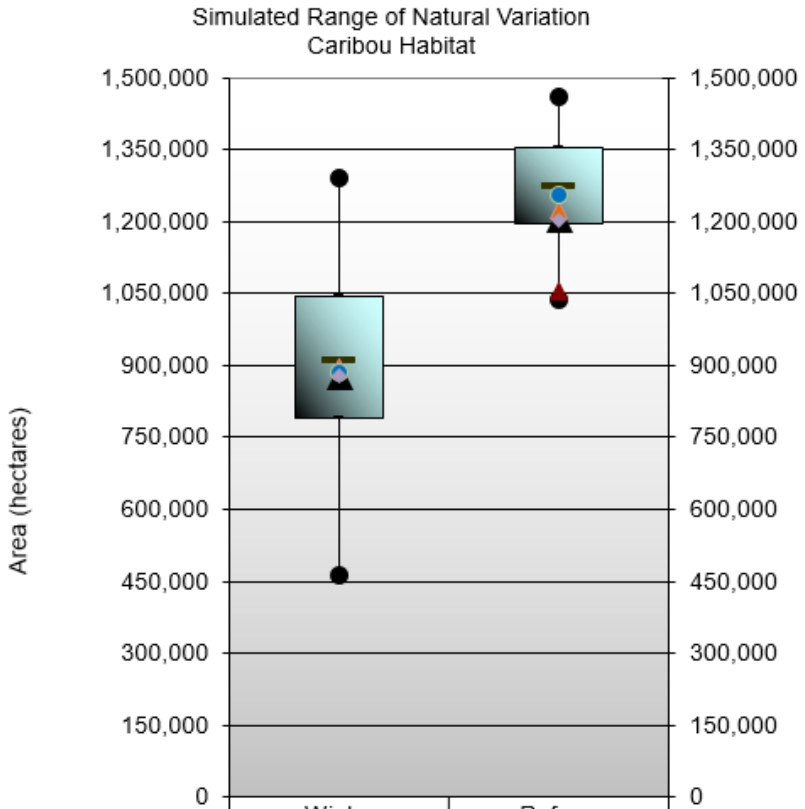
Range 2: Sydney 2011 – 2015, Refuge Habitat SRNV by FMU



	Trout Lake Forest Caribou Range 2	Red Lake Forest Caribou Range 2	Kenora Forest Range 2	Whiskey Jack Forest Range 2
– Lower quartile	43,715	73,266	95,540	151,474
● Lower Range	36,401	56,425	86,210	134,796
– Median	49,749	79,493	101,326	157,895
● Upper Range	60,498	93,477	113,467	179,136
– Upper Quartile	53,034	86,012	106,578	166,326
▲ 2011	31141	52072	32889	4589
▲ 2012	37808	55216	48385	10042
▲ 2013	38209	56046	52033	9975
● 2015	38133	55249	52032	10026



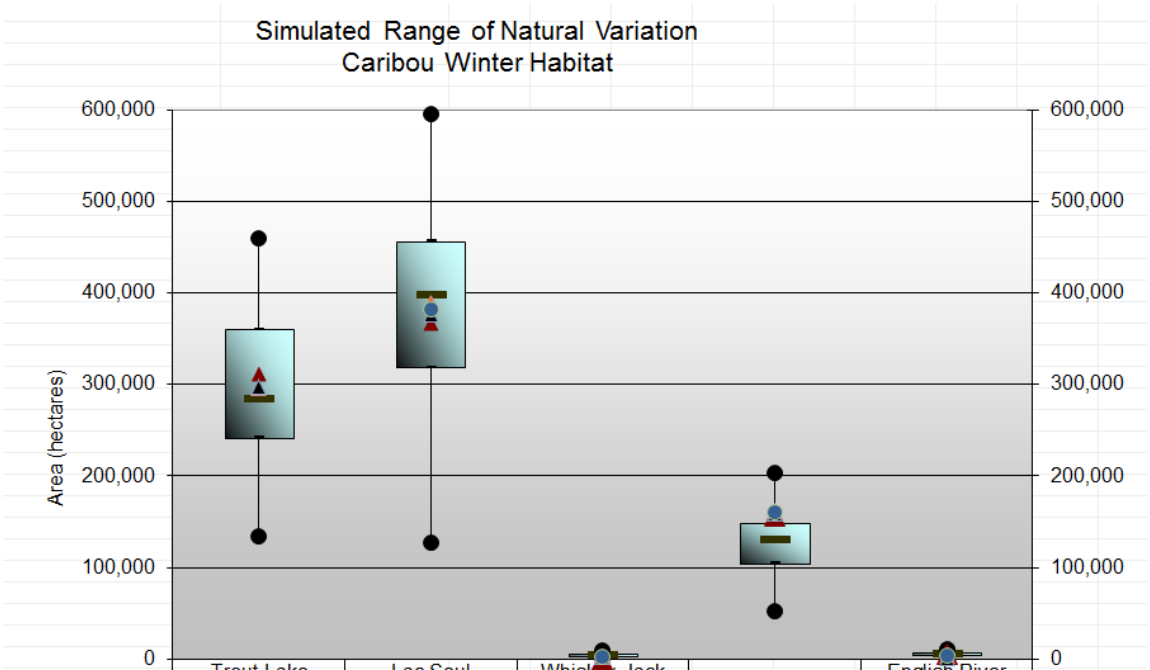
Range 3: Churchill 2011 – 2017, Habitat SRNV



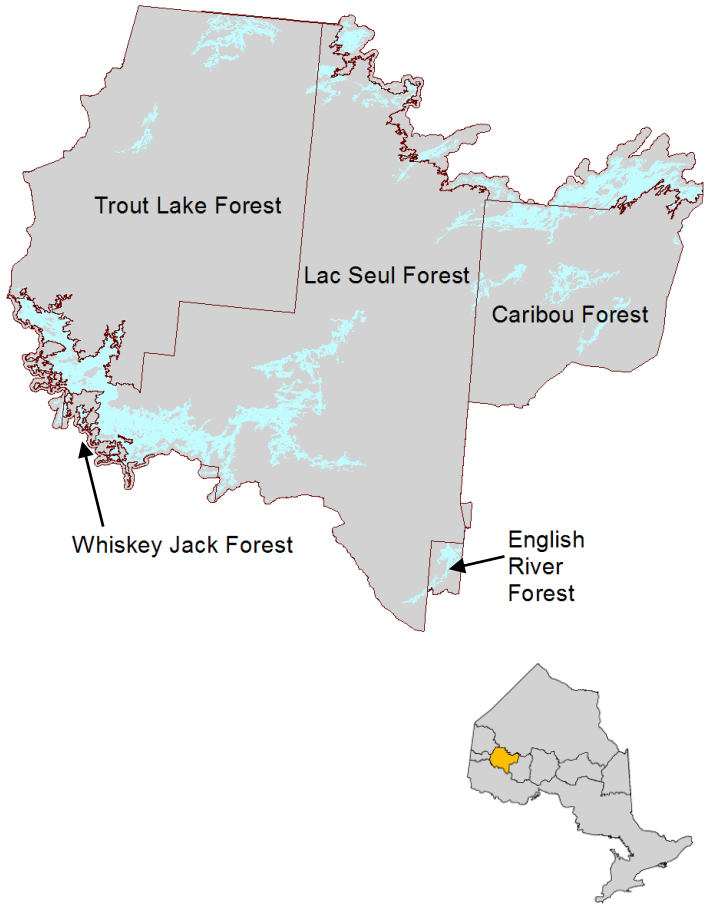
	Winter	Refuge
– Lower Quartile	789,520	1,196,592
● Lower Range	461,357	1,035,807
– Median	911,008	1,271,623
● Upper Range	1,292,364	1,459,006
– Upper Quartile	1,044,972	1,355,828
▲ 2011	876,276	1,055,835
▲ 2012	876,983	1,205,640
▲ 2013	896,684	1,222,746
● 2015	883,769	1,256,917
◆ 2017	879,147	1,203,153

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 3: Churchill 2011 – 2015, Winter Habitat SRNV by FMU



	Trout Lake Forest Caribou Range 3	Lac Seul Forest Range 3	Whiskey Jack Forest Range 3	Caribou Forest Range 3	English River Forest Range 3
– Lower quartile	241,614	318,426	3,714	104,793	5,286
● Lower Range	134,506	127,874	1,176	52,203	2,065
– Median	285,769	399,076	5,071	131,858	6,640
● Upper Range	460,170	595,896	9,814	202,781	10,322
– Upper Quartile	360038	456328	6414	148676	7769
▲ 2011	311296	366614	7	156577	5997
▲ 2012	297108	376110	3000	159434	1250
▲ 2013	296229	389632	2634	161332	4168
● 2015	2902037	382632	2459	160169	4168



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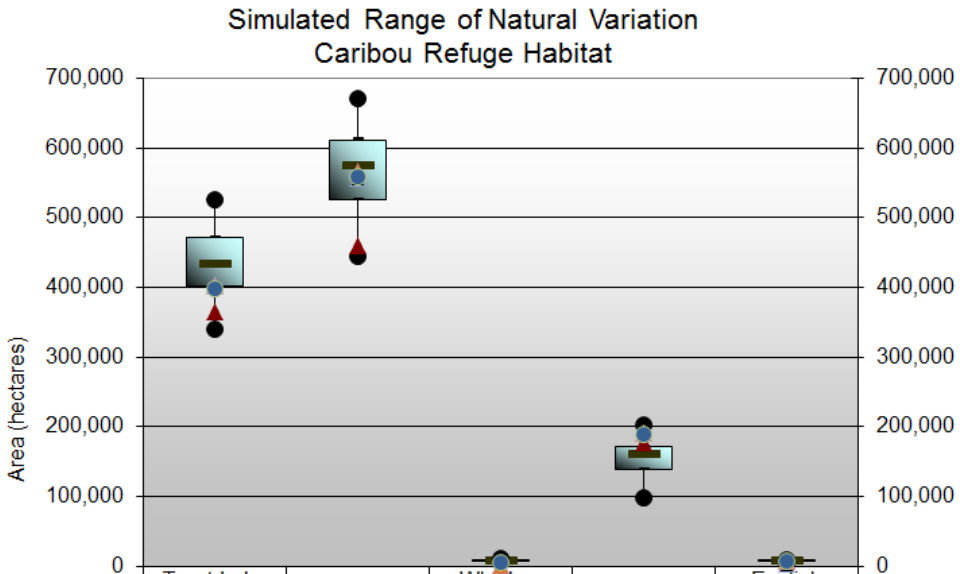
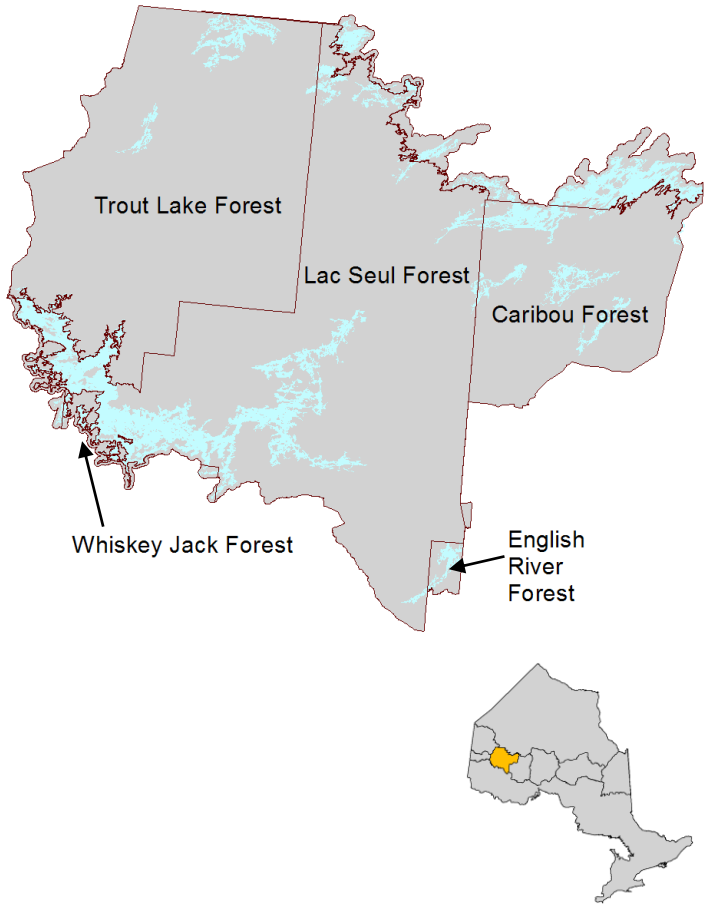
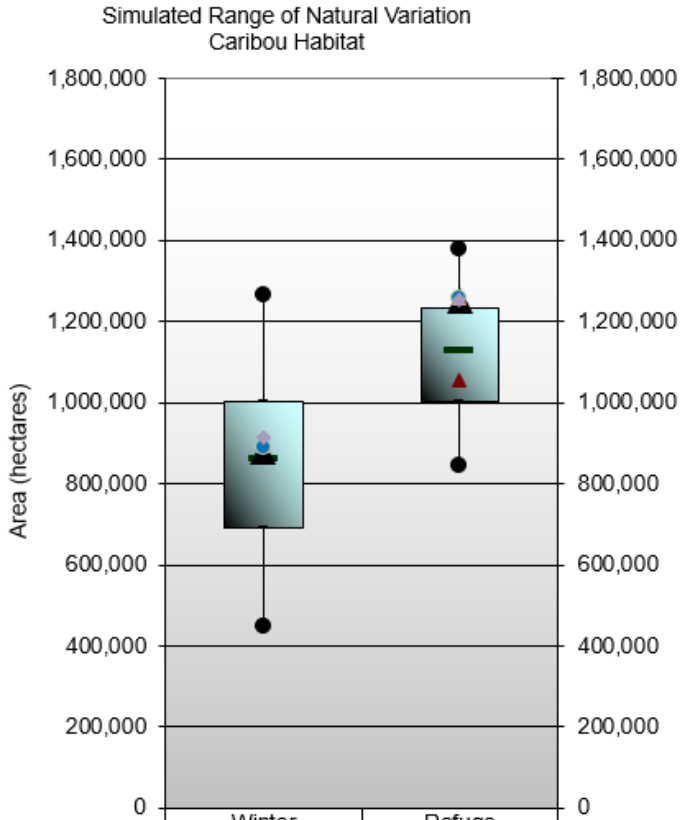
Range 3: Churchill 2011 – 2015, Refuge Habitat SRNV by FMU



	Trout Lake Forest Caribou Range 3	Lac Seul Forest Range 3	Whiskey Jack Forest Range 3	Caribou Forest Range 3	English River Forest Range 3
– Lower quartile	403,193	525,825	7,283	138,563	7,860
● Lower Range	339,214	445,192	4,030	97,666	5,111
– Median	435,029	576,785	8,669	160,902	8,701
● Upper Range	525,666	670,381	11,142	202,003	9,667
– Upper Quartile	471,801	611,914	9,458	171,781	9,196
▲ 2011	364703	459679	13	176329	5997
▲ 2012	402643	556100	530	190634	2500
▲ 2013	402257	566175	481	190650	6192
● 2015	397131	559349	4658	189619	6192

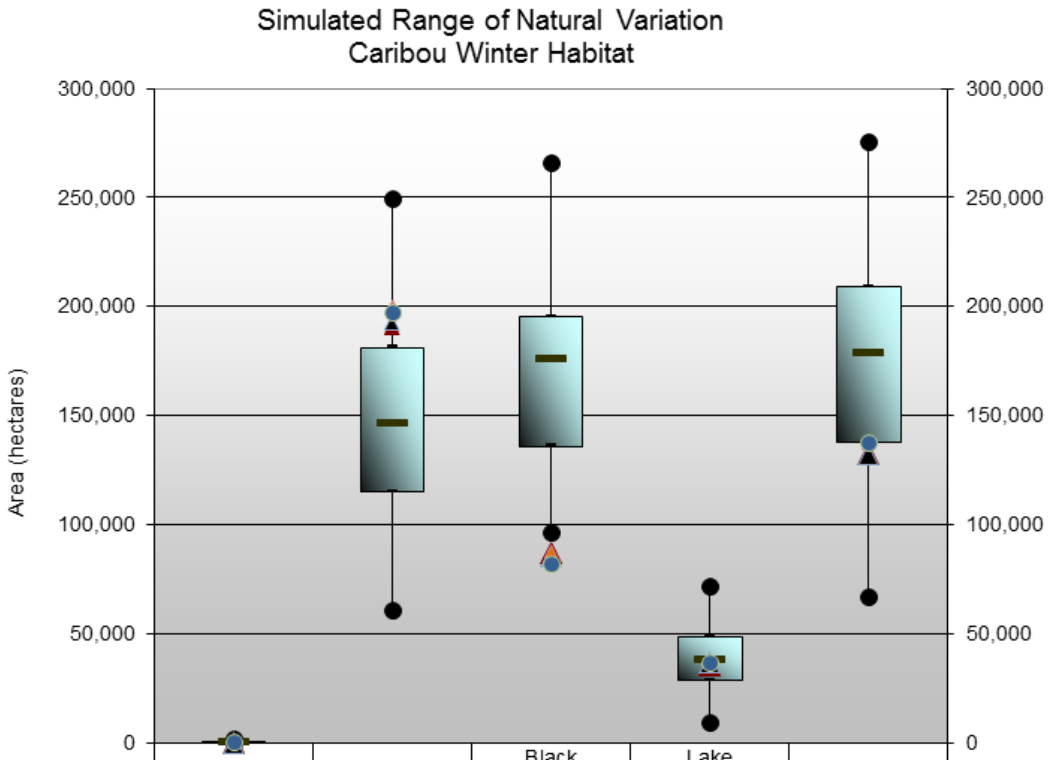


Range 4: Brightsand 2011 – 2017, Habitat SRNV

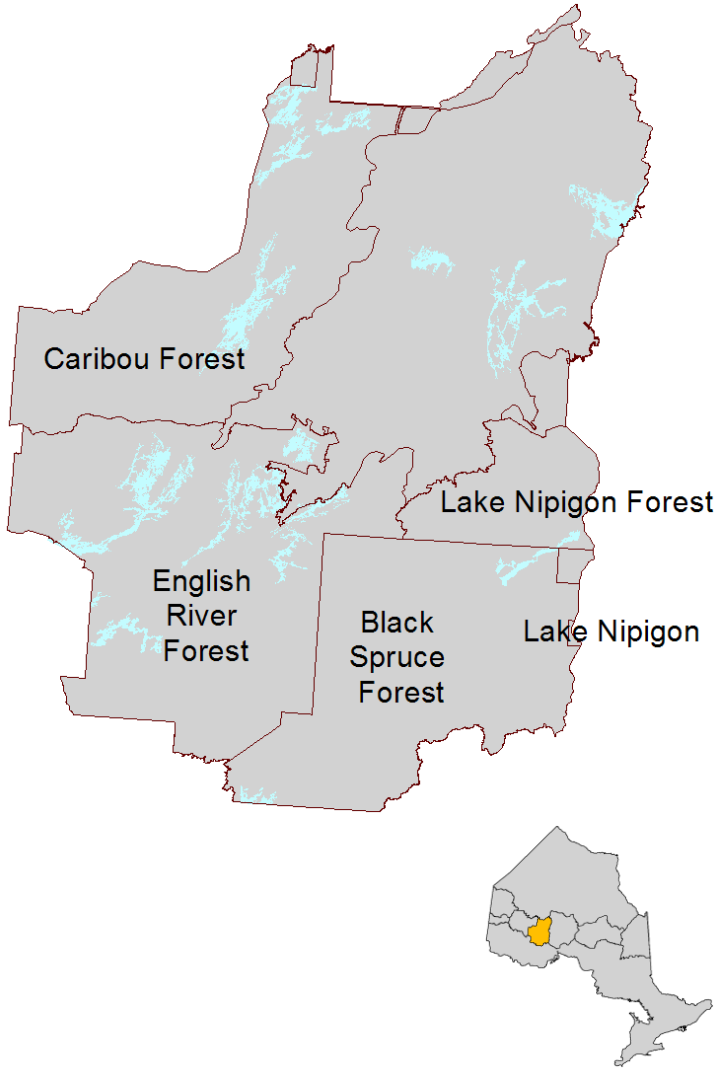


	Winter	Refuge
Lower Quartile	692,580	1,003,208
Lower Range	448,752	844,526
Median	859,950	1,128,682
Upper Range	1,266,154	1,378,072
Upper Quartile	1,002,864	1,232,110
2011	875,947	1,053,614
2012	881,390	1,249,933
2013	895,608	1,259,845
2015	889,589	1,256,917
2017	912,435	1,253,826

Range 4: Brightsand 2011 – 2015, Winter Habitat SRNV by FMU



	Lac Seul Forest Range 4	Caribou Forest Range 4	Black Spruce Forest Range 4	Lake Nipigon Forest Range 4	English River Forest Range 4
– Lower quartile	232	115,261	136,056	28,870	137,776
● Lower Range	15	60,859	96,440	9,265	67,200
– Median	625	146,840	176,284	38,394	178,662
● Upper Range	1,773	249,548	265,921	72,131	275,441
– Upper Quartile	1068	181650	195486	48702	209236
▲ 2011	23	190601	86956	35710	132381
▲ 2012	0	192559	85635	36524	132501
▲ 2013	368	200274	87847	37055	136770
● 2015	366	197343	82386	36843	137838



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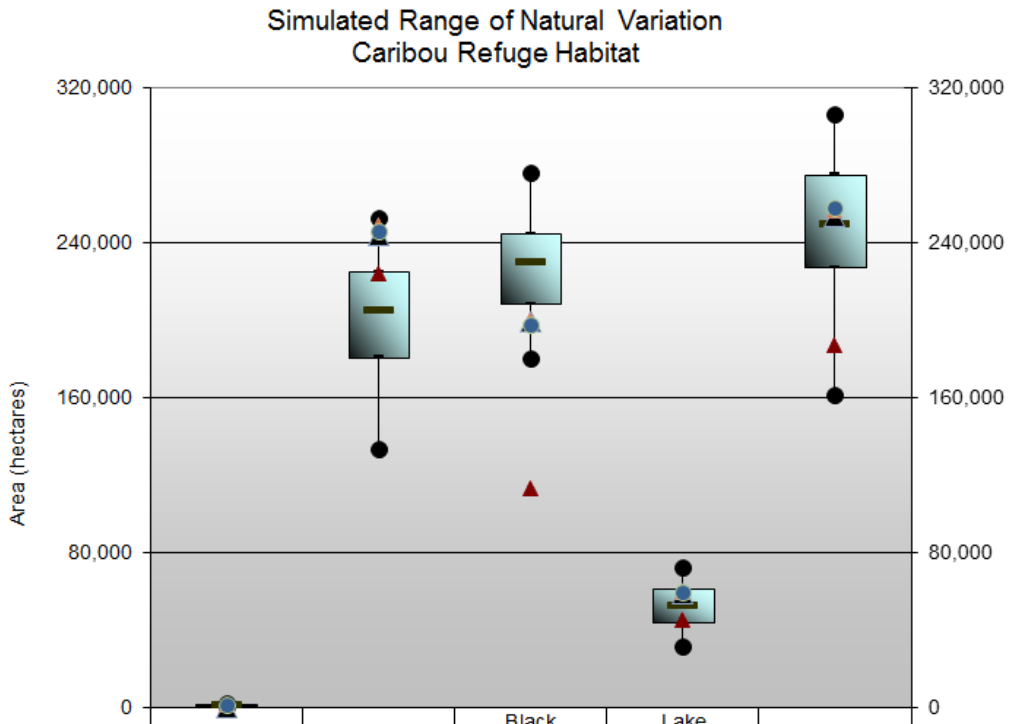
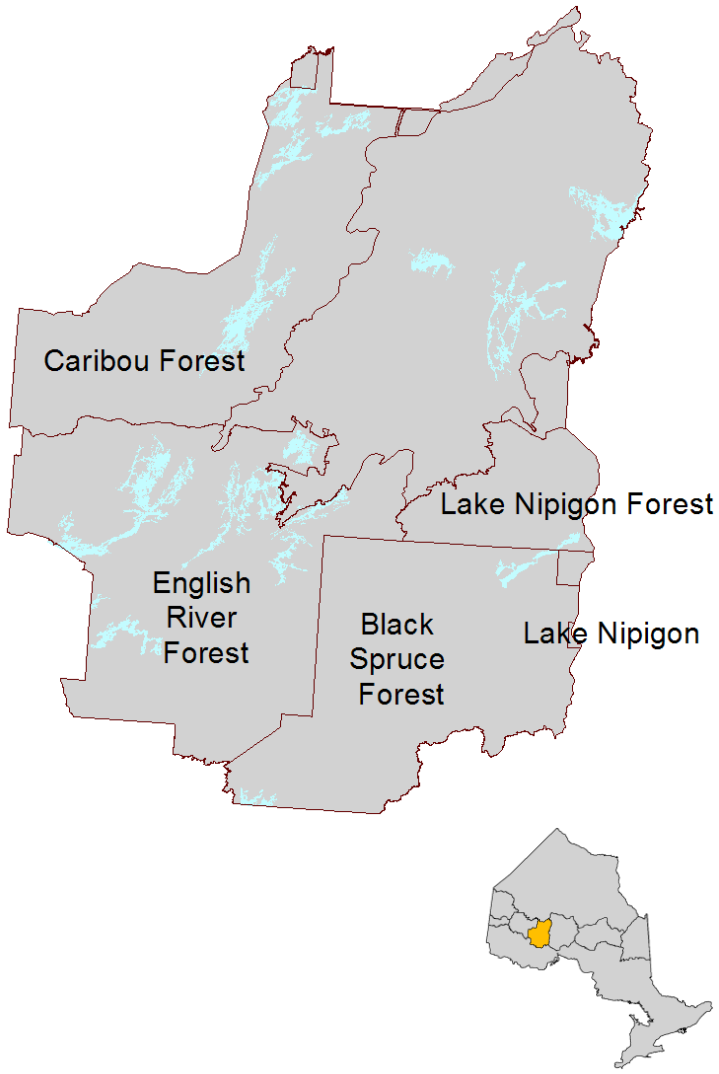
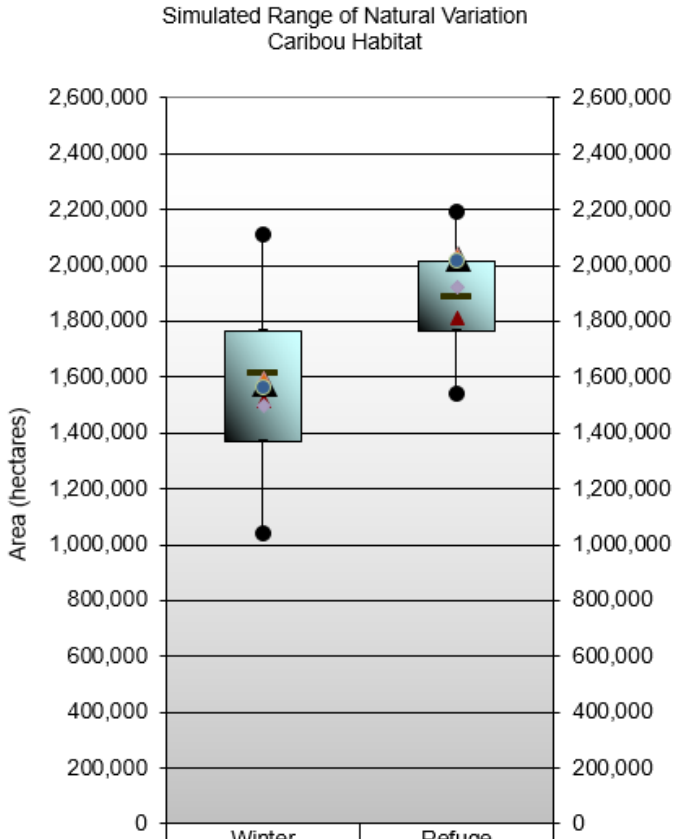
Range 4: Brightsand 2011 – 2015, Refuge Habitat SRNV by FMU



	Lac Seul Forest Range 4	Caribou Forest Range 4	Black Spruce Forest Range 4	Lake Nipigon Forest Range 4	English River Forest Range 4
Lower quartile	795	180,657	208,376	43,707	227,098
Lower Range	393	133,631	179,799	31,435	161,222
Median	1,109	204,964	229,943	52,538	249,377
Upper Range	1,571	252,724	276,301	72,398	306,649
Upper Quartile	1,310	224,816	244,674	60,856	275,071
2011	71	223740	112746	44673	186830
2012	0	243432	198999	58754	253556
2013	1302	248618	200069	59541	256114
2015	1298	245872	197360	59398	258098

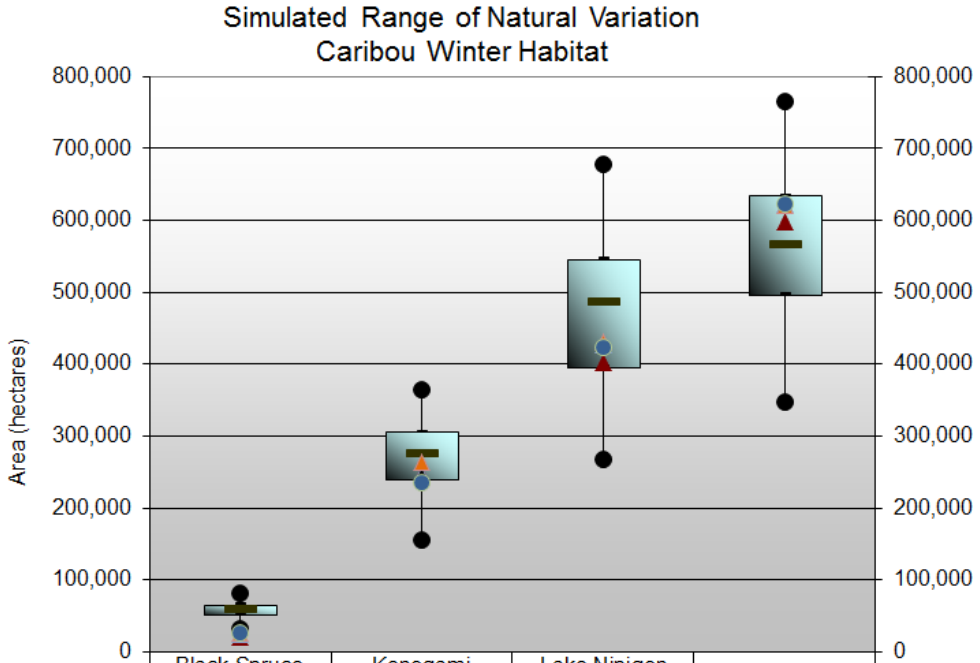


Range 5: Nipigon 2011 – 2017, Habitat SRNV

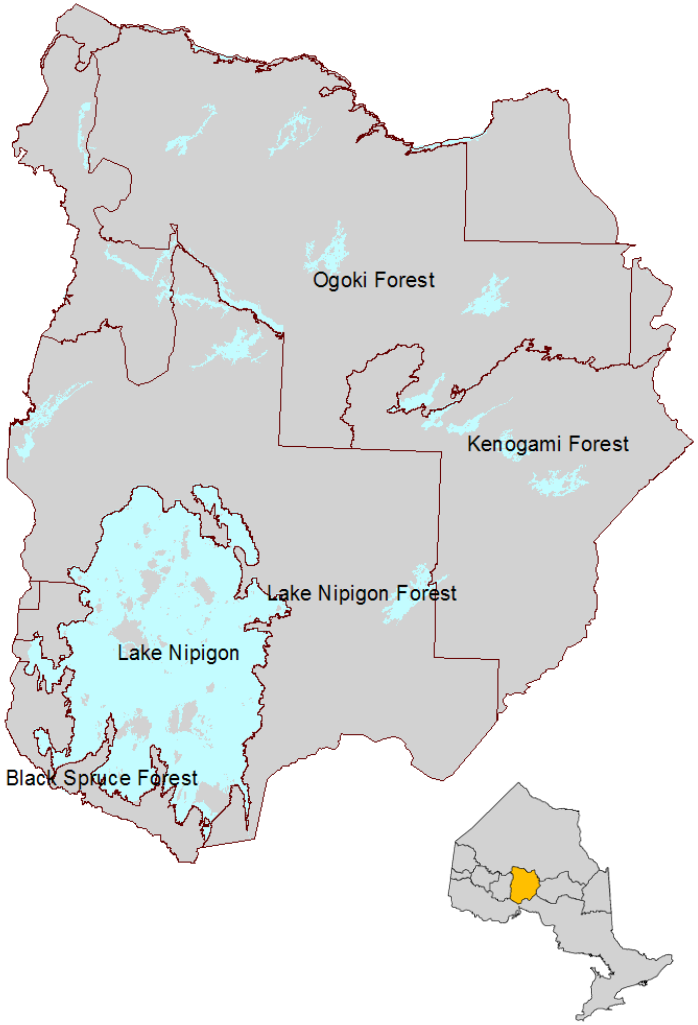


	Winter	Refuge
Lower Quartile	1,371,692	1,766,113
Lower Range	1,039,966	1,536,676
Median	1,615,442	1,889,451
Upper Range	2,105,543	2,192,203
Upper Quartile	1,763,265	2,012,990
2011	1,517,757	1,813,536
2012	1,573,623	2,022,989
2013	1597713	2038148
2015	1563320	2014244
2017	1499491	1923184

Range 5: Nipigon 2011 – 2015, Winter Habitat SRNV by FMU



	Black Spruce Forest Range 5	Kenogami Forest Range 5	Lake Nipigon Forest Range 5	Ogoki Forest Range 5
– Lower quartile	51,698	239,223	396,580	497,081
● Lower Range	31,299	155,395	267,893	347,734
▬ Median	60,601	276,238	487,844	567,139
● Upper Range	82,253	365,251	677,357	765,059
– Upper Quartile	65459	306200	546101	635194
▲ 2011	21141	247282	401595	598794
▲ 2012	24443	247290	426934	622950
▲ 2013	25718	263083	431212	621421
● 2015	25494	234821	422996	623633



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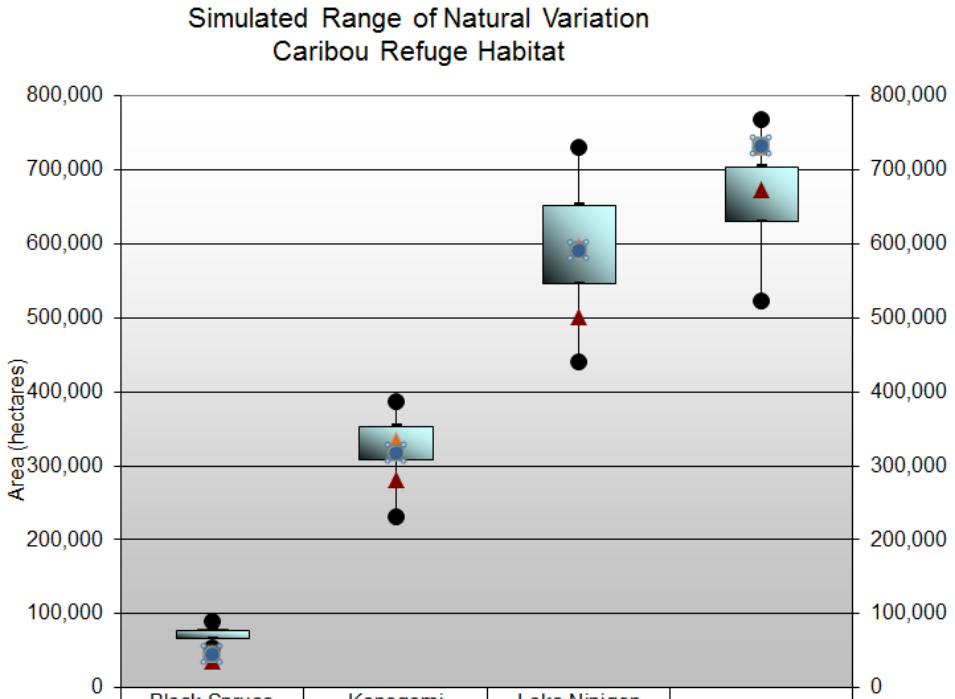
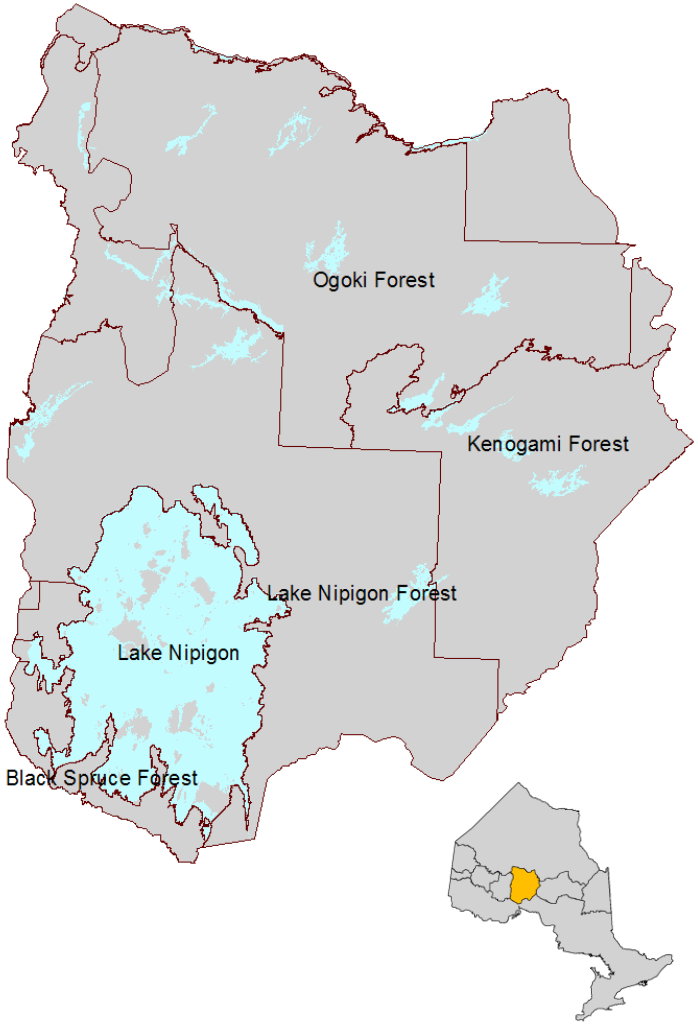
Range 5: Nipigon 2011 – 2015, Refuge Habitat SRNV by FMU

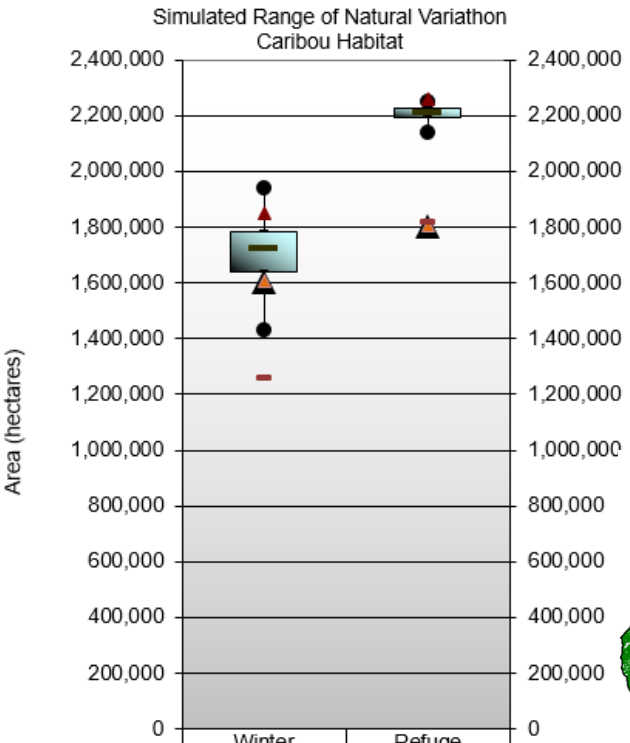


	Black Spruce Forest Range 5	Kenogami Forest Range 5	Lake Nipigon Forest Range 5	Ogoki Forest Range 5
Lower quartile	66,521	309,550	546,406	630,934
Lower Range	53,266	230,545	440,000	522,966
Median	75,112	331,842	610,917	667,328
Upper Range	89,722	386,375	730,949	767,843
Upper Quartile	78,897	353,828	652,634	704,972
2011	36802	281850	502078	673472
2012	45428	326437	595714	733611
2013	46308	334886	597213	731154
2015	45859	316539	591561	731632

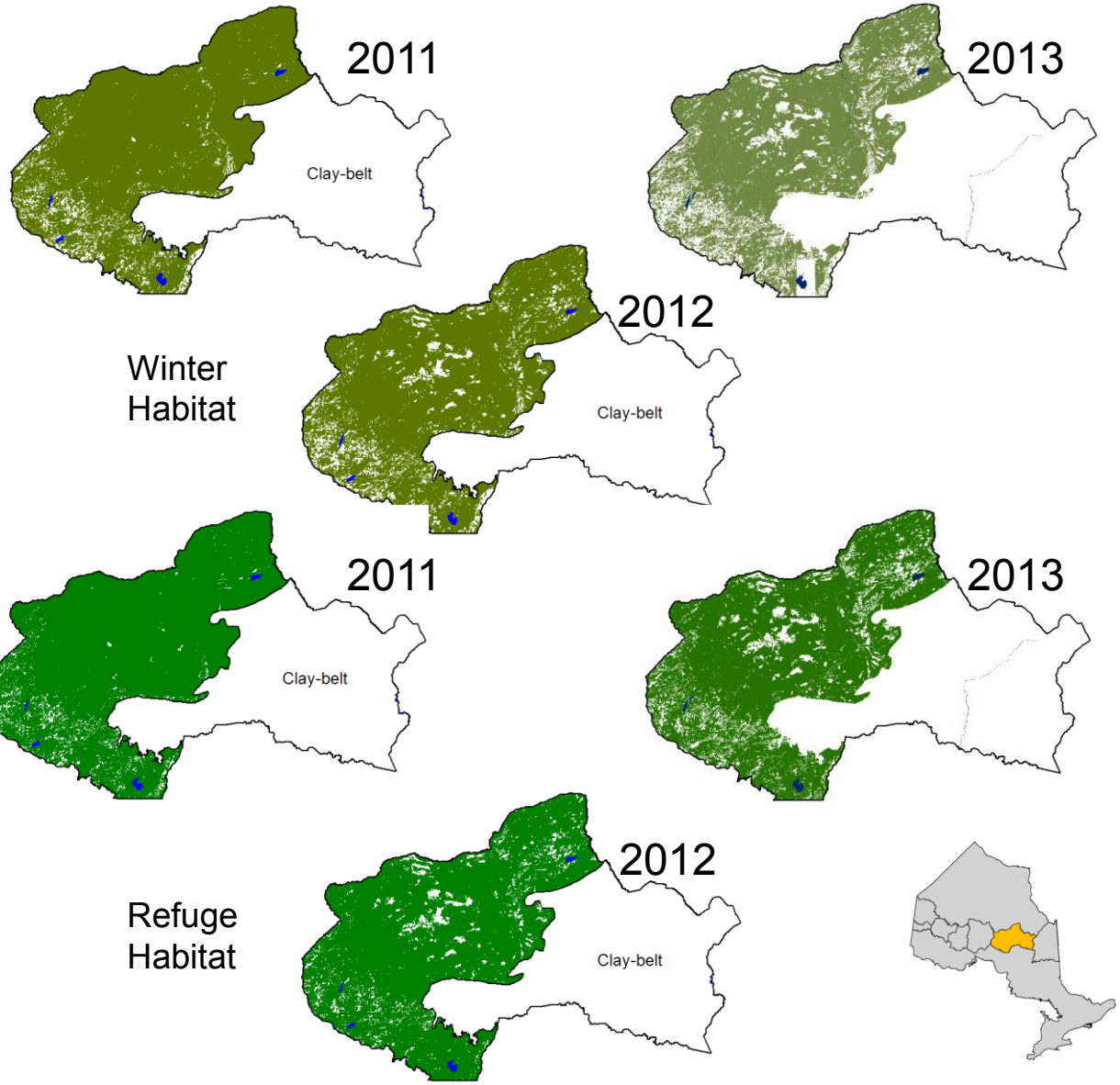


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2011 – 2017, West Habitat SRNV



	Winter	Refuge
– Lower Quartile	1,641,411	2,194,097
● Lower Range	1,432,000	2,139,883
– Median	1,723,678	2,212,055
● Upper Range	1,937,741	2,251,208
– Upper Quartile	1,784,089	2,225,728
▲ 2011	1,850,147	2,261,497
▲ 2012	1,603,941	1,800,707
▲ 2013	1,606,070	1,807,262
▬ 2017	1261289	1,817,508



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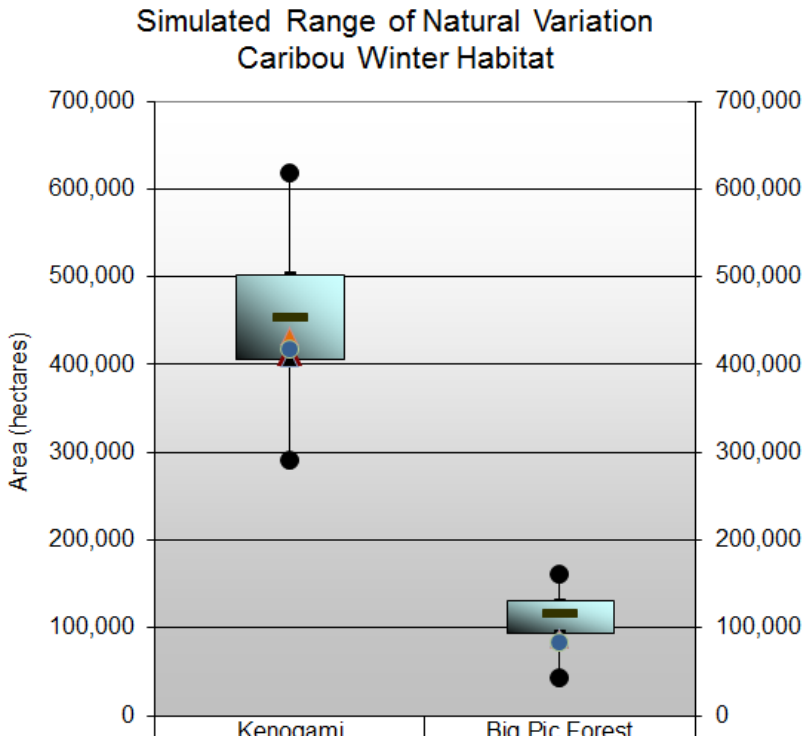
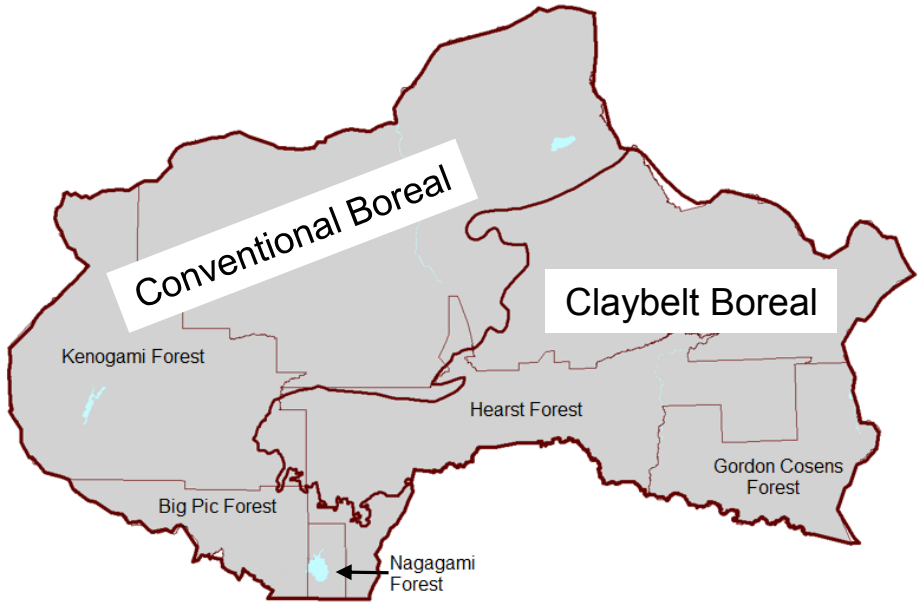
Range 6: Pagwachuan 2011 – 2015, West Winter Habitat SRNV by FMU

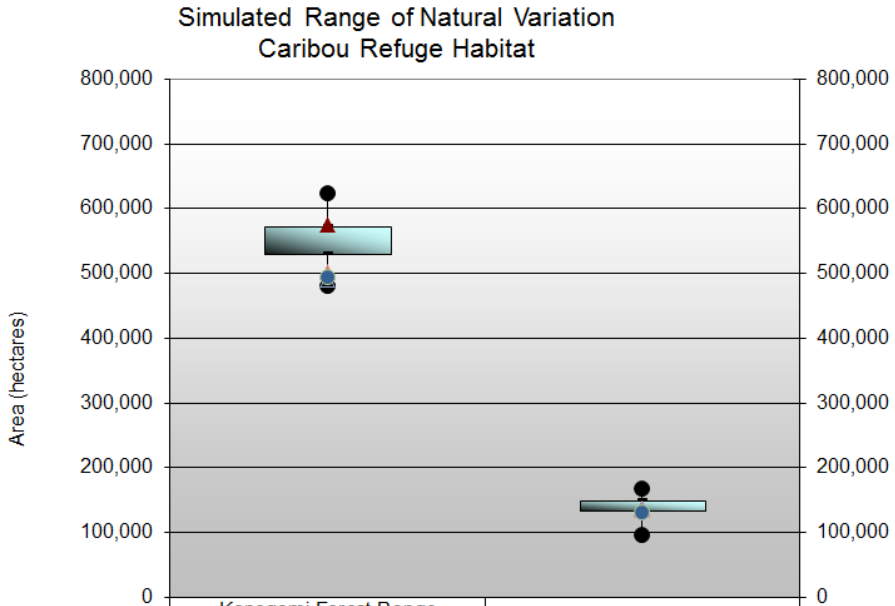


	Kenogami Forest Range 6	Big Pic Forest Range 6
Lower quartile	406,353	95,013
Lower Range	291,539	43,033
Median	455,539	117,198
Upper Range	617,624	160,764
Upper Quartile	503,423	130,951
2,011	411,983	86,369
2012	406,695	89,130
2013	432,183	87,100
2015	418,317	83,627

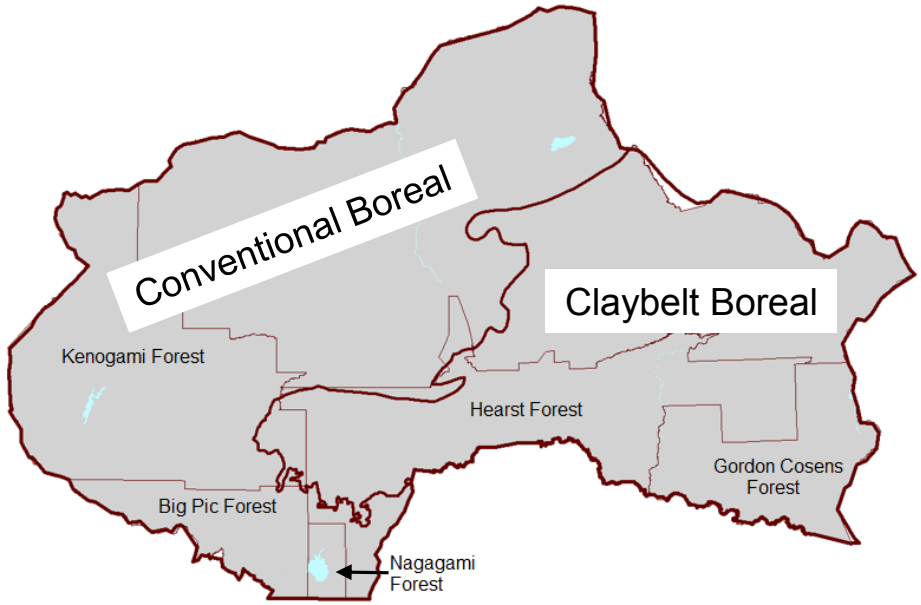


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2011 – 2015, West Refuge Habitat SRNV by FMU

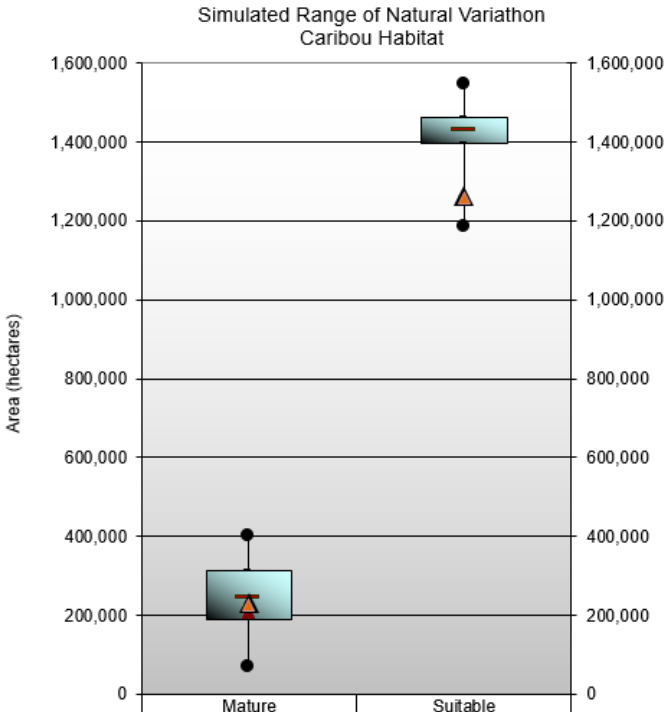


	Kenogami Forest Range 6	Big Pic Forest Range 6
– Lower quartile	530,267	133,657
● Lower Range	480,762	95,715
– Median	553,092	142,023
● Upper Range	623,763	168,231
– Upper Quartile	573,353	150,427
▲ 2011	576,276	137,185
▲ 2012	490,023	137,673
▲ 2013	502,354	134,443
● 2015	494,025	130,412

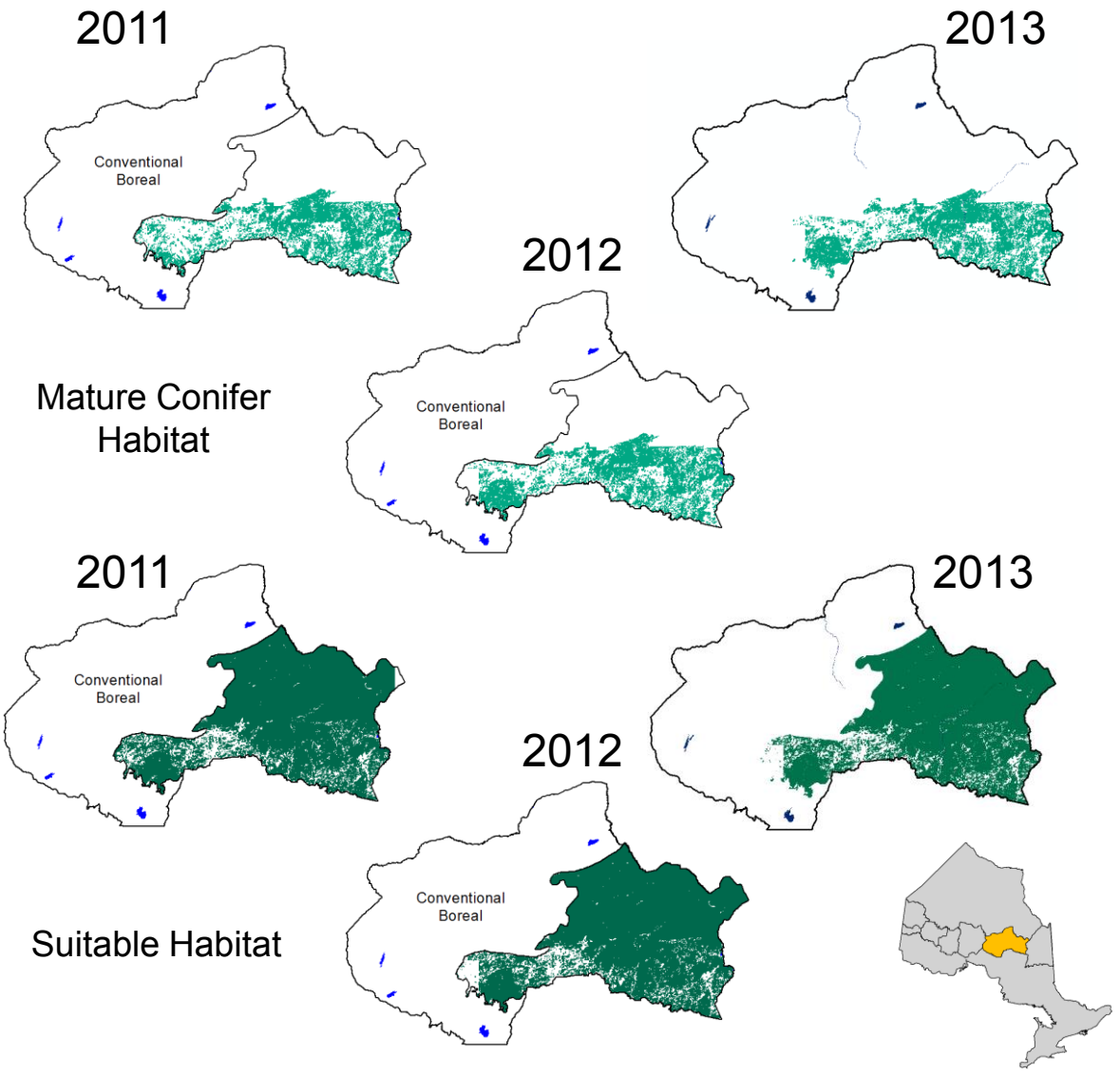


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2011 – 2017, East Habitat SRNV

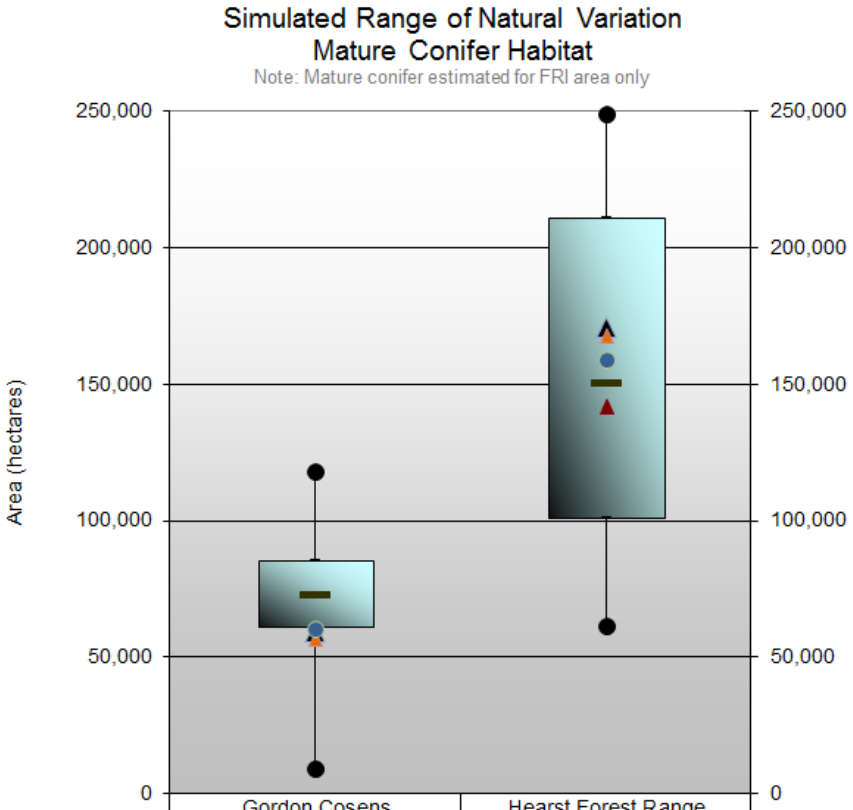


	Mature	Suitable
Lower Quartile	188,452	1,396,348
Lower Range	69,445	1,184,239
Median	244,392	1,428,217
Upper Range	400,590	1,548,325
Upper Quartile	312,168	1,463,792
2011	206,493	1,257,911
2012	230,763	1,263,101
2013	226511	1257424
2017	222647	1261289

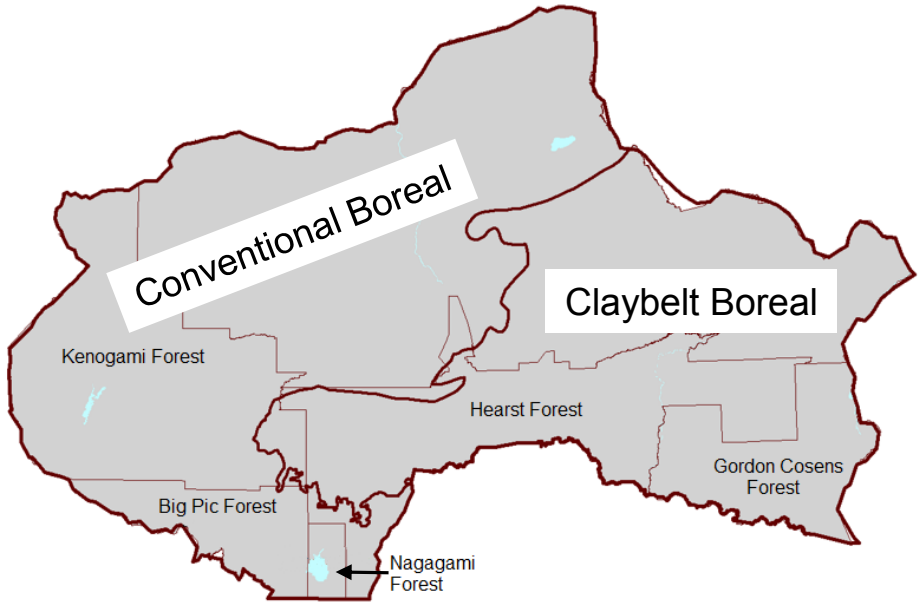


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2011 – 2015, East Mature Conifer Habitat SRNV by FMU

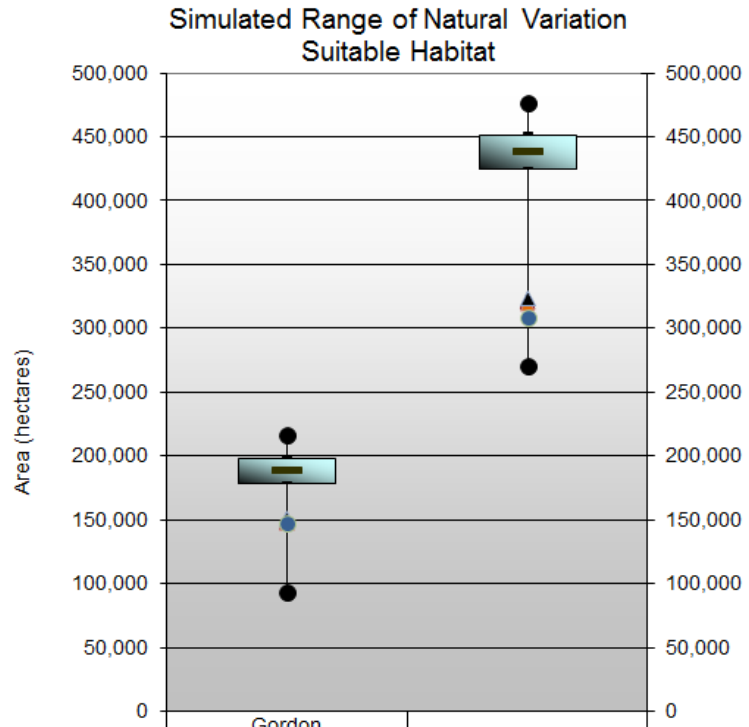


	Gordon Cosens Forest Range 6	Hearst Forest Range 6
– Lower quartile	61,114	101,089
● Lower Range	9,296	61,437
– Median	72,962	150,565
● Upper Range	118,343	248,982
– Upper Quartile	85,338	211,001
▲ 2011	59,523	142,085
▲ 2012	59,369	170,894
▲ 2013	56,857	167,823
● 2015	60,155	159,360

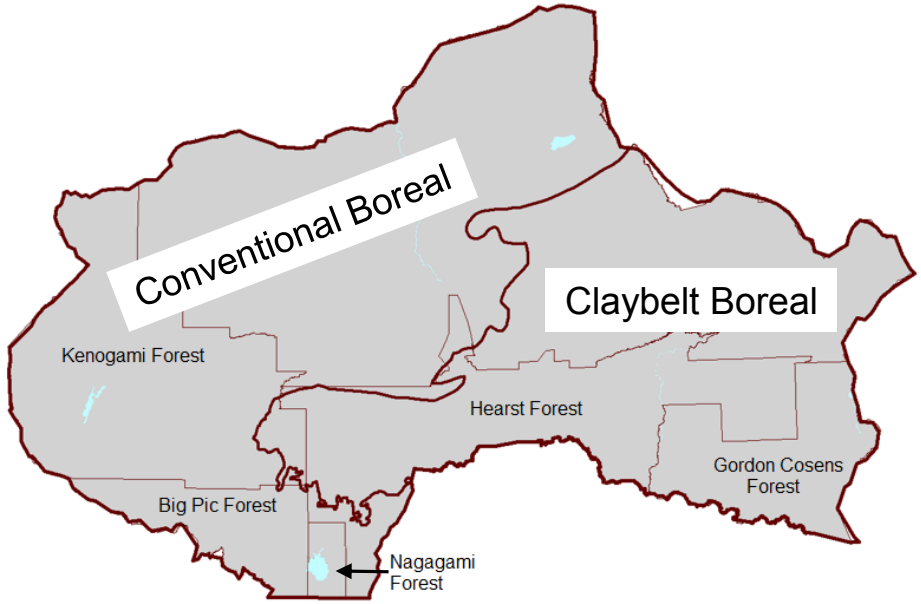


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 6: Pagwachuan 2011 – 2015, East Suitable Habitat SRNV by FMU

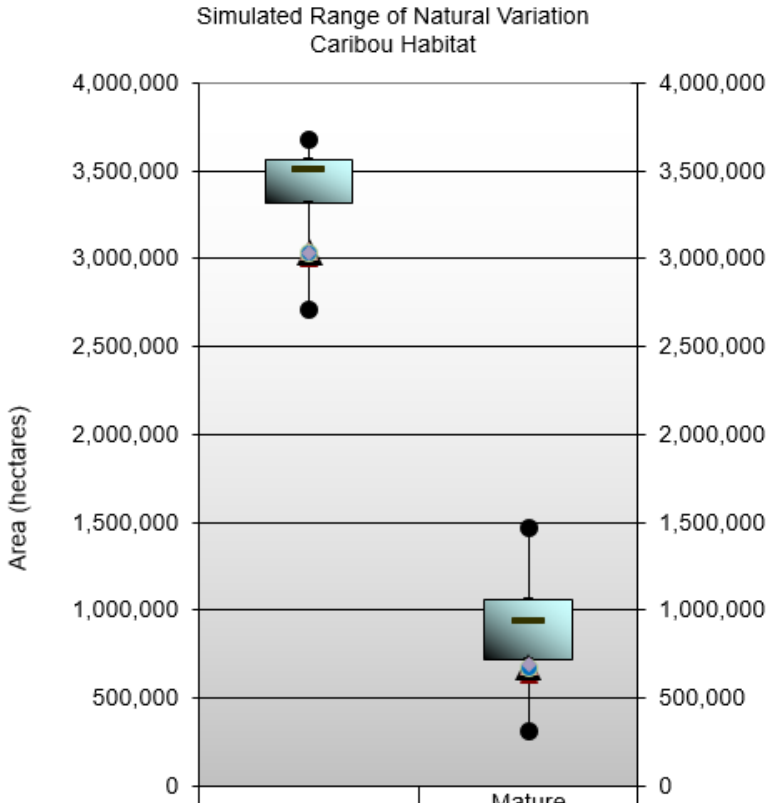


	Gordon Cosens Forest Range 6	Hearst Forest Range 6
Lower quartile	178,877	425,148
Lower Range	92,760	270,999
Median	188,942	438,201
Upper Range	216,890	476,757
Upper Quartile	199,078	452,128
2011	148,214	321,146
2012	151398	323,875
2013	147492	319,330
2015	147,015	309,041



Statistics are approximate and may contain estimates from forest management planning annual work schedules.

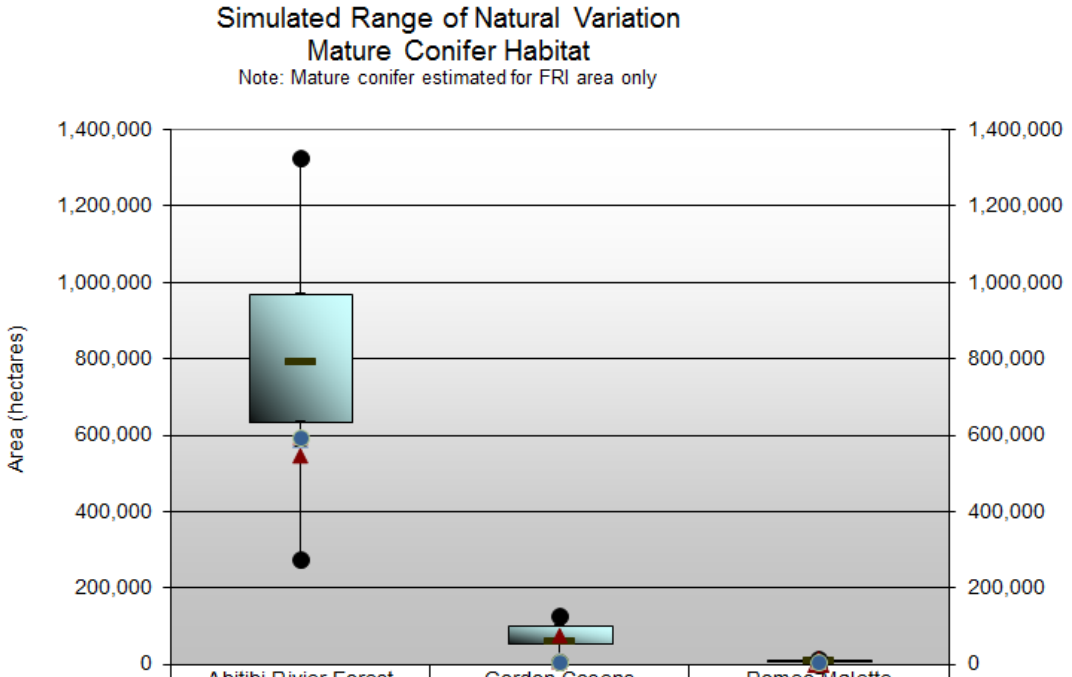
Range 7: Kesagami 2011 – 2017, Habitat SRNV



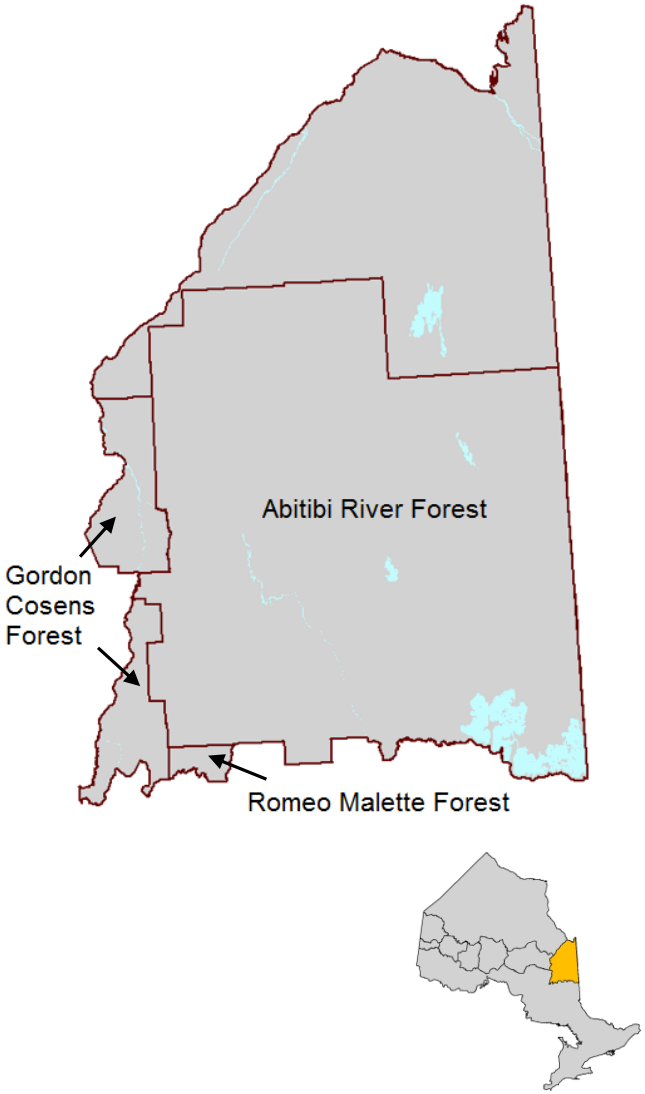
	Suitable	Mature Conifer
Lower Quartile	3315440	716,486
Lower Range	2708865	311,973
Median	3508552	934,988
Upper Range	3676586	1,468,893
Upper Quartile	3562103	1,060,994
2011	3,002,818	629,615
2012	3,032,301	675,536
2013	3,037,757	680,320
2015	3035834	670336
2017	3034466	691,670

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

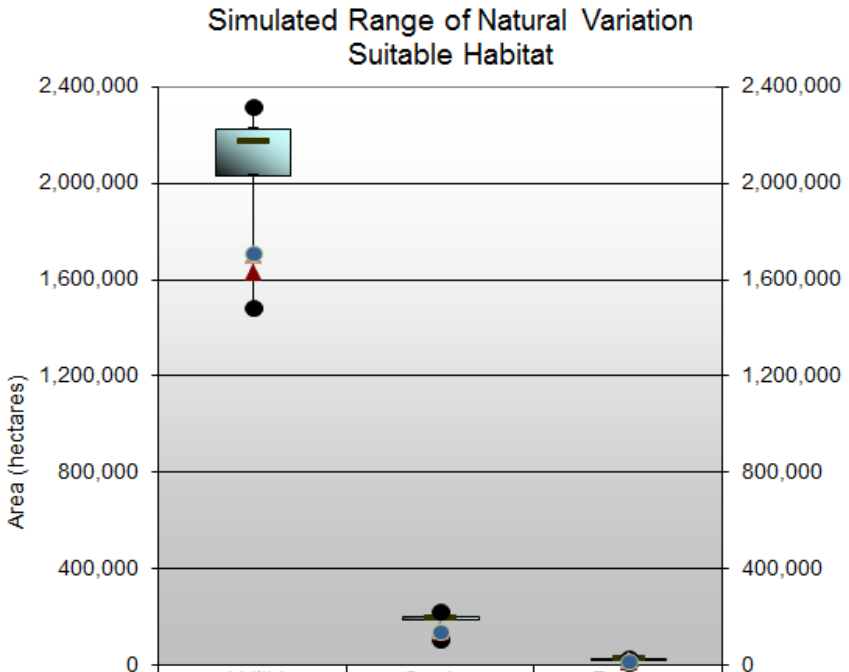
Range 7: Kesagami 2011 – 2015, Mature Conifer Habitat SRNV by FMU



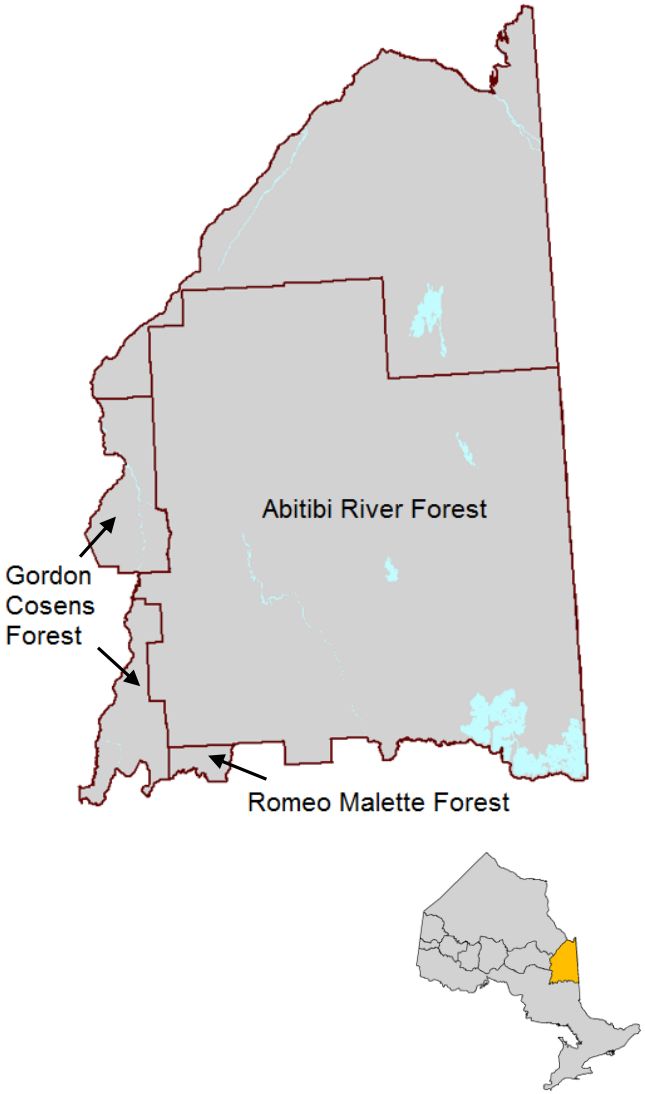
	Abitibi Rivier Forest Range 7	Gordon Cosens Forest Range 7	Romeo Malette Forest Range 7
– Lower quartile	633,990	54,210	8,472
● Lower Range	274,626	4,740	7
– Median	794,475	61,092	10,577
● Upper Range	1,325,693	128,121	12,996
– Upper Quartile	969,717	99,612	11,795
▲ 2011	546,161	74,980	6,358
▲ 2012	586,227	8,233	6,892
▲ 2013	593,112	7,921	6,340
● 2015	593,771	6,929	5,977



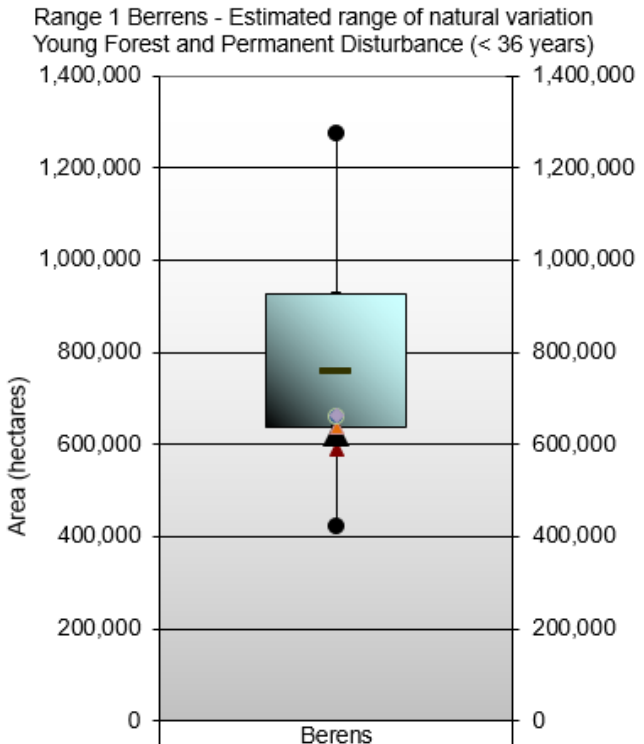
Range 7: Kesagami 2011 – 2015, Suitable Habitat SRNV by FMU



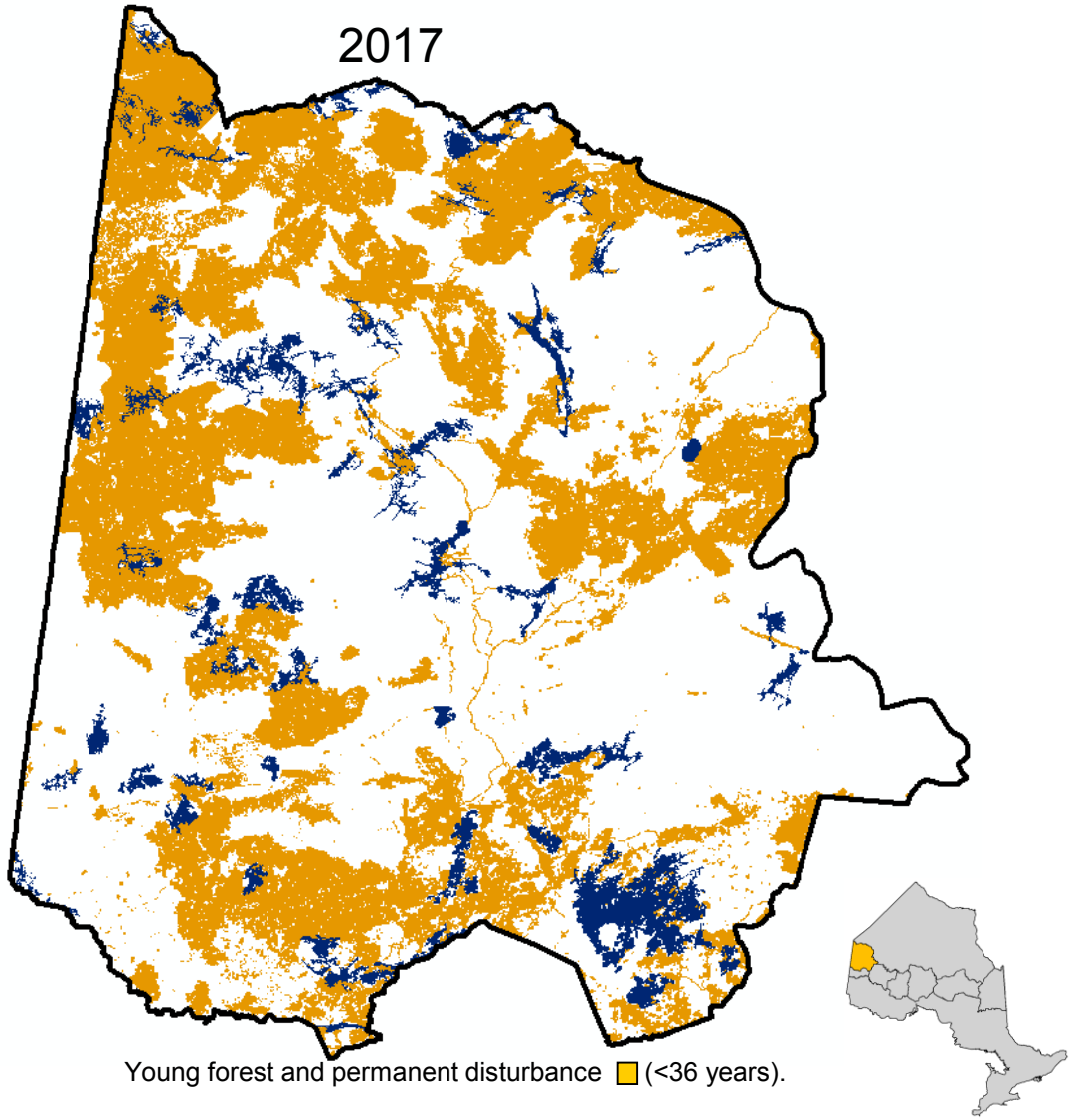
	Abitibi Rivier Forest Range 7	Gordon Cosens Forest Range 7	Romeo Malette Forest Range 7
Lower quartile	2,026,982	185,062	23,904
Lower Range	1,477,515	104,949	4,965
Median	2,174,171	196,124	24,891
Upper Range	2,314,381	221,090	27,155
Upper Quartile	2,221,813	201,501	25,430
2011	1,629,872	137,147	16,808
2012	1,697,235	146,466	17,842
2013	1,701,499	142,223	16,869
2015	1,707,704	139,335	15,746



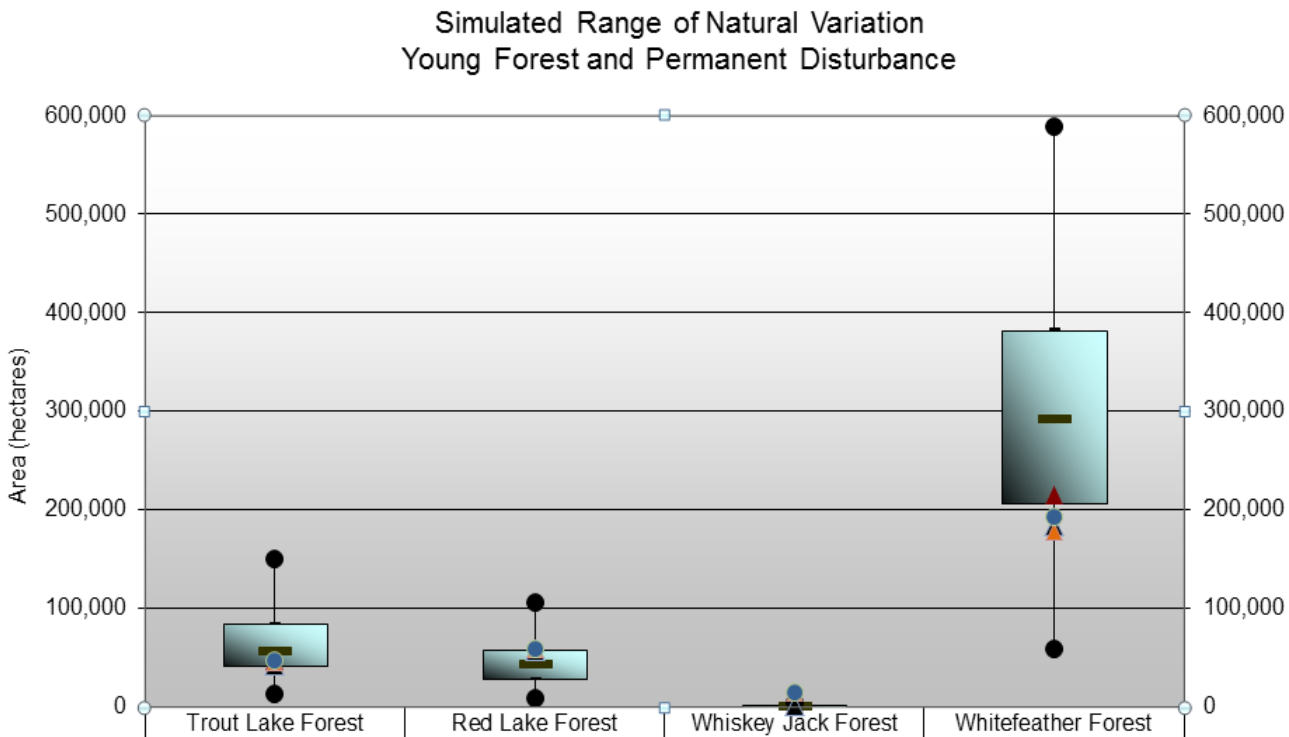
Range 1: Berens 2011 – 2017, Young Forest and Permanent Disturbance SRNV



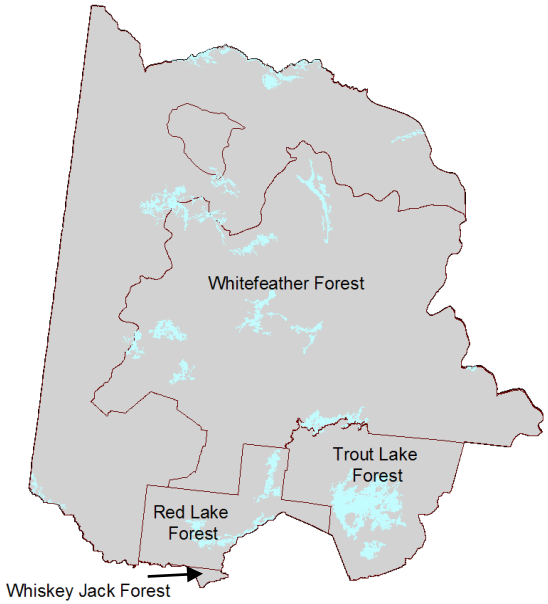
	Berens
– Lower Quartile	636,251
● Lower Range	420,924
– Median	757,122
● Upper Range	1,274,095
– Upper Quartile	927,139
▲ 2011	591,754
▲ 2012	625,253
▲ 2013	635,899
● 2015	660,282
◆ 2017	663,449



Range 1: Berens 2011 - 2015, Young Forest and Permanent Disturbance SRNV by FMU

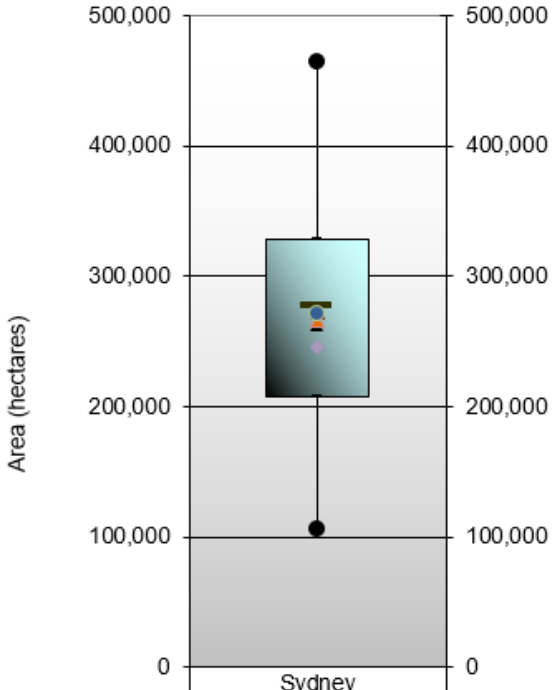


	Trout Lake Forest Caribou Range 1	Red Lake Forest Caribou Range 1	Whiskey Jack Forest Caribou Range 1	Whitefeather Forest Caribou Range 1
– Lower quartile	41,913	28,749	184	207,613
● Lower Range	13,393	9,164	4	58,989
– Median	57,442	44,463	1,275	292,398
● Upper Range	149,771	106,585	3,974	589,167
– Upper Quartile	84,779	57,988	2,030	382,888
▲ 2011	46947	56355	1491	215841
▲ 2012	43,139	58,276	1,598	184,148
▲ 2013	46,439	58,507	14,966	177,705
● 2015	46,929	59,322	15,232	192,762

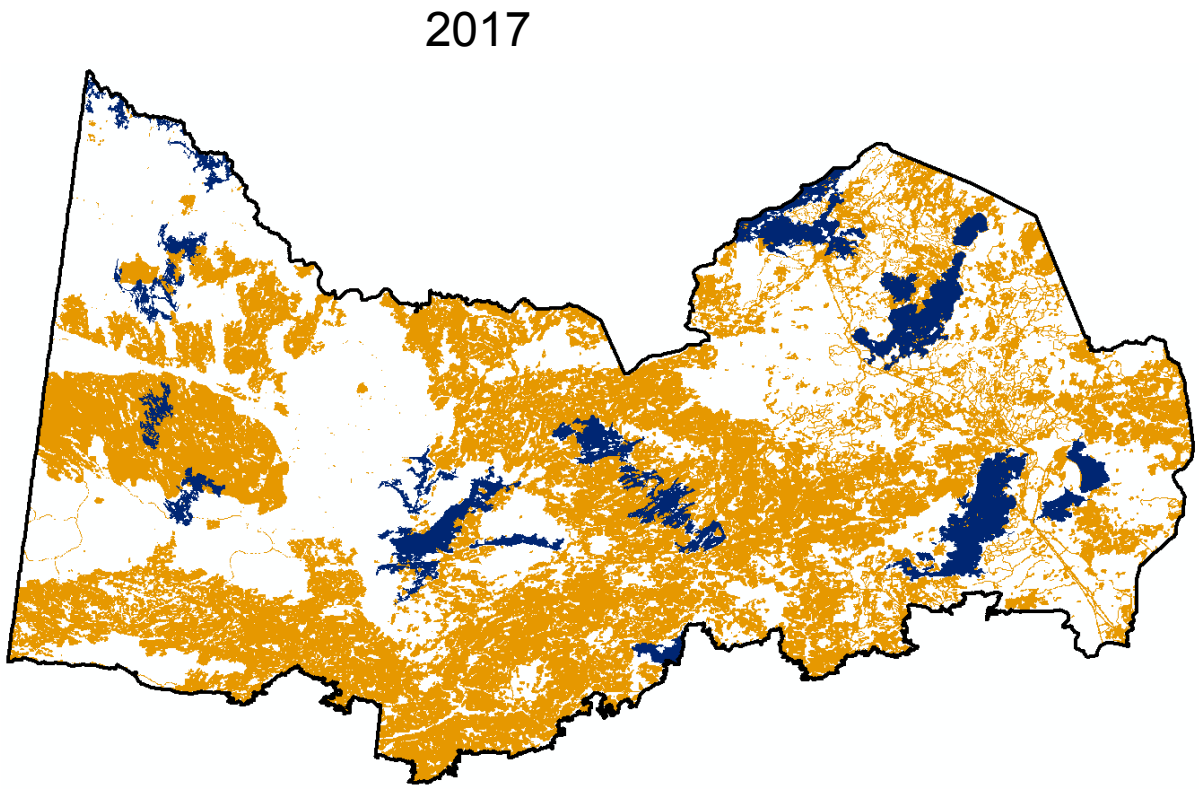


Range 2: Sydney 2011 – 2017, Young Forest and Permanent Disturbance SRNV

Range 2 Sydney - Estimated range of natural variation
Young Forest and Permanent Disturbance (< 36 years)



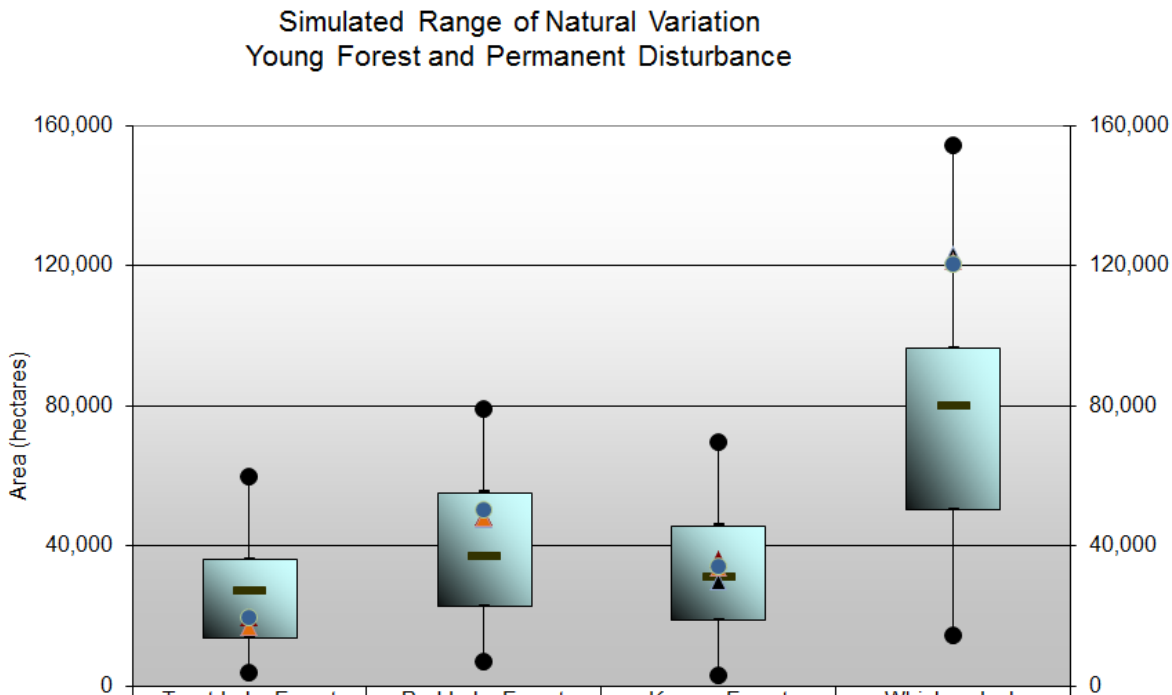
	Sydney
Lower Quartile	207,342
Lower Range	105,552
Median	278,258
Upper Range	464,150
Upper Quartile	329,061
2011	272,764
2012	262468
2013	266,012
2015	271,227
2017	245,853



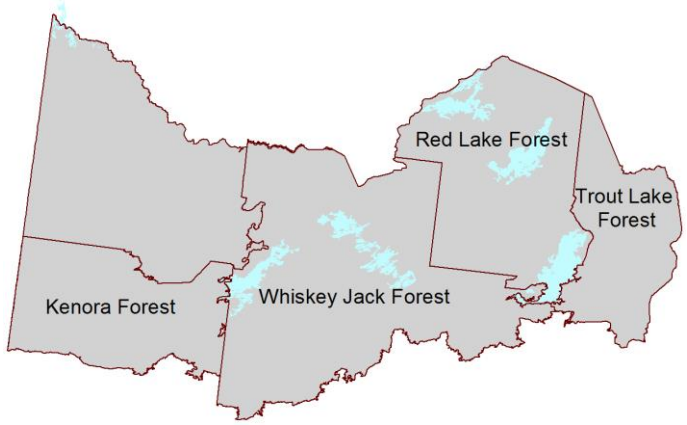
Young forest and permanent disturbance (<36 years).

Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 2: Sydney 2011 – 2015, Young Forest and Permanent Disturbance SRNV by FMU

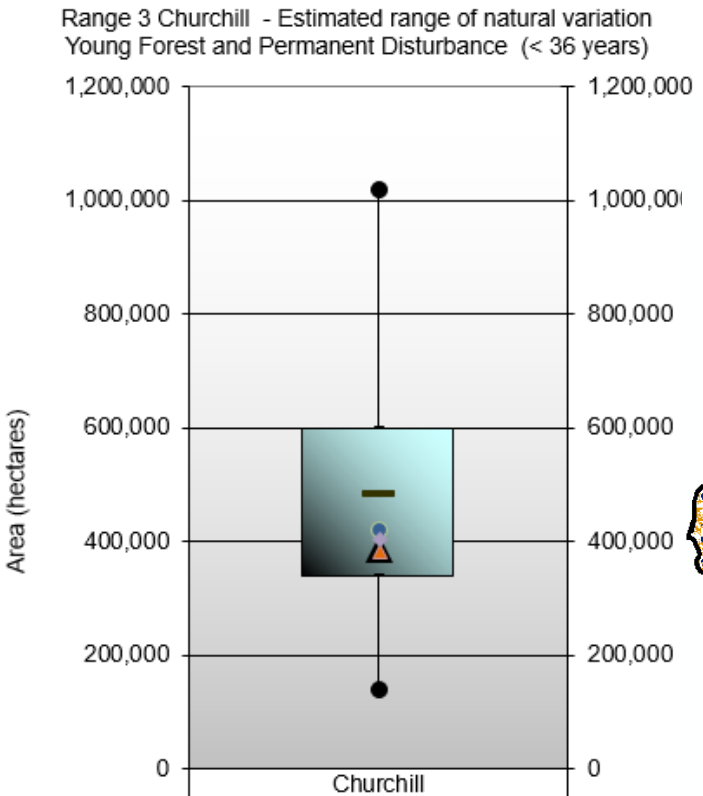


	Trout Lake Forest Caribou Range 2	Red Lake Forest Caribou Range 2	Kenora Forest Range 2	Whiskey Jack Forest Range 2
– Lower quartile	14,066	22,799	18,887	50,388
● Lower Range	3,708	6,843	3,104	14,700
– Median	27,422	37,163	31,536	80,304
● Upper Range	59,939	79,127	69,575	154,470
– Upper Quartile	36,271	55,359	46,000	96,503
▲ 2011	19,707	48,507	36,038	122,464
▲ 2012	16,876	47,675	29,880	123,179
▲ 2013	16,827	48,100	33,787	121,103
● 2015	19,639	50,385	34,320	120,451

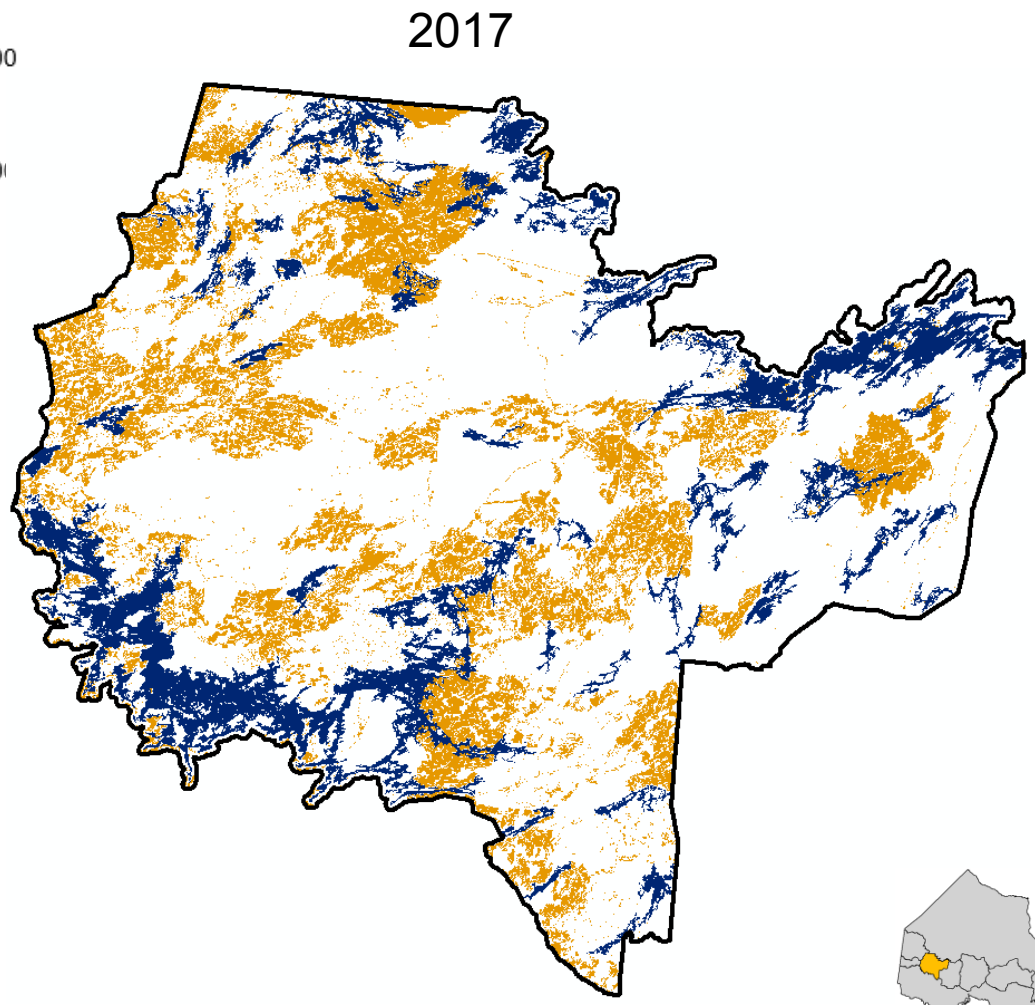


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 3: Churchill 2011 – 2017, Young Forest and Permanent Disturbance SRNV



	Churchill
– Lower Quartile	340,902
● Lower Range	139,244
– Median	484,095
● Upper Range	1,019,066
– Upper Quartile	600,717
▲ 2011	376,927
▲ 2012	388,046
▲ 2013	382,419
● 2015	417,968
◆ 2017	402,874



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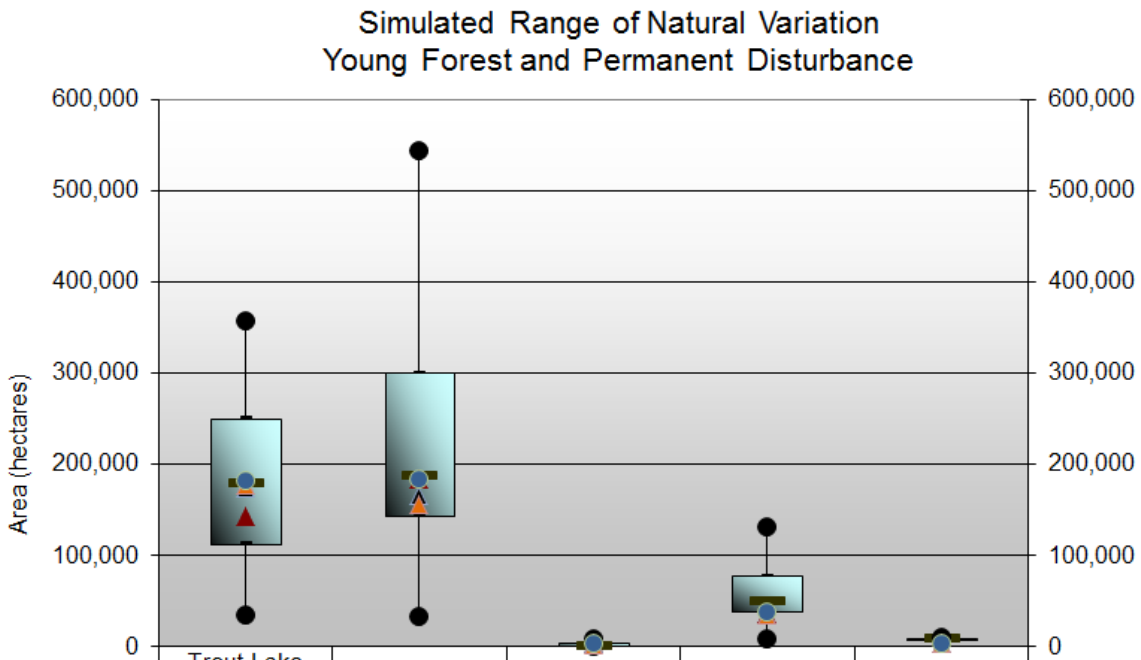
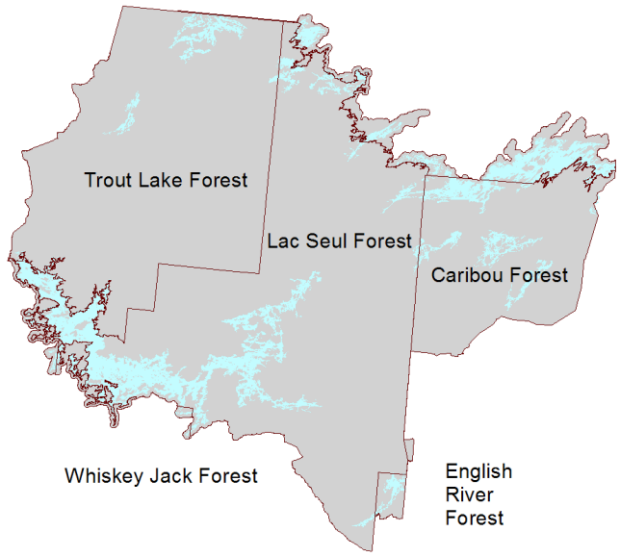
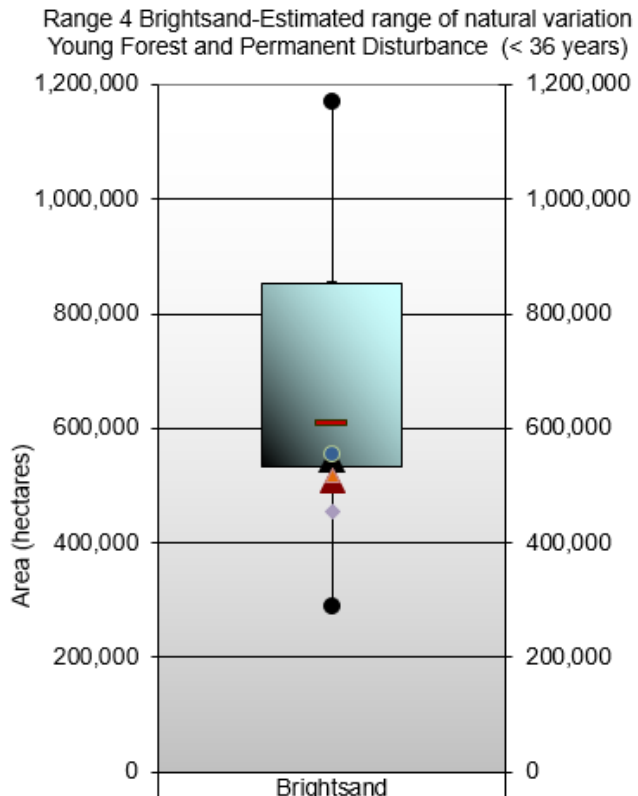
Range 3: Churchill 2011 – 2015, Young Forest and Permanent Disturbance SRNV by FMU



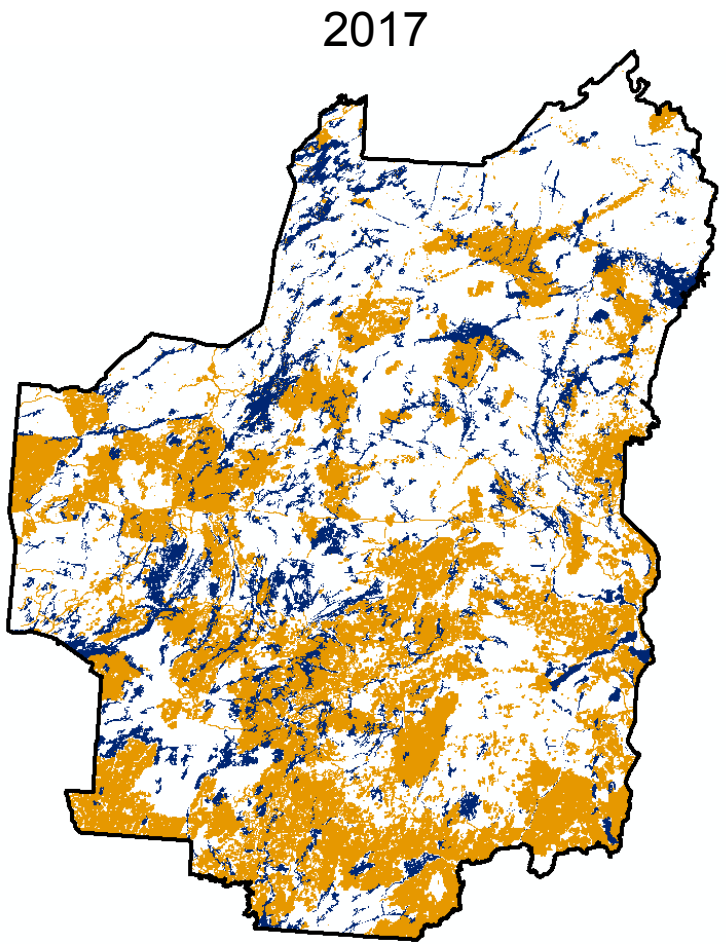
	Trout Lake Forest Caribou Range 3	Lac Seul Forest Range 3	Whiskey Jack Forest Range 3	Caribou Forest Range 3	English River Forest Range 3
– Lower quartile	113,034	143,436	1,447	39,780	10,070
● Lower Range	35,647	33,977	37	9,395	5,006
– Median	181,703	188,831	2,581	52,122	10,145
● Upper Range	357,216	544,432	8,501	131,967	10,232
– Upper Quartile	251,174	300,948	4,789	78,137	10,229
▲ 2011	142,656	184,852	3,279	36,814	3,744
▲ 2012	173,903	166,005	3,426	34,928	3,715
▲ 2013	177,931	155,886	3,205	35,232	3,712
● 2015	182,314	183,724	3,489	38,539	3,711



Range 4: Brightsand 2011 - 2017, Young Forest and Permanent Disturbance SRNV

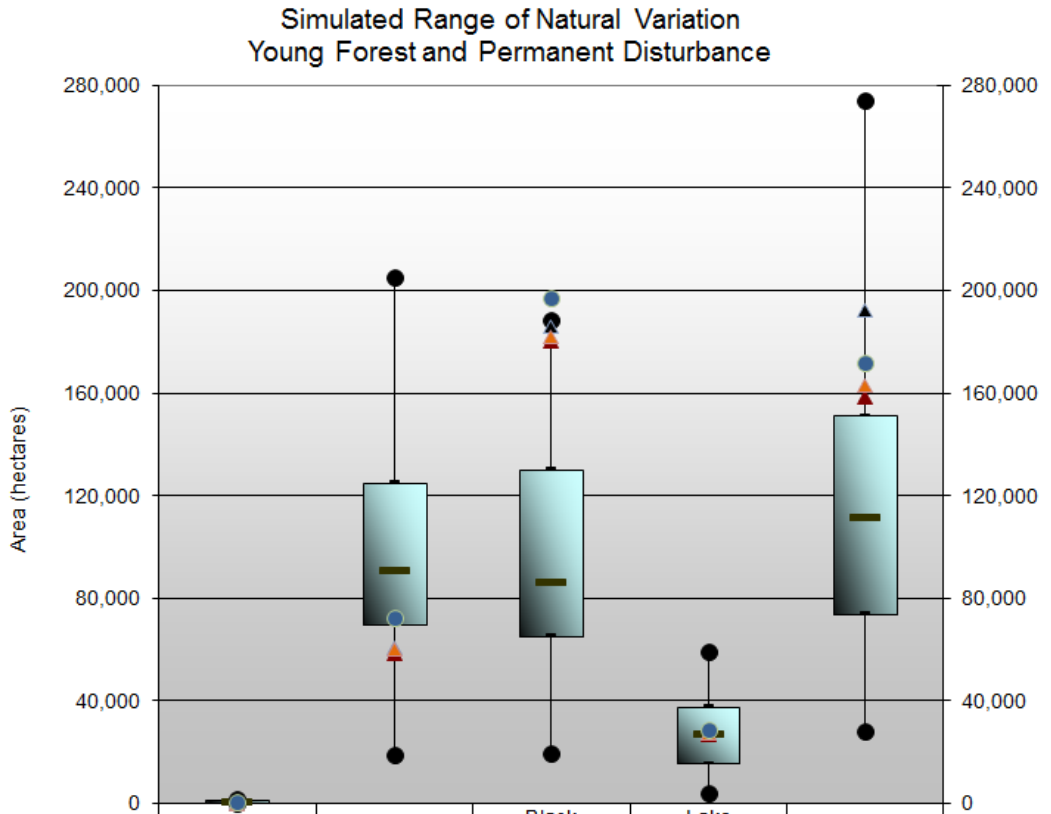


	Brightsand
Lower Quartile	534,081
Lower Range	287,643
Median	608,181
Upper Range	1,170,558
Upper Quartile	852,045
2011	507,628
2012	546,063
2013	516,965
2015	553,675
2017	454,829

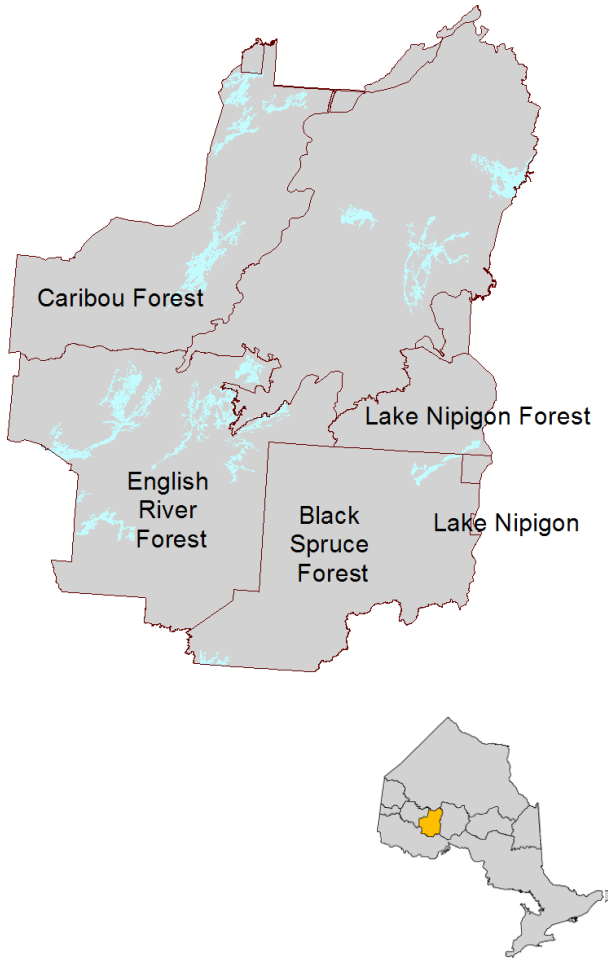


Young forest and permanent disturbance (<36 years).

Range 4: Brightsand 2011 - 2015, Young Forest and Permanent Disturbance SRNV by FMU

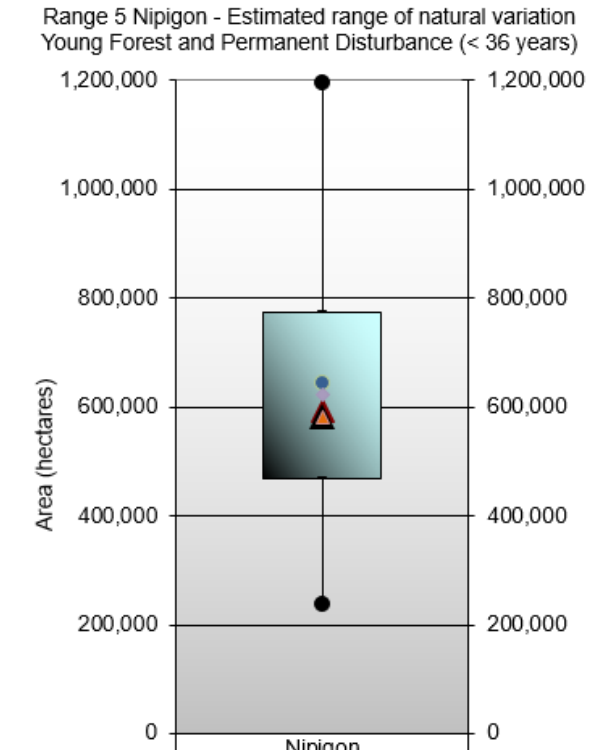


	Lac Seul Forest Range 4	Caribou Forest Range 4	Black Spruce Forest Range 4	Lake Nipigon Forest Range 4	English River Forest Range 4
Lower quartile	118	69,844	65,414	15,735	74,109
Lower Range	3	18,721	19,667	3,941	28,053
Median	296	90,942	86,046	26,715	111,264
Upper Range	1,500	205,002	188,423	59,093	274,157
Upper Quartile	1,350	125,027	130,184	37,942	151,326
2011	228	58,489	180,413	26,795	158,390
2012	147	61,004	186,485	27,591	192,383
2013	178	60,248	182,198	27,424	163,436
2015	248	72,339	197,071	28,791	171,944

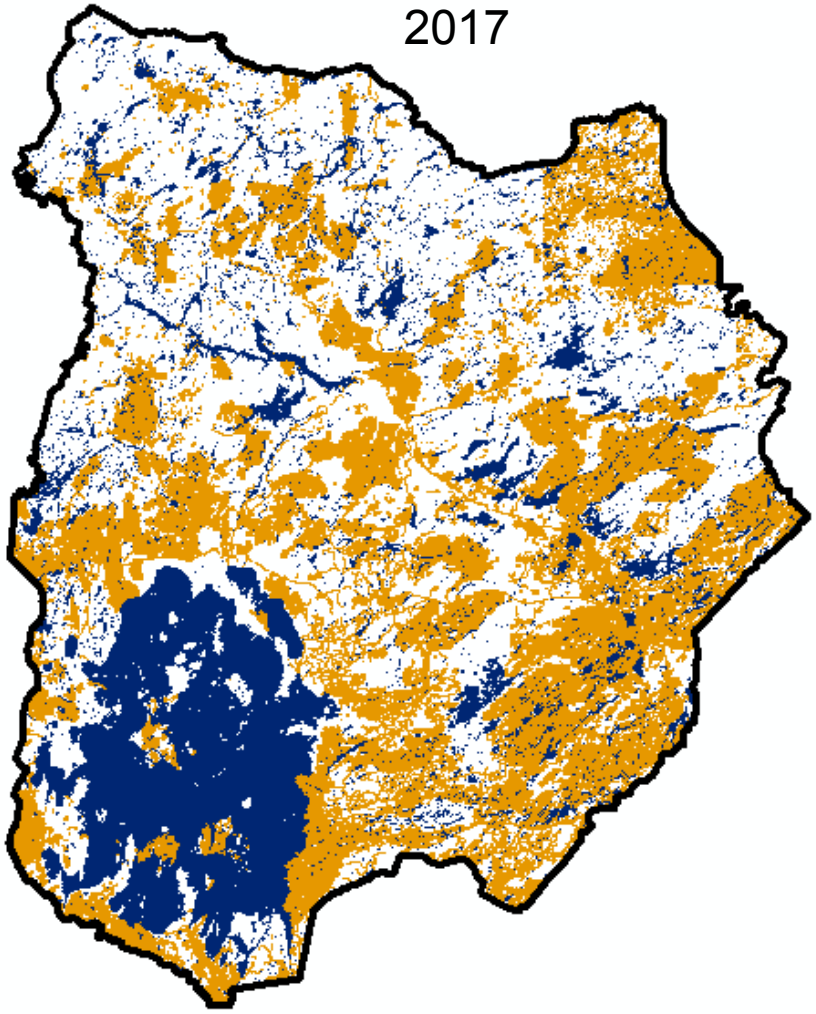


Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 5: Nipigon 2011 - 2017, Young Forest and Permanent Disturbance SRNV

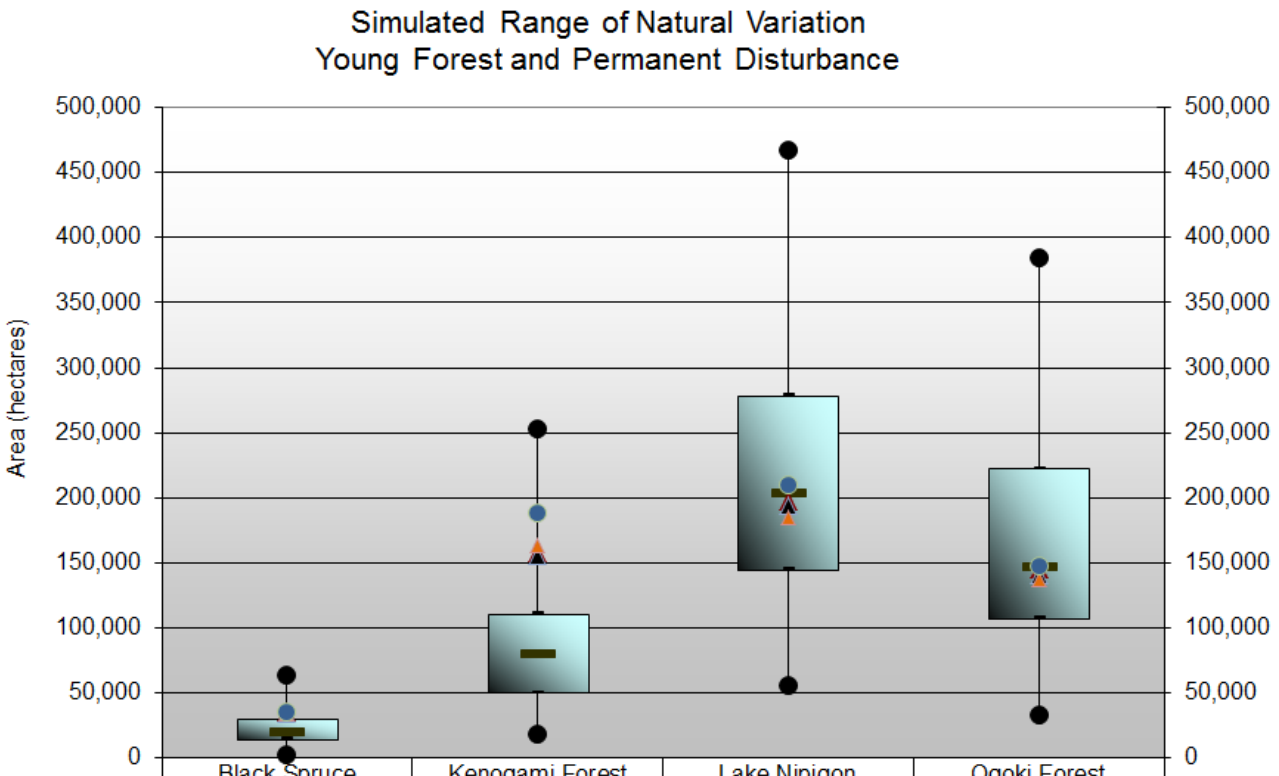


	Nipigon
– Lower Quartile	469,340
● Lower Range	238,666
– Median	570,199
● Upper Range	1,196,193
– Upper Quartile	774,663
▲ 2011	594,646
▲ 2012	583,774
▲ 2013	580,215
● 2015	642,669
◆ 2017	624,374



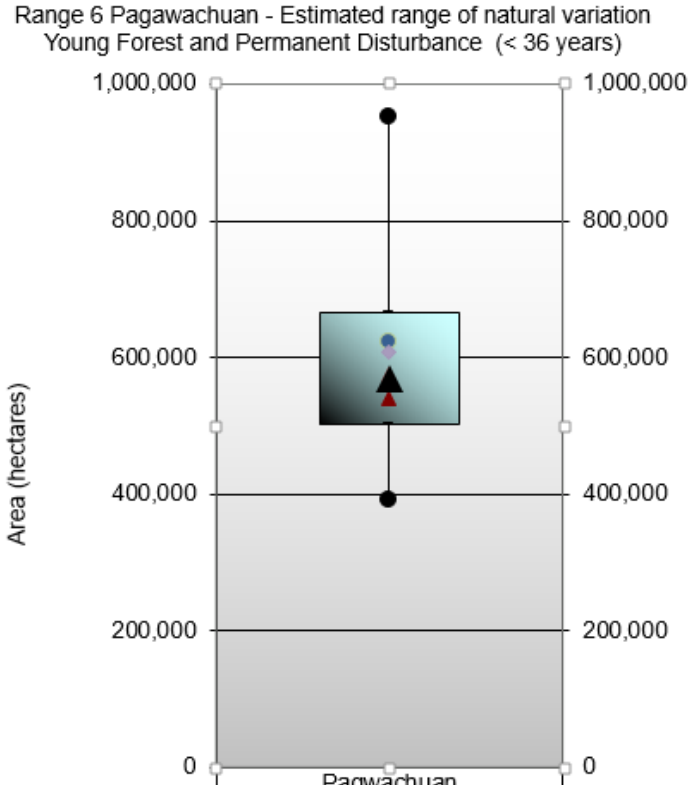
Young forest and permanent disturbance ■ (<36 years).

Range 5: Nipigon 2011 - 2015, Young Forest and Permanent Disturbance SRNV by FMU

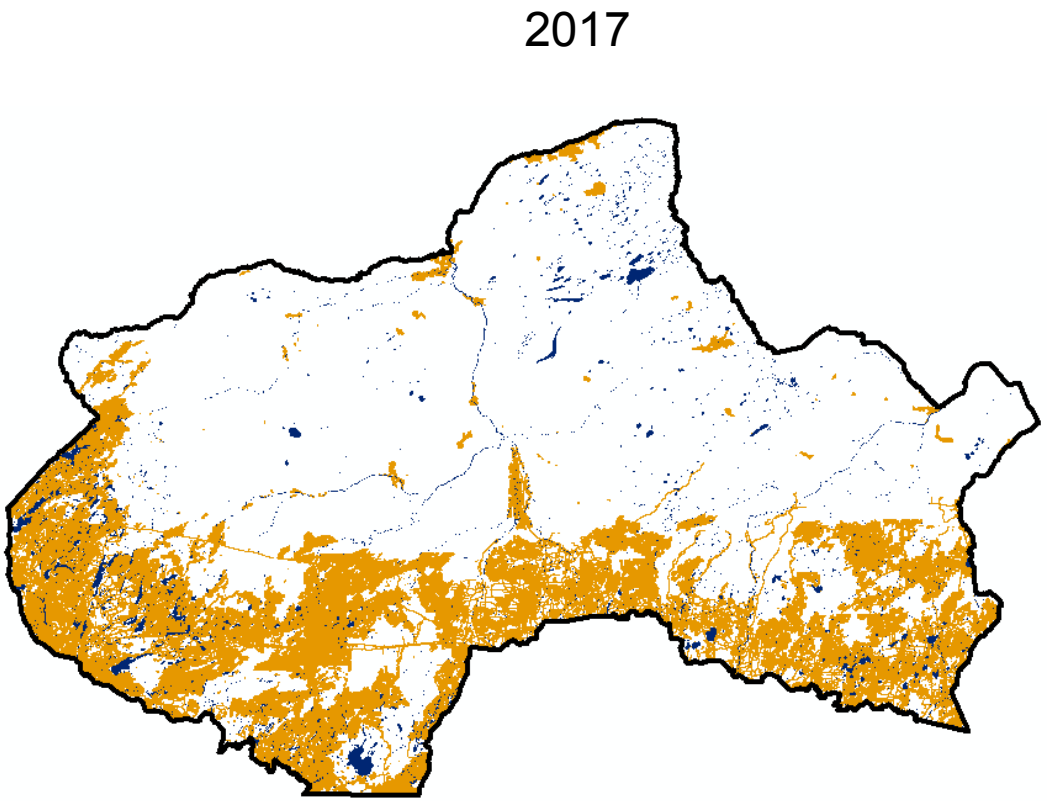


	Black Spruce Forest Range 5	Kenogami Forest Range 5	Lake Nipigon Forest Range 5	Ogoki Forest Range 5
– Lower quartile	14,909	50,224	144,767	107,670
● Lower Range	2,987	18,757	55,448	32,743
– Median	20,156	80,988	204,296	147,611
● Upper Range	63,765	253,273	467,470	385,011
– Upper Quartile	29,746	111,013	279,020	222,837
▲ 2011	35,634	157,221	197,257	145,027
▲ 2011	34,218	155,555	193,907	140,829
▲ 2013	33,944	162,942	184,765	137,075
● 2015	35,498	188,286	209,737	147,615

Range 6: Pagwachuan 2011 - 2017, Young Forest and Permanent Disturbance SRNV

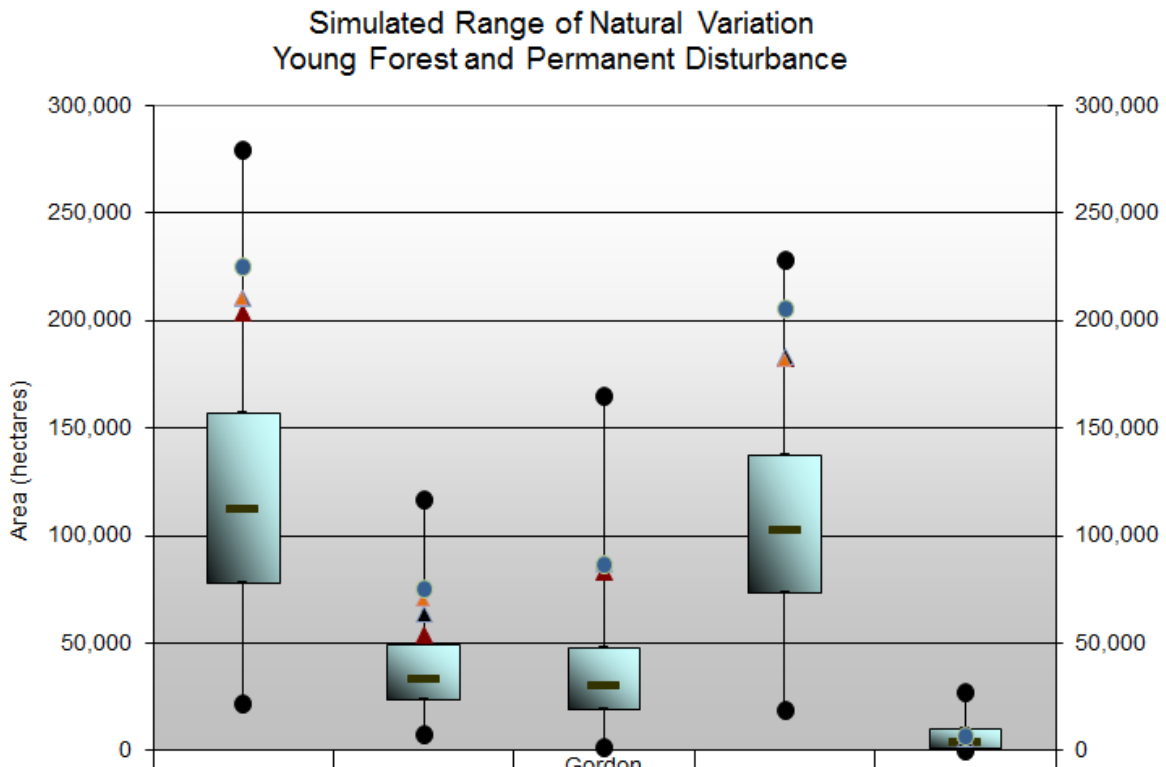


	Pagwachuan
Lower Quartile	502,833
Lower Range	390,548
Median	587,995
Upper Range	951,508
Upper Quartile	664,349
2011	539,727
2012	567,813
2013	575,067
2015	623,222
2017	607,933

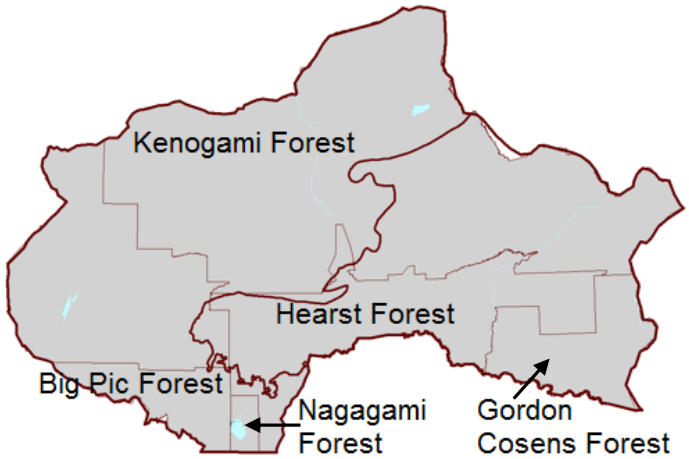


Young forest and permanent disturbance (<36 years).

Range 6: Pagwachuan 2011 - 2015, Young Forest and Permanent Disturbance SRNV by FMU



	Kenogami Forest Range 6	Big Pic Forest Range 6	Gordon Cosens Forest Range 6	Hearst Forest Range 6	Nagagami Forest Range 6
– Lower quartile	77,590	23,821	19,125	73,067	1,136
● Lower Range	22,107	7,459	1,756	19,417	33
– Median	112,126	33,358	30,358	102,675	4,232
● Upper Range	279,240	116,671	165,268	228,350	27,728
– Upper Quartile	156,929	49,520	47,514	137,284	10,251
▲ 2011	203,781	53,546	83392	182,335	5,780
▲ 2012	210,691	63,432	86,849	182,864	5,235
▲ 2013	209,941	69,806	87,220	180,645	6,735
● 2015	225,321	75,311	87,149	206,105	6,916



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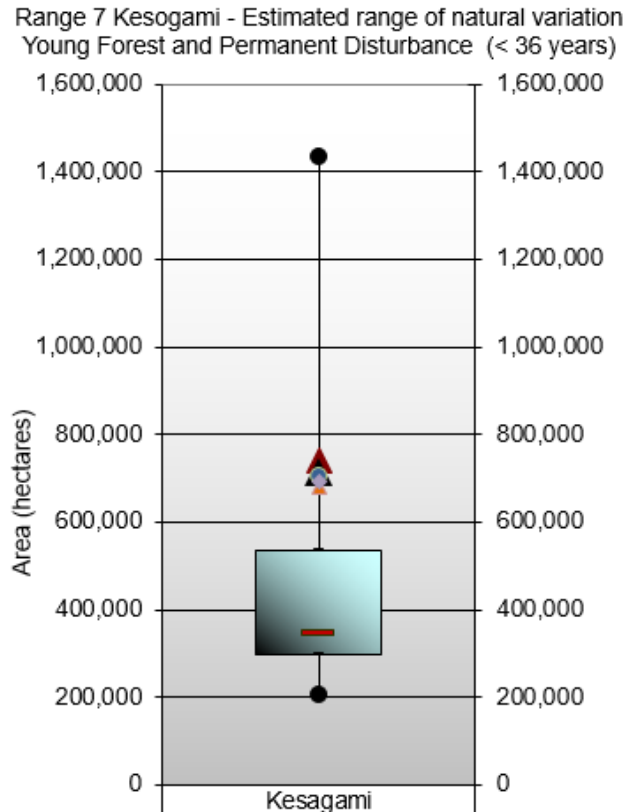
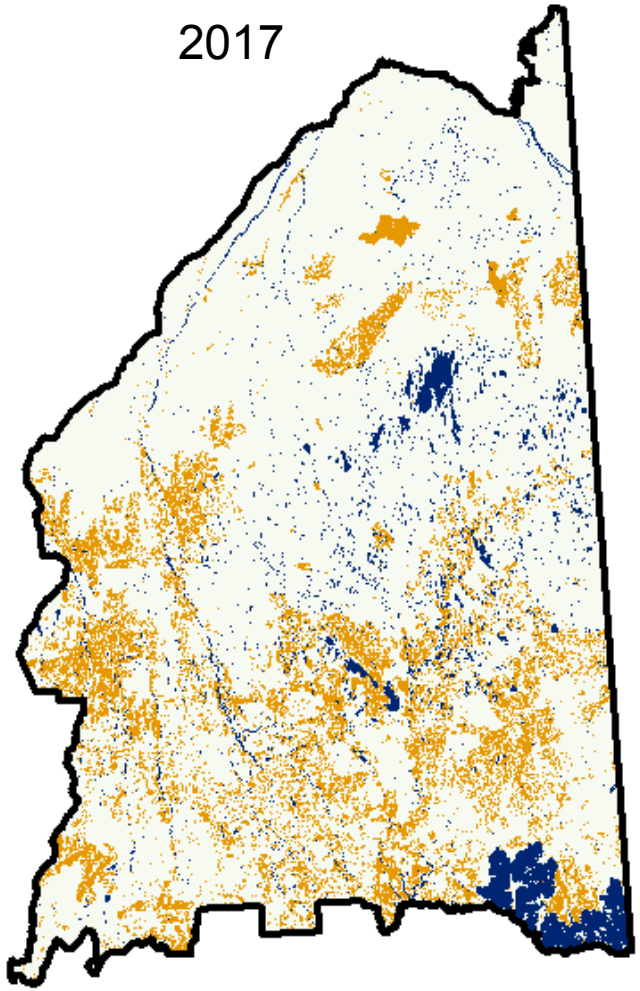
Range 7: Kesagami 2011 – 2017, Young Forest and Permanent Disturbance SRNV

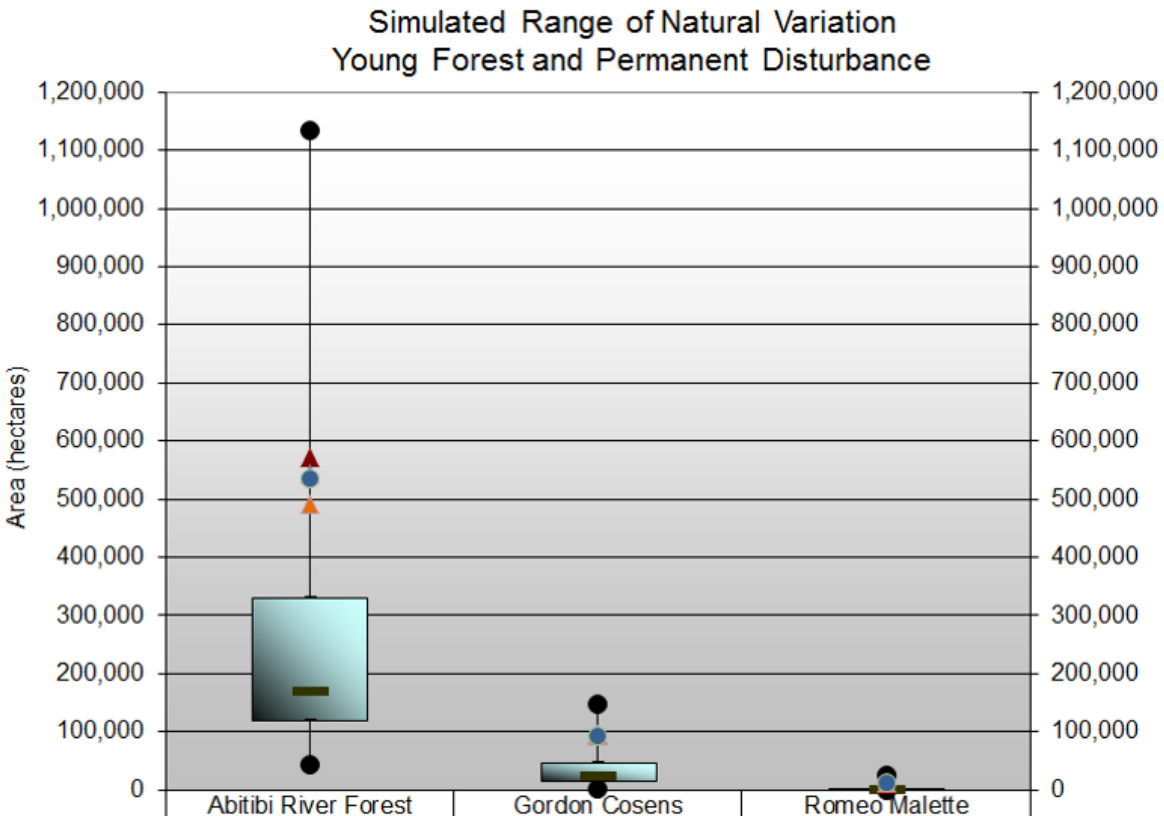


	Kesagami
Lower Quartile	296,059
Lower Range	205,284
Median	347,027
Upper Range	1,433,957
Upper Quartile	536,173
2011	742,336
2012	714,813
2013	679,760
2015	704,116
2017	691,965

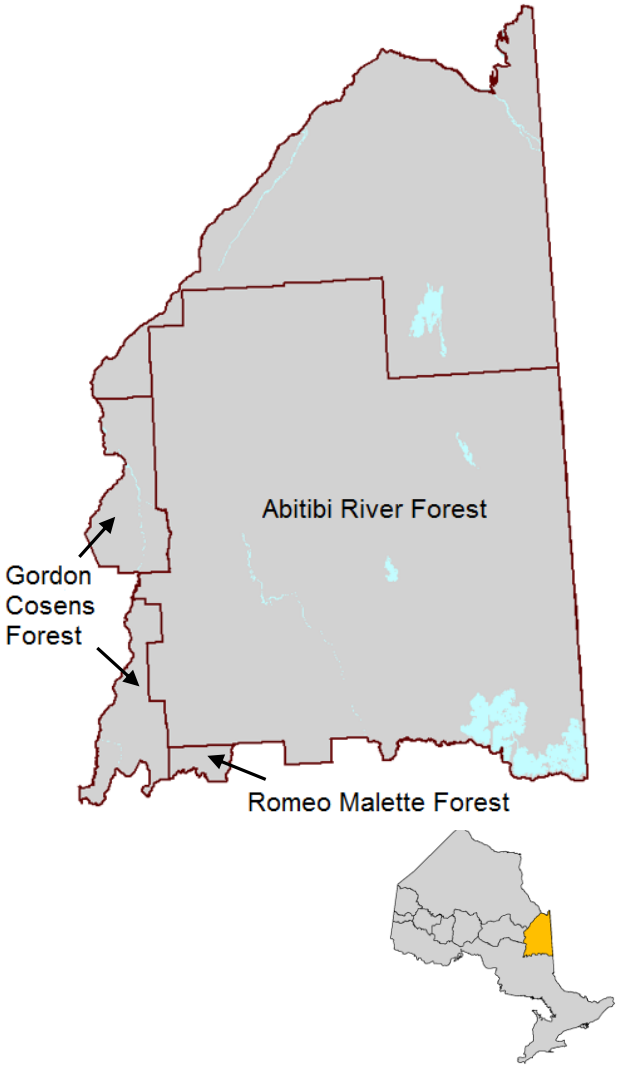


Young forest and permanent disturbance (<36 years).

Range 7: Kesagami 2011 – 2015, Young Forest and Permanent Disturbance SRNV by FMU

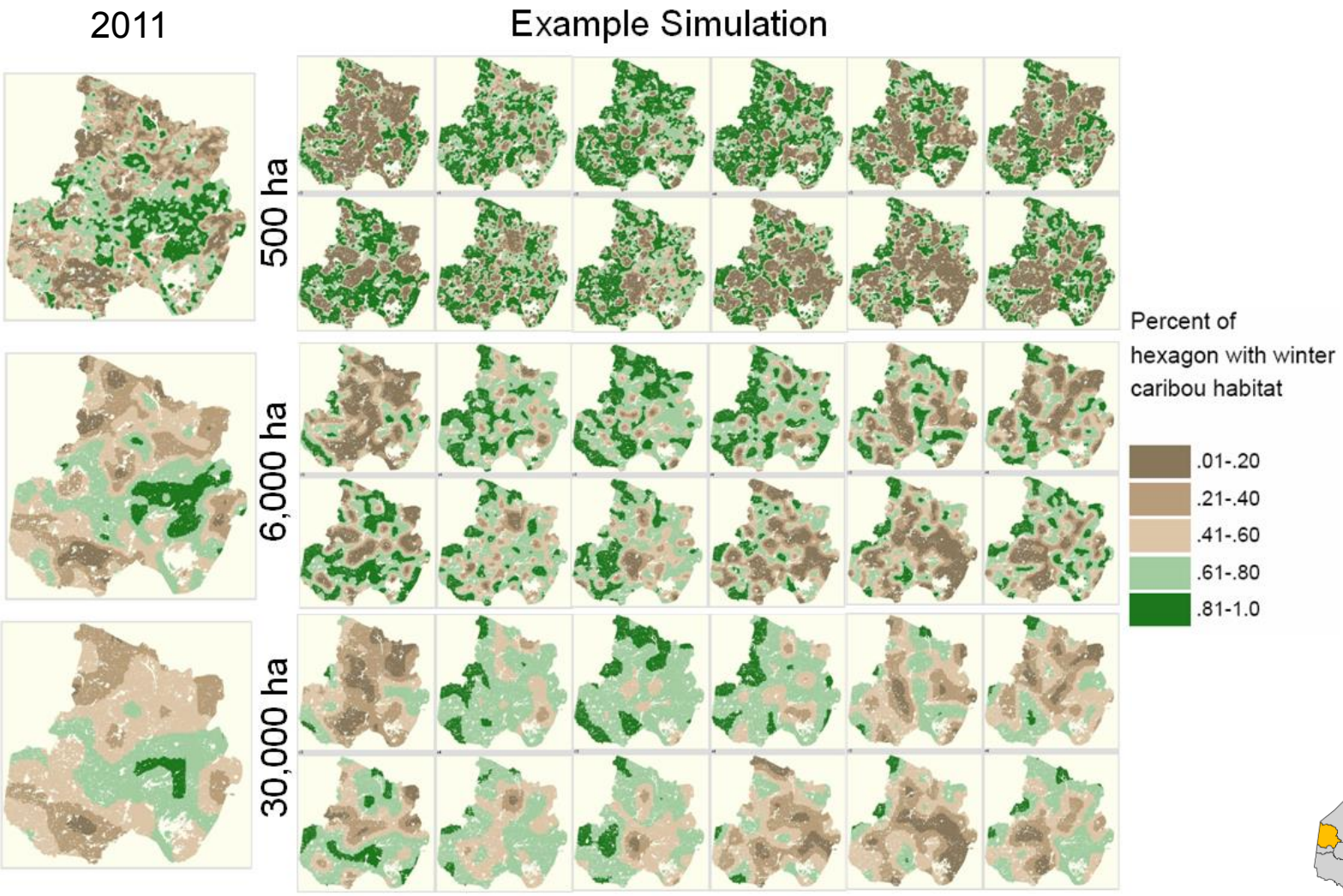


	Abitibi River Forest Range 7	Gordon Cosens Forest Range 7	Romeo Malette Forest Range 7
– Lower quartile	119,212	16,446	339
● Lower Range	42,876	1,489	4
– Median	172,124	25,149	1,263
● Upper Range	1,134,721	147,480	25,472
– Upper Quartile	330,775	46,732	3,772
▲ 2011	571,642	94,419	9428
▲ 2012	542,729	94,741	11,704
▲ 2013	489,861	93,136	11,516
● 2015	536,607	93,191	12,660



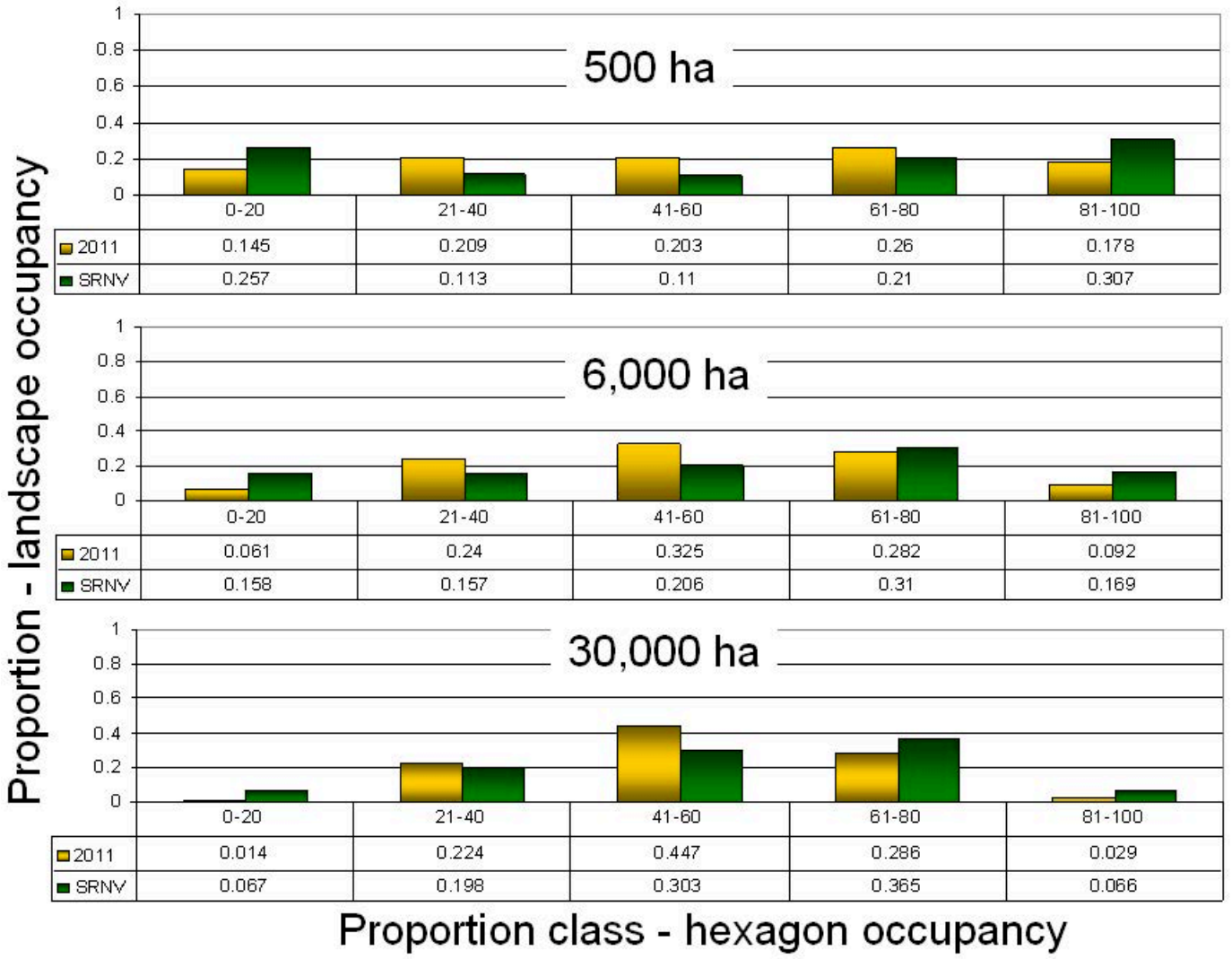
Statistics are approximate and may contain estimates from forest management planning annual work schedules.

Range 1: Berens 2011 Simulation Pattern Results Winter Habitat – Landscape Diagrams



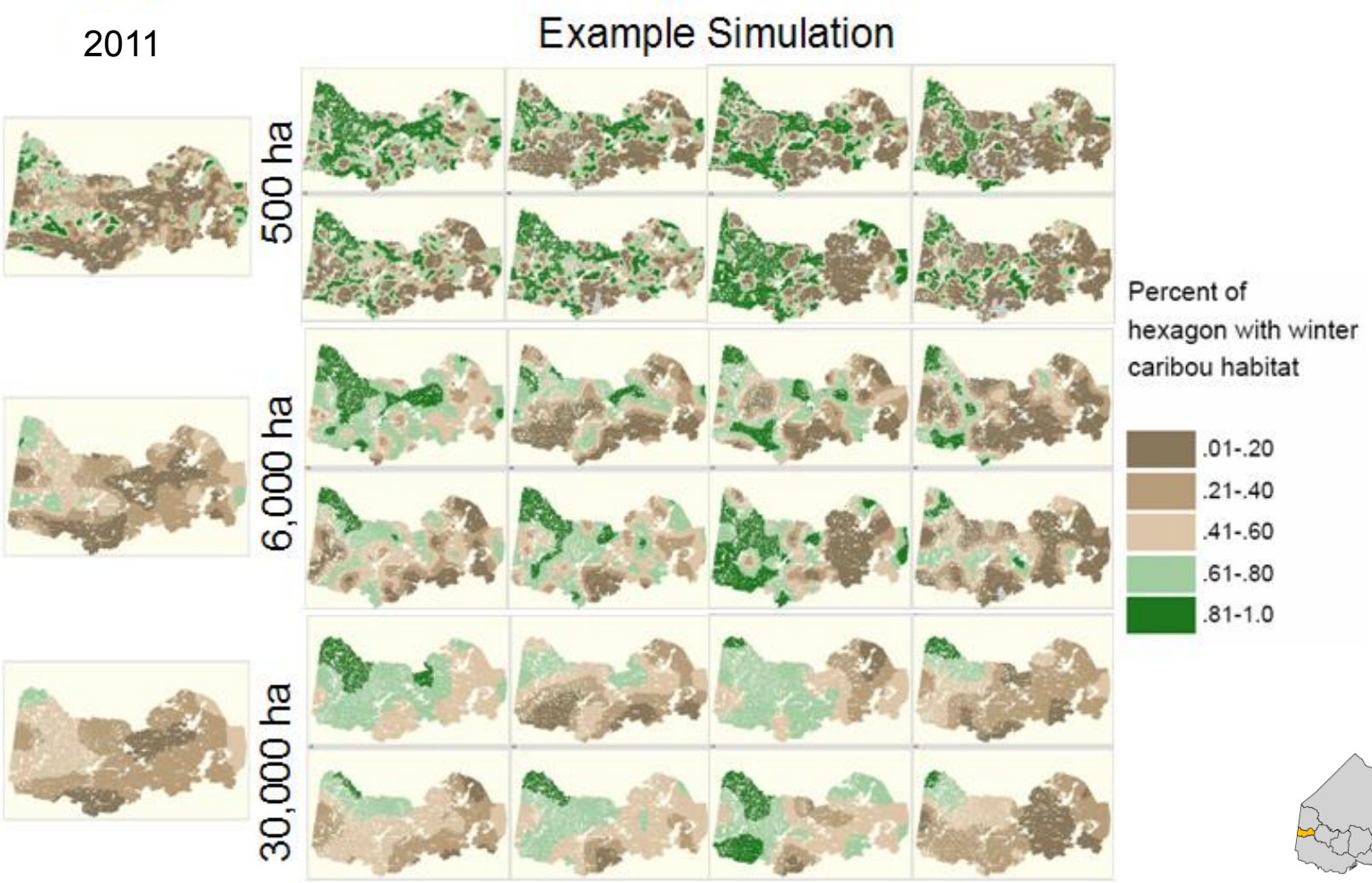
Arrangement of caribou winter habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 1: Berens 2011 Simulation Pattern Results Winter Habitat – Landscape Histograms



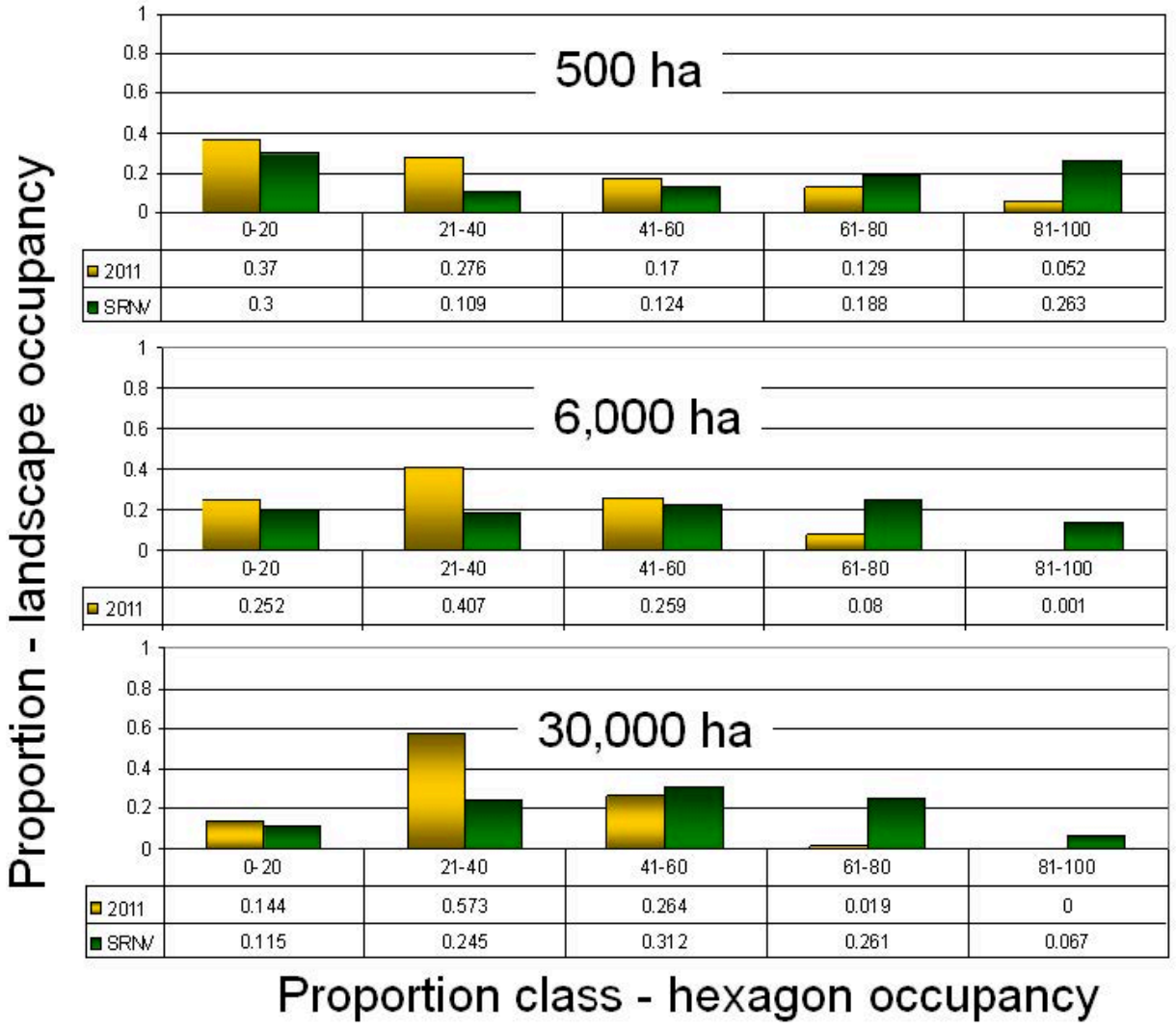
Caribou winter habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 2: Sydney 2011 Simulation Pattern Results Winter Habitat – Landscape Diagrams



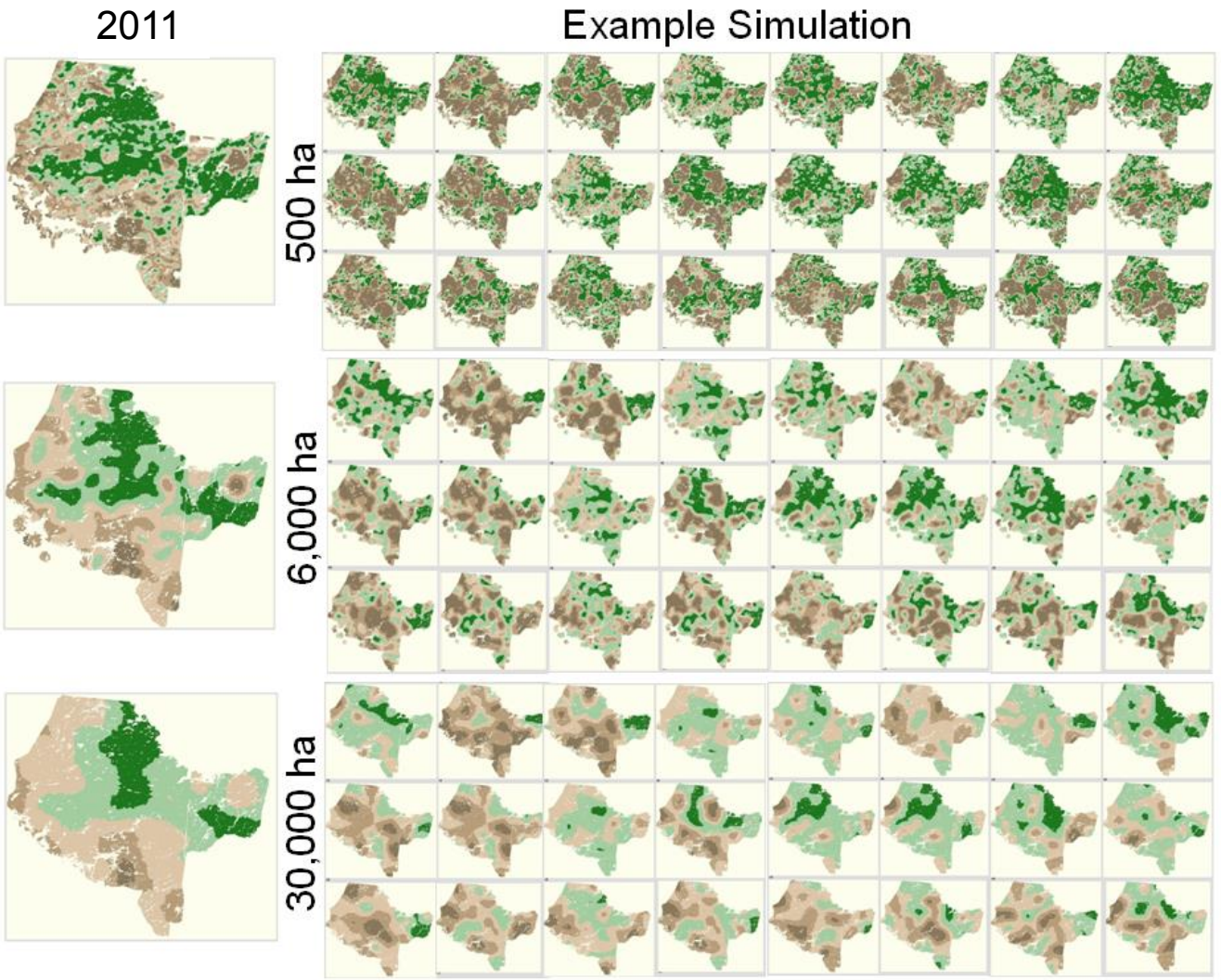
Arrangement of caribou winter habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 2: Sydney 2011 Simulation Pattern Results Winter Habitat – Landscape Histograms



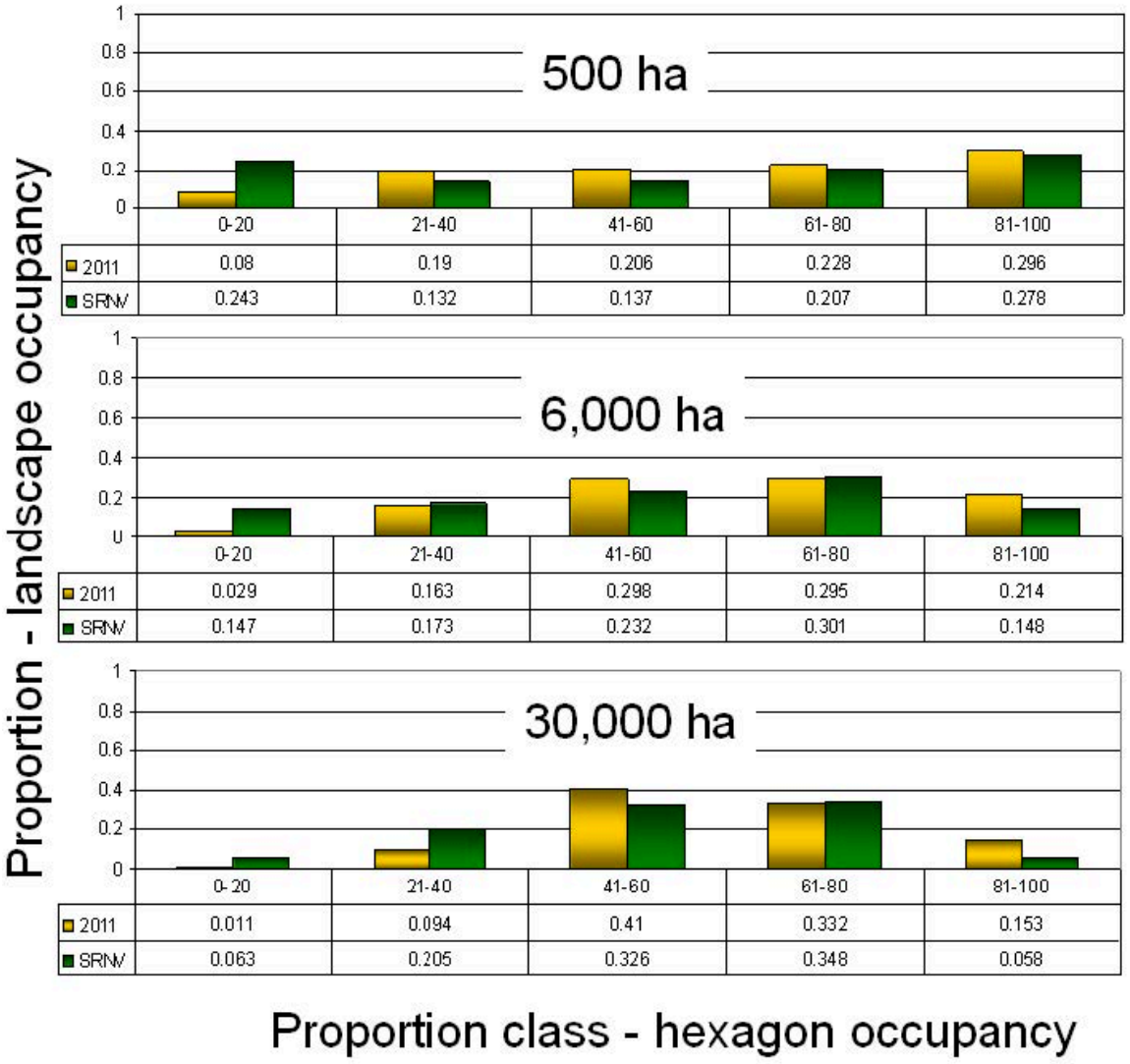
Caribou winter habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 3: Churchill 2011 Simulation Pattern Results Winter Habitat – Landscape Diagrams



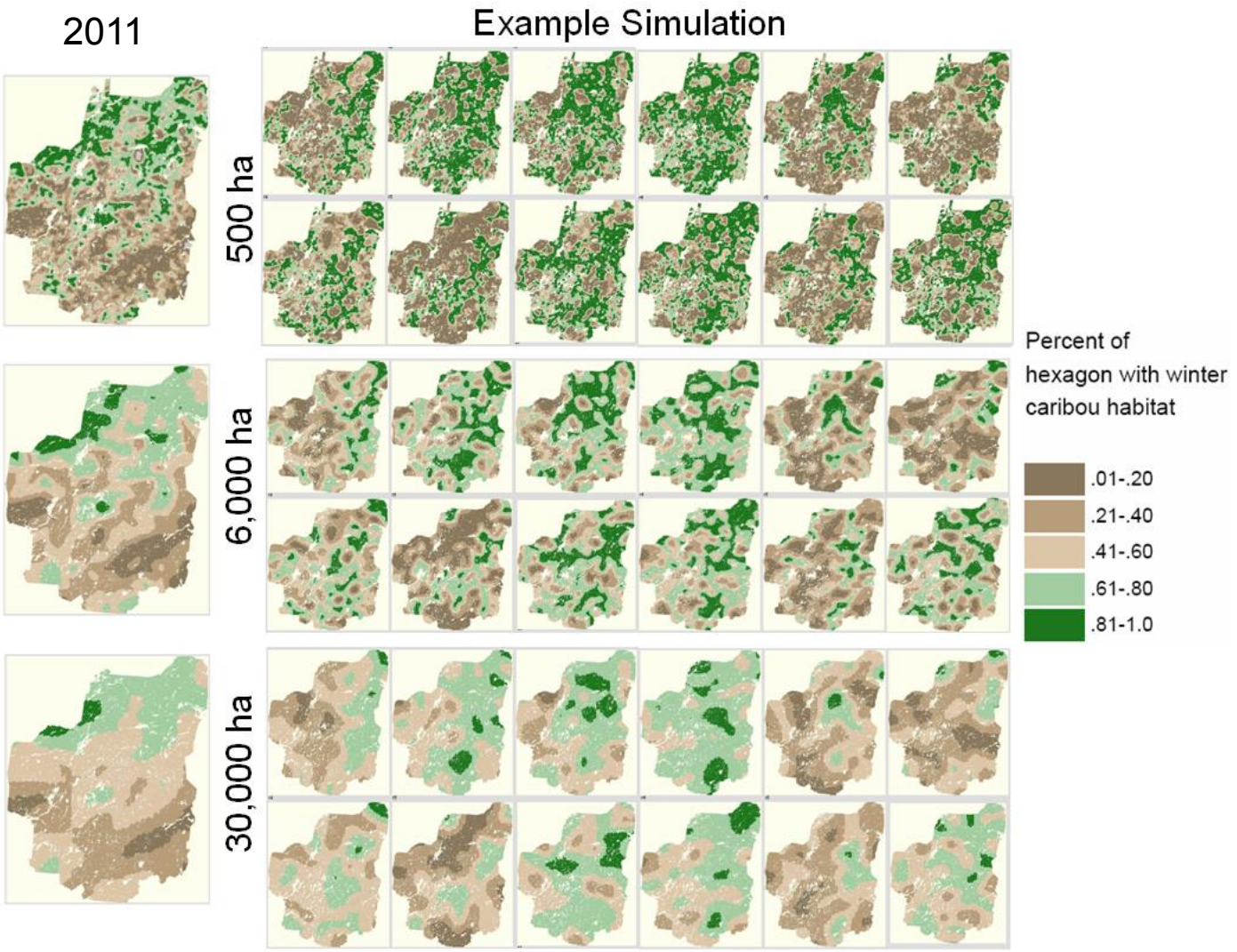
Arrangement of caribou winter habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 3: Churchill 2011 Simulation Pattern Results Winter Habitat – Landscape Histograms



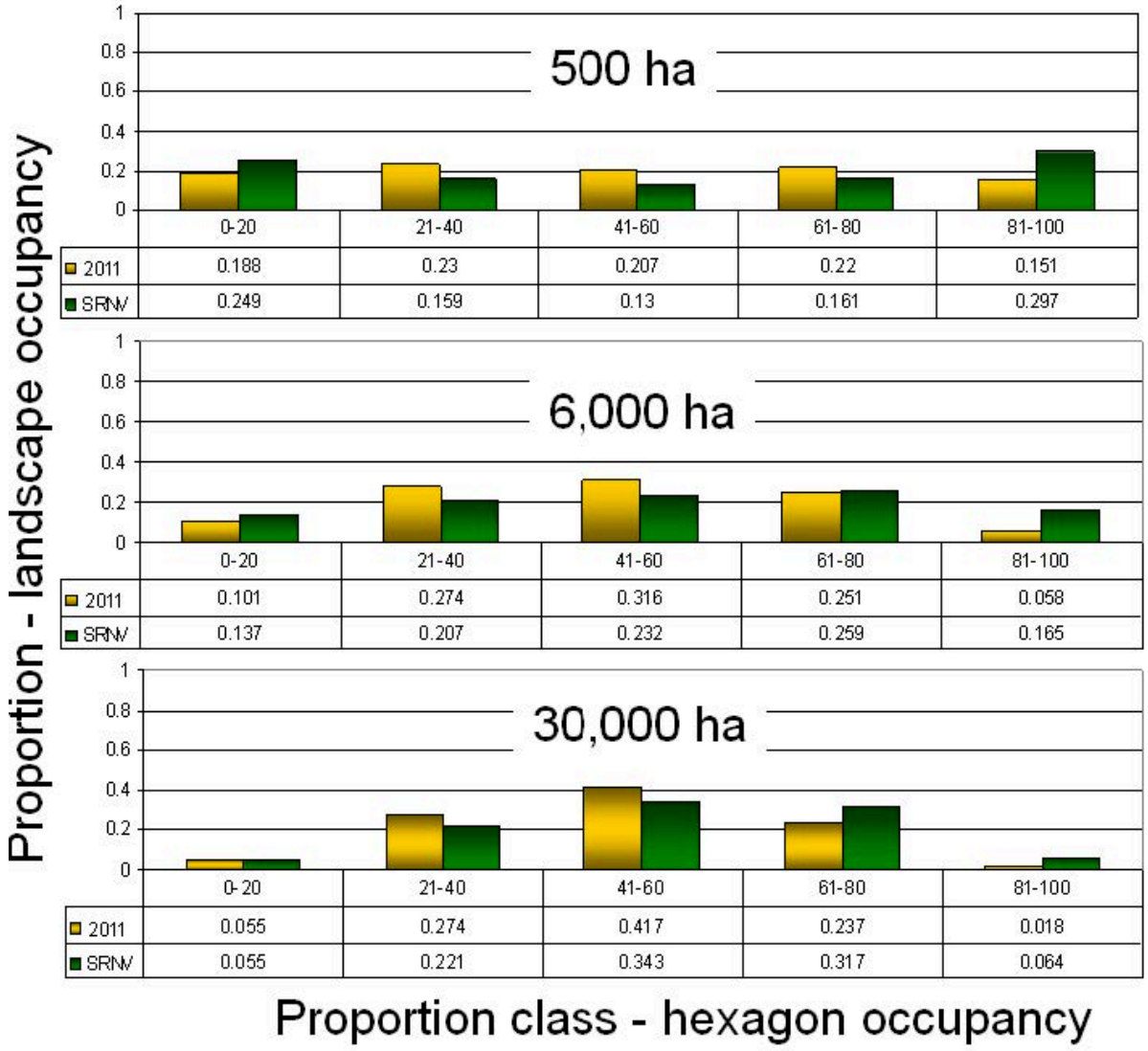
Caribou winter habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 4: Brightsand 2011 Simulation Pattern Results Winter Habitat – Landscape Diagrams



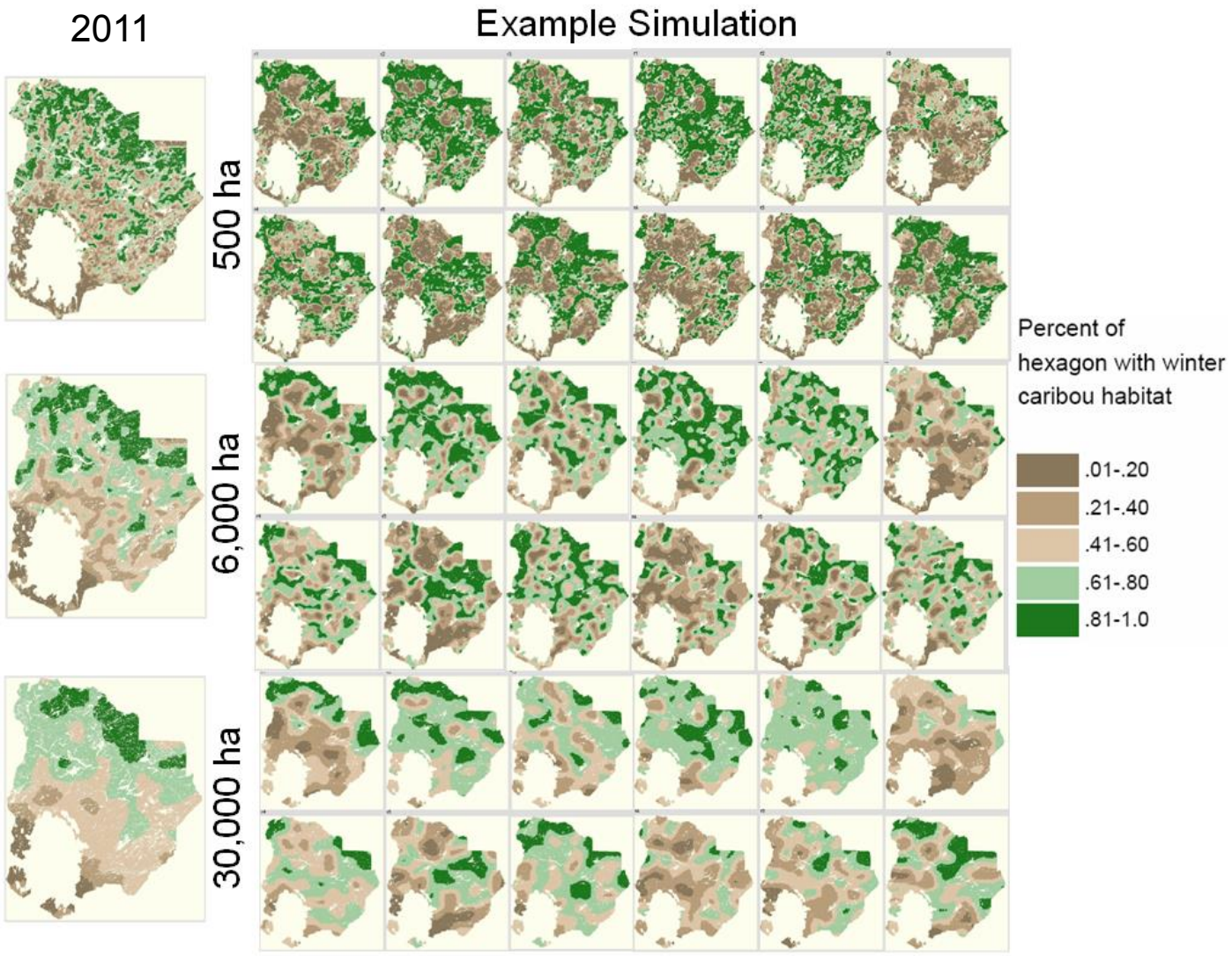
Arrangement of caribou winter habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 4: Brightsand 2011 Simulation Pattern Results Winter Habitat – Landscape Histograms



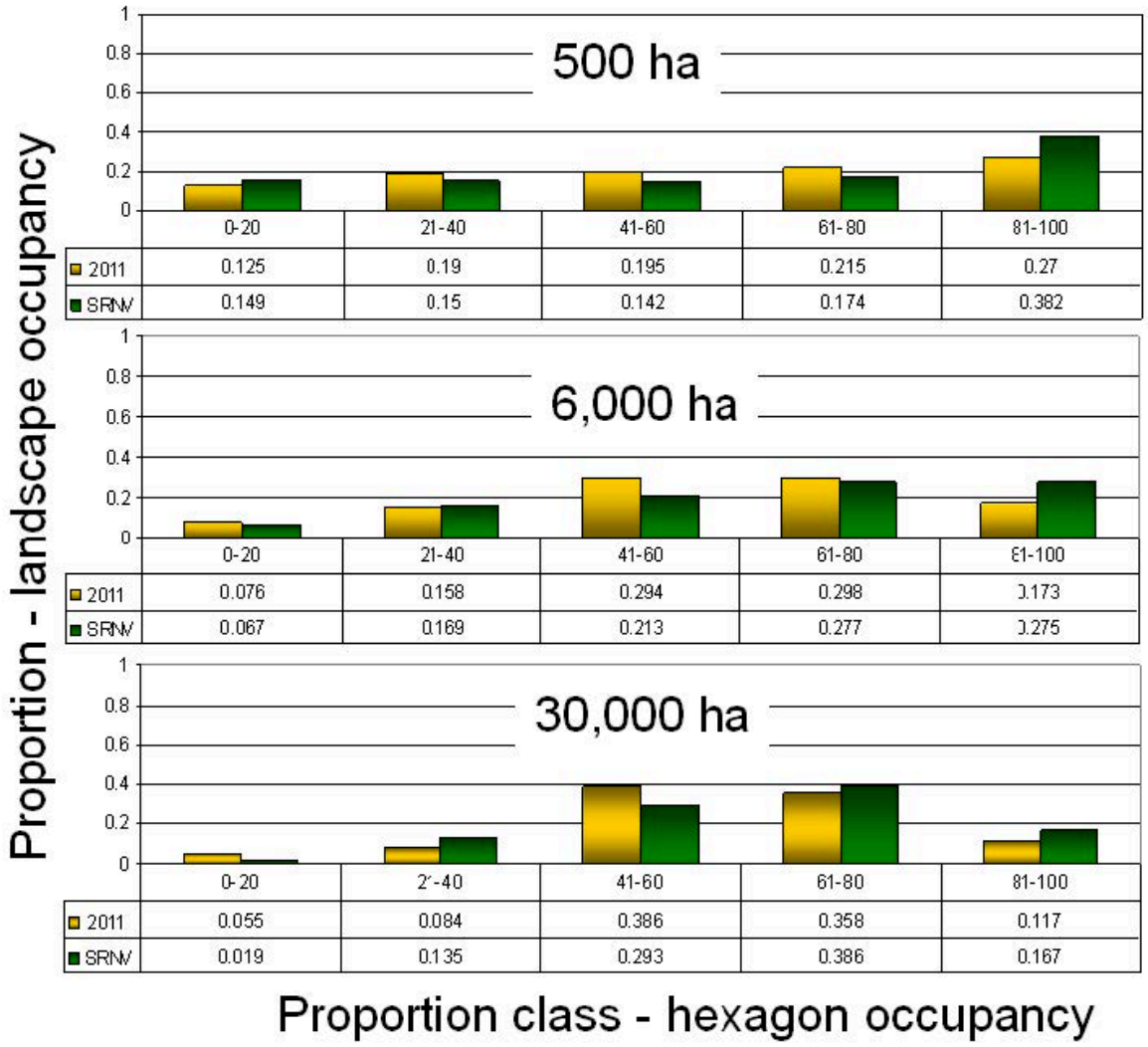
Caribou winter habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 5: Nipigon 2011 Simulation Pattern Results Winter Habitat – Landscape Diagrams



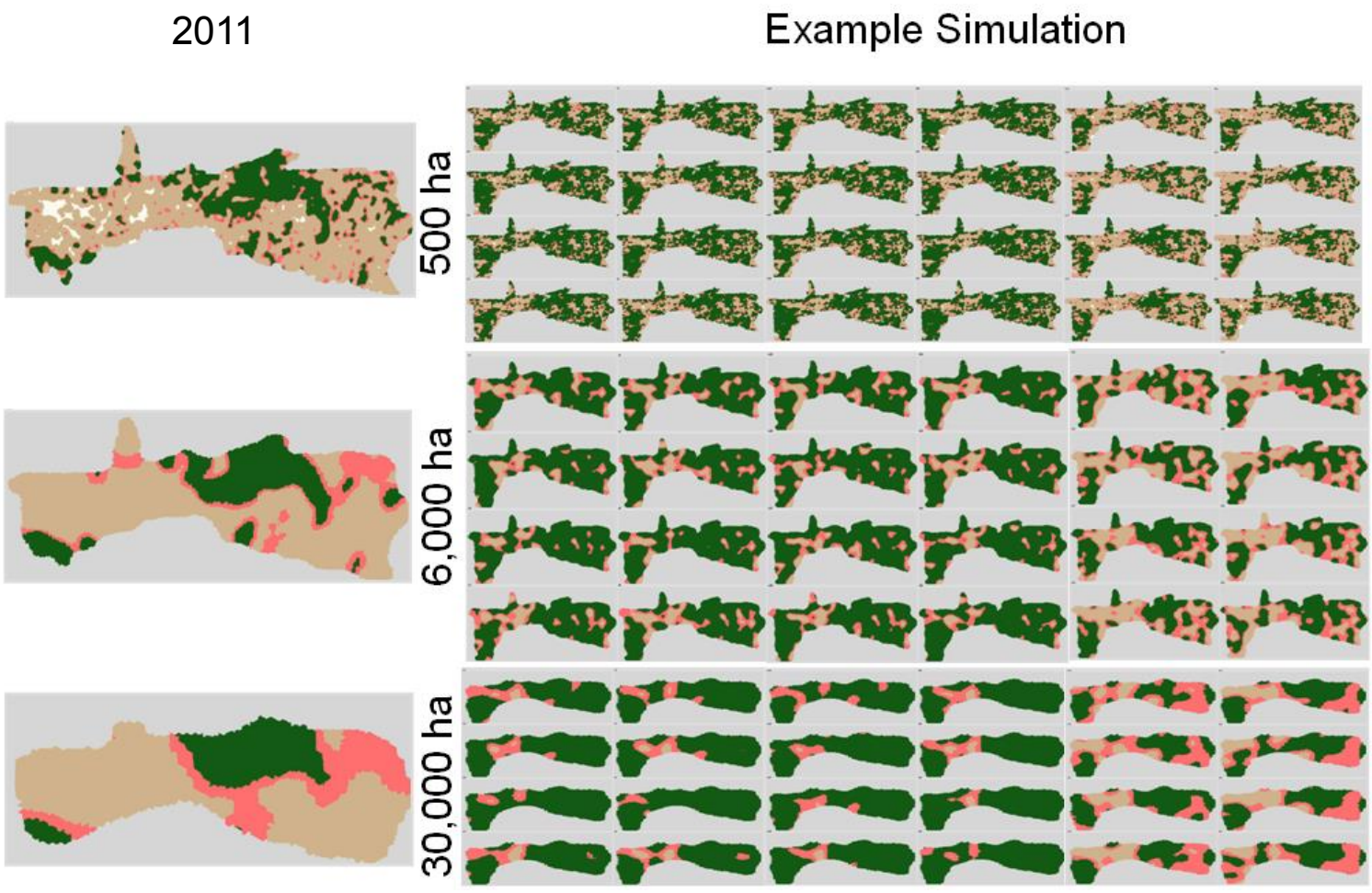
Arrangement of caribou winter habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 5: Nipigon 2011 Simulation Pattern Results Winter Habitat – Landscape Histograms



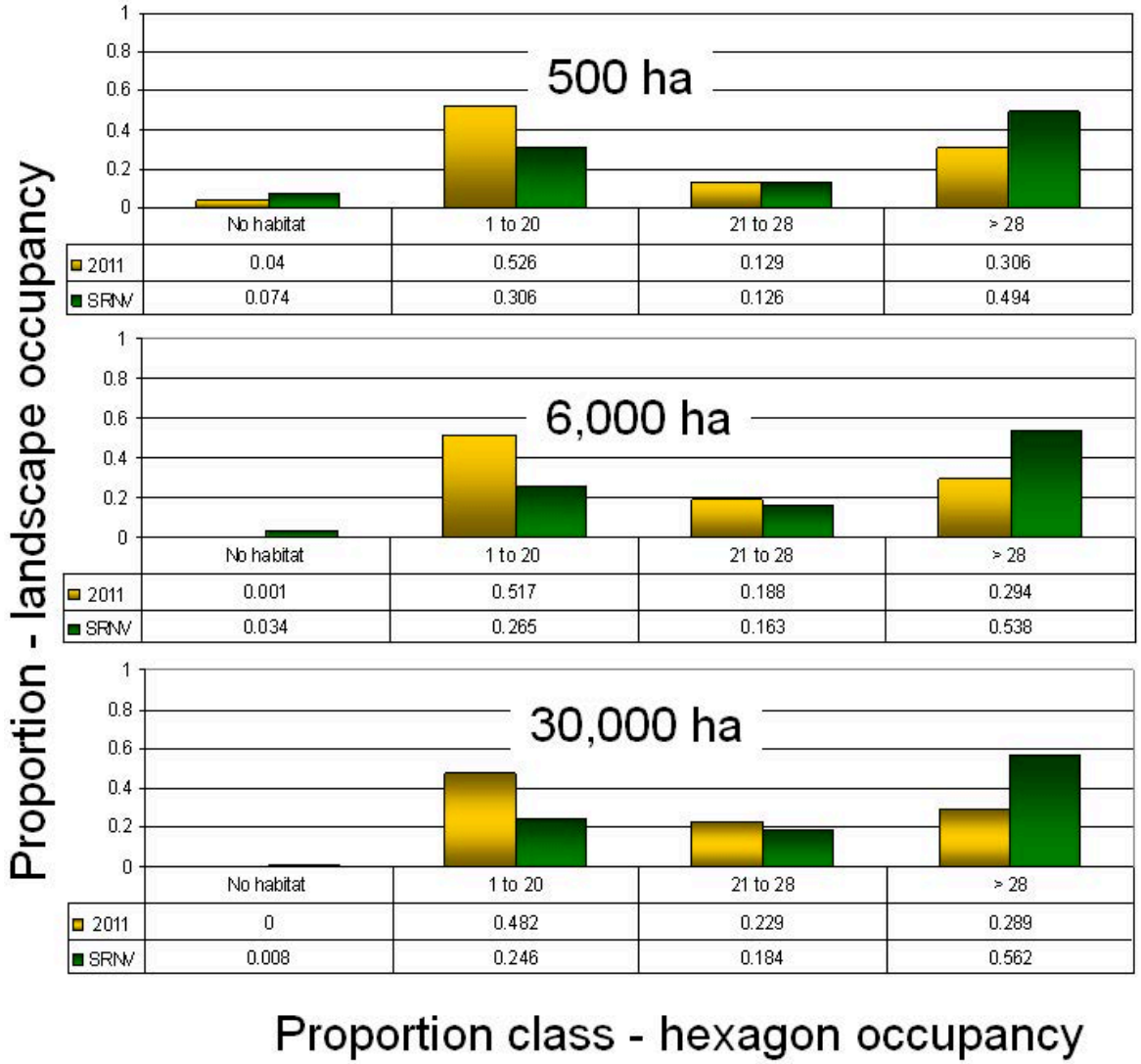
Caribou winter habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 6: Pagwachuan East 2011 Simulation Pattern Results Mature Conifer Habitat – Landscape Diagrams



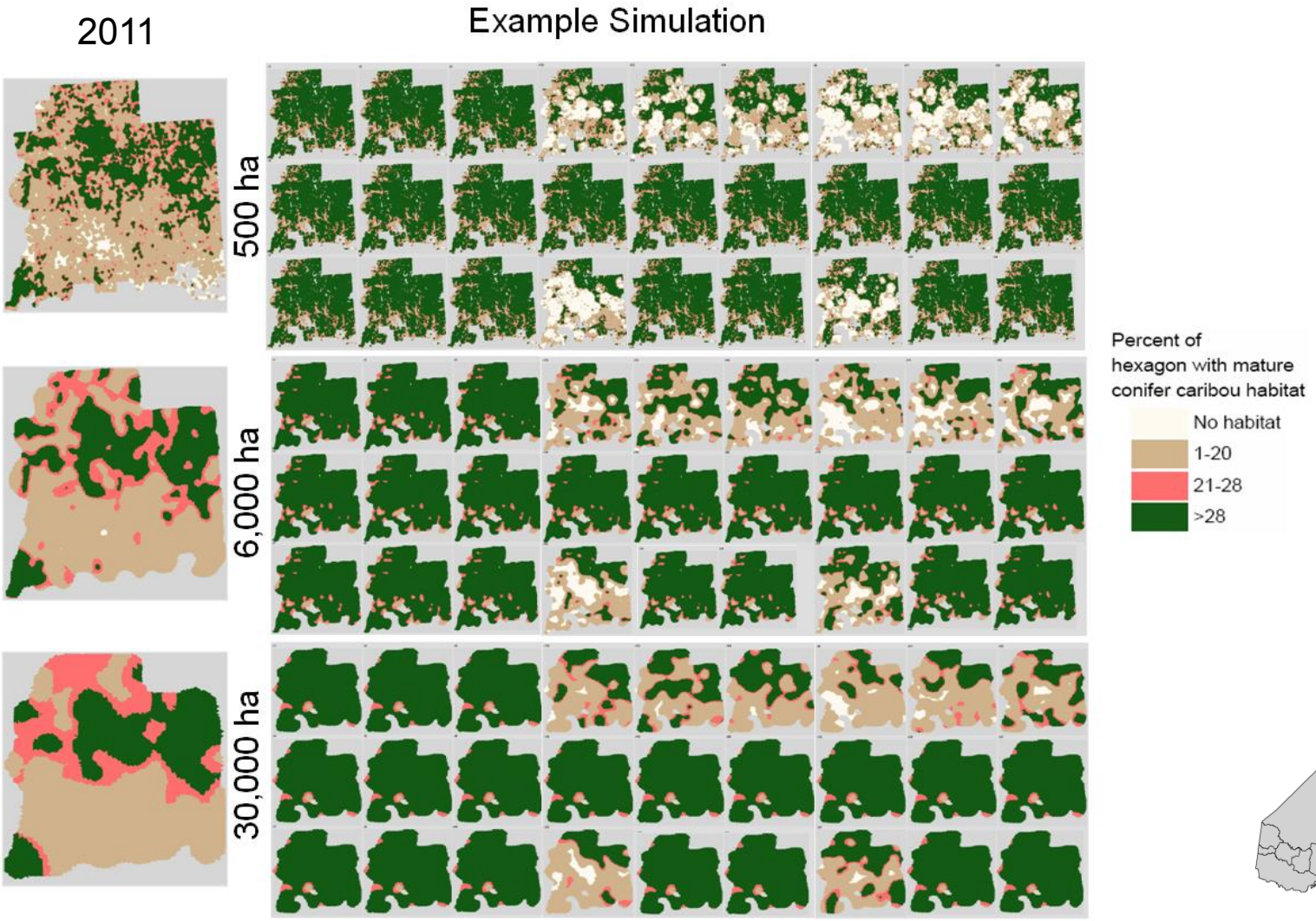
Arrangement of caribou mature conifer habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 6: Pagwachuan East 2011 Simulation Pattern Results Mature Conifer Habitat – Landscape Histograms



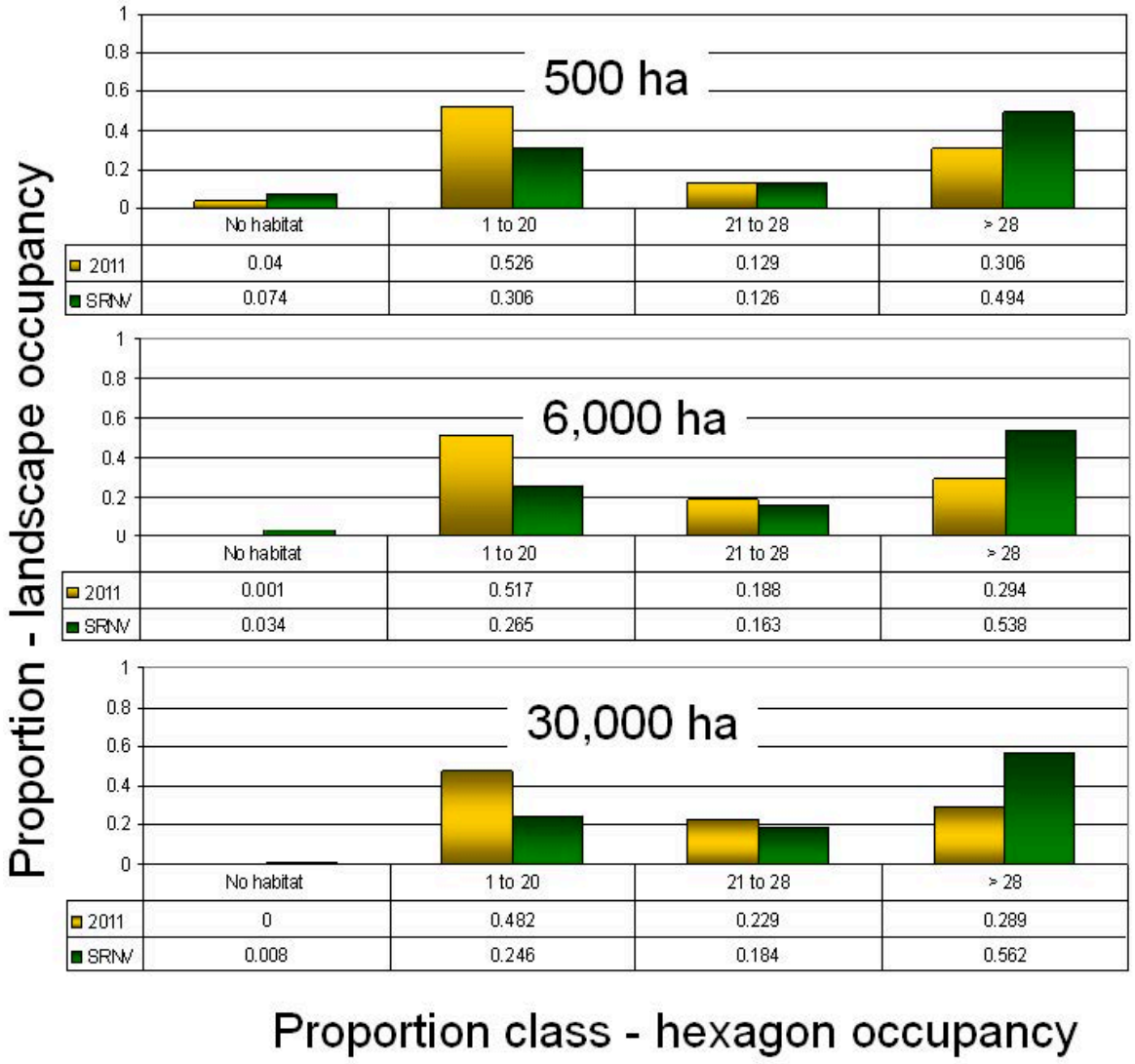
Caribou mature conifer habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.

Range 7: Kesagami 2011 Simulation Pattern Results Mature Conifer Habitat – Landscape Diagrams



Arrangement of mature conifer habitat (Conventional Boreal Model) at 500 ha, 6,000 ha and 30,000 ha including 2011 and several example maps from the simulations.

Range 7: Kesagami 2011 Simulation Pattern Results Mature Conifer Habitat – Landscape Histograms



Caribou mature conifer habitat texture histogram – 2011 compared to simulation means at the 500, 6,000 and 30,000 hectare levels.