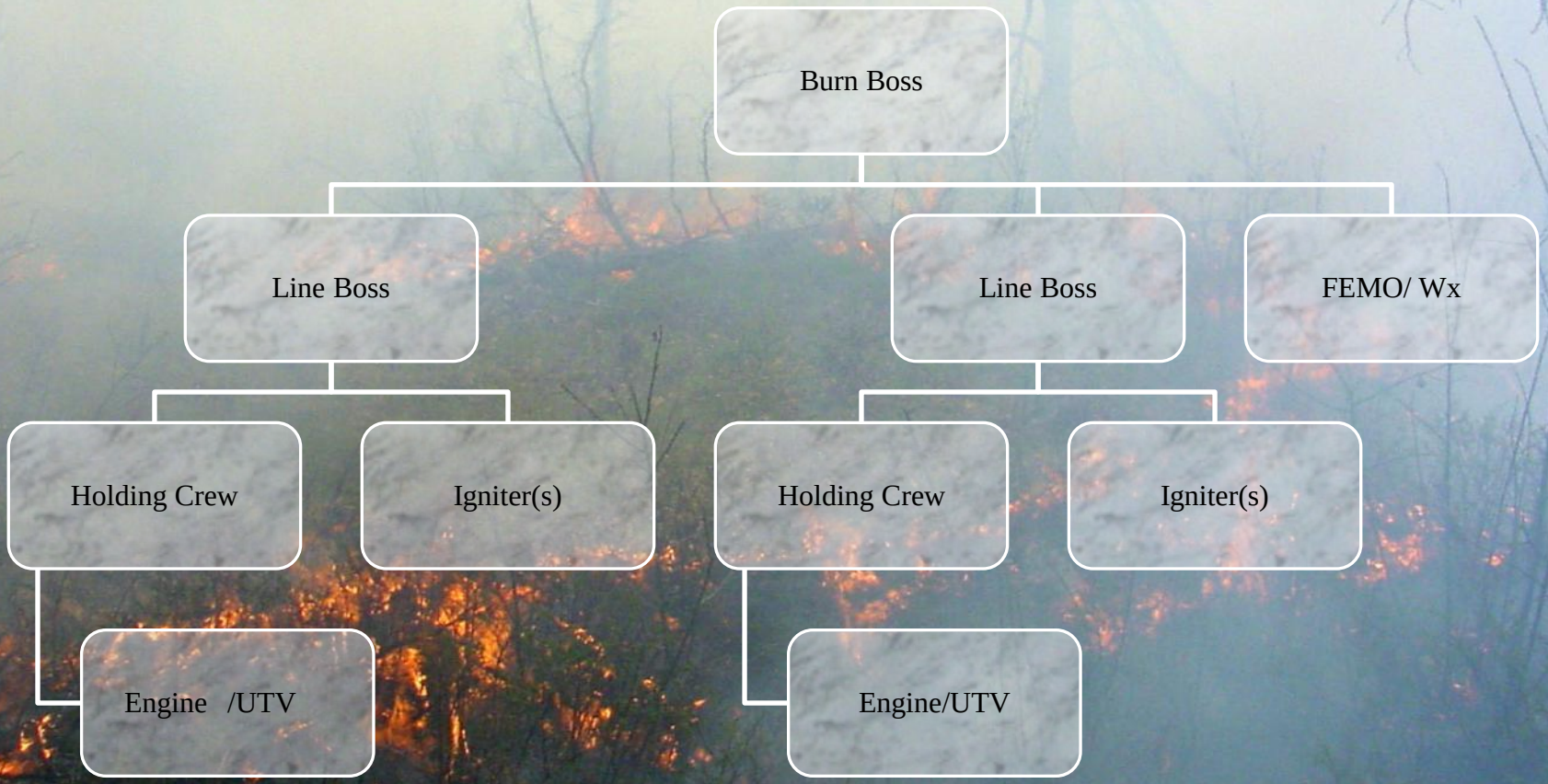
PRESCRIBED FIRE IN THE SAND COUNTIES

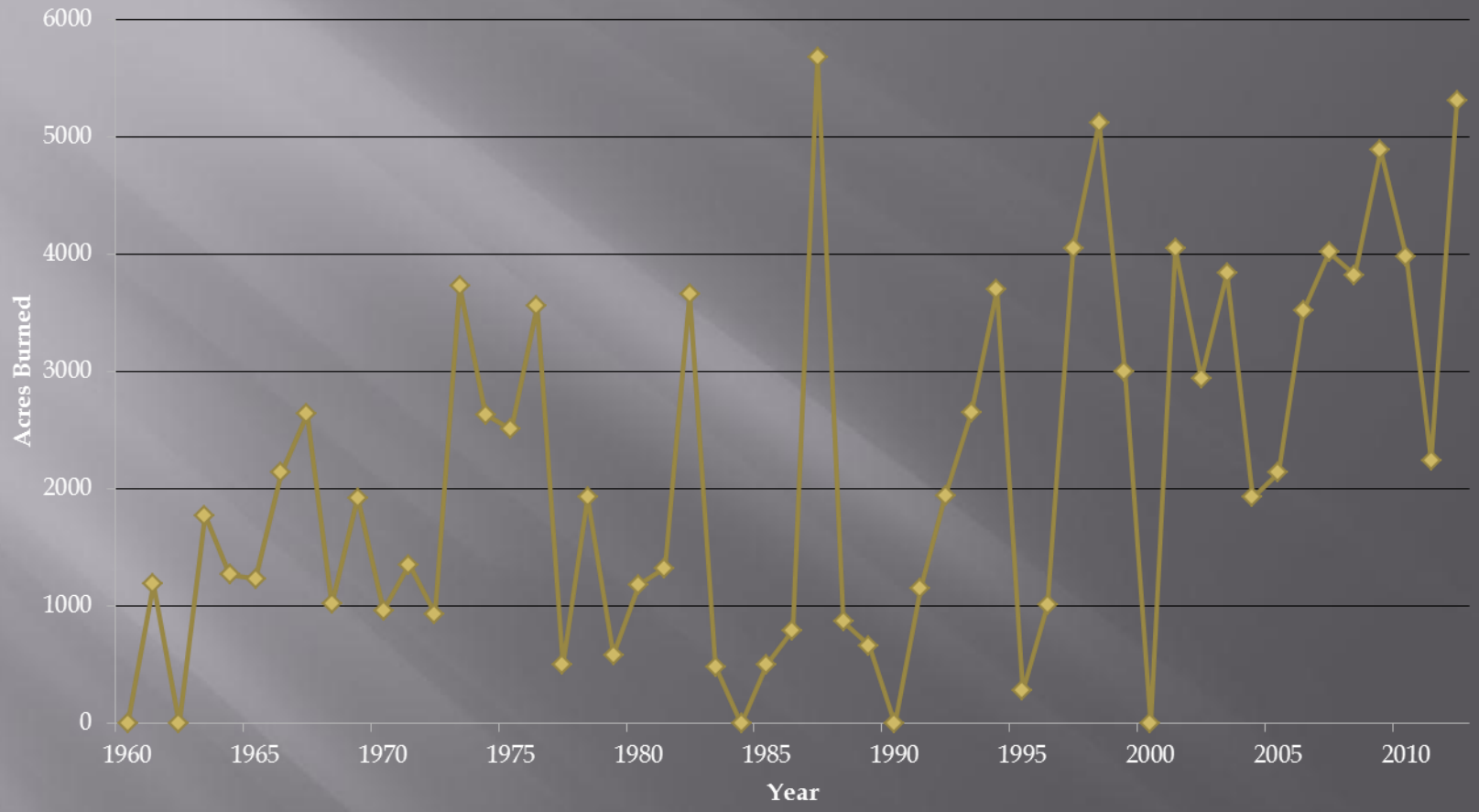
Richard King
U.S. Fish and Wildlife Service

Prescribed Fire Organization Chart
Necedah National Wildlife Refuge

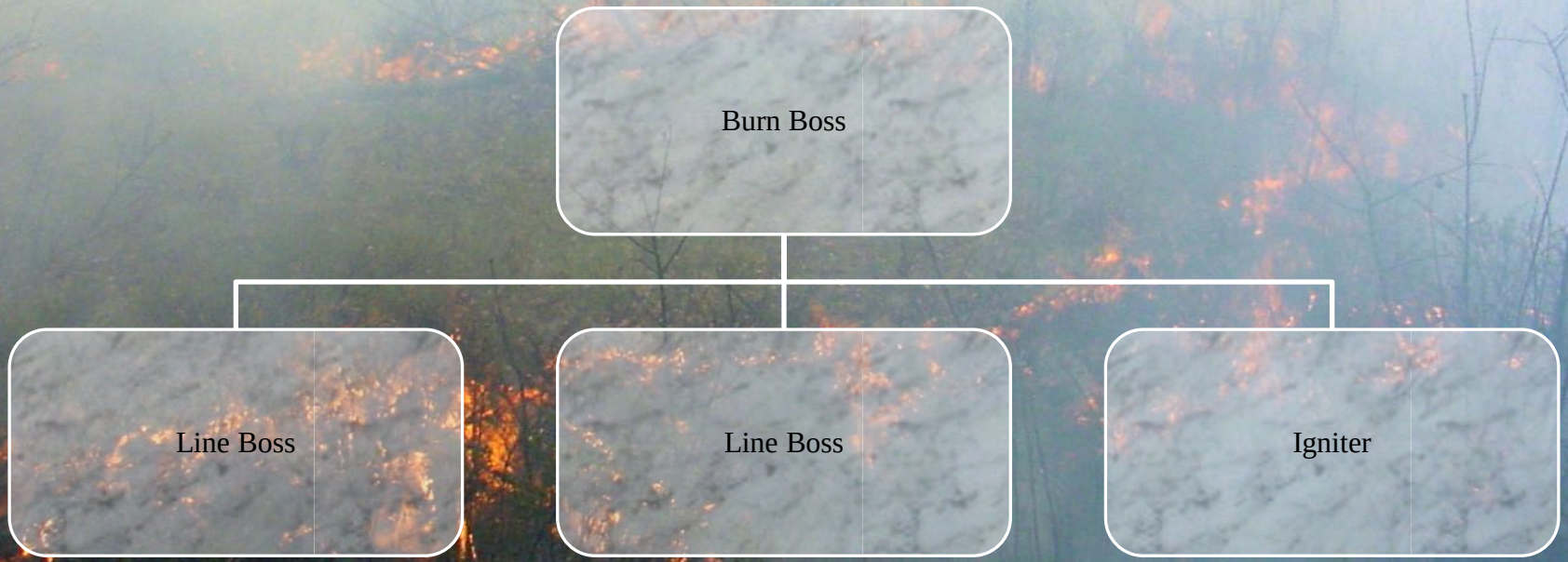


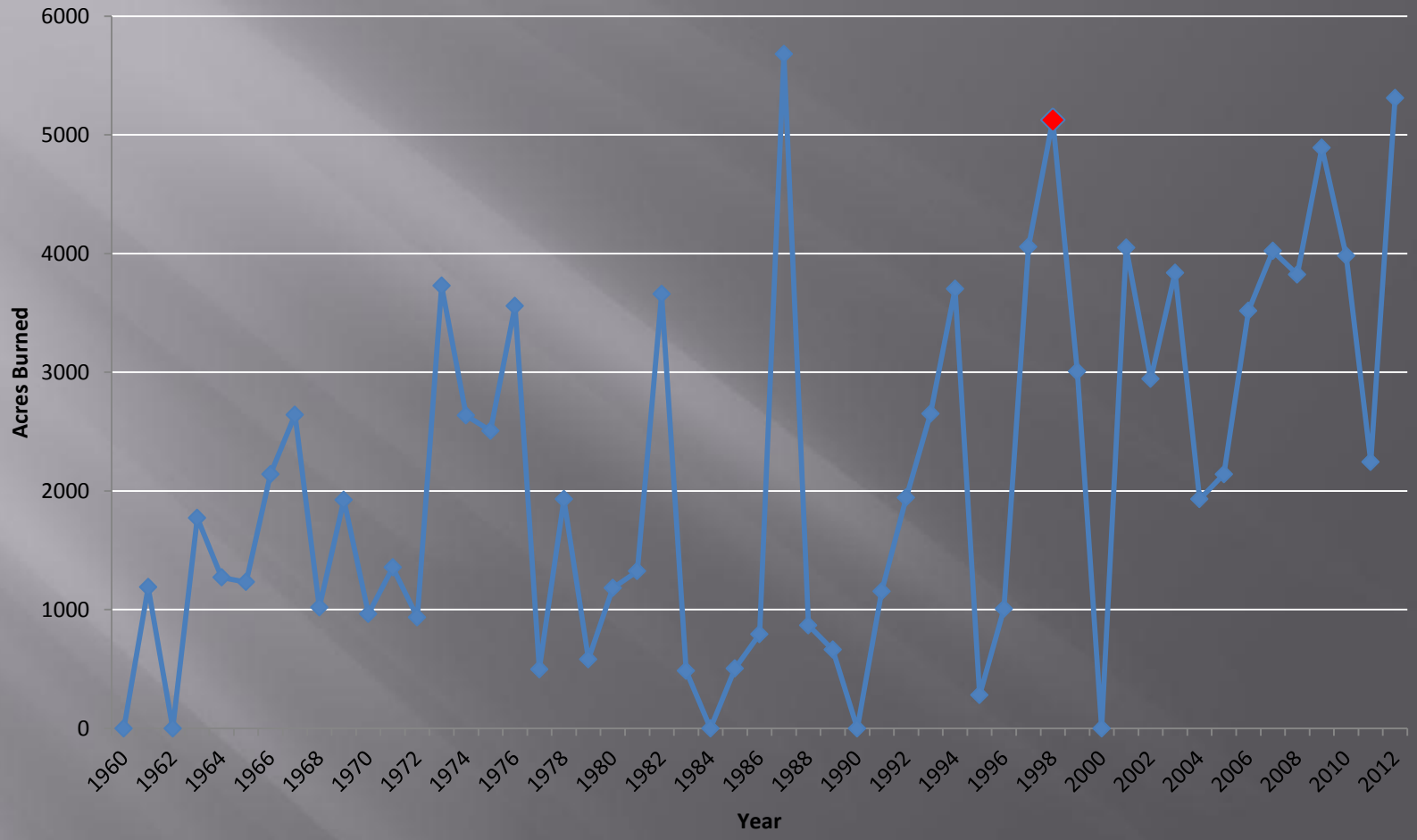

FIRE

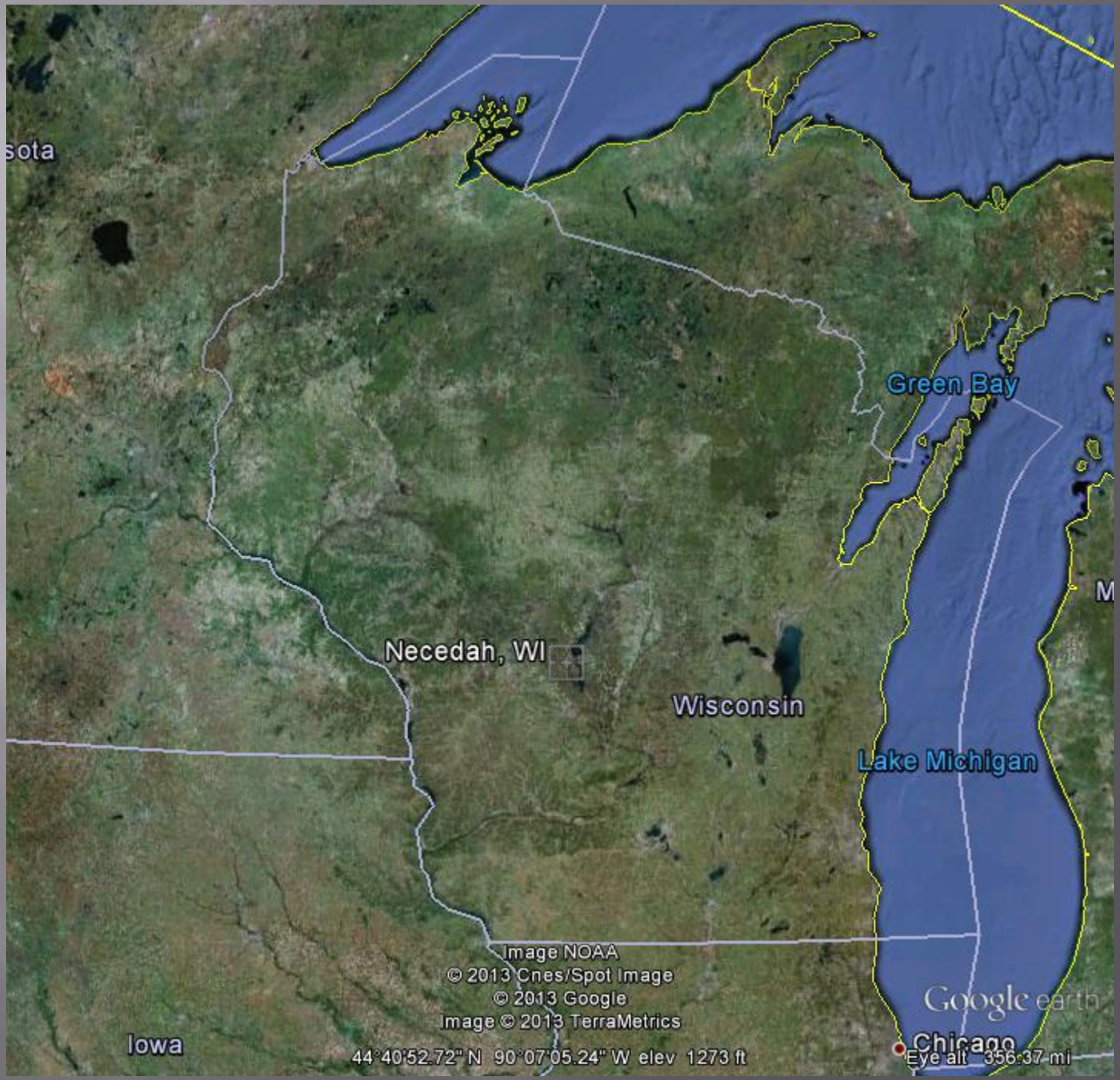

© 2007 Rich Armstrong Photography


6000
5000
4000
3000
2000
1000
0
Acres Burned
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
Year

Prescribed Fire Organization Chart
Necedah National Wildlife Refuge




6000
5000
4000
3000
2000
1000
0
Acres Burned
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
Year


sota
Green Bay
Necedah, WI
Wisconsin
Lake Michigan
Image NOAA
© 2013 Cnes/Spot Image
© 2013 Google
Image © 2013 TerraMetrics
Iowa
Chicago
44°40'52.72" N 90°07'05.24" W elev 1273 ft
Eye alt 356.37 mi

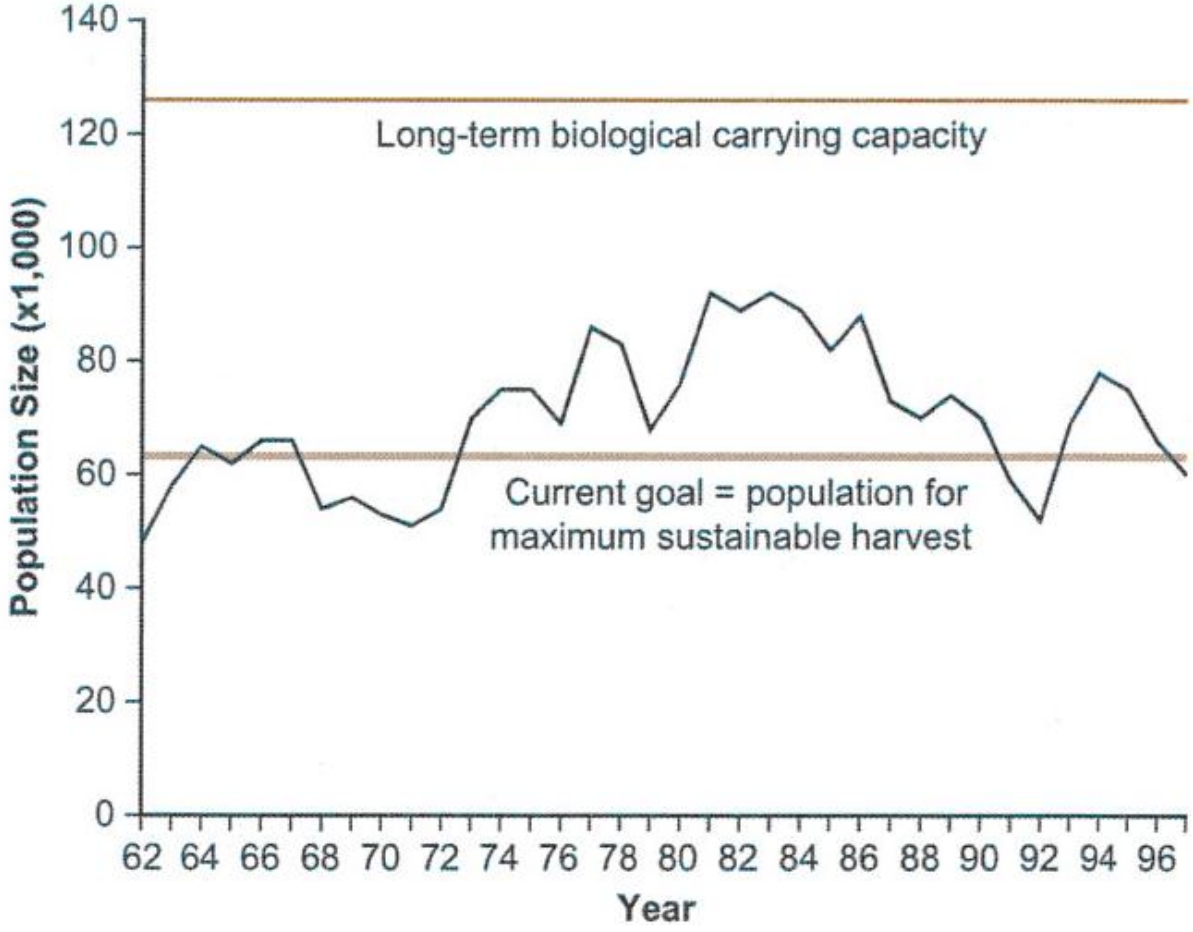
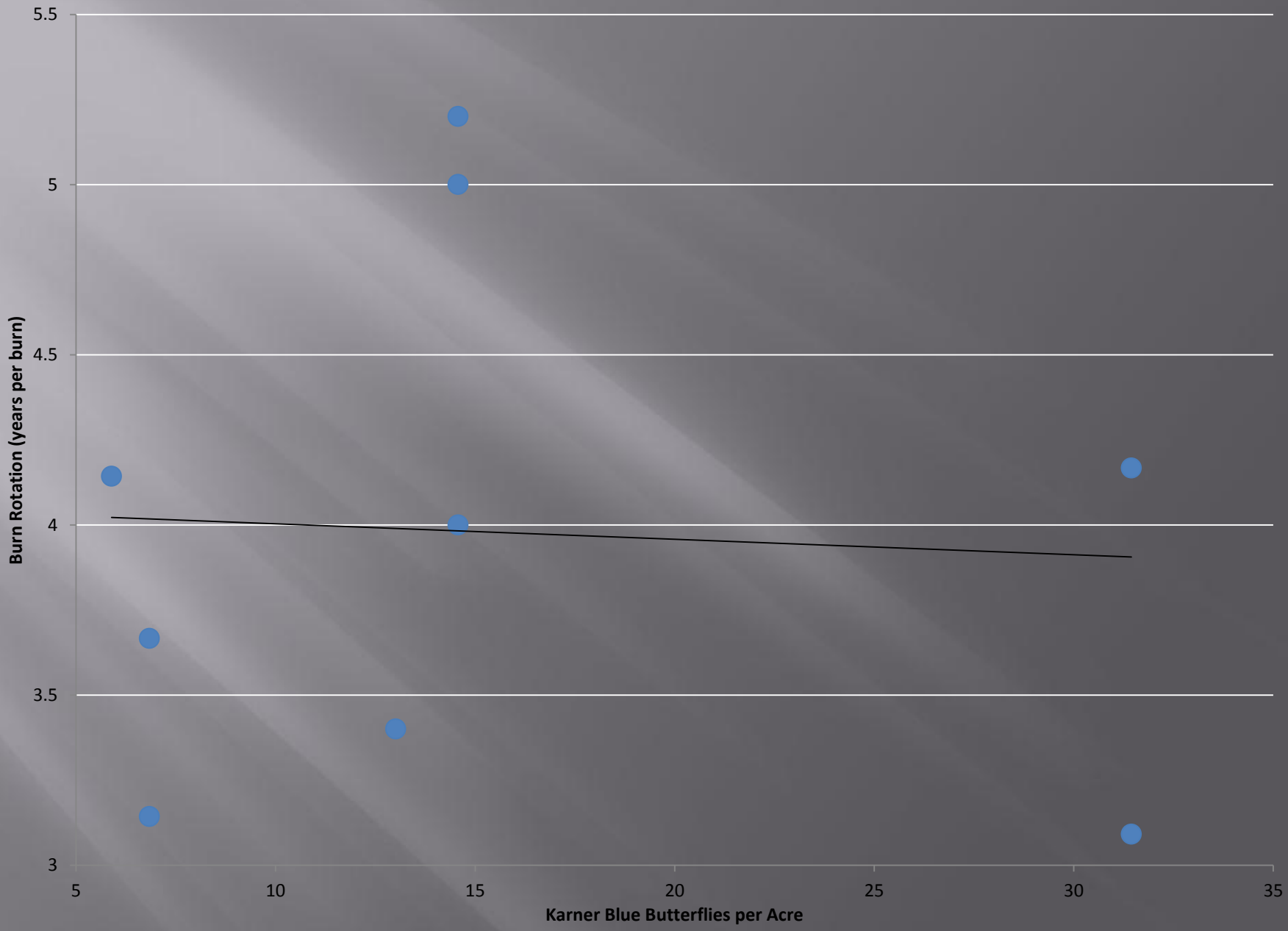
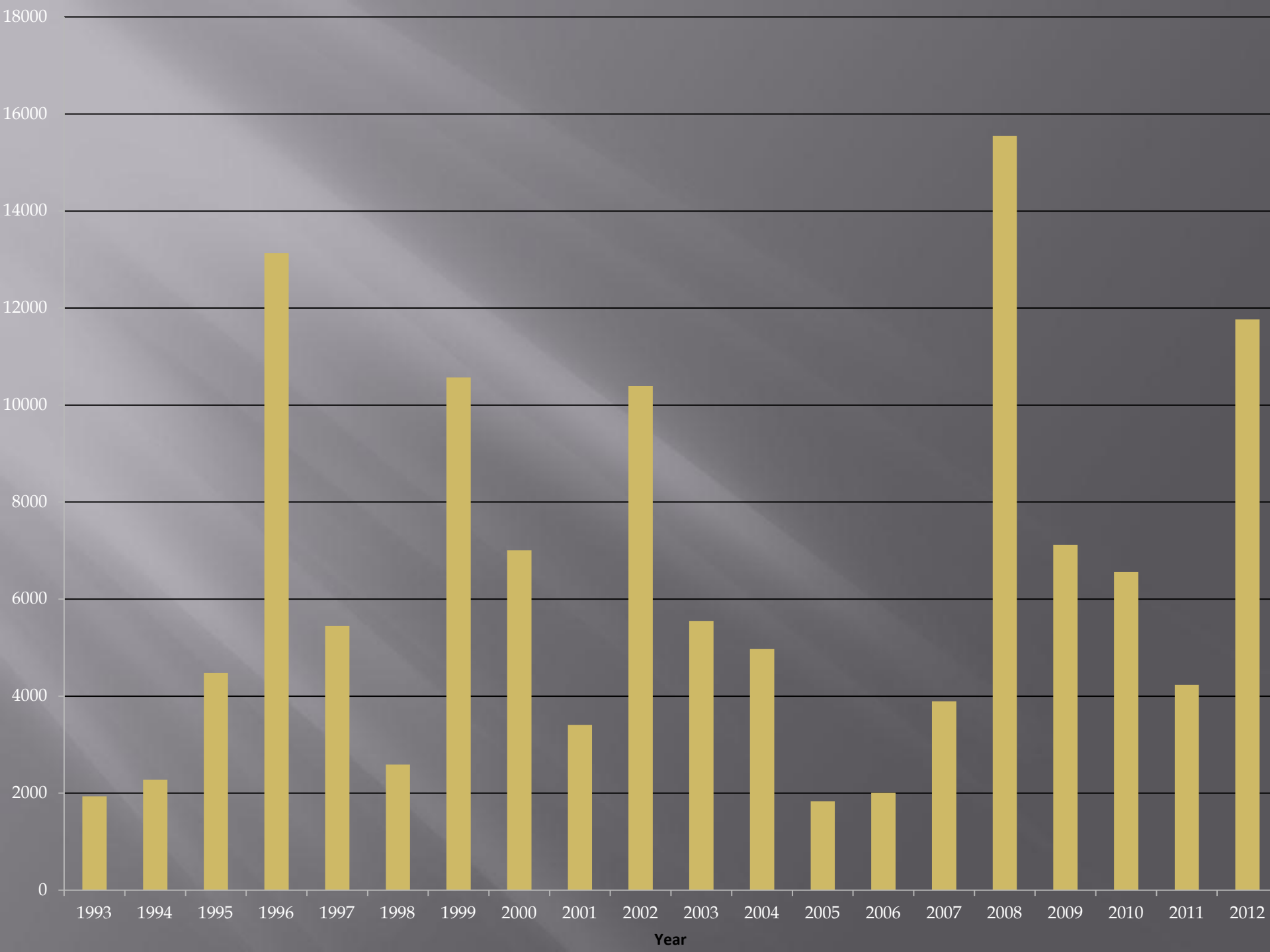
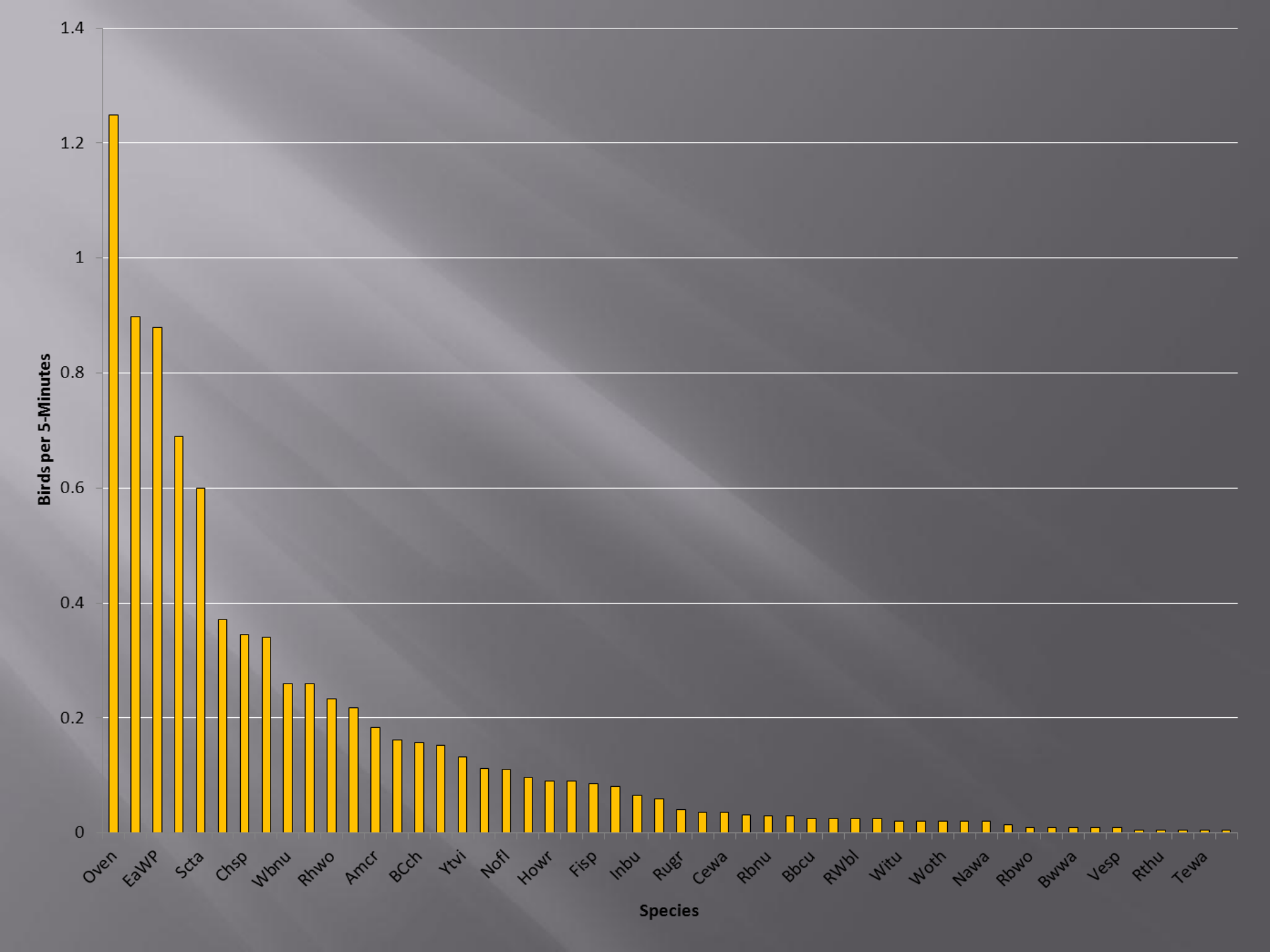


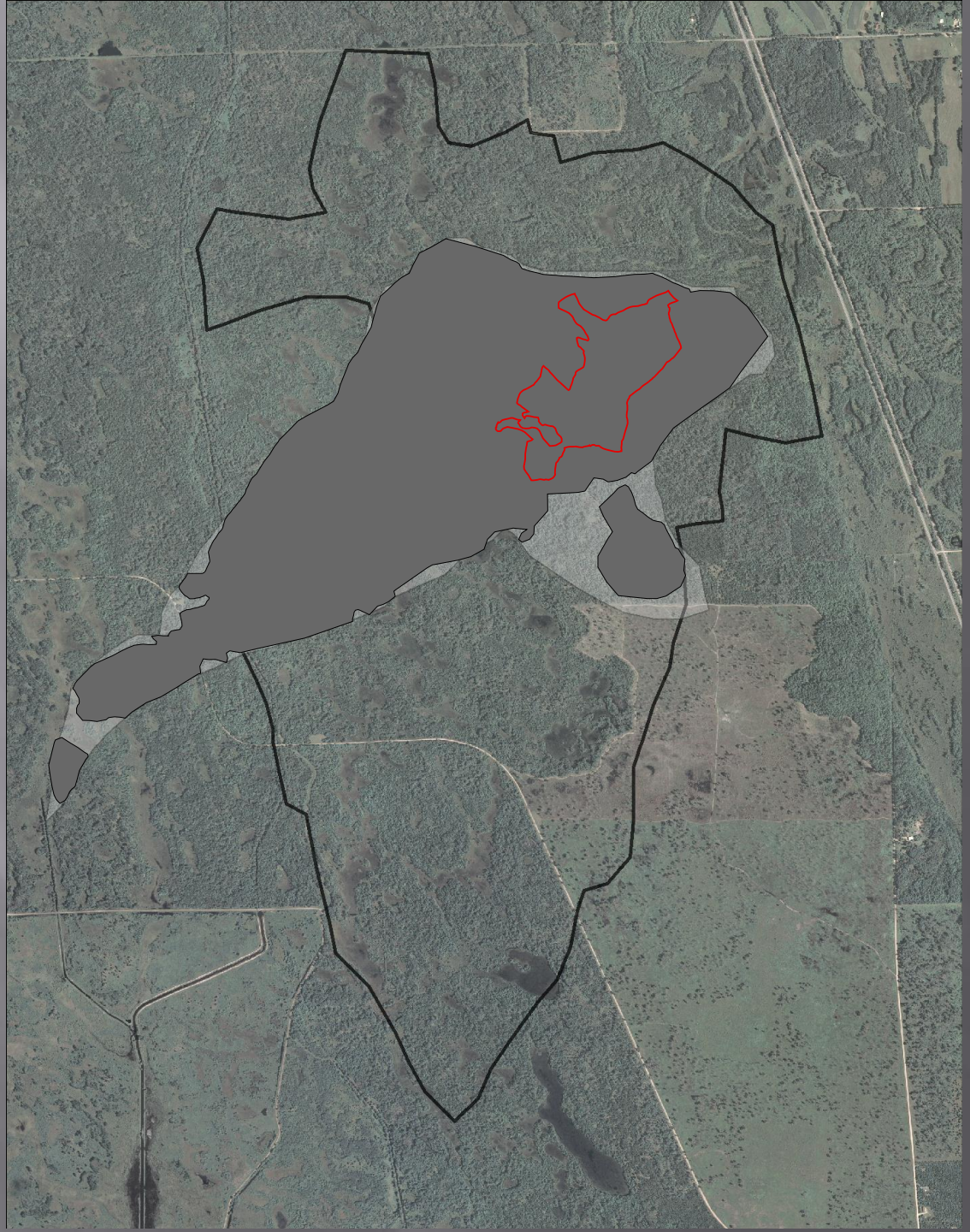
Figure 18. *Central Wisconsin forest January deer population estimates, 1962-1997, compared with the current overwinter population goal, maximum biological carrying capacity, and population level for highest sustainable harvest.*

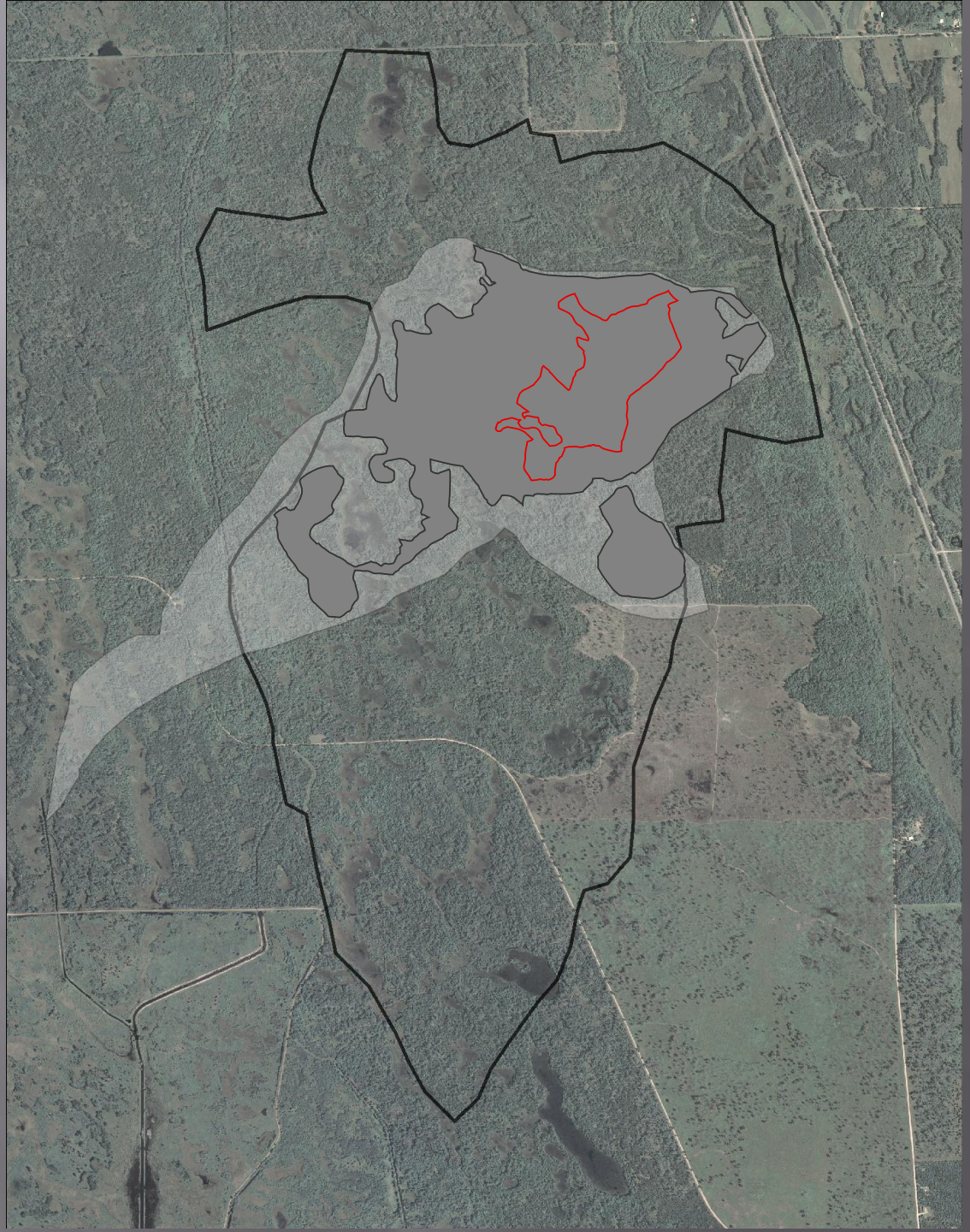

5.5
5
4.5
4
3.5
3
Burn Rotation (years per burn)
5
10
15
20
25
30
35
Karner Blue Butterflies per Acre

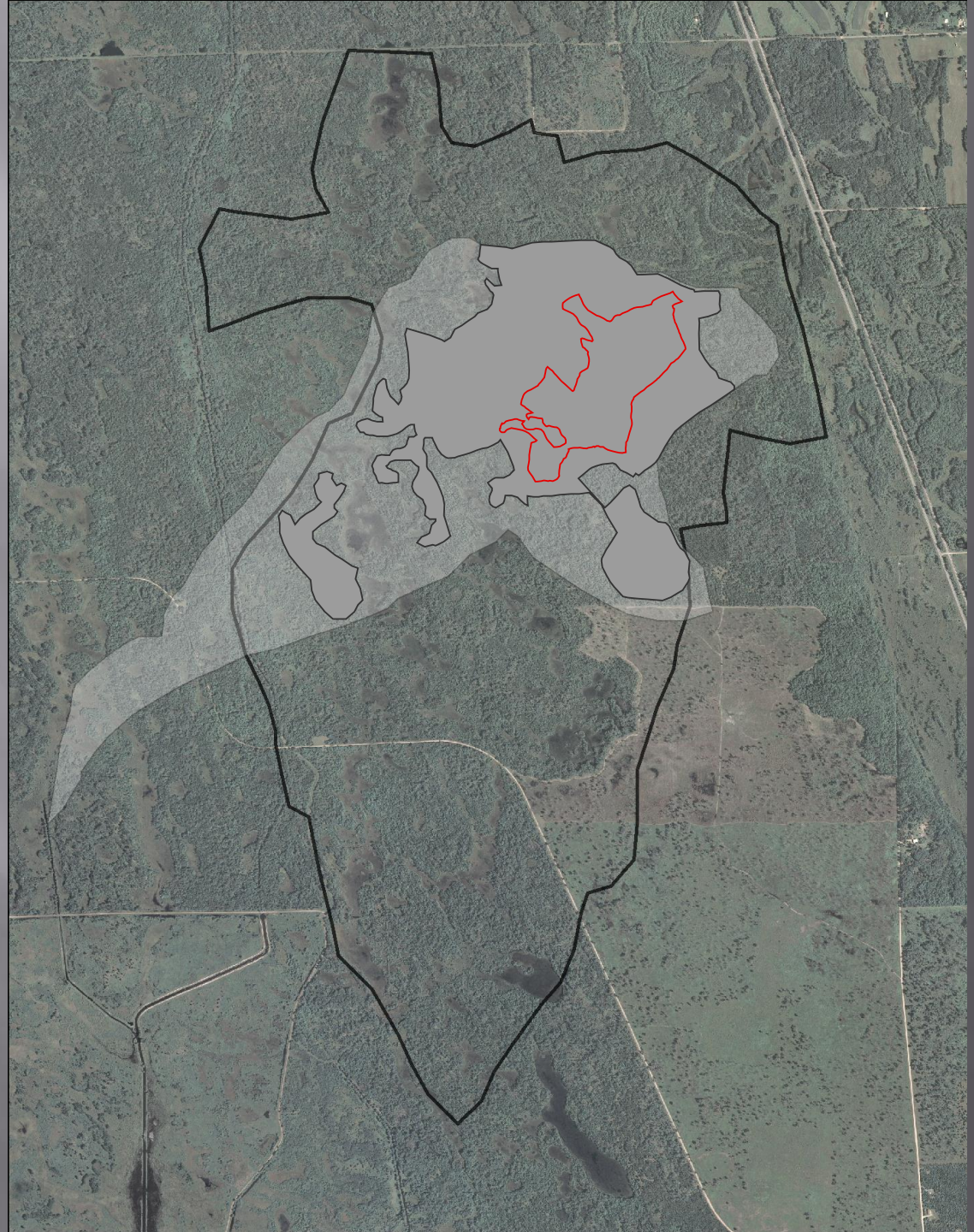

18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
Year

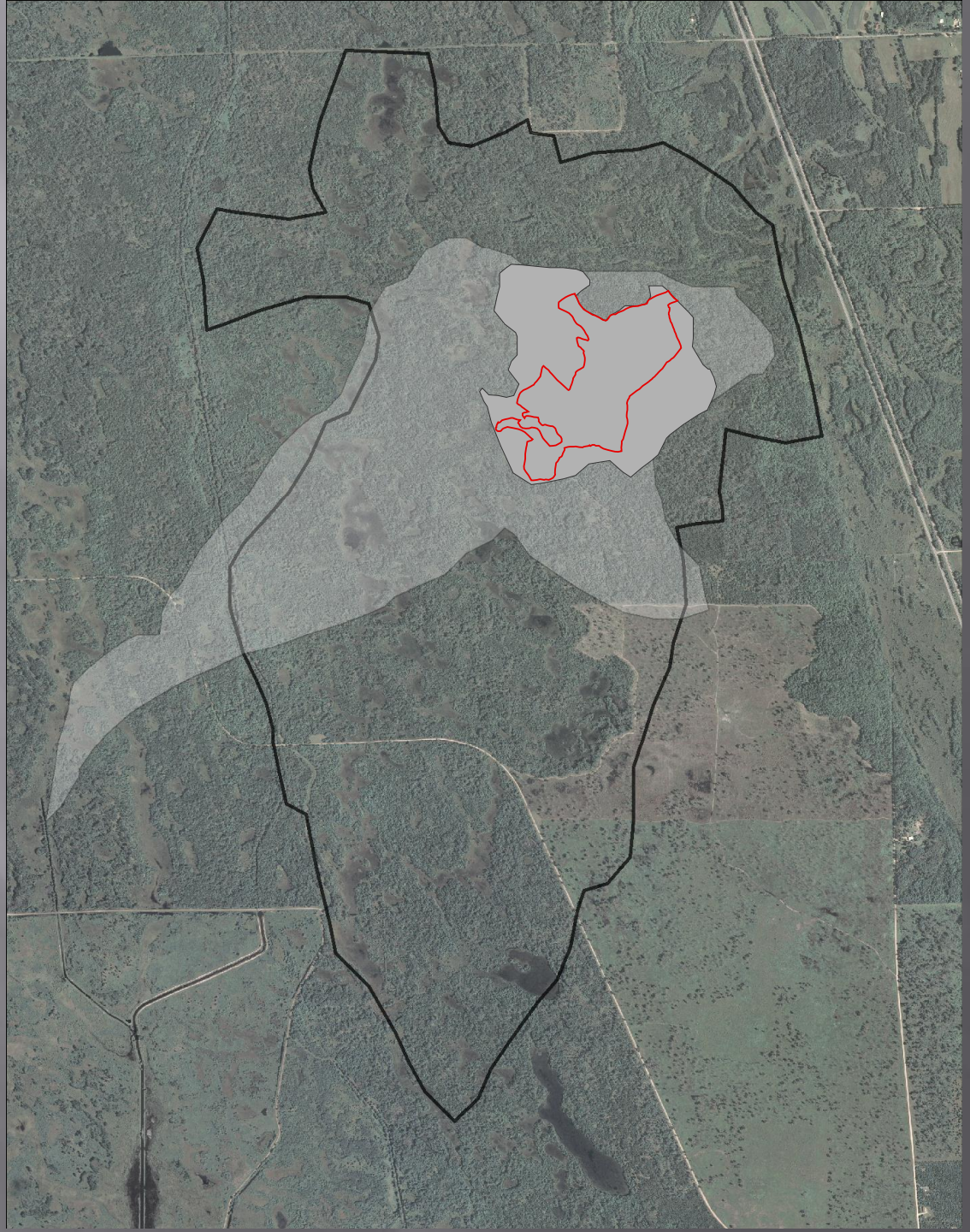

1.4
1.2
1
0.8
0.6
0.4
0.2
0
Birds per 5-Minutes
Oven
EaWP
Scta
Chsp
Wbnu
Rhwo
Amcr
BCch
Ytvi
Nofl
Howr
Fisp
Inbu
Rugr
Cewa
Rbnu
Bbcu
RWbl
Witu
Woth
Nawa
Rbwo
Bwwa
Vesp
Rthu
Tewa
Species

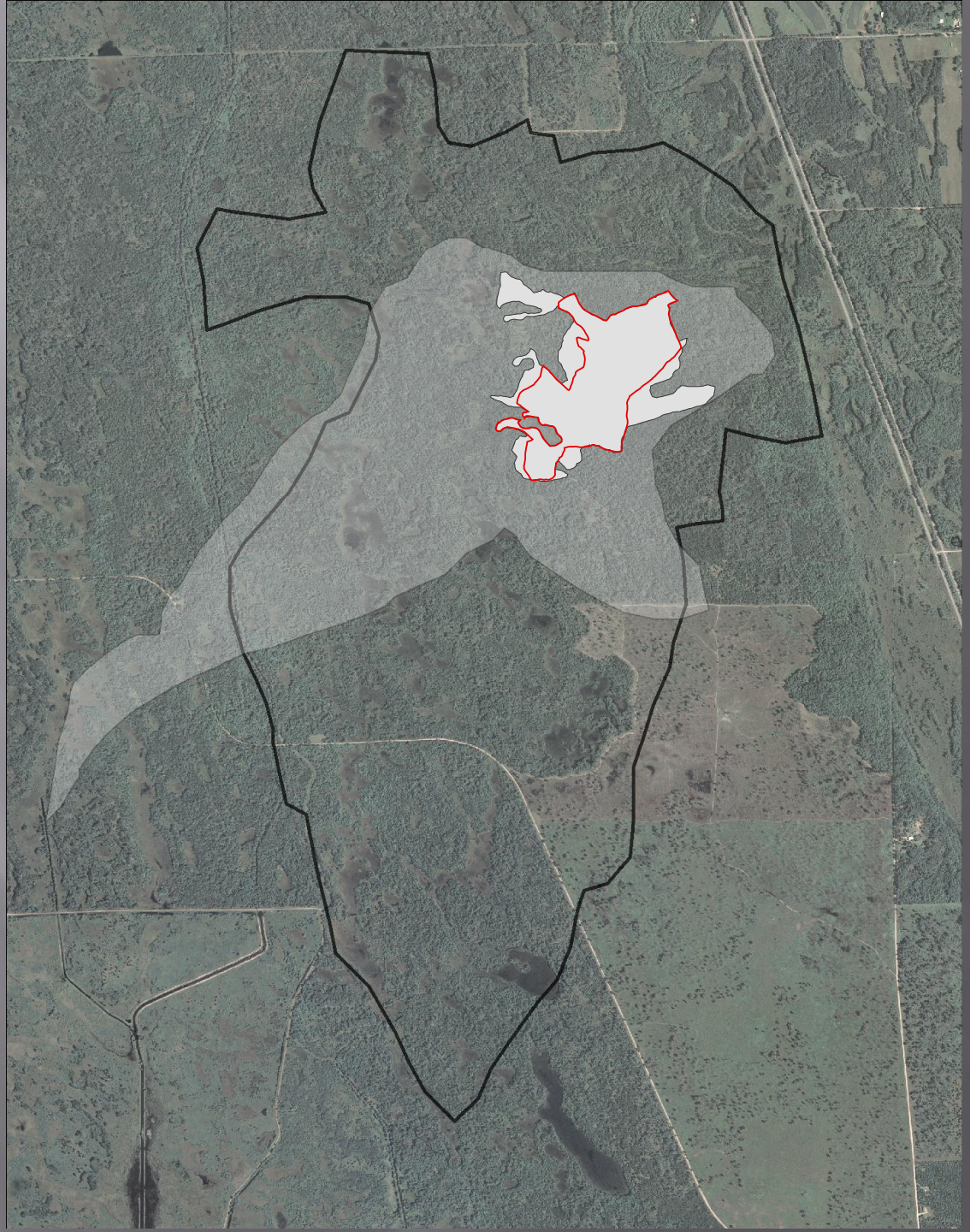

0
0.25
0.5
1
Miles

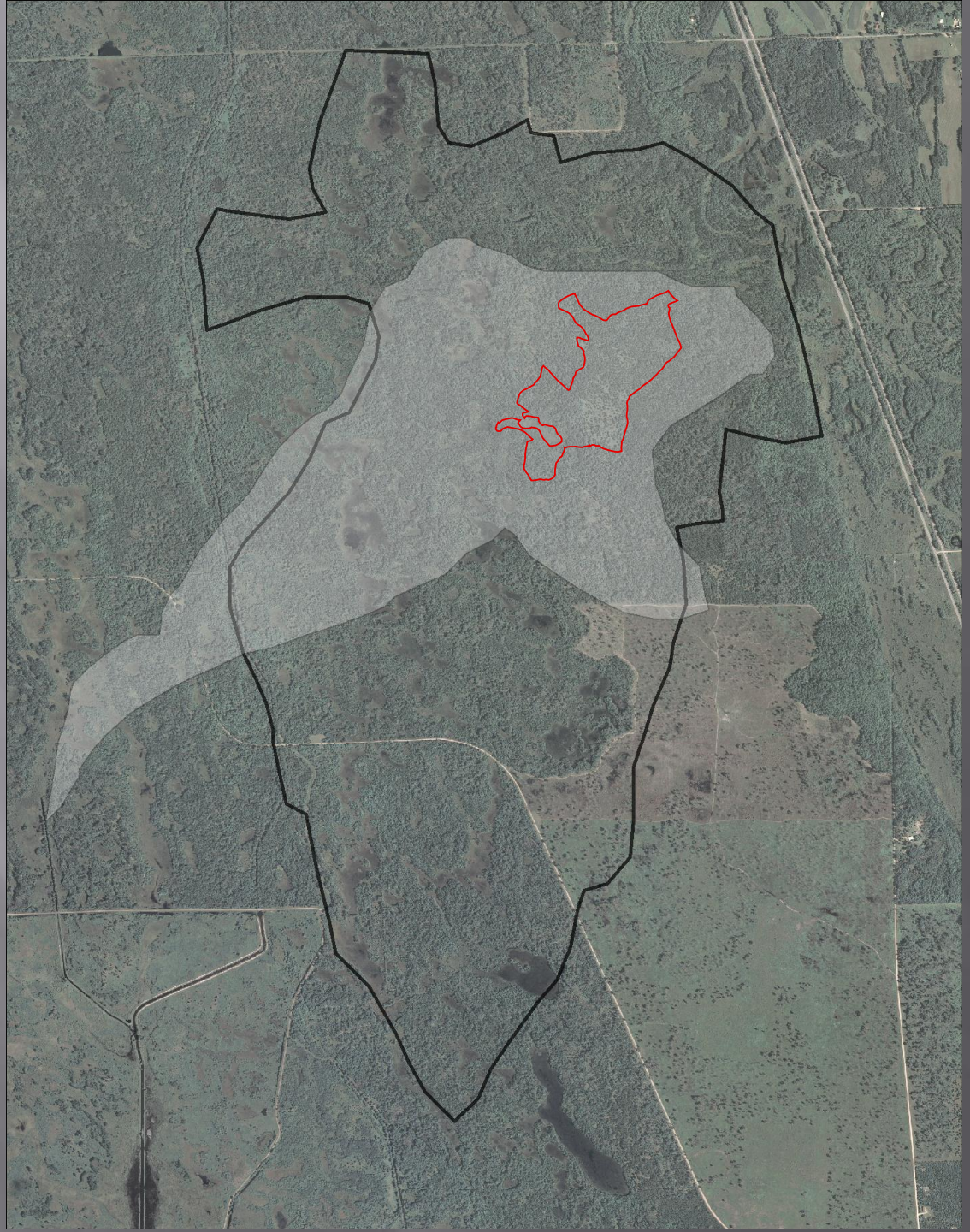


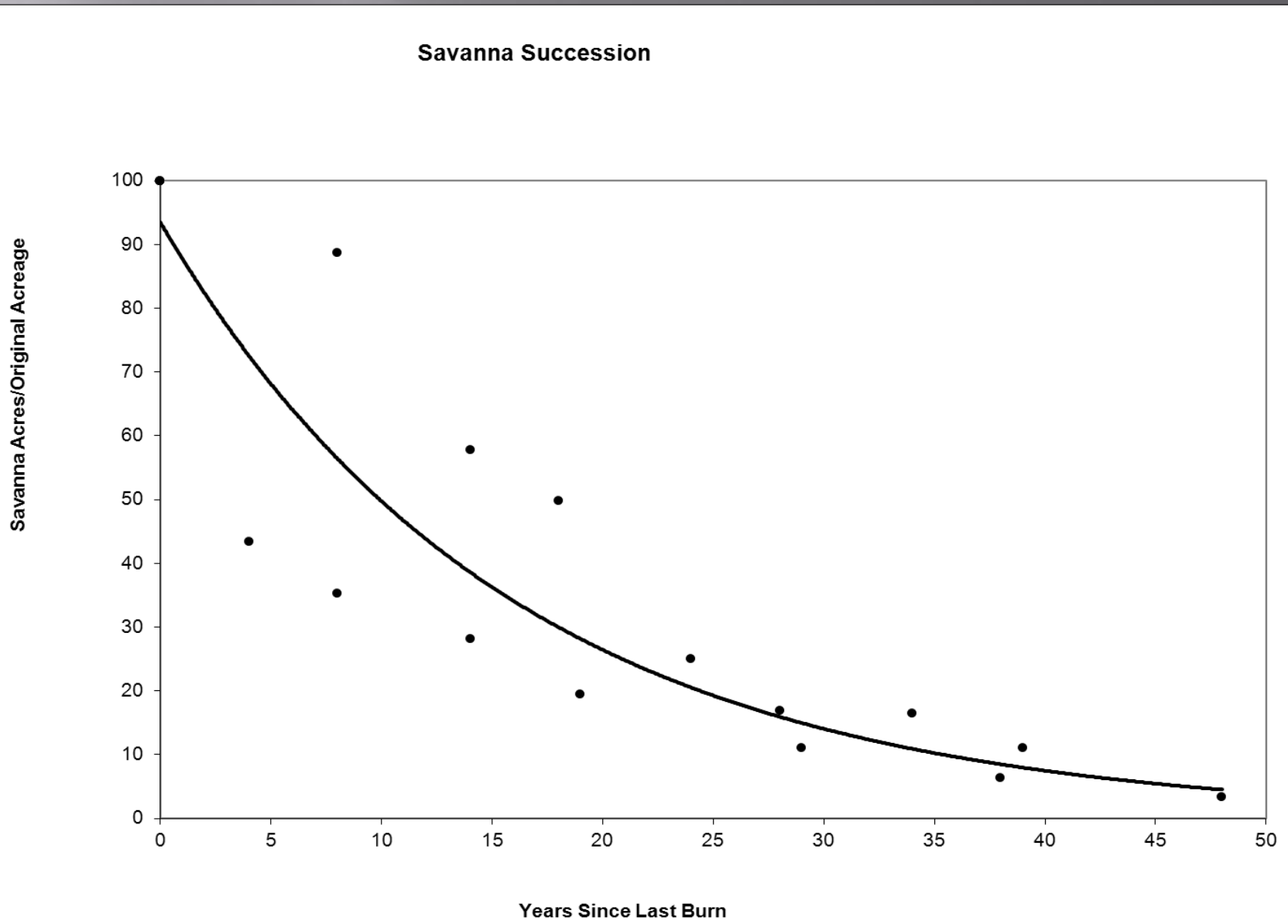


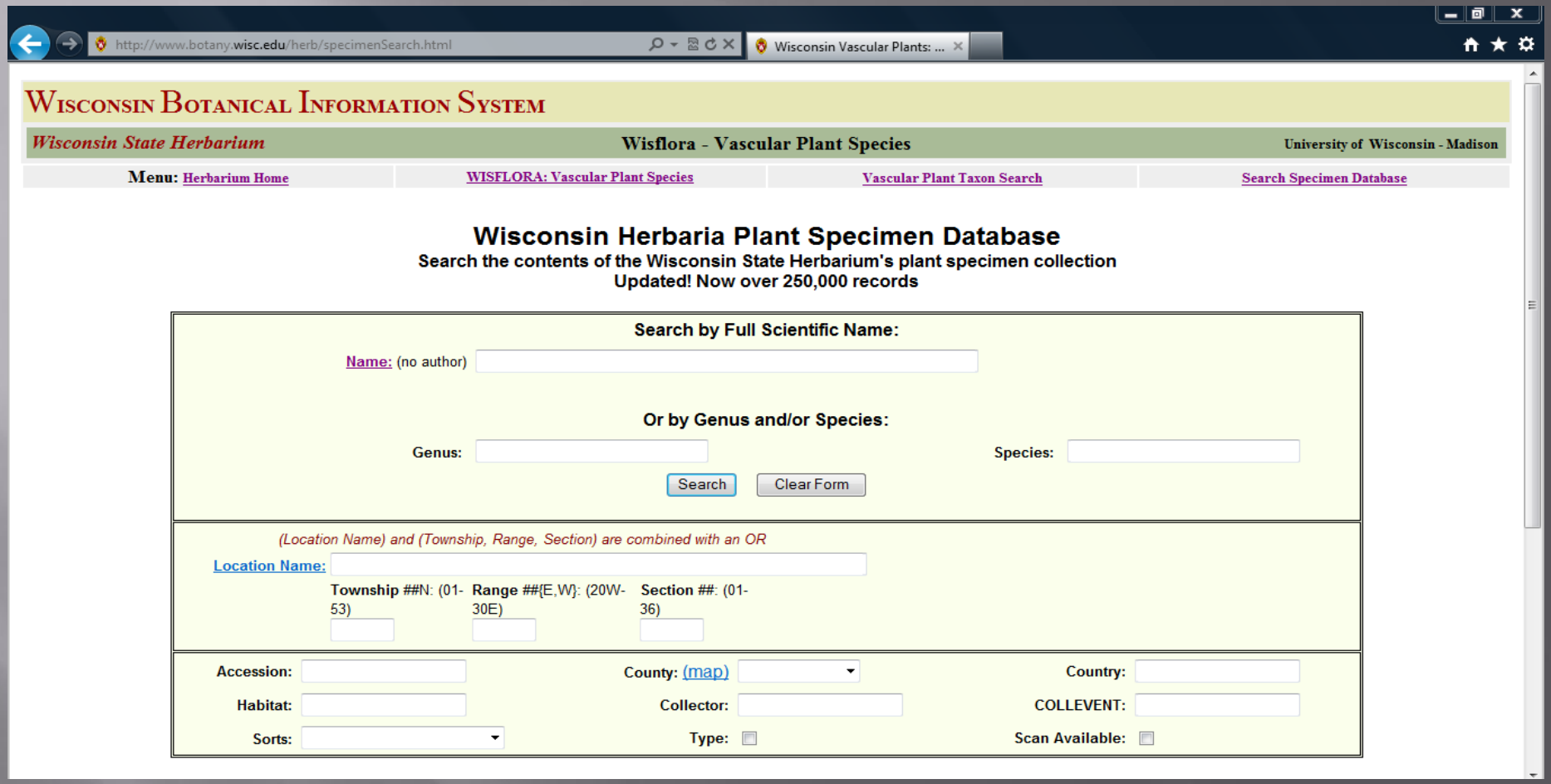


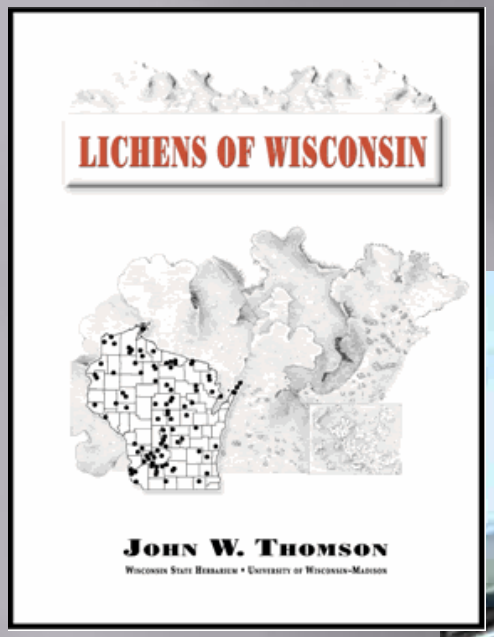







Savanna Succession
Savanna Acres/Original Acreage
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
50
Years Since Last Burn

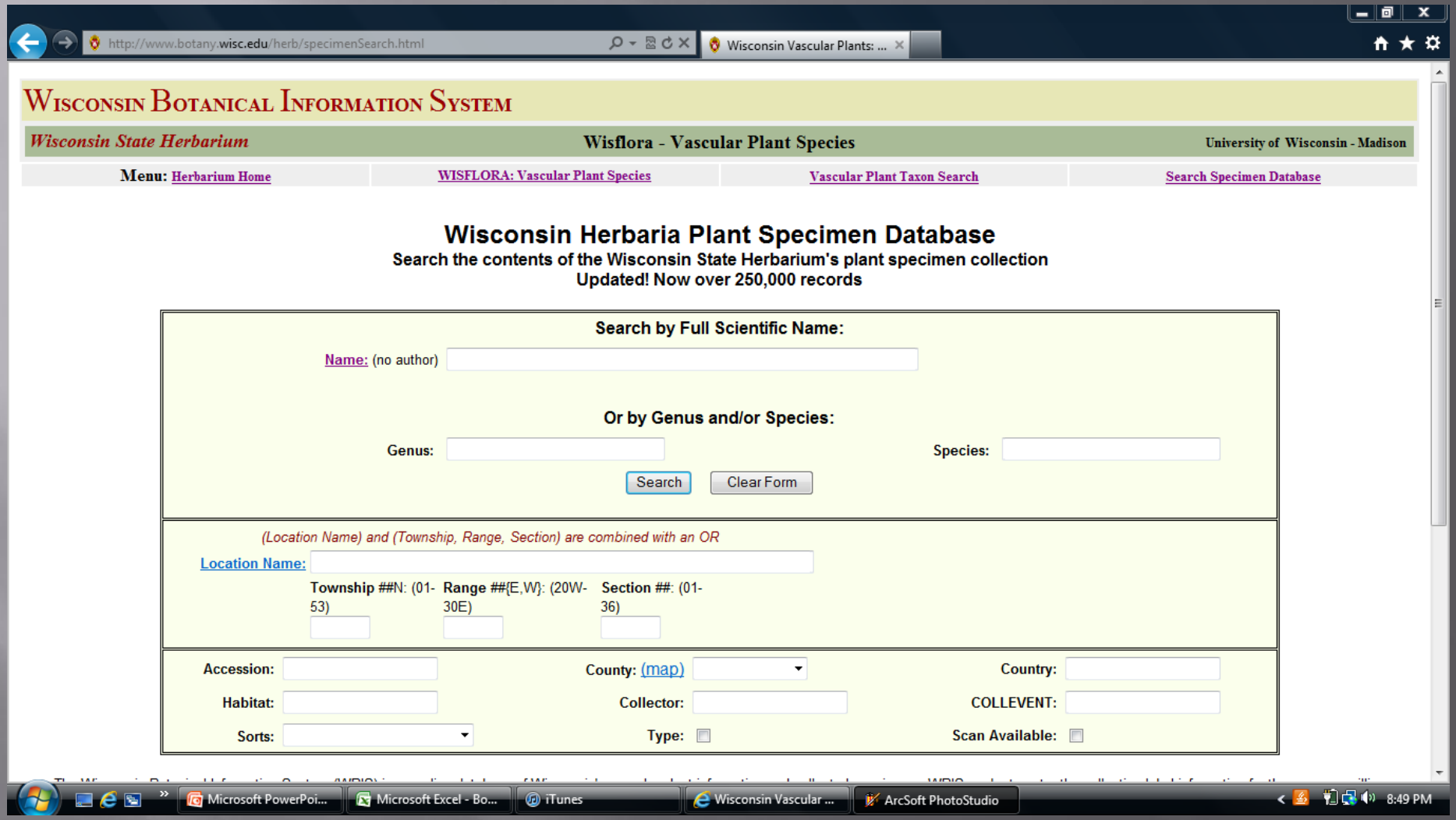

http://www.botany.wisc.edu/herb/specimenSearch.html
Wisconsin Vascular Plants: ...
WISCONSIN BOTANICAL INFORMATION SYSTEM
Wisconsin State Herbarium
Wisflora - Vascular Plant Species
University of Wisconsin - Madison
Menu: Herbarium Home
WISFLORA: Vascular Plant Species
Vascular Plant Taxon Search
Search Specimen Database
Wisconsin Herbaria Plant Specimen Database
Search the contents of the Wisconsin State Herbarium's plant specimen collection
Updated! Now over 250,000 records
Search by Full Scientific Name:
Name: (no author)
Or by Genus and/or Species:
Genus:
Species:
Search
Clear Form
(Location Name) and (Township, Range, Section) are combined with an OR
Location Name:
Township ##N: (01-53)
Range ##{E,W}: (20W-30E)
Section ##: (01-36)
Accession:
County: (map)
Country:
Habitat:
Collector:
COLLEVENT:
Sorts:
Type:
Scan Available:


LICHENS OF WISCONSIN
JOHN W. THOMSON
WISCONSIN STATE HERBARIUM • UNIVERSITY OF WISCONSIN-MADISON

STCP A Brief History of STCP

The Society of Tympanuchus Cupido Pinnatus, Ltd. (STCP) was founded in Wisconsin in 1961 by a handful of conservation minded Milwaukeeans. Led by Dory Vallier and Willis Sullivan, Sr. *(exit STCP)*, STCP was quickly formed as a non-profit organization and went to work. STCP's goal was simple: "to preserve and protect the prairie-chicken". At the time, concern had been expressed by noted wildlife biologists Drs. Frederick & Frances Hamerstrom *(exit STCP)* (pictured above) about the amount of grassland habitat that needed to be protected to ensure the survival of the species in Wisconsin. Once found in every county of the state as late as 1948, the population and range had decreased dramatically and the species was holding on only in the grasslands and failed farming regions of Central Wisconsin.

Once STCP was organized, critical properties were surveyed and identified by the Hamerstroms and Oswald Mattson. And, in a timely and efficient manner, STCP raised private funds and purchased these grassland reserves. These parcels of land varied in size and were acquired in a scatter-pattern approach developed by the Hamerstroms called "ecological patterning." The concept protected suitable blocks of prairie-chicken habitat interspersed throughout the landscape. Humans


http://www.botany.wisc.edu/herb/specimenSearch.html
Wisconsin Vascular Plants: ...
WISCONSIN BOTANICAL INFORMATION SYSTEM
Wisconsin State Herbarium
Wisflora - Vascular Plant Species
University of Wisconsin - Madison
Menu: Herbarium Home
WISFLORA: Vascular Plant Species
Vascular Plant Taxon Search
Search Specimen Database
Wisconsin Herbaria Plant Specimen Database
Search the contents of the Wisconsin State Herbarium's plant specimen collection
Updated! Now over 250,000 records
Search by Full Scientific Name:
Name: (no author)
Or by Genus and/or Species:
Genus:
Species:
Search
Clear Form
(Location Name) and (Township, Range, Section) are combined with an OR
Location Name:
Township ##N: (01-53)
Range ##{E,W}: (20W-30E)
Section ##: (01-36)
Accession:
County: (map)
Country:
Habitat:
Collector:
COLLEVENT:
Sorts:
Type:
Scan Available:
Microsoft PowerPoi...
Microsoft Excel - Bo...
iTunes
Wisconsin Vascular ...
ArcSoft PhotoStudio
8:49 PM

One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen. An ecologist must either harden his shell and make believe that the consequences of science are none of his business, or he must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise.

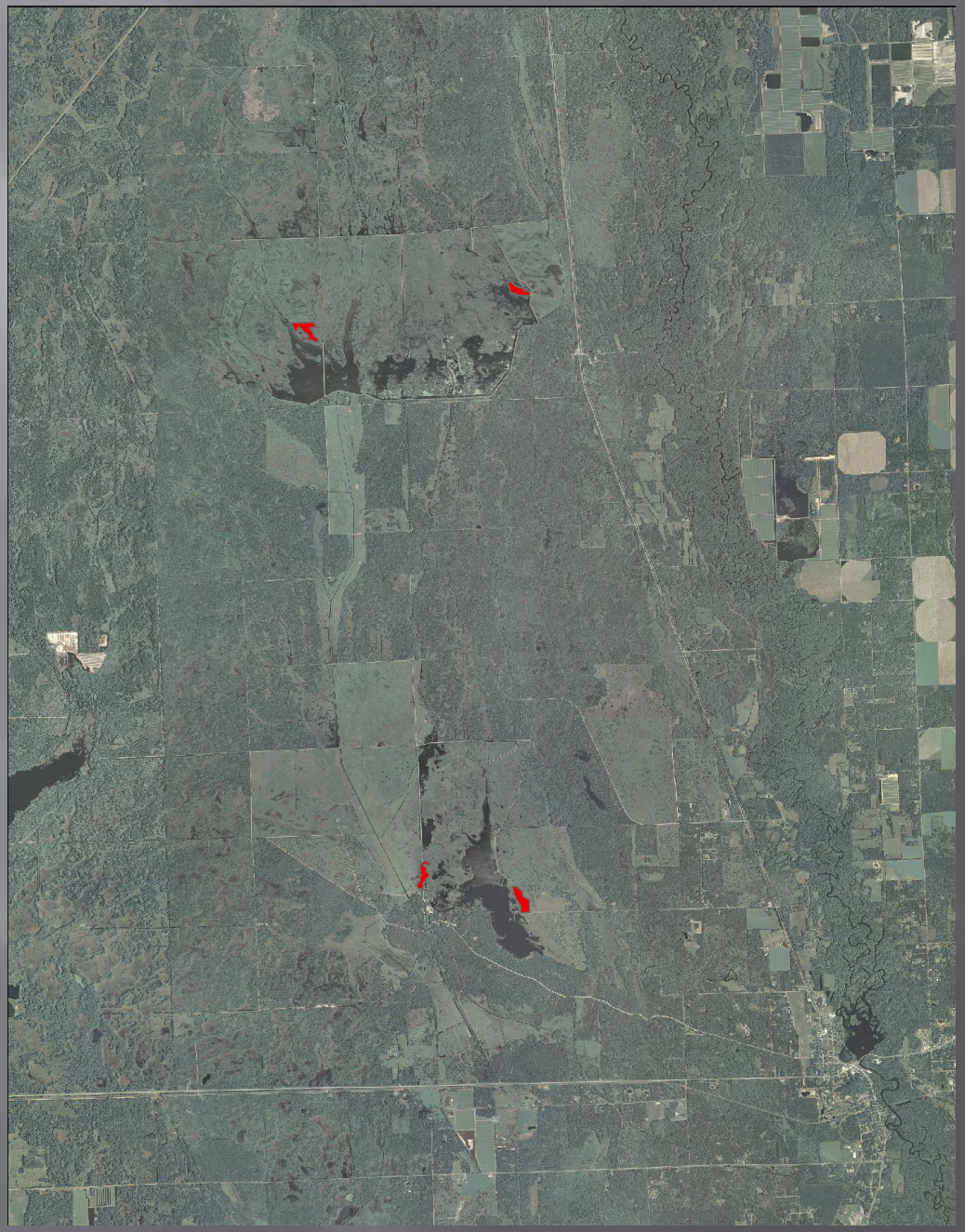
- *Aldo Leopold*

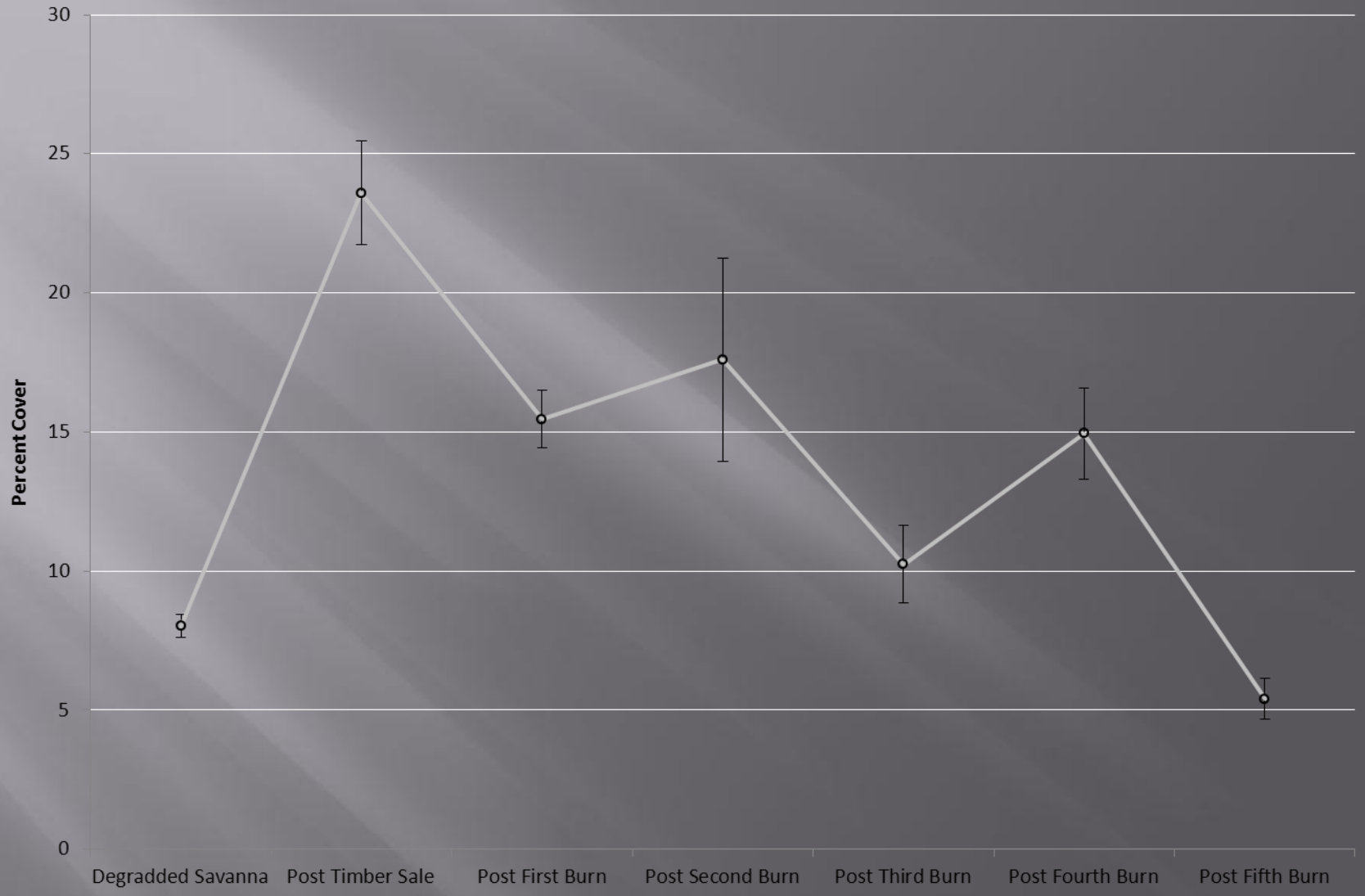
Photo#262256

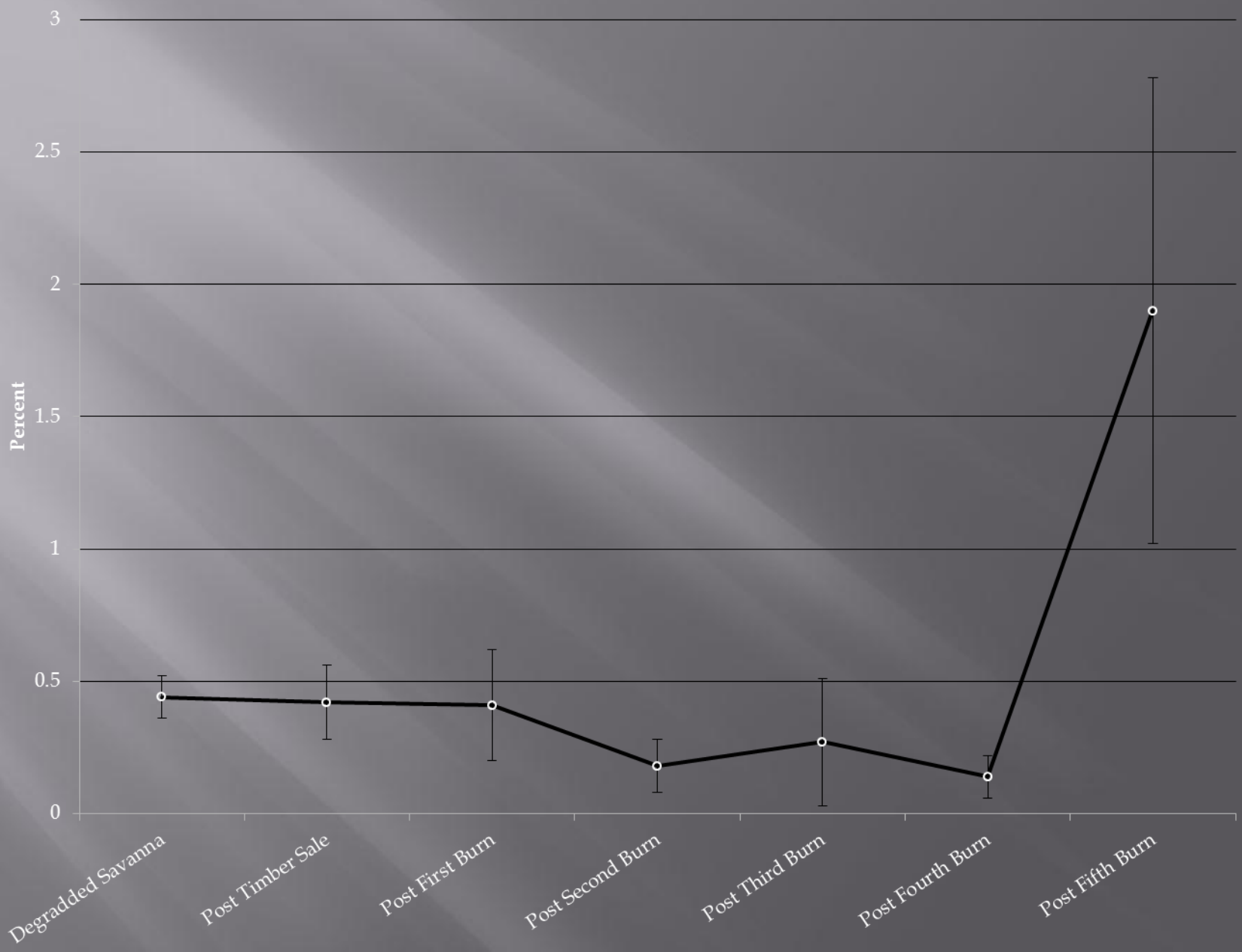
Isarthrus calceatus

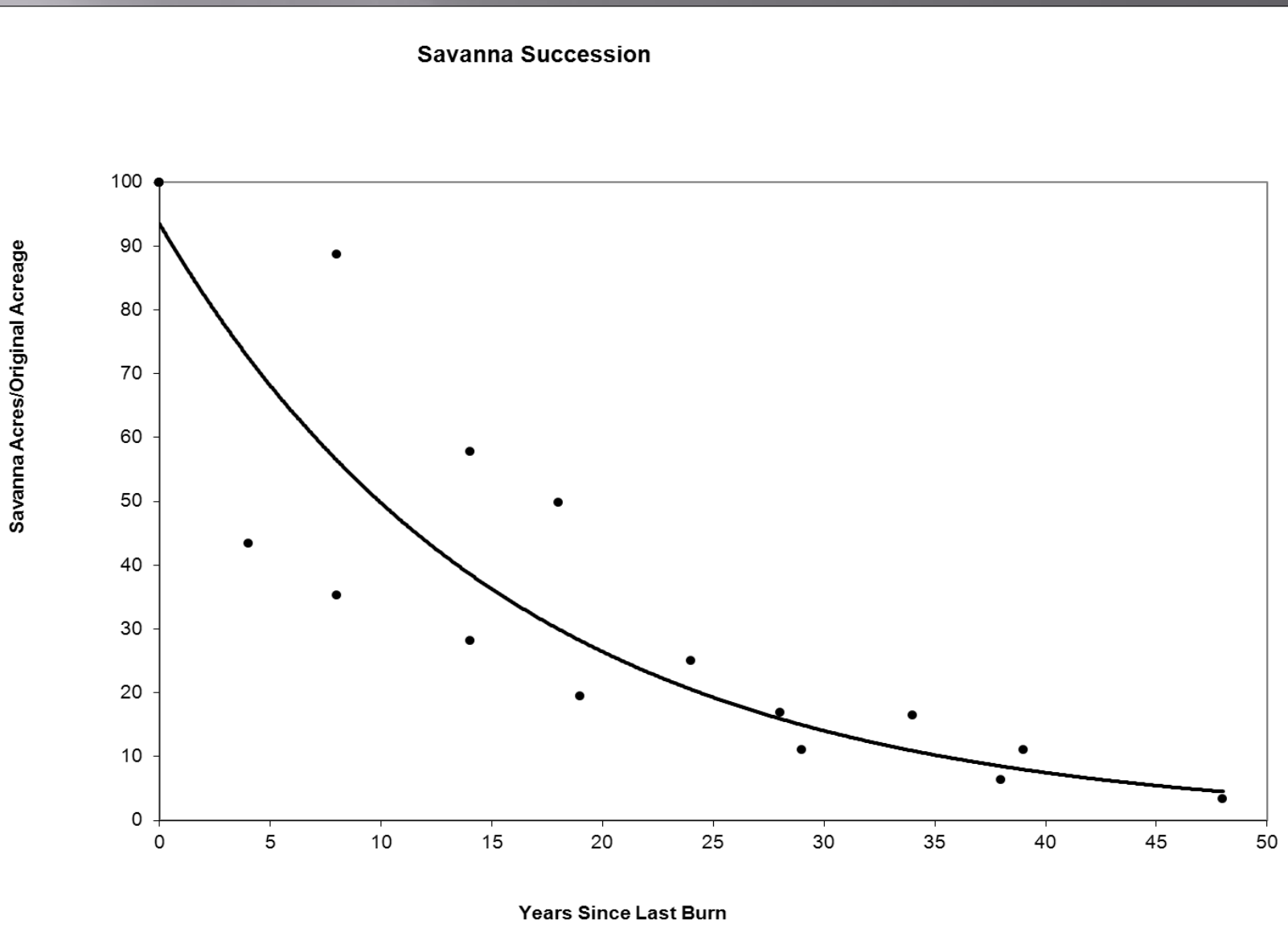
Necedah National Wildlife Refuge, Juneau County, Wisconsin, USA
June 11, 1996
Size: 6 mm

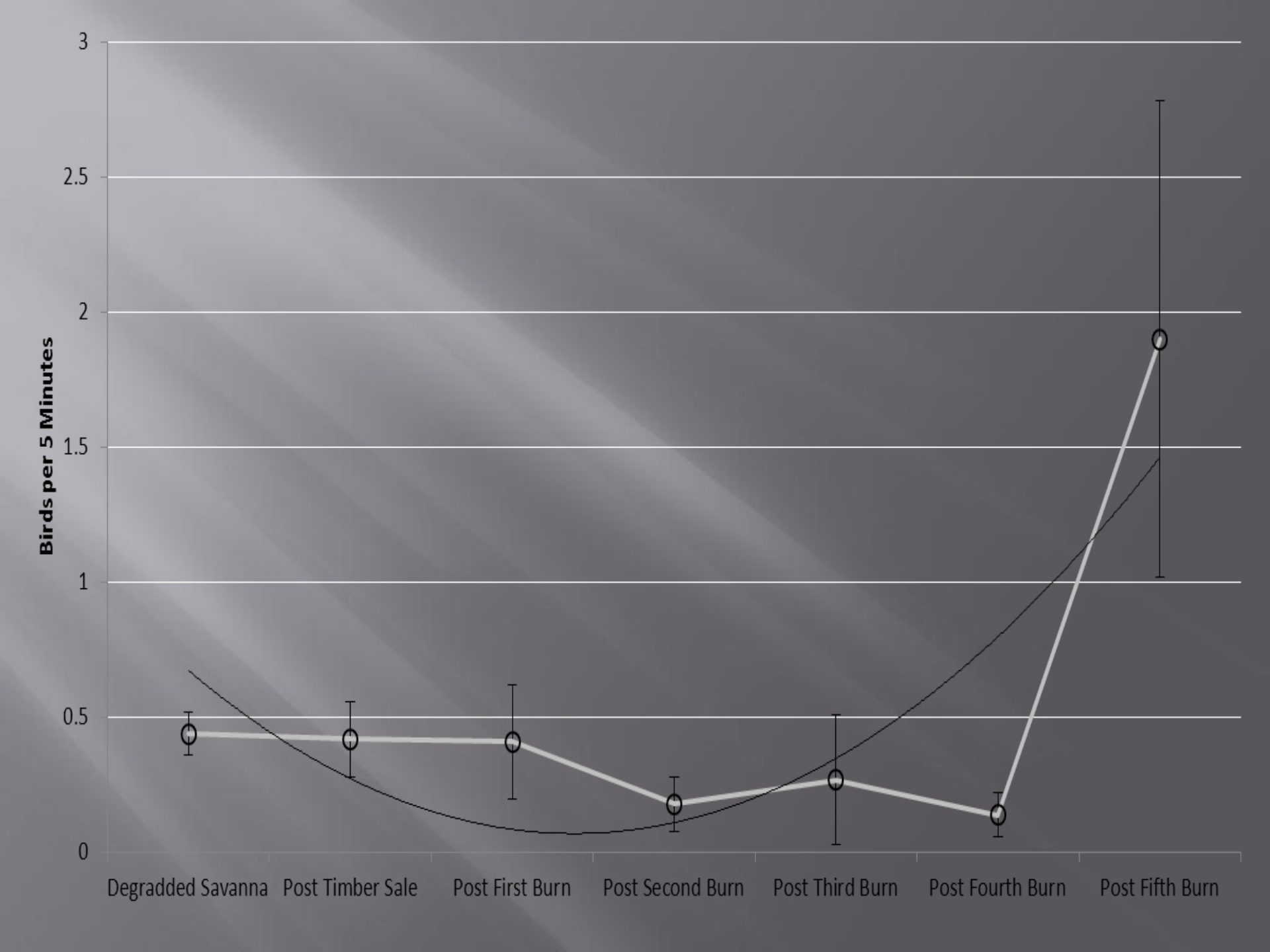
The eucnemid was collected by Katy Pope using a Malaise Trap.

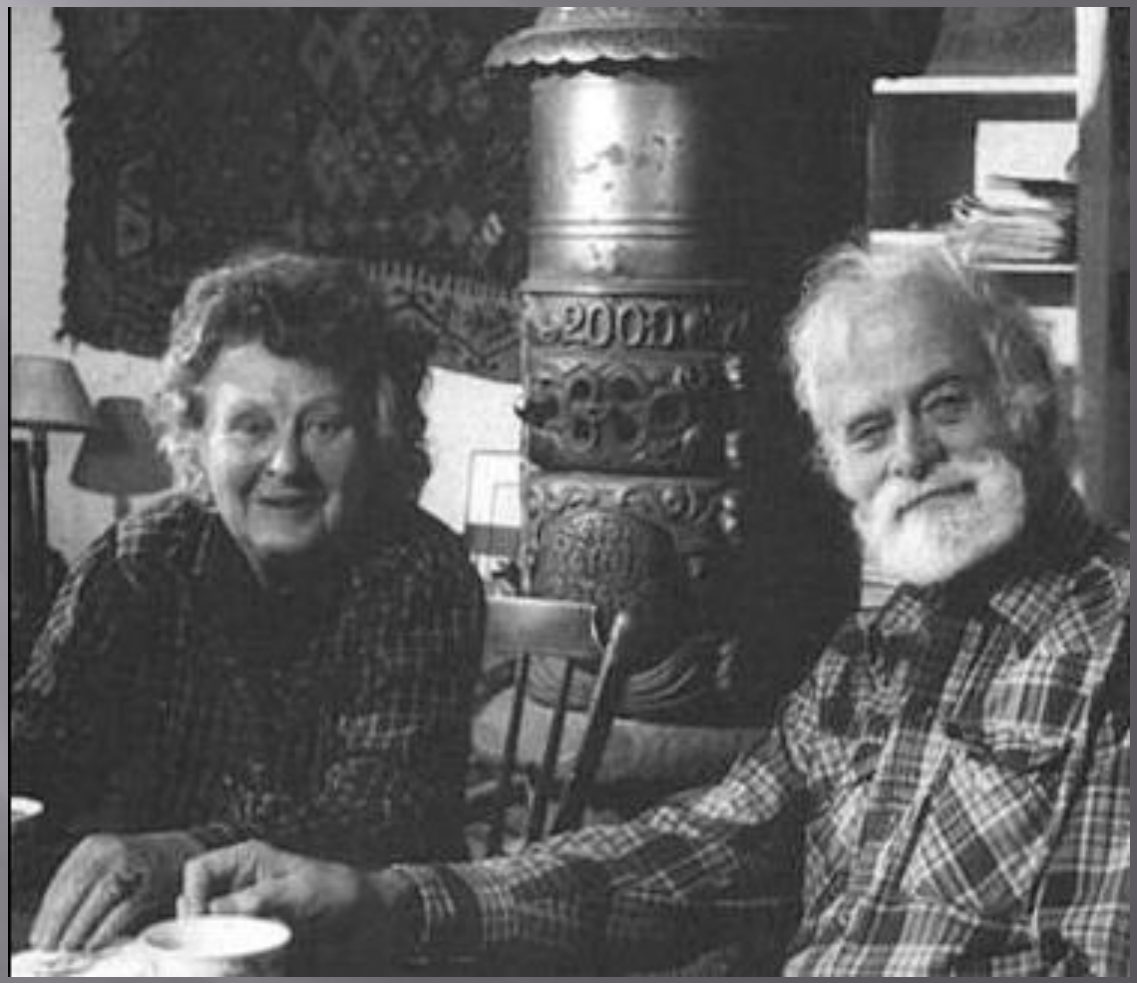


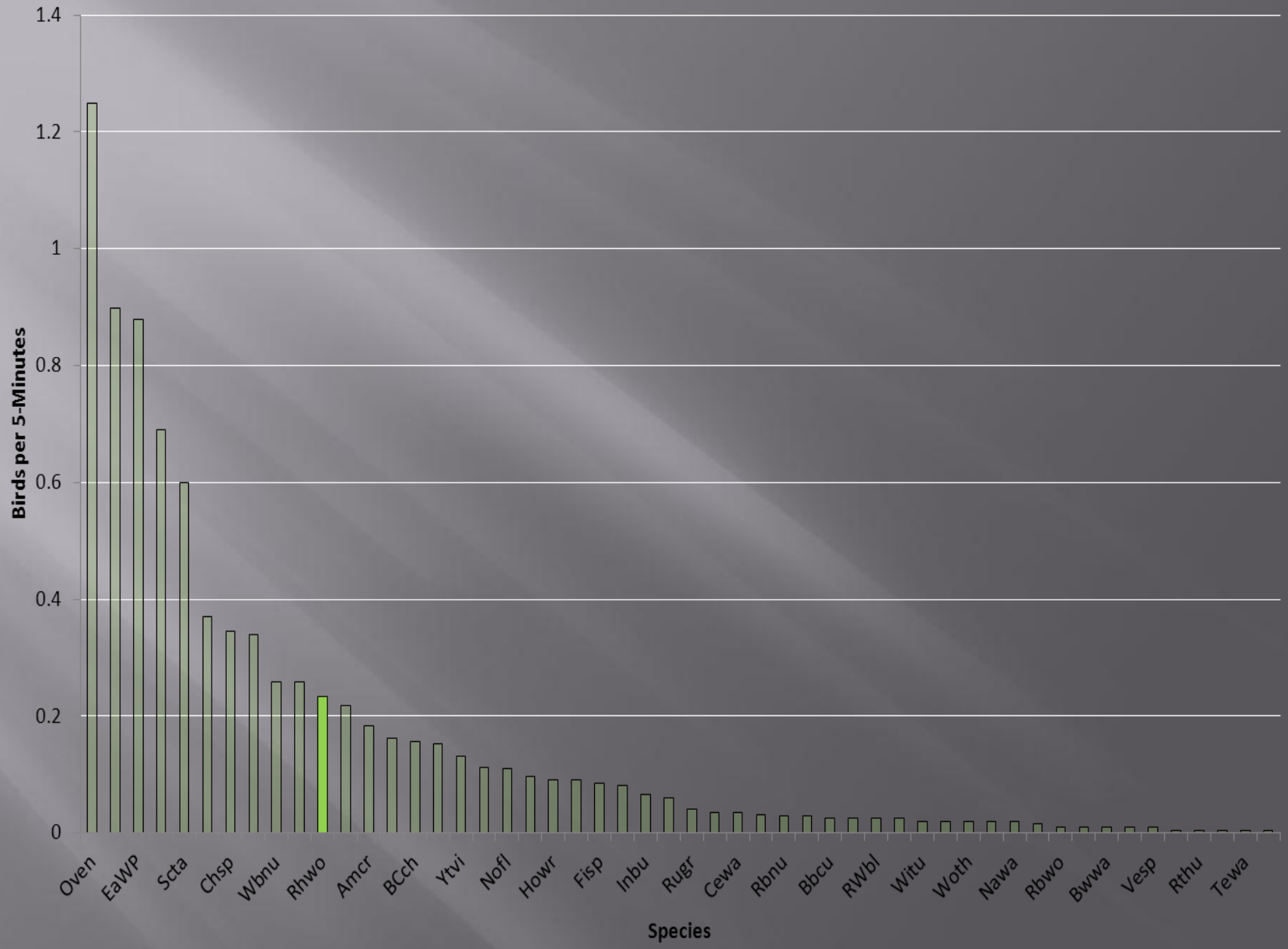

30
25
20
15
10
5
0
Percent Cover
Degradded Savanna
Post Timber Sale
Post First Burn
Post Second Burn
Post Third Burn
Post Fourth Burn
Post Fifth Burn


3
2.5
2
1.5
1
0.5
0
Percent
Degradded Savanna
Post Timber Sale
Post First Burn
Post Second Burn
Post Third Burn
Post Fourth Burn
Post Fifth Burn


Savanna Succession
Savanna Acres/Original Acreage
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40
45
50
Years Since Last Burn


3
2.5
2
1.5
1
0.5
0
Birds per 5 Minutes
Degradded Savanna
Post Timber Sale
Post First Burn
Post Second Burn
Post Third Burn
Post Fourth Burn
Post Fifth Burn


2000


1.4
1.2
1
0.8
0.6
0.4
0.2
0
Birds per 5-Minutes
Oven
EaWP
Scta
Chsp
Wbnu
Rhwo
Amcr
BCch
Ytvi
Nofl
Howr
Fisp
Inbu
Rugr
Cewa
Rbnu
Bbcu
RWbl
Witu
Woth
Nawa
Rbwo
Bwwa
Vesp
Rthu
Tewa
Species


© 2007 Rich Armstrong Photography

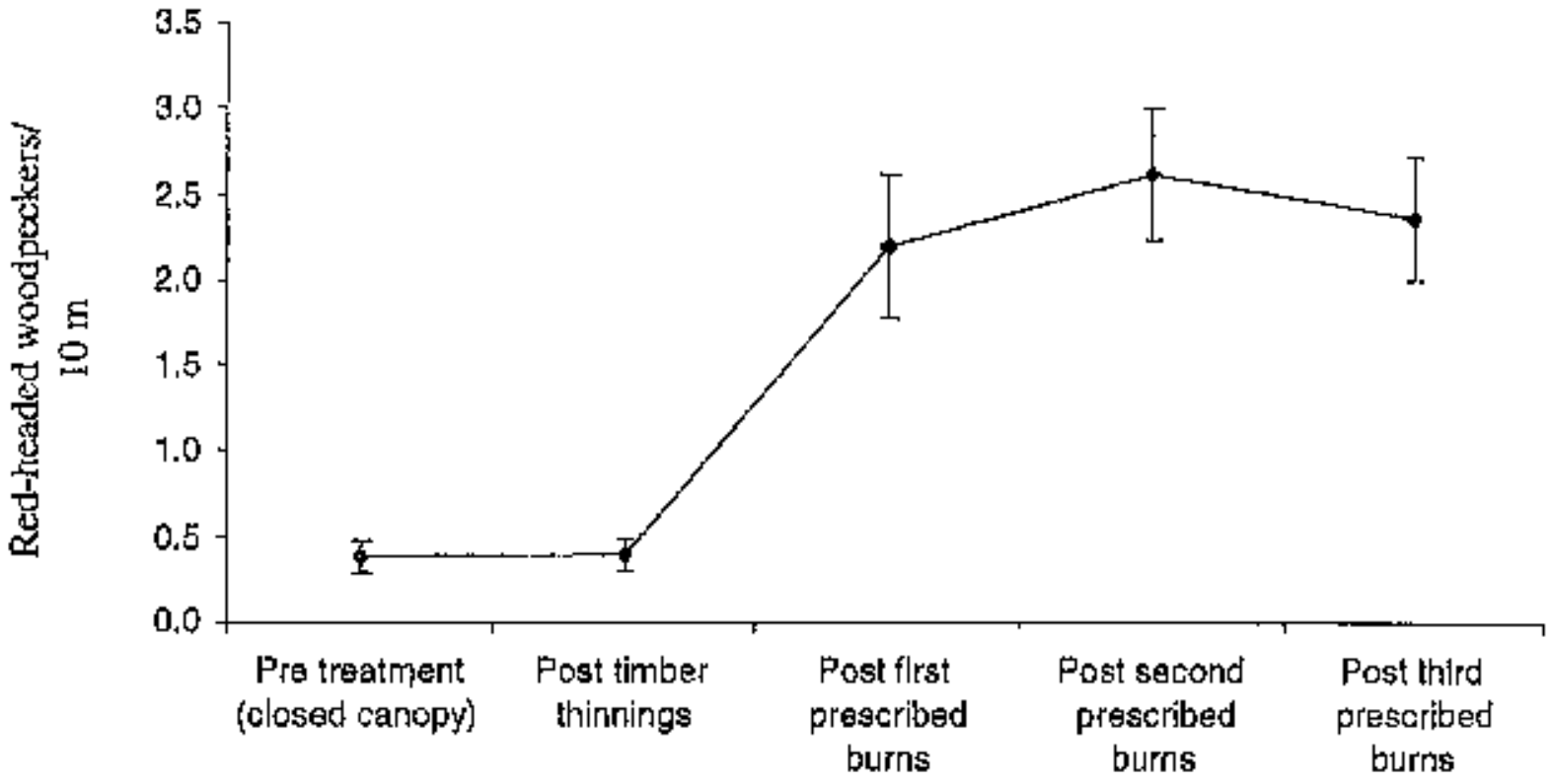


Figure 2. Red-headed woodpecker abundance ($\bar{x} \pm$ SE) resulting from savanna restoration activities on Necedah National Wildlife Refuge, Wisconsin, USA, 2002–2003.

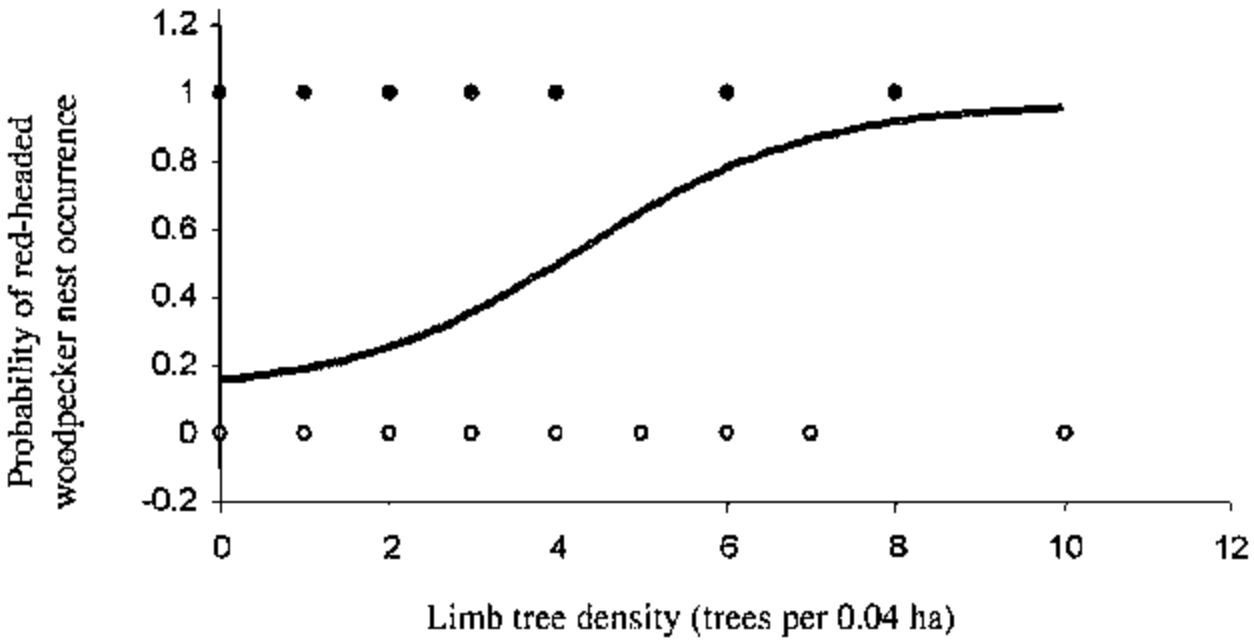


Figure 4. Nesting red-headed woodpecker limb-tree density threshold within restored savannas on Necedah National Wildlife Refuge, Wisconsin, USA, 2002–2003.


05/13/2007

Red-headed Woodpecker Recovery

redheadrecovery.org

NEW Read about Banding Success!

See Video Inside a Woodpecker's Nest!

Maps of Red-headed Woodpecker Clusters

All of The REDHEAD Newsletters

The Red-headed Woodpecker

The Red-headed Woodpecker is a lively bird of Eastern forests and parklands. Its striking colors, behavior and willingness to share space with people make it a favorite among many.

Red-headed Woodpeckers are key to maintaining diversity. They make numerous holes in dead trees, or dead limbs of live trees, for nesting, roosting and caching food. These holes are used later by many other species of birds and wildlife.

But...numbers have declined 90% in the last 40 years. This decline can be easily reversed by changing how we manage our landscapes.

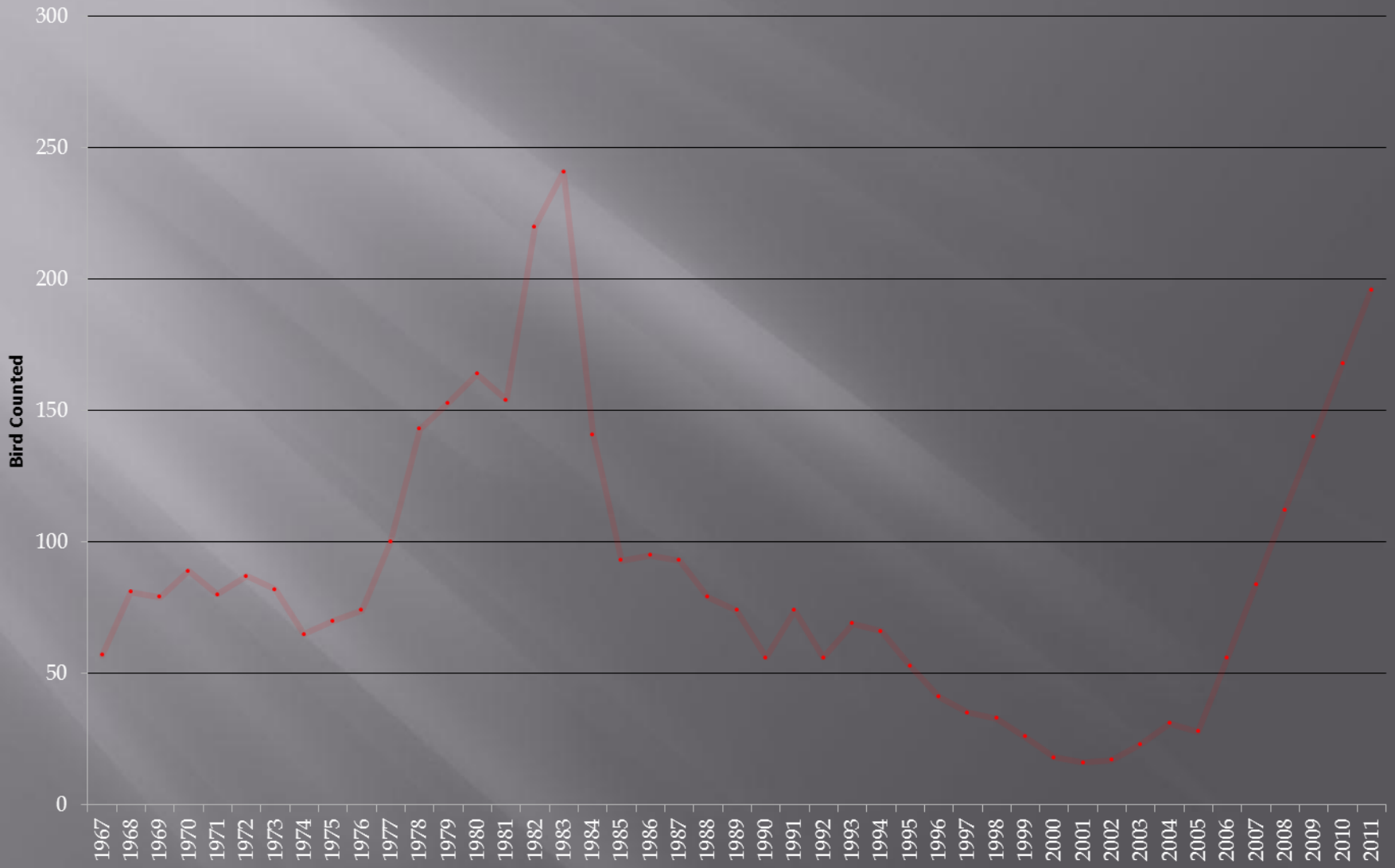
Our Goal

The goal of Red-headed Woodpecker Recovery (RhWR) is to reverse the decline and encourage the recovery of Red-headed Woodpecker populations through the creation, preservation, and restoration of habitat, and with research and public education.

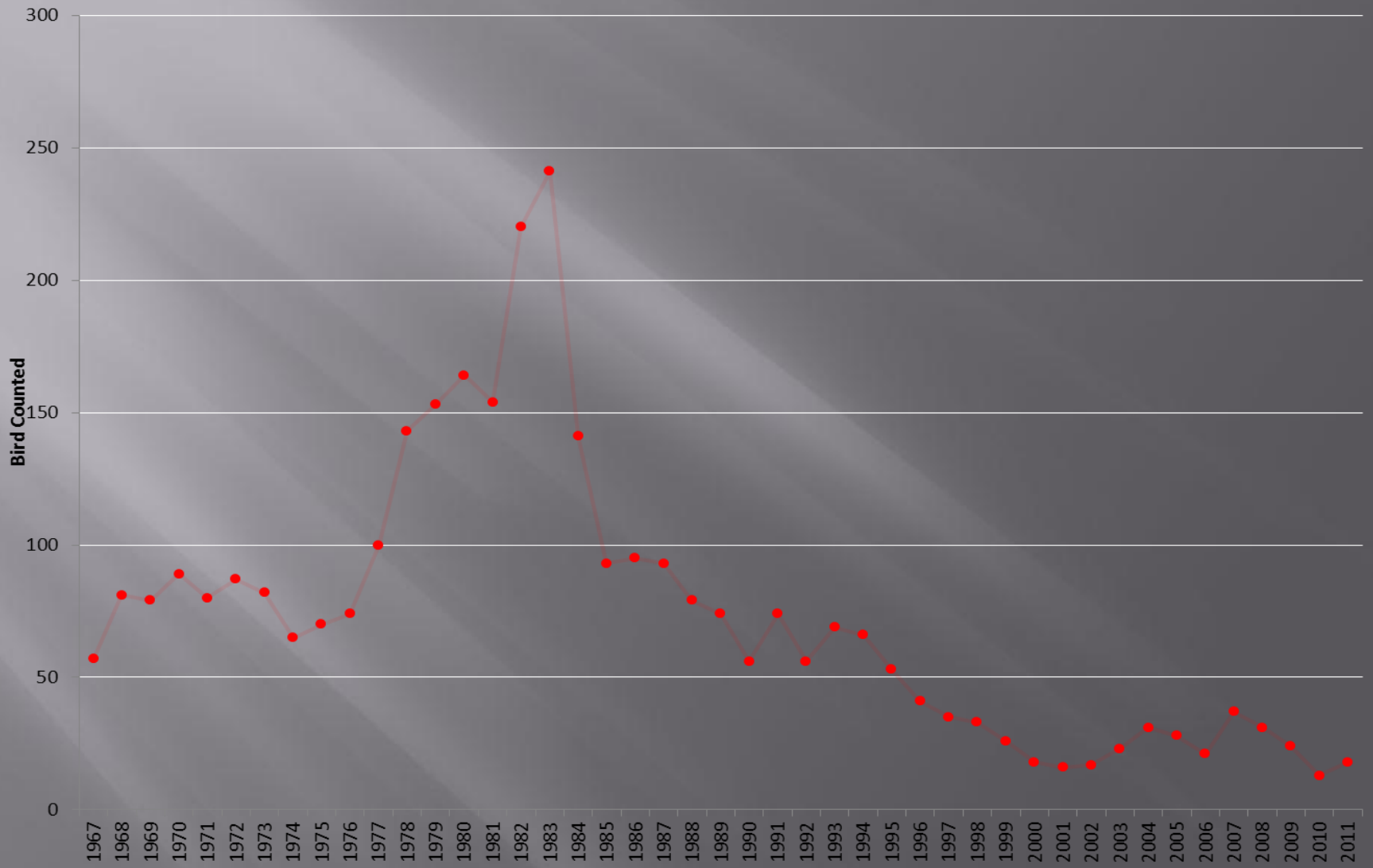
The group was formed in Minnesota in 2006 in order to serve as a focal point for red-head recovery.

Committee Meetings

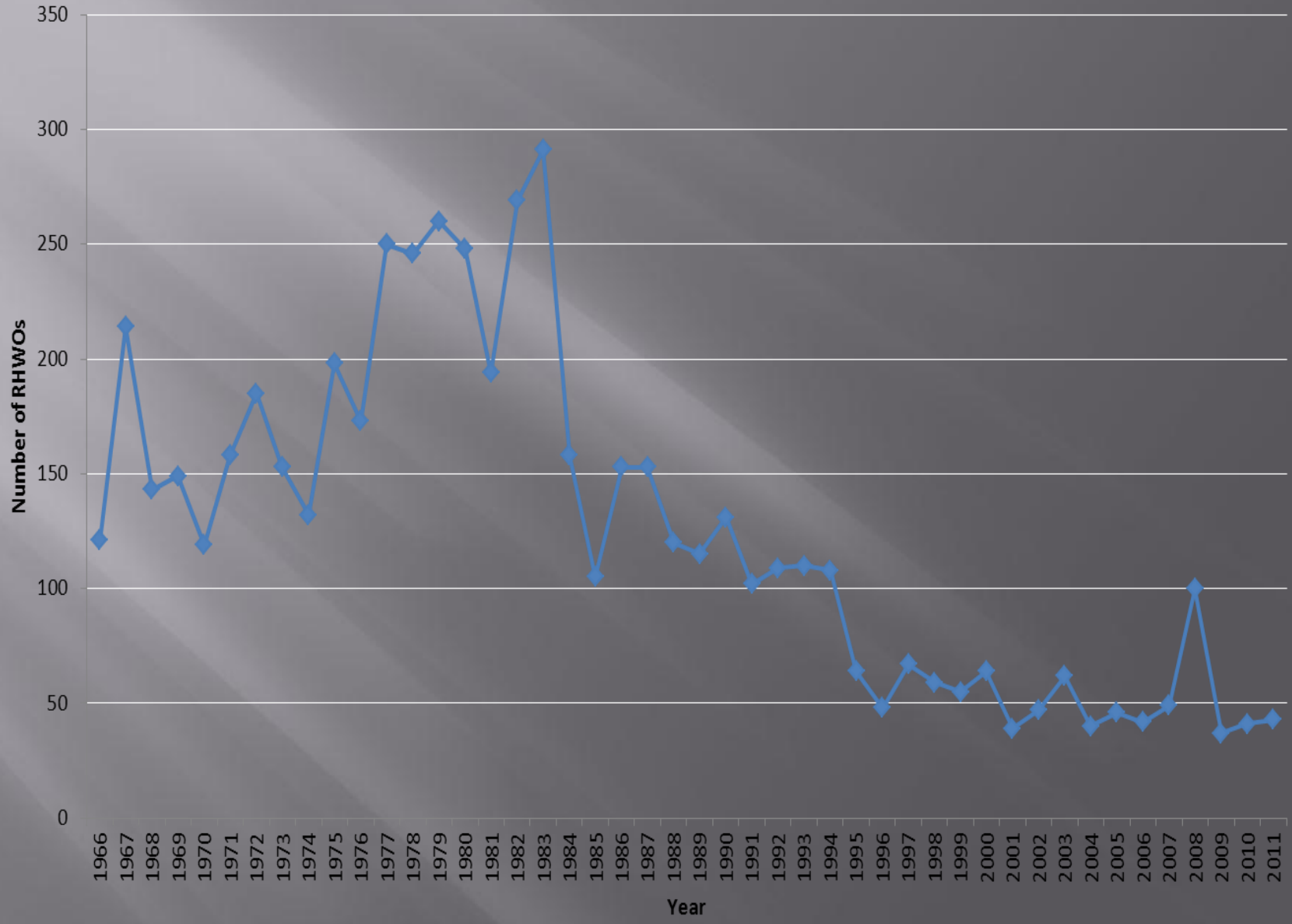
Minnesota Breeding Bird Survey Results (USGS)



Minnesota Breeding Bird Survey Results (USGS)

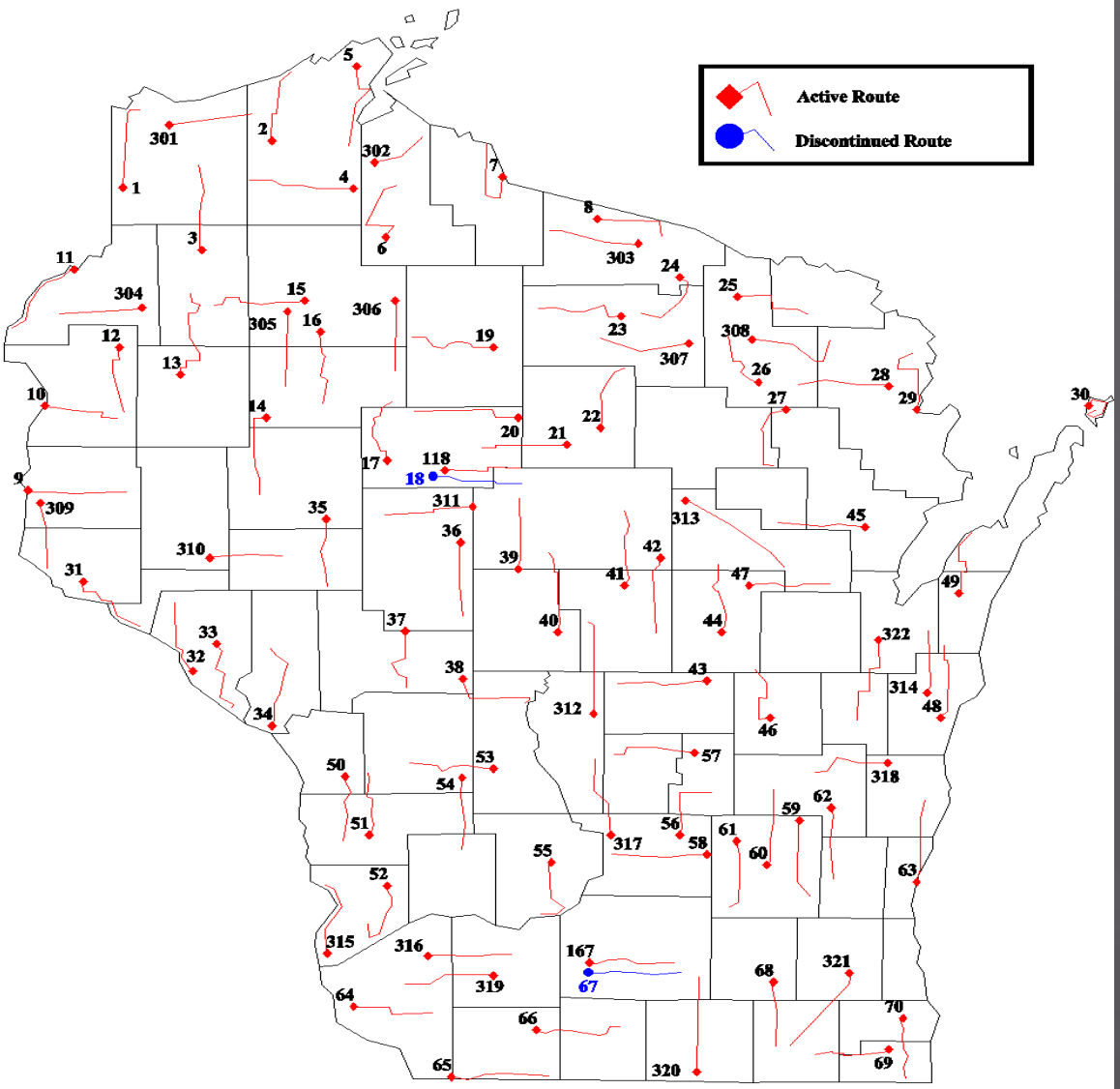


Wisconsin Breeding Bird Survey Results (USGS)



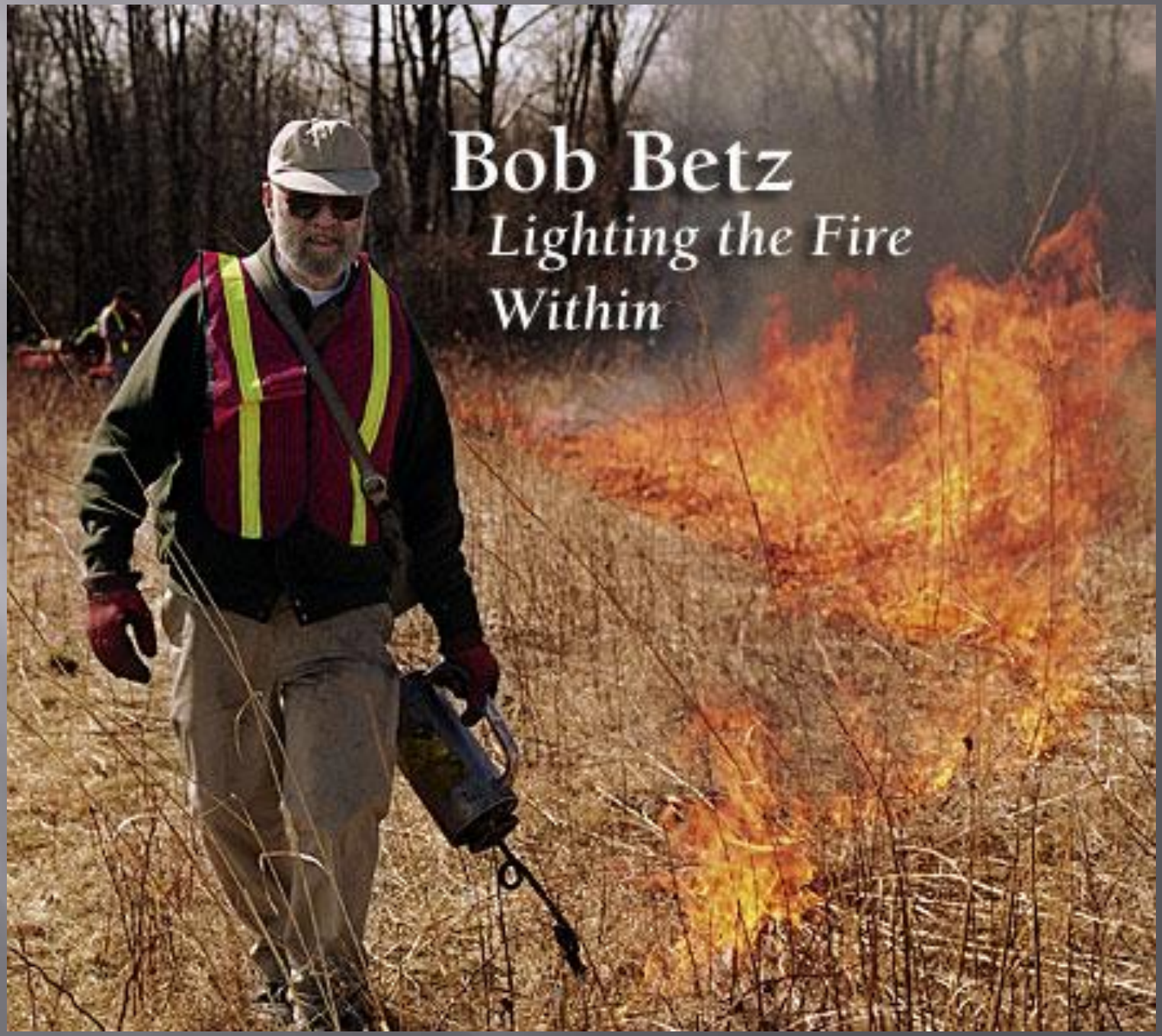
91 -- Wisconsin

BREEDING BIRD SURVEY ROUTE LOCATIONS



NOTE: Survey routes are not drawn to scale and are intended only to provide approximate route locations (3/96,klp).


?
Breeding
Breeding and wintering
Wintering


Bob Betz
Lighting the Fire
Within

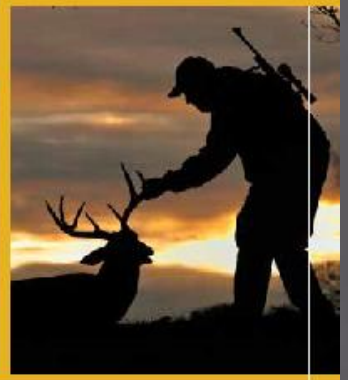

2000


© 2007 Rich Armstrong Photography

The North American Model of Wildlife Conservation





Technical Review 12-04
December 2012

THE WILDLIFE SOCIETY

2012 NATIONAL PRESCRIBED FIRE USE SURVEY REPORT

Technical Report 01-12

Coalition of Prescribed Fire Councils, Inc.

Results *(continued)*

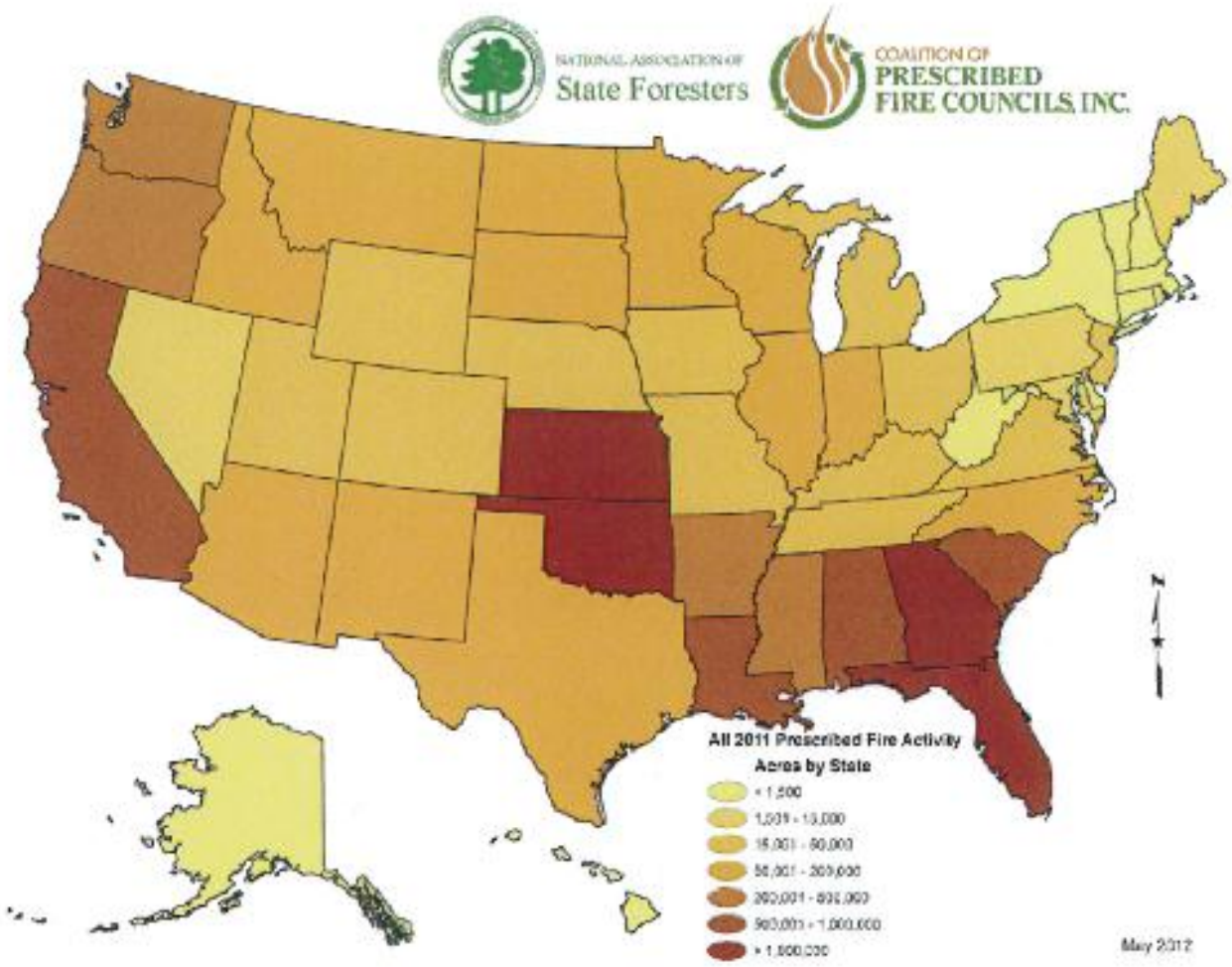


Figure 10. Acres of all prescribed fire use by state. The coarse acreage classes were created using a histogram which determined the most significant breaking points in acres reported.

Results *(continued)*

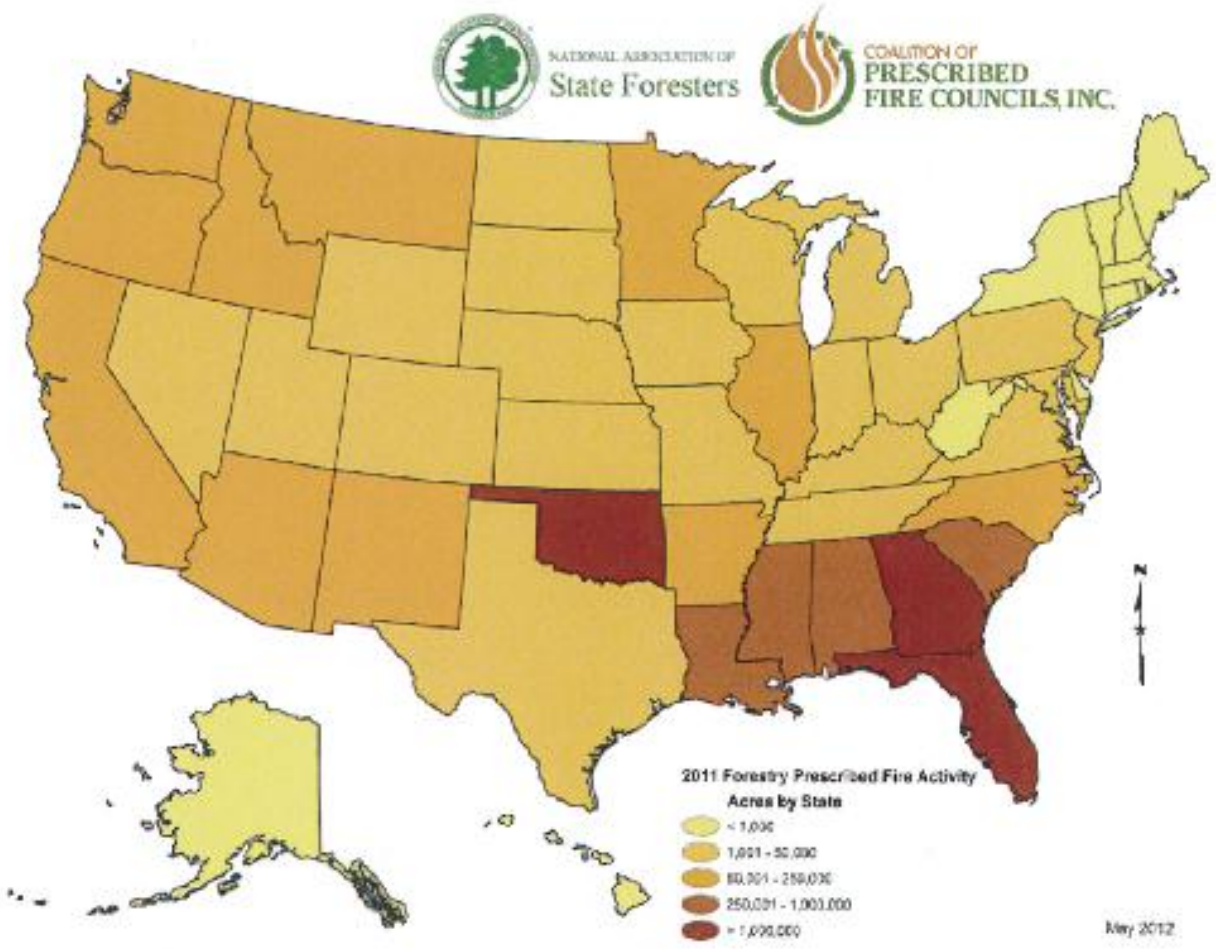
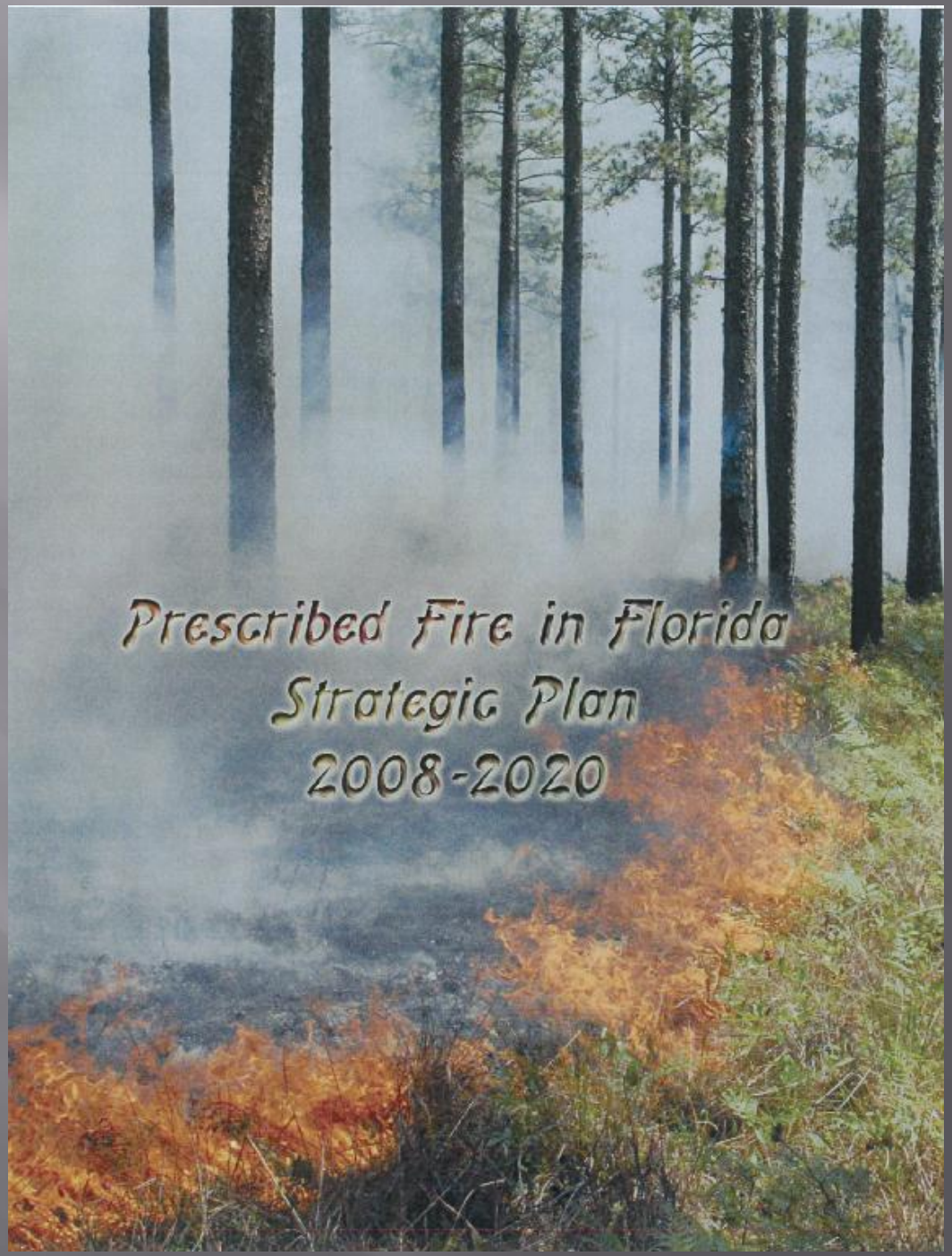


Figure 11. Acreage of prescribed fire use for forestry objectives by state. The coarse acreage classes were created using a histogram which determined the most significant breaking points in acres reported.


Prescribed Fire in Florida
Strategic Plan
2008-2020

OKLAHOMA FORESTRY SERVICES

A Division of the Oklahoma Department of Agriculture, Food, and Forestry

What are the Benefits of Fire?

What is Prescribed Fire?

How to Prepare to Conduct a Prescribed Fire

OFS Assistance to Conduct a Prescribed Fire

OFS Scheduled Prescribed Fires

Forms and Publications

Search this Website

Click to Search

What is Prescribed Fire?

Prescribed fire refers to the controlled application of fire to wildland ecosystems under specified environmental conditions that help restore health to fire-adapted environments.

By reducing hazardous fuel accumulations on the forest floor, encouraging the new growth of native vegetation, and maintaining the many plant and animal species whose habitats depend on periodic fire, prescribed burning helps reduce the catastrophic damage of wildfire on our lands and surrounding communities.

Prescribed fire is one of the most effective tools we have in preventing the outbreak and spread of wildfires. But because prescribed fire is fire, fire management experts must be extremely careful in planning and executing a prescribed fire.

Need to Conduct a Prescribed Fire?
Oklahoma Forestry Services can help!

RADIUM3

OKLAHOMA FORESTRY SERVICES

A Division of the Oklahoma Department of Agriculture, Food, and Forestry

Home OFS Services Wildland Fire Prescribed Fire OFS Assistance to Conduct a Prescribed Fire

What are the Benefits of Fire?

What is Prescribed Fire?

How to Prepare to Conduct a Prescribed Fire

OFS Assistance to Conduct a Prescribed Fire

OFS Scheduled Prescribed Fires

Forms and Publications

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OFS Prescribed Fire Assistance

Oklahoma Forestry Services encourages the use of prescribed burning when it is consistent with good forest resource management principles and practices and hazard reduction and mitigation activities that reduce the threat of wildfires. If you need to conduct a prescribed fire OFS can help.

We currently offer the following on a fee basis:

- Prefire Construction
- Full Service Prescribed Burning (Turn-key) for individuals
- Wildland Urban Interface (WUI) Hazard Mitigation Burning

Eligible Landowners include:

- Non-industrial private forest landowners with an approved Forest Stewardship plan or approved equivalent.
- Communities that are participating in the Community Wildfire Protection Program (CWPP) or Firewise Program
- Groups, partnerships, associations, trusts, conservators, and state or local government agency owning land (as long as there is no conflict with the primary purpose and other responsibilities of Oklahoma Forestry Services)

Our foresters and fire professionals will work with you to accomplish your land management objectives. For more information contact the OFS Forester near you or complete our request for prescribed fire assistance form.

RADIUM3

Results *(continued)*

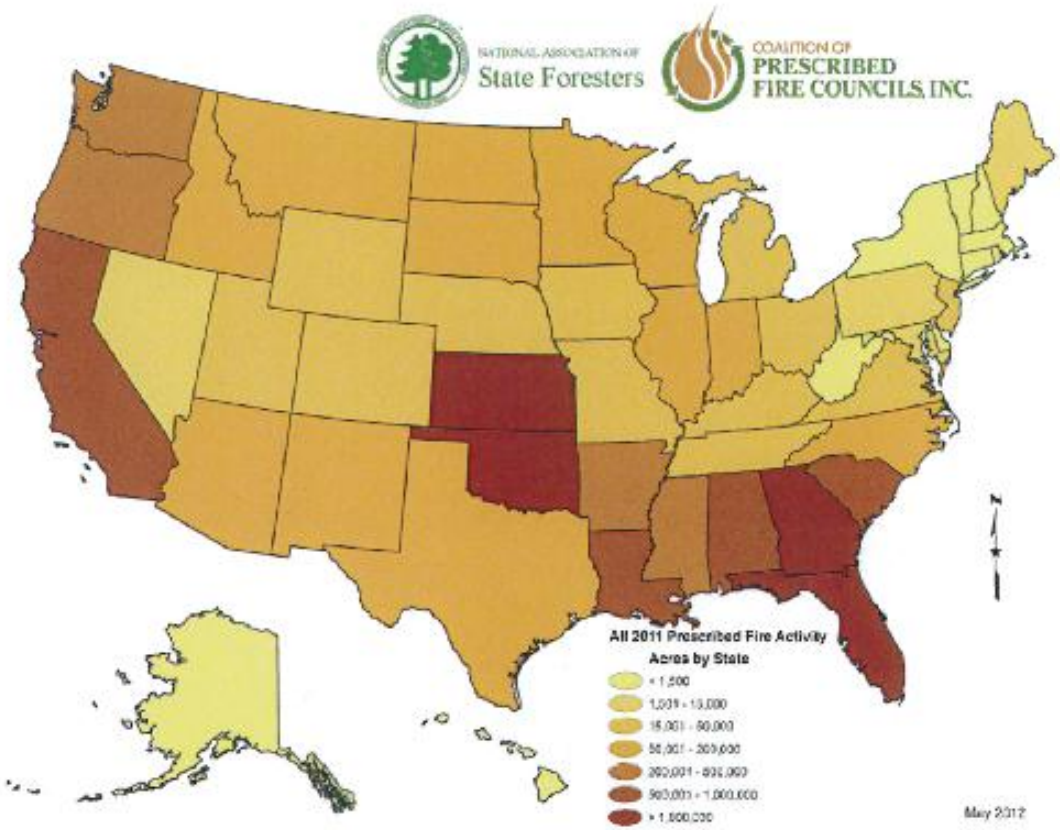


Figure 10. Acres of all prescribed fire use by state. The coarse acreage classes were created using a histogram which determined the most significant breaking points in acres reported.


Minneapolis
Necedah, WI
Wiscon
McGregor, IA
Madison
© 2013 Google
Image © 2013 TerraMetrics
43°41'32.46" N 90°54'29.67" W elev 1107 ft
Google earth
Eye alt 191.02 mi

Biol Invasions (2010) 12:241–252
DOI 10.1007/s10530-009-9446-z

ORIGINAL PAPER

The effects of eastern red cedar (*Juniperus virginiana*) invasion and removal on a dry bluff prairie ecosystem

Ann M. Pierce · Peter B. Reich

Received: 12 July 2008 / Accepted: 28 January 2009 / Published online: 6 February 2009

Abstract Eastern red cedar (*Juniperus virginiana*) establishment increased dramatically in the tallgrass prairie biome of North America during the last 30 years. Since many of the remaining remnant prairies occur on steep, dry, and nutrient poor sites, threatened by the invasion of native and non-native woody species, it is important to understand how an invasive species such as eastern red cedar influences key environmental factors that may determine the future trajectory of these systems and whether abiotic and biotic components of the system are resilient following cedar removal. To address these issues we: (1) investigated the influence of eastern red cedar on micro-environmental factors; (2) evaluated how these micro-environmental factors responded to eastern red cedar removal; and (3) assessed the effect of eastern red cedar on herbaceous species germination and distribution. The invasion of eastern red cedar was associated with lower surface light availability and soil temperature, as seen in prior studies, but otherwise had effects distinct from those observed in prior studies. There was no effect of cedar on soil pH, and unlike prior studies, cedar patches had higher soil moisture compared to native C_4 prairie grass plots. Moreover, these effects had strong spatial signatures, with impacts of invasion on micro-environment and native vegetation differing dramatically with slope position and aspect. Three years after eastern red cedar was removed, micro-environmental factors and species composition became similar to the tree-free grass-dominated plots, indicating a significant capacity for recovery following possible cedar control. In a broader context, this study sheds light on the pathways and mechanisms driving the impacts of this biological invasion on dry, steep, nutrient poor systems and illustrates the capability of these systems to recover once the invading species is removed.

Keywords Biological invasion · *Juniperous virginiana* · Prairies

A. M. Pierce (✉)
Minnesota Department of Natural Resources,
Ecological Resources, 500 Lafayette Road, Saint Paul,
MN 55155, USA
e-mail: ann.pierce@dnr.state.mn.us

A. M. Pierce · P. B. Reich
Conservation Biology Program, University of Minnesota,
Saint Paul, MN, USA

P. B. Reich
Department of Forest Resources, University of Minnesota,
Saint Paul, MN, USA

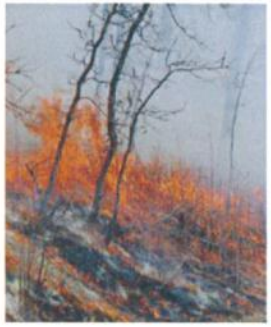
Introduction

Woody vegetation has increased in abundance in the Great Plains and prairie-forest border region of the United States over the last century at the expense of relatively tree poor systems such as prairies and savannas (Bragg and Hulbert 1976; Hoch and Briggs

The Driftless Area, comprised of the unglaciated portions of Wisconsin, Minnesota, Iowa, and Illinois, sits between the Eastern Forests and Western Prairies. The region's rugged topography supports a wide range of habitats today, although much more of the area historically was prairie and savanna.

Less than 1/10 of 1% of our original prairies remain today. In the Driftless Area, much of the remaining prairies are hill prairies. These prairies are now considered "Globally Rare" and contain many unique and declining species of plants and animals.

Most prairie types were lost primarily to plowing. The hill prairies, however, disappeared due to a loss of fire on the landscape. The upside is that the loss has been relatively slow and a portion of the original hill prairies remain. These small patches (remnants) will not persist into the future without some management action.



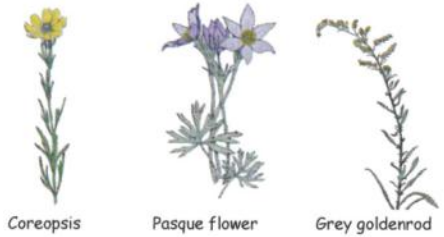
Hill prairies (sometimes called goat or bluff prairies) are typically found on south and southwest facing slopes. The dry conditions on these sites favor the plants and wildlife that are common to the hill prairie.

Common Grasses

Side-oats gramma | Little bluestem | Big bluestem

Common Forbs (flowers)

Leadplant | Silky aster | Purple prairie clover



Coreopsis | Pasque flower | Grey goldenrod

False boneset | Stiff goldenrod | Rough blazingstar

Benefits to Wildlife

Many unique animals utilize hill prairies. Several reptiles, including lizards, find the dry conditions of these prairies attractive. Butterflies and birds frequent prairie openings to take advantage of the diverse plant life. Some invertebrates (snails, insects, and spiders) spend their entire lives on a hill prairie.

A hill prairie lizard

Current Threats to Hill Prairies

The lack of fire has allowed woody species to invade the prairie. Some are native species that are intolerant of fire, others are exotic (non-native) species. There are also non-woody invasives. Here are some things to look for:

Red cedar – In some areas, this is the primary threat. Though these are native, they were not common when fires were frequent.

Aspen and Sumac – These native species are well equipped to invade prairies. These trees form clones by suckering (sending up new shoots that become trees), thus spreading out into open areas.

Brush – Many shrubs (buckthorn, honeysuckle, prickly ash) will invade the open spaces of the prairie. Many are native and can be expected to be present in low density. Historically, fires kept the shrubs at a low density.

Non-woody plants – Sweet clover, spotted knapweed, and leafy spurge are some of the problem species that compete with native prairie plants.

“Prairie preservation is crucial as prairies are the chief botanizing places for the students of native grassland vegetation and almost the only locations where school children may become acquainted with the native fauna and flora where persons who entertain a sentimental interest in historical aspects of the state may reconstruct a picture of the original Iowa landscape.”

- Ada Hayden

Learn

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RESTORING THE LOESS HILLS

This article first appeared in INHF's Fall 2008 magazine.

by Stan Buman

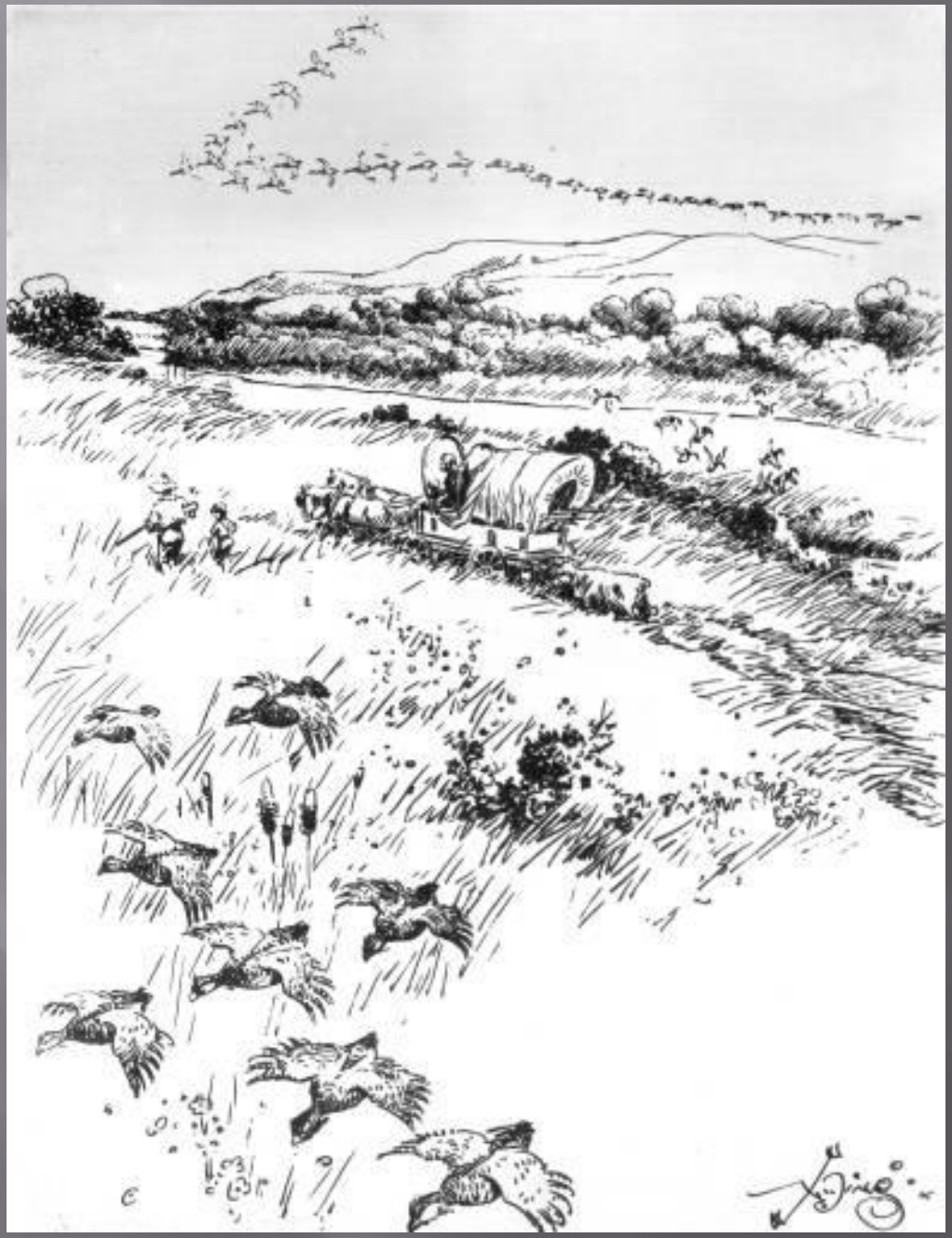
On July 16th, 1804 – while traveling along what's now Waubonsie State Park in southwest Iowa – William Clark (Lewis and Clark expedition) noted the absence of trees when describing "an extensive prarie on the S.S.. This Prarie I call Ball [bald] pated Prarie from a range of Ball Hills parralel to the river & at from 3 to 6 miles distant from it, and extend as far up and down as I can see. [sic]"

Left: Shimek's photo, taken about 100 years after the Lewis and Clark expedition, still shows treeless hill slopes.
Right: Approximately 100 years after Shimek's visit, Stan Buman photographed the same Loess Hills site. Dense, woody vegetation now obstructs the former prairie and the view.

Photo permission granted by the University of Iowa, The Shimek Photographic Collection, Depts. of Geoscience and Biological Sciences

Modern visitors to Iowa's Loess Hills see a very different view. While the reg ive prairie remnants from succumbing to the plow, woody vegetation has slowly crept into this ancient s and forbs. However, both public and private landowners are attacking these invaders to maintain our h ide open vistas.

"For more than three hundred years destruction was called 'improvement' and it has only in recent years come to the attention of the people generally that the American people were like spendthrift heirs wasting their inheritance."
--Major John Lacey

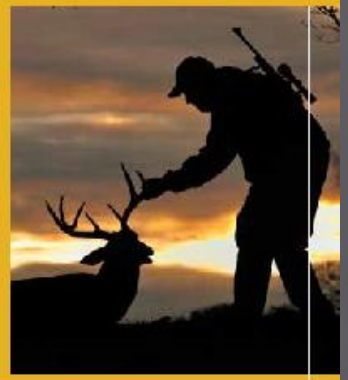



ORE ARK 1300

The North American Model of Wildlife Conservation





Technical Review 12-04
December 2012

THE WILDLIFE SOCIETY

- 60 to 90 % of state level conservation funding is sportsman-derived
- Wildlife and their habitat are public trust resources
- User-based funding sources have declined and will continue to decline
- “Wildlife professionals must engage in a campaign to inform and educate leading academic and political entities…”
- Scientists, resource managers, and agents of the trustees of wildlife, wildlife professionals rarely engage in advocacy, and are not particularly adept when doing so. A few key issues warrant advocacy.
- “A mechanism must be found to encourage the non-hunting public to contribute financially to conserve the fish and wildlife resources they enjoy and have an equal responsibility to protect”

N.R. Barger

SHARPTAILS INTO THE SHADOWS?

by

FREDERICK and FRANCES HAMERSTROM
and OSWALD E. MATTSON

Wisconsin Wildlife No. 1

Summary/Conclusions

- Prescribed fire has a rich history in the Midwest that includes many conservation pioneers
- Fire practitioners have many conservation successes and failures to build upon
- Fire practitioners should pursue alternate conservation models
- Fire practitioners should focus on education (public, legislative)
- Fire practitioners should embrace advocacy role


Thank You