



Natural Areas Association

Supporting Professionals Protecting Nature

Founded in 1978
to promote
awareness and
appreciation of
natural areas, and
to facilitate
communication
among workers on a
national scale



For 35 years--



A home for people who work to preserve nature

The NAA's Mission...

...to support the community of natural area professionals, help members reach their professional goals, promote natural areas management based on sound science, work to raise awareness about the need for natural areas conservation, and to support natural areas research.



What do we do?





NAA is the principal organization that speaks for natural areas on a national level

How We Do What We Do



Natural Areas Conference



- Sessions cover a wide range of topics
- Annual Conference held in a different region each year
- 40th Anniversary Conference – just convened in October, in Chicago. 41st will be in Dayton, OH in fall 2014.

Natural Areas Conference

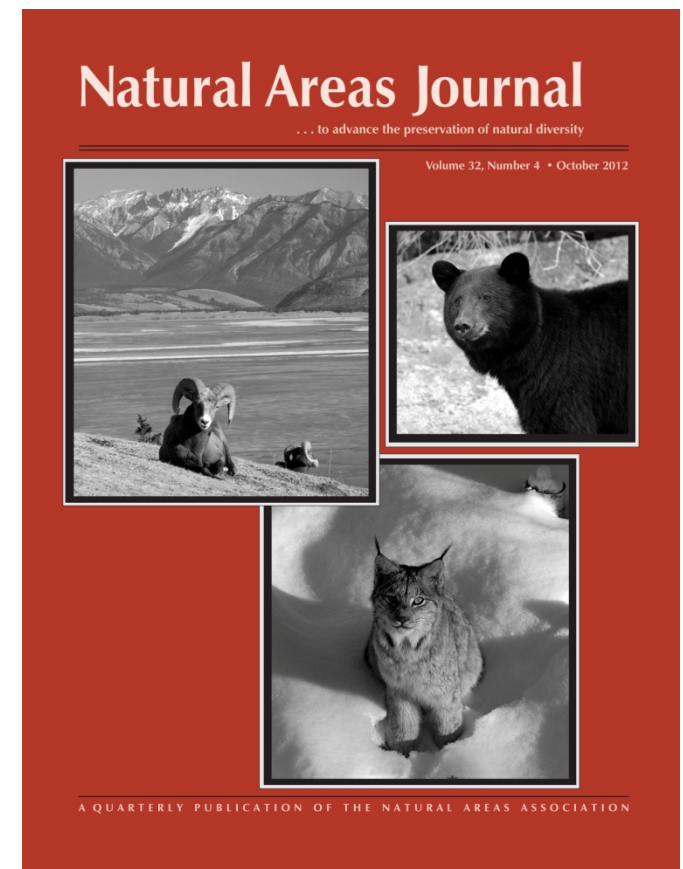


An unparalleled opportunity to catch up with the latest research, receive valuable training, and network with colleagues from all over the country.

Natural Areas Journal

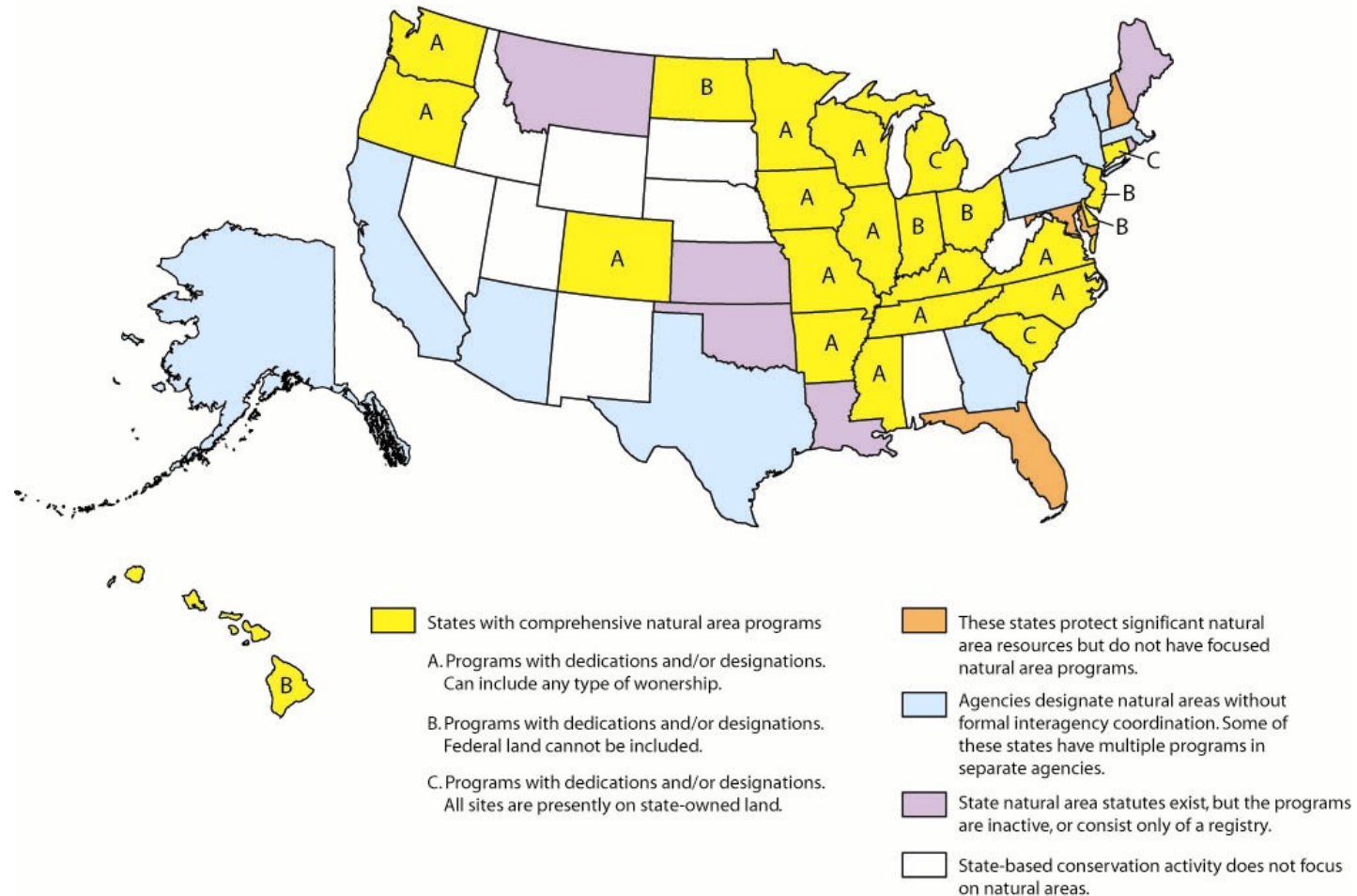
A leading voice in natural areas management

- Cutting-edge research
- Land management best practices
- Wide variety of topical articles:
 - Applied conservation biology
 - Ecological restoration
 - Assessment and monitoring
 - Invasive species management
 - Habitat protection
 - Fire ecology and management



Federal and State Programs

FIGURE 1. 2001 Status of State Natural Area Programs



NAA Interactive Website Benefits Members

- A forum for communication and sharing
- News feed with current information on natural areas-related issues from all over the country
- Blogs, natural area program reports, jobs
- www.naturalareas.org



Natural Area News

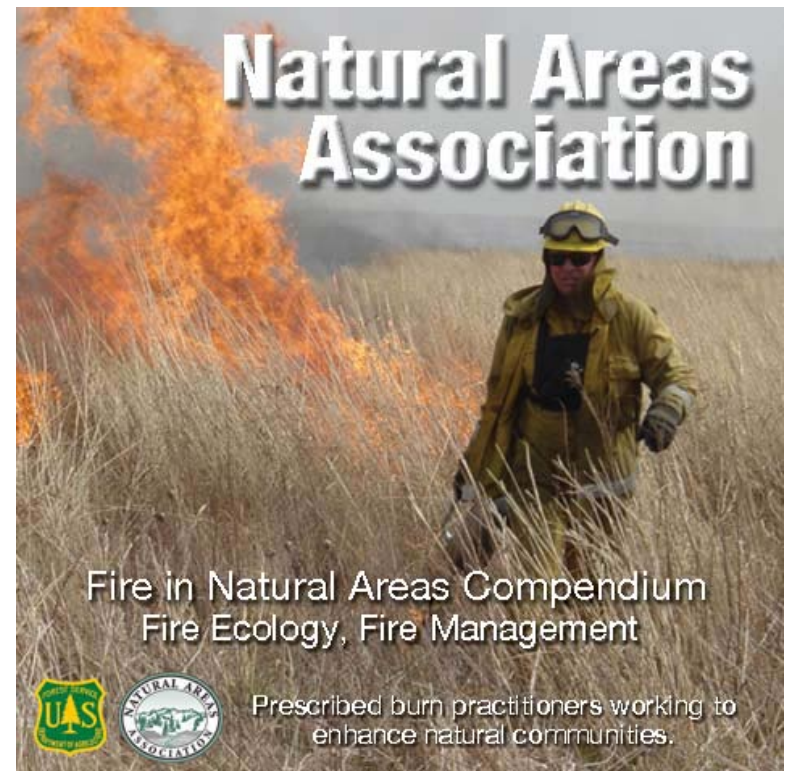
Newsletter published online:

- Conservation news
- Steward's Circle articles on land management and restoration
- Topical articles such as on invasive species, restoration ecology; best practices, case studies.



Training Tools and Resources

- Compendiums: Invasive Exotic Species, Fire Ecology and Management
- Status of State Natural Areas Programs report
- Webinars
- Workshops
- Natural Areas Roundtables
- Website features



NAA Student Initiatives & Chapters

Oak savanna restoration in Michigan: Effects on habitat and bee communities
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Abstract
 Temperate savannas are among the world's most threatened ecosystems, and in the Midwestern United States high quality remnants are rare. As such, restoration of degraded savannas stands on the most effective approach to their conservation. This study focuses on assessing different approaches to savanna restoration for their effects on abiotic factors (i.e. light and cover) as well as pollinator and flowering plant communities. These are important ecosystem components which can influence restoration success. A more intensive approach utilizing woody plant reduction in addition to prescribed burning (the "burn" approach) reduces cover while increasing light, bee abundance, and flowering abundance as compared to less intensive management (only) and unmanaged reference savanna plots (Figure 1) during year one and two of a 10 year ecological restoration experiment.

Introduction
 • Approximately 146,000 oak savannas in Michigan at time of European settlement (Figure 1)
 • Modern savannas found on high quality sites (Nudds 1988)
 • Remnant savannas suffer from degradation due to:
 - Disruption of disturbance (e.g. fire, large grazers)
 - Logging
 - Exotic species
 • High quality reference sites normally guide restoration
 • Presence of these sites creates general uncertainty about savannas, particularly for restoration activities

Objectives
 O1. Assess effects of restoration on abiotic factors (i.e. cover, light availability) among treatments (the "burn" (B), burn only (B), and unmanaged (UN).
 O2. TB treatments will have the greatest amount of light and least amount of cover followed by B and UN treatments respectively.
 O3. Assess pollinator community response to restoration among treatments
 O4. TB treatments will have a greater species richness and abundance of pollinators than B and UN treatments respectively.

Site & Experiment
 • 400 ha Quincey Reserve, Jackson County, Michigan (Fig. 1) formerly a barrens and upland oak savanna including former oak openings, oak barrens, and upland savanna
 • Experimental oak savanna restoration initiated in 2010
 • 10 areas of restored oak savanna remains identified and assigned TB, B, or UN treatments (under a Coarsely Randomized Design)
 • TB & B were treated in 2 years (burning, while remnants are thinned) successively in TB (Stage 1&2 DBH Stage 2 < 27 DBH Stage 3 > 27 DBH) and UN (no management)
 • UN increase in management

Methods & Analysis
Bee sampling
 • 3 3.75 oz. plastic cups (Solo Cup Company, Chicago, IL) of 3 colors filled with soapy water, glued to adjustable plant trays (Figure 3)
 • 4 arrays placed in each unit for 24 hrs every 2 weeks from May-August for a total of 6 sampling dates
Vegetative cover
 • Percent cover assessed visually with 2.5 m tall coverboard (Figure 3) with alternating black & white at .5 m bands (Nudds 1977) on two dates
Light
 • Measured using AccuPAR LP-80 (Decagon Devices, Pullman, WA).
 • Measured at 1 m between 10 a.m.-2:15 p.m. on two dates
Analysis
 • Mixed models were used to determine the effect of treatment and year on light levels and cover

Results
Light availability
 Figure 4. Average light levels across treatments among years two sampling dates/year. Different letters indicate statistically significant differences (p<0.05).
Season-long bee captures
 Figure 5. Total # of bees captured across treatments among years (six sampling dates/year).
Bee Captures by Treatment
 Figure 6. Five common bee species, their proportional captures among treatments, and their nesting guilds.
Vegetative Cover 2011
 Figure 7. *Ceratina calcarata*, *Lesioglossum coeruleum*, *Agrochlorella aurata*
 Figure 8. % cover by height among treatments for A) 2011 & B) 2012 (two sampling dates/year)
Vegetative Cover 2012
 • Light availability differed significantly only among TB & UN, but not among years.
 • Main effects of height and treatment were significant in 2011 & 2012, while the interaction between height & treatment was only significant in 2012.

Conclusions
 • The thin + burn (TB) management approach significantly increased light availability and decreased cover at nearly all levels except the understory (0.5 m) across 2 years, while the burn only (B) approach produced mixed results.
 • Both restoration approaches (TB & B) resulted in higher captures of bees than unmanaged reference areas (UN), with TB nearly always producing the most captures. Commonly captured bee species appear to have some preference for all three treatment types.
 • Future work will make a detailed community analysis of pollinators and flowering plants, as well as analyze the pollination function measured among restoration treatments.

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Acknowledgments

A Voice



Partnerships

- We work hand-in-hand with our federal, state and NGO partners
- Partners contribute to NA conference program
- Collaborate with other nonprofits on key projects



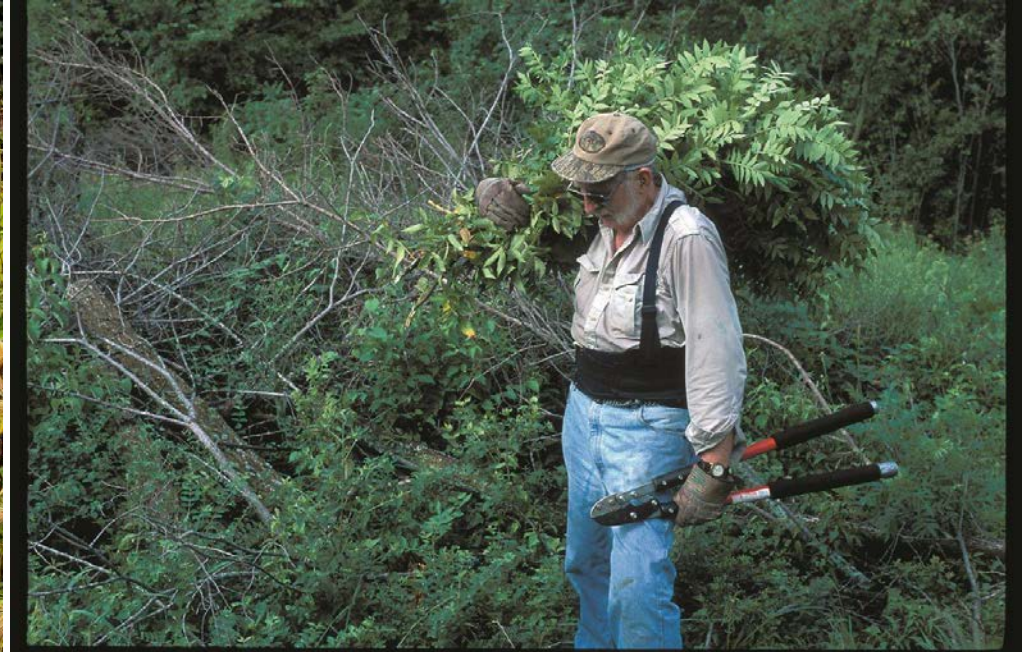
What Can the NAA Do For You?

- Provide access to a community of practitioners
- Be a forum for information exchange
- Help advocate for your program
- Disseminate your organization's news and information
- Provide you with cutting edge training, tools and information to help you do your job and achieve your goals

NAA Membership

- Natural area professionals, educators and volunteers inventory, monitor, study and manage representative protected natural communities and ecosystems
- The NAA has been providing these natural area 'defenders' with the programs, tools and information they need to be successful for 35 years
- NAA members come from all over the country and are as diverse as the natural areas they serve
- NAA membership is rewarding and provides numerous benefits in addition to camaraderie

“For most people in the natural areas field, their profession isn’t just a job, it’s a passion. They really believe in it and many times make personal sacrifices to see natural areas protected and managed. I think that’s one thing that sets the NAA apart from many other organizations.” *Carl N. Becker, Chief Natural Heritage Division, IDNR*



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