

The Glade

*The Newsletter of the Missouri Chapter of the
Society for Conservation Biology*

Volume 13, Numbers 1 & 2 December 2010
(Date of publication, 27 January 2011)



Society for Conservation Biology

Contents

| | |
|---|-----------|
| News and Notes , Call for articles | 2 |
| Chapter President's 2010 report to SCB | 3 |
| Announcement — “Conservation Biology for All” - Free download from SCB | 3 |
| Announcement — 4th Fire in Eastern Oak Forests Conference | 4 |
| Report — Natural Areas Association meeting in Missouri <i>James Trager</i> | 5 |
| Report — Celebrating 10 years of state wildlife grant funding <i>Amy Buechler</i> | 6 |
| Report — America's “Great Outdoors Initiative: Americans use social media to rant about conservation <i>Esther Stroh</i> | 7 |
| Article: Elk for Missouri: A New Issue for Conservation Biologists <i>Andy West</i> | 8 |
| Food for thought — Fire and grazing in Missouri Natural Areas <i>James Trager</i> | 10 |
| Membership information | back page |

NEWS AND NOTES

Attend the MOSCB Annual Chapter Meeting: Even if you are not a voting member, we invite you to learn more about MOSCB by attending our annual chapter meeting. The meeting will be held Thursday, February 3rd at 4pm at Tan-Tar-A resort during the Missouri Natural Resources Conference. Please attend if you can. We will hold officer elections and plan activities for the coming year.

Donate items for our annual Silent Auction: Our silent auction at Missouri Natural Resources Conference is our primary fundraiser. Please consider donating items (books, wine, framed prints or photographs, etc). If you are attending MNRC, you can bring your items to our booth in Wingate hall on Wednesday afternoon, February 2nd.

Nominations sought for MOSCB 2011 Board of Directors: Terms of office begin one month after the election and are for one year. All MOSCB officers must join the Society for Conservation Biology. Other than that, we are simply looking for dedicated, organized individuals to serve in the following roles:

Secretary. The Secretary records minutes, administers correspondence between the Chapter and the Society, oversees elections, and maintains historical records and a roster of members.

Treasurer. The Treasurer collects dues, maintains accounts, and collects and distributes funds for Chapter activities. The Treasurer reports on the financial activities and status of the Chapter at Chapter meetings and coordinates the annual student poster contest.

Chair of the Conservation Committee. The Chairperson of the Conservation Committee seeks submissions to and edits *The Glade*, the twice-yearly newsletter of the Chapter. (The current editor is willing to continue editing, but will gladly cede conservation committee duties to a willing volunteer.)

Please submit your nominations (you may nominate yourself) to MOSCB President Esther Stroh estroh@usgs.gov by February 1, 2011. Elections will be held at the MOSCB Annual Chapter Meeting (see above).

PUBLISH IN *The Glade*—CALL FOR ARTICLES

Volume 13-numbers 1&2 combined of *The Glade* appears! This is your newsletter, so take the opportunity to inform the *The Glade*'s readership about your conservation biology activities in Volume 14, during the year 2011. If you have conservation biology research notes, announcements, relevant musings, or other newsletter materials that will be of interest to conservation and field biologists, please contribute by sending your manuscript as a Word .doc, to the editor, james.trager@mobot.org

I'll be looking forward to the flood of manuscripts! Send them in now, before the weather gets nice and you are all back with your beloved study organisms in the wonderful places they inhabit.



Your photo could be here. "The Glade" welcomes photos relevant to your writings.

Papilio glaucus nectars at
Liatris pycnostachya.
Photo by James C. Trager

CHAPTER PRESIDENT'S REPORT TO THE SOCIETY FOR CONSERVATION BIOLOGY

This year [2010], we published Volume 13 of our Chapter newsletter, *The Glade*. We organized and judged our seventh annual student poster contest at the Missouri Natural Resources Conference, where we also held our fourth annual silent auction, earning \$517. We provided \$300 as a sponsorship to the 37th Natural Areas Conference, held in October in Osage Beach, MO, and our Treasurer, Amy Buechler, served on the conference planning committee. This year, as in the past few years, the requirement by SCB for all chapter members to be members of SCB significantly affected our membership. In the past, any one who subscribed to *The Glade* was essentially considered a member of the Missouri Chapter; dues were optional. Payment of optional dues in the past was about 15% of *The Glade* readership. The biggest drawback to the new arrangement is that it has reduced our "membership" from about 200 to 23. We will still continue to send *The Glade* to all interested parties (about 200 subscribers), and call them "Friends of the Missouri Chapter of SCB."

SOCIETY FOR CONSERVATION BIOLOGY PUBLISHES "CONSERVATION BIOLOGY FOR ALL"

Oxford University Press makes conservation biology textbook by some of the world's most prominent ecologists and conservation biologists available as free download

Conservation Biology for All provides cutting-edge but basic conservation science to a global readership, with authoritative chapters written by the top names in conservation biology with the principal aim of disseminating cutting-edge conservation knowledge as widely as possible. Important topics such as balancing conservation and human needs, climate change, conservation planning, designing and analyzing conservation research, ecosystem services, endangered species management, extinctions, fire, habitat loss, and invasive species are covered. Numerous text boxes describing additional relevant material or case studies are also included.

The global biodiversity crisis is now unstoppable; what can be saved in the developing world will require an educated constituency in both the developing and developed world. Habitat loss is particularly acute in developing countries, which is of special concern because it tends to be these locations where the greatest species diversity and richest centers of endemism are to be found. Sadly, developing world conservation scientists have found it difficult to access an authoritative textbook, which is particularly ironic since it is these countries where the potential benefits of knowledge application are greatest. There is now an urgent need to educate the next generation of scientists in developing countries, so that they are in a better position to protect their natural resources.

[CONSERVATION BIOLOGY FOR ALL](http://www.conbio.org/publications/consbioforall/)

<http://www.conbio.org/publications/consbioforall/>



4th Annual Fire in Eastern Oak Forests Conference

May 17-19, 2011
Springfield, Missouri



ANNOUNCEMENT — 4TH FIRE IN EASTERN OAK FORESTS CONFERENCE

Call for Poster Presentations and Registration

The 4th Fire in Eastern Oak Forests Conference will be held May 17 to 19, 2011 at the University Plaza Hotel in Springfield, Missouri. The Fire in Eastern Oak Forests Conference is a major symposium focused on fire in oak forests, woodlands and savannas where noted experts in research and management gather to present state-of-the-art information, perspectives and synthesis on key issues.

The theme of this conference will be “Managing Oak Woodlands & Savannas in the Forest-Prairie Region”. The conference will feature 16 invited presentations and additional offered posters by scientists and managers on a wide range of topics including:

- Restoring oak woodlands and savannas in the Cross Timbers Region, the Ozark Highlands, and Midwestern landscapes
- Natural and fire history of the Ozark Highland Region
- Human history, culture, and fire-use in the Ozark Highland Region
- The history and current use of fire in natural resource public agencies in the Midwest
- Patch grazing in woodlands and savannas to simulate the role of large ungulates
- Ecosystem services and climate change adaptation
- The role of fire in the southern Appalachian Region during the Holocene
- Fire effects on bats and reptiles
- Managing woodlands and savannas for songbirds
- Invasive species in woodland and savanna restoration
- Wildlife habitat restoration and maintenance

There will be a day of speakers, a field trip day, followed by a final day of speakers. See the Program and Field Trip pages for more information. Keep checking this website for 4th Fire in Eastern Oak Forests Conference Updates! — <http://muconf.missouri.edu/easternfire/index.html>

Call for Abstracts (next page)

4th Fire in Eastern Oak Forests Conference — Call for Abstracts

The organizing committee for the 4th Fire in Eastern Oak Forests Conference is pleased to invite the submission of abstracts for poster presentation at this scientific event. Fifteen speakers have been confirmed to speak at the 4th Fire in Eastern Oak Forests Conference. They will highlight current knowledge and state-of-the-art with respect to fire regimes, fire effects, and restoration.

Abstracts for the Fire in Eastern Oak Forests Conference can be submitted by emailing Dan Dey at ddey@fs.fed.us by February 1, 2011.

Guidelines to Authors

All speakers are expected to submit a manuscript of their presentation at the time of the meeting (May 17-19, 2011). Manuscripts will be peer-reviewed by two anonymous reviewers. Authors can submit the names of two or more reviewers for their manuscripts. All poster presenters are expected to submit an extended abstract that conveys the highlights from their posters. Extended abstracts will generally not exceed one published page each, although there is some flexibility in this length limit. The intent is to fully present the information. Photos, tables and graphs can be included in the extended abstract. Extended abstracts should be submitted at the time of the meeting (May 17-19, 2011).

All speaker manuscripts and poster extended abstracts will be published in the Proceedings of the meeting published by the USDA Forest Service Northern Research Station as a General Technical Report. Attached are guidelines for authors of manuscripts and extended abstracts that should be followed.

Any questions may be directed to Dan Dey at ddey@fs.fed.us 573-875-5341 ext. 225

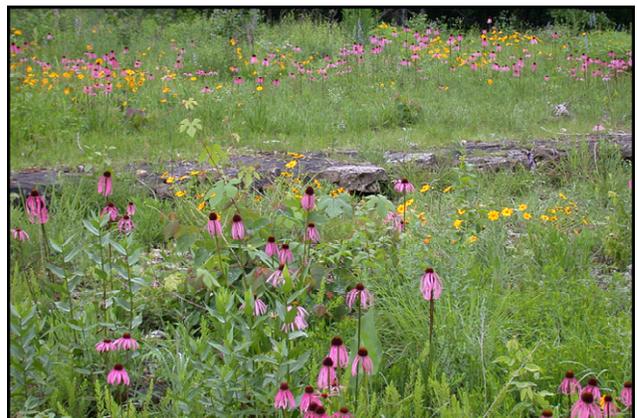
NATURAL AREAS ASSOCIATION MEETING COMES TO MISSOURI

James C. Trager

The Natural Areas Association (NAA) held its 37th annual conference at Tan-Tar-A Resort at Lake of the Ozarks from October 26-29, 2010. The mission of the NAA is to “advance the preservation of natural diversity. The Association works to inform, unite, and support persons engaged in identifying, protecting, managing, and studying natural areas and biological diversity across landscapes and ecosystems.” The Missouri Chapter of the Society for Conservation Biology donated \$300 to the conference. Conference hosts included the University of Missouri-Columbia College of Agriculture, Food and Natural Resources, the Missouri Natural Areas Committee, and the National Association of Exotic Pest Plant Councils.

This year’s theme was “Natural Resource Connections across Generations and Disciplines”. I found myself compelled by interest to attend a presentation in every

single time slot allotted to a talk — an all-time first for me! One after another, speakers presented beautifully illustrated PowerPoint slide shows that seemed to go deeper and show more understanding, about what we know and don’t know about our Eastern and Midwestern wooded, grassland, cave and wetland ecosystems, and their plant, animal and fungal inhabitants, than in any previous conference of this sort that I have attended. I think all attending learned much that was new, and left with new questions that, I suspect, many had never thought of before.



Dolomite glade at Shaw Nature Reserve, Franklin Co. MO.
Photo by James C. Trager

Our field has a vibrant future!

CELEBRATING 10 YEARS OF STATE WILDLIFE GRANT FUNDING

Amy Buechler, Teaming With Wildlife Coordinator, Conservation Federation of Missouri



2010 year marked the 10th Anniversary of the State Wildlife Grants Program – a national funding source created to prevent species from becoming endangered by protecting and restoring native habitats. Missouri has received more than \$12.4 million over the past 10 years (averaging \$1.2 million annually) to help ensure that Missouri has healthy, sustainable plant and animal communities for future generations to use and enjoy. Part of this vision is to have fish, forest and wildlife resources in appreciably better condition tomorrow than they are today. That is why projects and other conservation actions are developed through citizens, government agencies and non-governmental organizations working together to protect, sustain, enhance, restore or create sustainable plant and animal communities of local, state and national significance.

One important state funding source made possible with State Wildlife Grant funding is the Missouri Bird Conservation Initiative (MoBCI) Grant Program. MoBCI is a coalition of over 55 organizations and agencies that support bird conservation in Missouri. State Wildlife Grant funding has made the MoBCI Grants program possible each year since 2003. In the past six years, State Wildlife Grant funding has allowed more than \$600,000 to be available for MoBCI grants which has been matched with over \$1.2 million in partner funds! This investment has made thousands of acres of bird habitat work possible on public and private lands throughout Missouri.

The State Wildlife Grants Program also makes the Department of Conservation's Wildlife Diversity Fund possible. This significant funding source is made available to Missouri Department of Conservation employees and partners to accomplish native habitat restoration and research and inventory needs for species of conservation concern on public and private land. Over the past decade, tens of thousands of acres have been affected by conservation practices such as clearing unwanted trees and brush from native prairie, replanting native species, and applying prescribed fire to stimulate natural communities. Practically every habitat type has benefited by projects made possible by State Wildlife Grants, including wetlands, rivers, forests, woodlands, savannas, glades, prairies and caves.

The State Wildlife Grants Program is a major accomplishment of the Teaming With Wildlife Coalition – a network of over 6,000 organizations and businesses nationally (275 in Missouri) that support additional funding for fish, forest and wildlife conservation. Because it is an annually appropriated funding source, the Teaming With Wildlife Coalition must speak up each year to ensure its inclusion in the Department of Interior's budget. Your organization or business can help support State Wildlife Grant funding (and other potential funding sources), by joining the Teaming With Wildlife Coalition. It's free and easy to join. Simply fill out the brief form at www.teaming.com/action or contact Amy Buechler (800-575-2322, abuechler@confedmo.org). For more details on State Wildlife Grant funding, visit www.moteaming.org.

AMERICA'S GREAT OUTDOORS INITIATIVE:
AMERICANS USE SOCIAL MEDIA TO RANT ABOUT CONSERVATION
Esther Stroh, MOSCB President

On April 16, 2010, President Obama established the America's Great Outdoors Initiative. The goal of this initiative is to "promote and support innovative community-level efforts to conserve outdoor spaces and to reconnect Americans to the outdoors." The desire is to get Americans talking about conservation and about the places they care about and how they want to go about protecting (and using!) these places. With over 80 percent of the American population living in urban or suburban environments, there is concern about the lack of access to natural areas combined with a loss of connection to the natural world.

The lead federal agencies for the initiative are the Departments of Interior and Agriculture along with the Environmental Protection Agency and the President's Council on Environmental Quality. Representatives from these agencies are travelling the country and its territories to speak with local communities about the nearby places they love, in hopes of learning about successful approaches to community-based conservation. The closest listening session to date was held in St. Louis on August 20th. At press time, no results had been posted about this session; however, photos and comments from other listening sessions can be found on America's Great Outdoors website: www.doi.gov/americasgreatoutdoors/.

One goal of the initiative is to encourage dialogue among Americans about conservation approaches. An interactive site for this dialogue can be found at <http://ideas.usda.gov/ago/ideas.nsf/>.

Anyone who registers on the site can submit an idea or opinion under four topic areas: 1) Challenges (obstacles to achieving conservation goals or reconnecting people to the outdoors); 2) What Works (effective strategies for conservation, recreation and reconnecting people to the outdoors); 3) Federal Government Role (how can the federal government can be a more effective partner); and 4) Tools (additional tools and resources needed to improve success of conservation efforts). Those who register can also vote to promote or demote an idea or submission. You can view the most active topics for the day or for the past week or month. At press time, some of the most popular suggestions deal with fully funding national parks; some of the most contentious suggestions deal with off-road vehicle use. Like many social media or commentary sites, you will find that there are a lot of hot-headed comments with very little thought behind them. However, there are also many other well-thought out ideas that are being posted and voted on. It is not clear exactly how results from listening sessions or the interactive site will be used by the lead agencies, or even how one might analyze results from such a dialogue. In my opinion, though, I would rather see Americans quibbling about conservation approaches and use of natural areas than opining on the latest political speeches or celebrity antics.

ELK FOR MISSOURI A NEW ISSUE FOR CONSERVATION BIOLOGISTS

K. Andrew West, Vice President, MoSCB

Though once widespread in Missouri, the last wild elk disappeared from the Show Me State about 1865. North American elk (or wapiti) reportedly occupied most Missouri environs: northern prairies, dry Ozark woodland and barrens, and southern floodplain forests. The Missouri Department of Conservation hopes to give elk a second chance.

The idea of bringing back elk is not novel in Missouri: MDC published its first elk plan in 2003. Through subsequent public hearings and citizen comments MDC believed it had enough public support to proceed. The Rocky Mountain Elk Foundation (RMEF), the Nation's premier elk advocate, became a partner with MDC.

The Elk Foundation has helped introduce elk back to landscapes all around the country. Their track record working with state and federal agencies is impressive. In our region, elk were successfully resettled in Arkansas, Kentucky, and Nebraska. The closest reestablished population is in northern Arkansas' Buffalo National River where the National Park Service partnered with Arkansas Game and Fish and the RMEF. In both our southern neighbors, numbers increased to allow hunting seasons. Nebraska has had elk hunting for some time. Other eastern reintroductions were in Pennsylvania, Wisconsin, and Great Smokey Mountains National Park.

Bringing Elk Back

In 2003, MDC settled on an isolated setting for elk release: relatively unpopulated portions of Carter, Reynolds, and Shannon counties. Restoration efforts were to focus on an important MDC Ozark site, Peck Ranch Conservation Area, with public National Forest lands aplenty surrounding it. Mark Twain National Forest signed on as a second agency partner.

Unfortunately, those first elk introductions were stymied when chronic wasting disease (CWD) showed up in Midwestern cervids. Rather than implement reestablishment only to have CWD in the new herd, MDC suspended reintroduction plans.

In 2010 MDC and RMEF determined that CWD testing and monitoring regimes had improved. They revisited elk resettlement, following the 2003 plan and focusing on the Peck Ranch release site. Once the Conservation Commission directed MDC to proceed with reintroduction last summer, MDC re-launched a public information program about elk that includes a short internet video clip, a number of press releases and articles, and an informational brochure. Public comments were accepted through October and the elk plan finalized in late 2010.

Should Conservation Biologists Support Missouri Elk?

The Conservation Department did their homework: the Missouri Elk Plan more than adequately addresses elk biology, habitat suitability and ecosystem viability concerns. The plan outlines potential impacts of returning a large herbivore to present-day Ozark landscapes. The MDC traditionally works effectively through the media and provides a conduit for citizen reviews and comments. It routinely accomplishes what many state agencies not do: it solicits and employs citizen feedback in wildlife management decisions. Predicatively, the Department used carefully crafted news releases and educational resources on the elk issue.

ELK IN MISSOURI (continued)

The Elk Foundation is a good conservation partner. Some reintroduction costs and logistics are contributed by RMEF staff and volunteers; they use proven practices from successful programs, programs that brought elk to nearly half of the states where they historically abided. Even though the organization is supported by hunters desiring American big game, the Elk Foundation routinely preaches that other plant and animal life benefits in prime elk habitats. They provide training and help for state and federal biologists and land managers when elk are brought to their jurisdictions. The Foundation brings another supportive constituency to Missouri: elk hunters. Leafing through RMEF publications reveal that for many, hunting in a wild landscape is enough and healthy ecosystems rate as high as elk on the hunters' menu.

Elk conceivably fill a niche absent in modern Missouri landscapes. Their manner of foraging has not been a part of Missouri ecosystems for many years. We have been assured that MDC will monitor habitat quality and track potential changes in vegetation structure and wildlife communities. Peck Ranch and surroundings seemingly provide a mosaic of upland forest communities, natural forest openings (e.g. glades and barrens) and old field habitats suitable for elk. Land cover in the vicinity is reported in the elk plan as 94% "forest land" and 4% open lands.

That said, elk are not without their detractors. In my home state, plans for returning elk to the barrens of extreme southeastern Illinois in the 1990s were blocked after vigorous opposition from Farm Bureaus and other agricultural advocates, citing fears of crop depredation and bovine diseases. Widespread opposition does not seem to be the case in Missouri. Unlike Missouri's more populous neighbor, croplands make up less than 0.1% of that 4% (approximately 350 acres) in the release area. Although public support appears to be strong in Missouri, some important voices spoke in opposition. Writing on behalf of Missouri's largest farmer organization, the Missouri Farm Bureau's president, Charlie Kruse of Dexter cited concerns about disease and property damage and urged the Commission to "... listen to landowners' concerns and vote to shelve this proposal once and for all" (Missouri Farm Bureau Federation and Affiliated Companies 10/13/2010).

Opposition in elk states also came from auto insurance companies who anticipate catastrophic elk-vehicle collisions. MDC Biologist Lonnie Hansen stressed that while accidents do occur in elk country collisions are not as commonplace as those with deer. Apparently elk movements are more deliberate and predictable than those of deer. In the Ozarks, once the new animals become acclimated and settle their new territories they will most likely remain close to original release sites. Missourians can anticipate that for at least the first 10 years Ozark elk populations will be kept in check by habitat size and hunting pressure.

After 10 years, who knows? (See links, next page) In the end, people will have to adapt as much as elk. We'll need to make room on the landscape for wapiti and people to coexist. If Missouri society can accommodate this, elk will thrive.

The concept of returning large mammals (in this case a large herbivore) to an ecosystem fits well into the landscape-level management philosophy that is at the core of conservation biology. Although no formal action has been taken by your Missouri Chapter Board or our membership-at-large, bringing elk back to Missouri seems to be an exercise in conservation that SCB members can support.

Certainly there is more to reestablishing herds than just another hunting opportunity and one more, big herbivorous creature to watch. A species as versatile and potentially adaptable as elk will push MDC and other conservation agencies to manage landscapes for this big ungulate. Elk management will support a whole suite of species and habitats lacking the attention and reputation that elk possess.

For more information, see links on next page:

Jenkins, J. 2010. Elk in Missouri? Proposed plan to restore wild elk in the Ozarks excites some, elicits concerns from others. Rural Missouri, October 2010: 12.

Missouri Dep. Conservation (*npd*). Elk restoration in Missouri (pamphlet available from the MDC website or print versions at MDC offices)

<http://mdc.mo.gov/landwater-care/animal-management/elk-restoration>

<http://mdc.mo.gov/newsroom/conservation-commission-seeks-more-information-citizens-comments-elk-reintroduction> ...

http://mdc.mo.gov/user_mailman_register (for comments on elk restoration)

<http://www.rmef.org/AllAboutElk>

<http://www.mofb.org/NewsMedia/Articles.aspx?articleID=99> (Missouri Farm Bureau 10/13/2010)

<http://www.mofb.org/Portals/0/MFB%20Uploads/ContentImages/PDFs/ElkComments%282%2910-8-10.pdf>
(full text of Missouri Farm Bureau president's letter to MDC 10/8/2010)

K. Andrew West, Proprietor
Ozark Koala Ecosystem Services
(Vice President, Missouri Chapter, SCB)
Marion IL and Puxico MO

FIRE AND GRAZING IN MISSOURI NATURAL AREAS

James C. Trager, Editor, "The Glade"

The listserves and discussions of nature advocacy groups around Missouri and in neighboring states have experienced lively discussions over the last year concerning the possible deleterious aspects of excessive prescribed burning in Midwestern natural areas. Those who study the invertebrates of fire-managed areas have perhaps the strongest apprehensions regarding fire, noting plenty of anecdotes and a growing amount of good data that frequent fire reduces populations of certain natural area remnant-dependent butterflies and moths, of rove and long-horned beetles, of native plant hoppers and aphids, etc. Advocates and students of these groups argue that prescribed burning has become something of a bad habit among natural area managers, practiced with little thought to the consequences, beyond a certain desired aesthetic result. Studies from around the world have begun to document more carefully the effects of fire on arthropod populations. A common result of such research is that while overall abundance and species richness of arthropods is relatively little changed after fire, species composition is, often shifting away from representation of remnant-specialist species and toward dominance by generalist species. It is counter-intuitive and "hard to get one's head around" the often catastrophic reduction of insect habitat-specialists in habitats that themselves require periodic fire for their long-term maintenance.

Enter another novelty in the tool box of natural area management in Missouri, patch burn grazing with cattle (PBG for short), currently being practiced in several southwestern Missouri prairies to create structural diversity in vegetation that is presumed to favor diversity of grassland birds, and particularly, to favor the greater prairie chicken, a bird that continues to lose ground in Missouri, despite reintroductions and various other

Fire and grazing thoughts (continued)

measures to prop up its populations in the state. The view of some who call themselves “realists”, right or wrong, is that the best this can do is give the prairie chicken, already doomed in the modern Missouri landscape a chance to hold on a little bit longer in the state. But, the greater concern is among native plant advocates, who note a high level of destruction of nectar and seed production at the cattle stocking rates used in the current PBG treatments, and predict a cascade of degradation including serious declines and possible loss of populations of pollinators and granivores of all sorts. Patch burn grazing management is widely practiced with apparent benefit on large prairie tracts in Oklahoma, Kansas and Nebraska, many already degraded by past overgrazing and herbiciding of broadleaf plants to favor grass production, and most of the rest are prairie plantings on former farm land in an early seral condition. The tracts of land are often an order of magnitude larger and the cattle stocking rates significantly lower on these more western prairies.

Several questions arise from these controversies :

- How can we protect fire-sensitive but habitat-specialist species in fire-managed habitats?
- What cattle stocking rates are safe for maintenance of pollinators and granivores in PBC treatments?
- Are the effects of elk (and bison) grazing somehow different in effect from that of cows?
- Are prairie chickens more important than whole, diverse, functioning plant and insect communities?

And many more — *The Glade* welcomes your comments on these matters.



Photos:
Arthropods by James C. Trager,
Fire by Bill Mulford



Society for Conservation Biology

Membership information — Missouri Society for Conservation Biology

In order to be a voting member of the Missouri Chapter of the Society for Conservation Biology, you must join the larger Society for Conservation Biology (SCB). Join the global community of conservation professionals at: <https://www.conbio.org/join/>. Annual dues are \$10 for students and retirees, and \$40 for working professionals.

The goal of MOSCB is to promote communication among conservation biologists throughout the state of Missouri. Membership in the Missouri Chapter is \$5.00. Please send a check made out to MOSCB to the attention of Amy Buechler, Treasurer, MOSCB, c/o Conservation Federation of Missouri, 728 West Main, Jefferson City, MO 65101. Contact Amy (abuechler@confedmo.org, 573-634-2322) with questions."

The Glade Vol. 13 was edited by James C. Trager . Special thanks to the authors in this issue for their time and thought in preparation of their contributions. Funding for this issue of *The Glade* was provided by MOSCB.



Society for Conservation Biology