AMBASSADOR ROOM

WEDNESDAY MORNING

ROOM: Ambassador
TIME: Wednesday 8:00 AM
TITLE: Effects of hydrologic restoration on birds breeding in forested wetlands
AUTHOR(S):
Jeffrey Hoover -- Illinois Natural History Survey, University of Illinois, 1816 South Oak Street, Champaign, IL 61820. Phone: 217-244-2922 Email: jhoover@inhs.uiuc.edu

ABSTRACT: Channelization of rivers and streams threatens bottomland forest bird communities because it can lead to the formation of lateral gullies that connect streams to adjacent wetlands and unnaturally accelerate the draining of wetlands, potentially exposing some birds to high rates of nest predation. I studied how the hydrologic restoration of off-channel wetlands (plugging gullies that drain off-channel wetlands) affects the diversity, abundance, and nesting success of birds breeding within forested wetlands within the Cache River watershed in Illinois. I compared surface area, water depth, bird diversity, bird densities, and nesting success between treatment (gully plugs added) and control (gully plugs not added) wetlands pre- and post-treatment. During the breeding season of birds, treatment wetlands retained more flooded area and greater depths of water compared to control wetlands. Bird diversity was unaffected by the installation of gully plugs. The density and nesting success of Prothonotary Warblers (*Protonotaria citrea*) was higher in treatment wetlands than in control wetlands. Other species that responded positively to the installation of gully plugs included the Yellow-crowned Night-Heron (*Nyctanassa violacea*), Wood Duck (*Aix sponsa*) and Hooded Merganser (*Lophodytes cucullatus*). Documenting changes in the bird community in response to this conservation action provides a means to measure the success of restoration activities in the Cache River watershed and inform conservation plans and restoration efforts in other bottomland forest ecosystems.
KEYWORDS: restoration, wetland, birds

ROOM: Ambassador
TIME: Wednesday 8:20 AM
TITLE: Impact of invasive species removal to breeding birds during oak woodland management
AUTHOR(S):
Scott Meister -- Forest Preserve District of DuPage County, 35580 Naperville Road, PO Box 5000, Wheaton, IL 60189. Phone: (630)933-7081 Email: smeister@dupageforest.com
Glenn L Gabanski -- Forest Preserve District of DuPage County

ABSTRACT: The impacts of invasive species on ecosystem function have been well-documented and include adverse effects to avian communities. Habitat management programs are often initiated to improve habitat quality by removing undesirable invasive plants. However, immediate impacts to faunal communities following invasive species removal are less known. We studied avian capture rates at a long-term banding station before and after invasive species removal. Capture rates were higher post-management for multiple species including American Goldfinch (*Carduelis tristis*), Indigo Bunting (*Passerina cyanea*), House Wren (*Troglodytes aedon*) and White-breasted Nuthatch (*Sitta carolinensis*), whereas capture rates were lower post-management for Black-capped Chickadee (*Poecile atricapillus*). Overall capture rate did not differ before and after management, though a periodical cicada emergence may have played a confounding role. Land managers must consider both positive and negative impacts of their actions when contemplating management activities.
KEYWORDS: restoration, invasive, avian

ROOM: Ambassador
TIME: Wednesday 8:40 AM
TITLE: Changes in avian community structure in grasslands managed using a fire-grazing interaction
AUTHOR(S):
Finn Pillsbury -- Iowa State University, Dept of Natural Resource Ecology and Management, 339 Science II, Ames, IA 50011. Phone: (515)290-7913 Email: finnp@iastate.edu
James R Miller -- University of Illinois
Diane M Debinski -- Iowa State University
David M Engle -- Oklahoma State University

ABSTRACT: Grassland birds have experienced widespread population declines throughout the central United States, largely as a result of habitat loss and the homogenization of remaining fragments. Recent work in relatively extensive grasslands has demonstrated that mimicking historic disturbance patterns using a fire-grazing interaction can increase the abundance and diversity of grassland birds by providing more habitat heterogeneity. We examined the efficacy of the fire-grazing interaction for promoting avian diversity in a fragmented landscape in the Grand River Grasslands of Iowa and Missouri. From 2006 - 2009 we quantified the relative abundance of obligate and facultative grassland bird species along transects in 13 research pastures (range: 15 - 31 ha), divided among three treatments: 1) spatially discrete fires and free access by cattle ("fire-grazing interaction"), 2) free access by cattle and a single complete burn ("grazed"), and 3) a single complete burn with no cattle ("ungrazed"). The fire-return interval was three years. We expected that the fire-grazing interaction would produce a bird community intermediate between those of the grazed and ungrazed treatments, because it would provide habitat for species associated with both. However, community structure on pastures managed using a fire-grazing interaction instead diverged significantly from both of the other treatments. This suggests that instead of simply providing a greater number of grassland habitat types, the fire-grazing interaction can provide habitat for those species requiring a heterogeneous complement of grassland vegetation, and has the potential to be an important management tool for promoting avian diversity in the Midwest.
KEYWORDS: birds, fire, grazing

ROOM: Ambassador
TIME: Wednesday 9:00 AM
TITLE: Nesting Success of Grasshopper Sparrows on southern Iowa grasslands treated with fire and grazing
AUTHOR(S):
Torre Hovick -- Iowa State University masters of science student, Iowa State University, 339 Science II, Ames, IA 50011. Phone: 319-215-8829 Email: tjhovick@iastate.edu
James R Miller -- Professor
Dave M Engle -- Professor
Diane M Debinski -- Professor

ABSTRACT: Iowas tallgrass prairie has been reduced to < 0.10 % of its original extent. Presently, the majority of warm-season herbaceous cover exists mostly in the southern third of the state, where agricultural practices are dominated by cattle grazing and hay production. Patch-burn grazing is a management practice intended to benefit grassland-dependent wildlife. To assess effects of this practice, we studied nesting success of Grasshopper Sparrows (*Ammodramus savannarum*), a species of greatest conservation need in Iowa and throughout its range, under two management treatments: a graze-only treatment (grazing, entire pasture burned every third year), and a patch-burn treatment (grazing, one-third of pasture burned each year). The study was conducted in Ringgold County, Iowa, on public and private lands. We found 327 Grasshopper Sparrow nests from mid-June through July 2008 and May through July 2009. Nests found in pastures with graze-only treatment had daily survival rates (DSR) of 0.895 (0.013 SE) and 0.899 (0.016 SE) during incubation and nestling stages, respectively. Nests found in pastures under patch-burn grazing treatment had DSRs of 0.919 (0.009 SE) and 0.917 (0.011 SE) during incubation and nestling stages, respectively. Overall probability of a Grasshopper Sparrow surviving the nesting period was 11.3% for graze-only treatment and 18.1% for patch-burn grazing treatment. My data suggest Grasshopper Sparrows nesting in pastures that were treated with patch-burn grazing had greater probability of surviving. This research could provide a model for managing working grasslands across the Midwest for nesting Grasshopper Sparrows and possibly other obligate grassland birds.
KEYWORDS: grassland, fire, bird

ROOM: Ambassador
TIME: Wednesday 9:20 AM
TITLE: Habitat associations of grassland bird communities on southern Illinois reclaimed surface-mines
AUTHOR(S):
Shawn Duncan -- CWRL Southern Illinois University Carbondale, Life Science II Mailcode 6504, 1125 Lincoln Drive, Carbondale, IL 62901. Phone: (317)450-6134 Email: Shawnduncan@gmail.com
Eric Hellgren -- CWRL Southern Illinois University Carbondale
Jack Nawrot -- CWRL Southern Illinois University Carbondale
Don Sparling -- CWRL Southern Illinois University Carbondale

ABSTRACT: Midwestern grassland birds evolved in a tall-grass prairie system that has declined by 99%. Reclaimed surface-mine grasslands provide over 50,000 ha of surrogate habitat for the declining grassland bird community. Are the habitat associations of grassland birds using reclaimed surface-mines the same as those on restored or remnant prairies in Illinois? As Henslows sparrow (*Ammodramus henslowii)* populations have stabilized and potentially began to grow, are their perceived habitat associations the same now as they were in the past? I conducted bird surveys using strip-transects at 20 grasslands at 2 reclaimed surface-mines in southern Illinois. I also measured vegetation height and density, litter depth, shrub density, and plant community composition. Research was conducted May-Aug, 2008 and 2009. Shrub density and vegetation structure were the first and second most important factors affecting bird community composition. The detected association between thick and tall vegetation and Henslows sparrow inhabitation was not as strong as reported in prior studies. The habitat relationships of birds on reclaimed surface mines were similar to those on remnant and restored native grasslands. However, there is a greater component of shrubland birds using mine grasslands due to the patchwork landscape. Henslows sparrows appear to be less specific about the habitats they use. Territorial males have been recorded using short, sparse redtop pastures as well as tall, dense big bluestem prairies possibly indicating a growing population expanding into sub-prime habitats.
KEYWORDS: birds, grasslands, minelands

ROOM: Ambassador
TIME: Wednesday 9:40 AM
TITLE: Effects of vegetation management and landscape composition on Northern Bobwhite presence in conservation reserve program tall fescue monocultures
AUTHOR(S):
Douglas Osborne -- Southern Illinois University Carbondale, 251 Life Scince II, Mailcode 6504, Carbondale, IL 62901. Phone: Email: osborne@siu.edu
Donald W Sparling -- Southern Illinois University Carbondale
Robert L HopkinsII -- University of Rio Grande

ABSTRACT: Nearly four decades of northern bobwhite (colinus virginianus) declines have impelled the development of new conservation strategies and federal incentive programs. In this paper, we assessed bobwhite response to 3-United States Department of Agriculture approved mid-contract management practices including strip disking, glyphosate, and glyphosate with legume interseeding. We monitored presence/absence of bobwhite in 60-tall fescue (*Festuca arundinacea*) dominated CRP fields in south-central Illinois during 2006-2008. We developed 20 a priori candidate models based on literature review and biological insight of vegetation characteristics of nesting and brood-rearing habitats, management regimes, and landscape composition variables potentially influencing bobwhite habitat use during the reproductive season. We found fields treated with glyphosate and glyphosate with legume interseeding were more likely to have adult bobwhite and bobwhite broods present than disked and control fields. Adult bobwhite presence was positively correlated with brood-rearing habitat and percent cropland. Bobwhite brood presence was 39.5% more likely in fields treated with glyphosate and glyphosate with legume interseeding than in unmanaged fields. Bobwhite brood presence was positively correlated with brood-rearing habitat and percent managed CRP within a 250 m buffer. These treatments restored suitable nesting and brood-rearing cover conditions for adults and increased accessibility to bare ground for optimal foraging. CRP fields managed for early successional plant communities with glyphosate and glyphosate with legume interseeding should have a positive effect on bobwhite use of tall fescue CRP fields and increase annual recruitment.
KEYWORDS: Bobwhite, CRP, Farm Bill

ROOM: Ambassador
TIME: Wednesday 10:20 AM
TITLE: Small mammal use of a savannah restoration site in West Michigan
AUTHOR(S):
Paul Keenlance -- Biology Department Grand Valley State University, 1 Campus Drive , Allendale, MI 49401. Phone: 626-460-2127 Email: keenlanp@gvsu.edu
Joseph Jacqout -- Biology Department Grand Valley State University
Angela Larsen -- Biology Department Grand Valley State University
Sheila Miara -- Biology Department Grand Valley State University

ABSTRACT: Savannah and other grassland ecosystems are one of the most endangered ecosystems in Michigan and much of North America. Consequently, species which rely on habitat found in this ecosystem are frequently species of concern for management agencies. The US Forest Service is currently conducting a restoration of savannah in areas which have transitioned to mixed deciduous forest. The impetus for this effort is to promote wild lupine (*Lupinus perinnus)* regeneration and provide habitat for the federally endangered Karner Blue butterfly (*Lycaeides melissa samuelis*). Our objective was to monitor and analyze the impacts of the restoration project on small mammal diversity and density. A control and three treatment plots (shearcutter, bulldozer, and masticator) were monitored in each of five replicates. Small mammals were trapped in a grid of 36 Sherman live traps within each treatment plot during October of 2008 and September 2009. Trapping results indicated that White-footed mice (*Peromyscus leucopus*) were the most prevalent species in all treatments and replicates. Other small mammal species present included Short-tailed shrew (*Blarina brevicauda*), Masked shrew (*Sorex cinereus*), Eastern chipmunk (*Tamias striatus*), Southern flying squirrel (*Glaucomys volans*), Thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), and Meadow vole (*Microtus pennsylvanicus*). Monitoring effort will be expanded into additional treatment areas and will continue for the foreseeable future to determine the long-term impacts of the restoration effort.
KEYWORDS: peromyscus, savannah

ROOM: Ambassador
TIME: Wednesday 10:40 AM
TITLE: Behavioral affects of anthropogenically altered habitat on a declining long-lived vertebrate
AUTHOR(S):
Andrea Currylow -- Purdue University, 715 West State Street, Lafayette, IN 47907. Phone: (805) 610-1640 Email: currylow@purdue.edu
Brian MacGowan -- Purdue University Extension
Rod N Williams -- Purdue University

ABSTRACT: Habitat alteration through direct and indirect anthropogenic episodes such as habitat destruction and global climate change is becoming increasingly frequent. The understanding of how these changes affect habitat use and selection by native fauna is vital to the preservation of diversity. The Eastern Box Turtle (*Terrapene carolina carolina*) is a long-lived and geographically widespread forest animal yet numerous populations are experiencing precipitous declines. This species ability to endure in a range of available habitat and its close ties to temperature fluctuation make it ideal for study of habitat use and selection amid anthropogenic disturbances. For three consecutive years we studied the behavior of 23-43 adult Eastern Box Turtles using radio telemetry to determine seasonal habitat selection with habitat alteration. Turtles were tracked intensively during annual activity periods (May-October) for two years prior to and one year following scheduled timber harvests. Annual and seasonal ranges were calculated and compared as Minimum Convex Polygons (MCP) and Kernel estimates. Pre-harvest home range sizes for sedentary adults ranged from 0.8 to 19.0 hectares and did not significantly vary between the sexes (av. M:3.55ha. and av. F:2.89ha.). This experimental design using radio telemetry data and direct observation of a wild turtle population prior to and in response to anthropogenic habitat alteration is the first of its kind.
KEYWORDS: anthropogenic, disturbance, turtles

ROOM: Ambassador
TIME: Wednesday 11:00 AM
TITLE: Spatial ecology of timber rattlesnakes in managed forests in Indiana
AUTHOR(S):
Brian MacGowan -- Purdue University, Department of Forestry and Natural Resources, 715 West State Street, West Lafayette, IN 47907. Phone: (765)647-3538 Email: macgowan@purdue.edu

ABSTRACT: The Timber Rattlesnake (*Crotalus horridus*), is a species of conservation concern throughout much of the Midwest. While the habitat preferences of Timber Rattlesnakes have been studied throughout their range, little empirical data is available on the effects of forest management on the spatial ecology of this species. For three consecutive years, I tracked the movements of 23-34 adult Timber Rattlesnakes using radio telemetry. Snakes were tracked usually 3 times per week during the activity season (April-October) for two years prior to, and one year following, scheduled timber harvests. Pre-treatment home range size (95% MCP) averaged 43.2 ha among all snakes (range 1.6 ha to 143.2 ha). Average male home range size (65.8 ha) was larger ($P < 0.001$) than female home range size (20.6 ha). Differences between years and treatments were not observed for either sex ($P > 0.10$). Ultimately, the results of this research will provide critical information that will enhance Timber Rattlesnake habitat on managed forests.
KEYWORDS: timber rattlesnake, Indiana, timber harvest

ROOM: Ambassador
TIME: Wednesday 11:20 AM
TITLE: Responses of amphibian and reptile communities to forest management in the Missouri Ozark Forest Ecosystem Project - preliminary results
AUTHOR(S):
Jean Favara -- MOFEP Herp Project Crew Leader, 142 Holly Garden Dr, Ballwin, MO 63021. Phone: (314)603-9462 Email: jpouf1@swbell.net
Rochelle B Renken -- Missouri Department of Conservation
Robert A Gitzen -- University of Missouri School of Natural Resources
Joshua Millspaugh -- University of Missouri School of Natural Resources

ABSTRACT: The Missouri Ozark Forest Ecosystem Project is a landscape scale long-term study that examines the response of various biotic and abiotic components of the oak-hickory forest ecosystem to even-aged, uneven-aged, and no-harvest forest management as performed by the Missouri Department of Conservation in the Missouri Ozarks. One aspect of MOFEP examines the response of amphibian and reptile communities to these three types of management. Using a passive trapping system, we sampled amphibian and reptile communities for 4 years prior to the first regeneration harvest which was performed in 1996. These communities were also sampled in 1997 through 2001 and again starting in 2008. Preliminary analysis of the 2008 to 2009 data indicates that the amphibian and reptile communities and animal relative abundance has not changed among the three treatments. Additionally, the first regeneration harvest in 1996 did not affect the relative abundance of amphibians and reptiles in the managed forest. At this point in the experiment, climatic conditions appear to play a greater role in affecting these communities than management actions. Future plans for this study include a second forest regeneration harvest scheduled for 2011. Reptile and amphibian communities will again be sampled after this harvest in 2012 to 2014.
KEYWORDS: herptile, forest, management

ROOM: Ambassador
TIME: Wednesday 11:40 AM
TITLE: Assessing the impact of housing development projections on high priority forest birds
AUTHOR(S):
Todd Jones-Farrand -- American Bird Conservancy, 302 Natural Resources Building, University of Missouri, Columbia, MO 65211. Phone: (573)875-5341 Email: tjones-farrand@abcbirds.org
Anna Pidgeon -- University of Wisconsin Madison
Frank Thompson -- U.S. Forest Service
Jane Fitzgerald -- American Bird Conservancy

ABSTRACT: Conservation planning efforts focused on sustaining wildlife populations require information on how threats to populations and their habitats are likely to manifest in the future. Expanding development is widely recognized as a driving force behind forest loss and fragmentation. We combined information on current bird abundance (circa 2000), concurrent levels of housing density (HD), and projected changes in HD (2030) to examine how this threat might affect bird populations within 3 Bird Conservation Regions in the Midwest and South-central US. We summarized HD and land cover data around Breeding Bird Survey (BBS) routes to examine their relationships with bird abundance for 35 priority species. Next we developed models predicting developed area from HD and other land cover classes to project future landscapes resulting from increases in HD. Finally, we predicted bird population response to the projected future landscapes based on our BBS models. Results showed that HD affected the abundance of most of our focal species. Thirty-four bird populations were predicted to decline overall from 2000 to 2030, but declines were not ubiquitous. Rather, species-specific population changes (positive and negative) were observed to result from the spatial variability in human population and land use patterns. Concentrating future development within 400 m of existing development lessened negative impacts on populations. The spatially explicit maps produced by this project will assist land planners in mitigating the impacts of future development on bird populations. Because this work is based on national datasets, similar products can be developed for other regions of the US.
KEYWORDS: BBS, landcover, urbanization