Panel Discussion: Incorporating fire sensitive species into prescribed fire planning and operations

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Panel Members: Armund Bartz (Wisconsin DNR), Emily Hohman (Iowa TNC), Jack McGowan-Stinski (Cardno JFNew), Steve Woods (Ohio TNC), Matt Zine (Wisconsin DNR). Moderated by Nate Fayram (TPOS Fire Science Consortium).

Abstract: *Box turtles, birds, bugs…So many species that can be directly impacted by fire, or indirectly through changes to their habitat. Insects, small mammals, birds, reptiles, amphibians, even snails! How can we get enough fire on the landscape to restore these fire dependent communities, without killing the rare species that depend on these sites for habitat? This panel will discuss a range of issues such as species phenology and life histories; burn timing, intensity, return interval, and prescriptions; incidental take protocols, site context, burn unit design, and more. Come share your questions and experiences, so we can all 'burn smarter' and do the best we can to plan for all the biodiversity within our burn units.*

Summary/Key Points Made:

- Needs: More monitoring of fire effects on rare fauna, also life history and phenology of many species
- Also need to improve the sharing of the results of research and experience
- Information on likely locations of, and fire impacts on, rare species is lacking for contractors and private landowners
- Diversity in methods (such as mowing, burn timing, ignition techniques) can minimize impacts within a burn unit (example: consider fall and growing season burns vs. always burning a unit in the spring)
- Consider the implications of "doing nothing" as well as the impacts you can have on individuals with prescribed burns. Most of these species need improvements in their habitat on a large scale to survive long term.

Minutes - Based on notes from Jessica Renley (WI DNR)

Q1) Bat issues – Indiana Bat?

- MI – North/South bat line across state, management restricted west of line
- Southern States found that fire doesn't ultimately affect Indiana Bat
- Need cavity trees, nest under bark
- Fire creates habitat for Indiana Bats, ultimately beneficial
- See Forest Service website (region 8?) for more info

Q2) Monitoring and Management; Anecdotal Knowledge vs. Research?

- We're not doing a good enough job of actual monitoring
- Typically coarse level monitoring (e.g. photopoints), often tied to management grants
- Need more data on patch burn grazing, growing season burns
- $ - funding is a big issue!!
- Citizen based monitoring
    - Obstacle is protocols, consistency of monitoring, vols. have little research background

- Example given of monitoring that resulted in incidental take
    - 100% mortality of butterflies in enclosures
- Seeing high #s after Rx fire is not conclusive
    - Were they there prior, or just came in after?
- Monitoring can affect behavior of spp being monitored
- WI CBM – good coarse level info for spp presence (ex. WI butterfly website)
- CBM easier for birds, less for inverts (etc) b/c of ID difficulty
- Need to improve communication with grad student researchers to make sure results are known (often don't share results)

Q3) Herpetofauna (reptiles and amphibians) and fire?

- Iowa prairie rattlesnakes
    - Monitoring - Pit tagging occurring
    - Avoid burning when it's been cold, snakes can't move well
    - Location of snakes affect grazing mgt (bison, cattle)
- MI massasauga rattlesnakes
    - How can we manage for these spp without killing them?
    - DNR recommends burning while snakes are in hibernacula
        - But won't get fire effects you need to maintain or expand habitat
    - Anecdote: Jack killed 2 saugas in Rx burn
        - Didn't think they were there, highly degraded habitat, and began mgt
        - Found many more after the burn, including neonates
    - Jack recommends burning during active season
        - Paper will come out re: behavior of snakes during burns
- Turtles use Brushpiles!
    - Often hibernate within them (esp. box turtles)
    - So use care when making brushpiles, and burning them up
    - Ideally burn them up right away
- Protocols overlapping for multiple T/E species makes it difficult to burn
    - Turtles are most vulnerable to fire
    - Many threats to rare species, fire is a threat but also helps the species habitat
        - Need to consider total population not just individuals
- WI Grassland/Savanna Incidental Take Protocols
    - Massasauga protocol based on ground temp
    - Timber Rattlesnakes – Date for cut off is April 15
    - Dates are problematic b/c of seasonal changes, climatic fluctuations, variability
- Midwest proposed herp protocol very problematic
    - Restricted to winter burning
- Paradox: How to manage without killing individuals
    - Same for birds, etc
- Managing around several fire sensitive species very difficult
    - Recommendation: variable burn program
        - Don't burn same units the same time of year in successive years etc
        - Switch it up! (Fall, Spring, Growing Season, Winter)
- How fast can 'saugas move?
    - Jack: Grad student did "speed trials"

    - Determined they could maintain low enough rate of spread (via prescription, ignition techniques) so that saugas could escape
    - This minimized the impact

Q4) Contractors and Private Landowners, lack of access to info on rare species, may not know what is within burn units

- Protocols are a good way to get landowners involved (i.e. searching for turtles pre-burn)
- How to disseminate info re: rare species, protocols, etc to private landowners?
- Listed species (animals) are legally protected, even on private land
    - Unclear whether majority of public realizes this
- Contractors get DNR permits, but DNR doesn't check Natural Heritage Inventory (NHI) for presence of Elemental Occurrences (verified finding of listed species)
    - NHI not available to public (or not in enough detail to be useful)
    - Most of the time landowners don't know what's on their property
    - As a contractor for landowners, what resources are there to know about rare species presence, how should they proceed?
    - Mike Healy suggests providing list of EO's per township when people apply for a burn permit

Q5) How were these sensitive species surviving fires historically?

- Larger habitat overall, scale
- Larger populations overall
- Unburned refugia, patchiness of large scale fires
- Rich Henderson comments we don't really know for sure how many species survived, lack of knowledge
- So, mix it up. Seasonality, management techniques (Rx fire, mowing, etc). Diversify!
- Need to know more about fire effects
    - Example: Burning Karner Blue Butterfly habitat while lupine was blooming – very controversial
    - But this growing season burn had much more natural refugia, most lupine didn't burn, others resprouted
    - Karners responded well
- Becoming too cautious to do management = choosing to allow habitat to degrade
- Do we have to accept that some species will be lost?
    - Can't be so cautious that all other species will be affected negatively
- Risk Assessment: Biggest problem for all species is habitat loss (and degradation, fragmentation)
    - Need to bring back big blocks of habitat. Maybe if rare species are lost during this restoration, they can be reintroduced?
    - How can we get "invert people" on board with this approach?
        - Need to 'build bridges'
    - Example - Karners introduced too quickly
        - Still lots of management work to do
        - KBB presence makes management harder
    - Need to remember we're all on the same team, and we all care
    - Again, we need better data (monitoring)