

Burning Issues Symposium II

Wildlife A: Herps

Eastern Box Turtles



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Eastern Box Turtle (*Terrapene carolina carolina*)

Identification: The high, domed carapace is dark with a radiating pattern of yellow or orange. Plastron with flexible hinge, allowing complete shell closure. Male usually has red eyes and concave plastron.

Adult carapace length: 4.5 to 7.8 inches (11.4 to 19.8 cm).

Habitat: Open woodlands and adjacent meadows, thickets, and gardens, often near shallow ponds, swamps, or streams. Michigan's only truly terrestrial turtle.

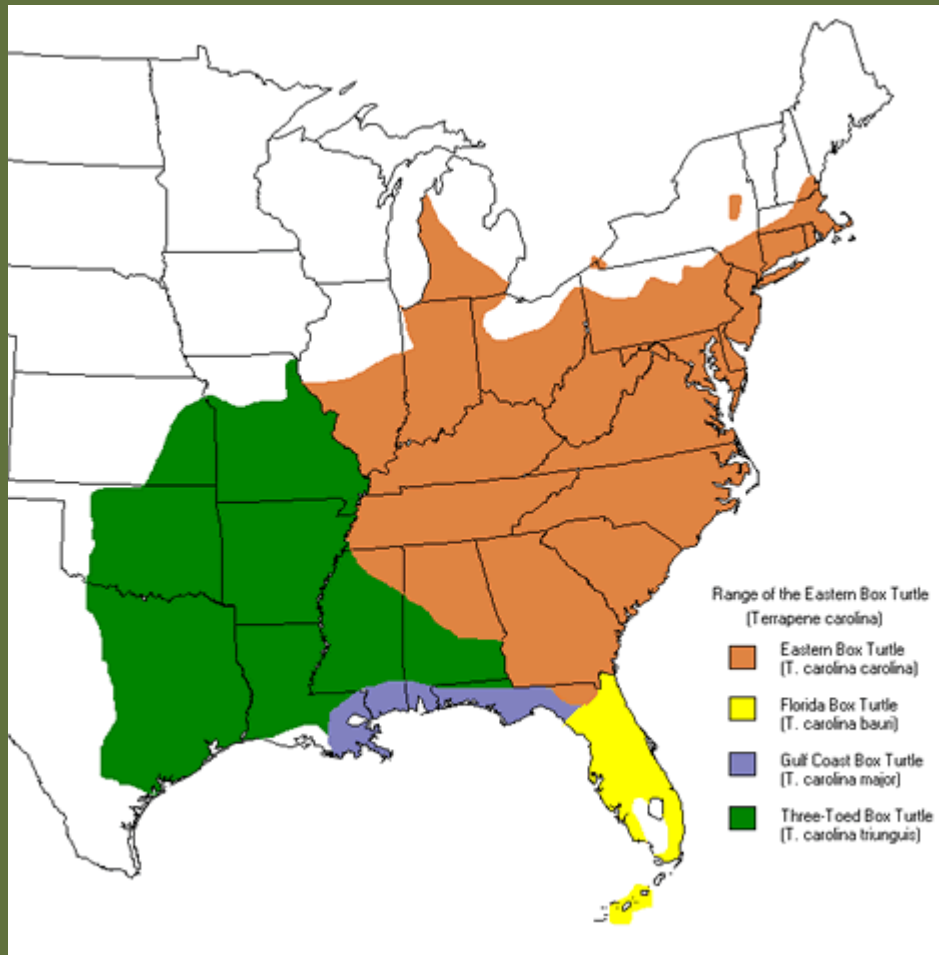
Habits: Small home range (under five acres) . Eat plants, berries, fungi, insects, worms, slugs, snails, carrion. Live 40-50 years.

Reproduction: Reach sexual maturity 6-10 years. Lay 3 to 8 eggs in June. Hatchlings emerge in September-October (or April).



Eastern Box Turtle (*Terrapene carolina carolina*)

Range and Status: Uncommon to rare in southern and western Lower Peninsula. Declining due to habitat loss, collecting for pets, and road mortality. Protected by law in MI, OH, and IN as a special concern species.



Challenges of using prescribed fire in EBT habitat

Natural History Conflicts:

- Active season overlaps with typical burning season
 - Spring & Fall
- Slow-moving & cold-blooded; cannot outrun fire



Behavioral Conflicts:

- Drawn to higher fuel loads (leaf litter, woody debris, etc.)
- Movement patterns variable and uncoordinated



The biggest challenge will be keeping an open mind about putting fire on the ground during non-traditional times...





Habitat Use – Adult Turtles

Adult Box Turtles				
	<u>General Habitat Type</u>			
<u>Time of Year</u>	<u>Primary</u>	<u>Secondary</u>	<u>Behavior</u>	<u>Exposure</u>
March	Closed canopy		Emergence	Buried
April: W1&2	Closed canopy		Emergence	Partial buried
April: W3&4	Closed canopy		Emergence	Full
May: W1&2	Closed canopy	Wetland		Full
May: W3&4	Edge- Closed canopy	Wetland	Staging	Full
June	Open/grassland	Closed canopy	Nesting	Full
July: W1&2	Closed canopy	Open/grassland		Full
July: W3&4	Closed canopy	Wetland		Full
August: W1&2	Closed canopy	Wetland		Full
August: W3&4	Closed canopy	Wetland		Full
September	Closed canopy			Full
October	Closed canopy		Pre-overwintering	Partial buried
November	Closed canopy		Overwintering	Buried
December	Closed canopy		Overwintering	Buried
January	Closed canopy		Overwintering	Buried
February	Closed canopy		Overwintering	Buried

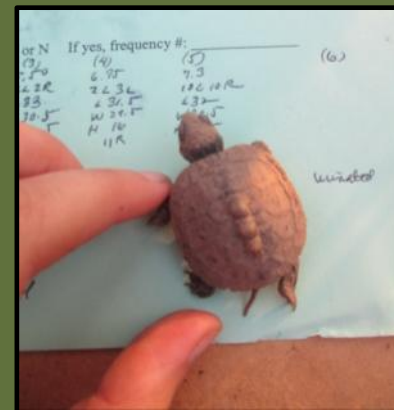


Habitat Use – Hatchling Turtles

Hatchling Box Turtles				
	General Habitat Type			
Time of Year	Primary	Secondary	Behavior	Exposure
March	Open/grassland		Overwintering	Partial buried
April: W1&2	Open/grassland		Overwintering/Hatch	Partial buried
April: W3&4	Open/grassland		Hatch/Emerge	Full
May: W1&2	Open/grassland		Active	Full
May: W3&4	Open/grassland		Active	Full
June	Open/grassland		Active	Full
July: W1&2	Closed Canopy?	Open/grassland	Active	Full
July: W3&4	Closed Canopy?	Open/grassland	Active	Full
August: W1&2	Closed Canopy?	Open/grassland	Active	Full
August: W3&4	Closed Canopy?		Active	Full
September	Open/grassland		Hatch (9/7)	Full
October	Open/grassland		Hatch (10/24)	Full
November	Open/grassland		Pre-overwintering	Partial buried
December	Open/grassland		Overwintering	Partial buried
January	Open/grassland		Overwintering	Partial buried
February	Open/grassland		Overwintering	Partial buried

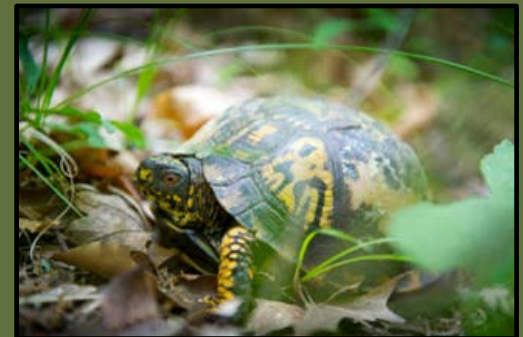
Habitat Use – Comparison (adults vs. hatchlings)

	Adults	Hatchlings
<u>Time of Year</u>	<u>Primary</u>	<u>Primary</u>
March	Closed canopy	Open/grassland
April: W1&2	Closed canopy	Open/grassland
April: W3&4	Closed canopy	Open/grassland
May: W1&2	Closed canopy	Open/grassland
May: W3&4	Closed canopy	Open/grassland
June	Open/grassland	Open/grassland?
July: W1&2	Closed canopy	Closed canopy?
July: W3&4	Closed canopy	Closed canopy?
August: W1&2	Closed canopy	Closed canopy?
August: W3&4	Closed canopy	Closed canopy?
September	Closed canopy	Open/grassland
October	Closed canopy	Open/grassland
November	Closed canopy	Open/grassland
December	Closed canopy	Open/grassland
January	Closed canopy	Open/grassland
February	Closed canopy	Open/grassland



Some things we do know:

- Burning during inactive season is best (weather limited; 3-5 years)
- Emergence burns are likely the worst
 - Early spring burns (end March-mid April = 11% mortality)
- Annual burns are bad
- Recruitment is vulnerable to spring and fall grassland management activities
- EBT can survive fire and live to reproduce



How to reduce the negative effects:

Think like a turtle: familiarize yourself with their ecology

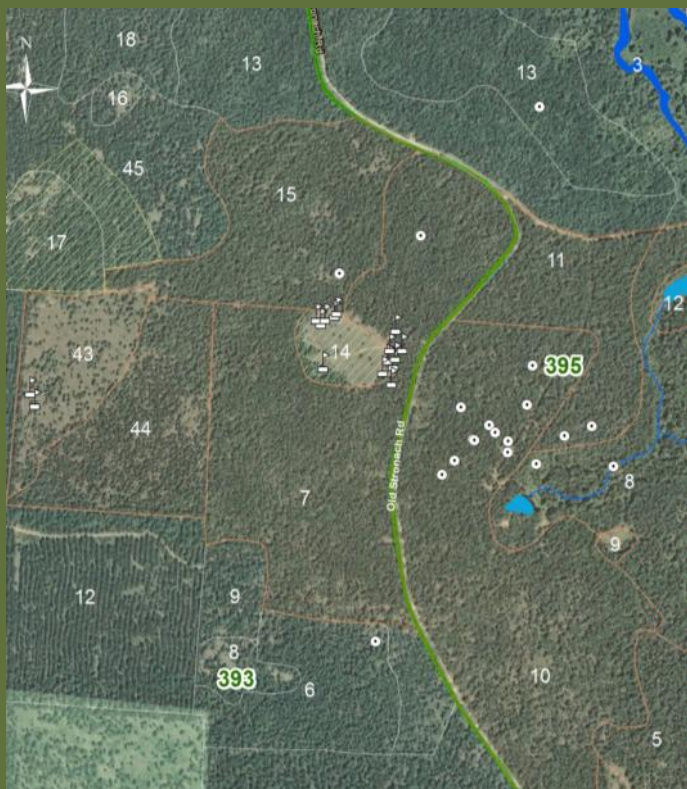
- Emergence (mid-April)
- Nesting (late May - June) = Grasslands off limits
- Cold-blooded



How to reduce the negative effects:

Evaluate and utilize site's strengths and weaknesses

- Sources of mortality
- Water sources
- Availability of nesting areas (grasslands)



How to reduce the negative effects:

No sustainable “one burn fits all”

Mix it up

- Burning season (spring, summer?, fall)
- Frequency (5+ years ideal)
- Ignition pattern

Side notes

- Smaller burn units
- Patchy is good
- Watch the edges



Re-evaluate your definition of a “successful burn”