

Table 1: Goals and Conservation Measures of CCAA (2010-2019)

**** APPENDIX A ****

(Note: See text of CCAA for more detailed explanation of Goals, CMs, Strategy, and Status)

Goals	Conservation Measure (CM)	Strategy	Status	Annual Conservation Goal	Cost	Funding Secured	Additional Cons. Actions if Funding Allows/Funding
1: Enhance, and manage habitat at Tiffany to maximize maintenance and protection of the EMR population	1: Quantify habitat changes over time to determine affect on EMR populations.	1: Conduct a Geographic Information Systems (GIS) analysis of the NTRNA and Tiffany to quantify and qualify changes in vegetation and hydrology.	<u>Strategy 1 Completed.</u> Final Report, “Hydrographic and Vegetation Change in the Tiffany Bottoms Area of the Lower Chippewa River in Buffalo County” (Faulkner & Weiher 2005).	Completed	About \$20,000	All	Completed
	2 (Optional): Forecast future habitat suitability for this EMR population as funding permits.	1 (Higher priority): Use the GIS analysis to develop a predictive model of hydrologic conditions for the future.	Not started	N/A	TBD	0	N/A
		2: Use the GIS analysis to develop a predictive model of vegetation changes in the future under a no-management scenario	Not started	N/A	TBD	0	N/A
	3: Based on the finding from CMs 1 & 2 (if available) conduct EMR management at Tiffany while balancing habitat needs of other ssp.	1: Conduct periodic prescribed burns in EMR occupied or previously occupied habitats and restore connectivity between occupied habitats.	On-going	Maintain about 40 acres of open canopy habitat and open 1-3 acres of habitat in and around occupied EMR habitat.	Annual funding needed: ¹ \$6000-10,000	² <u>Year 1</u> (2010/2011) \$11,900 ³ <u>Year 2</u> (2011/2012) \$6,000	⁴ <u>Year 1</u> Restore and/or manage about 200 acres of savanna habitat - northern Tiffany/ \$7,500.

Goals	Conservation Measure (CM)	Strategy	Status	Annual Conservation Goal	Cost	Funding Secured	Additional Cons. Actions if Funding Allows/Funding
		2: Conduct other habitat management to expand open-canopy areas. All management will be per the latest approved "Protocol for Incidental Take Authorization Eastern Massasauga Rattlesnake (<i>Sistrurus catenatus catenatus</i>)."	On-going	Same as above	Included in above	Included in above	TBD
2: Determine and monitor the population size and occupied range of the EMR.	4: Conduct population monitoring to evaluate the status of the EMR in the Chippewa Bottoms.	1: Conduct initial population surveys in Tiffany and NTRNA to determine the currently occupied range of EMRs.	<u>Strategy 1 Completed</u> EMR surveys and telemetry work were conducted at Tiffany and NTRNA from 2000-2003 (McCumber and Hay 2001, 2002, 2003).	Completed	\$6,000	All	Completed
		2: Select 3 large sub-populations (sites) in Tiffany to establish a catch per unit effort baseline for use in comparing future monitoring efforts.	<u>Strategy 2 Completed.</u> Initial surveys completed in 2007 (Lively 2007).	Completed	\$2-3,000	All	Completed
		3: Conduct monitoring of EMR populations at the large EMR sites selected for Strategy 2 plus 2-3 additional smaller recently occupied sites in Tiffany per monitoring event. Monitoring should be conducted at 3-5 year intervals for a minimum of 15 years.	On-going	Conduct monitoring every 3-5 years e.g., 2010, 2014, and 2018.	\$3,000 every 3-5 years	\$3,000 for 2010 monitoring	NA

Goals	Conservation Measure (CM)	Strategy	Status	Annual Conservation Goal	Cost	Funding Secured	Additional Cons. Actions if Funding Allows/Funding
3: Create sense of ownership and support for EMR management, protection and recovery efforts.	5: Develop and implement an education program, to reduce the threat of collecting and killing in the Chippewa Bottoms.	1: Funds permitting, modify existing EMR educational materials to make it applicable to the Chippewa Bottoms area and use to conduct outreach to landowners.	Not started	NA	\$2,000	0	NA
		2: Review Rebecca Christoffel's Ph. D thesis on "The human dimensions of rattlesnake conservation in the upper Midwest" for information applicable for use in Strategy 1.	Not started	NA	Include w/ above cost	0	NA
		3 (Optional): Develop and circulate a questionnaire to solicit public opinion regarding EMR recovery.	Not started	NA	\$2,500	0	NA

¹ The variance in expenses (\$6,000 - \$10,000) is due to the level of maintenance needed on some of the openings, i.e. brushing and mowing versus prescribed burning versus herbicide use (Kris Johansen, WDNR, pers.comm., 2009)

² Year 1 = fall/winter of one year and winter of following year e.g. the fall/winter of 2009 and winter of 2010.

³ Some of Year 2 money may be spent in Year 1 if weather/field conditions permit; some years it is difficult to conduct work due to field conditions. This strategy may apply to future habitat work as well.

⁴ The \$7,500 will be used in the northern portion of Tiffany where no EMRs are known present at this time to manage and restore oak savanna habitat. It is anticipated that EMRs may move into this northern habitat over the long term as the habitat is restored (Kris Johansen, pers. comm., 2009).

N/A = Not applicable

TBD = To be determined

Note Re: Funding: The WDNR has been successful in the past in securing funds from various sources for habitat restoration and EMR monitoring activities at Tiffany. Funds are already secured for Year 1 and Year 2 for habitat maintenance and restoration activities; funds for the 2010 EMR monitoring work are also secured (see above). Anticipated future funding sources include WDNR State Wildlife Grants, Service Challenge Grants, Service ESA Section 6 funds, Service discretionary funds, and State Turkey Stamp monies.