

## NC507 – Rapid Response

### Title: NC507 Monarch Conservation in the Midwest

Two informal meetings of NC507 were held to initiate regional discussions of the Rapid Response project, coordinate regional efforts, and to facilitate communication among interested members and potential members. The first was a teleconference on May 12, 2015, the second was an informal meeting in conjunction with North Central Branch Entomological Society meeting and was held on June 2, 2015 in Manhattan, KS. Notes from each of these meetings are included below.

Teleconference: May 12, 2015.

Below is a short summary of the NC-507 teleconference held today

Present: Blodgett, Bradbury, Debinski, Hartzler, Hellmich Mota-Sanchez, Oberhauser, Porter, Purcell-Miramontes, Ratcliff, Weissling, Zhou

- Reviewed NC507 objectives
- Members provided a brief verbal summary of monarch conservations research and outreach efforts
  - Oberhauser shared that there are a number of publications available from Monarch Joint Venture ( see <http://www.monarchjointventure.org/resources/publications/> ). In addition, Oberhauser’s new book “Monarchs in a Changing World” will be available shortly (see <http://www.cornellpress.cornell.edu/book/?GCOI=80140100672610> )
  - Bradbury reviewed opportunities for a regional grant proposal
    - The U.S. Fish and Wildlife Foundation website lists three focus areas for the Monarch Conservation Fund ( <http://www.nfwf.org/monarch/Pages/home.aspx#.VVKultpViko> ):
      - Habitat restoration
      - Outreach and education (with a focus on youth education)
      - Native seed production
    - Another critical area is the design of surveys to ensure that monitoring data can be aggregated. While USGS is designing survey protocol there is a need to connect to data at the state level.
- Oberhauser shared that habitat restoration may be the right focus for the regional committee given that Monarch Joint Venture partners are engaged in native seed production and there are numerous educational materials already developed.
- Ratcliffe offered to link Monarch Joint Venture’s webpage, Iowa Monarch Conservation Consortium webpage ( <http://monarch.ent.iastate.edu> ) and other webpages to the NCR IPM Center webpage ( <https://www.ncipmc.org/> ). In addition, she shared that the IPM Extension Coordinators may be able to summarize IPM practices that are not conducive to monarch butterfly conservation.
- Purcell shared "AFRI’s Agro-ecosystem Management program may be very appropriate to future proposals by this group. The program funds research proposals, conferences and workshops that focus on sustainability and interactions between biodiversity, ecosystem services and function. This is in the Foundational RFA and this year’s deadline is June 10, 2015. There is an annual call. But make sure that the priorities of the future RFAs line up with your project objectives. Go to the bottom of page 24 after clicking on this link: <http://nifa.usda.gov/funding->

[opportunity/agriculture-and-food-research-initiative-foundational-program"](#)

Michael Bowers is the NPL in charge of this program. His email is [mbowers@nifa.usda.gov](mailto:mbowers@nifa.usda.gov)

- Blodgett shared that an informal NC-507 meeting will be held on June 2, 6 to 10 pm at the Hilton Garden Inn in Manhattan Kansas (associated with the NCB-ESA meeting)
- Dr. Chip Taylor at University of Kansas and Dr. Baum at Oklahoma State University will be asked to join the regional committee. In addition, representatives from Texas A&M, Purdue, Ohio State and Penn State will be invited to join the committee.

May 13, 2015. Follow-up by K. Oberhauser via email

1. Regarding Tom Weissling's Milkweed Watch project. Tom, if you send me your mailing address, I'll send you a few copies of our book Milkweed, Monarchs and More. I'm sorry that I can't send them free to everyone, but they're available on our website: <http://monarchlab.org/store/category/books-and-curriculum-guides>. The book is a comprehensive overview of what you see on milkweed plants.

Tom, the MLMP has an activity that involves our volunteers reporting on other arthropods that they see on milkweed (that's why we developed the book), but because our focus is monarchs, we haven't really used those data much, at least yet. I'd be happy to talk with you about our protocol, and perhaps we could link our projects somehow.

2. Rick, the MJV is also working on a project involving demonstration sites on farms, and it would be great to team up on this. The Tallgrass Prairie Center in Iowa is a key partner in this project, as is the Xerces Society. We could share educational materials, or strategies for communicating with farmers. Let me know if you want me to organize a call with Laura Jackson and Scott Black from TPC and Xerces.

3. Perhaps those of us involved with surveying for milkweed could strategize on common methods so that our data are comparable. The USGS is supporting interns to survey in IA, MN, WI, OK and TX (and maybe into NE) this summer, and it would make sense for us to use similar methods. Would you be willing to share your methods for choosing sites to monitor, and for monitoring sites, Bob?

4. For people new to monarchs, here's a link to the new book:

<http://www.cornellpress.cornell.edu/book/?GCOI=80140100672610>

5. Finally, here is a link to the MLMP videos on monarchs.

<http://www.mlmp.org/Training/Videos.aspx>. Videos 2, 3 and 4 provide general background on monarch ID and biology, and the others are more focused on the MLMP citizen science project. If you're still with me Tom, video 8 is focused on the activity where people collect data on invertebrates on milkweed plants.

June 2, 2015. Kansas Meeting: The first informal meeting was held in conjunction with the North Central Branch of the Entomological Society of America meeting in Manhattan, KS, June 2, 2015. Participants at this meeting included: Phil Muldar (OK), Kirk Larson (Luther), Dave Hogg (WI), Rob Wiedenmann (AR), Greg Zolnerowich (KS), Tom Weissling (NE), Debbie Finke(MO), Ian Kaplan (Purdue),

Tanner Mattson (KS), John Ruberson (KS), Sue Blodgett (IA), Steve Bradbury (IA), Amy Morey (MN), Jim Nechols (KS), Shelly Wiggam (KS), Sarah Zukoff (KS), Jean Haley (IL).

A list of the topics discussed:

- NC507 project; research & extension goals were briefly reviewed.
- Group discussed the need for multistate coordination that would help to complement efforts, learn from other state projects, and allow us to aggregate results/impacts regionally. Regional platform will help us to tangible and permanent efforts to improve monarch habitat. Following topics were touched on; agronomy of milkweed and nectar plants, cost effect mix that will promote monarch reproduction, patch size, monarch movement among patches, survey designs.
- Iowa Monarch Consortium is focused on developing a program that is future oriented and farmer-led. The program is surveying monarch and milkweeds to establish a baseline that can benchmark our activities, identified a mesic and wet-mesic seed mix, and has demonstration plots of 9 milkweed species planted at the ISU Research Farms and several other locations. Membership in the consortium has unlocked some project support.
  - ISU project includes faculty in several departments. Collaboration between ISU-NREM Department and IDNR has MSIM project that in the past has included butterflies (with a few monarch observations). In 2015 an individual is being assigned to survey monarch and milkweeds that will support the benchmarking objective. State departments of natural resources/NRCS periodically do wildlife and habitat monitoring this may be a good source of collaborations for most states.
- Oklahoma – S. Wiggam described her research program that includes seeding milkweed in prairie stands, using burning and grazing in establishment and management. She suggests burning an area, followed by seeding, and then graze with cattle (their hooves help with seed-soil contact).
- National initiatives that may influence future work/directions include:
- The [National Strategy to Promote the health of Honey Bees and Other Pollinators](#) was released by the White House May 19, 2015. One of the three goals of the strategy is to increase the eastern population of the monarch butterfly to 225 million butterflies occupying an area in the overwintering site of 15 acres (6 ha). This led to a discussion of interest by U.S. Department of Transportation and USFWS in developing monarch habitat along the I-35 corridor as the “Monarch Highway”. Roadsides along I-35, will be targeted. There is also some observation that rivers and waterways may be important for monarchs migration and for local movement.
- USGS is working on a common database through the [Powell Center](#) for national data management system. They are just getting started.

There have been several funding opportunities: USDA-NRCS-CIG – April 30; IOWA-NRCS-CIG – May 15 (most states offer a state-level CIG grant; Missouri deadline is July 10 and South Dakota deadline is July

17). Because of the raised awareness through the Iowa Consortium there is some commodity funding available through state commodity organizations.

Action items:

- Suggest that Midwest in the title of NC507 be dropped
- There is still availability for a late breaking symposium at ESA/Tri-Societies meeting this fall. Speakers?
- One of the key new grants that targets monarch is from the National Fish and Wildlife Foundation (NRWF) grants due July 15. This represents a good opportunity for collaboration both within NC507 and with state agencies. Some of the topics that were mentioned that could be the focus for a NFWF grant include:
  - Monarch life tables for individual milkweed species, cardenoloid contents;
  - Milkweed species differ by state – perhaps a demo component with milkweed species – similar to what is going on in Iowa. Examining
  - Patch size, milkweed stand density and impacts on predators and protozoa; how many stems needed per unit area, optimum patch size and spatial arrangement (distance between patches), patch size related to apparency, spatial scales and issue of monarch corridors – connecting corridors (connecting the dots),
  - Protection of plants/patches from herbicide or insecticide drift, how are milkweed species and monarch affected by sublethal concentrations.
  - Maintaining patches over time, management needed to sustain milkweeds
  - Roadsides (can state DOTs reduce mowing? What about road dust? Monarch mortality due to traffic)
  - Companion plants – optimum mixture or progression may change by state. Because nectar plants serve as adult energy sources and are needed for migration – their needed landscape distribution may differ from milkweeds, nectar plants may need to be considered on a different spatial scale than the milkweed reproductive plant.

Action Plan:

1. ISU will request the NC507 project title be changed to ‘Monarch Conservation’ to acknowledge membership of Universities outside the North Central area (request has been submitted)
2. Participating Universities are requested to ensure their participants have completed Appendix E of the project.
3. The website for the National Fish and Wildlife Foundation call for proposals is <http://www.nfwf.org/monarch/Pages/monarch2015rfp.aspx#.VXBbqWN-OKZ> .
4. The Iowa Monarch Conservation Consortium website is at <http://monarch.ent.iastate.edu> The consortium’s vision statement and operating principles are attached.
5. Iowa Seed mix - Will send or post ISU seed mix and the 9 species plants.

References of interest:

- Mace Vaughan is a good contact for Xerces; [mace@xerces.org](mailto:mace@xerces.org)

- USFWS Region 2 Monarch Butterfly Conservation Strategy and Action Plan Template [http://www.fws.gov/southwest/es/Documents/R2ES/Pollinators/11-Southwest\\_Region\\_Monarch\\_Conservation\\_Strategy\\_Nov2014.pdf](http://www.fws.gov/southwest/es/Documents/R2ES/Pollinators/11-Southwest_Region_Monarch_Conservation_Strategy_Nov2014.pdf) USFWS has a goal of producing 100 Million Monarchs by 2020
- President's Pollinator strategy: <https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Health%20Strategy%202015.pdf> National strategy include monarch butterfly with the goal of increasing the eastern population of the monarch butterfly to 225 million butterflies occupying an area of approximately 15A (6 ha) in overwintering grounds in Mexico by 2020.
- USGS Powell Report
- [North American Monarch Conservation Plan](#) – Commission for Environmental Cooperation (2008)
- Diffendorfer, J.E., John B. Loomis, Leslie Ries, Karen Oberhauser, Laura Lopez-Hoffman, Darius Semmens, Brice Semmens, Bruce Butterfield, Ken Bagstad, Josh Goldstein, Ruscena Wiederholt, Brady Mattsson, & Wayne E. Thogmartin. 2015. National Valuation of Monarch Butterflies Indicates an Untapped Potential for Incentive-Based Conservation Conservation Letters 7(3) 253-262. <http://onlinelibrary.wiley.com/doi/10.1111/conl.12065/epdf>

November 17, 2015, Hyatt Regency, Minneapolis, MN.

Participants at this meeting included: Kirk Larson (Luther), Dave Hogg (WI), Sue Blodgett (IA), Steve Bradbury (IA), Peter Berthelsen (PF-NE), Diane Debinski (IA), Rick Hellmich (ARS-IA), Doug Golick (NE), David Mota-Sanchez (MI), Kristen Baum (OK), Louise Lynch (NE), Natalia Bjorklund (NE), Teresa Blader (IA), Victoria Pocius (IA).

Future NC507 meeting sites and times consider NCBESA meeting in Cleveland, June 2016 or Keystone meeting as yet to be scheduled.

General discussion centered on outreach and the importance of engaging agriculture across the region and partner with state agencies, NGOs, LGU, private and public colleges and extension and research. Monarch butterfly is a high priority and there is interest in funding opportunities, plant conservation, and milkweed establishment/conservation plots. Several state efforts included; Oklahoma – land management including grazing lands that include milkweed, issues of timing mowing to with monarch butterfly biology; Pheasants Forever include seed mixture that focuses on habitat establishment, national pollinator initiative and habitat carry over to pheasant, wildlife and songbird populations; Michigan – Concern with neonic off-target effects and working with Mexican growers; Nebraska – Primarily outreach efforts that include establishing gardens.