

April 25, 2018

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Why is EPRI Involved in Pollinators?

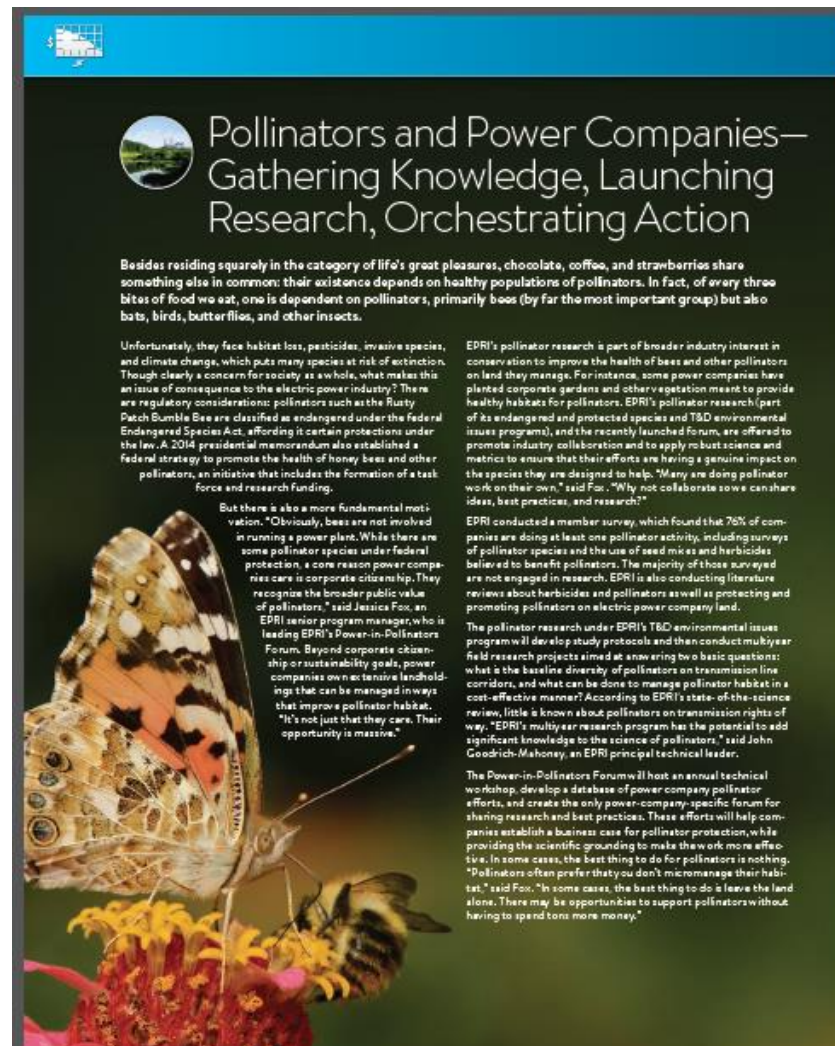
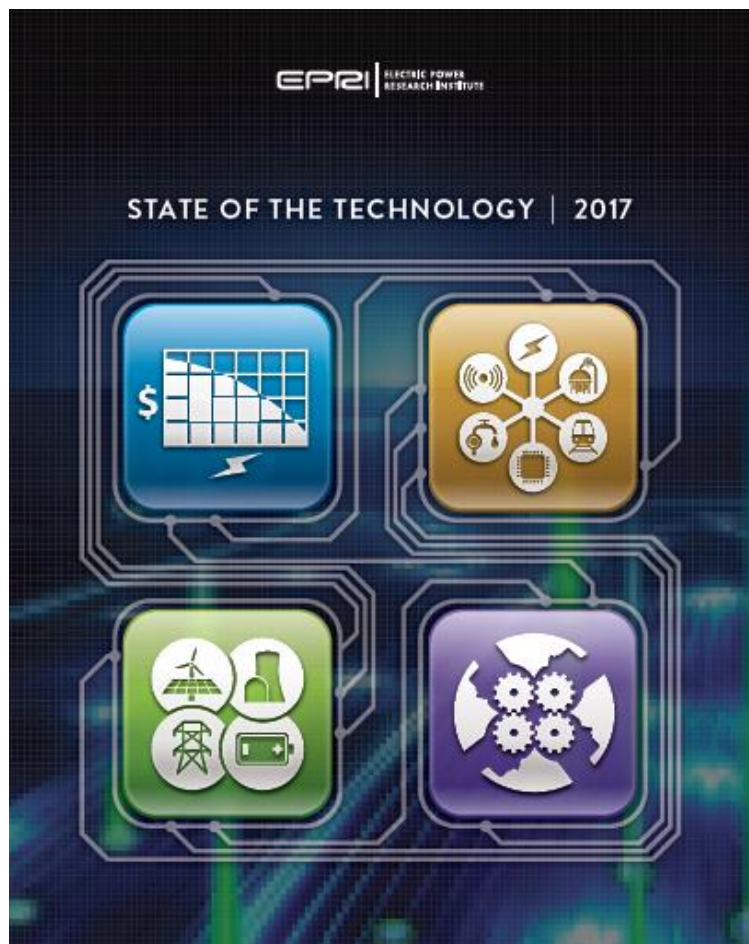
- Global decline in pollinator populations
- Internal and external stakeholder inquiries to electric utilities about pollinators on their lands
- Delivering rigorous science and a coordinated response to a critical environmental issue



Opportunity: Electric utilities manage large real estate assets. There is tremendous potential to get credit for your conservation, reduce impacts, and enhance pollinator habitat.

EPRI 2017 State of Technology

■ 2017 State of Technology Report



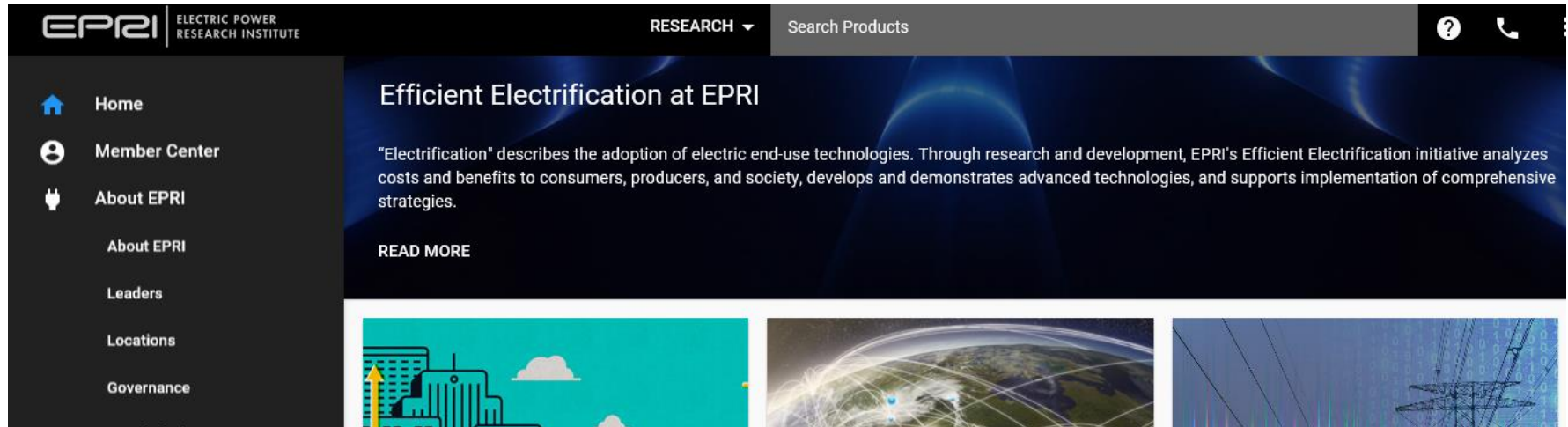
EPRI Journal Published Jan 2018: Features Dairyland

- <http://eprijournal.com/power-to-the-pollinators/>



“At that time, such efforts were uncommon at landfills,” said Brad Foss, Dairyland’s senior environmental biologist. “We were fortunate to have the support of senior management, who understood the ecological benefits.”

EPRI Public Pollinator Website Coming . . .



- Need a place one-stop-shop for EPRI pollinator work
- Anticipate: www.epri.com/pollinators
- Timeline: Live in May – prior to National Pollinator Week

Power-in-Pollinators Initiative



Value

Hone in on high-value opportunities, develop shared tools, and identify industry-level collaborations that make a difference



The first research forum designed for power companies and pollinators.

Power-in-Pollinators Initiative: Founding Companies



EVERYTHING MATTERS

Portland General Electric



Metrics for Outcomes

- Identify and define science-based metrics
- Guide company investments
- Establish measurable goals
- Track progress

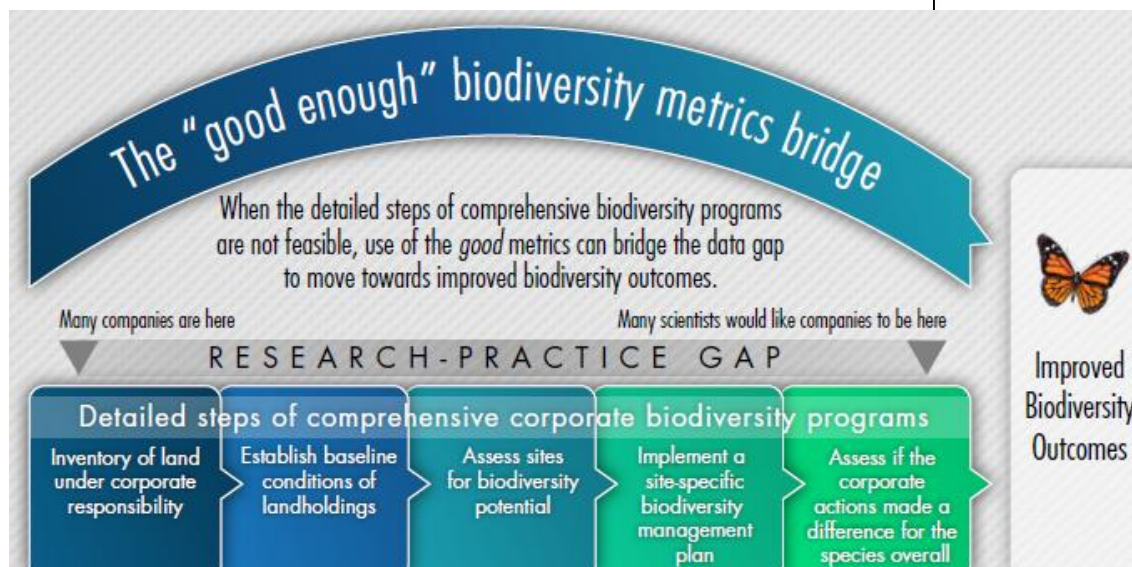
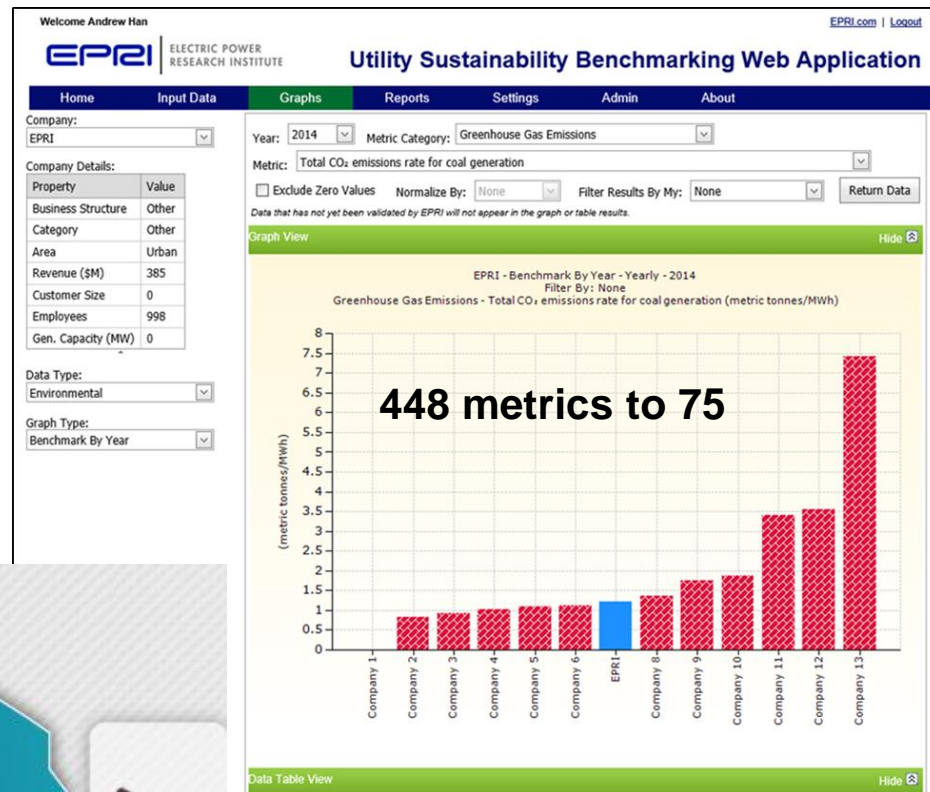


Steps of 2-Year Effort:

1. Compile database of existing metrics.
2. Map metrics to purpose: communication, planning, goal setting, etc.
3. Review for application to power industry.
4. Test for relevance, usability, cost-effectiveness, and ecological credibility

Lessons from past metric work

- Sustainability Metrics
- “Habitat” Metrics
- There are A LOT of metrics, not all can be used or are necessary



CURRENT STATUS

Excel database

Xerces will draft

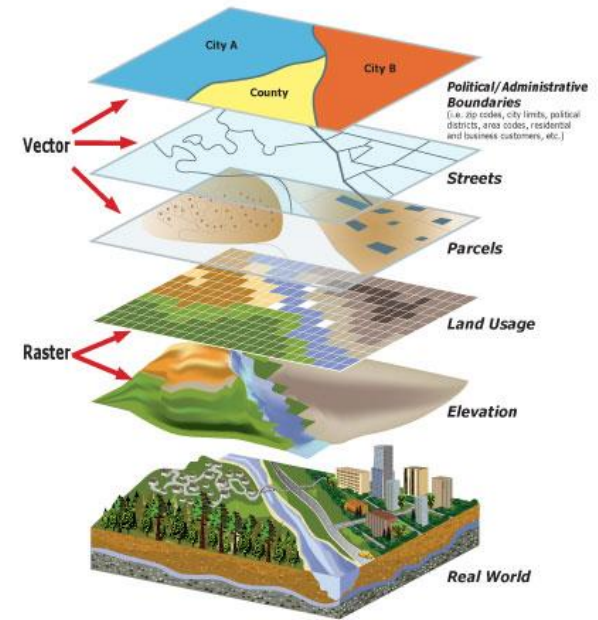
October – review database

GIS Prioritization Tool

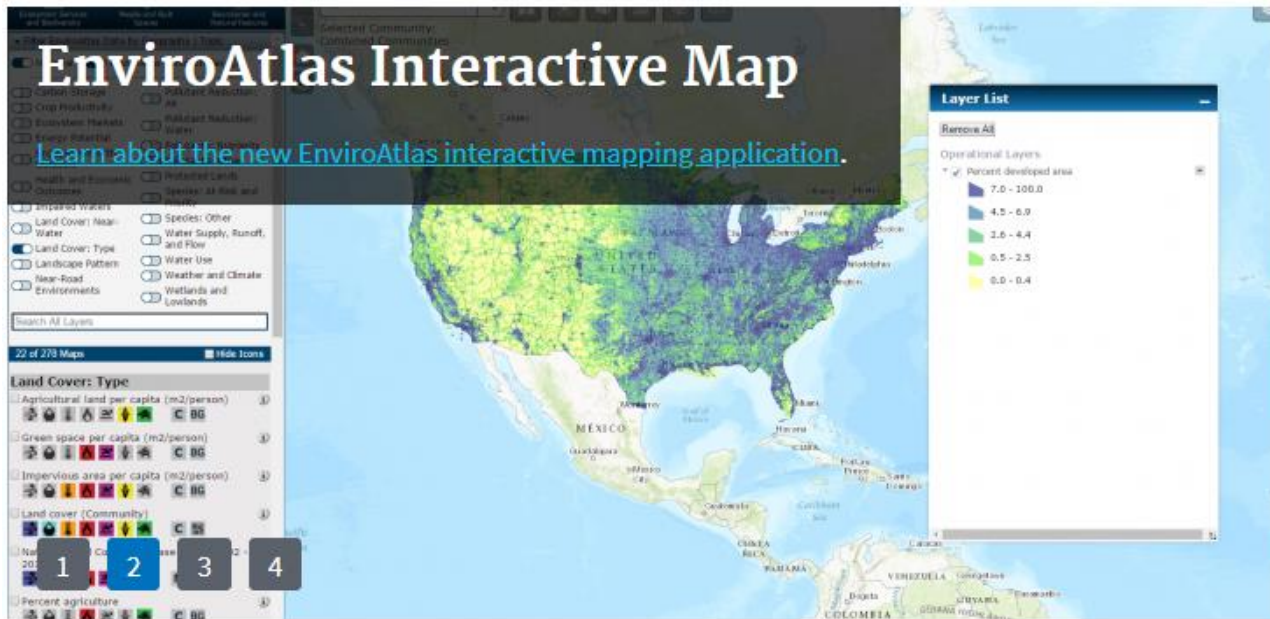
- Mapped-based approach to honing in on opportunities
- Land use, land ownership, species ranges, T&D lines.
- Identify *collaborative conservation*.
- Desk-top analysis, does not include site visits or field work.

Steps:

1. Proxy for “pollinator”.
2. Running custom scenarios
3. Assessing the customization of tool for company-confidential data analysis.



Leveraging what is already built



- Testing EnviroAtlas for application
- It will need additional work to APPLY to companies.
- Run scenarios, overlay company information, T&D line layer

CURRENT STATUS

EPRI meeting with
EnviroAtlas Team

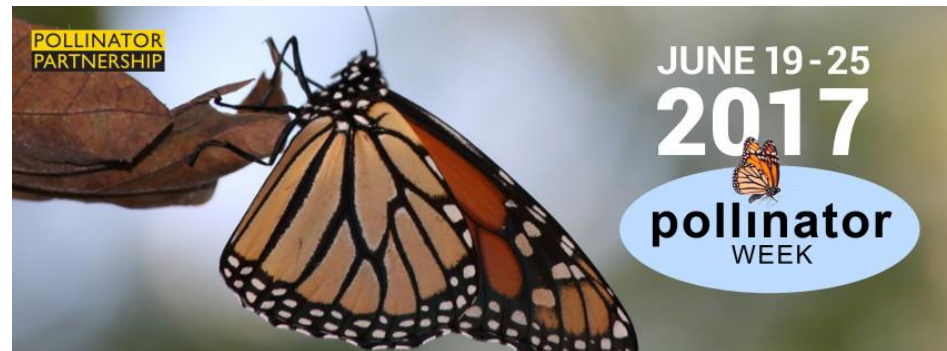
Demo @ April workshop

October: run scenarios
with member volunteer

National Pollinator Week

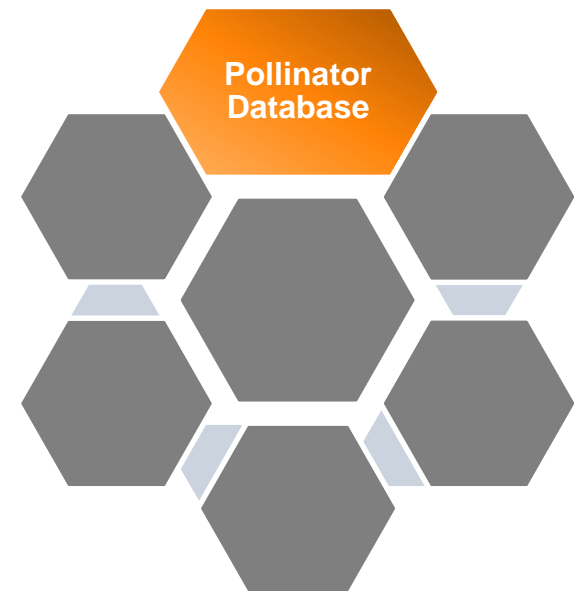
Every June is National Pollinator Week and lead by Pollinator Partnership.

- Develop shared resources for companies to customize.
- Develop announcements and statements.
- Create graphics, postcards, or other materials



EPRI Pollinator Database

- Public-facing database
- Catalog your pollinator efforts
- Tell your story
- Roll-up industry-level efforts
- Could set the stage for industry-level commitments in the future



CURRENT STATUS

Aug-Sept: Collect information

Launching Late 2018

National Pollinator Week (June 18-24)



EPRI Industry Collaborators

National Pollinator Week Mini Toolkit

Get Ready for Pollinator Week!

June 18-24, 2018

It's not too early to start thinking about how your company can get involved. Pollinators positively affect all our lives, supporting human health and ecosystems - let's SAVE and CELEBRATE them!

Become a leader in your industry by participating in National Pollinator Week! Engage your colleagues, customers, families, and community members this summer to show your commitment to sustainability.



CURRENT STATUS

Now: Planning Activities

June: Pollinator Week

July: EPRI posts results

Technical Briefs

- Power Companies and Pollinators
 - Overview to discuss intersection of power industry and pollinators.
 - Audience: Employees, executives, broader stakeholders

- Solar Power and Pollinator Opportunities
 - Describe opportunity for pollinators as part of solar installations.
 - Audience: Primarily for your companies.

- Value of Pollinators
 - Outward facing summary of the value of pollinators, including comments on bee stings and community considerations.
 - Audience: Stakeholders/Customers/Community

Protecting and Promoting Pollinators on Electric Utility Lands: Multi-year Observational and Manipulative Studies

- Multi-year field research projects, in Program 51(*Transmission and Distribution and ROW Environmental Issues*) to address three basic questions
 - What is the baseline diversity of pollinators on powerline corridors?
 - How do vegetation management treatments affect insect pollinators on transmission ROWs?
 - What are cost-effective habitat enhancements?
- Observational studies to document plant and pollinator assemblages
- Manipulative studies to document vegetative and pollinator response to mechanical and chemical treatments



Protecting and Promoting Pollinators on Electric Utility Lands: Projects Underway

- New York Power Authority
 - Initiated in 2016
- First Energy
 - Initiated in 2016
- Southern Company/Alabama Power
 - Initiated in 2018
- Seeking additional participants



Selected Published Pollinator Research Reports

- Assessing Effects of Powerline Corridor Vegetation Management Treatments on Insect Pollinators: Preliminary Field Research Protocols for Design, Installation, Implementation, and Monitoring, 3002010805, 12/2017
- Insights from the Literature and Stepwise Guidance for Vegetation Managers Interested in Promoting Pollinators on Electric Transmission Line Rights-of-Way (with P195), 3002011898, 12/2017
- Direct Effects of Glyphosate on Honey Bees: A Brief Literature Review with Implications for Vegetation Management of Electric Transmission Line Rights-of-Way, 3002010811, 12/2017
- Pollinator Diversity on Power Line Corridors in New York, 3002010809, 12/2017
- Pollinator Diversity on Power Line Corridors in Ohio, 3002010806, 12/2017



Monarchs are of Concern

- Monarch is being considered for Federal Protection under Endangered Species Act.
- Large range and overlap with power company property.
- Many efforts to evaluate conservation options, efforts, and impacts/benefits.
- Many assumptions about the role and amount of responsibility for power companies.



Monarch Conservation Database

We are developing a database to capture new, ongoing and planned conservation efforts for the monarch butterfly. Conservation efforts are on-the-ground actions designed to improve the population status of monarchs. This includes improving and creating habitat by enhancing milkweed and blooming nectar plant resources. The database will help the U.S. Fish and Wildlife Service and conservation partners assess conditions for the monarch now and into the future, across the United States.

We expect the database to be ready for data entry by June 2018. Until that time, we will host a series of webinars as an opportunity to provide updates and to receive your feedback on database development. Comments and questions regarding the database can also be provided by email to FW3_monarchconservation@fws.gov.

Monarch Research Questions



1. What are power companies' role in monarch impacts and conservation?
2. What regionally-specific monarch conservation actions can a power company take that are meaningful?
3. What are barriers and solutions for the implementation of monarch conservation actions?

Idea: Include case studies of what power companies are already doing to support monarch.

Monarch Research Approach

- EPRI will work with the Xerces Society
- Conduct a peer literature review and expert interviews. Collect details on current conservation activities, cost/barrier hurdles, and IVM overlay.
- Outcome: Report describing the conservation actions (BMPs) for monarchs that is regionally specific, how the BMPs apply to power companies, conservation opportunity vs cost, and case studies of current projects,

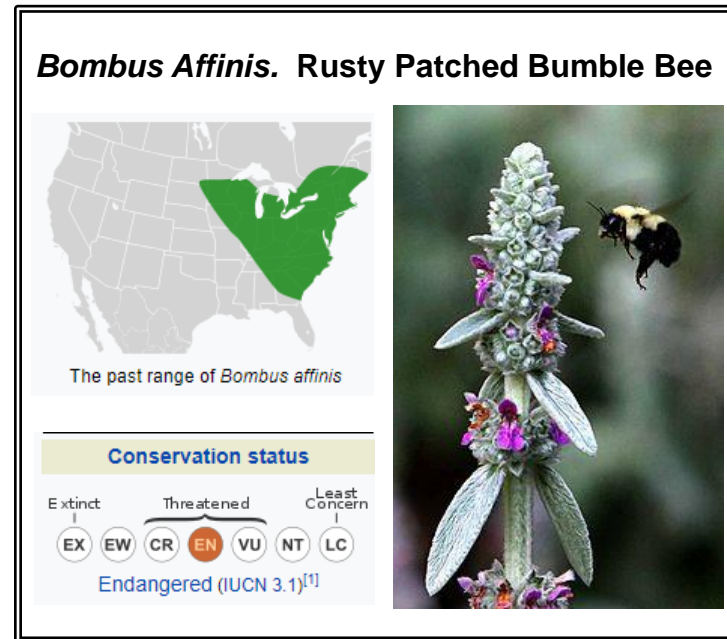
Schedule: Draft report for review by USFWS and monarch experts, November 2018.



Together...Shaping the Future of Electricity

Herbicides and Pollinators

- Literature review of direct effects of two primary herbicides (glyphosate and 2, 4-D) on pollinators published in 2017
- 12 published, refereed studies focus on herbicides in agricultural applications and honeybees
 - Chronic, sub-lethal dosages result in behavioral changes in bees
 - Mostly associated with herbicide rates higher than those documented during right-of-way applications
- Follow-on study ideas are being formulated for member prioritization
 - Combining glyphosate with natural and organic herbicides to reduce sub-lethal dosages
 - IVM techniques to further minimize herbicide use



Pollinator Responses to Vegetation Management Practices in Rights-of-Way



VALUE

- Understanding pollinator assemblages
- Site-specific field studies
- Testing of different vegetation management techniques
- Information to develop site-specific, cost effective BMPs
- Demonstrate corporate pollinator conservation
- Contribute site-specific data relevant to a broad understanding of how to manage transmission vegetation to promote and protect pollinators country

OBJECTIVES and SCOPE

- Studies to investigate the relationship between vegetation management techniques and the quality and abundance of pollinator habitat and assemblages
- Year 1: Baseline observational studies of study plots
- Year 2: planned manipulative vegetation treatment experiments
- Years 3 and 4: continuing inventories of study plots as vegetation matures

Development of site-specific, cost effective Best Management Practices (BMPs) for the protection and promotion of pollinators on transmission line rights of way