

# Multiagency Avian-Solar Collaborative Working Group (CWG)

## Stakeholder Webinar Draft Avian-Solar Science Plan

**August 31, 2016**

**1:00 – 2:30 pm Pacific Time**

**Webinar URL: <http://anl.adobeconnect.com/avian-solar/>**

**Participant Dial-In: 1-888-240-2560 (Passcode: 963-774-5036)**

# Stakeholder Workshop on the Draft Avian-Solar Science Plan

***Purpose: provide an overview of the draft  
Science Plan, answer questions, and request  
written comments***

## Participation Instructions

Please dial into the webinar using the  
Participant Dial-In: [1-888-240-2560](tel:1-888-240-2560) (Passcode: [963-774-5036](tel:963-774-5036))

Please mute phone when not speaking.

Use the chat window to ask questions.

# Overview of CWG Goal and Objectives

*To develop better information to support future agency decisions regarding potential avian impacts at utility-scale solar facilities*

## **OBJECTIVES**

- Establish collaborative working group among federal and state agencies
- Develop Avian-Solar Science Plan
  - Document current and planned research activities
  - Identify information gaps and research priorities
  - Identify agency roles in funding and oversight
  - Develop feasible mitigation measures, if warranted
- Prepare education and outreach materials

# CWG Members

***Representatives of federal and state agencies with relevant missions and/or project authorization responsibilities***

Federal Agencies	State Wildlife and Energy Agencies *
DOE Solar Energy Technologies Office	AZ Game and Fish Dept.
Bureau of Indian Affairs	CA Dept. Fish and Wildlife
Bureau of Land Management	CA Energy Commission
U.S. Fish and Wildlife Service	NV Dept. Wildlife
U.S. Geological Survey	
DOI Solicitor's Office	
U.S. Department of Defense	

*\* Other state energy agencies have been invited to participate*

# Background Information about the CWG

## Scope

- Utility-scale solar technologies
  - All technologies
  - All facility components
- Initial geographic focus: Arizona, California, and Nevada

## Past Stakeholder Activities

- May 10-11, 2016: stakeholder workshop in Sacramento, CA
- Shared and received comments on CWG objectives and elements of the Science Plan

## Additional Information About the CWG

- CWG website: <http://blmsolar.anl.gov/program/avian-solar/>
- Subscribe to email updates: [rollins@anl.gov](mailto:rollins@anl.gov)

# Avian-Solar Science Plan Outline

## Executive Summary

1. Introduction
2. Conceptual Framework of Avian-Solar Interactions
3. Summary of Existing Information and Related Activities
4. Identifying Information Needs
5. Prioritizing Research and Monitoring Needs
6. Implementation

## Appendices

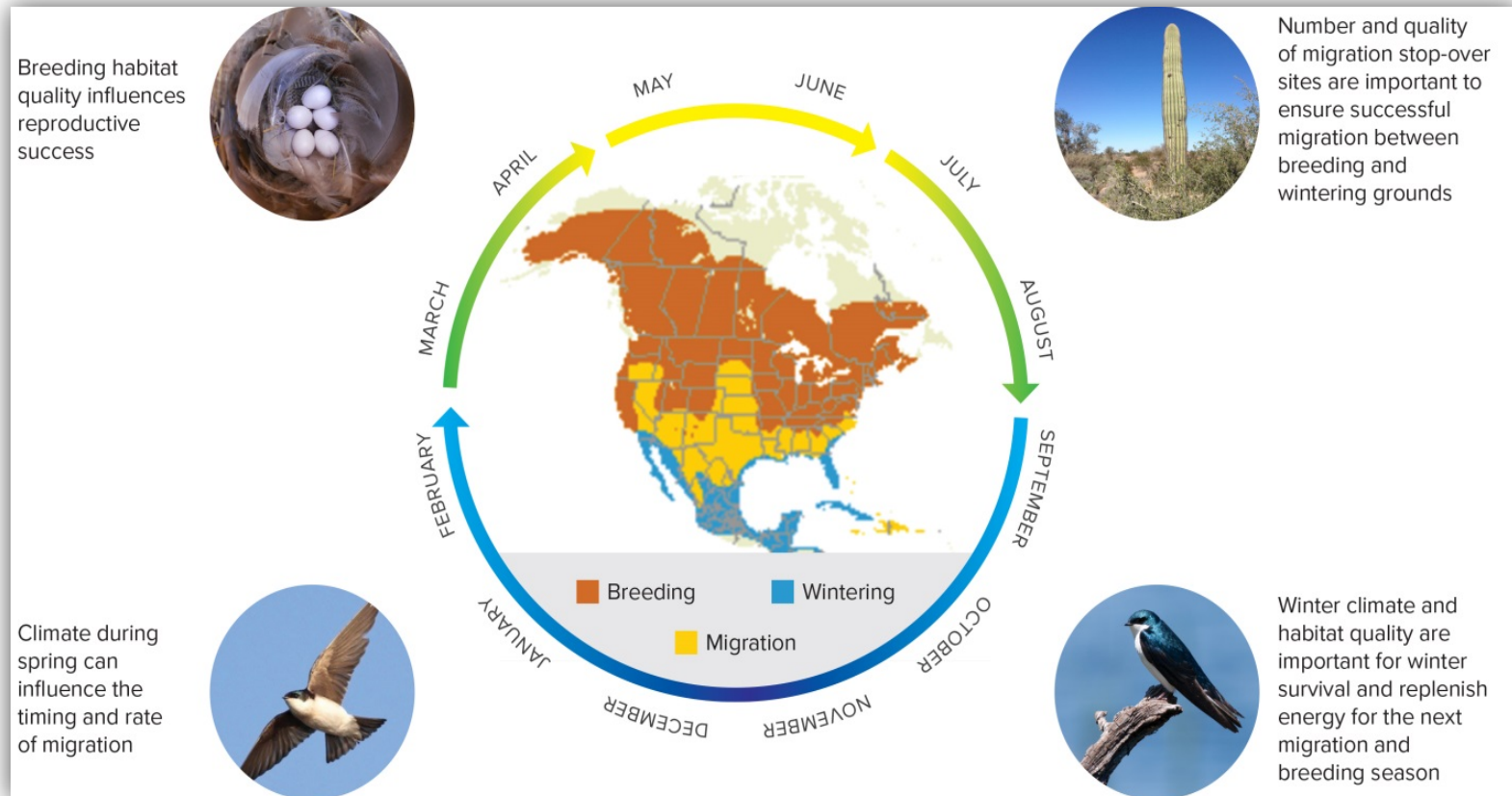
- CWG Management Questions
- Relationship between CWG and Avian-Solar Working Group (ASWG) Research Questions

# The Science Plan is Oriented Around Addressing Agency Management & Research Questions (Table 1-3)

CWG Management Question Categories
1. Baseline information and landscape considerations
2. Methods to evaluate avian risk and impacts
3. Sources of mortality and injury
4. Avian behavior (attraction / avoidance)
5. Impacts on habitat and other wildlife that might affect birds
6. Taxonomic and guild-specific impacts
7. Minimization, mitigation, and adaptive management

Individual management and research questions are provided in Appendix A.

# Context for Assessing Avian-Solar Interactions



Example Life Cycle Model of the Tree Swallow (Figure 2-1)

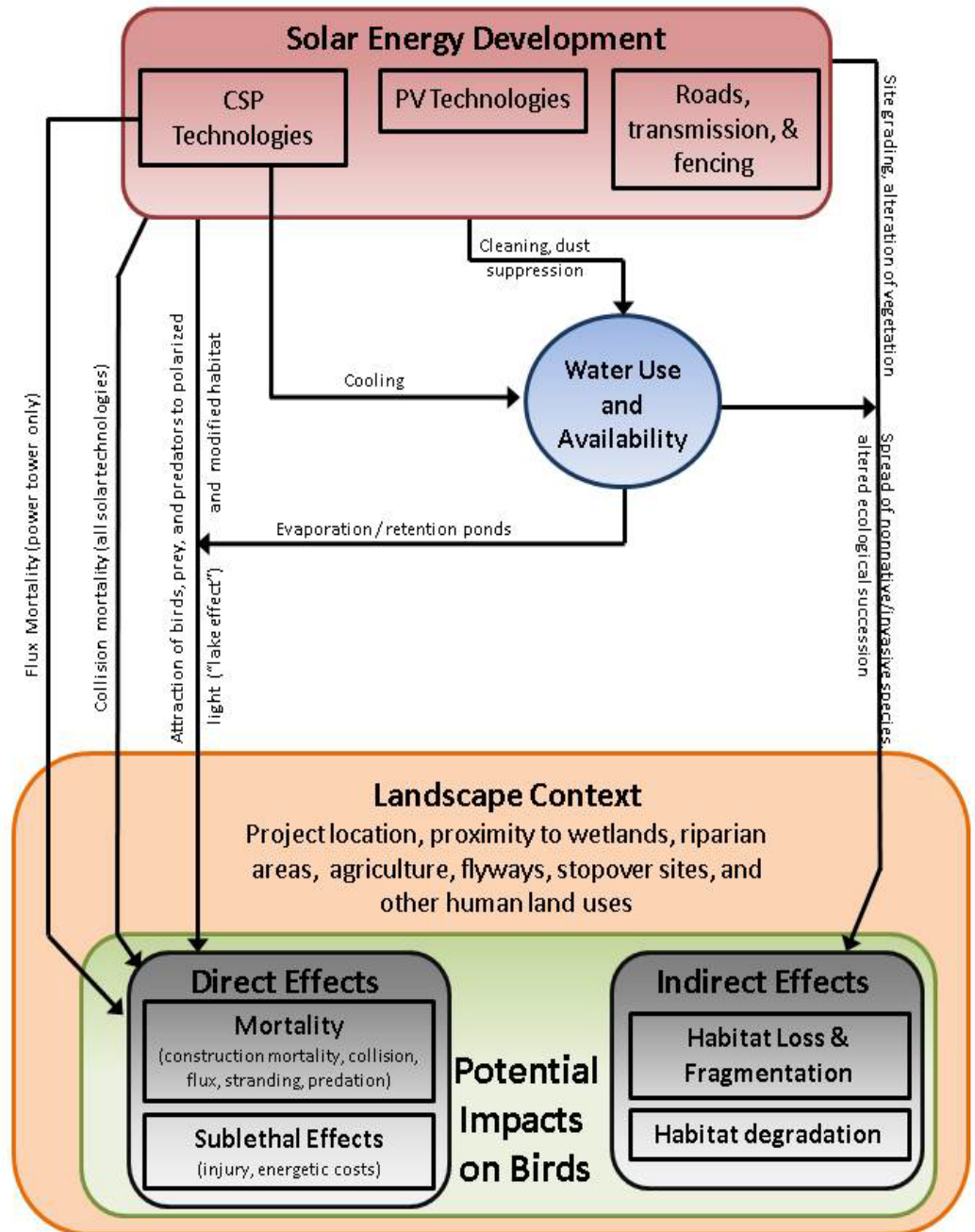
Modified from Small-Lorenz et al. 2013

- Avian life cycle conservation models provide for consideration of the full life cycle needs in assessing population impacts to individual species.
- They provide the foundation for understanding how interactions may occur and what the potential adverse and beneficial impacts may be.



# Conceptual Framework of Avian-Solar Interactions (Figure 2-2)

This conceptual hypothesis model of avian-solar interactions illustrates how solar energy development may adversely affect birds.



# Data Gaps and Information Needs Related to the CWG Management Question Categories (Table 4-1)

Management Category	Data Gaps
1. Baseline information and landscape considerations	<i>Little information is available on regional movement patterns of birds and other fauna and thresholds for cumulative impacts.</i>
2. Methods to evaluate avian risk and impacts	<i>Little information exists to determine population-level risks.</i>
3. Sources of mortality and injury	<i>The mechanism by which birds encounter solar facilities, context, and magnitude of these interactions are not well understood.</i>
4. Avian behavior (attraction/avoidance)	<i>The hypothesis that solar facilities may attract birds, their predators, or their prey (e.g., lake effect hypothesis) has not yet been systematically tested.</i>

# Data Gaps and Information Needs Related to the CWG Management Question Categories (Table 4-1)

Management Category	Data Gaps
5. Impacts on habitat and other wildlife	<i>The possibility that certain project designs might provide habitat for predators and prey, which could influence avian activity and monitoring results, has not been systematically tested. Additional research on predator-prey relationships in the environments of solar energy development is needed.</i>
6. Taxonomic and guild-specific impacts	<i>No systematic research has been conducted to examine population- or guild-level risks to solar energy development.</i>
7. Minimization, mitigation, and adaptive management	<i>Additional systematic study of deterrents and other mitigation measures is needed.</i>

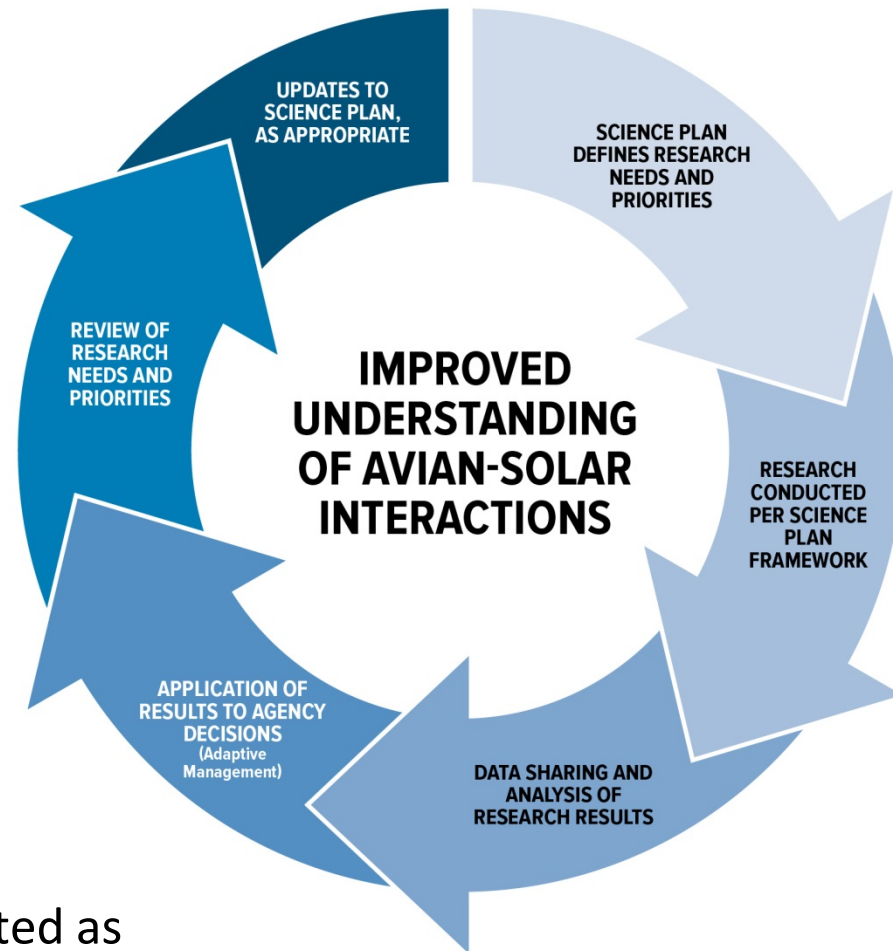
# The Science Plan Recommends Initial Research Priorities (Table 5-1)

Research Priority	Description
1. Baseline avian activity, abundance, and potential for interaction	<ul style="list-style-type: none"> <li>• Research will aid in the identification of avian migratory flyways and inform decisions on project site selection and the selection of avoidance, minimization, and mitigation measures</li> <li>• Addresses CWG management category 1</li> <li>• Timeline: start soon, some results within 1 year</li> </ul>
2. Mechanisms by which birds interact with solar facilities	<ul style="list-style-type: none"> <li>• Research will be used to better understand (1) the role and scale of avian attraction to solar facilities in causing avian mortality and (2) the need for and the development of appropriate minimization and mitigation measures and BMPs</li> <li>• Addresses CWG management categories 3, 4, 6, and 7</li> <li>• Timeline: initial research to be completed within 2-3 years</li> </ul>
3. Methods to understand the magnitude of avian impacts	<ul style="list-style-type: none"> <li>• Research will focus on developing and testing methodology(ies) to better understand impacts, as well as synthesize existing data to understand impact magnitude</li> <li>• Addresses CWG management category 2</li> <li>• Timeline: initial research to be completed within 2-3 years</li> </ul>

***Based on prioritization criteria: (1) sequence/foundationality, (2) management/decision-making, and (3) basic ecological processes***

# The Science Plan Will Be Implemented to Provide Continually Improved Understanding Of Avian-Solar Interactions (Figure 6-1)

- The Science Plan identifies research priorities.
- Results of research will inform agency decisions (adaptive management).
- CWG agencies will share research results and outcomes with each other and with stakeholders, as appropriate.
- The Science Plan will be revised to identify new priorities based on results and outcomes.
- Funding TBD; research will be conducted as future funding allows.



*Purpose of this webinar: provide an overview of the draft Science Plan, answer questions, and request written comments*

**Written comments on the draft Science Plan will be accepted through September 19, 2016.**

**Send comments to [lwalston@anl.gov](mailto:lwalston@anl.gov)**

# Next Steps

- Submit written comments on the draft Science Plan by September 19, 2016.
  - Send comments to [lwalston@anl.gov](mailto:lwalston@anl.gov)
- Publish Final Science Plan by end of October 2016.
- Implement Science Plan and continue CWG collaborations.

## **For more information**

CWG website: <http://blmsolar.anl.gov/program/avian-solar/>

Subscribe to email updates: [rollins@anl.gov](mailto:rollins@anl.gov)