

**State Wildlife Action Plan  
Virtual Learning Series #2  
SWAPs and Climate Change  
December 14, 2022**

**Session Recording**

<https://fishwildlife-org.zoom.us/rec/share/MBFlxKvPJ8V2hCru3z4gLkQlYjHtkIVHBDB3TOut2IouuSYrzEfDnj1zNuQy5n0g.tD6nCLnVuIIhD-wj>

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**Presentation of Voluntary Guidance for States to Incorporate Climate Adaptation into SWAPs and Other Management Plans**

*Jacob Blandford, AFWA; Jason Goldberg, USFWS*

- Adaptation for Fish and Wildlife
  - Target Audience: State Fish and Wildlife Agencies
  - Purpose: Incorporating climate adaptation into State Wildlife Action Plans
  - Content: Focuses on adaptation, not mitigation
  - Timeline: Needed for 2025 SWAP revisions
- 9 representatives from state fish and wildlife agencies, 5 federal agency representatives, 2 indigenous peoples, & 5 NGOs were consulted
- Navigating the Guidance
  - Ch.1 – Introducing and a How-to Guide for using the document
  - Ch.2 – Climate Adaptation for Fish and Wildlife
  - Ch.3 – Addressing Climate Adaptation in the 8 Elements
  - Ch.4 – Resources for Planning and Implementing Climate Adaptation
- 7 Principles of Climate Adaptation
  - Fully integrate climate change into State Wildlife Action Plans
  - Adopt forward-looking goals
  - Explicitly link actions to climate vulnerabilities
  - Manage for change, not just persistence
  - Consider broader landscapes and longer timeframes
  - Address uncertainty by considering future scenarios and use of adaptive management
  - Engage diverse partners with climate experience and expertise
- Climate Considerations for the 8 Elements of a SWAP
  - ID the Species of Greatest Conservation Need (SGCN)
    - Consider observed and future climate impacts
    - Assess species that have low or declining populations, and species that are abundant now but may not be in the future
    - Evaluate how current and future climate change may affect critical aspects of the species life history
    - Draw on existing vulnerability assessments from neighboring states and regional assessments
  - ID the SGCN habitats

- ID the threats to SGCNs and habitats
- ID conservation actions
- Develop a monitoring plan
- Revise the SWAP at least every 10 years
- Coordinate with partners
  - Ensure plans represent a broad array of perspectives and interests
  - Involve climate science experts with regional knowledge
  - Engage social scientists to understand perceptions of different groups
  - Be mindful of cultural priorities and differences
- Engage with the public on SWAPS
  - Help the public realize that options beyond the status quo may be necessary
  - Consider who will participate and how to reach audiences you may not have worked with previously
- The Resist Accept Direct framework has emerged as a way to help managers address ecological transformation. We often talk about climate change as if it were a future event when it is something happening today.
- 5 Key Aspects to Successful Climate Science Communication
  - Communicate with appropriate language, metaphor, and analogy
  - Combine with narrative storytelling
  - Use visual imagery and experiential scenarios
  - Balance with scientific information
  - Deliver through trusted messengers
- Email Jason Goldberg (Jason\_goldberg@fws.gov) to be added to list for research updates
- Subscribe to the Climate News Roundup monthly newsletter by [clicking here](#).
- [Updated climate guidance link](#)

### **Climate Change Case Study**

*Sean Gimbel, Executive Policy Specialist, Pennsylvania Fish and Boat Commission*

- The PA Fish and Boat Commission covers recreational fishing, recreational boating, and the protection of aquatic natural resources
- What has been done in the past to address climate change?
  - In the past 10 years or so the social climate has shifted to where we are talking about it much more often
  - Efforts have been focused on the adaptation side rather than the mitigation side
  - Released a climate action plan in Summer 2022 that discusses partners, strategies, challenges, and actions
- How are you planning to use this new guidance? (addressing this question as a broader “us” than just the PA Fish and Boat Commission and speaking to all)
  - It is important to understand where we are in the guidance document and where we fit
  - Looking forward to the guidance helping navigate through the social aspects, people claiming ownership of roles, and progress

### **CA SWAP Climate Integration, *in Progress***

*Junko Hoshi, California SWAP Coordinator, California Dept. of Fish and Wildlife*

- [California State Wildlife Action Plan 2015](#)
  - Creates a vision and framework

- Provides conservation priorities
  - Regional and ecosystem approach
  - Built by many with a strategic approach
- In CA, they focused on SGCN and the ecosystems Key Ecological Attributes (KEA), determined the stress and pressures, and used this information to develop strategies
- CA SWAP has a set of 2016 companion plans that focuses on the 2015 SWAP collaborative implementation. Those companion plans are meant to implement SWAP priorities shared with partners.
- CA SWAP tried to address climate change and adaptation at all the key elements and opportunities mentioned above.
- The 2015 SWAP incorporated species vulnerability studies and climate projections to determine what to conserve, what is degraded and affecting for the degradations, and what steps need to be taken to reduce the negative impacts and improve habitat conditions
- Though not integrated into SWAP as intended, a vegetation vulnerability study has also been conducted during the SWAP planning phase. (The report has been issued after SWAP 2015 was finalized. Later, the results were used to create a terrestrial refugia data layer that has been placed into an updated data portal. The portal now enables overlaying layers for biological hotspots, terrestrial connectivity, and terrestrial refugia.)
- After SWAP 2015 was finalized, CA has experienced an increase in ecosystem disasters including droughts, massive tree death, fires, and local extinction
- Politics and administrations have been changed, too
- In response, there has been policy changes and opportunities to use emergency and climate resiliency funds for conservation provided through many climate related bills
- Those changes have provided unexpected opportunities for SWAP to advance its implementation
- Climate related activities are indeed driving the SWAP implementation
  - Through state grants
  - Due to data needs and integration
  - CDFW new programs to address nature-based adaptation (e.g., Beaver Restoration Program)
  - Klamath River Dam removal and other big projects
- Adaptation Guidance Uses for CA SWAP 2025
  - Criteria for SWAP 2015 Implementation evaluation
  - Checklists for addressing climate change statewide
  - Organizing Summary of Change section for climate change
  - Term definition/standardization for climate change adaptation
  - Linking strategies to 7 principles
  - Icebreaker for content development discussions
  - Climate change adaptation guideline for grant project applicants
  - An overview material to learn climate change and adaptation

### **Incorporating Climate Adaptation into the Nevada SWAP Revision**

*Lee Davis, Ecologist & Habitat Staff Specialist, with Jen Newmark, Wildlife Diversity Division Administrator, Nevada Dept. of Wildlife*

- General Approach: Moving from broad trends to specific actions

- Climate change addressed from a habitat perspective
- Goals:
  - Address future Nevada trends broadly, including variability in projections
  - Address habitat specific threats to change and ability to adapt to change
  - Address species-specific threats
- Overview of Nevada's climate, including a comparison from historic (1960-91) and mid-term future (2035-64) projections
- NatureServe's Habitat Climate Change Vulnerability Index (HCCVI) analysis
- Threats to SGCN addressed through species-specific actions based on prior (2012) CCVI in conjunction with expert opinion, literature reviews and other resources
- Summarized climate change across the state by engaging with the state climatologist, climate adaptation science centers, regional specialists, etc. to guide their path forward
- Determined 366 SGCN in their 2022 revision but some of those species have more immediate/pressing needs that are being prioritized moving forward
  - Climate risk based on literature qualitatively included in ranking decisions
  - Knowledge gaps and research, monitoring needs identified in species accounts
- Summarized climate vulnerability for key habitats
- Translating these threats to actions
  - Developed a menu of general habitat related actions based on Resist-Accept-Direct (RAD) conceptual framework
  - Explicitly addresses anticipated and desired future conditions at near, mid, & long terms
- Where we can resist change through increasing system resilience, we want to do that to protect the habitats and expand
- Laying out conceptual framework for higher level planning and on the ground planning
- When we pull back spatially explicit products, we can begin to pick out landscape areas where we can feasibly resist change and have low vulnerability based on climate
  - This also highlights areas we need to quickly begin directing change
- Monitoring for climate impacts takes dedicated funding, personnel, and program oversight
  - As an agency they are moving to modernized tools
  - Not being reliant of NDOW specific methods but rather shifting to core/agency specific methods
  - Identified the need for long-term trend and condition monitoring and treatment effectiveness monitoring
  - Interpretable, timely, actionable output

### **Questions from Chat**

- For Junko, when you spoke of climate related activities that are driving the SWAP implementation you mentioned climate station installation w/ biodiversity monitoring devices. Were the climate station installations identified in CA's SWAP as a specific action or did this action originate from outside the SWAP process?

Response:

- (Please see attached file with Junko's presentation for additional info.)
- A1: The shortest answer is yes and no.

- A2: Here is one paragraph answer: In CA SWAP 2015, we do not have a specific action to install climate or biodiversity monitoring stations. Saying this, there are actions specified to gather climate-related information with SGCN and vegetation data and to better understand the impacts on habitats/ecosystems for management purposes. For example, such an interest is explicitly stated in the strategies for Sparsely Vegetated Desert Dune (Ch5.6, check p.47.) and Alpine Vegetation both in the Sierra Nevada and Klamath and North Coast Provinces. Installing stations to monitor biodiversity and climate data is directly advancing these SWAP actions and within the interests of SWAP.
- A3: More details and backgrounds: Our ecoregional scale acoustic and camera monitoring had already been taking place in the northern regions before the 2015 updated process was initiated. People working on the monitoring were active participants in developing the SWAP regional strategies. Reflecting that, SWAP 2015 in different places addresses actions to conduct similar large-scale biodiversity monitoring.
- In the 2015-16 period, a regional scale biodiversity monitoring was conducted in Central Valley and the Mojave Desert to expand the ongoing work in the northern regions. A drought emergency fund was used for this effort. Those data have been analyzed with different information, including climate data (I believe that has been gathered separately), to see correlations. For example, a few conclusions have been made, such as; areas with higher diversity of crops were found to host more bird species; climate change would likely severely impact the bird species in the deserts; and artificial water features would help species in deserts for climate adaptation.
- The installation of climate stations was discussed back in 2013 in the SWAP program without any concrete plan, though the interest has been expressed in many regional discussions to develop SWAP. In that, the SWAP program has spread the seeds. Also, one of the department's jurisdictional regions started planning installation just before the 2015 version was finalized, and 6 weather stations were installed in 2016. The regional unit worked on this installation also participated actively in developing the SWAP regional content. As a background, the region has an established tradition for large-scale, long-term collaborative conservation planning and implementation and has a close relationship with universities and USGS. This earlier regional effort has been integrated into the statewide installations that was imitated independently by my unit. It needs to be emphasized that this later effort is part of the greater efforts that have been ongoing, and the installation and the planning have been made collaboratively with a wide range of partners' involvement.
- In short, those installations were not done and were not ongoing solely to implement SWAP. Rather, SWAP reflects the interests of our conservation communities to have climate data collection and integration in different scales to help planning and land management. SWAP contributed more by providing opportunities to discuss and think about climate adaptation and by backing them up when opportunities arose to implement their interests.
- When RAWA gets passed (I'm going to think optimistically here), can some of the funds be used to help with climate adaptation planning and SWAP implementation?

Response:

- RAWA is intended to fund SWAP implementation, and while RAWA does not explicitly say that it will fund climate adaptation, if climate adaptation is incorporated into the SWAP then those efforts would be eligible for RAWA funding. Unfortunately, RAWA was not passed by

the 117<sup>th</sup> congress but AFWA will continue to push for RAWA to provide funding for SWAP implementation and climate adaptation through the SWAP.

## **Breakout Group Session Notes**

### **Breakout Room #1**

- 1) How have you incorporated climate change into your SWAP? (either using the past guidance or new version of the voluntary guidance)
  - States planning to launch in 2025 are looking forward to new guidance
  - Oregon representative mentioned that her state has a habitat plan
    - In their 2015 revision they did identify climate change as a key issue
    - It was well implemented throughout the SWAP, but they are still looking for ways to more effectively implement it throughout
    - Want climate change to be a component in every part of the SWAP
  - Maine had Elements 1-4 and said they had similarities to Colorado and Oregon plans
    - Want to add climate change to the plan where it wasn't already addressed
  - Minnesota is looking forward to this guidance to improve SWAP revision
  - Climate change was incorporated throughout the SWAP in Florida, not as its own individual section
  
- 2) Are there lessons learned that you could share (either successes or failures) when you tried to incorporate climate change into your SWAP?
  - It was said in Colorado on 2015 SWAP climate change was well incorporated and received but it was more of an afterthought
    - Should have been more holistic like everyone else expressed
    - Needs to be incorporated throughout the SWAP
  - Potential “key” to a successful plan that prioritizes climate is working with many different partners from different organizations and departments to get various viewpoints
  - In New Mexico (not relating to an experience with SWAPS specifically) on the Climate Action Plans partners made it well rounded
    - Best thing is to have many agencies on the ground advising/improving
  - In Maine, raising public awareness and communication between agencies was effective
    - Coming up on the revision she feels there will be more buy in because their capacity increased
  - Several others agreeing that building capacity is key right now along with focusing on climate change
  - In SWAPS, we need to do more looking forward than has been done in the past
  - We need to be more proactive and look at vulnerabilities of various species so that way when we set 10-year long plans in place we can be effective and guide research better
  
- 3) What additional questions do you have related to addressing climate change or what opportunities exist to address the issue?
  - Feelings that Utah is not as far along in their SWAP as some other states, so they need to focus on important components to incorporating climate change
  - It is easy to get overwhelmed quickly so boil it down to resilience
    - They looked at it through the example of wildfires

- You have habitat types and specific species within those that need them
- How to build resiliency into those individual habitat types and ecosystems
- Focus on things you feel like you can actually do
- Heard from the southwest that they pulled together a good model of regional working groups for SWAPs
  - We can “piggy-back” and have similar models using other states as examples
  - Greater context is helpful

## **Breakout Room #2**

### **Breakout Group Questions**

Q1) How have you incorporated climate change into your SWAP? (*either using the past guidance or new version of the voluntary guidance*)

- Kristin Hall (MN)-incorporated CC into last SWAP. Built GIS model ID using climate vulnerability of habitats. This time will do habitat vulnerability assessments similar to the process used in California. Difficult to get consistent baseline from users. We will do projected modeling on habitats.
- Elizabeth Crisfield-Updated northeast states. Used a common lexicon, standard data structure, addressed CC in the lexicon. Northeast states addressed climate change upfront. We suggested using a roadmap to allow embedding of climate change. Consider CC as an amplifying affect. Enhance monitoring for CC tracking. Partners that do climate change.
- Alex Fish (ME)-Using the NE lexicon for revision. In the past linked CC as a stressor (put link in the chat). I'm new so no lessons learned right now. I want to make more tools for SWAP.
- Megan Rohweder (KS)-In the last plan CC was incorporated as a threat. We ran a CC vulnerability analysis on a subset of spp. SWAP is lacking in resources. Hope to incorporate more habitat vulnerability analysis into next SWAP. We have no in house climate expertise. Connecting with outside experts.
- Michael Bill (MO)-Our SWAP was approved this year. CC is incorporated throughout the plan. We also included the Forest Action Plan. In future we want a statewide CC plan and want to look at habitat vulnerability. Using C-SWG to look at species specific vulnerability.

Q2. Are there lessons learned that you can share (*either successes or failures*) when you tried to incorporate climate change into your SWAP?

- Kristin-In last plan did not apply CC as actionable item...we will do this this time. Theory rather than actionable
- Elizabeth-CC cuts across the elements. Don't have data for species elements. Actionability and climate smart planning most important. CC as amplifier slipped through the cracks. (flooding not primary threat but may become so).
- Alex-pass
- Meagan-Ditto to Kristen
- Michael-Be more actionable, statewide plan will help that.

Q3) What additional questions do you have related to addressing climate change or what opportunities exist to address the issue?

- Kristin-We are struggling how to incorporate human diversity into the plan. Don't want to be monolithic. What do we say about social context.
- Alex-pass
- Megan-just getting started, discussion not happening yet
- Michael-State Plan will give us more questions. Will be another lens for managers.
- Elizabeth-Partnership is critical. How do we involve partners?
- Michael-All partners at the table.
- Kristin-Looking to engage new partners, especially social and integration into other plans

### **Breakout Room #3**

1) How have you incorporated climate change into your SWAP? (*either using the past guidance or new version of the voluntary guidance*)

- Cindy Simpson
  - In NC, we used the 2009 guidance for our 2015. We worked with Defenders of Wildlife, who developed a report for us on the impacts of F&W. We included that in 2015 plan as an addendum. That helped us with our Chapter. For SGCN evaluations, we did an assessment of whether or not species would be impacted by 1 of 11 threat categories, ranking them. We have all of that.
  - For 2025 Plan, Governor has said we have to incorporate climate change. We're working out how to determine to move forward.
- Brett Anderson – Nebraska
  - We have some mention of climate issues. Working to align SGCNs with climate issues to identify research issues. Working in a fragmented ag landscape and develop a connected landscape.
- Matt Wunder – NM
  - Used 2009 Guidance for the 2015 SWAP. We contracted with USFS and did a comprehensive analysis, primarily focused on habitats in eco-regions we have in NM.
  - We didn't do a specific analysis, but rather focused more on expert opinion.

2) Are there lessons learned that you can share (*either successes or failures*) when you tried to incorporate climate change into your SWAP?

- Political views and consideration of how they fit into SWAPs can be important. It can affect what issues are allowed to be incorporated into SWAPs.
- Impacts of climate change, however, are so widely on display that perspectives may be changing, which may influence political views and a recognition that climate change somehow has to be addressed.
- Messaging has focused not so much on climate change as the impact to extreme weather events, such as coastal flooding and drought, which has helped reach some audiences. We're seeing extremes in temperatures, etc. We look at the habitats and species and figure out what has to happen.
- We don't have to call what we're seeing climate change. It doesn't matter what you call it, what matters is that you manage the impacts. Making sure people relate to the impacts and understand the need for action. Rephrasing can make a difference. Focusing on clean water and clean air.



3) What additional questions do you have related to addressing climate change or what opportunities exist to address the issue?

- How do you navigate messaging when there may be sensitivities to discussing climate change?
- Can the guidance be updated more frequently?