ASSOCIATION of FISH & WILDLIFE AGENCIES

State Fish and Wildlife Agency Wind Siting Survey Final Report

Conducted on behalf of the AFWA Energy & Wildlife Policy Committee

Executive Summary

At the March 2019 North American Wildlife and Natural Resources Conference, the Association of Fish and Wildlife Agencies (AFWA)'s Energy & Wildlife Policy Committee established the State Wind-Wildlife Assessment Workgroup. The workgroup was charged with gathering information from State Fish and Wildlife Agencies (SFWA) through an online survey to better understand concerns, needs, and interests related to wind energy siting and wildlife. The workgroup sent the survey to wind energy contacts for the 50 SFWAs in July 2019 and closed the survey in August 2019. The results were summarized and presented at the AFWA Annual Meeting in St. Paul, MN in September 2019.

State Wind-Wildlife Assessment Workgroup Charge

Identify state fish and wildlife agency concerns and opportunities related to wind siting by designing and delivering a survey, summarizing findings and recommendations, and proposing next steps at the AFWA 2019 Annual Meeting (September 2019).

The workgroup was co-chaired by Chris Berens, Kansas Department of Wildlife, Parks & Tourism, and Jessica Wilkinson, The Nature Conservancy. Mark Humpert, Association of Fish and Wildlife Agencies staffed the workgroup. Workgroup members included Mike George, Ducks Unlimited; Greg Link, North Dakota Game and Fish Department; Tracey Librandi Mumma, Pennsylvania Game Commission; Joel Merriman, American Bird Conservancy; Davia Palmeri and Sarah Reif, Oregon Department of Fish and Wildlife; Karen Voltura, Colorado Parks and Wildlife; and Laura Zebehazy, Texas Parks and Wildlife Department.

The survey results reflect responses received from 39 state fish and wildlife agencies which together represent 93% of the total megawatts of wind capacity currently installed, under construction, or in advanced stages of development in the United States.[1] The following findings emerged from the survey:

- SFWAs feel the <u>most significant risks</u> to wildlife and habitat from wind development are: 1) direct mortality from collisions; 2) habitat fragmentation; and 3) cumulative impacts.

- SFWAs feel that the most significant <u>direct risks</u> to wildlife and habitat from wind siting are to 1) bats; 2) birds (other than raptors and grassland grouse); and 3) raptors.

[1] American Wind Energy Association. 2019. "AWEA Q2 2019 Market Report."

- SFWAs feel the most significant indirect risks to wildlife and habitat are to 1) mammals (non-bats); 2) birds (other than raptors and grassland grouse); and 3) grassland grouse.

- SFWA feel the most significant cumulative risks to wildlife and habitat from wind siting are to 1) bats; 2) birds (other than raptors and grassland grouse); and 3) raptors.

- SFWAs feel that current wind-wildlife science is doing an adequate job of addressing direct impacts, it is doing only a moderately good job of addressing indirect impacts, and it is doing a poor job of addressing cumulative impacts.

- SFWAs are interested in improving coordination and communication with wind energy developers. Specifically, they are interested in exploring ways to: 1) require or encourage developers to coordinate with them earlier and more frequently throughout the project development process; 2) improve the consistency of coordination practices among the wind development industry; and 3) improve the amount of information that is shared with fish and wildlife agencies throughout the project siting process.

- While states have a range of authorities and mechanisms to require or encourage consultation on the impacts to fish and wildlife from wind projects, no SFWA that responded had direct project approval authority.

- Only half of the responding SFWAs are very familiar with the federal Wind Energy Guidelines (WEGs). While very few states believe the WEGs have been effective at supporting low-impact wind siting, a strong majority of states believe that the effectiveness of the WEGs could be improved by updating their substance and/or application.

- States identified those mechanisms they feel would be most effective at ensuring early consultation on wind projects: require other agencies (such as state public service commissions) to consult with the SFWA; improve the substance and/or application of the federal wind energy guidelines; and adopt state regulations on wind energy siting.

- SFWAs have access to wind-wildlife science, but the vast majority would like more information. They are most interested in additional science on: 1) post-construction minimization technology (e.g., deterrents); 2) strategies to avoid, minimize, and offset impacts to bats (compensatory mitigation); and 3) cumulative impacts of wind development on species and habitat. SFWAs are most interested in having this information delivered via email or webinar.

- SFWAs do not feel that developers share the majority of pre-/post-construction monitoring data with them. They do feel that this information is helpful for informing siting and regulatory decisions and believe that there is a lot of opportunity to develop and apply more consistent pre/post-construction monitoring protocols.

- Very few SFWAs are seeing wind projects that compensate for impacts to habitat or species that are not regulated by the federal Endangered Species Act or Clean Water Act.

SFWAs believe, however, there is strong interest or opportunity to develop voluntary compensatory mitigation programs in their state.

- SFWAs are very interested in increasing interstate coordination/communication on wind siting issues. They believe this coordination would be most beneficial if carried out quarterly or biannually.

Methods

An online survey was sent to wind energy points of contact in each SFWA in late July 2019. The survey was closed in August 2019. The survey results were summarized and reviewed by the State Wind-Wildlife Assessment Workgroup and distributed to members of the AFWA Energy & Wildlife Policy Committee in mid-September 2019. The results were also presented to the committee at the September 2019 AFWA Annual Meeting. After discussing the results of the survey, committee leadership instructed the workgroup to compile the results into a final report and distribute it to SFWA Directors, Energy & Wildlife Policy Committee members and others.

Results

Thirty-nine (39) SFWAs responded to the survey (Figure 1). These states represent 93% of the total megawatts of wind capacity currently installed, under construction, or in advanced stages of development in the United States.[2] California submitted two responses and thus is counted twice in the results. One state submitted an anonymous response.

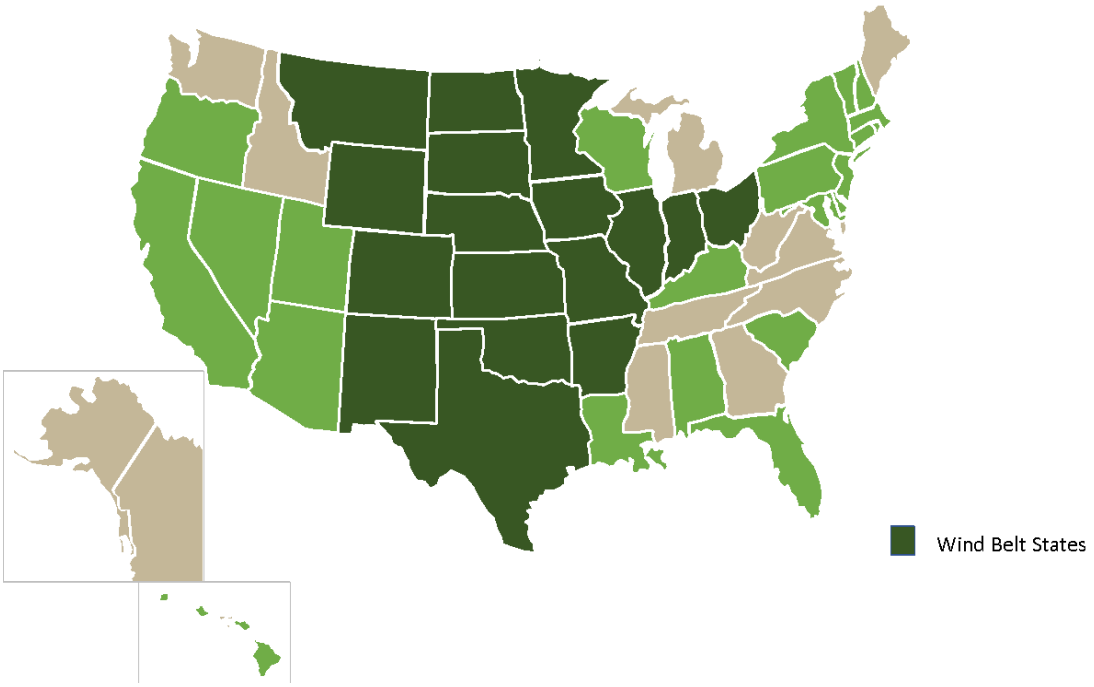

Figure 1: Map of responding states.

[2] American Wind Energy Association. 2019. "AWEA Q2 2019 Market Report."

Below is a summary of the responses organized into seven thematic areas.

1. Identified risks – general

States were asked to rank the most significant risks to wildlife and habitat from wind development and operation. The top three risks identified by states are: 1) direct mortality; 2) habitat fragmentation; and 3) cumulative impacts.

SFWAs were asked what groups of species and habitat they believe are most at risk from the direct, indirect, and cumulative effects of wind siting.[3]

- For **direct impacts**, SFWAs feel that the most significant risks are to bats (94.9%); birds other than raptors and grassland grouse (76.9%); and raptors (76.9%).
- For **indirect impacts**, SFWAs feel that the most significant risks are to mammals other than bats (56.8%); birds other than raptors and grassland grouse (56.8%); and grassland grouse (48.6%).
- For **cumulative impacts**, SFWAs feel that the most significant risks are to bats (83.8%); birds other than raptors and grassland grouse (73.0%); and raptors (62.2%).

2. Current trends in consultation with SFWAs

SFWAs were asked a series of questions related to when in the project development process developers consult with them, the frequency of that consultation, and the quality of that consultation (e.g., how much of the collected data are shared with them). Consultation was defined broadly as communicating by email, requesting in-person meetings, etc.

When asked how regularly wind developers consult with their agency when siting new projects, we received 36 responses. Forty-seven percent (47.3%) of states responded that they are consulted on every project or that some developers consult with them on every project. Fifty-three percent (52.8%) of states responded that most developers consult with them once or never.

SFWAs were asked how frequently throughout the project siting and design process developers consult with them. We received 30 responses. Seventy-seven percent (76.7%) of responding states reported that developers consult with them frequently or several times throughout the process; 23.4% of the states reported that developers consult with them only once or never.

Ninety-one percent (90.6%) of states reported that the frequency with which developers consult with them is very dependent on which specific developer is involved.

States were asked when in the development process developers consult with them and how much information is shared at each stage.[4] States reported that very little information on siting is shared

[3] The Workgroup noted that the results from this and other questions may be influenced by regional differences in the distribution and presence of specific groups of species. For example, threatened or sensitive grassland grouse species are not present in all of the responding states and thus states without these species would be unlikely to identify grassland grouse as a group of species of significant concern.

[4] Stages were defined as following: I. Prospecting – Very early in the process when they are considering multiple sites, before they have secured land control, and/or before they have a power purchase agreement in place; II. Early development – when they are conducting preliminary site visits, starting to secure land control, etc.; III. Intermediate – when they are undertaking wildlife monitoring and data collection, and/or some land controls have been secured;

with them early in the development process and that the amount of information provided to them increases as the process nears its final stages (Figure 2). For example, during the prospecting stage, 61.5% of states reported that developers share very little or no data. By the final development phase, this number drops to 22.0% (i.e., 78% of states report that developers share some or extensive amounts of data during the final development phase).

SFWAs were asked about the types of information wind developers most frequently request from their agency. States are most frequently asked for information on the presence of regulated species or their habitat (81.6%). Less frequently, developers request information on the presence of sensitive but unregulated species or their habitat (50.0%), very general information on species or habitat of interest to the agency (50.0%), and known areas of wildlife congregation (42.1%). Developers infrequently request information on agency recommendations for effective minimization measures, such as deterrent technologies and smart curtailment approaches (28.9%), agency recommendations for effective approaches to compensate for impacts to species and habitat (23.7%), and information on areas of intact habitat sensitive to the effects of fragmentation (7.89%).[5]

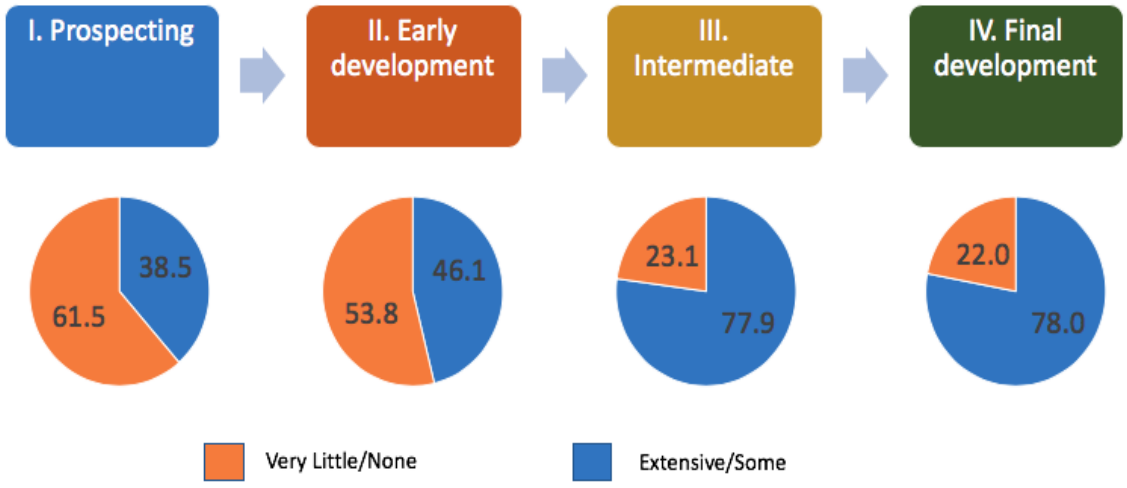

Figure 2: Project Development Process and Amount of Information Shared.

SFWAs largely feel that there are ways that early consultation with their agencies could be improved (86.8%).

Developers may be hesitant to share project and location details with agencies early in the development process due to concerns that open records statutes may force the release of proprietary/confidential business information that can affect their competitive advantage. SFWAs were asked if they have the ability to ensure that, if shared, early siting information can be exempted from public disclosure (e.g., non-disclosure agreements or another state mechanism

IV. Final development – during active permitting (if applicable), project is being designed, project financing is in place, and/or after having signed a power purchase agreement.

[5] Note that all of the types of information listed in the survey are those that the federal WEGs suggest should be considered during Tier 1, Tier 2, and Tier 3 analyses.

that allows information shared on potential site locations to be kept private). Forty-two percent (41.7%) of states responded that they do have such a mechanism and 58.3% responded that they do not have such a mechanism. States that answered "yes" often have public disclosure statutes with exceptions for sensitive species or if records are marked as sensitive.

3. Mechanisms to encourage/require consultation with agency

SFWAs were asked a series of questions about whether they have any regulatory or non-regulatory mechanisms to encourage or require developers to consult with or secure approval for projects from their agency or another state agency.

Seventy-four (74.4%) of SFWAs reported that they have some state or local regulatory authorities in place that require wind developers to consult with or secure approval from their agency, another agency, or a local government. Forty-one percent (41.0%) of states reported that developers are required to consult with the SFWA; 35.9% of SFWAs reported that a state agency other than the SFWA has project approval authority (e.g., a Public Utility Commission or similar state agency); 35.9% of states reported that local or regional governments have adopted mandatory project review or approval policies (e.g., setback requirements); and 20.5% of SFWAs reported that developers are required to consult with a state agency other than the SFWA on wildlife issues. No SFWA that responded to the survey has independent project approval authority.

For SFWAs with some regulatory authorities, 9.5% reported that these mechanisms were extremely or very effective at encouraging low-impact siting, 57.1% feel they were somewhat effective, and 33.3% feel they were not very or not at all effective (Figure 3).

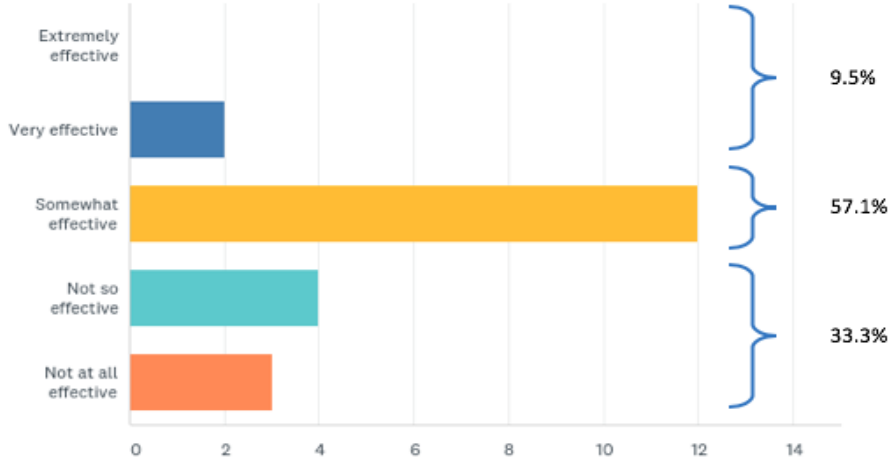

Figure 3: If your state has regulatory authorities, how effective are they at encouraging low-impact siting?

Over 80% of SFWAs reported that they have non-regulatory mechanisms to encourage consultation, including state guidelines for siting and/or monitoring or geospatial siting tools. These include state wind siting guidelines (7), state guidelines for monitoring or and/or study design (7), state guidelines on impact minimization/operation (3), siting tools (3), and a gubernatorial executive order (1).

Of those states with non-regulatory mechanisms, 12.5% feel they were extremely or very effective at encouraging low-impact siting, 41.7% feel they were somewhat effective, and 45.8% feel they were not very or not at all effective (Figure 4).

SFWAs were asked a series of questions about their familiarity with the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (WEGs)[6] and their effectiveness. While 48.7% of SFWAs reported that they were extremely or very familiar with the WEGs, 41% reported that they were somewhat familiar, and 10.3% reported that they are not very or not at all familiar with the WEGs (Figure 5). Sixty-three percent (63.4%) of states reported that they feel the WEGs were always or usually used by the wind industry (developers, power purchasers, those that finance wind projects) and 36.7% of SFWAs feel they were used sometimes or rarely.

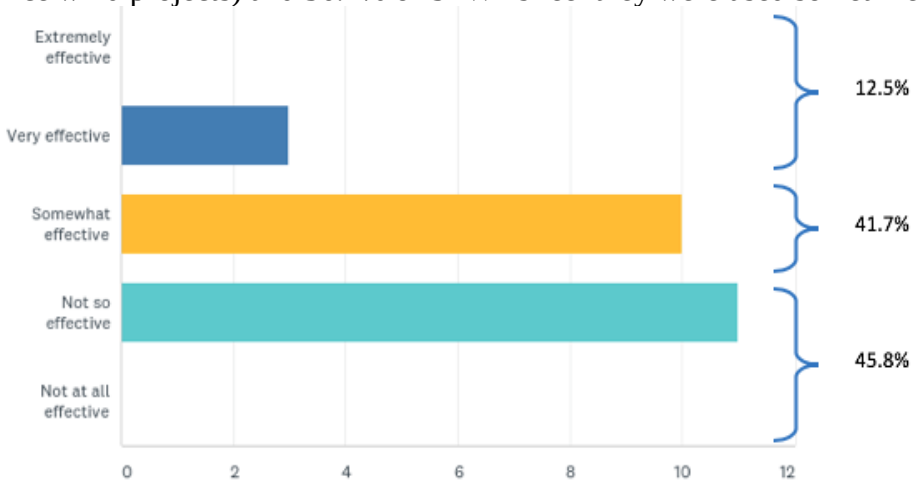

Figure 4: If your state has non-regulatory mechanisms, how effective are they at encouraging low-impact siting?

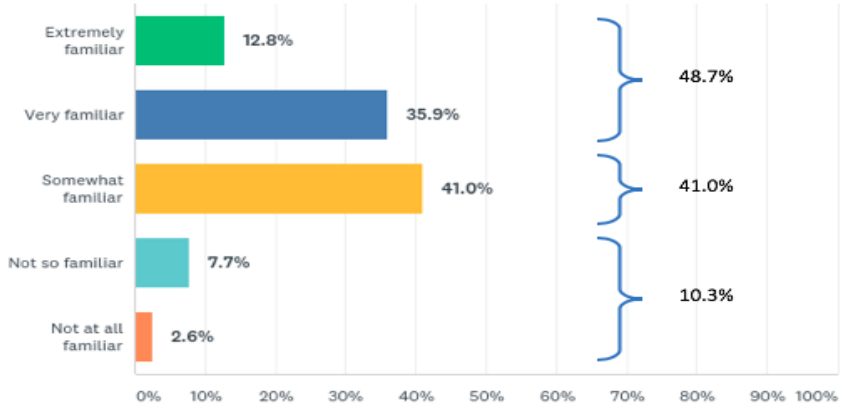

Figure 5: Are you familiar with the U.S. Fish and Wildlife Service's Land-Based Wind Energy Guidelines (also known as the Wind Energy Guidelines or WEGs)?

[6] U.S. Fish and Wildlife Service. 2012. "U.S. Fish and Wildlife Service Land-based Wind Energy Guidelines." https://www.fws.gov/midwest/wind/resources/.

When asked about the effectiveness of the WEGs in supporting low-impact wind siting, 3.3% of SFWAs reported they are very effective, 50.0% feel they are somewhat effective, and 33.3% feel they are not very or not at all effective. Thirteen percent (13.3%) of SFWAs feel they are more effective at addressing some types of impacts over others (Figure 6).

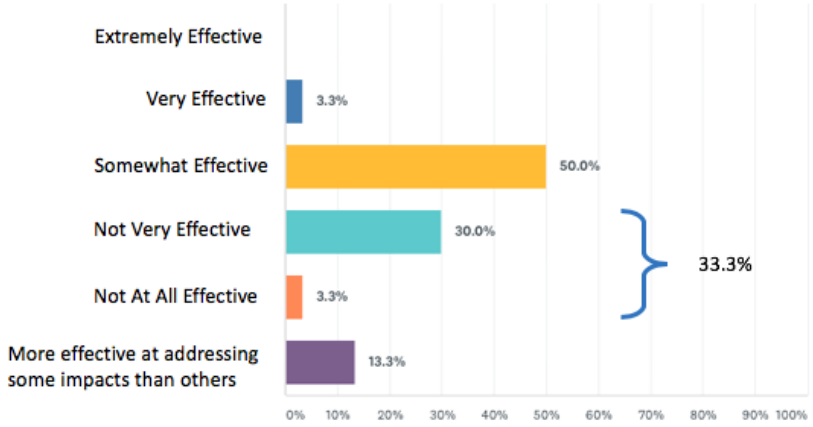

Figure 6: How effective do you think the federal Wind Energy Guidelines are at supporting low-impact wind siting?

Seventy-three percent (73.3%) of responding SFWAs feel that changes to the federal WEGs would improve siting outcomes and 26.7% reported they did not think changes to the WEGs would improve siting outcomes. SFWAs identified several procedural and technical ways application of the WEGs could be changed to improve siting. For example, states noted that the WEGs are not specific enough or that they could be made more specific through development of state or region-specific guidance. Multiple SFWAs feel that the voluntary nature of the WEGs limited their effectiveness and multiple SFWAs feel that the WEGs could be updated or supplemented to recognize new technologies and provide guidance on the full range of impacts.

Finally, SFWAs were asked which mechanisms they feel have been most effective at ensuring early consideration of species and habitat conservation in wind siting. SFWAs identified the following as the most effective mechanisms: SFWA coordination with state boards of public utilities, other state agencies, Federal agencies, non-profit conservation organizations (24 states); federal WEGs (20); and state regulations (18).

4. Access to and status of wind-wildlife science

States were asked to rank on a scale of 1-10 how well current wind-wildlife science is addressing impacts to wildlife and habitat. States responded that **direct impacts** were addressed adequately (6.05/10.0); **indirect impacts** were addressed moderately well (4.15/10.0); and **cumulative impacts** were poorly addressed (3.05/10.0).

SFWAs largely (56.7%) feel that they have access to the best available science on the impacts of wind development on wildlife and habitat, while 43.3% reported that they do not. The top three sources of information on wind-wildlife science for SFWAs are the American Wind Wildlife Institute (34), Association of Fish and Wildlife Agencies (28), U.S. Fish and Wildlife Service (27), and peer reviewed journals (e.g. Journal of Wildlife Management) (26) (Figure 7).

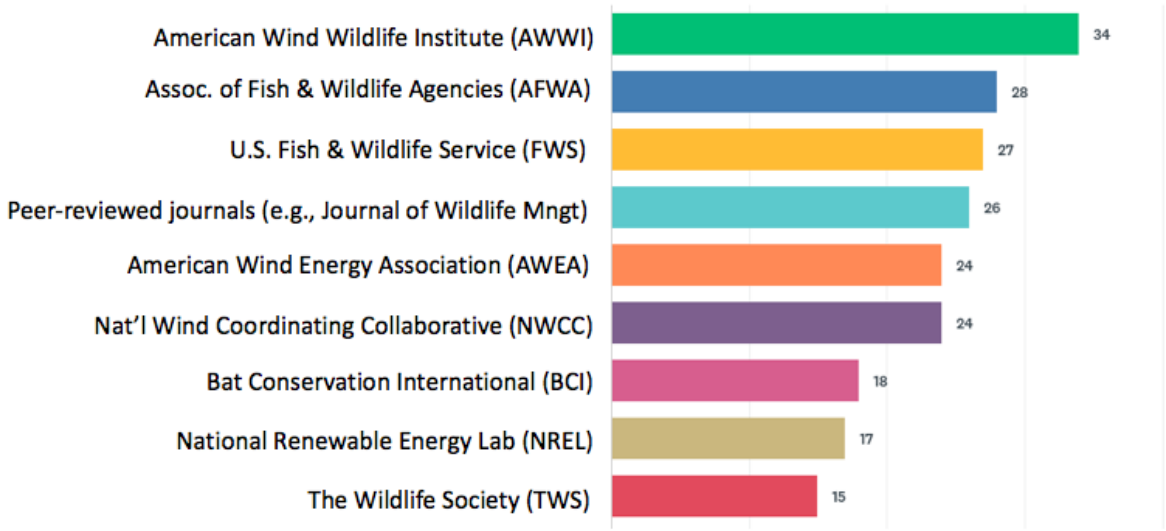

Figure 7: From what sources do you receive information on wind-wildlife science?

SFWAs overwhelmingly reported (89.5%) that they would be interested in receiving more regular updates on wind-wildlife science. The top three sources of wind-wildlife science from which they would like to receive more information are the Association of Fish and Wildlife Agencies (27), peer reviewed journals (e.g. Journal of Wildlife Management) (26), and Bat Conservation International (25) (Figure 8).

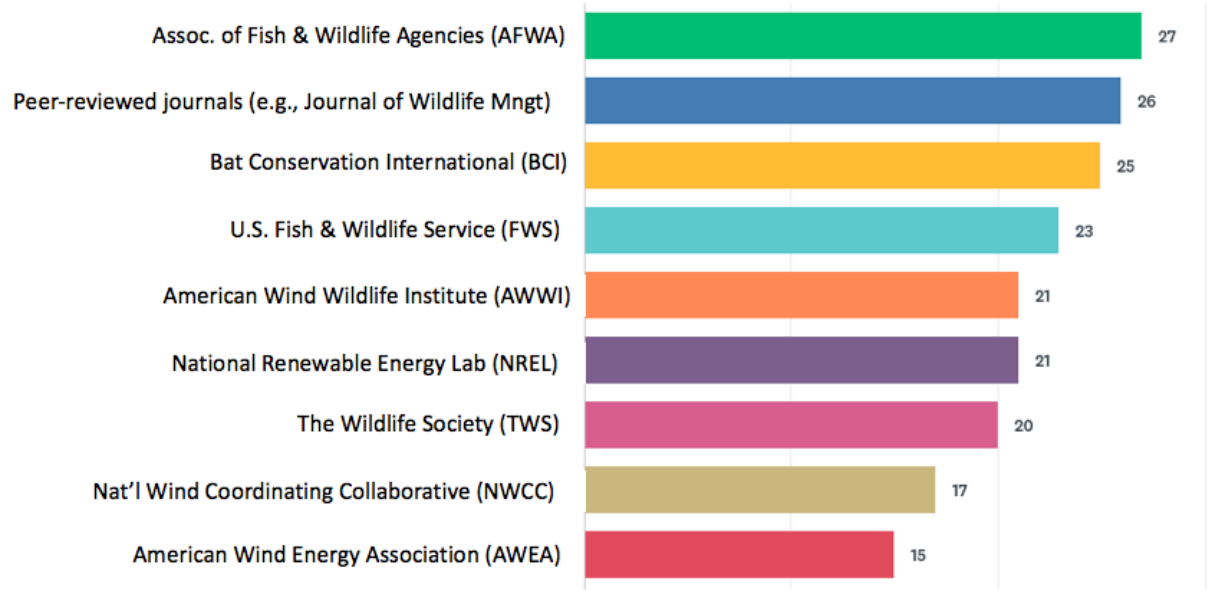

Figure 8: If you would like more regular updates on wind-wildlife science, from what sources would you like to receive this information?

When asked to identify their greatest wind-wildlife science needs, the top three identified needs were: 1) post-construction fatality minimization technology (e.g., deterrents); 2) strategies to avoid, minimize, and compensate for impacts to bats; and 3) cumulative impacts of wind development on species and habitat.

SFWAs are most interested in receiving wind-wildlife science updates via webinar (91.9%), email (78.4%), and workshops in association with existing meetings (51.4%).

5. Pre- and post-construction monitoring data

When asked how much pre/post-construction monitoring data were shared with the SFWAs, the agencies indicated they were receiving more pre-construction data (32.4% receive all such data, 61.8% receive some, and 5.9% receive none) than post-construction data (25.0% receive all, 57.1% receive some, and 17.9% receive none) (Figure 9).

Fifty percent (50%) of SFWAs indicated they feel that the pre-construction monitoring methods used by developers are consistent while 34.4% feel that post-construction monitoring methods are consistent. The majority of SFWAs feel that the pre- and post-construction monitoring data that is collected by developers are helpful at informing siting/regulatory decisions (76.0% feel that pre-construction data are helpful and 76.9% feel that post-construction data are helpful).

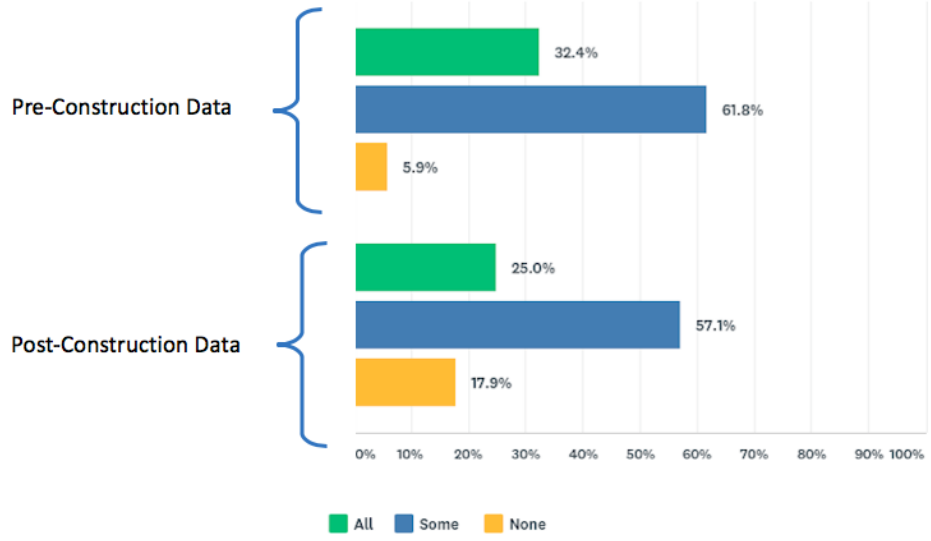

Figure 9. How much of their pre- and post-construction wildlife monitoring data do developers share with your agency?

6. Compensation - required and voluntary

Twenty-nine percent (29.4%) of SFWAs reported that wind projects in their states are required to compensate for impacts to species and/or habitat (other than through the federal Endangered Species Act, federal Clean Water Act wetland and stream mitigation program (§404)). Fifty-three percent (52.9%) reported that there are no compensation requirements and 17.6% were unsure as to whether compensation is required.

SFWAs were also asked whether wind developers are voluntarily providing compensation for impact to species and/or habitat. Seventy-four percent (74.2%) of SFWAs reported that developers rarely or never voluntarily provide compensation, 22.6% reported that they sometimes do, and 3.2% reported that they usually do. Eighty-six percent (86.2%) of SFWAs

reported that they are interested in or feel there is an opportunity to further advance voluntary compensation programs in their states.

7. Agency coordination on wind-wildlife issues

SFWAs overwhelmingly reported (81.6%) that they are interested in having a regular forum for wildlife agency project reviewers to improve interstate communication. SFWAs feel that it would be most helpful to coordinate with their counterparts in other states on a quarterly basis (50.0%), twice annually (38.2%), or annually (11.8%). Twenty-three (23) states feel that it would be most valuable for this coordination to include all interested members of the AFWA Energy & Wildlife Policy Committee, while 17 SFWAs reported that such coordination would be most valuable if participation were restricted to SFWA staff only, at least initially.

Discussion

The survey of SFWA opinions on wind energy siting was the first in recent memory. With current levels of wind energy operation and projected increases to that deployment, there is a need to better understand the concerns and challenges that SFWAs are facing. The results from the survey will help the AFWA Energy & Wildlife Policy Committee and others identify needed actions to address the identified issues. Likewise, the information in the survey will be of interest to the wind energy industry to help in their work to partner with SFWAs to avoid, minimize, and offset (provide compensatory mitigation) for impacts to wildlife. The Wind Siting Working Group reviewed the survey results and identified the following next steps:

- Widely share the survey results with SFWA Directors, partners, wind energy industry, and others as appropriate through presentations and dissemination of a report. Potential venues include meetings of regional fish and wildlife associations, National Wind Coordinating Collaborative, American Wind Energy Association, American Wind Wildlife Institute, Bat Wind Energy Collaborative, etc.

- Summarize the findings in a more formal report and/or seek publication in a professional peer-reviewed journal.

- Seek ways to improve SFWAs' access to the best available science by offering quarterly webinars.

- Improve coordination across SFWAs by doing quarterly updates to committee members, wind energy contacts and others. Enlist the help of groups like the MAFWA Midwest Landscape Initiative to assist. Utilize this coordination to, among other things, share information about mechanisms are working to support low-impact wind development.

- Share SFWA identified science priorities with partners and encourage investment in these research priorities (e.g., AWWI, NWCC).

- Explore opportunities to fill AFWA's vacant Energy & Wildlife Program Manager position.

- Identify and share those regulatory and non-regulatory mechanisms that states feel have effectively supported low-impact wind development.

- Improve substance and implementation of the federal Wind Energy Guidelines (WEGs). Accomplish this by providing training on the WEGs, encourage industry to educate its members on the WEGs, explore potential updates to the WEGs, and/or establish a WEG workgroup to further identify areas of opportunity to improve the substance and/or implementation (e.g., adherence to recommend WEG protocols without significant modifications) of the WEGs.

- Identify and advance effective strategies to connect wind developers with appropriate SFWA contacts and encourage them to consult with these agencies as early as possible in the planning process (i.e., feasibility stage) and throughout the development process. This could be accomplished by developing an industry engagement strategy, identifying ways to encourage earlier consultation without fear of sharing competitive information, and communicating SWFAs' expectations for the timing, frequency, and substance of consultation.

- Identify ways to enable/encourage SFWAs to provide support/input to counties and local governments.