



ASSOCIATION *of* FISH & WILDLIFE AGENCIES

Energy & Wildlife Policy Committee State Wind-Wildlife Assessment Workgroup March 2019-September 2019

Co-Chairs

- Chris Berens, Kansas Department of Wildlife, Parks & Tourism
- Jessica Wilkinson, The Nature Conservancy

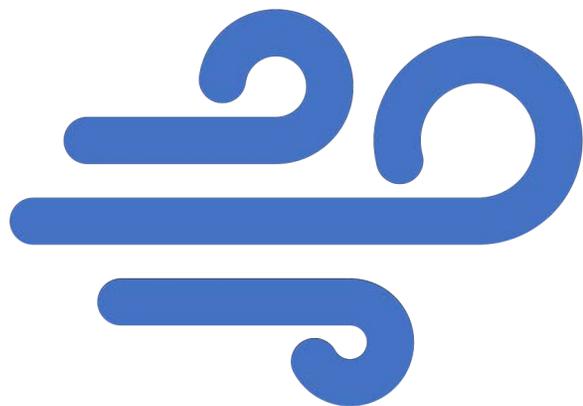
Staff

- Mark Humpert, Association of Fish and Wildlife Agencies

Members

- Mike George, Ducks Unlimited
- Holly Goyert, American Bird Conservancy*
- Greg Link, North Dakota Game and Fish Department
- Tracey Librandi Mumma, Pennsylvania Game Commission
- Davia Palmeri/Sarah Reif, Oregon Department of Fish and Wildlife*
- Karen Voltura, Colorado Parks and Wildlife
- Laura Zebehazy, Texas Parks and Wildlife Department

*Input provided by proxies



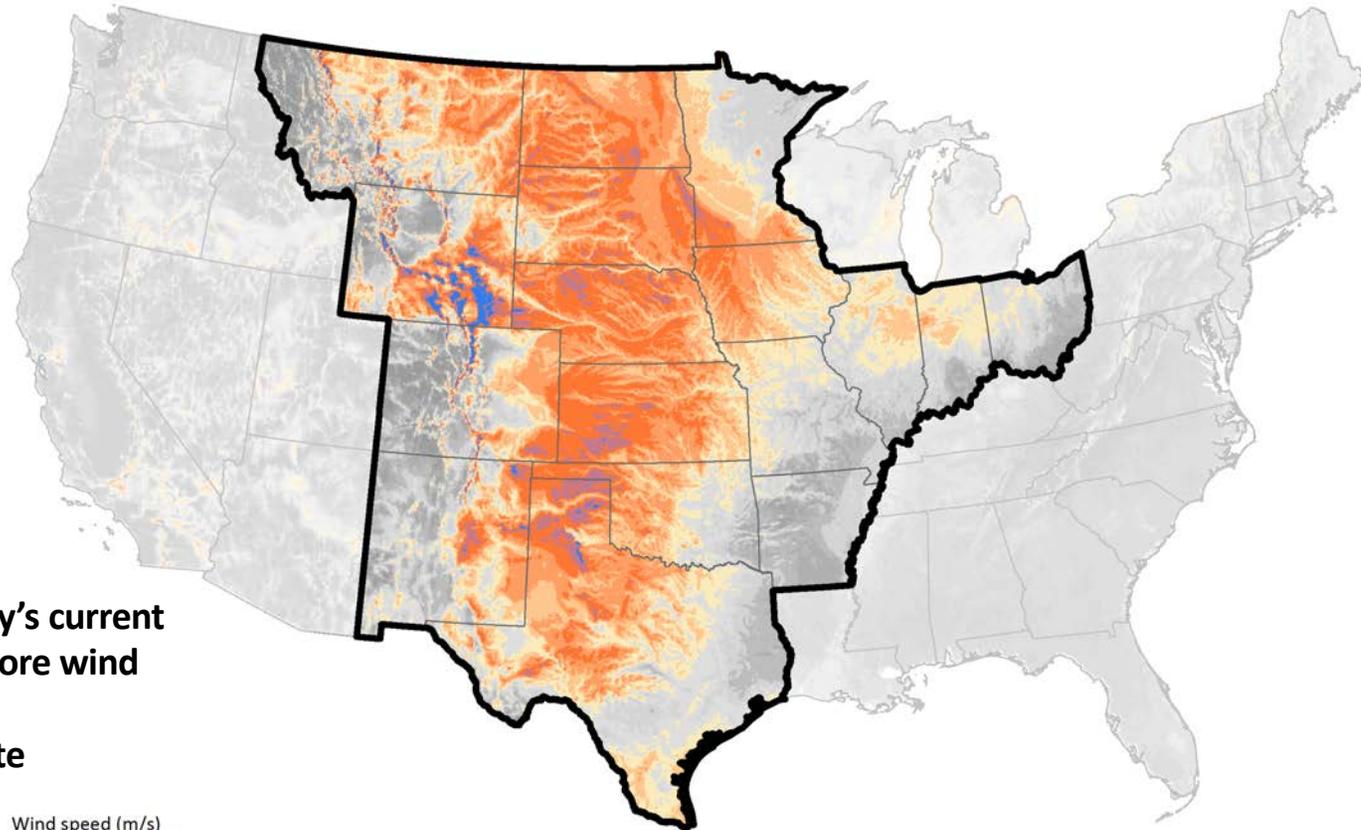
Outline

- Summary of responses – what states answered
- Identified risks – general
- Current trends in consultation with wildlife agencies
- Mechanisms to encourage/require agency consultation
- Access to science
- Monitoring data – pre- and post-construction
- Compensation – required and voluntary
- Agency coordination on wind-wildlife issues

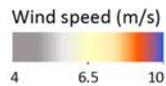
A landscape photograph showing a golden field with numerous round hay bales scattered across it. In the background, a tall white wind turbine stands against a bright blue sky with scattered white clouds. The text "Summary of Responses" is overlaid in the center of the image.

Summary of Responses

“Wind Belt”



- 80% of the country’s current and planned onshore wind capacity
- 100% response rate



Modified from:
NREL / AWS Truepower utility-scale land-based 80 m wind maps for the United States
<http://energy.gov/eere/wind/windexchange>

Draft - Not for Circulation

A large flock of bats is captured in flight against a deep blue night sky. The bats are scattered throughout the frame, with some in sharp focus and others blurred, creating a sense of movement and a dense population. The lighting highlights the translucent wings and the dark bodies of the bats.

Identified Risks – General

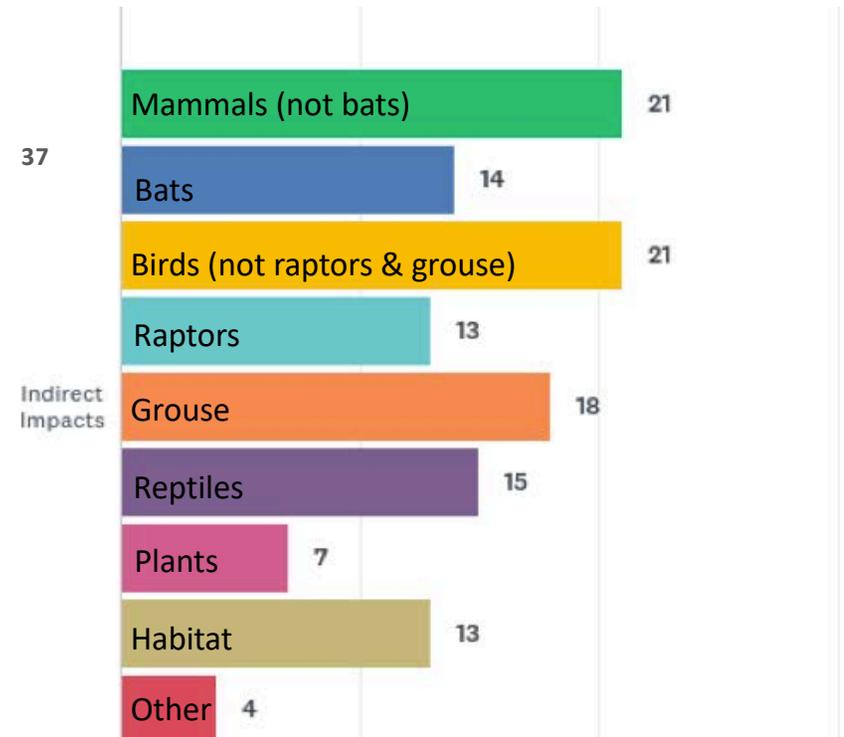
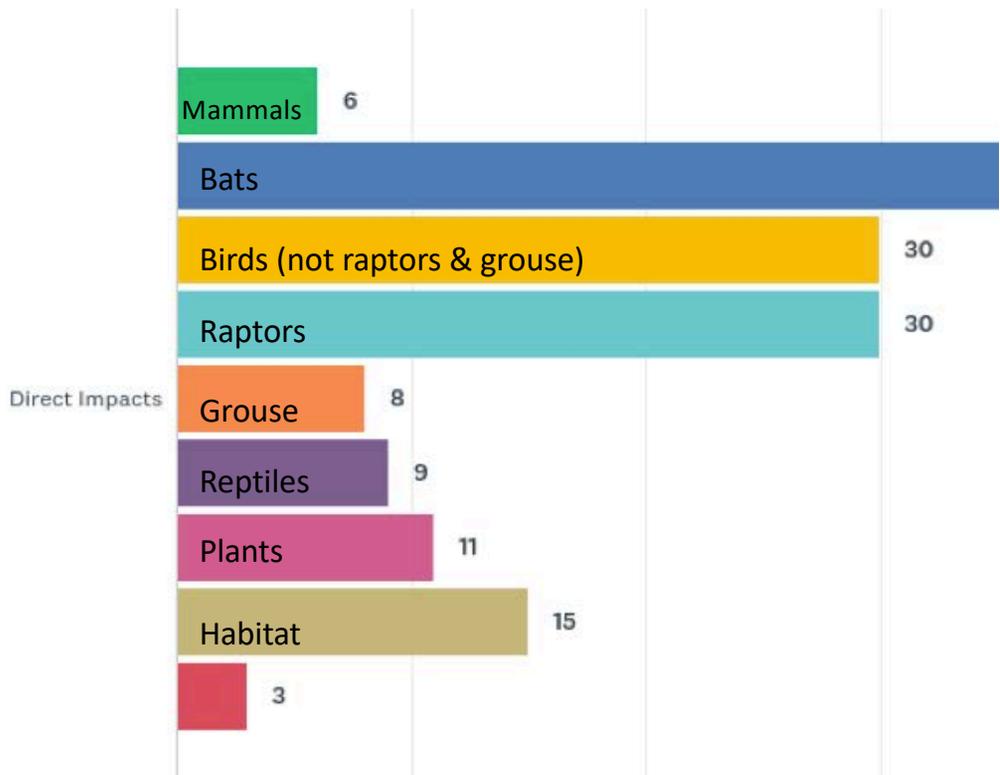
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PHOTO: KARINE AIGNER

What are the most significant direct and indirect risks to wildlife and habitat from wind development?

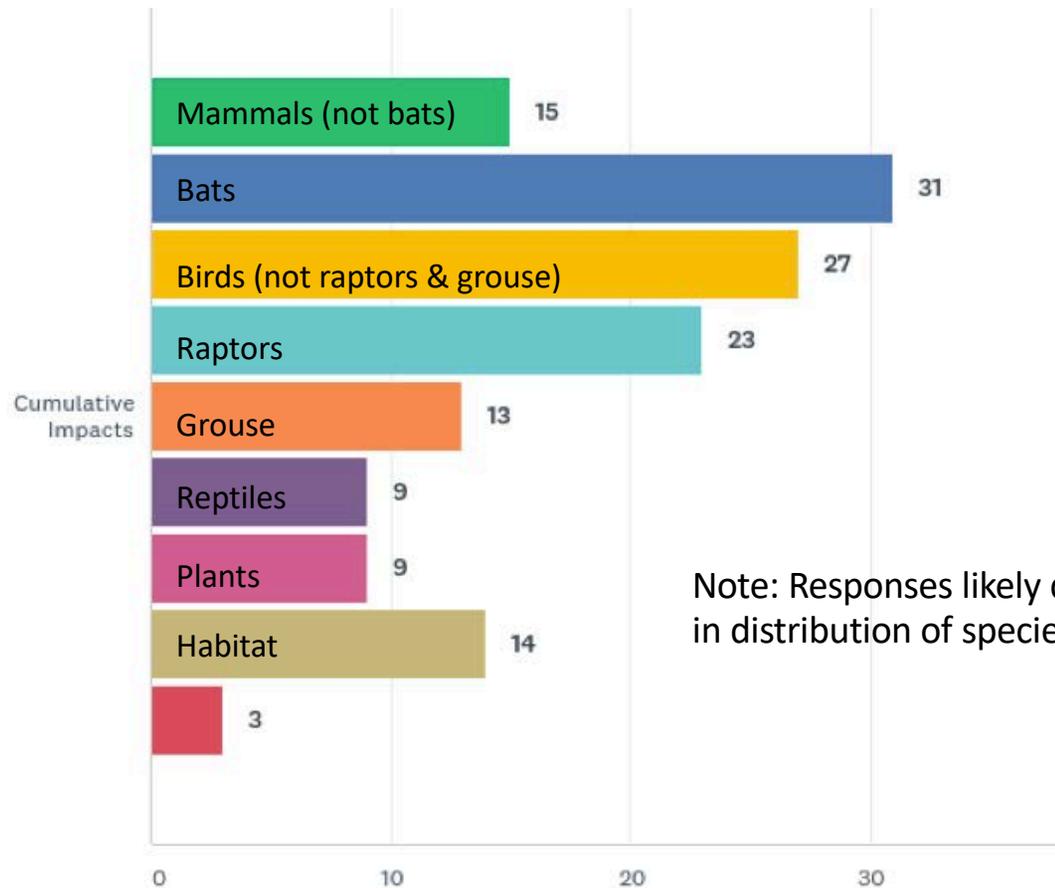
Answered: 40 Skipped: 1



Note: Responses likely due to regional differences in distribution of species.

What are the most significant cumulative risks to wildlife and habitat from wind development?

Answered: 40 Skipped: 1



Note: Responses likely due to regional differences in distribution of species.



What are the most significant risks to wildlife and habitat from wind development?

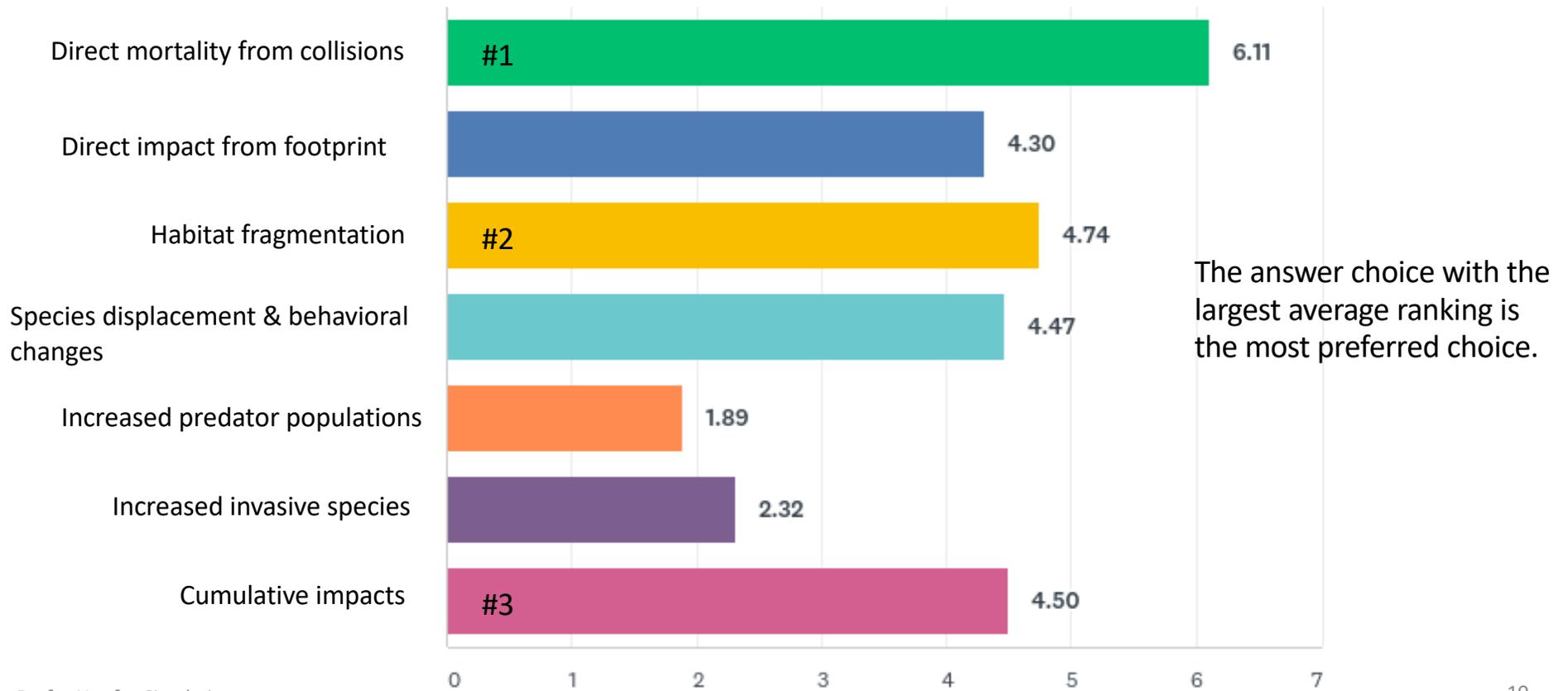
14 states noted concerns about specific habitat types

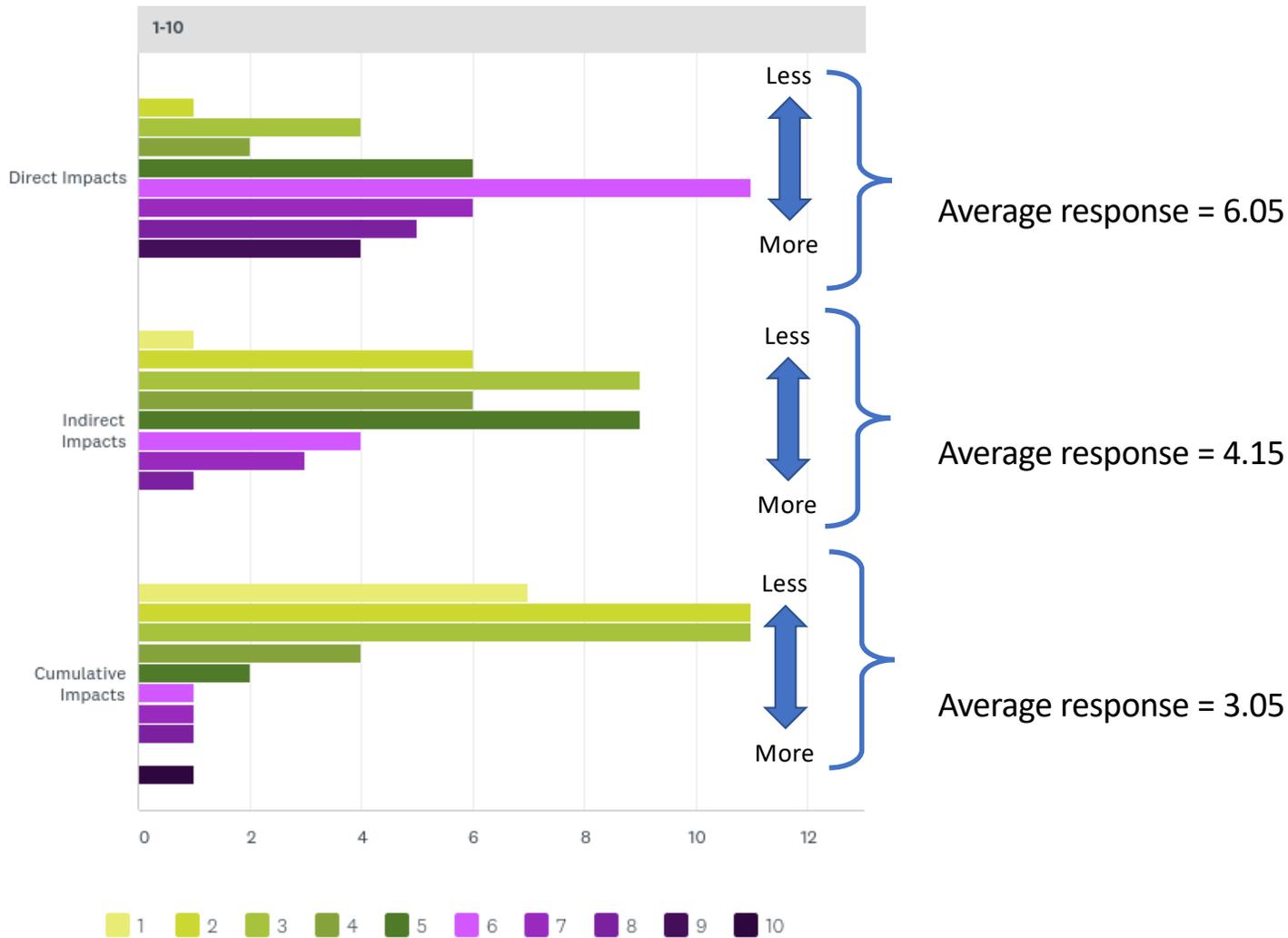
- 9 states – grasslands/prairie
- 7 states – wetlands/streams
- 4 states – unfragmented forest

Note: Responses likely due to regional differences in distribution of habitat types.

Rank risks to wildlife and habitat (1=highest; 7=lowest)

Answered: 38 Skipped: 3





On a scale of 1-10, how well do you think current wind-wildlife science is addressing different kinds of impacts?
 1 = not at all
 10 = fully addresses

Answered: 39 Skipped: 2

Summary

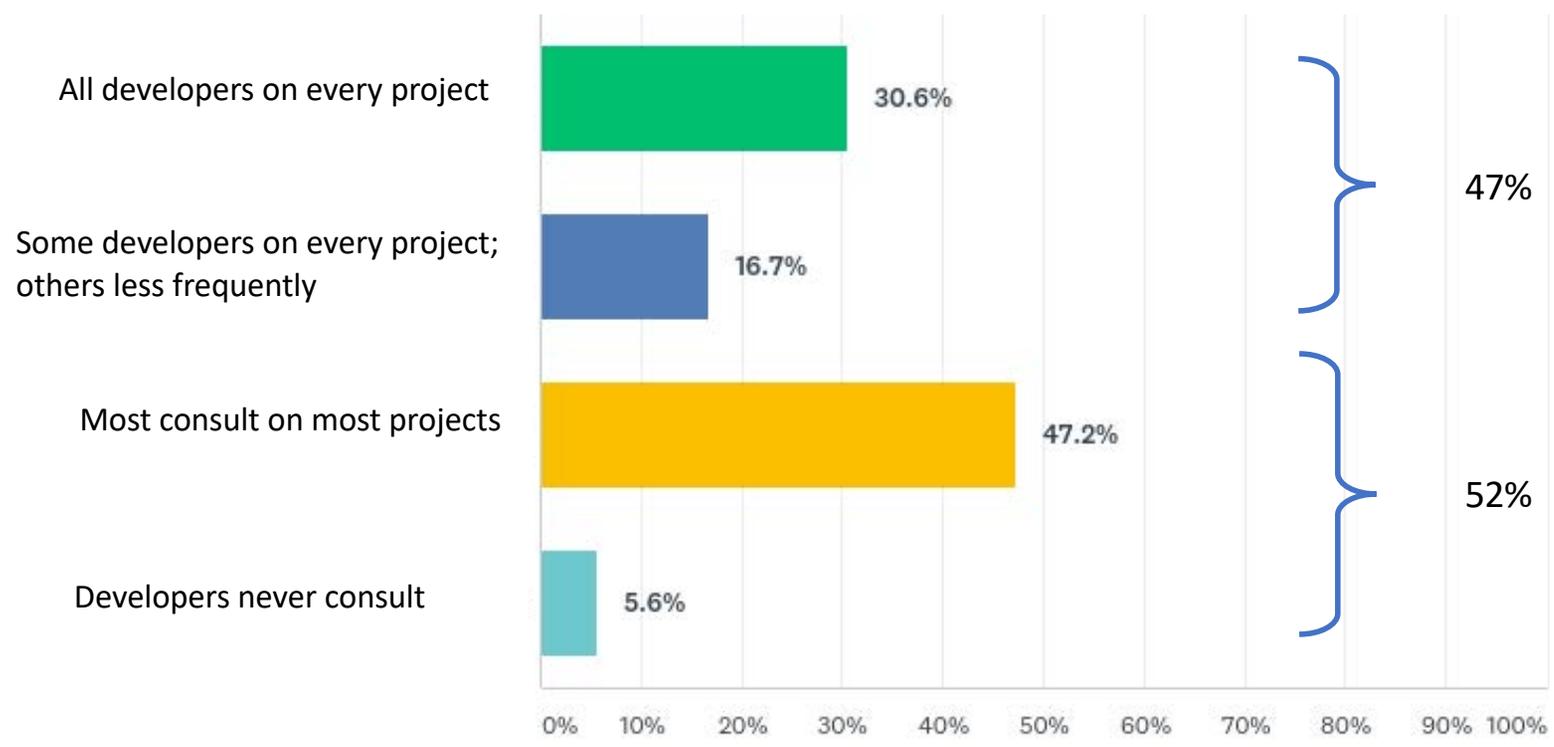
- States believe the most significant risks to wildlife and habitat are: 1) direct mortality from collisions; 2) habitat fragmentation; and 3) cumulative impacts.
- States feel that current wind-wildlife science is doing a decent job of addressing direct impacts; a moderately good job of addressing indirect impacts; and a poor job of addressing cumulative impacts.

The image features three sandhill cranes in flight, captured in a dynamic, low-angle shot. The cranes are positioned diagonally across the frame, with the top crane in the upper left, the middle one in the center, and the bottom one in the lower right. They have long necks, long legs, and a distinctive red patch on their foreheads. The background is a soft, out-of-focus landscape with warm, golden-brown tones, suggesting a sunset or sunrise. The overall mood is serene and naturalistic.

Current trends in consultation with wildlife agencies

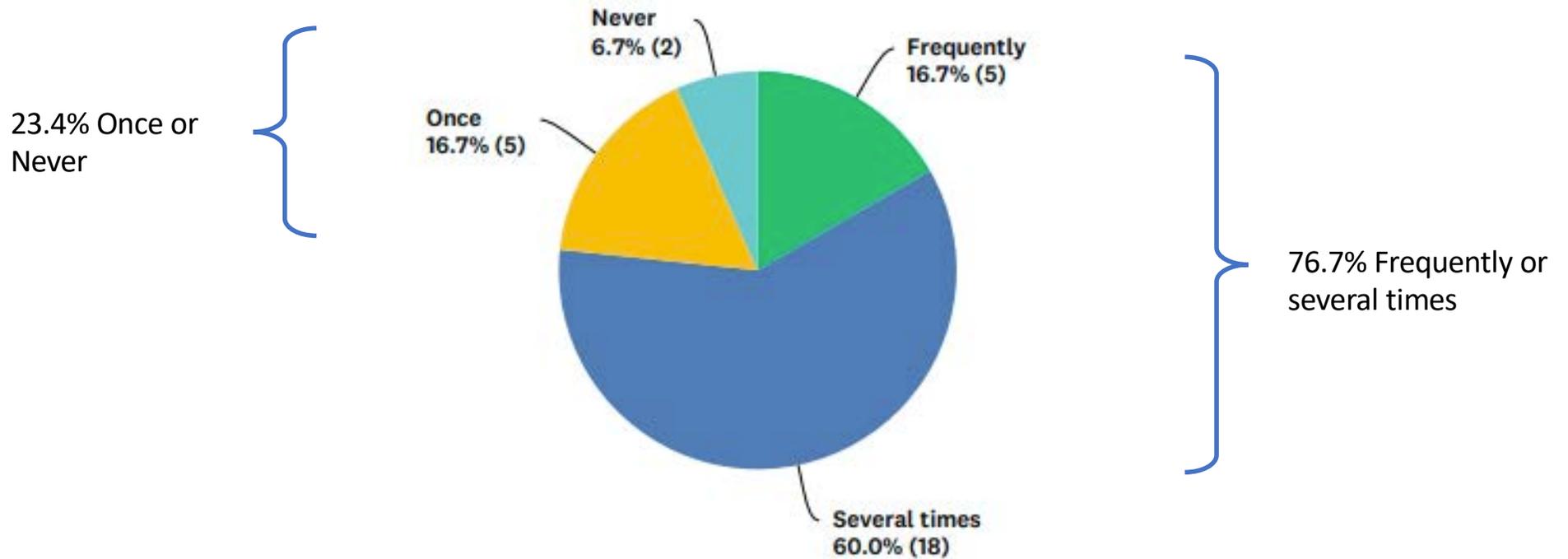
How regularly do wind developers consult with your agency when siting new projects?

Answered: 39 Skipped: 2



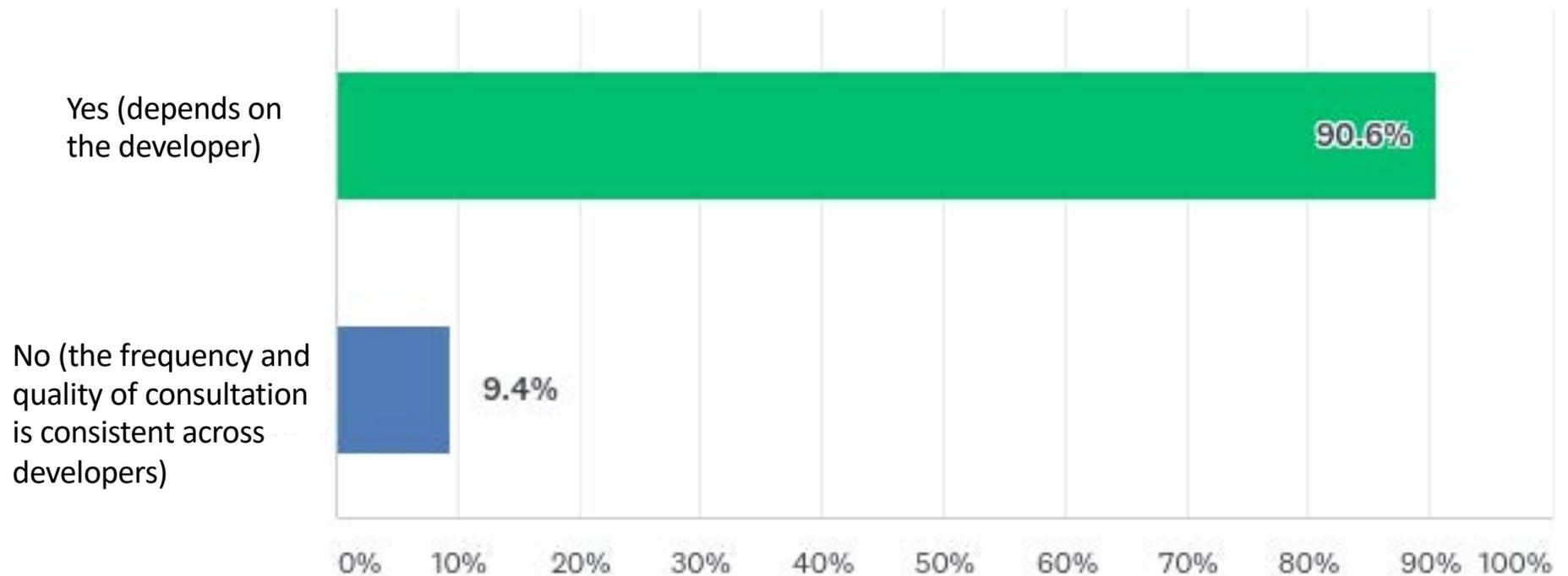
How frequently throughout the project siting and design process do developers consult with you?

Answered: 39 Skipped: 2

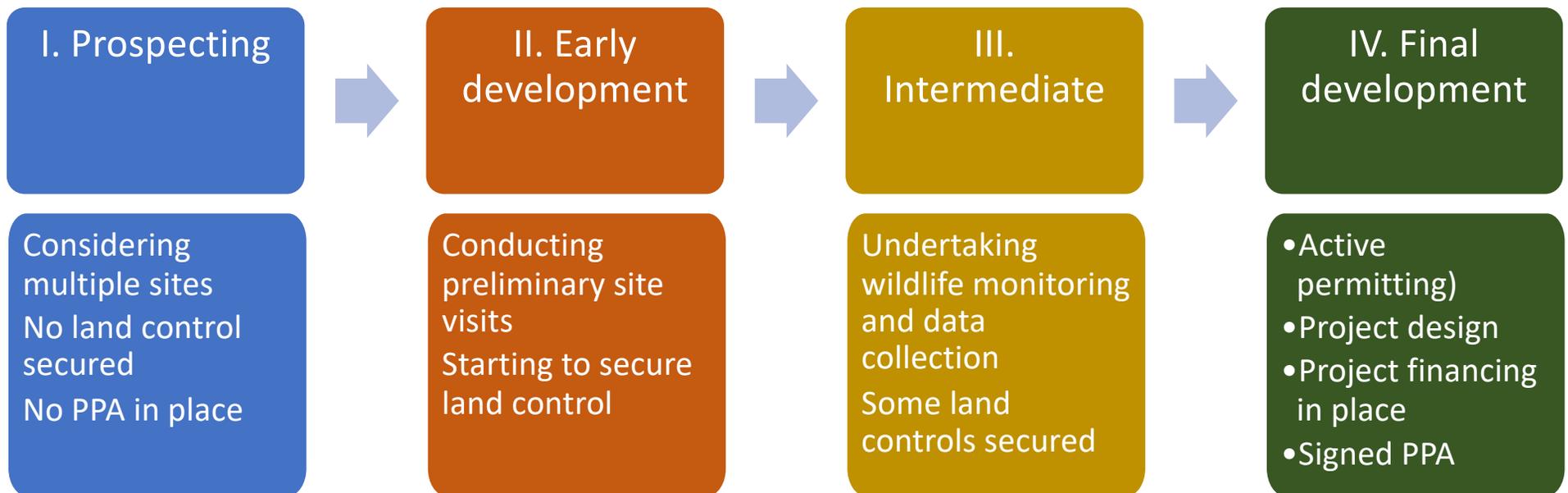


Does the frequency with which developers consult with you and the quality of that consultation differ significant based on the developer?

Answered: 39 Skipped: 2

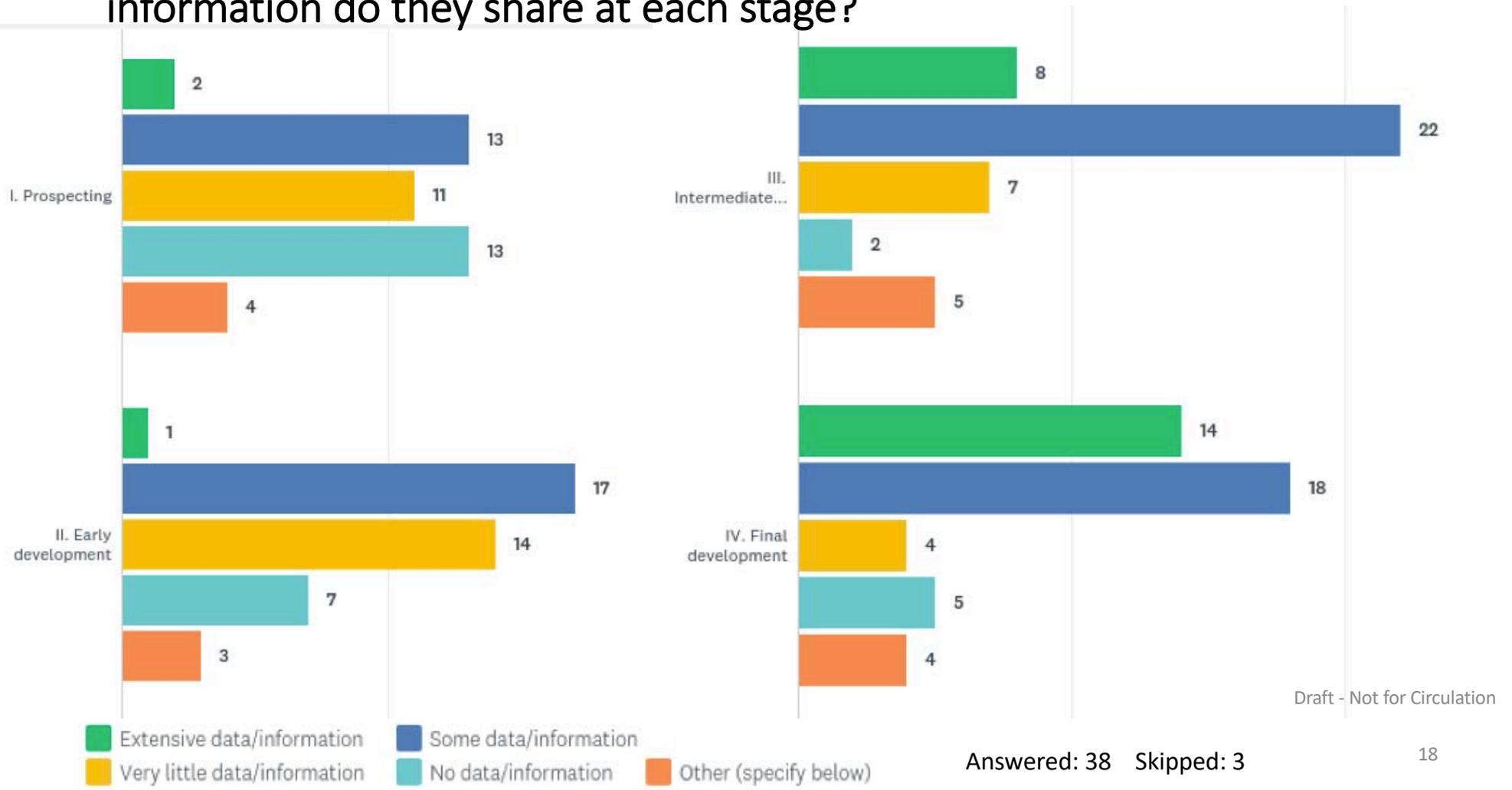


Project Development Process



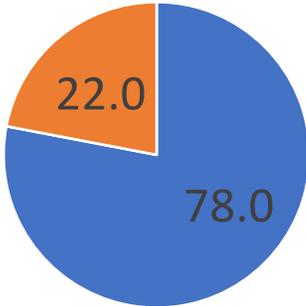
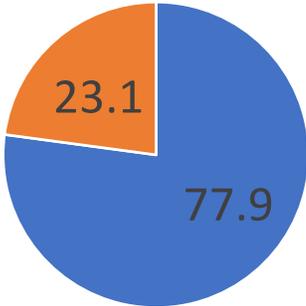
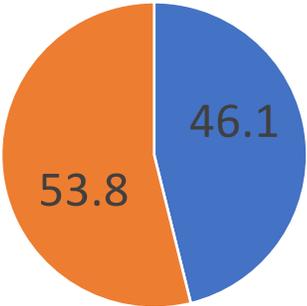
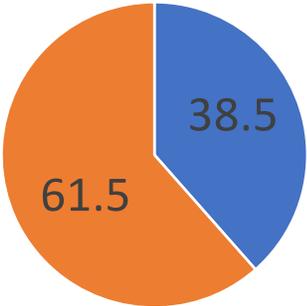
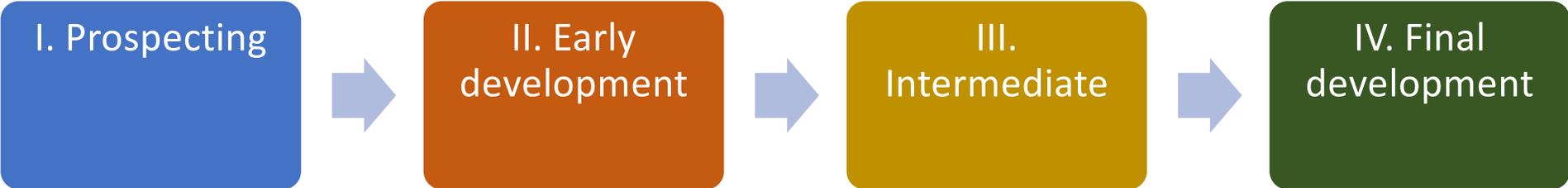
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At what stage of the process do developer consult with you? How much information do they share at each stage?



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Project Development Process & Amount of Information Shared



Very Little/None

Extensive/Some

Draft - Not for Circulation

At what stage of the process do developer consult with you? How much information do they share at each stage?

- “Amount of data provided varies between companies.”
- “Different companies time this differently.”
- “This highly depends on the company.”
- “Some companies are much more communicative than others.”
- “Amount and quality of wildlife data and willingness to share that data can vary considerably.”
- “Generally, developers or their consultants do not want to share comprehensive data with us at any point.”
- “Unfortunately, it is typically very late in the game when [we are] engaged by the developer.”
- “Does vary depending on the consultant/client”
- “It is unknown when the companies secure land.”
- “Few provide study results before they are required to.”
- “they typically provide what they think is the minimum data needed for us to make a determination.”
- “the developers’ reluctance to provide information in a timely fashion has resulted in delays in project reviews.”

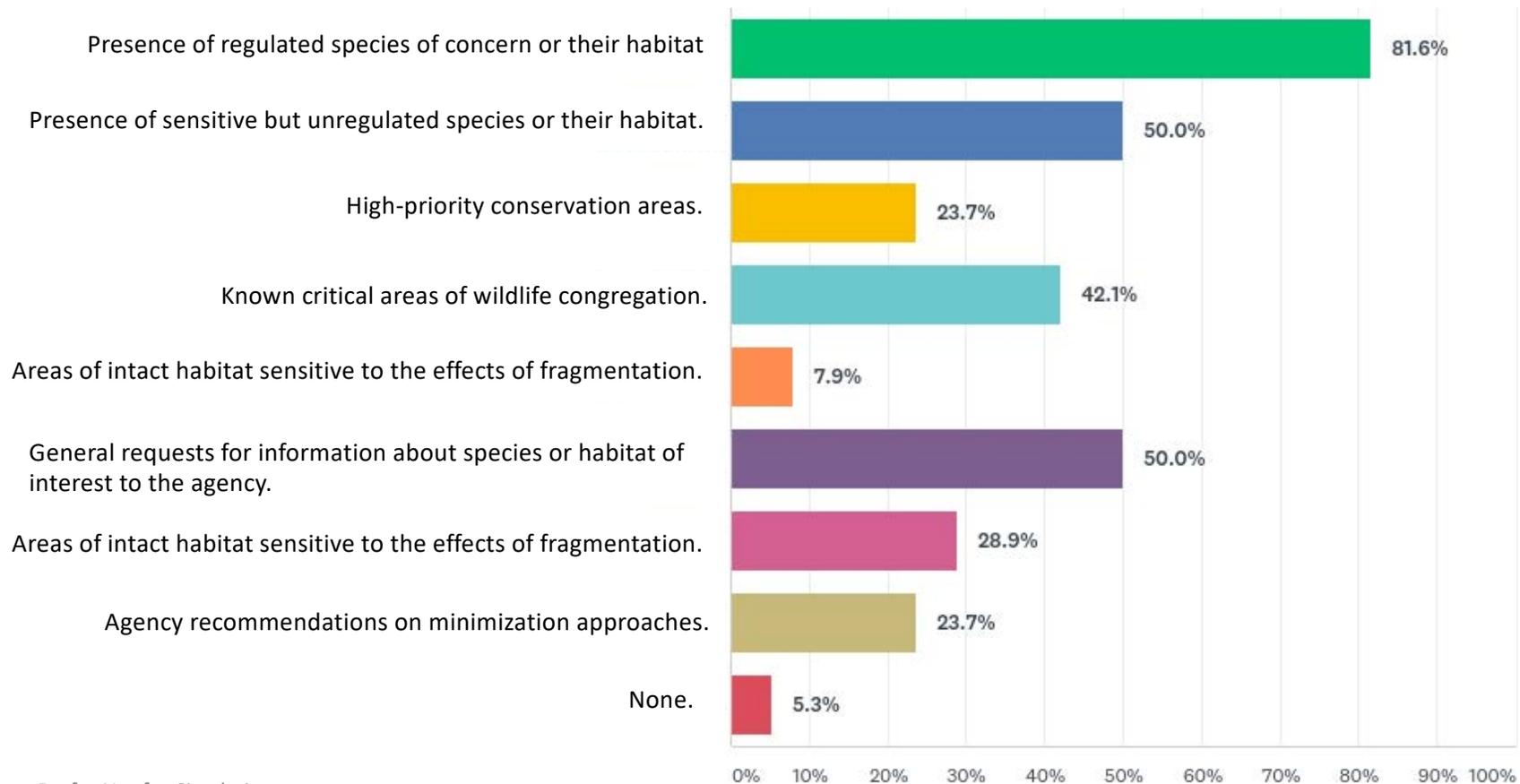
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Answered: 38 Skipped: 3

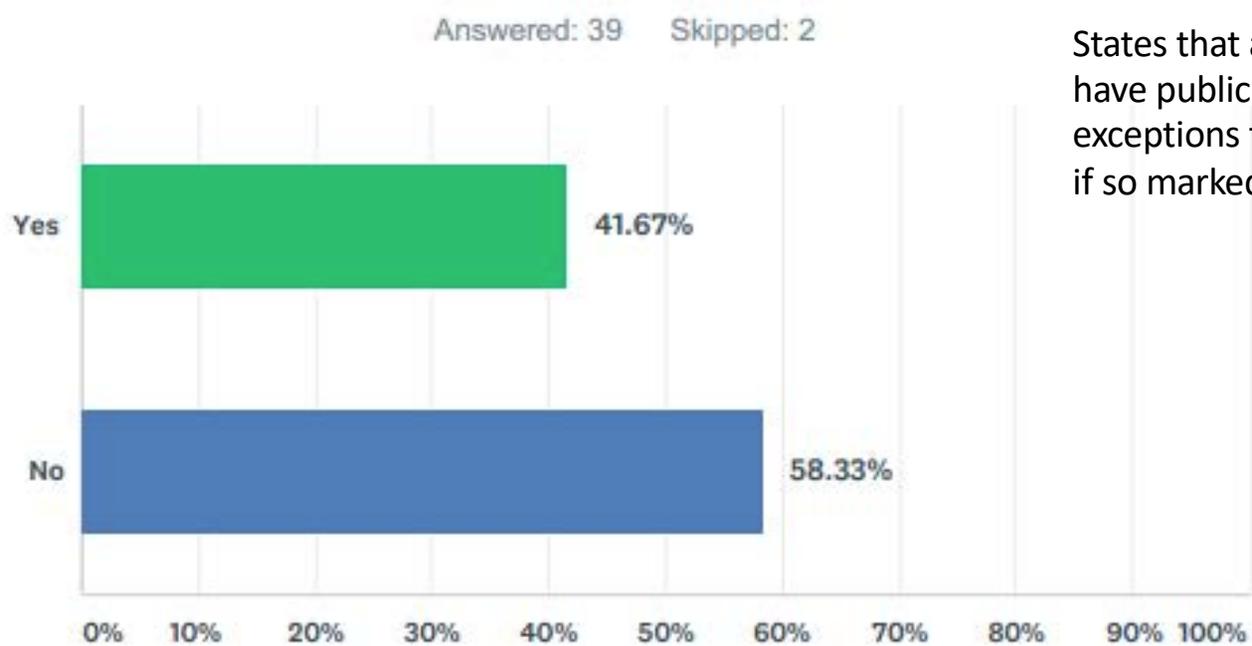
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What types of information do wind developers most frequently request from your agency?

Answered: 38 Skipped: 3



Does your agency have the ability to ensure that early siting information can be exempted from public disclosure?



States that answered “yes” often have public disclosure statutes with exceptions for sensitive species or if so marked.

Summary

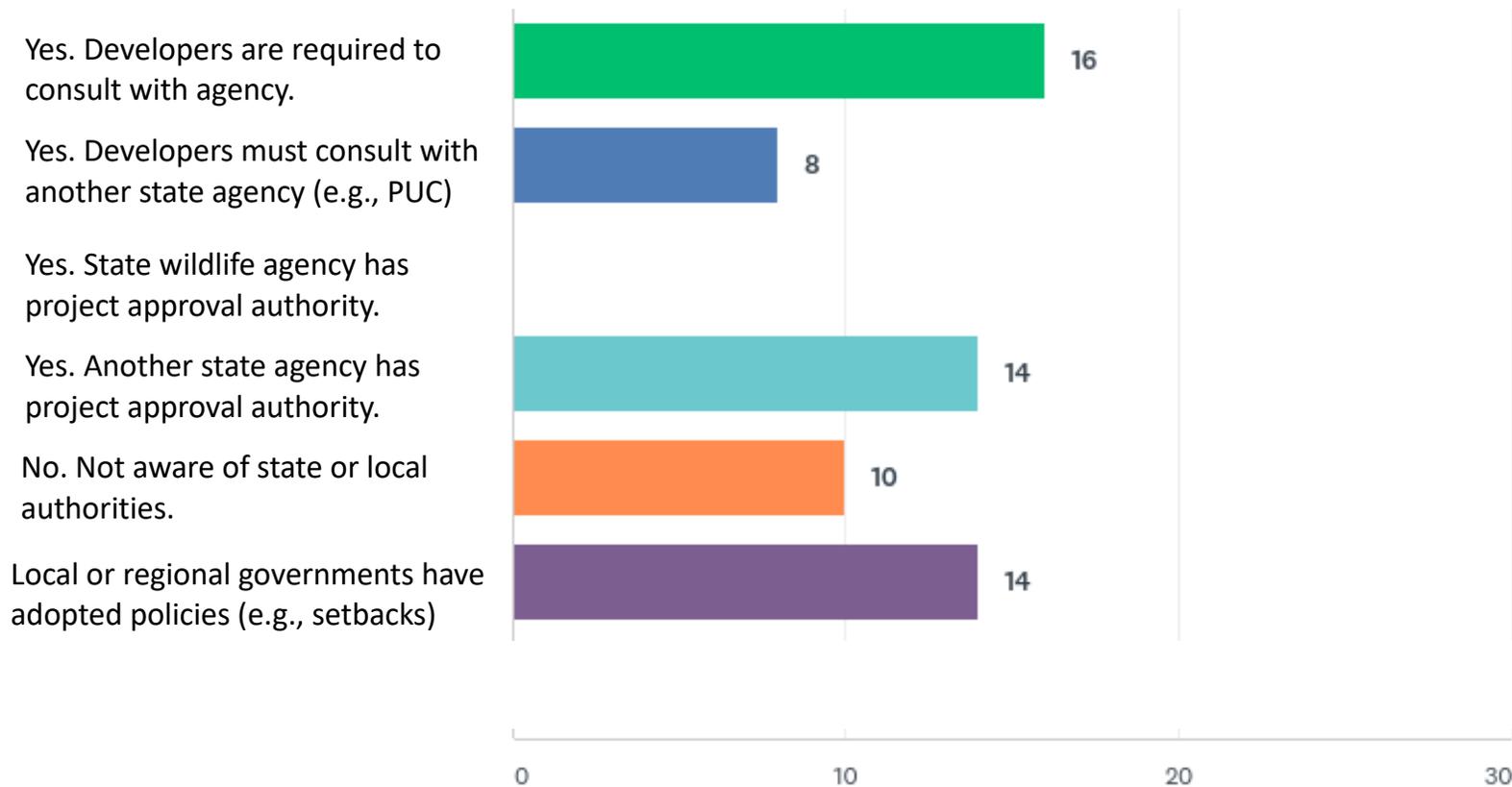
- 25% of the time, developers only consult with wildlife agencies once or never.
- The frequency and quality of consultation is dependent on the specific developer.
- Developers provide wildlife agencies with very little information on siting early in the development process. The amount of information they provide increases as the process nears its final stages.
- Developers frequently request information on regulated species and general information about agency priorities.
- Only about half of all states have a mechanism to protect information on prospective developments from public disclosure.

A photograph of a field of yellow flowers in the foreground, with a sunset in the background. The sun is low on the horizon, casting a warm glow over the scene. The sky is filled with dark, dramatic clouds. The text is overlaid in the center of the image.

Mechanisms to encourage/require agency consultation

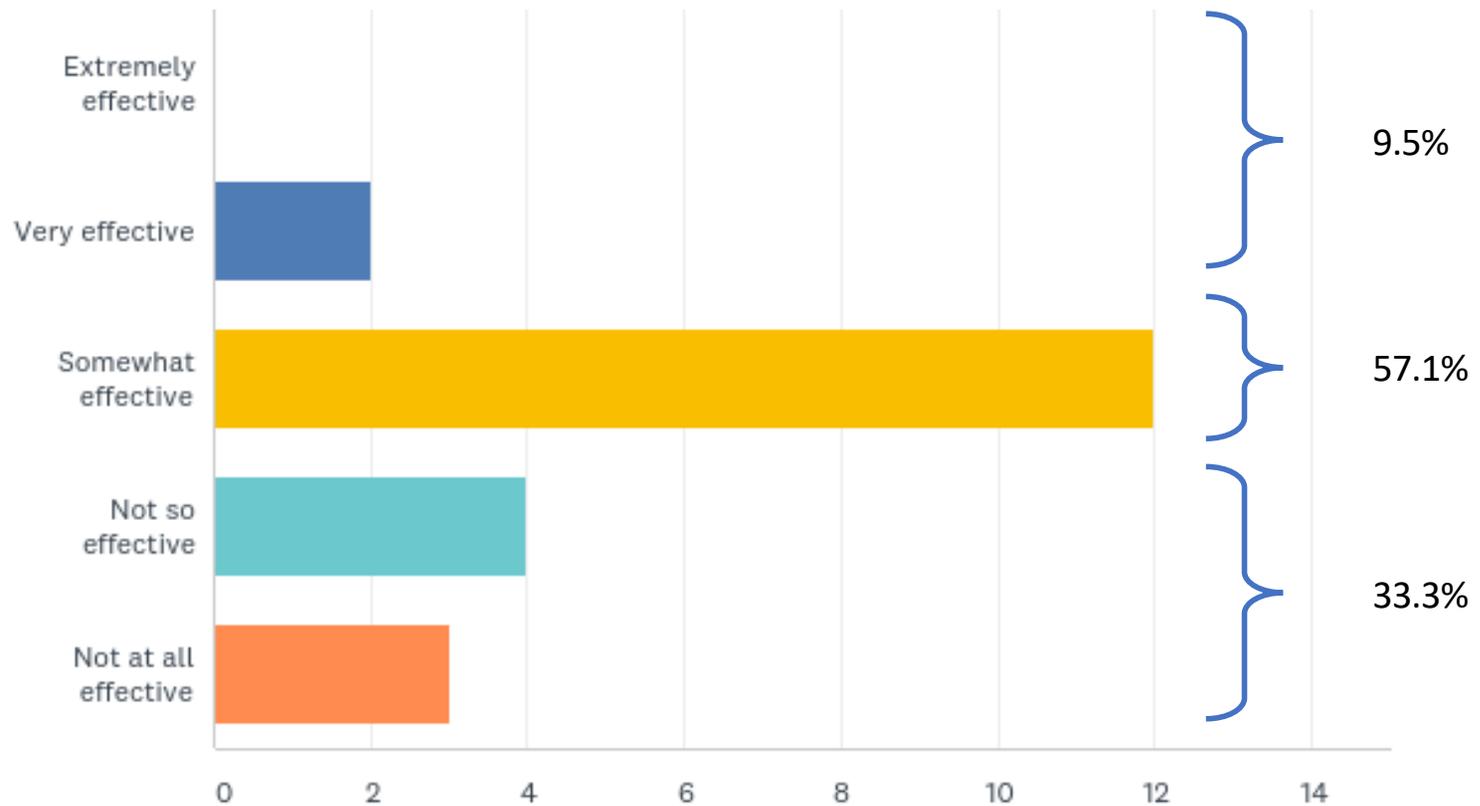
Does your state have regulatory authorities in place that require wind developers to consult with or secure approval from either the state fish and wildlife agency or another state agency on projects?

Answered: 39 Skipped: 2



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

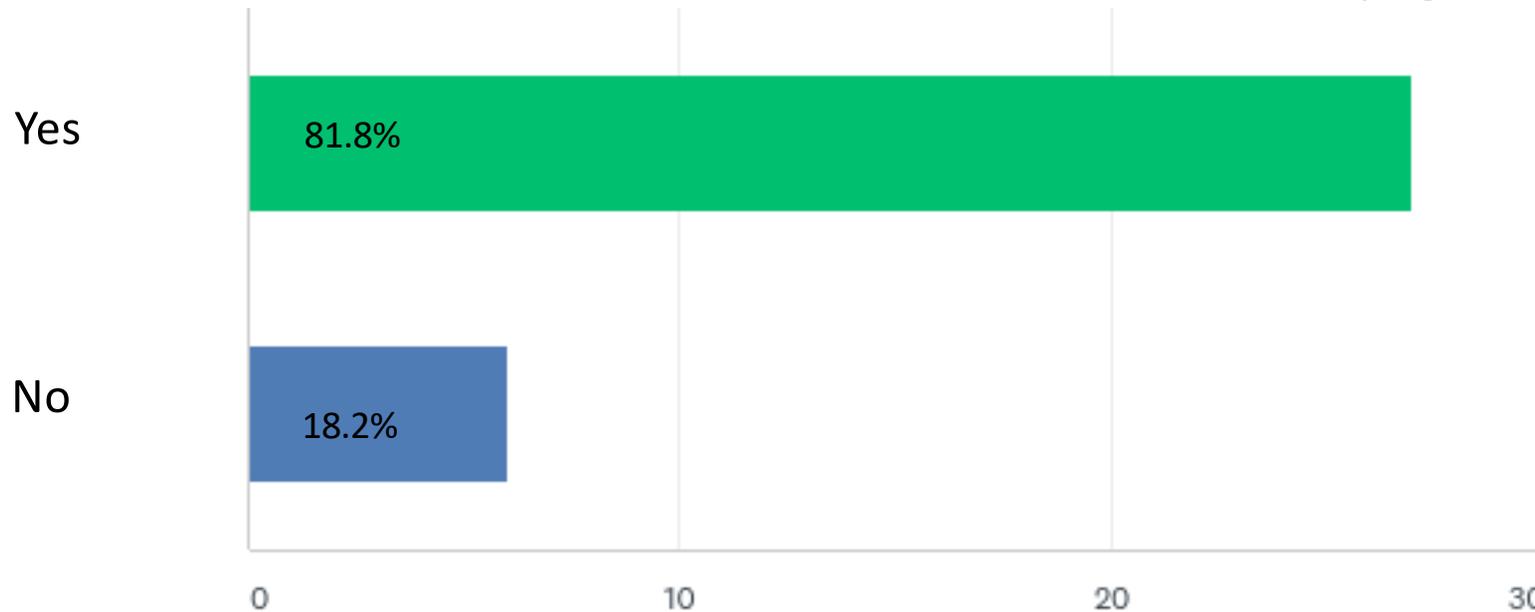
Answered: 32 Skipped: 9



Does your state have non-regulatory mechanisms or tools to encourage low-impact siting?

Answered: 39 Skipped: 2

Examples: State-specific wind siting guidelines, geospatial siting tools, outreach program



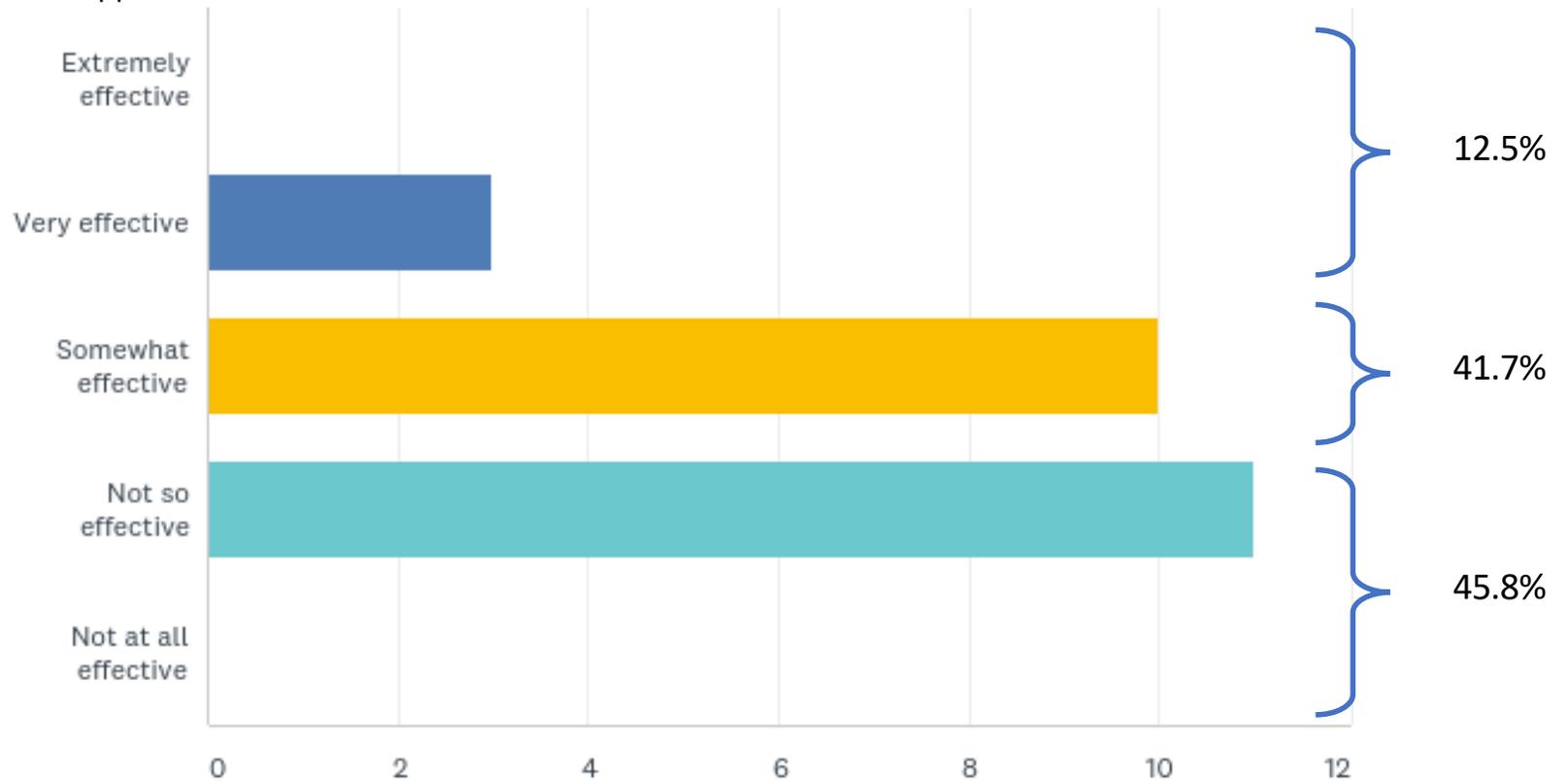
Does your state have non-regulatory mechanisms or tools to encourage low-impact siting?

Answered: 39 Skipped: 2

- 7 = State wind siting guidelines
- 7 = State guidelines on monitoring and/or study design
- 3 = State guidelines on impact minimization/operation
- 3 = Siting tool
- 1 = Gubernatorial executive order
- 1 = Cooperative agreement

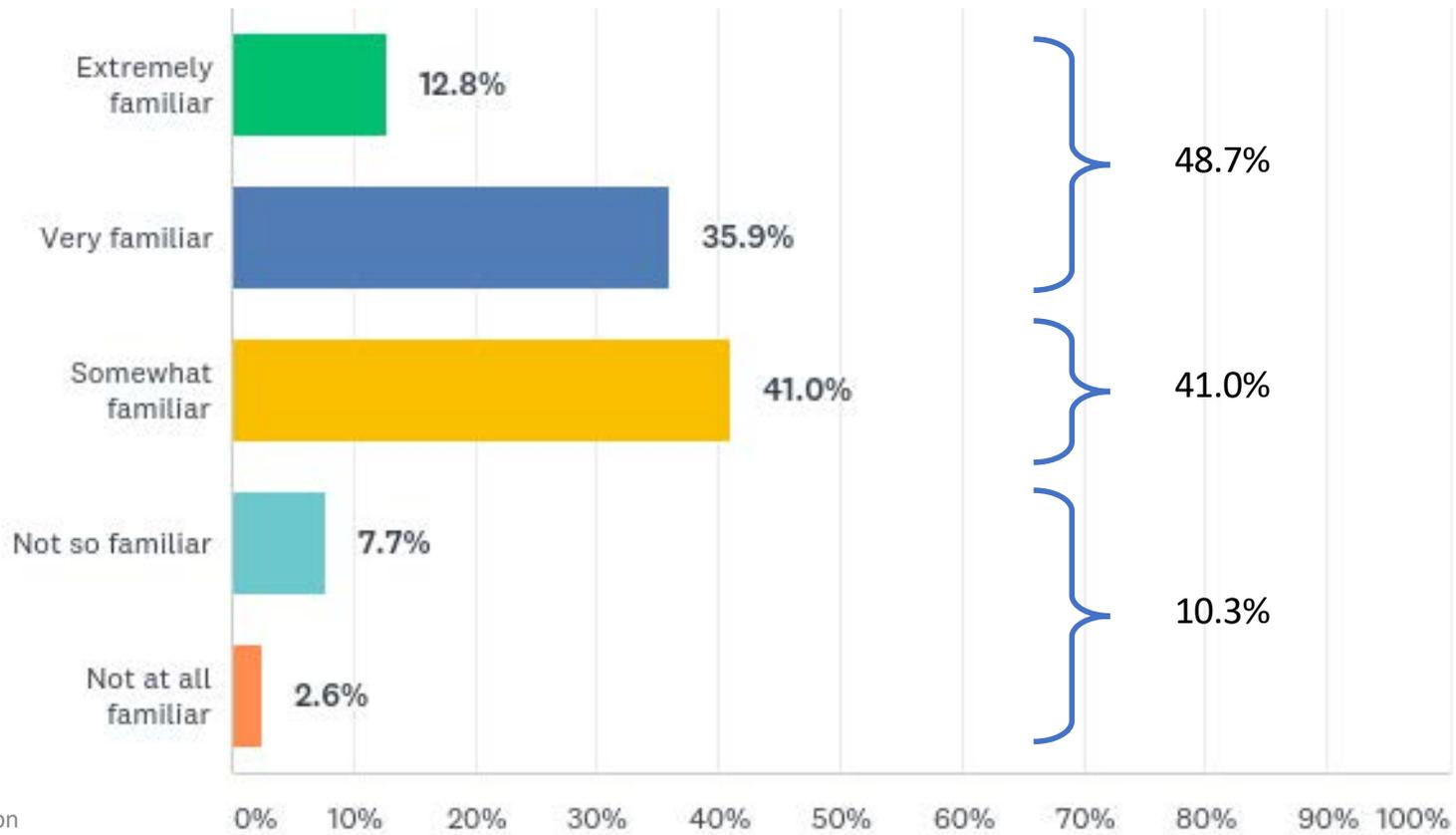
If your state has non-regulatory authorities, how effective are they at encouraging low-impact siting?

Answered: 33 Skipped: 8



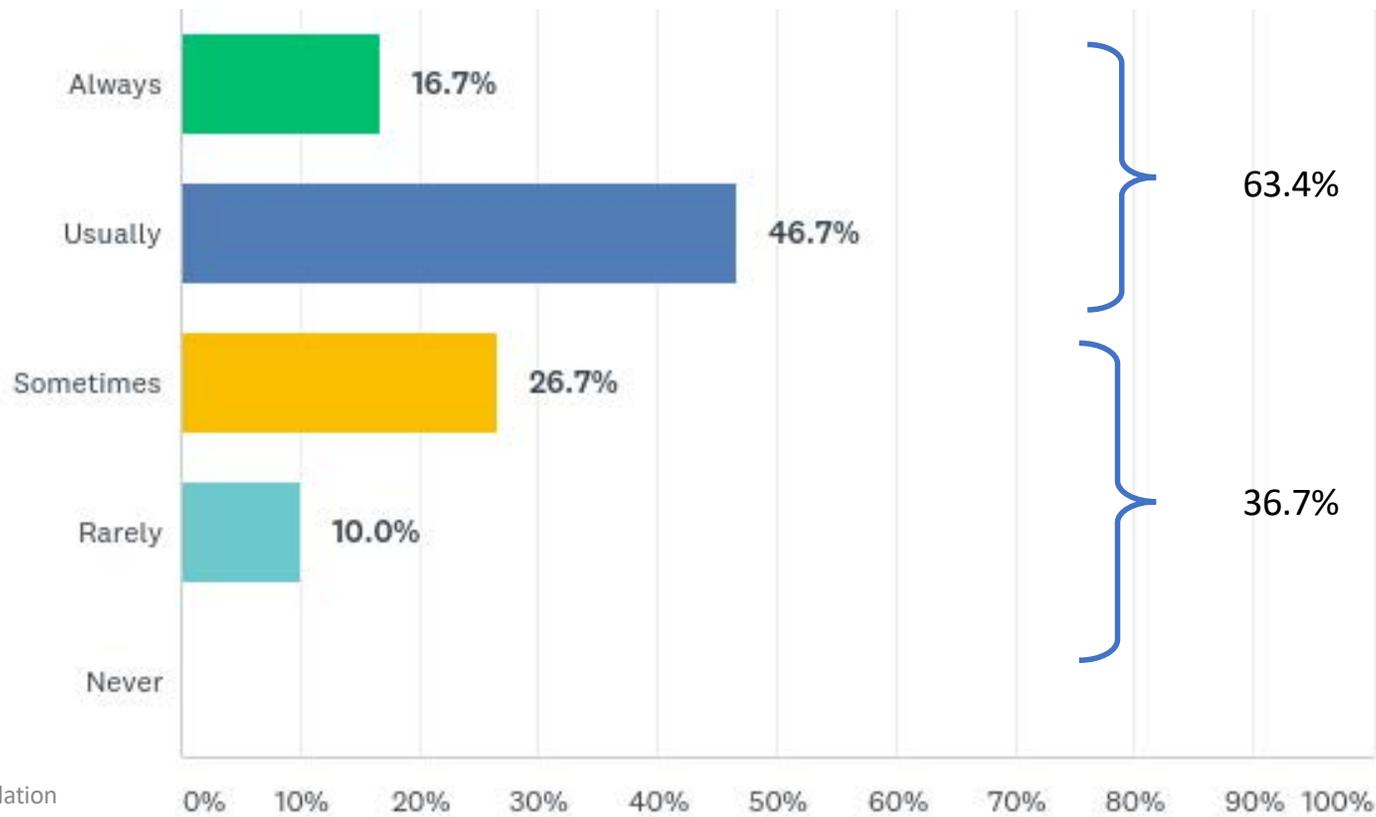
How familiar are you with the U.S. Fish and Wildlife Service's "Land-Based Wind Energy Guidelines" (WEGs)?

Answered: 39 Skipped: 2



How regularly do you think the wind industry uses the federal Wind Energy Guidelines?

Answered: 39 Skipped: 2



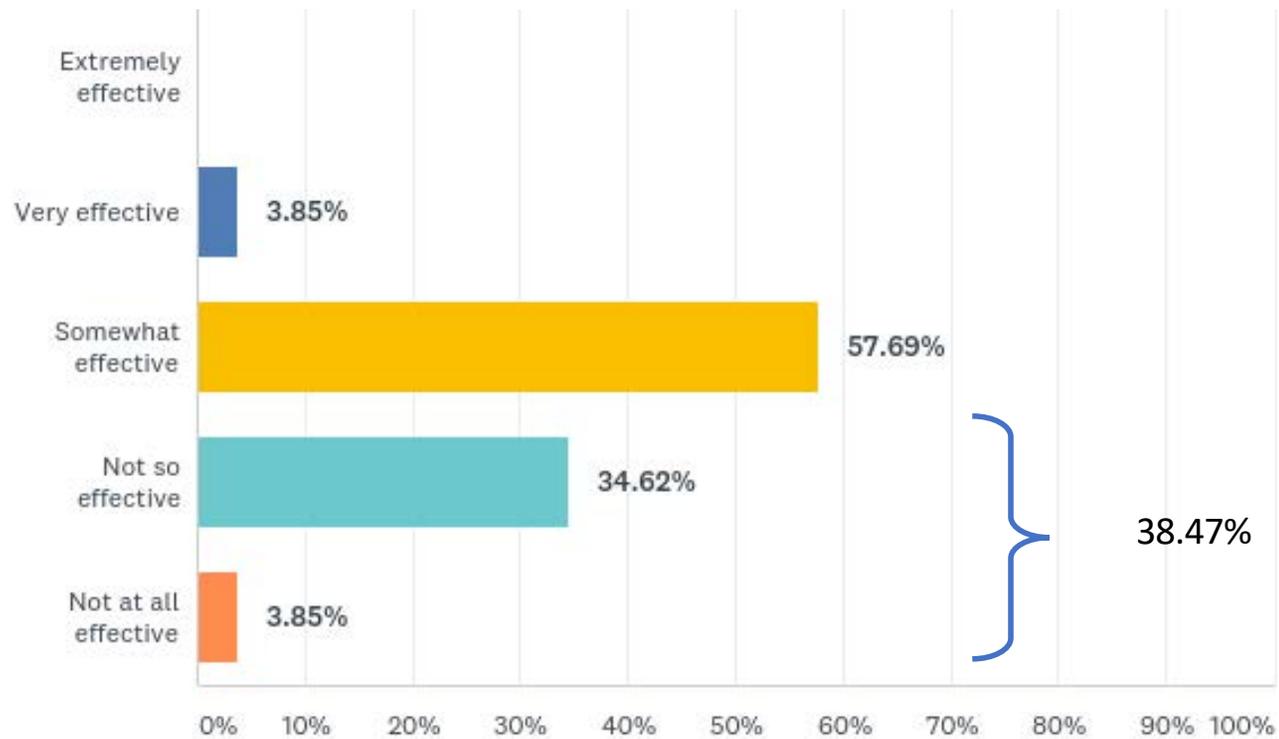
How regularly do you think the wind industry uses the federal Wind Energy Guidelines?

Answered: 39 Skipped: 2

- “some developers use them as a ‘check box’ that they completed all these steps outlined.”
- “Guidelines are not often used appropriately or are referenced but not actually followed.”
- “seen as an environmental due diligence process, but not a show stopper even when high resources levels of federally endangered bats exist in the area.”
- “they look for profitable wind first, and then afterwards figure out how to best address wildlife concerns without changing the site location.”
- “Often used but not appropriately.”
- “Some of the smaller projects and developers probably don't follow them as closely but I do not know of any that have skipped USFWS and state consultation entirely.”

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

Answered: 39 Skipped: 2



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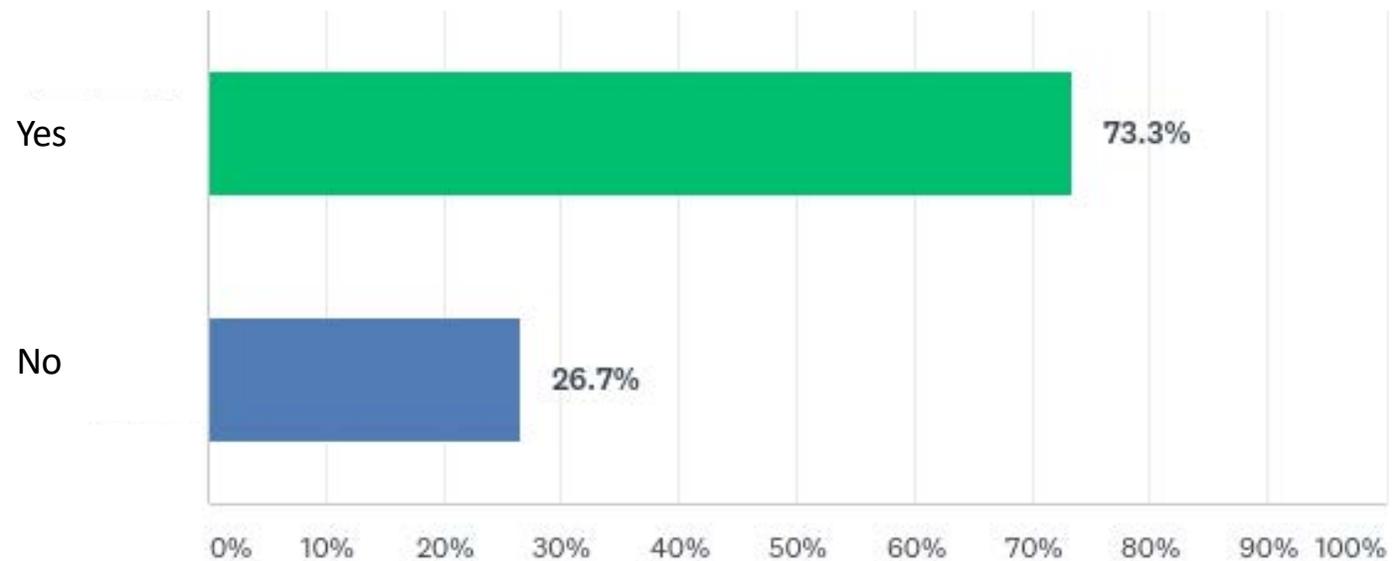
How effective do you think the federal Wind Energy Guidelines are at supporting low-impact wind siting?

Answered: 39 Skipped: 2

- “They would be more effective if followed – they appear to be frequently loosely interpreted by wind energy companies.”
- “The WEGs seem to include more recommendations to determine the risk of direct take of federal trust resources, and may not offer detailed-enough recommendations for engaging with states or quantifying the risks of indirect take/cumulative impacts to non-federal trust species.”
- “Industry definitely uses the WEG to address their project's collision impacts. But they don't seem to be using the guidelines for site selection (that seems to be driven mostly by proximity to transmission, substation, markets, and willing landowners) and not by known crucial areas for wildlife. I don't blame this on industry or the WEGs, but rather that states have not served these data up in a way where everyone knows they exist and in a way where there is buy in for their use by regulatory agencies and industry.”
- “I would say WEG's chief gain is laying out a process for companies to follow for due diligence. It may be helpful to purchasers of projects, in assessing which projects have less risk (mostly to endangered species).”
- “needs revision based on advances in science and technology.”
- “It seems that the WEGs require some consultation with USFWS for interpretation and implementation. The delays in potential eagle permit applications has deterred/delayed some developers from fully implementing the WEGs - it seems that some are not willing/able to delay projects to fit with the current permitting timeline with USFWS.”

Do you think changes to the federal Wind Energy Guidelines would improve siting outcomes?

Answered: 39 Skipped: 2



4 = They need to be more specific and/or regionalized

6 = They need to have a regulatory hook

Do you think changes to the federal Wind Energy Guidelines would improve siting outcomes?

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More specificity

- "some more specificity to hinder developers from using the WEG as a checklist, rather than a true tool to evaluate a site."
- "If changes could be made to be more specific to regional differences."
- "If the WEGs placed stronger emphasis on consultation with state wildlife agencies, and if state wildlife agencies [provided] state-specific guidelines, alongside crucial wildlife habitat information in the form of decision support tools, then yes I think we could be doing a lot better than we are currently."
- "may be useful to develop more regionalized guidelines."

Limitations to guidelines

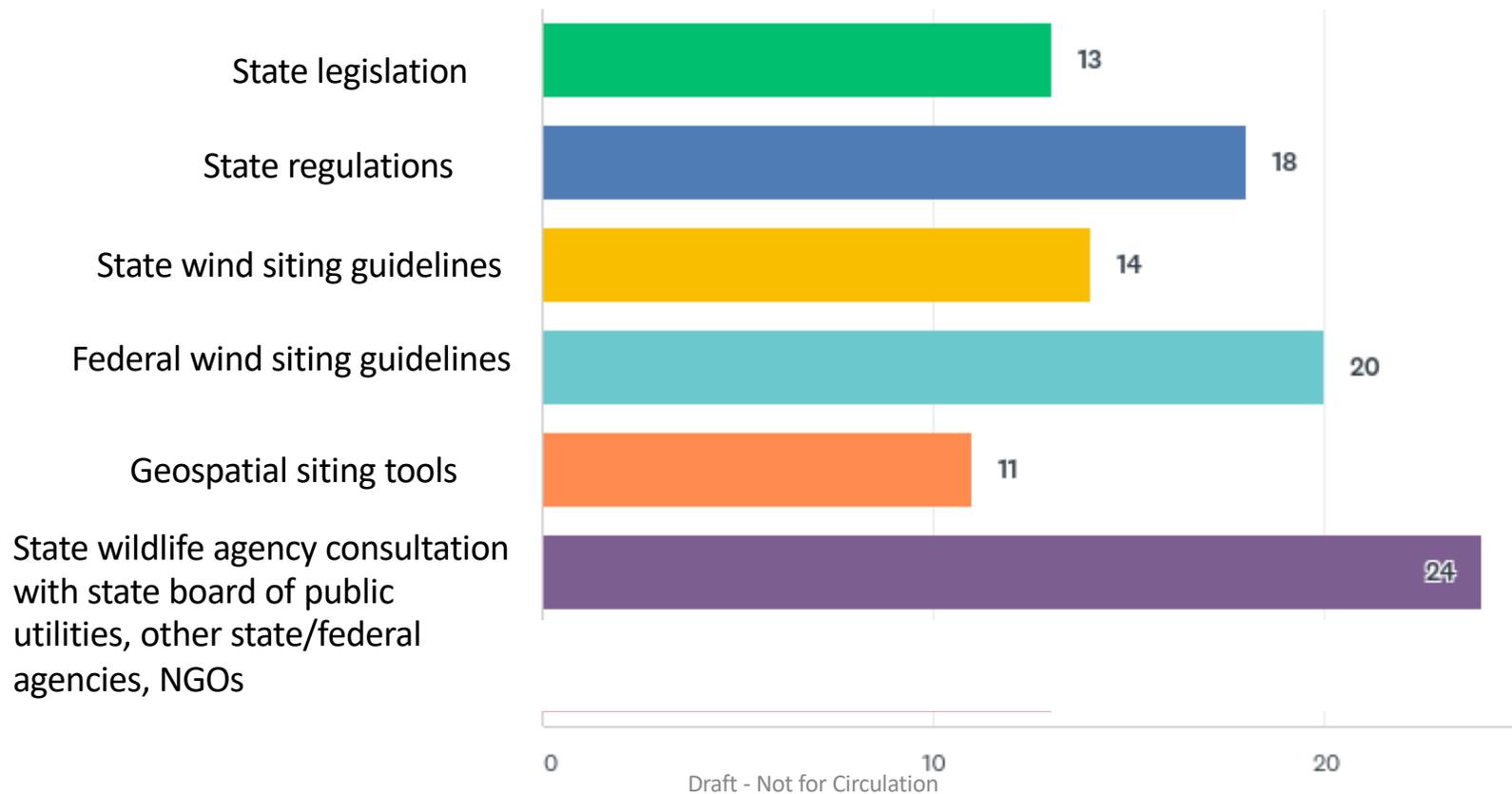
- "Only voluntary... developers not held accountable to use appropriately or change project accordingly."
- "Need to have state agencies incorporate them into their permit/approval/siting process."
- "As long as they are guidance with limited enforcement capability, and not regulations, they will continue to have some limitations and mostly effect small changes in design or layout of a site, not a wholesale shift to low impact areas."
- "further recommendations to consult with state wildlife agencies for impacts to habitats/species under states authority."
- "Yes, if they were required or at least more closely adhered to."
- "Guidelines, unless not referenced into a regulatory processes, would not likely to help."
- "as long as the guidelines are voluntary, there is always room for improvement."
- "Guidelines would need to be made more prescriptive or regulatory to improve siting outcomes."

Incorporate new science/technology

- "An update to include incorporation of new technological advances is needed but whether or not it will make a difference in the state is not certain."
- "Now that we have additional information on impacts, it should be possible to collaborate to identify those risks in such a document as well as appropriate siting/operational modifications/proven technology that would minimize risk."
- "I think we should incorporate the most recent studies to make the recommendations flexible for certain areas of the nation as new data becomes available."
- "if more attention is paid to cumulative impacts, fragmentation, and direct impacts on special habitats."
- Incentivize
- "only if there were incentives for wind developers to reduce impacts to environmental resources. The guidelines are good in that they give developers an idea of what to expect but since they are guidelines and not requirements, some developers use them as guidelines for what they need to document for the USFWS to show why they aren't avoiding resources instead of using the guidelines to help avoid resources."

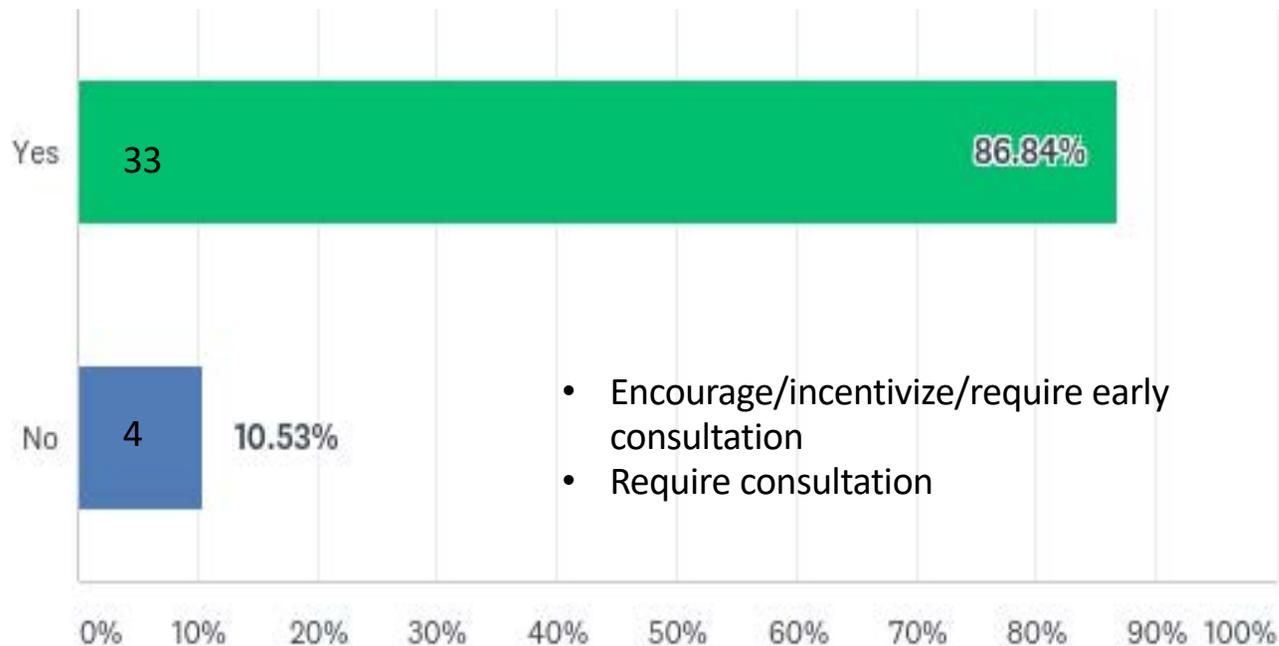
What mechanisms do you think have been most effective at ensuring early consideration of species and habitat considerations in wind siting?

Answered: 39 Skipped: 2



Do you think there are ways that early consultation with state wildlife agencies could be improved?

Answered: 38 Skipped: 3



Do you think there are ways that early consultation with state wildlife agencies could be improved?

Early consultation

- “more information from developers provided earlier in process.”
- “Via outreach to wind energy companies regarding the tools available to them to proactively avoid impacts to sensitive rare/threatened/endangered spp. and habitats.”
- “Somehow get companies to share shapefiles of their study areas before they have 80% of the land under control. Once they get that far along, they're locked in.”
- “By making early consultation a requirement would greatly improve siting and consultation with the state agencies.:
- “If more specific information about considered siting locations could be shared, we could provide better information to the wind companies about areas to avoid or minimize.”
- “Consultation in general really differs depending on who the developer is. And the definition of "early" also differs depending on the developer.”
- “If consultations were held prior to site selection and if agency recommendations were incorporated.”
- “Earlier coordination, study plan development/site surveys.”
- “Share potential infrastructure (turbine arrays, access roads, etc.) with the state agencies early, so that problematic areas can be dealt with prior to final permitting and public discussion of proposed farms.”
- “The earlier in the process we can be contacted the better.”
- “incentives for early consultation such as expedited reviews, if and where possible protection of early planning data, etc.”
- “Early consultations should be a standard operating procedure for wind developers. State agencies in Montana could collaborate to create one process and/or point of contact for early consultations.”
- “Early consultation isn't all that valuable when a poor site (= significant impacts predicted for wildlife) has already been chosen... early consultation could be improved if the states did a better job at serving up their data/information in a way that is most useful to industry.”
- “Agreeing upon a definition of early consultation i.e. when early consultation needs to occur - e.g. during siting phase. Consultation through the lead agency.”
- “Get over the fear of early concepts being open to public records requests and get that information to state agencies earlier. “

Do you think there are ways that early consultation with state wildlife agencies could be improved?

Need regulatory requirement

- “requiring some sort of prospectus/draft project outline as part of a regulatory mechanism would foster better cooperation.”
- “We are currently relying on the Fish & Wildlife Service to include us in the consultation process. Our agency would benefit from a state trigger that officially includes us in the process.”
- “Mandatory to consult; provide sufficient information with review of materials planned into schedule; by following our usual review coordination process instead of insisting on coordinating on their terms.”
- “early consultation goes best when it is a requirement of the wind permitting/regulatory agency; if it's built into their laws and rules then it creates predictability, consistency, and transparency.”
- “If there are regulations specific to wind energy, early coordination would play a more important role.”
- “make it more of a requirement as it is in everyone's best interest to deal with conflicts, suggestions, etc. early in the process”
- “By making early consultation a requirement would greatly improve siting and consultation with the state agencies.”
- “By making it a legal requirement to minimize impacts to the maximum extent practicable as recommended by the state fish and wildlife agency.”
- “It would exist were it legally required. Since there are no state permits required in relation wildlife laws and wind energy development, there is little reason for wind energy developers to consult directly with state wildlife agencies both early in the process and regularly throughout the process.”
- “If it was required or perhaps made an industry BMP to work with F & W agencies at the scoping phase.”
- “state requirements to be included early in the process.”
- “Legislation or State permitting agencies should require developers to consult with state wildlife agency.”

Summary

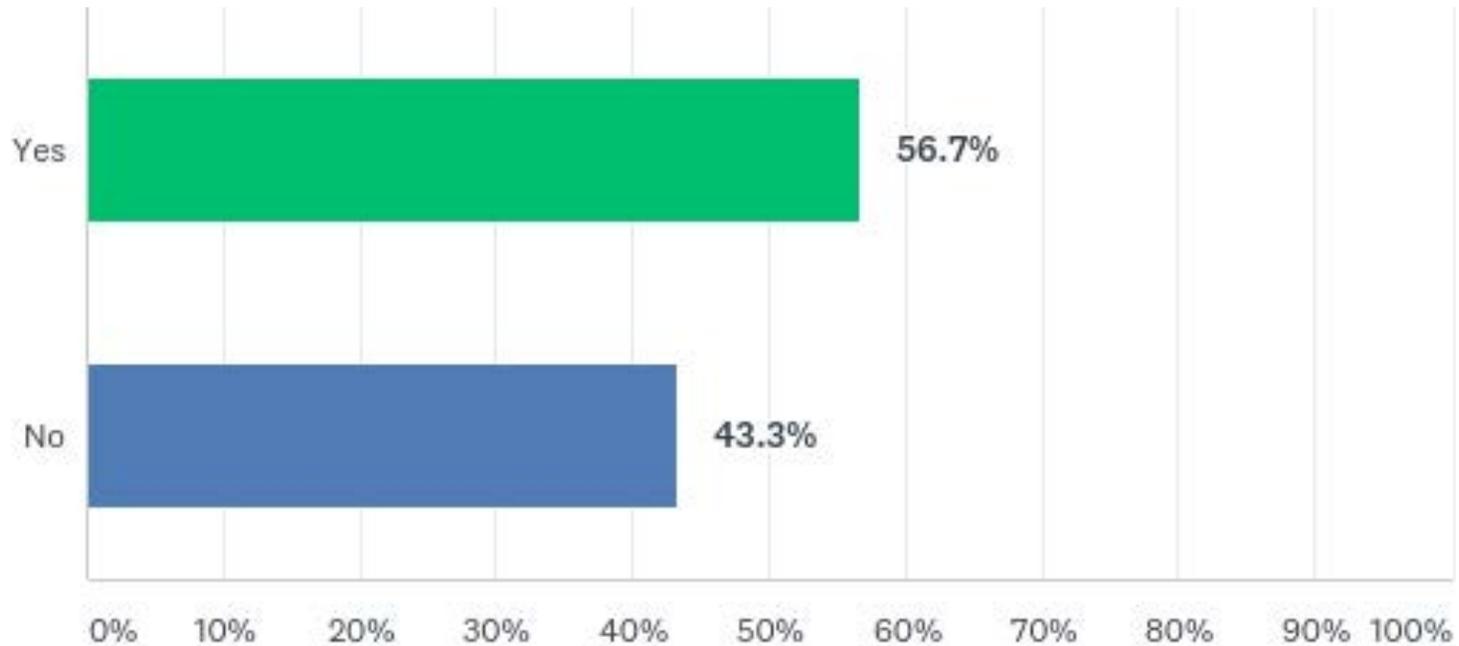
- Many states have authorities that require developers to consult with a state agency – such as the BPU or wildlife agency – but no wildlife agencies have regulatory authority.
- Fewer than 10% of states feel that these regulatory authorities are effective.
- Over 80% of states have non-regulatory mechanisms to encourage consultation, including state guidelines for siting and/or monitoring.
- Only 12% of states feel that these non-regulatory authorities are effective.
- 49% of states are very familiar with the federal Wind Energy Guidelines. There is a lot of opportunity to acquaint wildlife agencies with the WEGs.
- Over 60% of states believe that the WEGs are used always or usually and ~4% of states believe the WEGs are very effective.
- Over 70% of states believe the WEGs could be effective if there were changes to their substance and/or application.
- States believe that the most effective mechanisms for improving siting are 1) requiring other agencies, such as BPUs, to consult with the wildlife agency; 2) improved federal wind energy guidelines; and 3) state regulations.

A photograph of two grouse birds in a grassy field. One bird is in flight in the upper right, showing its wings and tail. The other bird is on the ground in the lower left, facing right. The background is a soft, out-of-focus green field under a hazy sky. The text "Access to Science" is centered over the image.

Access to Science

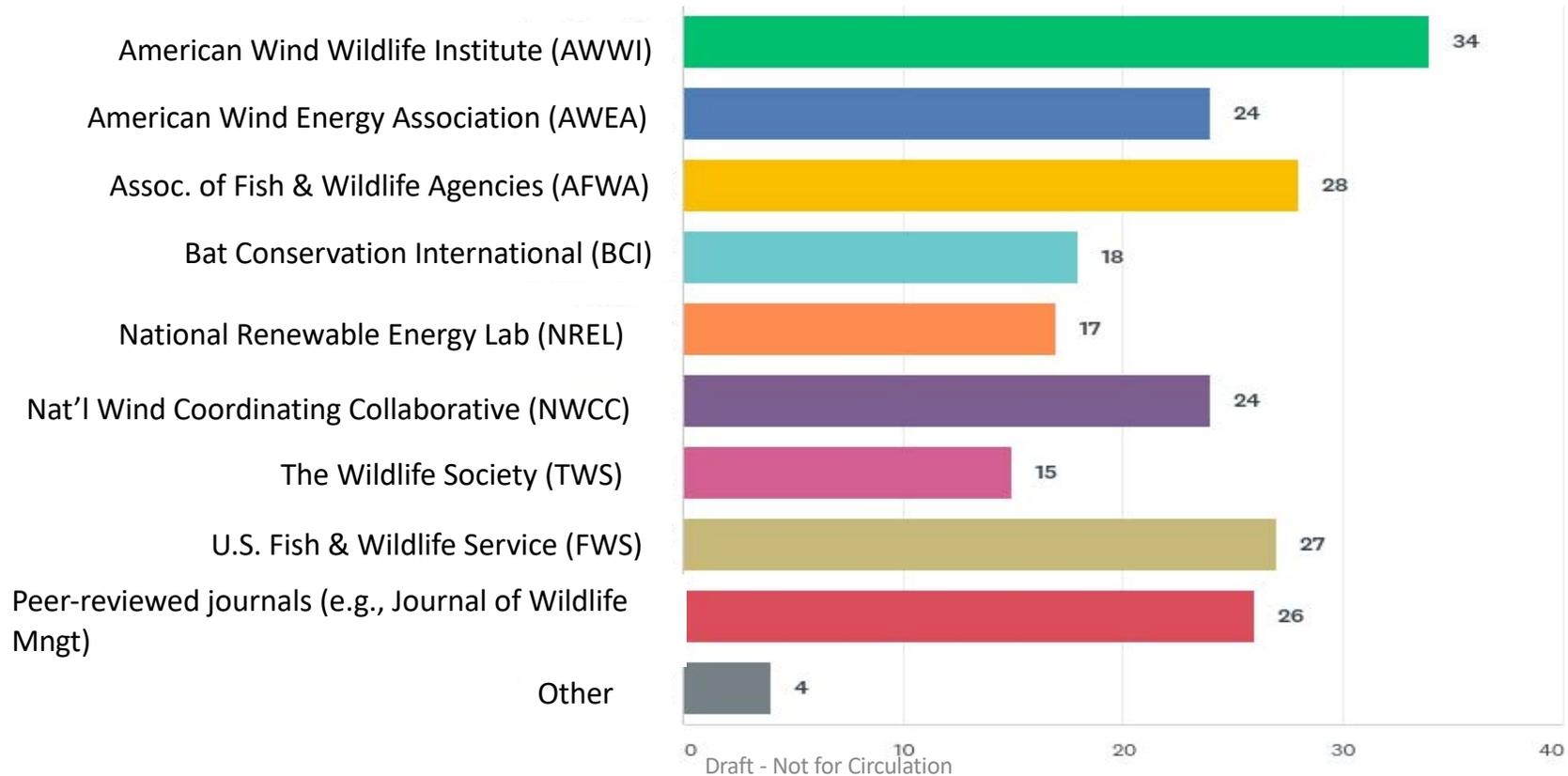
Do you feel that you have access to the best available science on the impacts of wind development on wildlife and habitat?

Answered: 38 Skipped: 3



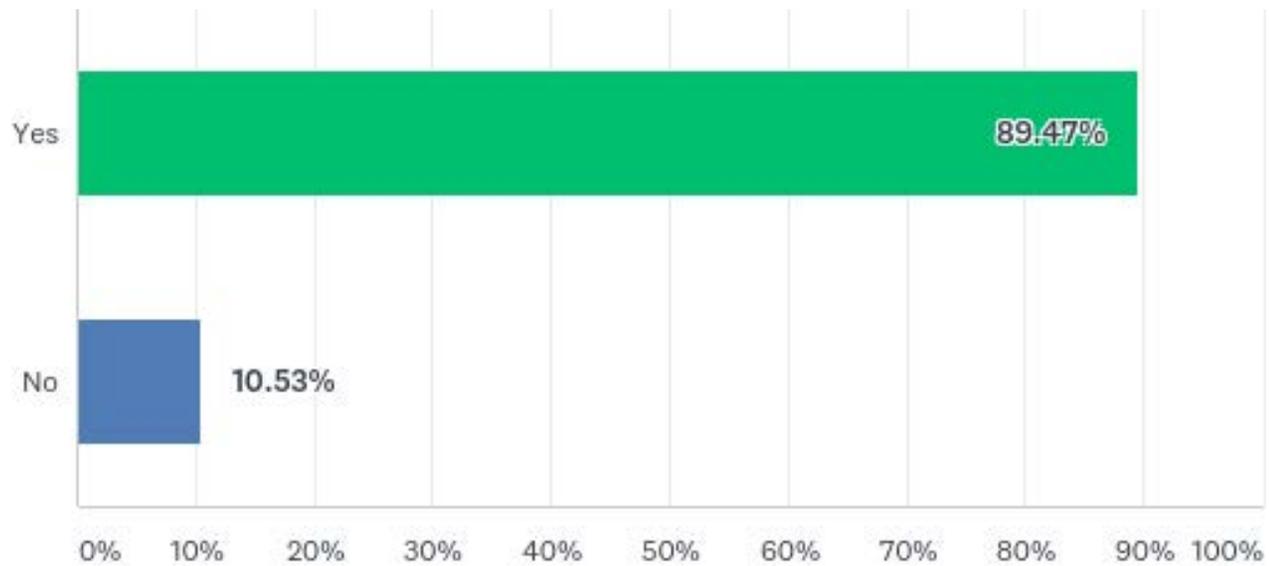
From what sources do you receive information on wind-wildlife science?

Answered: 38 Skipped: 3



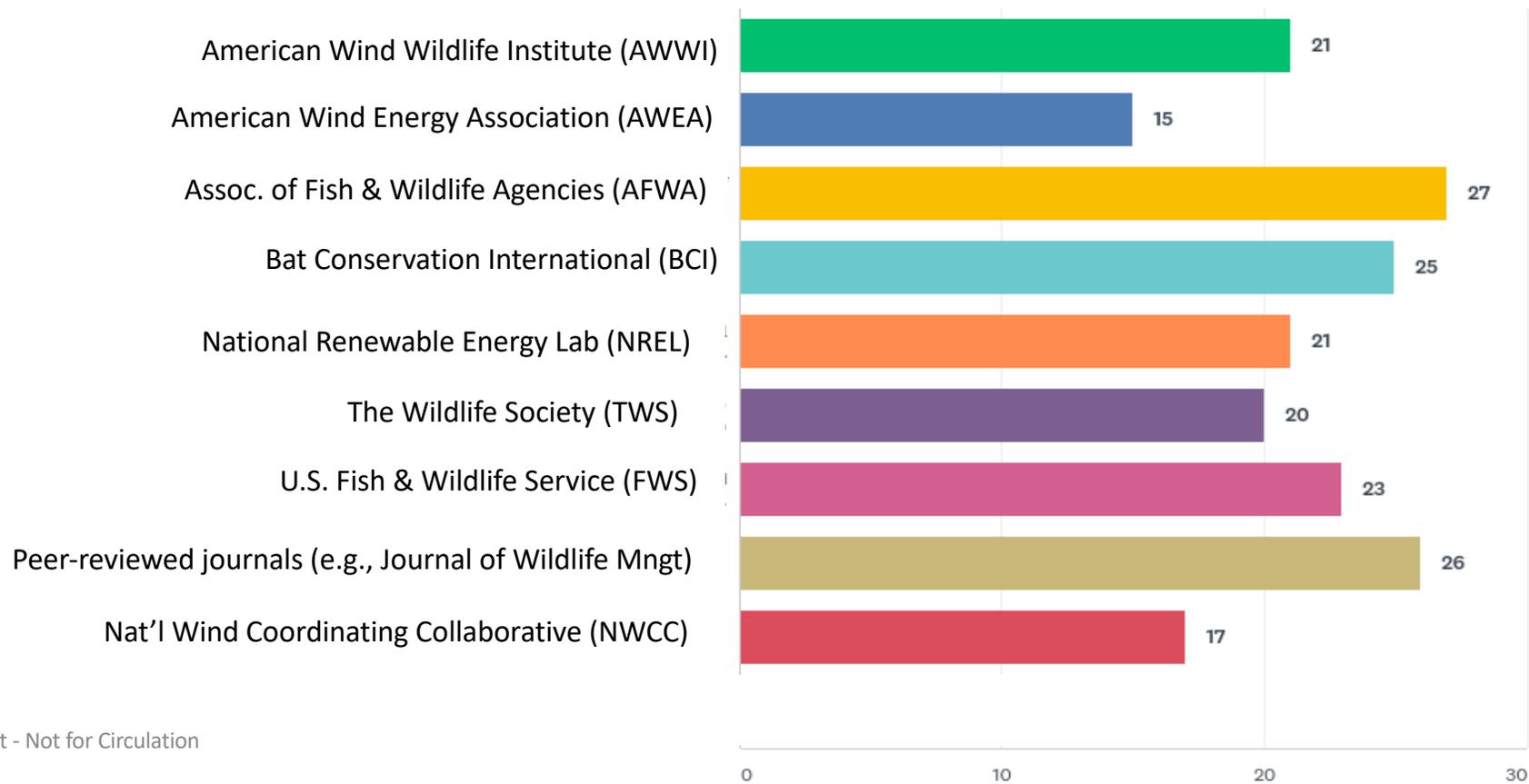
Would you be interested in receiving more regular updates on wind-wildlife science?

Answered: 38 Skipped: 3

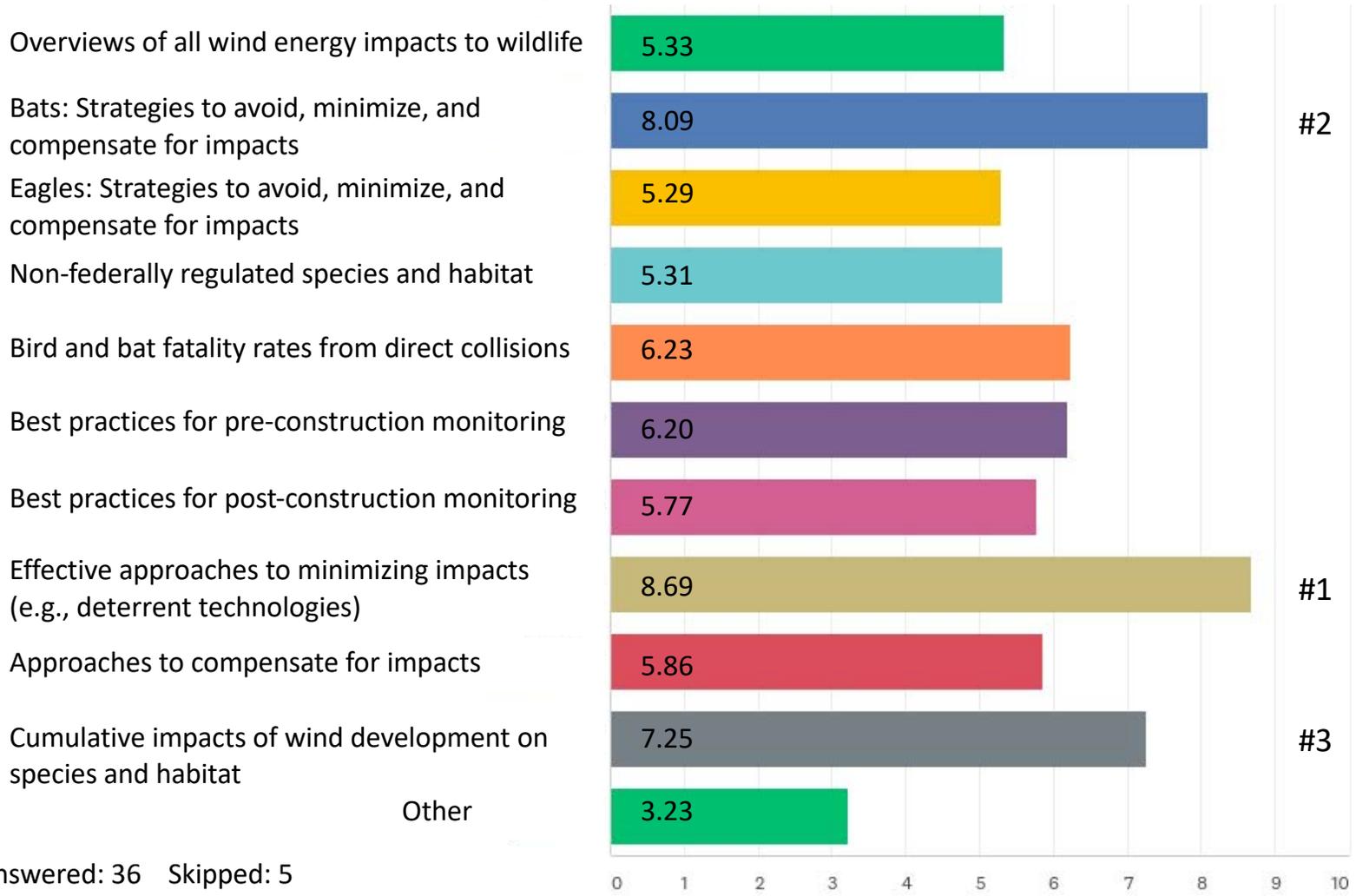


If you would like more regular updates on wind-wildlife science, from what sources would you like to receive this information?

Answered: 36 Skipped: 5



What are your greatest wind-wildlife science needs?



Answered: 36 Skipped: 5

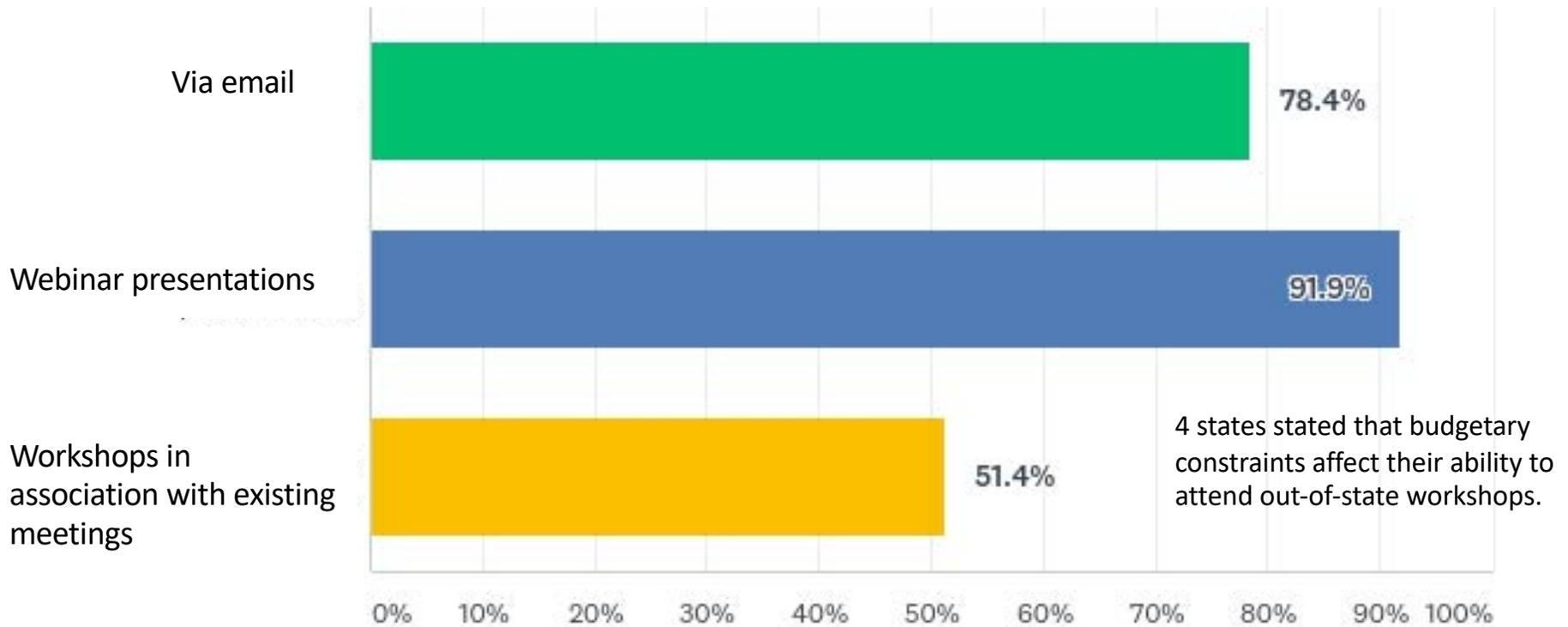
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What are your greatest wind-wildlife science needs?

- “INDIRECT impacts to species mammals, birds, herps, inverts) and habitats (woodland, grassland, and wetland).”
- “The best estimators.”
- “we need to pivot away from the emphasis on pre-construction monitoring. We know enough already. What we really need is population estimates and migration studies for bats and birds (including raptors) so that we can refine our siting guidelines, and refine our mitigation thresholds.”
- “look more closely at better pre-construction and post-construction practices and...work out better predictive pre-construction work. Industry is so dedicated to using existing survey methods and refusing to consider other methodology while concurrently arguing that the work they are doing is ineffective and not worth the cost. Temporal distribution of fatalities and work to connect pre-construction data with post-construction fatalities is generally dismissed as not useful but that is in large part due to a refusal to look at alternatives.”
- “Effective adaptive management strategies; evaluate impacts based on siting and technology differences between facilities.”
- “Noise impacts of turbines on breeding birds and vibration on small mammals- set-back distances to avoid these impacts.”
- “There is a bit of a disconnect between well-understood pre-construction surveys (especially for bats) and how to use that information to improve siting. So, there is less of a need for more monitoring, but rather a better use of that data to minimize impacts.”
- “Impacts to big game species.”
- “Measuring displacement behaviors of birds.”

How would you prefer to receive additional wind-wildlife science?

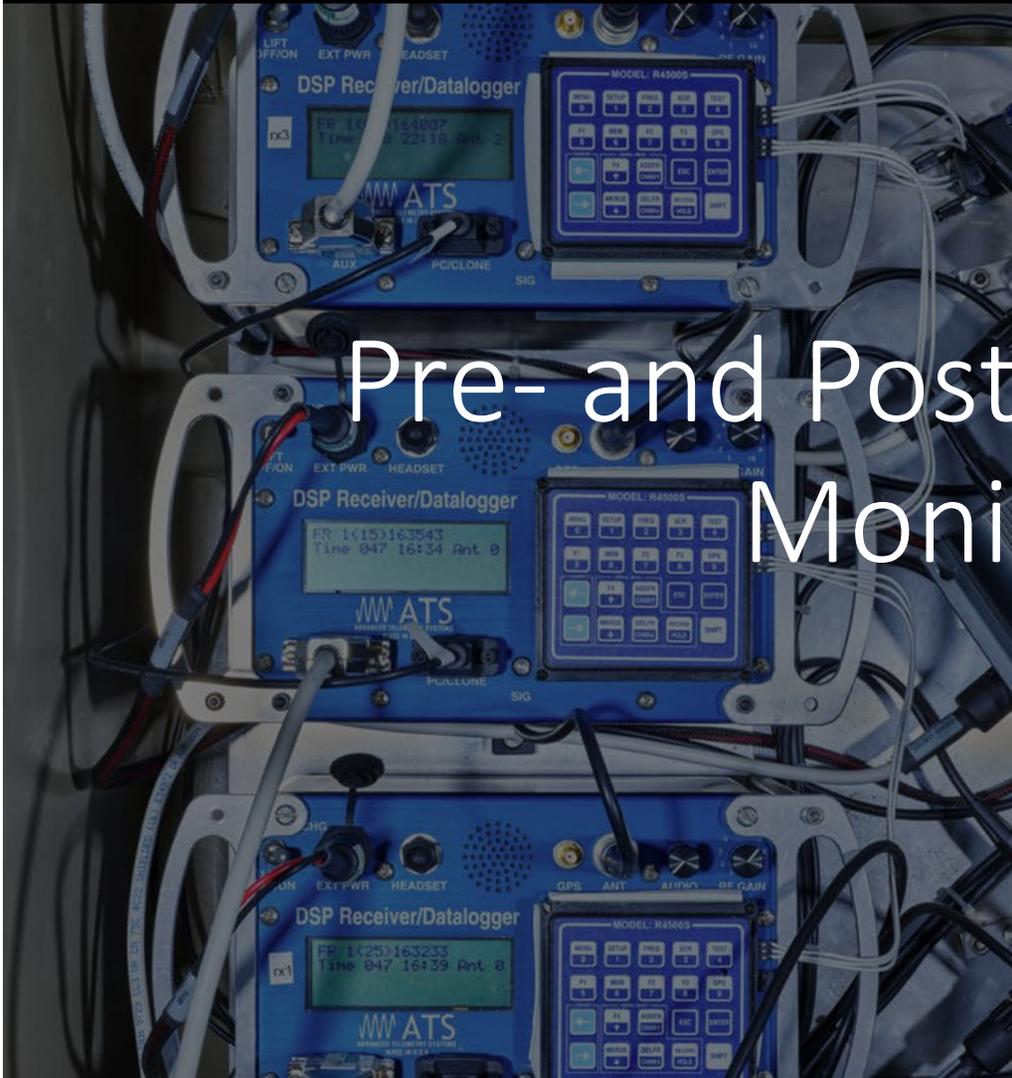
Answered: 37 Skipped: 4



Summary

- Wildlife agencies have access to wind-wildlife science, but the vast majority of agencies would like more information.
- Agencies are most interested in additional science on: 1) post-construction 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.
- Agencies are most interested in this information via email or webinar.

Pre- and Post-Construction Monitoring

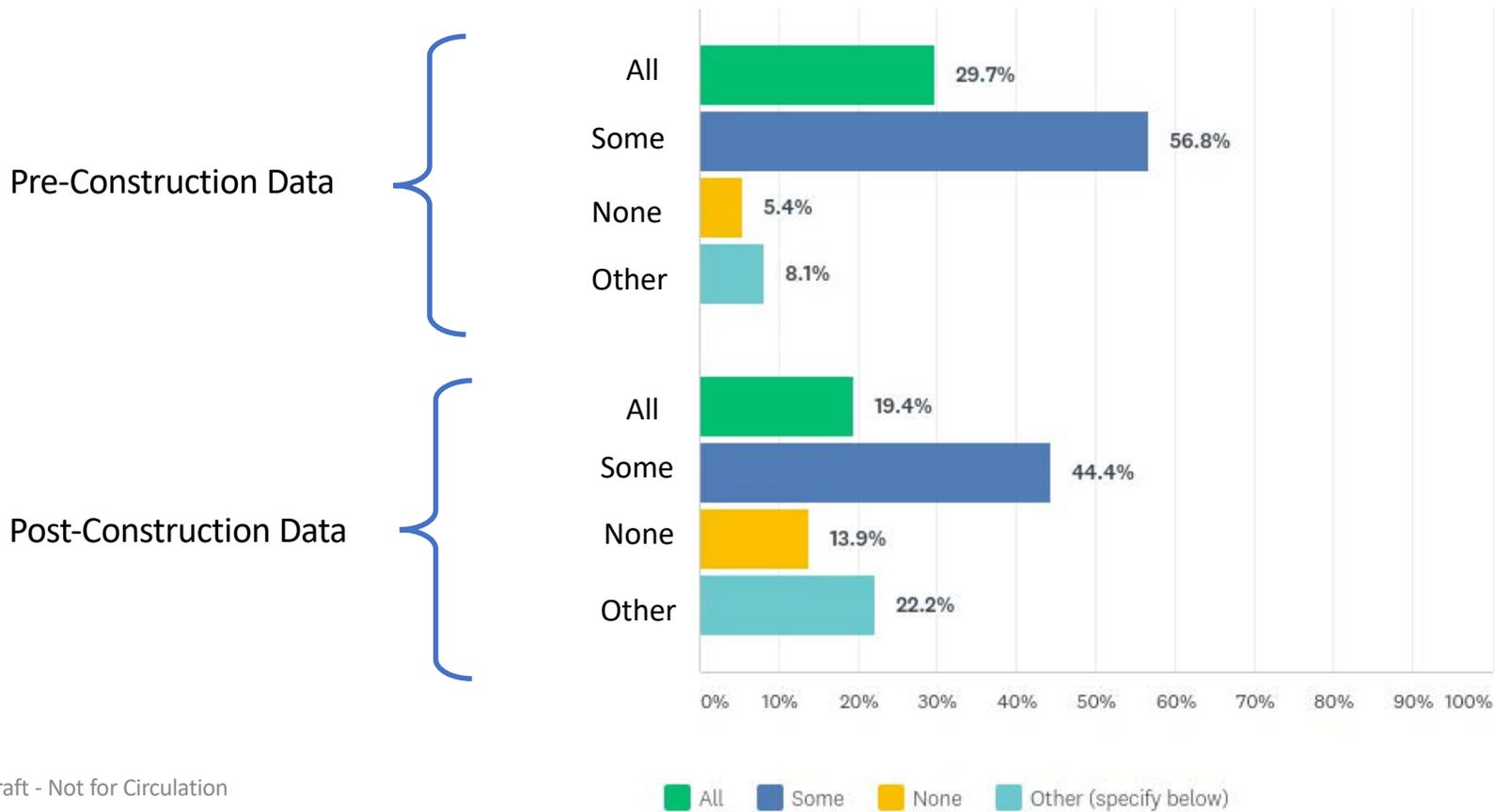


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Photo credit: National Audubon Society

How much pre- and post-construction wildlife monitoring data do developers share with your agency?

Answered: 37 Skipped: 4

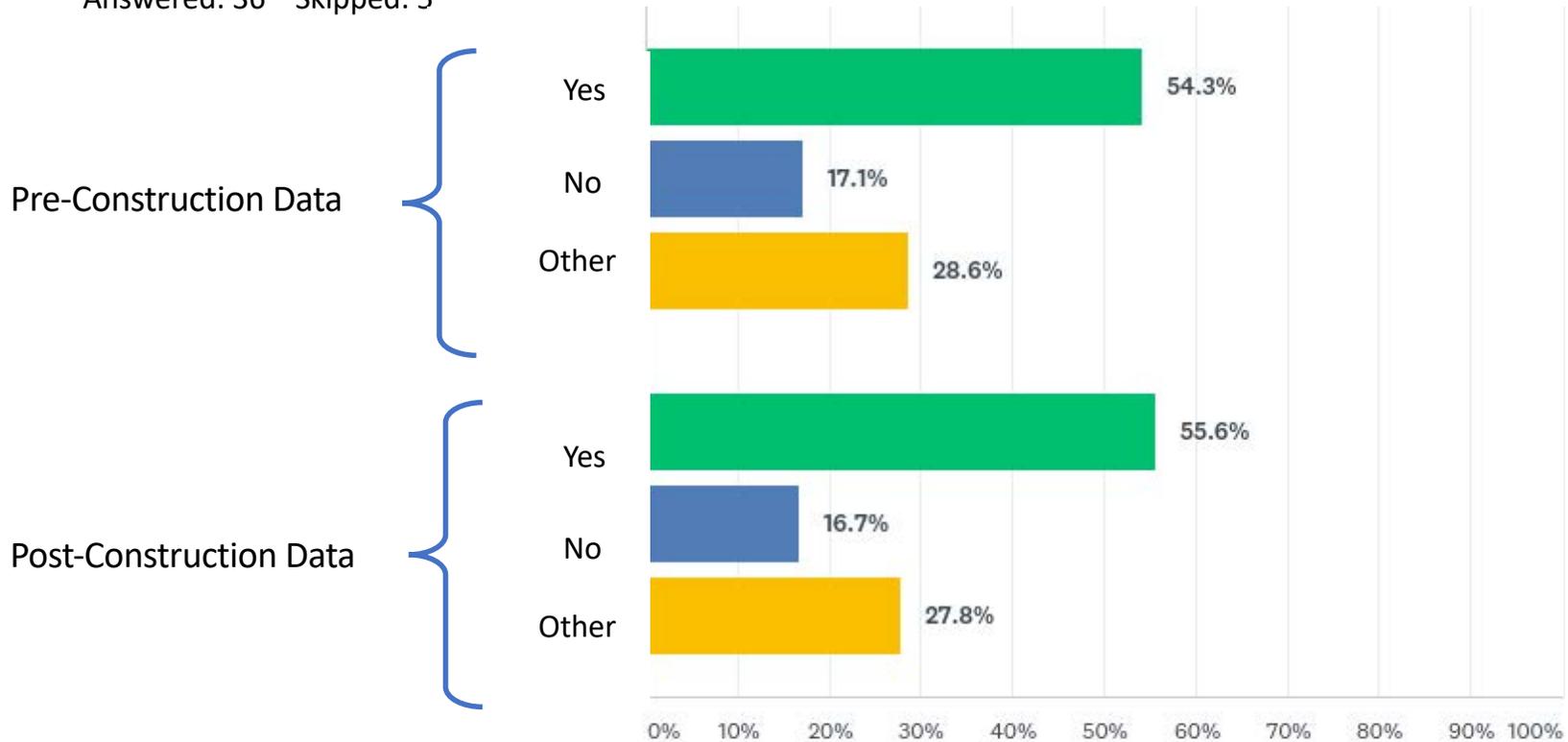


How much pre- and post-construction wildlife monitoring data do developers share with your agency?

- “Some monitoring data is shared by some companies, however typically that is in the format of a presentation during a meeting. Copies of the summarized information may not be provided to the agency for consideration in our final review. Few companies share any post-construction monitoring data with us.”
- “Poor, not meaningful data.”
- “They should be sharing all, that is what we have asked for in the past with the prelim studies and reports that are part of their permits.”
- “For pre-construction this varies depending on the company. Some claim to be sharing all information, but you never know for sure.”
- “Rarely share pre-construction data; only once I recall. There are no post-construction data for Louisiana. They have been hesitant to share post-construction data from other states.”
- “We ask for the raw data but never receive it.”
- “Pre-construction greatly depends on the consultant. Some want to meet to discuss data while others do not contact me. Post-construction varies between some and none although some is a stretch with the quality of data.”
- “It depends of the company and if they have permits issued... that requires such.”
- “We get it eventually, but not always in a timely manner.”
- “We do see pre-construction data but these are almost always summary data with some level of detail withheld. They usually are supposed to share post-construction fatality data but often limit what we receive.”
- “If the developer doesn't give the information to our agency the [USFWS] will usually send it to us. The one exception would be any monitoring information that might contain proprietary information.”
- “Post construction data is only sporadically shared, and we rarely, if ever, see final reports or bird-bat conservation plans.”
- “Only through becoming involved in the state utility commission cases were we able to get agreements that the companies would share mortality reports with us. In several of those cases, the post-construction mortality monitoring methods were not even a point of agreement.”
- “Some do not collect these data if not required; pre-construction "monitoring" mostly just means information on what is at the site currently.”
- “Somewhere between "some" and "none"; often only interact with developers during pre-construction planning.”
- “Summary reports, not raw data.”

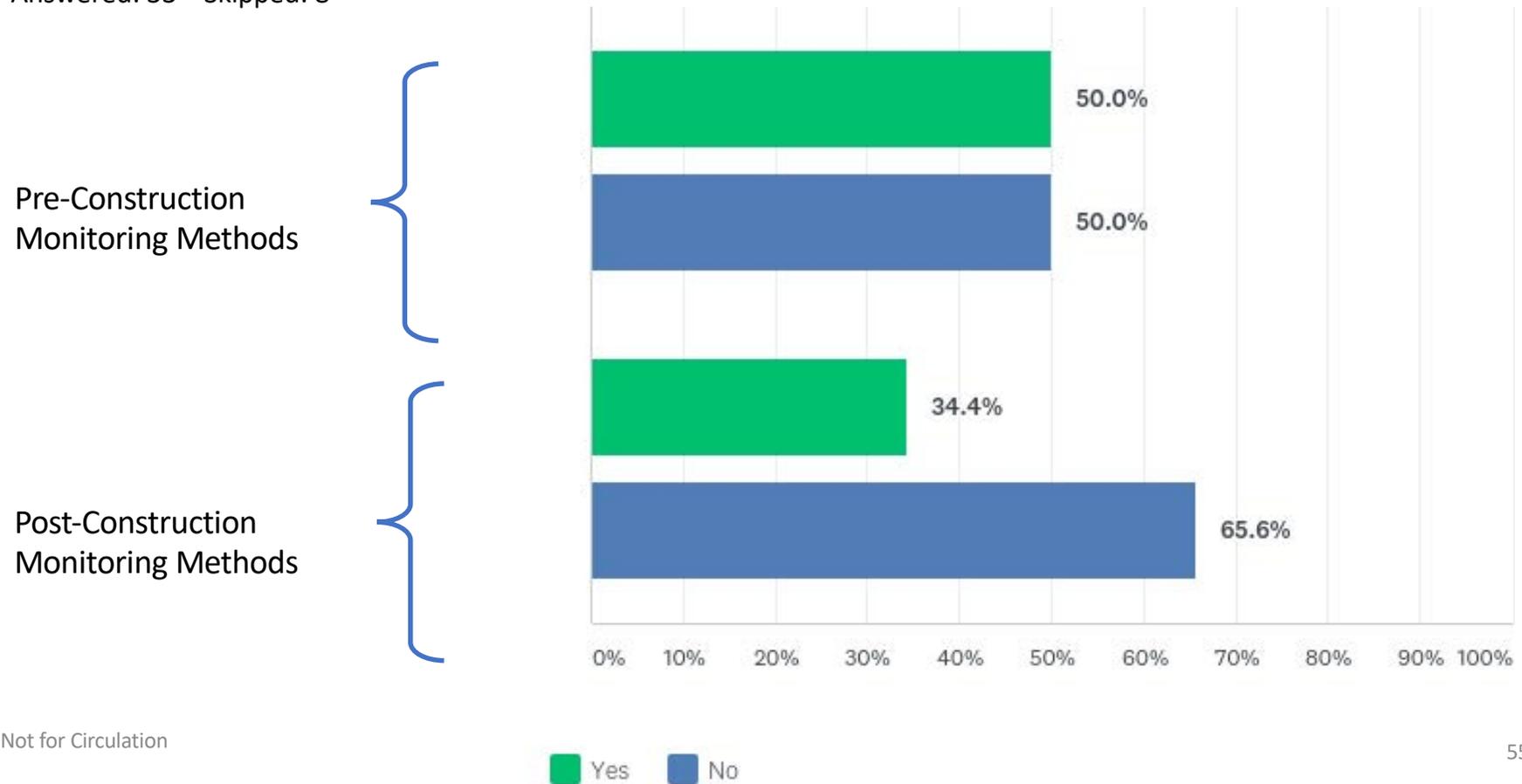
Do you think the pre- and post-construction monitoring data collected by developers is helpful for informing siting/regulatory decisions?

Answered: 36 Skipped: 5



To your knowledge, do wind companies use consistent pre-and post-construction monitoring methods?

Answered: 33 Skipped: 8



Summary

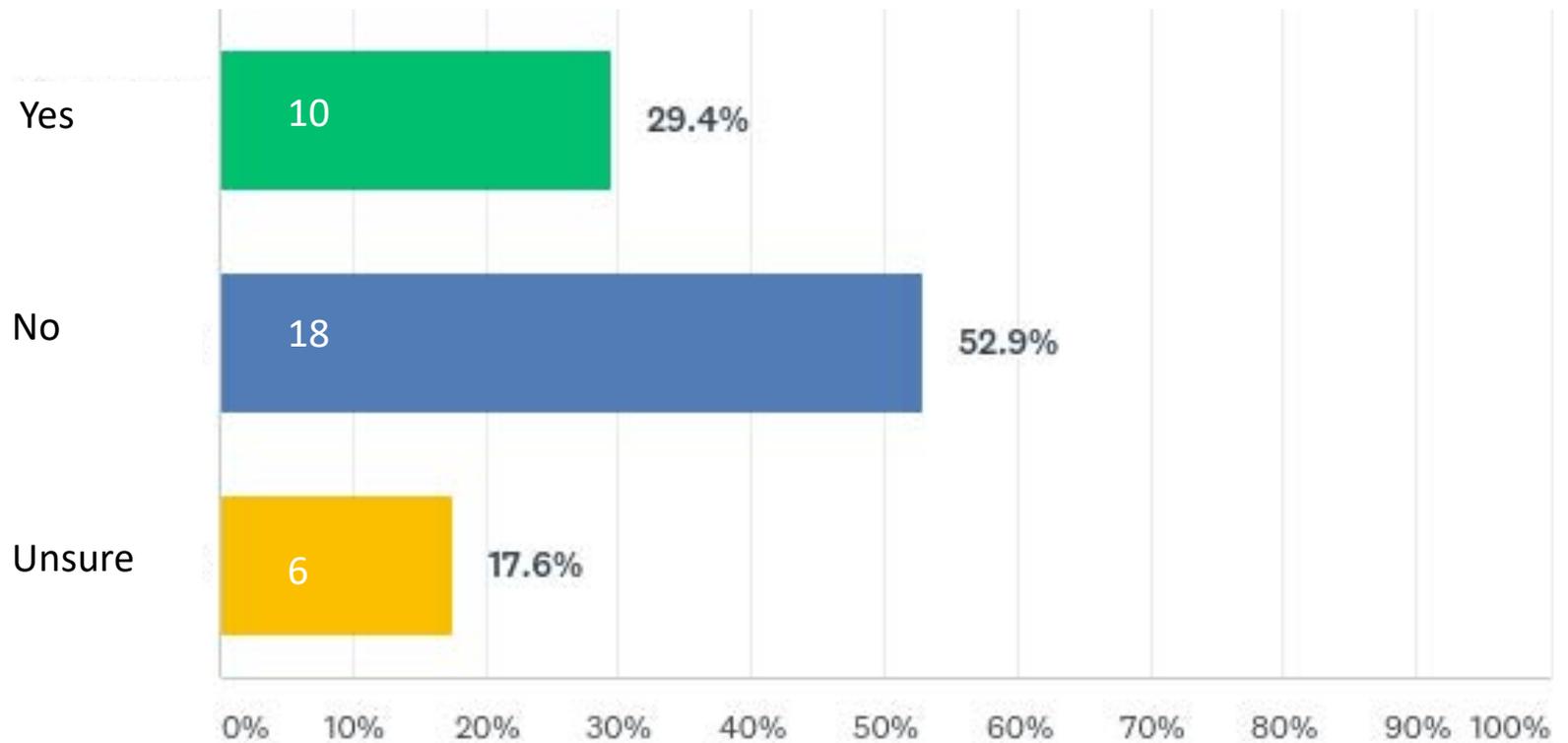
- States do not feel they are getting the majority of pre- and post-construction monitoring data
- They do feel that this information is helpful for informing siting and regulatory decisions
- There is a lot of opportunity to improve pre- and post-construction monitoring protocols

A photograph of a wind farm in a field with many birds flying in the sky. The image shows two wind turbines in the foreground, with a vast field of golden-brown crops in front of them. In the background, there are rolling hills and mountains under a clear sky. A large number of birds are flying in the sky, creating a dense pattern of small dark shapes. The overall scene is a mix of natural and man-made elements.

Compensation – Required and Voluntary

Are wind projects in your state required to compensate for impacts to species and/or habitat (other than through ESA and 404)?

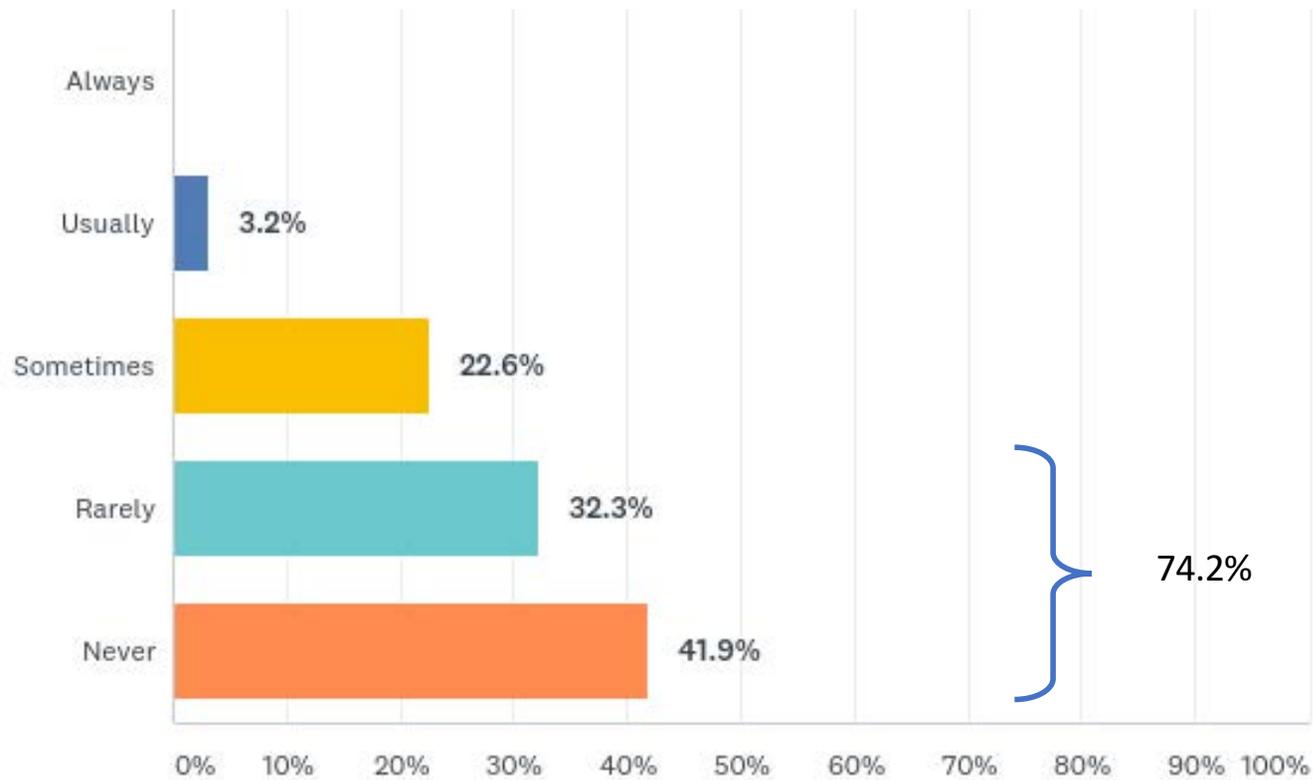
Answered: 33 Skipped: 8



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Are wind projects in your state voluntarily providing compensation for impacts to species and/or habitat (other than through ESA and 404)?

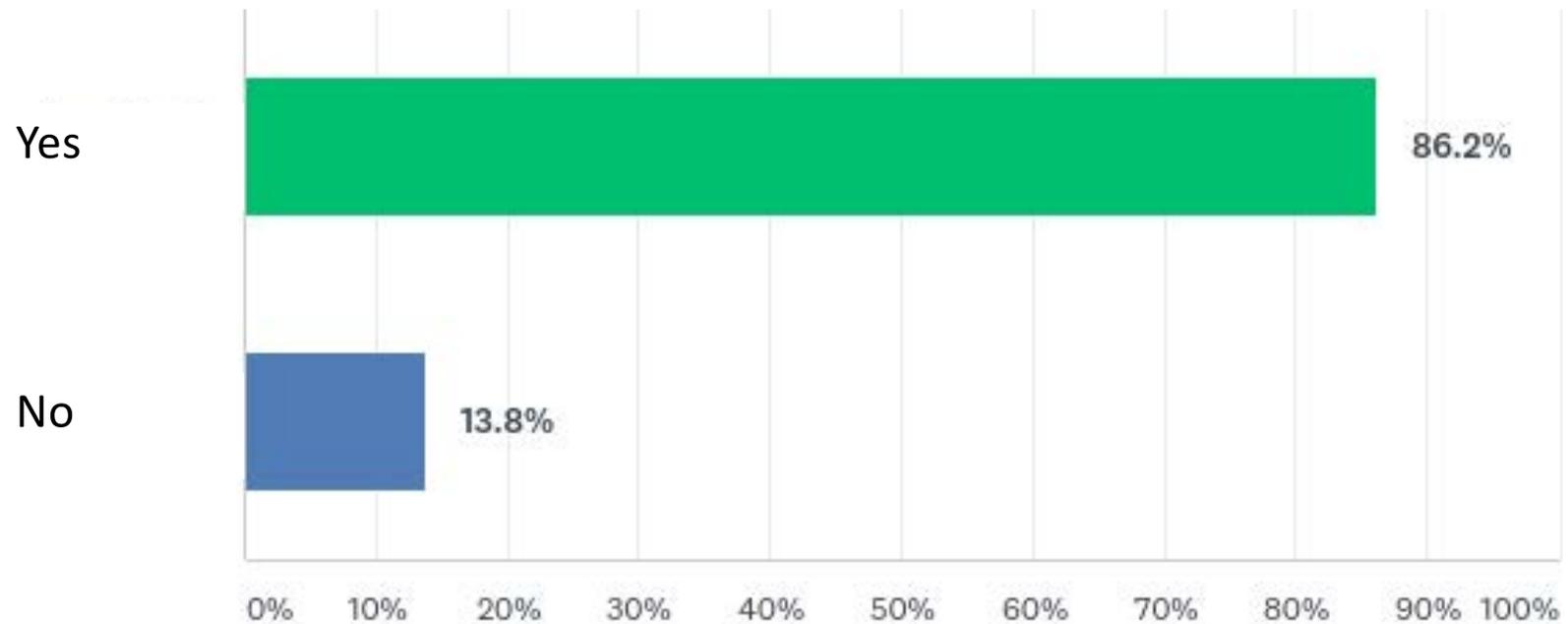
Answered: 37 Skipped: 4



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Is there an interest in or opportunity to develop or further advance voluntary compensation programs in your state?

Answered: 37 Skipped: 4



Is there an interest in or opportunity to develop or further advance voluntary compensation programs in your state?

Answered: 37 Skipped: 4

- “we are working on a standard method for calculating the dollar amount of mitigation required for offsets...[and] potential private, non-profit entities that handle a mitigation fund.”
- “collaborative guidelines were attempted but failed... now doing it project-by-project basis”
- “NGOs may be interested in developing these types of programs in our state”
- “developing a tool that will identify mitigation for projects”
- “We are at the point we understand and can measure direct effects and begin to explore what compensation may be appropriate”
- “There is also a lot of interest in... developing...[a program] and we are in the process of scoping this program.”
- “Not sure about interest but certainly opportunity!”
- “interest no, opportunity yes.”
- “Interest among agency staff, yes. Interest among project developers is unknown.”
- “Voluntarily compensation seems a long ways off.”
- “I think there is interest but no volunteers to coordinate the efforts.”

Summary

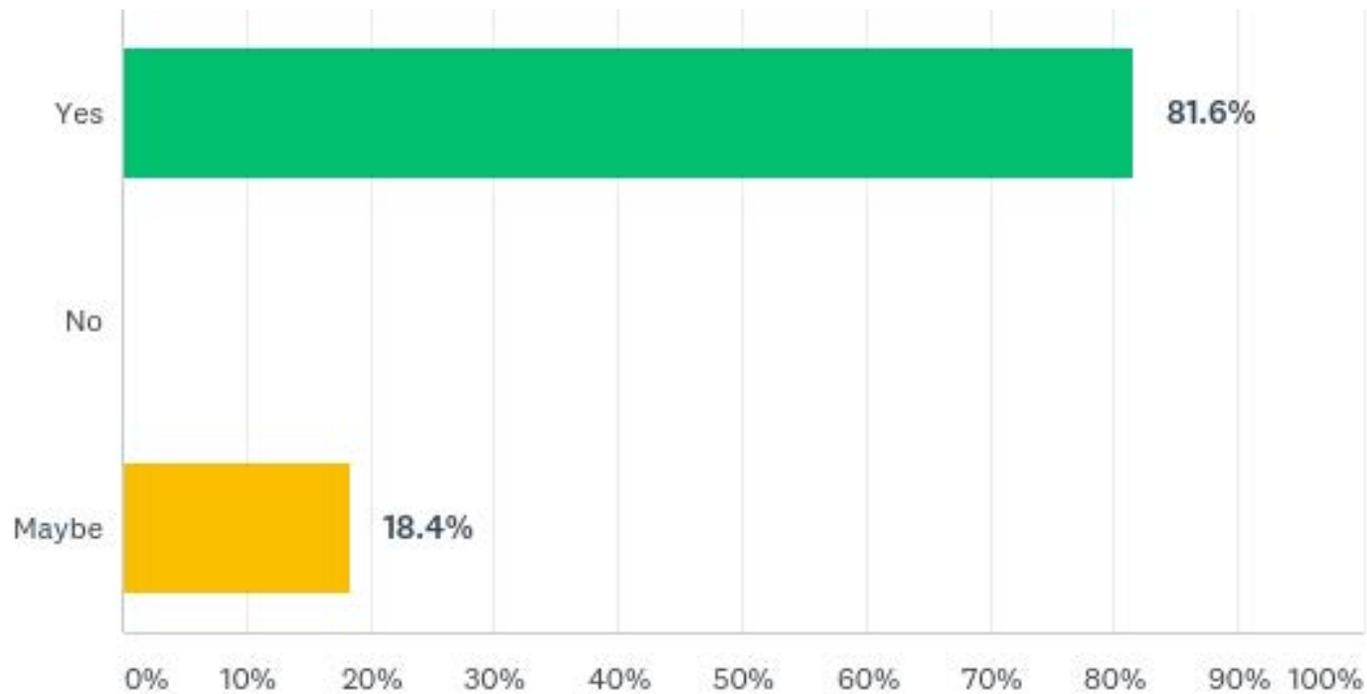
- There is very little required or voluntary compensation going on across the country.
- There is significant interest in developing compensatory mitigation programs.

An aerial photograph of a vast wind farm. The landscape is a mix of rolling green hills and flat fields, with numerous white wind turbines scattered across the terrain. The sky is a pale, overcast blue. The overall scene conveys a sense of large-scale renewable energy production in a natural, rural setting.

Agency Coordination on Wind-Wildlife Issues

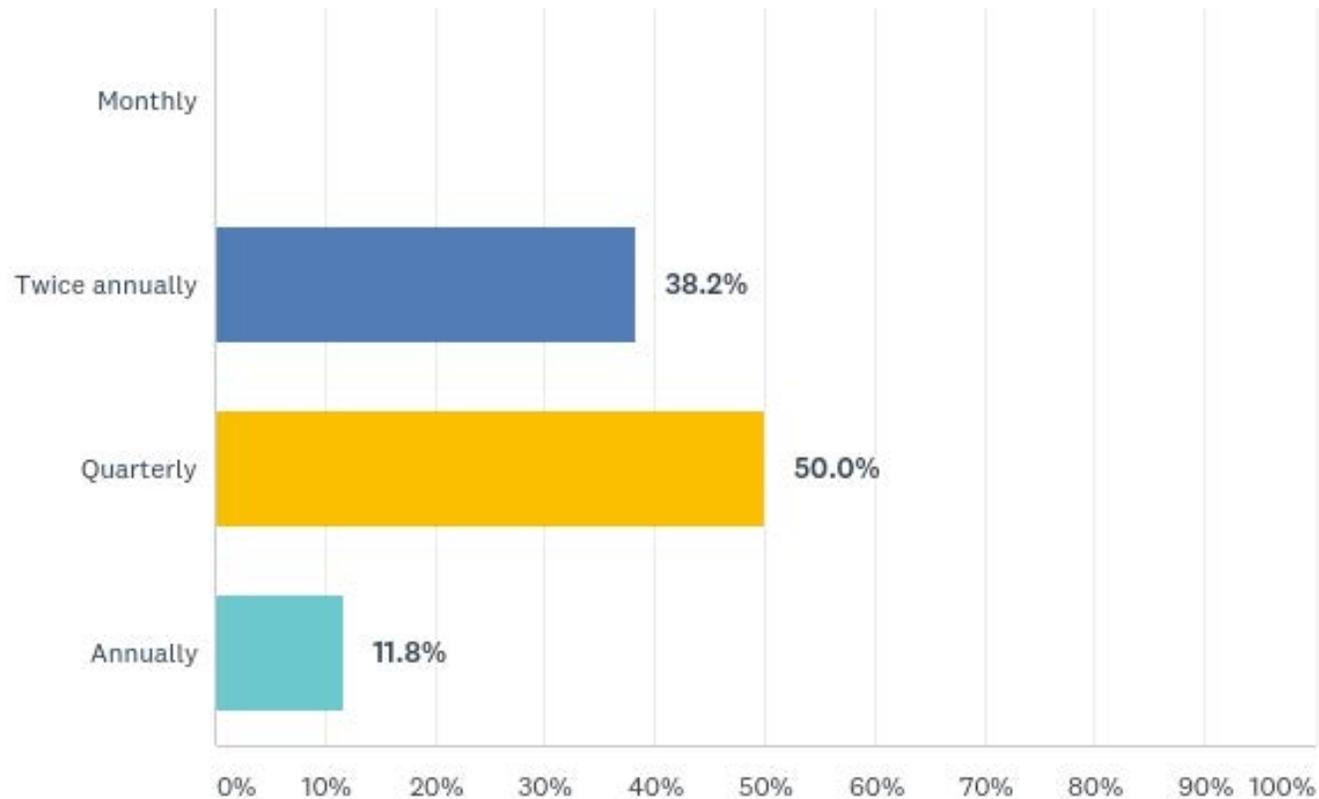
Are you interested in having a regular forum for wildlife agency project reviewers to improve interstate communication?

Answered: 38 Skipped: 3



If you you are interested in regular coordination with wildlife agency project reviewers, what frequency would you find most useful?

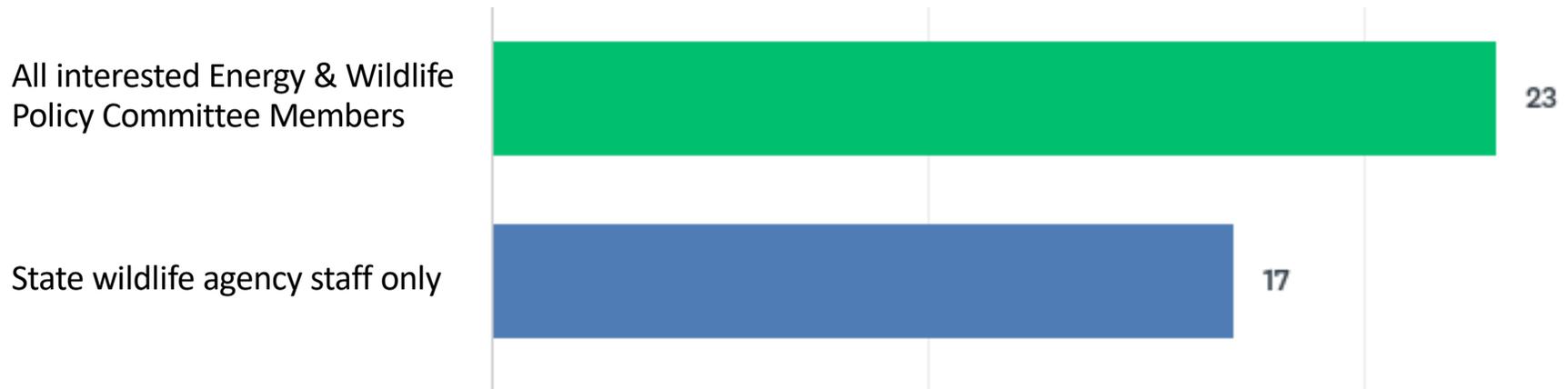
Answered: 35 Skipped: 6



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If you are interested in regular coordination with wildlife agency project reviewers, what do you feel would be the most valuable makeup of such a group?

Answered: 35 Skipped: 6



Summary

- States are very interested in increasing interstate coordination/communication on wind siting issues.
- They would like this quarterly or twice annually.
- They are split on whether they would prefer to communicate amongst themselves or with other Committee partners.



Thank You!