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WIND TURBINE GUIDELINES ADVISORY COMMITTEE
FEDERAL ADVISORY COMMITTEE MEETING #4

*AGENDA
FOR REVIEW AND COMMENT*

SOUTH MAIN INTERIOR BUILDING
1951 CONSTITUTION, NW
WASHINGTON DC 20240

JULY 23-24, 2008

FOURTH WIND TURBINE GUIDELINES ADVISORY COMMITTEE MEETING

- Review Outcome from June 18 Workshop, next steps
- Review Subcommittee progress and discuss next steps
 - Guiding Principles for FAC
 - Legal
 - Uncertainty/Other Models
 - Landscape/Habitat
 - Existing Guidelines
 - Science and Tools
- Hear presentation from Mexico
- Review and discuss additional important FAC items
- Discuss Milestones, timelines and process steps to address additional items

Comments Protocol for FAC Meeting

If you are a member of the public and want to make a comment to the FAC, please sign up on the “Comment Sign-Up Sheet” at the registration desk. Comments will be taken at the designated time on the agenda. Comments may need to be held to 3 minutes, depending on the number of parties who request time to comment. If time does not allow for all comments, then members of the public will be asked to write their comments down and submit them to the FWS staff at the registration desk. All comments will be made part of the public record and will be electronically distributed to all FAC members after the FAC meeting.

Day One, July 23, 2008

8:00 – 8:15	<p><u>Welcome & Overview of Agenda</u> <i>D.Stout, DFO/USFWS / A.Arnold, facilitator</i></p> <p>Introductions of all FAC members</p> <ul style="list-style-type: none"> ➤ Welcome from <i>Gary Frazer, Assistant Director for Fisheries and Habitat Conservation</i>, and <i>Paul Schmidt, Assistant Director for Migratory Birds</i> ➤ Opening comments from D.Stout ➤ Review and agree on meeting purpose ➤ Review and agree on meeting agenda ➤ Review status of pending nomination of alternates package
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Attachment A

8:15 – 10:00	<p><u>Review Outcome from June 18 Workshop, Next Steps</u> <i>A.Arnold/D.Stout</i></p> <p><i>Purpose:</i></p> <ul style="list-style-type: none"> ➤ Review of June 18 Workshop Results and FAC discussion ➤ Overview of where we are in process and where we are going ➤ Upcoming meetings, milestones <ul style="list-style-type: none"> ○ <i>FAC member discussion about moving from now to Set of Recommendations to Secretary</i> ➤ Beginning of table of contents for FAC Recommendations <ul style="list-style-type: none"> ○ <i>Present rough draft table of contents and get FAC feedback</i> ➤ Review FWS definition of wildlife, mitigation policy, other <ul style="list-style-type: none"> ○ <i>FWS hand out definitions, policy determine questions.</i>
10:00-10:20	<p><u>Break</u></p>
<p>10:20-10:50 <i>(including break)</i></p>	<p><u>Overview of Subcommittee Progress, Questions to FAC</u></p> <p><i>(Objective of this session: A representative from each Subcommittee give a short update (5 min) so all parties have a full picture of subcommittee activities. For the remainder of meeting, return to each report and review and discuss reports, recommendations, and offer advice on next steps.</i></p> <ul style="list-style-type: none"> ➤ Guiding Principles <i>Taber Allison</i> ➤ Legal <i>Patrick Traylor</i> ➤ Uncertainty/Other Models <i>Patrick Traylor</i> ➤ Landscape/Habitat <i>Rob Manes</i> ➤ Existing Guidelines <i>Kathy Boydston</i> ➤ Science and Tools <i>Robert Robel</i>
10:50 – 12:00	<p><u>Discuss and Review Subcommittee Reports</u></p>
10:50- 12:00	<p><u>Guiding Principles</u></p> <p><i>Objective of this session: get update on work conducted by this subcommittee, FAC offer direction to subcommittee about next steps.</i></p> <ul style="list-style-type: none"> ➤ Briefing on and Discuss Revised Principles (<i>edited based on June 18 workshop</i>) ➤ Have we captured the June 18 issues discussion? ➤ Are these principles for the FAC or for the FAC to recommend to the Secretary as part of the Recommendations? ➤ Does the FAC want to adopt these principles? <ul style="list-style-type: none"> ○ <i>What is FAC direction to the Subcommittee?</i> ➤ Are there terms to define?
12:00-1:15	<p><u>LUNCH on your own</u></p>

Attachment A

1:15 – 2:15	<p><u>Legal</u> <i>Objective of this session: get update on work conducted by this subcommittee, FAC offer direction to subcommittee about next steps.</i></p> <ul style="list-style-type: none"> ➤ Briefing on status of white paper: (review of outline) ➤ Are there <i>new</i> issues raised at the June 18 Workshop the legal Subcommittee proposes to address? ➤ Are there terms to define? ➤ Next steps; <ul style="list-style-type: none"> ○ <i>What is FAC direction to the Subcommittee?</i>
2:15-3:30	<p><u>Uncertainty/Other Models</u> <i>Objective of this session: get update on work conducted by this subcommittee, FAC offer direction to subcommittee about next steps.</i></p> <ul style="list-style-type: none"> ➤ Briefing on Other Models and Uncertainty <ul style="list-style-type: none"> ○ Have we addressed all models FAC members want us to? ○ <i>FAC direction to the Subcommittee</i> ➤ Are there terms to define? ➤ Next steps; <i>FAC direction to the Subcommittee</i>
3:30 – 3:45	<p><u>Break</u></p>
3:45 – 5:00	<p><u>Discuss and Review Subcommittee Reports</u>, <i>continued</i> <i>Objective of this session: get update on work conducted by this subcommittee, FAC offer direction to subcommittee about next steps.</i> <u>Landscape/Habitat</u></p> <ul style="list-style-type: none"> ➤ Briefing on landscape habitat matrix <ul style="list-style-type: none"> ○ Next steps; <i>direction to the Subcommittee?</i> ➤ Briefing on status of discussion on development of recommendations regarding siting and sensitive habitats <ul style="list-style-type: none"> ○ Next steps; <i>direction to the Subcommittee?</i> ➤ Are there terms to define?
5:00-5:15	<p><u>Public Comment</u> <i>(may be earlier, depending on FAC schedule)</i> <i>Members of the public are invited to speak to the FAC; Please sign up on the Public Comment Form; time permitting each party will be asked to keep their comments to 3 minutes each. Written comments will be accepted by the Committee.</i></p>
5:15-6:00	<p><u>Reports/Presentations</u> ➤ Rafael Villegas Patraca, Mexico</p>
6:00-6:15	<p><u>Wrap Up and Review Next Steps</u> <i>A. Arnold, facilitator</i> <i>Review agenda for Day II in light of progress made on Day I</i></p>
6:15	<p><u>Adjourn for evening</u></p>

Day 2 July 24, 2008

8:00-8:15	<u>Review Day's Agenda</u>
8:15 – 10:15	<u>Subcommittees Meet in Person</u>
10:30-12:00	<u>Return to Discussion of Subcommittee Activities</u> , <i>continued</i>
10:30-12:00 (including break)	<p><u>Existing Guidelines</u></p> <ul style="list-style-type: none"> ➤ Discuss existing guidelines matrix, table of contents ➤ Next steps; <i>direction from FAC to the Subcommittee?</i> ➤ Are there terms to define?
12:00-1:15	<u>Lunch</u> (on your own)
1:15-2:15	<p><u>Science and Tools</u></p> <p><i>Objective of this session: get update on work conducted by this subcommittee, FAC offer direction to subcommittee about next steps:</i></p> <ul style="list-style-type: none"> ➤ Review matrix of tools <ul style="list-style-type: none"> ○ Next steps; ➤ Direction from FAC to the Subcommittee? ➤ Are there terms to define?
2:15-3:00	<p><u>Review Outstanding Items and Today Reflections from Chairman/DFO</u></p> <p><i>Objective of this session:</i></p> <ul style="list-style-type: none"> ➤ Review list of outstanding items from June 18 and determine if we have addressed, if not, what are next steps for those items. ➤ Hear from DFO on reflections of meeting, next steps....
3:00–3:45	<p><u>Review of Next Steps</u></p> <ul style="list-style-type: none"> ➤ Review next steps, activities between now and October ➤ Agenda items for October
3:45-4:10	<u>Public Comment</u>
4:15	<u>Adjourn FAC Meeting</u>

**WIND TURBINE GUIDELINES ADVISORY COMMITTEE:
FEDERAL ADVISORY MEETING # 4**

**July 23-24, 2008
Washington, DC**

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Wind Turbine Guidelines Advisory Committee: Nominated Alternates

Alternate	Nominated by	Affiliation
John Austin	Keith Sexson	Association of Fish and Wildlife Agencies
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Panama Bartholomy	Karen Douglas	California Energy Commission
Joseph Carpenter	Mark Sinclair	Clean Energy States Alliance
Brian Chappell	Patrick Traylor	Hogan & Hartson LLP
Jim Eisen	Steven Quarles	BP Alternative Energy
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Curt Leigh	Greg Hueckel	State of Washington
James Lindsay	Winifred Perkins	Florida Power & Light
Jay Pruett	Rob Manes	The Nature Conservancy
Barry Sweitzer	Michael Azeka	AES Wind Generation
Chris Taylor	René Braud	Horizon Wind Energy
Robert Thresher	Steve Lindenberg	Department of Energy
Julie Wicker	Kathy Boydston	State of Texas

1. FAC June 18 Meeting: Summary of Issues Discussion

Robin Gregory & Graham Long (consultants to FAC)
DRAFT: June 26, 2008

1.0 Introduction

On June 18, 2008 a special session of the Federal Wind Turbines Advisory Committee (FAC) was held in Lakewood, Colorado at the regional offices of the US Fish and Wildlife Service. The purpose of the meeting was to clarify the leading issues to be discussed by the Committee during the course of their deliberations on ways to minimize impacts to wildlife resulting from new development of wind turbines for producing electricity. Although this charge at first appears straightforward, any risk minimization effort of this type faces difficult questions concerned with scope, information quality, and tradeoffs across competing objectives (e.g., time vs. quality, breadth of coverage vs. depth, etc). At the April 23/24 meeting of the FAC (in Washington DC), a short discussion was led by Dr. Gregory on the topic of setting clear objectives and identifying scope of effort so as to aid future efforts of the FAC and to facilitate both effective use of committee members' time and clear communication with external audiences (within participating agencies as well as members of the public). Coming from the April meeting, a recommendation was made to continue this discussion at the June 18 session.

2.0 Methods

As preparation for the June 18 discussions, the consultants prepared a short list of issues that had been raised during earlier discussions (including the one-hour initial discussion on April 24) or that had been raised by participants as part of interviews or in written communication (e.g., subcommittee reports). When combined with the four-point charter given to the Committee from the Secretary of Interior, this list provided a starting point for probing in more depth the range of issues (also termed values or interests or objectives) that FAC members considered to be potentially important.¹ These were grouped into six categories: biological, economic, social, legal, institutional and process. The consultants also prepared other materials, including initial sketches of influence diagrams, to help illustrate some of the connections and linkages across different topics and to help FAC members to have a better idea of some of the more problematic issues of scope and focus that would be discussed at the meeting. In addition, the consultants prepared weighting sheets that would be used by FAC members to work from the longer, more comprehensive lists of issues to a smaller sub-set of issues identified as those on which the recommendations of the FAC potentially could have the most impact. The intent was to have

¹The consultants initially termed these "values" to contrast with the more formal term "objectives" used to designate both an issue and a desired direction of change (e.g., "minimize financial costs"). However, several FAC members found this terminology confusing and so the more general term "issues" was adopted.

members distinguish among the designated issues so that those that were considered both important and relevant could form the basis for future FAC discussions whereas those issues considered unimportant would not be discussed in depth and those considered important but either outside the mandate of FAC or clearly within the mandate of other ongoing processes also would receive less attention.

This logic -- starting with problem definition and moving to the identification of issues and objectives and the clarification of a subset of issues intended to form the basis of discussions and information gathering exercises -- is basic to the practice of structured decision making (SDM), which provides a way to help organize and structure discussions of the FAC. In particular, the use of SDM techniques is intended to help bound discussions of the FAC (what is in, what is out) and provide a transparent mechanism by which the logic lying behind the final FAC recommendations can easily be communicated and understood by multiple audiences. In addition, the use of SDM methods is intended to enhance the effectiveness of the FAC discussion by helping members to focus their attention and resources on those issues (consistent with their charter) where they can most effectively provide input to the Secretary of Interior, whether via the development of guidelines or through other means (e.g., risk minimization frameworks, tradeoff-analyses, recommendations for further research, etc.).

2.

3. 3.0 Results

B. 3.1 Initial Issues List

The list of the issues discussion are summarized below. These entries incorporate comments -- changes of wording, subtractions from the list, and additions to the list-- made by FAC members during the June 18 morning discussions.

1. Biological

- Avoid, minimize, and mitigate negative impacts on wildlife populations and habitat
- Address cumulative biological impacts -- focus on populations, (local or larger scale) over space and time
- Avoid, minimize, and mitigate negative impacts on federal and state trust species (including fish, migratory birds, & endangered species) and associated habitats.
- Protect wildlife populations on a landscape vs. project and specific
- Address indirect biological impacts such as displacement and habitat fragmentation.
- Establish comprehensive framework to address all species
- Provide methodology for risk and impact assessment that captures environmental variability

- Reduce uncertainty regarding biological impacts over time with the goal of reducing negative impacts on wildlife over time.

2. Economic

- Develop predictable and economically-efficient permit process
- Avoid guidelines that would unduly suppress wind energy development
- Reach early agreement on the balance of expected impacts and the cost of acquiring information, recognizing the effects of economies of scale.
- Evaluate relative costs and benefits to wildlife and wind
- Encourage PTC, R & D, accelerated depreciation for manufacturers
- Minimize post-construction decommissioning of wind facilities.

3. Social

- Establish mechanisms for determining appropriate risk-mgt response
- Address equity concerns regarding the distribution of costs and benefits
- Enhance/protect credibility of wind industry
- Enhance/protect credibility of federal and state regulators
- Improve education about wind and wildlife issues
- Examine whether the presence of wind turbines indirectly affects enjoyment of wildlife (e.g., hunting, photography, hiking, other recreational activities).

4. Legal

- Establish consistent framework with incentives to ensure compliance with relevant federal statutes (e.g., MBTA, BGEPA)
- Determine whether thresholds exist for agencies to take actions on private lands

5. Institutional

- Recognize voluntary focus of risk framework
- Ensure mechanism for addressing landscape-level impacts
- Develop macro (e.g., GIS mapping) approaches to complement micro, site specific approaches
- Develop incentives to encourage early contact with local ngo's, Tribes, residents, industry

- Ensure mechanisms for coordinating effectively with states / tribes, state, and local gov'ts
- Establish compatible evaluation approaches by federal, state, tribal & local gov'ts
- Minimize risk & liability to industry under federal wildlife laws
- Adopt and promote use of best available tools for impact evaluation
- Ensure that compatible evaluation processes apply across DOI and other federal agencies
- Clarify role that FWS, other federal / state agencies will play in minimizing effects on wildlife

6. Process

- Provide a mechanism to incorporate learning/reduce uncertainty over time
- Establish formal mechanism for making periodic revisions to Guidelines
- Establish consistent & collaborative process for meeting objectives and for implementing FAC recommendations
- Make use of functional approaches rather than prescriptive (subcommittees to elaborate)
- Ensure that local and geographic-specific concerns are addressed
- Ensure broad acceptance of guidelines (to encourage use by federal, state, local jurisdictions)
- Include mechanisms (e.g., incentives) to stimulate use of FAC recommendations
- Consider adoption of rewards (e.g., non-liability) if parties are consistent with guidelines
- Minimize ineffective requirements or recommendations
- Establish flexible process that can accommodate unusual considerations
- Adopt precautionary strategy in cases of serious but uncertain threat to wildlife-
- Encourage open communications so developers know where to go for authorization, permits, constraints across federal, state, local, Tribal jurisdictions
- Establish national data base that ranks desirability of locations for turbines
- Empower local decision makers to make decisions with confidence

C. This list of issues is intended to be comprehensive, in that it shows all considerations that FAC members noted as important to the success of their deliberations. This list thus becomes a de-facto table of contents: because these are the things that matter to FAC

members, then they should be discussed – however in-depth or briefly -- as part of the Committee’s report. However, experience has shown that long lists of issues are not necessarily helpful as means to orient discussion or to facilitate the development of effective recommendations, because they fail to provide sufficient guidance as to priorities (what is more or less important?) or to relationships (how is one item influence by changes in another?). To accomplish this further level of clarification, several SDM techniques can be helpful.

D. 3.2 Illustrative Objectives Hierarchy

E. A first technique is known as an objectives hierarchy. This takes an initial list of issues and then provides additional clarification as to the relationship among these elements: which are of a higher order and which are of a lower order. This is done for three primary reasons: to facilitate the comparison among issues, to help focus discussions at an appropriate level of detail (in particular, to get out on the table key distinctions that might otherwise be overlooked), and to avoid the inefficiencies that come with unnecessary depth of discussion on minor topics (since the implication is that there then will be less time or resources for addressing more relevant or important issues).

F.

Initial steps to create an objectives hierarchy were taken as part of the June 18 meeting. If desired, additional time could be given to this task at a future meeting, leading to a matrix of objectives versus action items that would help to determine in some detail those topics on which FAC deliberations would be best focused. An example objectives hierarchy, based on portions of the discussion of biological issues, is shown below: the bulleted objective is listed first, followed by sub-objectives.

- Avoid, minimize or mitigate impacts on wildlife populations and habitat ...
 - ... at the site-level
 - ... during facility design
 - ... during facility construction
 - ... populations during facility operations
 - ...during normal operating conditions
 - ...during exceptional operating conditions
 - ... populations during facility decommissioning
 - ... at the landscape or population level
 - ... during site selection

- ...during regional or national wind energy planning
- ...during regional or national transmission planning
- Minimize unnecessary expenditures resulting from measures to avoid, minimize or mitigate impacts on wildlife populations and habitat
 - ...for developers...
 - ...during site selection
 - ...during facility design
 - ...during operations
 - ...during decommissioning
 - For regulators and other groups
 - ...during site selection
 - ...during facility design
 - ...during operations
 - ...during decommissioning
- Ensure measures to avoid, minimize or mitigate impacts on wildlife populations and habitat can be effectively implemented, coordinated and administered
 - Maximize effective co-ordination and standardization of federal, state, tribal and county to avoid, minimize or mitigate impacts on wildlife populations and habitat ...
 - ...during site selection
 - ...during facility design
 - ...during operations
 - ...during decommissioning
 - Minimize barriers to the efficient implementation of measures to avoid, minimize or mitigate impacts on wildlife populations and habitat arising from the interpretation of legal requirements...
 - ...during site selection
 - ...during facility design
 - ...during operations
 - ...during decommissioning

- Maximize the ability to monitor and learn about the effectiveness of measures to avoid, minimize or mitigate impacts on wildlife populations and habitat...
 - ...during site selection
 - ...during facility design
 - ...during operations
 - during decommissioning
- Etc.

G. 3.3 Weightings of Issue Importance

Another (related) technique is to weight (i.e., rank or rate) issues in terms of their relative importance. For FAC, the most helpful rating was determined to be not importance – since some of the more important issues with respect to wind turbines and effects on wildlife might either lie outside the mandate of FAC or already be handled by a parallel effort – but rather the relative effectiveness associated with FAC members spending their scarce time and resources addressing the issue with the ultimate purpose of providing sound advice to the Secretary of Interior. Thus FAC members were provided with the comprehensive list of issues and asked, in their opinion, to state “How effective would it be for FACA to dedicate time to this?” with respect to every issue. This task was completed in two parts: first, each member was given a one-page list and asked to assign each issue a rank of 1 – 5 (see below); second, a discussion was held with all members present to review ranks and to determine if there was agreement among members on the inclusion of each item in the final list (and, if not, to ascertain the reason why, such as redundancy or lack of clarity or inappropriateness for FAC). Ranks were completed using the following scale:

- 1=FACA time/ resources very effectively spent addressing the issue
- 2=FACA time/ resources quite effectively spent addressing the issue
- 3=FACA time/ resources moderately effectively spent addressing the issue
- 4=FACA time/ resources somewhat effectively spent addressing the issue
- 5=FACA time/ resources not very effectively spent addressing the issue

H. This information can be displayed in several ways, depending on perspective and needs. The first display of this information, shown below in Table 1, is by issue category (biological, social, etc). Information is included on the relevant FAC Charter (A – D) and on the mean score across all participants (only FAC members; rankings by Committee consultants, members of the public, or other persons in the room are not included). Items shown in green are considered to be essential and are highly ranked by FAC members. Items shown in red are considered to be either (a) in need of further discussion, because not everyone is clear about their meaning or implications, or (b) outside of the direct domain of FAC deliberations but within the domain of issues that FAC can and should influence.

I.

J. Table 1: Ranks by issue category, unsorted

Category	Charter	Mean	n	Description
BIOLOGICAL	A	1.0	18	Avoid, minimize, and mitigate negative impacts on wildlife populations and habitat
BIOLOGICAL	A	1.9	18	address cumulative biological impacts – focus on populations, (local or larger scale) ---over space and time – including landscape level impacts
BIOLOGICAL	A	1.2	18	Avoid, minimize, and mitigate negative impacts on federal and state trust species (and fish, migra birds, endang species) and associated habitats.
BIOLOGICAL	A	1.9	18	wildlife populations on a landscape vs. project and specific
BIOLOGICAL	A	1.7	18	address indirect biological impacts such as displacement and habitat fragmentation.
BIOLOGICAL	D	2.4	18	establish comprehensive framework to address all species
BIOLOGICAL	C	2.0	18	provide methodology for risk and impact assessment that captures environmental variability
BIOLOGICAL	C	1.9	18	reduce uncertainty regarding biological impacts over time with the goal of reducing those impacts over time.
ECONOMIC	D	2.0	18	Develop predictable and economically-efficient permit process (F,S,T,GL)
ECONOMIC	B	1.8	18	Avoid guidelines that would unduly suppress wind energy development
ECONOMIC	B	2.0	18	Reach early agreement on the balance of expected impacts and the cost of acquiring information, recognizing the effects of economies of scale.
ECONOMIC		2.9	7	Evaluate relative costs and benefits to wildlife and wind
ECONOMIC		4.7	6	Encourage PTC, R and D, accelerated depreciation for manufacturers
ECONOMIC		3.7	6	Minimize post-construction decommissioning of wind facilities.
SOCIAL	C	2.9	18	establish mechanisms for determining appropriate risk-mgt response
SOCIAL	D	4.7	7	address equity concerns regarding the distribution of costs and benefits
SOCIAL		4.5	6	enhance/protect reputation of wind industry
SOCIAL		4.5	6	enhance/protect reputation of federal and state regulators
SOCIAL	D	3.4	17	improve education about wind and wildlife issues
SOCIAL		4.3	6	Does the presence of wind turbines affect (indirectly) enjoyment of wildlife, i.e.), hunting, photography? Observing recreational pursuits.
LEGAL	D	1.6	18	Establish consistent framework with incentives to ensure compliance with relevant federal statutes
LEGAL		3.7	18	Determine what is threshold for agencies to take actions on private lands?
INSTITUTIONAL		2.9	12	Voluntary (focus on voluntary) – a framework
INSTITUTIONAL	C/A	2.3	18	ensure mechanism for addressing landscape-level impacts
INSTITUTIONAL	C	2.2	18	Macro approaches (GIS mapping)vs. micro, on site specific
INSTITUTIONAL	D	1.6	18	Encourage early contact, develop incentives for early contact – contact with local ngo's tribes, ensure mechanisms for coordinating effectively with states / tribes, state, and local gov'ts

INSTITUTIONAL	D	1.6	18	Compatible evaluation approaches by federal, state, tribal & local gov'ts
INSTITUTIONAL		3.0	11	NWCC m and m
INSTITUTIONAL		2.3	10	Identify best available
INSTITUTIONAL	D	2.0	18	minimize risk & liability to industry under federal wildlife laws; early contact incentive;
INSTITUTIONAL	C	2.0	18	adopt and promote use of best available tools for impact evaluation
INSTITUTIONAL	D	1.6	18	Compatible evaluation process that apply across Dof I and FEDERAL agencies.
INSTITUTIONAL	D	2.2	18	Clarify role FWS, other fed agencies will play
PROCESS	C	2.5	18	provide a mechanism to incorporate learning/reduce uncertainty over time and consider
PROCESS	C/D	2.9	17	establishing formal mechanism for periodic revisions to Guidelines
PROCESS	D	2.5	17	establish consistent & collaborative process for meeting objectives – if had guidelines, want to implement through ongoing collaborative process (what mean buy collaboration?)
PROCESS	A	2.8	17	Functional approac VS. PRESCRIPTIVE (need to elaborate)
PROCESS	D	2.3	18	ensure that local and geographic-specific concerns are addressed and ensure broad acceptance of guidelines . Broad enough so can be used by federal,s tate, local jurisdictions.
PROCESS	D	1.6	18	Mechanism that stimulates USE OF guidelines.
PROCESS	D	2.1	17	If consistent with guidelines, should be a reward; ie non liability
PROCESS	D	1.8	18	minimize ineffective requirements or recommendations
PROCESS	C	2.5	18	establish flexible process that can accommodate unusual considerations (what mean by unusual?)
PROCESS	A	2.7	18	adopt precautionary strategy in cases of serious but uncertain threat to wildlife --
PROCESS	D	2.2	18	Open communications so developer knows where to go for authorization, constraints, Fed, state, local, NGO, tribes,
PROCESS	C/D	3.0	18	Some kind of national data base where an agency can go to a company looking at the wrong locations.
PROCESS	D	2.8	18	Empower local decision makers to make decisions. Confidence doing it right. Enable peole at local level to make decisions.

K. A second way to present this information (Table 2) is to sort by means across all issue categories, so that those items ranked most important are shown in descending order (from most to least highest ranked). Note here that, as anticipated, the listing of issues is led by biological and institutional considerations directly related to the avoidance, minimization, and mitigation of negative impacts on wildlife and their habitat. Another way to say this is that the main concerns of the FAC are expected to be related to issues of biology and of environmental policy, as reflected in the backgrounds and affiliations of FAC members.

Table 2: WEIGHTS SORTED BY ASCENDING MEAN (1=MOST EFFECTIVE FOCUS)

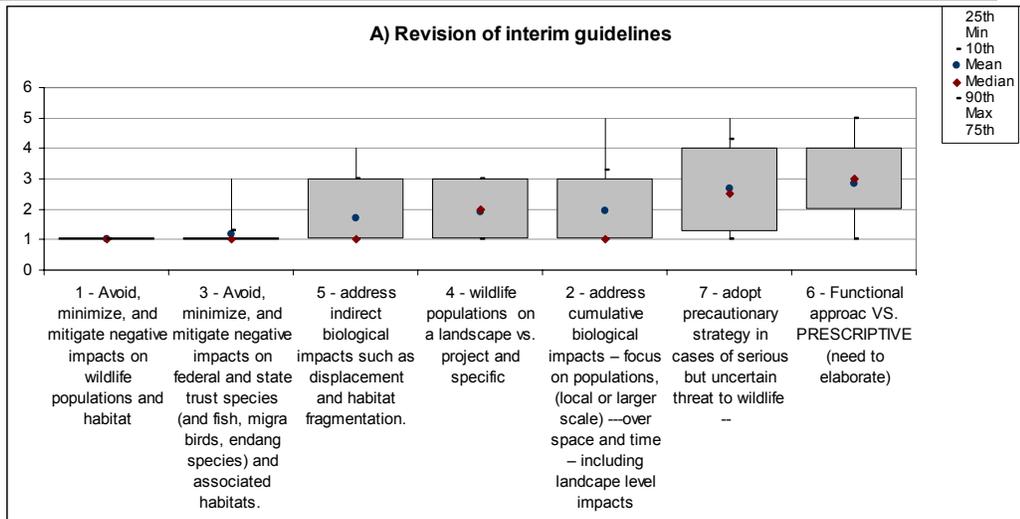
Category	Charter	Mean	n	Description
BIOLOGICAL	A	1.0	18	Avoid, minimize, and mitigate negative impacts on wildlife populations and habitat
BIOLOGICAL	A	1.2	18	Avoid, minimize, and mitigate negative impacts on federal and state trust species (and fish, migra birds, endang species) and associated habitats.
INSTITUTIONAL	D	1.6	18	Encourage early contact, develop incentives for early contact – contact with local ngo’s tribes, ensure mechanisms for coordinating effectively with states / tribes, state, and local gov’ts
INSTITUTIONAL	D	1.6	18	Compatible evaluation approaches by federal, state, tribal & local gov’ts
INSTITUTIONAL	D	1.6	18	Compatible evaluation process that apply across Dof I and FEDERAL agencies.
PROCESS	D	1.6	18	Mechanism that stimulates USE OF guidelines.
LEGAL	D	1.6	18	Establish consistent framework with incentives to ensure compliance with relevant federal statutes
BIOLOGICAL	A	1.7	18	Address indirect biological impacts such as displacement and habitat fragmentation.
ECONOMIC	B	1.8	18	Avoid guidelines that would unduly suppress wind energy development
PROCESS	D	1.8	18	minimize ineffective requirements or recommendations
BIOLOGICAL	A	1.9	18	wildlife populations on a landscape vs. project and specific
BIOLOGICAL	C	1.9	18	reduce uncertainty regarding biological impacts over time with the goal of reducing those impacts over time.
BIOLOGICAL	A	1.9	18	Address cumulative biological impacts – focus on populations, (local or larger scale) ---over space and time – including landscape level impacts
BIOLOGICAL	C	2.0	18	provide methodology for risk and impact assessment that captures environmental variability
ECONOMIC	D	2.0	18	Develop predictable and economically-efficient permit process (F,S,T,GL)
ECONOMIC	B	2.0	18	Reach early agreement on the balance of expected impacts and the cost of acquiring information, recognizing the effects of economies of scale.
INSTITUTIONAL	D	2.0	18	minimize risk & liability to industry under federal wildlife laws; early contact incentive;
INSTITUTIONAL	C	2.0	18	adopt and promote use of best available tools for impact evaluation
PROCESS	D	2.1	17	If consistent with guidelines, should be a reward; ie non liability
INSTITUTIONAL	C	2.2	18	Macro approaches (GIS mapping)vs. micro, on site specific
INSTITUTIONAL	D	2.2	18	Clarify role FWS, other fed agencies will play
PROCESS	D	2.2	18	Open communications so developer knows where to go for authorization, constraints, Fed, state, local, NGO, tribes,
PROCESS	D	2.3	18	ensure that local and geographic-specific concerns are addressed and ensure broad acceptance of guidelines . Broad enough so can be used by federal, state, local jurisdictions.

INSTITUTIONAL		2.3	10	Identify best available
INSTITUTIONAL	C/A	2.3	18	Ensure mechanism for addressing landscape-level impacts
BIOLOGICAL	D	2.4	18	Establish comprehensive framework to address all species
PROCESS	D	2.5	17	Establish consistent & collaborative process for meeting objectives – if had guidelines, want to implement through ongoing collaborative process (what mean buy collaboration?)
PROCESS	C	2.5	18	Provide a mechanism to incorporate learning/reduce uncertainty over time and consider
PROCESS	C	2.5	18	Establish flexible process that can accommodate unusual considerations (what mean by unusual?)
PROCESS	A	2.7	18	Adopt precautionary strategy in cases of serious but uncertain threat to wildlife --
PROCESS	D	2.8	18	Empower local decision makers to make decisions. Confidence doing it right. Enable people at local level to make decisions.
PROCESS	A	2.8	17	Functional vs. prescriptive emphasis
ECONOMIC		2.9	7	Evaluate relative costs and benefits to wildlife and wind
INSTITUTIONAL		2.9	12	Voluntary (focus on voluntary) – a framework
PROCESS	C/D	2.9	17	Establishing formal mechanism for periodic revisions to Guidelines
SOCIAL	C	2.9	18	Establish mechanisms for determining appropriate risk-mgt response
INSTITUTIONAL		3.0	11	NWCC m and m
PROCESS	C/D	3.0	18	Some kind of national data base where an agency can go to a company looking at the wrong locations.
SOCIAL	D	3.4	17	improve education about wind and wildlife issues
ECONOMIC		3.7	6	Minimize post-construction decommissioning of wind facilities.
LEGAL		3.7	18	Determine what is threshold for agencies to take actions on private lands?
SOCIAL		4.3	6	Does the presence of wind turbines affect (indirectly) enjoyment of wildlife, i.e.), hunting, photography? Observing recreational pursuits.
SOCIAL		4.5	6	Enhance/protect reputation of wind industry
SOCIAL		4.5	6	Enhance/protect reputation of federal and state regulators
ECONOMIC		4.7	6	Encourage PTC, R and D, accelerated depreciation for manufacturers
SOCIAL	D	4.7	7	Address equity concerns regarding the distribution of costs and benefits

A third way to present this information (Tables 3A – 3E) is by charter group (A – D), with the ranks sorted by mean (again, from most to least important). This provides a useful perspective on the issues considered by FAC members to be most effectively addressed in keeping with each of the Secretary’s four directives to the Committee. Results are included for each of the four charter groups, showing the distribution of responses in terms of the mean, median, and 25th and 75th percentile results. Items not assigned to a charter group, but still considered to be important to at least some FAC members, are shown at the end of these results (Table 3E).

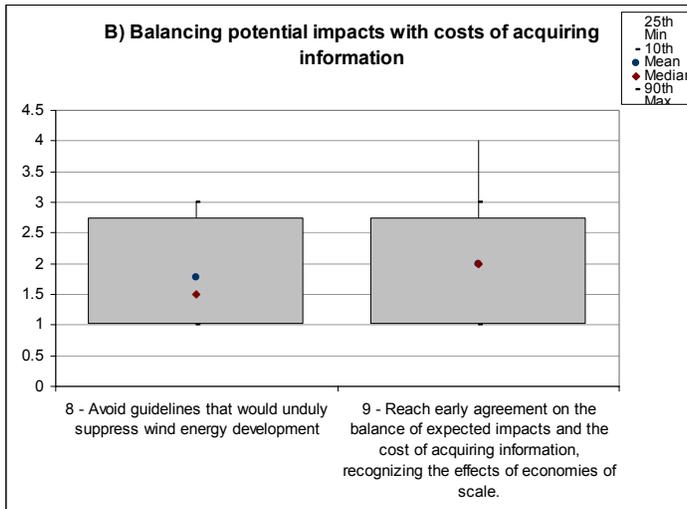
L. Table 3A: CHARTER GROUP A, SORTED BY MEAN

Category	Charter	Mean	n	Description
BIOLOGICAL	A	1.0	18	Avoid, minimize, and mitigate negative impacts on wildlife populations and habitat
BIOLOGICAL	A	1.2	18	Avoid, minimize, and mitigate negative impacts on federal and state trust species (and fish, migra birds, endang species) and associated habitats.
BIOLOGICAL	A	1.7	18	address indirect biological impacts such as displacement and habitat fragmentation.
BIOLOGICAL	A	1.9	18	wildlife populations on a landscape vs. project and specific
BIOLOGICAL	A	1.9	18	address cumulative biological impacts – focus on populations, (local or larger scale) ---over space and time – including landcape level impacts
PROCESS	A	2.7	18	adopt precautionary strategy in cases of serious but uncertain threat to wildlife --
PROCESS	A	2.8	17	Functional approac VS. PRESCRIPTIVE (need to elaborate)



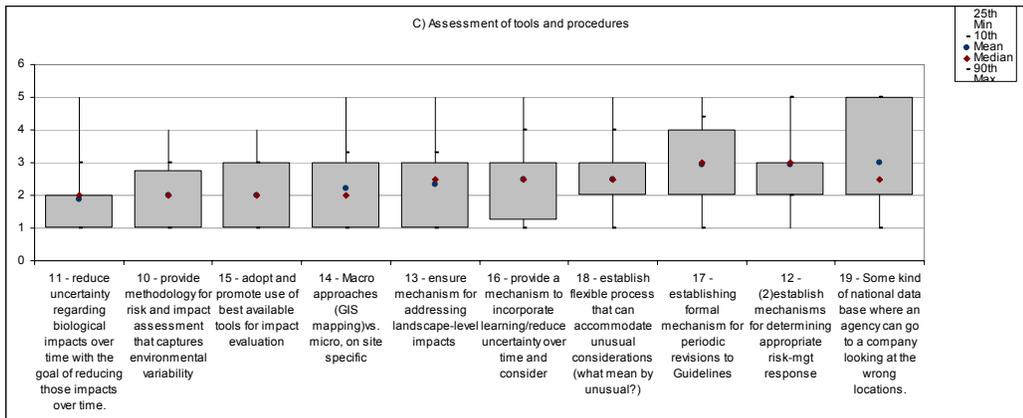
M. Table 3B: CHARTER GROUP B, SORTED BY MEAN

Category	Charter	Mean	n	Description
ECONOMIC	B	1.8	18	Avoid guidelines that would unduly suppress wind energy development
ECONOMIC	B	2.0	18	Reach early agreement on the balance of expected impacts and the cost of acquiring information, recognizing the effects of economies of scale.



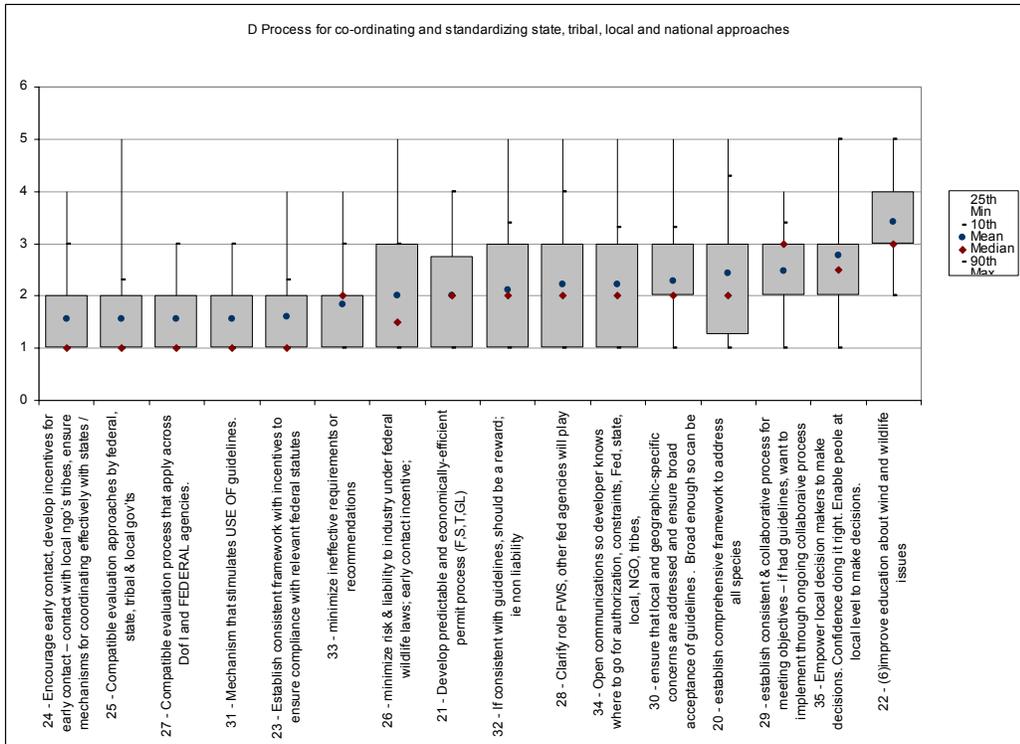
N. Table 3C: CHARTER GROUP C, SORTED BY MEAN

Category	Charter	Mean	n	Description
BIOLOGICAL	C	1.9	18	reduce uncertainty regarding biological impacts over time with the goal of reducing those impacts over time.
BIOLOGICAL	C	2.0	18	provide methodology for risk and impact assessment that captures environmental variability
INSTITUTIONAL	C	2.0	18	adopt and promote use of best available tools for impact evaluation
INSTITUTIONAL	C	2.2	18	Macro approaches (GIS mapping)vs. micro, on site specific
PROCESS	C	2.5	18	Provide a mechanism to incorporate learning/reduce uncertainty over time and consider
PROCESS	C	2.5	18	Establish flexible process that can accommodate unusual considerations (what mean by unusual?)
SOCIAL	C	2.9	18	Establish mechanisms for determining appropriate risk-mgt response
INSTITUTIONAL	C/A	2.3	18	Ensure mechanism for addressing landscape-level impacts
PROCESS	C/D	2.9	17	Eestablishing formal mechanism for periodic revisions to Guidelines
PROCESS	C/D	3.0	18	Some kind of national data base where an agency can go to a company looking at the wrong locations.



O. Table 3D: CHARTER GROUP D, SORTED BY MEAN

Category	Charter	Mean	n	Description
INSTITUTIONAL	D	1.6	18	Encourage early contact, develop incentives for early contact – contact with local ngo’s tribes, ensure mechanisms for coordinating effectively with states / tribes, state, and local gov’ts
INSTITUTIONAL	D	1.6	18	Compatible evaluation approaches by federal, state, tribal & local gov’ts
INSTITUTIONAL	D	1.6	18	Compatible evaluation process that apply across Dof I and FEDERAL agencies.
PROCESS	D	1.6	18	Mechanism that stimulates use of guidelines.
LEGAL	D	1.6	18	Establish consistent framework with incentives to ensure compliance with relevant federal statutes
PROCESS	D	1.8	18	Minimize ineffective requirements or recommendations
ECONOMIC	D	2.0	18	Develop predictable and economically-efficient permit process (F,S,T,GL)
INSTITUTIONAL	D	2.0	18	Minimize risk & liability to industry under federal wildlife laws; early contact incentive;
PROCESS	D	2.1	17	If consistent with guidelines, should be a reward; ie non liability
INSTITUTIONAL	D	2.2	18	Clarify role FWS, other fed agencies will play
PROCESS	D	2.2	18	Open communications so developer knows where to go for authorization, constraints, Fed, state, local, NGO, tribes,
PROCESS	D	2.3	18	Ensure that local and geographic-specific concerns are addressed and ensure broad acceptance of guidelines . Broad enough so can be used by federal,s tate, local jurisdictions.
BIOLOGICAL	D	2.4	18	Establish comprehensive framework to address all species
PROCESS	D	2.5	17	Establish consistent & collaborative process for meeting objectives – if had guidelines, want to implement through ongoing collaboraive process (what mean buy collaboration?)
PROCESS	D	2.8	18	Empower local decision makers to make decisions. Confidence doing it right. Enable people at local level to make decisions.
SOCIAL	D	3.4	17	Improve education about wind and wildlife issues
SOCIAL	D	4.7	7	Address equity concerns regarding the distribution of costs and benefits



P. Table 3E: ITEMS NOT ASSIGNED A CHARTER GROUP, SORTED BY MEAN

Category	Charter	Mean	n	Description
INSTITUTIONAL		2.3	10	Identify best available
ECONOMIC		2.9	7	Evaluate relative costs and benefits to wildlife and wind
INSTITUTIONAL		2.9	12	Voluntary (focus on voluntary) – a framework
INSTITUTIONAL		3.0	11	NWCC Methods and Metrics document
ECONOMIC		3.7	6	Minimize post-construction decommissioning of wind facilities.
LEGAL		3.7	18	Determine what is threshold for agencies to take actions on private lands?
SOCIAL		4.3	6	Does the presence of wind turbines affect (indirectly) enjoyment of wildlife, i.e.), hunting, photography? Observing recreational pursuits.
SOCIAL		4.5	6	Enhance/protect credibility of wind industry
SOCIAL		4.5	6	enhance/protect credibility of federal and state regulators
ECONOMIC		4.7	6	Encourage PTC, R and D, accelerated depreciation for manufacturers

4.0 Overview and Next Steps

The discussions at the June 18 “special” meeting of the FAC committee were helpful in identifying those key issues that should receive the bulk of the attention of future analyses and dialogue, because they are considered to be important by many FAC members and because there is broad agreement that discussions on these topics are likely to be effective and to produce results relating to impacts on wildlife from wind turbines that will be useful to the Secretary of Interior. The basic process followed in the meeting is shown below:

Step 1: Discuss initial listing of issues

Step 2: Expand / test this list to make sure it is comprehensive and accurate

Step 3: Group the full list of issues with reference to the 4-point FAC Charter

Step 4: Divide issues into three groups: those directly relevant to FAC, those likely to be influenced or informed by FAC, and those that are possibly important but outside FAC’s mandate

Step 5: Of those issues considered directly relevant to FAC (step 4), ask: Where can the Committee’s work be most effective, with respect the development of guidelines or a risk framework that will provide advice to the Secretary of Interior on wind turbine / wildlife interactions?

Step 6: Rank issues and present results of the analysis in different ways to aid interpretation and usefulness.

In our opinion, the list of issues that show up as being most important after this exercise are still in need of further clarification. Much progress has been made to date (e.g., on scope and on the definition of terms such as “wildlife”) but much work remains to define other terms (e.g., “address uncertainty”) or actions (e.g., “mitigation”) in ways that will facilitate effective and efficient decision making by industry and by local, state, Tribal, and federal decision makers. In part, this will require that key tradeoffs be addressed explicitly: every time the word “minimize” or “protect” is used, there are implied goals or constraints that should be clarified (minimize up to the point that, protect so as to achieve). In part, it will require learning more about how to address remaining issues of scope and focus, including the following:

- How will the impacts on wildlife from electricity substations and distribution lines be handled, at least to the extent that these are related to the implications of different wind turbine siting strategies?
- How will FAC recommendations address differences in the implications of wildlife impact evaluation frameworks across different forms of energy?
- What types of incentives will be considered so as to encourage acceptance of FAC recommendations by industry and by state, local, and Tribal risk managers?
- How will the national FAC recommendations address differences in the guidelines already put forth by States?
- To what extent should FAC recommendations anticipate issues that are likely to be raised as a result of public perceptions of wind turbine / wildlife interactions (e.g., episodic events)?

- To what extent should FAC provide a framework for helping developers to make choices across different mitigation options?
- How will FAC accommodate and/or seek to influence input from other wind / wildlife guidance efforts (e.g., NWCC, NREL)?
- What guidance will FAC provide as to how states, local governments, or Tribes should address issues of information quality or address differences of opinion across industry, ngo's, citizen groups, or other agencies with respect to likely impacts of turbine sitings on wildlife?
- To what extent will FAC seek to provide assistance to states, local government, or Tribes with respect to what it means to establish an effective collaborative decision making process?
- To what extent will FAC seek to provide assistance with respect to monitoring (post-construction) strategies and how the results of monitoring should feed back into decision making?
- To what extent will FAC seek to provide guidance regarding the development of adaptive strategies or precautionary strategies as means to incorporate uncertainty?

These are important questions, and (in our opinion) how these questions (and others) are answered by FAC members over the coming months will, to a large extent, determine the success of the undertaking. We appreciate the opportunities we have been given to work with FAC, and we look forward to future discussions should further input be considered useful.

**Wind Turbine Guidelines Advisory Committee
U.S. Fish and Wildlife Service Definition of “Wildlife”**

Chairman David J. Stout provided the Committee with the following information regarding the definition of “wildlife” in a July 10, 2008, e-mail message. Mr. Stout put forth this definition for use by the Committee, with the understanding that it is reasonable for the purposes of this Committee to set priorities on species that the Committee feels are most affected by windpower.

Based on the most fundamental piece of legislation to the mission of the Fish and Wildlife Service, the following definition is appropriate for our work:

The Fish and Wildlife Coordination Act; P.L. 85-624, 72 Stat. 563 August 12, 1958; 16 USC §661-667e

The terms “wildlife” and “wildlife resources” as used herein include birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent.

Further explanatory text is found at 50 CFR §10.12. The definitions at 50CFR §10.12 are intended to apply to multiple laws that FWS implements. Originally in Federal Register 38 FR 22015, Aug. 15, 1973, with several amendments.

§ 10.1 Purpose of regulations.

The regulations of this Subchapter B are promulgated to implement the following statutes enforced by the U.S. Fish and Wildlife Service which regulate the taking, possession, transportation, sale, purchase, barter, exportation, and importation of wildlife:

Lacey Act, 18 U.S.C. 42.

Lacey Act Amendments of 1981, 16 U.S.C. 3371–3378.

Migratory Bird Treaty Act, 16 U.S.C. 703–712.

Bald and Golden Eagle Protection Act, 16 U.S.C. 668a–668d.

Endangered Species Act of 1973, 16 U.S.C.1531–1543.

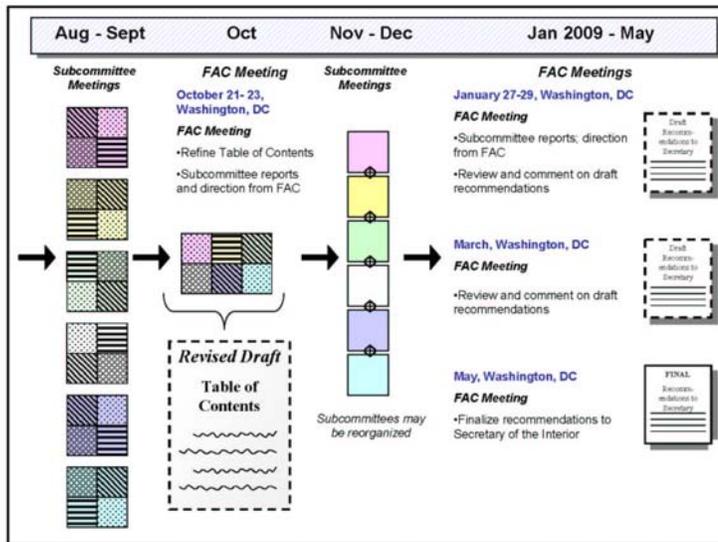
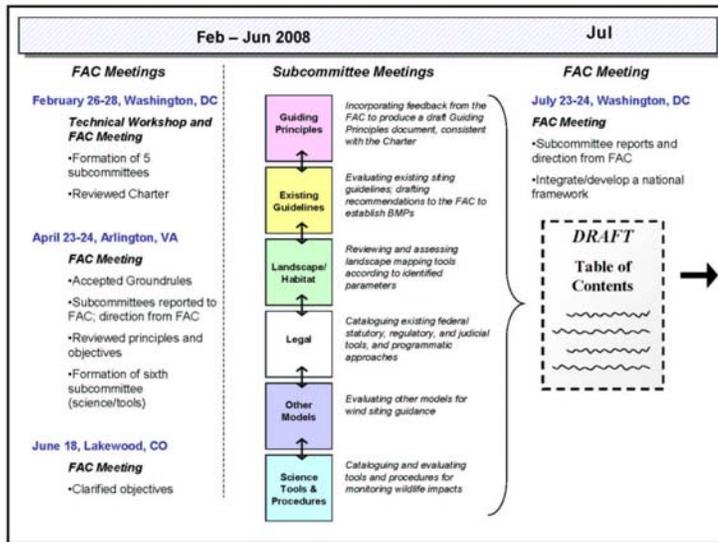
Tariff Classification Act of 1962, 19 U.S.C.1202

Fish and Wildlife Act of 1956, 16 U.S.C. 742a–742j–1.

Marine Mammal Protection Act of 1972, 16 U.S.C. 1361–1384, 1401–1407.

§ 10.12 Definitions.

Fish or wildlife means any wild animal, whether alive or dead, including without limitation any wild mammal, bird, reptile, amphibian, fish, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, whether or not bred, hatched, or born in captivity, and including any part, product, egg, or offspring thereof.



WIND TURBINE GUIDELINES ADVISORY COMMITTEE
FEDERAL ADVISORY COMMITTEE

REPORT TO SECRETARY OF INTERIOR

Draft
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III. Review and discussion of principles?

IV. FAC Recommendations

a. List recommendation and rational for each recommendation?)

V. Issues Raised by FAC to Address (outline issues in R.Gregory report) and whether and how addressed by the FAC recommendations????.

Appendices and Resource Documents

**Wind Turbine Guidelines Advisory Committee
Preparation for July 23-24, 2008: Subcommittee Feedback from FAC
(Meeting #4)**

Overview Questions for FAC:

- Do you want to pursue a national framework based on state guidelines?; AND/OR
- If there is another model or framework worth pursuing: if yes, do you want to move ahead with development of this framework or approach?

Guiding Principles:

- Have we accurately captured the guiding principles for use by the Committee in developing its recommendations?

Legal:

- Is the subcommittee headed in the right direction?
- Should the subcommittee develop some recommendations and a framework for how states and local agencies could agree to use the national guidelines, or local guidelines that are consistent with the national guidelines, to streamline and coordinate review under state and federal wildlife laws, and with reduced involvement in project-specific review by USFWS?

Other Models:

- Are there additional models you'd like us to explore?
- Are there models you would like us to remove from our list?
- Is there merit in developing a draft set of Avian Protection Plan guidelines for the wind industry? Should the subcommittee draft a APP framework for wind/wildlife?
- Can USFWS evaluate if it has authority to allow for some degree of liability protection or reduced risk of enforcement under MBTA for developer use and compliance with an APP?

- What specific risk assessment methodologies from other environmental areas, if any, should be examined by the sub-committee that may have relevance to wind/wildlife interactions?

Landscape/Habitat:

- Do we need to add to our parameters used to evaluate mapping tools? Does the FAC want us to move forward on how to use the data?

Existing Guidelines:

- Does the FAC want to move forward using the “guidelines” model?
- If so, are there policy issues that need to be discussed in their draft?
- What elements are missing from the draft guidelines framework developed by the subcommittee?
- Are there elements that are significantly problematic for any stakeholder group?

Science Tools & Procedures:

- Is the subcommittee headed in the right direction?
- Does the FAC desire us to address other issues?
- Are we duplicating the efforts of other FAC subcommittees?
- If so, which, and should we continue or cease our efforts?
- Are we working on nonessential areas? If so, which?

Guiding Principles Subcommittee
Report to the Wind Turbine Advisory Committee
July 23-24, 2008

Guiding Principles Subcommittee Membership: Taber Allison, Caroline Kennedy, Jeri Lawrence, Rob Manes, Winifred Perkins, Mark Sinclair, David Stout

The Guiding Principles Subcommittee has produced a revised draft of the Advisory Committee's Guiding Principles. In two teleconference meetings the subcommittee reviewed the Issues document produced by Robin Gregory after the Federal Advisory Committee's (FAC) meeting on June 18th to determine whether any of the Issues should be incorporated as Principles (or already were so incorporated). The latest draft distributed prior to our July meeting reflects these conversations. Principles were revised, reordered, in some cases, combined, and new Principles were added. We also revised the definition of wildlife (Premise 1) per David Stout's email communication on July 3rd, revised the "precautionary statement" (Premise 2) to reflect the language crafted by Robin Gregory. The third premise was revised to restate and affirm a key element of the FAC's charter.

Specifically the subcommittee reviewed the Issues rankings from the full FAC's June 18th meeting, and we agreed that unless a strong argument could be made, the lowest ranking Issues (those where the scores were red-highlighted) would not be included as Guiding Principles. The top-ranked Issues (green-highlighted Issues) were reviewed closely and either determined to be a part of our principles already or were added to the Principles or Premises as described above. The middle group (un-highlighted Issues) was also considered by the subcommittee and as a result minor edits were incorporated into some of the Principles. The subcommittee felt that many Issues should play an important role in our deliberations, but were at a level of detail not appropriate for Guiding Principles.

Questions for the full FAC:

- 1) Have we accurately captured the guiding principles for use by the Committee in developing its recommendations?
- 2) Are there fundamental issues under consideration by this subcommittee that must be resolved in order for the full FAC to move forward?

Suggested Principles for Developing Recommendations by the
US DOI Wind Turbine Guidelines Advisory Committee
(As modified following phone call of July 7th, 2008)

I. Premises

- 1) The Committee defines wildlife as birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent, but the Committee will focus its efforts on those species the Committee and the FWS feel are most likely to be affected by wind power development.
- 2) The Committee agrees that a precautionary approach should be used in cases of potentially serious but uncertain threats to wildlife.
- 3) The Committee recognizes that it is possible and essential to avoid, minimize, and mitigate negative impacts on wildlife populations and habitats while balancing expected impacts with the costs of undertaking necessary studies and monitoring.

II. Principles

1. The Guidelines should provide a consistent methodology for conducting pre-construction risk assessments and post-construction impact assessments to guide siting decisions by developers and agencies
2. The Guidelines should encourage communication and coordination between the developer and relevant state and federal agencies during all phases of wind energy project development
3. The Guidelines should provide mechanisms to encourage their adoption and use by all federal agencies, as well as the wind energy industry, while recognizing the primary role of the lead agency in coordinating specific project assessments
4. The Guidelines should complement state and tribal efforts to address wind/wildlife interactions and provide a voluntary means for these entities to coordinate and standardize review of wind projects with the USFWS
5. The Guidelines should provide a clear and consistent approach that increases predictability and reduces the risk of liability exposure under federal wildlife laws
6. The Guidelines should provide sufficient flexibility to accommodate the diverse geographic and habitat features of different wind development sites

7. The Guidelines should present mechanisms for determining mitigation, when appropriate, in the event of unforeseen impacts to wildlife during construction or operation of a wind energy project
8. The Guidelines should define scientifically rigorous and cost-effective study designs that improve the ability to predict direct and indirect wildlife impacts locally and regionally
9. The Guidelines should include a formal mechanism for revision in order to incorporate experience, technological improvements, and scientific advances that reduce uncertainty in the interactions between wind energy and wildlife

Suggested Principles for Developing Recommendations by the US DOI Wind Turbine Guidelines Advisory Committee (As modified following phone call of July 7th, 2008)

I. Premises

1) The Committee defines wildlife as birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent, but the Committee will focus its efforts on those species the Committee and the FWS feel are most likely to be affected by wind power development.

2) The Committee agrees that a precautionary approach should be used in cases of potentially serious but uncertain threats to wildlife.

3) The Committee recognizes that it is possible and essential to avoid, minimize, and mitigate negative impacts on wildlife and their habitats while balancing expected impacts with the costs of undertaking necessary studies and monitoring.

Comment: Cautious; conservative Err on the side of the species Move to principle?

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II. Principles

1. The Guidelines should provide a consistent methodology for conducting pre-construction risk assessments and post-construction impact assessments to guide siting decisions by developers and agencies

2. The Guidelines should encourage communication and coordination between the developer and relevant local, state, tribal, and federal agencies during all phases of wind energy project development

3. The Guidelines should provide mechanisms to encourage their adoption and use by all federal agencies, as well as the wind energy industry

4. The Guidelines should complement state and tribal efforts to address wind/wildlife interactions and provide a voluntary means for appropriate entities to coordinate and standardize review of wind projects with the appropriate agencies, including, for example, state fish and wildlife agencies and USFWS (see language in proposed principle #10 - greg, abby, and sam will propose lang.)

5. The Guidelines should provide a clear and consistent approach that increases predictability and process certainty and reduces the risk of liability exposure under federal wildlife laws and regulations

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Comment: Guidelines will facilitate...

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6. The Guidelines should provide sufficient flexibility to accommodate the diverse geographic and habitat features of different wind development sites

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7. The Guidelines should present mechanisms for recommending mitigation, when appropriate, in the event of predicted and/or unforeseen events to wildlife during construction or operation of a wind energy project

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8. The Guidelines should recommend and assess use of scientifically rigorous and cost-effective tools that improve the ability to predict direct and indirect wildlife impacts locally and regionally

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9. The Guidelines should include a formal mechanism for revision in order to incorporate experience, technological improvements, and scientific advances that reduce uncertainty in the interactions between wind energy and wildlife

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10. The guidelines should provide information/facilitate local, state and tribal governments to develop guidelines for their respective jurisdictions (incorporate into other principle? 4?)

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MEMORANDUM
BY ELECTRONIC MAIL

To:	Wind Turbine Advisory Committee
From:	Legal Subcommittee
Date:	July 17, 2008
Re:	Update on Legal Subcommittee Work

In preparation for the third meeting of the Wind Turbine Guidelines Advisory Committee, the Legal Subcommittee has prepared the following outline of a white paper that will summarize the applicability of federal wildlife laws to the siting, construction, and operation of wind turbine facilities, and that will summarize the mechanisms available under those laws to manage the risk of noncompliance.

1. Define scope of authority to regulate wildlife under federal law and consequences of noncompliance

1.1. Statutes covered

- 1.1.1. Endangered Species Act
- 1.1.2. Migratory Bird Treaty Act
- 1.1.3. Bald and Golden Eagle Protection Act
- 1.1.4. Clean Water Act Section 404
- 1.1.5. The Fish and Wildlife Coordination Act
- 1.1.6. The Lacey Act
- 1.1.7. Tariff Classification Act
- 1.1.8. Marine Mammal Protection Act

1.2. Regulation and consequences of direct species impacts

1.3. Regulation and consequences of habitat-related species impacts

2. Identify methods by which noncompliance can be avoided or liability for noncompliance can be mitigated or avoided

2.1. Sources of liability avoidance and mitigation

- 2.1.1. Statutory approaches
- 2.1.2. Regulatory approaches
- 2.1.3. Judicial approaches
- 2.1.4. Guidance/informal agency approaches
- 2.2. Liability avoidance and mitigation under the Endangered Species Act
 - 2.2.1. Habitat conservation plans and incidental take permits
 - 2.2.2. Section 6 state cooperative agreements
 - 2.2.3. Conservation agreements
 - 2.2.4. Bird letters
 - 2.2.5. Safe harbor agreements
 - 2.2.6. Candidate conservation agreements
 - 2.2.7. General conservation plans
 - 2.2.8. Conservation banking
 - 2.2.9. 4(d) rules
- 2.3. Liability avoidance and mitigation under the Migratory Bird Treaty Act
 - 2.3.1. Bird letters
 - 2.3.2. Special purpose permits
- 2.4. Liability avoidance and mitigation under the Bald and Golden Eagle Protection Act
 - 2.4.1. Bird letters
 - 2.4.2. Bald eagle regulation approaches
- 2.5. Liability avoidance and mitigation under Clean Water Act Section 404
- 2.6. Liability avoidance and mitigation under other statutes

MEMORANDUM
BY ELECTRONIC MAIL

To:	Wind Turbine Advisory Committee
From:	Risk & Uncertainty Subcommittee
Date:	July 17, 2008
Re:	Update on Risk & Uncertainty Subcommittee Work

In preparation for the third meeting of the Wind Turbine Guidelines Advisory Committee, the Risk & Uncertainty Subcommittee has prepared the following summary of other regulatory models that may provide useful in developing an approach to wind-wildlife interactions.

I. Merits of an Avian Protection Plan for Addressing Wind/Wildlife Interactions

The members of the Federal Advisory Committee may wish to consider the merits of the use of an Avian Protection Plan (APP) as part of a comprehensive framework for national guidelines to minimize wildlife impacts from wind development. An APP could serve as a complementary *or* alternative tool to the development of more traditional, prescriptive “guidelines”, by providing a mechanism by which wind developers can *implement* a specific commitment and plan to address wind/wildlife interactions on an early and ongoing basis. For example, if the FAC develops formal guidelines, the APP could serve as a mechanism to ensure use of the guidelines by a company.

The APP approach is employed successfully today by the electric utility industry and the USFWS to reduce avian electrocution and collision mortality associated with power lines. In 1989, the utility industry and the Service engaged in cooperative development of guidelines for Avian Protection Plans. The principles and voluntary guidelines are intended to allow electric utilities to tailor an APP that will best fit their needs while furthering the conservation of avian species and improving reliability and customer service. A utility that implements the principles contained in the APP guidelines greatly reduces avian risk as well its risk of enforcement under the Migratory Bird Treaty Act.

In the power line context, an APP provides a framework for implementing a utility program to reduce avian mortalities and document utility actions. It may include the following elements: corporate policy, training, permit compliance, construction design standards, nest management, avian reporting system, risk assessment methodology, mortality reduction measures, avian enhancement options, quality control, and public awareness.

In the context of wind development, a project developer could create an APP that incorporates certain guiding principles (developed by the FAC) and includes a commitment to implement the applicable federal and state formal guidelines to address project-specific avian issues. Based on implementation of the APP, the developer would then receive the benefit of assurances regarding regulatory compliance.

Preliminary Thoughts: Avian Protection Plan in the Context of the Wind Industry

A wind industry Avian Protection Plan would be a company-specific or project-specific document that delineates a program designed to reduce the risks that result from avian interactions with proposed and existing wind facilities. Although each company or project's APP will be different, the overall goal of any APP should be to reduce avian mortality. The FAC would develop a guidance document that establishes guiding principles to aid developers in their development of an APP. Although not all of the recommended elements would need to be included in every APP because of the specific circumstances of a project or geographical area, the recommended APP guidelines would represent an overview of elements that should be considered for inclusion in an APP and that developers may find helpful in crafting their own, individually-tailored APPs. As an industry incentive, a wind company that implements the principles contained in APP guidelines could be provided some assurances by the USFWS to reduce the risk of enforcement under the MBTA. For example, based on approval of an APP, the USFWS might consider agreeing not to pursue liability due to incidental takings under the MBTA as a result of wind energy development and operations *provided* that (1) the taking is not malicious, (2) the company remains in compliance with the APP and (3) the company has demonstrated good faith efforts to avoid and minimize potential adverse impacts by way of implementing best management practices and Service guidance.

The FAC also could develop suggested best practices for site selection and design of wind facilities to be included in an APP (see #3 below). For example, the electric utility industry has developed *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* for use in association with an APP, see www.aplic.org.

Possible Principles for a Wind Industry Avian Protection Plan

Using the principles from the electric utility industry's APP Guidelines as a starting point, here are several examples of the type of principles that could be established in an APP Guidelines document for the wind industry

1. Corporate Policy

An APP should include a statement of company policy confirming a commitment to work cooperatively towards the protection of birds and bat species. This should include a commitment by the company to balance its goal of producing wind energy generation in a cost-effective manner with state and federal regulatory requirements protecting avian and bat species, as well as the need to obtain and comply with all necessary permits, monitor incidents of avian and bat mortality, and make reasonable efforts to construct and alter infrastructure and project operations to reduce the incidence of avian and bat mortality.

2. Permit Compliance

An APP should identify the process under which the company will obtain and comply with all necessary permits and laws related to avian issues.

3. Site Selection & Design Practices

A company should agree to consider avian interactions in the siting, design and installation of new facilities, as well as in the operation and maintenance of existing facilities. Inclusion of best site selection and design practices for both new and retrofit techniques should be included in an APP. Companies should either rely on [*the best management practices and guidelines developed by the FAC*] or may choose to instead develop their own internal site selection and design standards that meet or exceed these guidelines. The company also should agree to use all reasonable and feasible generally accepted best management practices during construction and operation of the facility.

4. Consultation & Information Sharing

A company should agree to share all relevant information concerning wildlife resources in and around a wind project area and the potential adverse impacts to those resources. Shared information should include publicly available data from monitoring efforts and pre and post-construction study results relative to the project area. In the APP, a company should agree to work cooperatively with the USFWS in the future to avoid and minimize impacts to wildlife resources as new relevant project information becomes available.

5. Avian Reporting System

Although reporting of avian mortalities may be required as a condition of federal or state permits, a company should agree to voluntarily monitor relevant avian interactions, including mortalities, through the development of an internal reporting system. An APP should provide for the development of such a reporting system, which can help a company pinpoint areas of concern by tracking both the specific locations where mortalities may be occurring and the extent of such mortalities. Data collected by company personnel should include avian and bat mortalities or injuries, as well as remedial actions taken. All data should be regularly entered into a searchable database compatible for use in additional analysis.

6. Risk Assessment Methodology

A company should agree to assess risk to birds and bats from development of wind power at all proposed sites in order to avoid, minimize, and mitigate adverse impacts. A company can have the greatest impact on reducing avian mortality by focusing its efforts in a cost-effective manner to avoid locations and areas that pose the greatest risk to migratory birds and bats. Therefore, as a general matter, an APP should include a method for evaluating the risks posed to birds in a manner that identifies areas and issues of particular concern. A risk assessment study should begin with an assessment of available data addressing areas of high avian use, avian mortality, established flyways, adjacent wetlands, prey populations, effectiveness of design standards, and possible remedial actions and other factors that can increase avian interactions with wind facilities. The avian reporting system should be an integral component of this risk assessment. An APP

also should provide for the development of models that will enable a company to utilize biological information to assess risk and avoid and minimize avian impacts.

7. Mortality Reduction Measures

After completing a risk assessment, a company should focus its efforts on areas of concern, ensure that development activities are not out of proportion to the risks encountered by birds and bats, and then determine whether an avian mortality reduction plan needs to be implemented for existing projects.

8. Avian Enhancement Options

In addition to taking steps to reduce mortality risk to avian species, an APP also may include opportunities for a company to enhance avian populations or habitat, including managing habitats to benefit migratory birds, or working cooperatively with agencies or organizations in such efforts. Where feasible, such proactive development of new ideas and methods to protect migratory birds should be encouraged and explored.

9. Quality Control & Adaptive Management

An APP should include a mechanism to review existing practices, ensuring quality control and adaptive management. For instance, a company may conduct an independent assessment of its avian reporting system to ensure its effectiveness, or invest in research on the effectiveness of different techniques and technologies used to prevent mortality.

10. Key Resources

An APP should identify key resources to address avian protection issues including, for example, a list of experts who may be called upon to aid in resolving avian issues. These could include consultants, State and Federal resource agencies, universities, or conservation groups. An APP that connects avian experts with company decision-makers may reduce the risk of avian incidents.

Possible Next Steps

- FAC members determine if an APP approach has merit for the wind industry
- Receive briefing on pending APP being developed by Iberdrola and the Service
- Draft comprehensive guiding principles and framework for wind-related APP

II. Clean Water Act Stormwater Program

The EPA's stormwater program has undergone tremendous changes over the years, but in January 2008 the EPA (along with several other state and national partners) issued a document entitled "Managing Wet Weather with Green Infrastructure." This program basically aims to reduce the quantity of stormwater and improve water quality through a series of major areas of focus (research, outreach and communication, CWA regulatory support, economic viability and funding, demonstrations and recognition, partnerships, and promotions). Basically the concept is to promote an environmentally preferable approach that is cost-effective to reducing stormwater run-off.

III. Clean Water Act Section 316(b)

EPA's 316(b) rulemaking has undergone decades of review and development but there is now movement on the finalization of rules (after several court cases) that would basically stratify power plants and the level of review and scrutiny they would get based on the type of water body they are located on. The premise being that some plants are located in environments that are clearly more "sensitive" than others—such as estuaries versus open oceans. The concept here is that we could consider some sort of categorization of potential risk based on site criteria.

IV. Clean Air Act New Source Review

After having established clear guidelines on acceptable environmental impact levels from emissions of air pollution, the NSR construction permit program requires a case-by-case application of control technologies (which become more stringent over time as technology improves), backed by air quality impact modeling/monitoring. The control technologies are listed on a publicly-available database, and are available to state and federal regulators. I believe the practice of siting and construction with the best available mitigation technologies/best practices, backed by available monitoring data, will yield more protective deployment of wind turbines over time without unnaturally delaying the deployment of turbines now. That is, the data generated from today's best efforts to balance wind power with wildlife interactions will formally inform tomorrow's development efforts, with a long-term trend towards more information being gathered on turbine-wildlife interactions, and better mitigation/avoidance techniques being deployed.

V. National Environmental Policy Act

While not a permitting program, NEPA (and many states' mini-NEPAs) are comprehensive, good-faith attempts to identify the environmental impacts from development. The basic premise of applying NEPA to the turbine-wildlife interaction question would be largely of enforcement discretion after the developer made (and made available publicly or to state/federal agencies?) a comprehensive, good-faith effort to identify, avoid, or mitigate impacts from development. While a permit would not be issued, the EA/EIS process informs whether a permit is issued in a normal NEPA matter, and here would inform whether a developer should be subject to enforcement if the good-faith EA/EIS does not predict actual impacts.

VI. Clean Air Act/Clean Water Act Categorical Technology Standards

Many environmental statutes describe with particularity the design, construction, and operation standards applicable to new sources of pollution. In most cases, the standards are fairly concise, achievable, and provide certainty to developers and as to the environmental benefits of the standards.

**Existing Guidelines Subcommittee
Report to the Wind Turbine Advisory Committee
July 23-24, 2008**

The language used in this document is for discussion purpose only

I. INTRODUCTION

The objectives of these recommendations are to provide information and protocols for assessing, evaluating, and determining the level of project effects on fish and wildlife resources, and to develop and recommend impact avoidance, minimization, and mitigation measures for wind power projects in the United States.

The purpose of these recommendations is to establish best management practices (BMP) for wind power projects, to enable individual states to develop their wind power guidelines at a lower geographical scale that minimizes adverse impacts to wildlife, habitats and natural resources through proper pre-project risk assessment, good project design and operation, and effective adaptive management practices. These recommendations include guidelines for preliminary screening of proposed wind energy project sites; pre-permitting study design and methods; assessing direct, indirect, and cumulative impacts to birds and bats in accordance with state and federal laws; developing avoidance and minimization measures; establishing appropriate compensatory mitigation; and post-construction operations monitoring, analysis, and reporting methods.

The document is organized around four basic project development steps:

- (1) The first stage involves project siting and development, where development should focus on avoiding and/or reducing potential adverse impacts of a site before the facility is constructed.
 - a. Gather preliminary information and conduct site screening
- (2) The second stage is construction where careful planning should avoid important habitat and reduce disturbance by conducting construction at appropriate times of year when practicable, and away from sensitive habitat areas.
 - a. Collect pre construction data using standardized monitoring protocols,
 - b. Identify potential impacts and mitigation
- (3) The third stage is operations, where measures should be implemented to minimize ongoing impacts.
 - a. Collect operations monitoring data and post construction data using standardized monitoring protocols
 - b. Implement on site mitigation strategies
- 4) The fourth stage is the decommissioning stage at the end of the project's useful life, where restoration measures should be implemented to return the project area largely to its pre-construction state in accordance with landowner requests and contracts.

II. BEST MANAGEMENT PRACTICES

Language used in this section is for discussion purposes only**A. Preliminary Assessment**

The goals of this stage of assessment are to provide early information on environmental issues to help (1) steer development away from sensitive or environmentally significant sites, and (2) to start the process of identifying environmental information and survey needs for potential development sites.

(1) Meet with qualified expert consultants and relevant agencies to identify potential environmental concerns listed below and whether the following occur within the general project study region:

- (a) Federal and State listed endangered and threatened species, candidate, proposed and special concern species
- (b) areas that support high numbers of endemic species and a high degree of threat, as indicated by the percentage of remaining habitat in a region
- (c) areas recognized as rare, declining, specialized ecosystems or state, regional or national conservation priorities (such as wetlands, old growth forests, bottomland hardwoods, native prairie grasslands)
- (d) mapped significant bird, bat, or large mammal migration corridors, stopover points
- (e) locations designated by local, state or federal authorities as incompatible with wind development (wilderness areas, etc.)

To the extent possible, this pre-project assessment may utilize existing information from projects in comparable habitat types in locations close to the proposed project. (See Appendix A for information sources, this could include some of the mapping information we are gathering,)

(2) For wildlife species at risk whose ranges overlap with the project study area, check existing information sources to determine whether *actual or potential habitat or residences* for these species are present in the study area. Assess level of effort required or needed for further work (Appendix B-Natural Heritage Database locations, Fish and Game Agencies)

(3) Conduct an appropriate number of site visits to characterize habitat types, habitat quality, and topographic features of the project study area and identify relevant habitat features (e.g., bat hibernacula, raptor nests). Note presence of shorelines, ridges, wetlands, landfills, caves, mines, etc. on or near study area that are viewable from public roads or shown on available databases and confirmed by site visit.

Language used in this section is for discussion purposes only**B. Pre-construction Survey**

Pre-construction studies should normally address the following key issues associated with wildlife and wind power: avian risk, bat risk, wildlife displacement, and habitat loss and fragmentation. In addition to these general areas, appropriate surveys should be conducted for other species protected by state and Federal endangered species that may be present at the site.

(1) Avian Surveys

The objective of avian surveys is to gather information about avian use of potential project sites to characterize risks associated with collisions between birds and wind turbines (displacement effects are addressed in section 4 below).

Developers should collect appropriate and pertinent information that takes into consideration factors associated with region and habitat and that is designed to capture species occurrence and abundance during all seasons of the year in which there is avian use. These studies are to be conducted on representative areas of the site that are expected to include wind turbines. Studies should typically be conducted for a year. A full year may not be necessary if there are sufficient existing studies completed for other projects or phases in comparable habitats the region. More than one year may be appropriate where preliminary assessment or initial preconstruction surveys indicate potential for high avian use and risk. Information should be collected that considers the following issues as appropriate:

1. Identify avian use of a project area by species;
2. Evaluate potential impacts from construction and operation of the proposed site;
3. Determine seasonal variation, if any; and
4. Collect data to aid in the analysis of impacts such as topographic features and weather conditions

Available tools for avian studies include diurnal point count surveys, raptor nest surveys, breeding bird surveys, area searches, mist netting, migration counts, and marine radar surveys, large Doppler surveillance radar, thermal infrared imagery, moon counts, spotlighting, and radiotracking. Which of these tools should be used at a particular site should be a site-specific determination. All surveys should follow protocols contained in the NWCC's Methods and Metrics document. A revision of this document is currently underway. The National Academy of Sciences also lists methods and metrics in its 2007 document on wind energy.

[Andy: Although I like the idea of a framework requiring more study at more sensitive and/or less understood sites, I'm not comfortable with all the categories and definitions currently in the Appendix]* If the project area falls within an area that exhibits characteristics for a very high, high or medium area for bird use, additional surveys may be required (Appendix C)]

(A) Standard Methods and Metrics (or these could be in the Appendices)

(1) National Wind Coordinating Committee, methods and metrics docs (give website)

(2) Bat Surveys

The objective of pre-construction bat surveys is gather information about bat use of potential project sites to predict risks associated with collisions between bats and wind turbines.

Methods for preconstruction studies to effectively predict impact to bats have not been fully evaluated. In areas of known bat concentrations or near sensitive bat habitat, information should be collected that considers the following issues as appropriate:

1. Seasonal patterns of abundance and use of a prospective site by bats; and
2. Roosting areas and daily movement patterns.

Available methods for bat surveys are described in detail in Kunz et al. 2007's Journal of Wildlife Management paper.

*If the project area falls within an area that exhibits characteristics for a very high, high or medium area for bat use, additional surveys may be required (Appendix D)

- (A) Standard Methods and Metrics
(1) where they are located

(3) Displacement of species

Standard language regarding why it is important and what studies should be performed

- (A) Standard Methods and Metrics
(1) where they are located

(4) Habitat Loss and Fragmentation

Standard language regarding why it is important and what studies should be performed. Collect information about vegetation and land cover types, wildlife habitat, habitat quality, and physical and topographic characteristics of the project area should be collected and compiled using current state-of-the-art protocols

- (A) Standard Methods and Metrics
(1) where they are located-specify protocols for more detailed habitat surveys here

Language used in this section is for discussion purposes only

C. Site Development and Operations

The risk of adverse impacts to wildlife from turbines can be reduced through careful site selection and facility design and operation. The following best management practices can assist a developer in the planning process to reduce potential wildlife impacts.

Each wind energy project site is unique, and no one recommendation will apply to all site selection and layout planning. However, consideration of the following elements in site selection, turbine layout and development and operation of a facility can be helpful to avoid and minimize impacts. *Developers should contact and consult appropriate affected state agencies and the USFWS early in the planning process for each proposed project to identify concerns and potentially sensitive uses.*

1. Avoid locations of state and federal T&E species and those areas identified to have the potential for high risk to birds or bats. Avoid using or degrading high value habitat areas.
2. As appropriate based on direct and indirect risk, establish non-disturbance buffer zones to protect raptor nests, bat maternity roosts and hibernacula, areas of high bird or bat use, or special-status species habitat. Determine the extent of the buffer zone in consultation with USFWS or state wildlife biologists.
3. Site a wind power project on disturbed lands where possible.
4. Minimize, to the extent possible, the area disturbed by pre-construction site monitoring and testing activities and installations.
5. Minimize habitat destruction, habitat fragmentation and disturbance of breeding, staging and wintering birds to the extent possible. Establish the layout of roads, fences, and other infrastructure so as to minimize disturbance of sensitive resources. In natural settings, maintain habitat at the site as close as possible to pre-construction conditions and for seeding or planting use only species compatible with plants and wildlife native to the area. .
6. Limit the number of access roads and minimize new road cuts as much as possible by using existing infrastructure where possible.
7. To prevent avian collisions, place connecting power lines associated with the wind energy development underground, to the extent possible, unless burial of the lines would result in greater impacts to biological resources. Overhead lines may be acceptable if they follow tree lines or are otherwise screened from collision risk. All above-ground lines, transformers and conductors should fully comply with the Avian Power Line Interaction Committee (APLIC).

8. Avoid guy wires. Guyed structures pose a hazard to birds. Communication towers and permanent meteorological towers should not be guyed at turbine sites. If guy wires are necessary, bird deterrents should be used.
9. Keep lighting at both operation and maintenance facilities and substations to the minimum required to meet FAA guidelines and safety and security needs. Use white lights with sensors and switches to keep lights off when not required. Lights should be hooded and directed to minimize backscatter, skyward illumination, and outside illumination. Do not use high intensity lighting, steady-burning, or bright lights such as sodium vapor or spotlights.
10. Configure turbines to avoid creating extended barriers to bird movement to the extent possible. Align turbines to avoid separating birds and bats from their daily roosting, feeding, or nesting sites and to avoid location in high bird or base use areas.
11. Use tubular towers (as opposed to lattice towers) or best available technology to reduce ability of birds to perch and risk of collision.
12. Where warranted, develop a project-specific habitat conservation or restoration plan to avoid or minimize negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. When necessary and compatible with habitat plan, reduce habitat for prey near turbines and use construction and management practices to minimize activities that may attract prey and predators to the wind turbine site.
13. Remove wind turbines when they are no longer operational so they cannot present a collision hazard to birds and bats. Adopt a decommissioning plan and fund for removal of the turbines and infrastructure when it ceases operation, and for restoration of the site to approximate pre-project conditions. See section on Decommissioning.

Language used in this section is for discussion purposes only

D. Post Construction Surveys

At a minimum, the primary objectives for post-construction monitoring are to determine:

- (1) Whether estimated fatality rates from the pre-permitting assessment were reasonably accurate from direct strikes with the wind turbines, or indirectly through the altering of wildlife habitats. This is a very expensive idea, and determining habitat effects should not be a primary objective because it is overreaching and not warranted, except in special circumstances. (I think this is a topic that needs to be discussed. I think it would be negligent of us to discount other impacts of windpower, i.e. footprint, roads, transmission lines, and only observe direct strikes in post-construction monitoring. G. Hueckel)

(2) Whether the avoidance, minimization, and mitigation measures implemented for the project were adequate or whether additional corrective action or compensatory mitigation is warranted.

The duration of operations monitoring should be sufficient to determine whether pre-permitting estimates of impacts to birds or bats were reasonably accurate and to determine whether turbines are causing unanticipated fatalities that require impact avoidance or mitigation actions. The duration and focus of operations monitoring studies should be based on the availability of existing, site-specific data; the species potentially affected; and the magnitude of the anticipated effect. Consult local, state, or federal scientists and appropriate stakeholders regarding study protocol and the duration of an operations monitoring program.

A Technical Advisory Committee is recommended to be responsible for reviewing results of monitoring data and making suggestions to the permitting agency regarding the need to adjust mitigation and monitoring requirements based on results of monitoring data and available data from other projects. The range of possible adjustments to the monitoring and mitigation requirements should be clearly stated in the project permit. Adjustments should be made if unanticipated impacts become apparent from monitoring data. Examples of such changes may include additional monitoring or research focused to understand the identified impacts.

E. Retrofit and Decommissioning

Language used in this section is for discussion purposes only

F. Mitigation

Mitigation is defined as (a) avoiding the impact by not taking a certain action or parts of an action or limiting the degree or magnitude of the action and its implementation; (b) employing specific equipment, project designs, careful placement of facilities, or using corrective techniques that reduce or eliminate the impact; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments (from the President's Council on Environmental Quality as defined in the National Environmental Policy Act regulations).

- A. **Avoidance:** Avoiding adverse impacts through changes in project location, design, operation, or maintenance procedures, or through selection of other less damaging alternatives to the project or action.
- B. **Minimization:** Minimizing impacts by project modification, or rectification and rehabilitation to restore or improve impacted habitat to pre-project conditions, or through reducing or eliminating the impacts over time.

- C. **Compensation:** Compensating for unavoidable impacts by providing replacement or substitute resources (including appropriate management) for losses caused by project construction, operation, or maintenance.

Compensation should follow the sequence preference established by the USFWS as follows:

1. On-site, in-kind
2. Off-site, in-kind
3. On-site, out-of-kind
4. Off-site, out-of-kind

For off-site mitigation to be accepted, the project developer must demonstrate greater habitat function and value can be achieved off-site than on-site. It is recommended that compensation values or ratios be based on habitat types given priority according to state environmental regulations, ordinances, State Wildlife Action Plans or other environmental planning guidance, to provide compensation ratios:

a. Resource Category 1. Habitat to be impacted is of high value and is unique and irreplaceable on national basis or in the ecoregion section. The mitigation goal is to avoid impacts to these habitats.

b. Resource Category 2. Habitat to be impacted is of high quality and is relatively scarce or becoming scarce on a national basis or in the ecoregion section. The mitigation goal is no net loss of in-kind habitat value.

c. Resource Category 3. Habitat to be impacted is of high to medium value. The mitigation goal is no net loss of habitat value while minimizing loss of in-kind habitat value.

d. Resource Category 4. Habitat to be impacted is of medium to low value. The mitigation goal is to minimize loss of habitat value

(2) Mitigation Actions

(A) Mitigation Plans are integral part of construction and should be completed prior to or during project construction. Any mitigation plan should include some or all of the following: compensation for permanent, temporary and cumulative impacts to habitat(s) from the project, adequate replacement ratio, mitigation measures, goals and objectives, implementation plan, performance standards (survival percentage), operation and maintenance plans, and monitoring and evaluation plans. Mitigation sites should be protected for the life of the project.

Alternative Options for Mitigation Actions are:

- (1) purchase of appropriate acreage amount and type, in fee title

- (2) purchase of conservation easement containing appropriate acreage and habitat type
- (3) purchase buffers around or between areas with essential habitat (nesting and breeding areas, migratory areas, linkage between fragmented areas)
- (4) develop mitigation banks that conserve, restore or enhance priority habitats
- (5) voluntary monetary compensation, based on a per megawatt or per acre value, and should be based on compensation sequence as listed above:
- (6) Develop incentive program awarding certification to those entities that follow existing guidelines (either national or state), provide compensation as established above, then receive State Green Certification for Wind Energy Development Projects.

Need to address other mitigation options/strategies (e.g. operational curtailment) in next version *

III. Appendices

- Appendix A
- Appendix B
- Appendix C
- Appendix D
- Appendix E
- Appendix F

Organization Managing File(s)	Map/Database Title	Available?	Available as GIS layer	Spatial Scale	Regions/States Covered	Species covered	Habitat types covered	How to Access File	Comments
Existing information									
The Nature Conservancy	Portfolio Sites	Yes, some states. Lower 48 expected by end of 2008			North & Central America	NA (applicable to birds and most other organisms)	Large & intact	available at www.nature.org	
The Nature Conservancy	Great Plains Untilled Landscapes	Yes	no?	Coarse?	Great plains	NA (applicable to birds and most other organisms)	Large & intact landscapes		
Platt/DOE/Local transmission councils	Current and Proposed Transmission	Maybe	Yes/Maybe		Tx (Platt), other states?	NA	All	Information may be available from DOE, local transmission councils, or available for purchase from Platt (http://www.platts.com/Maps%20&%20Spatial%20Software/). Data may be sensitive (homeland security) and have release restricted.	
Unknown	Current and Proposed Wind Farms	Current wind farm info for sale from Industrial info. Information on Proposed Wind Developments is likely to be state by state and involves conversations with all of the possible permitting agencies.					All	existing wind areas http://industrialinfo.com/ ; planned wind developments contact local permitting agencies	
National Atlas	Bat Distributions	Distribution maps available. Requesting info from BCI on sensitive areas maps		Coarse scale distribution maps	US and Canada	Bats	All	Distribution maps at http://nationalatlas.gov/md/bat000m.html	
National Audubon Society	Important Bird Areas	Yes			U.S. (data organized at state level and not all states are currently available ~50% U.S. covered)	Birds	All	jcecil@audubon.org	
Natural Resources Conservation Service	Natural Resources Inventory (NRI)	Yes			All states and territ.	ETSC, significant rookeries and some biological "hotspots".		Contact state DNR	
Fish and Wildlife Service	Environmental Conservation Online System (ECOS)	Yes, USA		coarse	USA	ETSC designated critical habitat areas	ETSC designated critical habitat areas	http://ecos.fws.gov/imf/?site=ecos	

Organization Managing File(s)	Map/Database Title	Available?	Available as GIS layer	Spatial Scale	Regions/States Covered	Species covered	Habitat types covered	How to Access File	Comments
Existing information									
Fish and Wildlife Service	Habitat and Population Evaluation Team (HAPET) modeling	Yes, some models and midwestern states.	Yes, publicly available but no system set up for distribution as yet. Access maps on internet first.		Prairie Pothole Region (midwestern states). Region 3 out of Fergus Falls covers Minnesota, Iowa, Region 6 out of Bismark has region has Dakotas and ?	Grassland birds, specific models of some sparrows, prairie chickens, ducks, etc.		http://www.fws.gov/midwest/hapet/DistgbcaMap.htm http://www.fws.gov/midwest/hapet/WhoWeAre.htm Address: 18965 County Hwy 82 S Fergus Falls, MN 56537 Phone: 218-739-2291	Use maps with some caution. files on some specific organisms can be obtained on the USGS site http://www.nwr.usgs.gov/wdb/pub/hsi/hsiintro.htm#top
The Nature Conservancy	Wind & wildlife resource maps - Great Plains	Yes			Great Plains				
FORTHCOMING:									
Western Governors Association	Wind-wildlife transmission maps								
Audubon/NRDC	Western resources maps								
North American Grouse Partnership	Prairie grouse habitats	Yes							
The Nature Conservancy	Wind & wildlife resource maps - balance of US				US states				
Am. Wind & Wildlife Institute	Wind & wildlife resource maps				US states & territ.?			jill.griffin@pljv.org	
Playa Lake Joint Venture	Playas	Yes			So. Plains & SW US				
Prairie Pothole Joint Venture	Prairie Pothole habitats	Yes			Portions of ND,SD,MN,MT,IA				
Note: Should there be a collaboration with national atlas? Seems a great resource built around exactly the idea of making maps available to the public.									

U.S. FISH & WILDLIFE SERVICE
WIND TURBINE ADVISORY COMMITTEE
**LANDSCAPE/HABITAT SUBCOMMITTEE REPORT:
MAPPING, PROTOCOLS, & THEIR USE
PRELIMINARY ASSESSMENT SUMMARY
DRAFT - July 15, 2008**

The Landscape/Habitat Subcommittee concluded its inter-meeting conference call series July 15, with an examination of a draft catalog-matrix of wind-wildlife spatial analysis tools (maps), a draft protocol for applying these tools, and two example process flow diagrams for planning and siting wind energy facilities in consideration of wildlife impacts. Drafts of these interim products are available to FAC members. Subcommittee members did not attempt to reach consensus on the merits of these individual tools, but agreed that, in aggregate, they will be key assets in developing structured approaches to wind energy development.

The catalog matrix of wind-wildlife interaction identifies 10 existing and developing sources of maps that identify potential areas where wind energy development and wildlife resources may be incompatible. The draft matrix provides information regarding source organizations for each of the maps, availability, wildlife resources addressed, and accessibility. The matrix requires further development, and will remain an evolving document.

The example flow diagrams, one from a bat impact avoidance process and one from a Canadian wind energy siting process, offer simple step-down approaches to decision-making regarding wind energy siting. They suggest a structure for examining siting decisions that could provide both uniformity and objectivity.

The draft protocol is a simply dichotomous key, which relies, in large part on the use of maps and other available data. It points decision makers to these tools and suggests the acquisition of such data in cases when it is not readily available.

Subcommittee members discussed the need for each of these three components, as well as wind-wildlife maps themselves and standards for securing and applying the information they provide. The Subcommittee recommends that the full FAC consider the need for aggregated use of these tools – map catalog-matrix, maps, standard protocol for use, and process diagrams – as a foundational component of wind energy development siting analyses.

If the full FAC concurs with these recommendations, the Landscape/Habitat Subcommittee will continue development and refinement of each of the tools.

Landscape/Habitat Subcommittee Membership:

Ed Arnett
Rene Braud
Caitlin Coberly
Scott Darling
Mike Daulton
Amy Delach
Sam Enfield
Andy Linehan
Rob Manes
Rich Rayhill
Bob Robel

Staff/Coordinators:

Cheryl Amrani
Abby Arnold
Susan Goodwin
Rachel London

Figure 1: Key steps of the EA process and the required analyses for birds, in relation to the planning of a typical wind farm

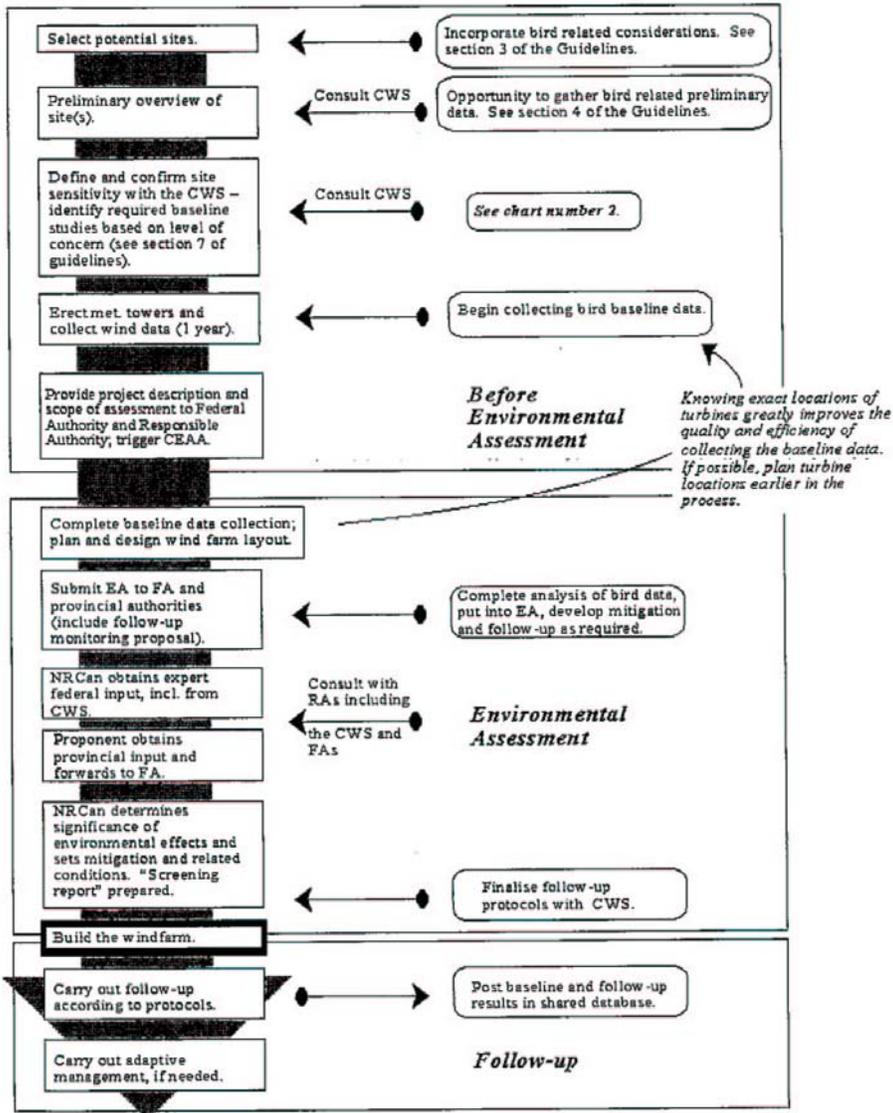


Figure 2: Overview of the process outlines in this guide to obtain and incorporate information on birds into an environmental assessment.

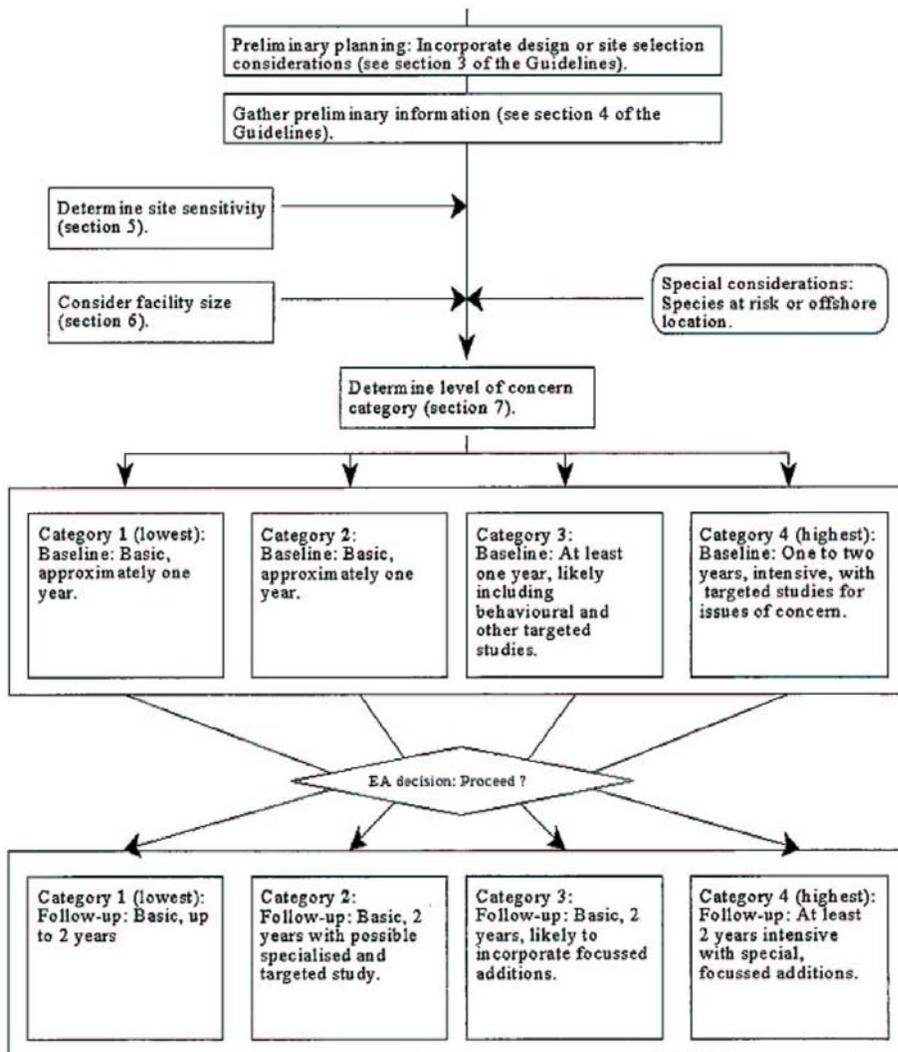
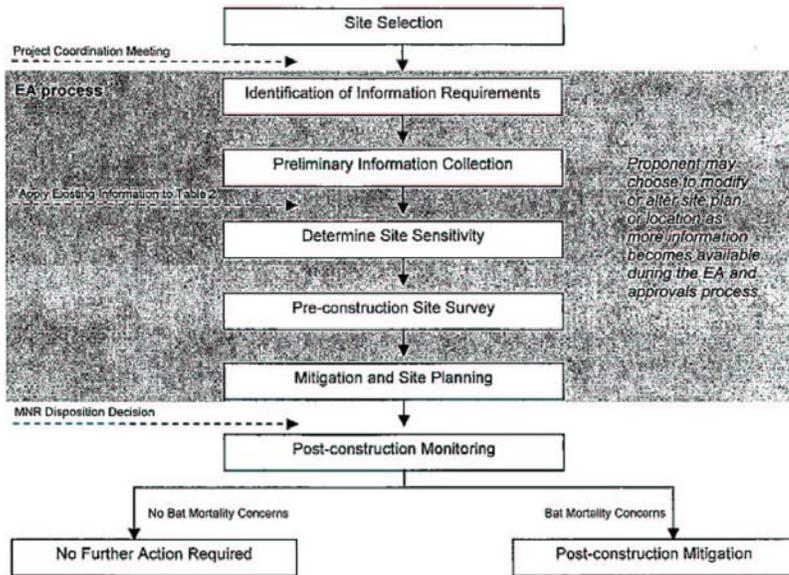


Figure 1. Overview of the Bat Screening Process, identifying a general sequence of steps in completing a site screening for bats.



REPORT

23 July 2008

To the Wind Turbine Guidelines Federal Advisory Committee

SCIENTIFIC TOOLS AND PROCEDURES SUBCOMMITTEE

Members: Taber Allison, Edward Arnett, Rene Braud, Rachel London (FWS), and Robert Robel

Technical Experts: Douglas Johnson (USGS) and Dale Strickland (WEST)

Purpose: To evaluate scientific tools and procedures to:
wildlife.
development.
1. Assess pre-development risk or benefits provided to
2. Measure post-development mortality of wildlife.
3. Assess behavioral modifications of wildlife to
4. Provide compensatory mitigation for unavoidable impacts on wildlife.
Draft recommendations for the Wind Turbine Guidelines FAC for reducing the risk to wildlife, if any, associated with wind power development.

The subcommittee has held four 1-hour teleconferences and one luncheon meeting since it was established during the 23-24 April 2008 meeting of the Wind Turbine Guidelines FAC. The first teleconference focused on the purpose of the subcommittee and agreeing on the types of Technical Experts required to deal with some of the issues that would be addressed by the subcommittee. The other meetings primarily focused on the tools currently available to assess pre-development conditions at proposed sites for wind power development (WPD), and whether or not the information gathered using those tools provide a reliable basis to predict impacts of the WPD on wildlife (primarily bats, birds, and federally listed species). Below is a generalized approach sometimes used to assess impacts of WPD sites on wildlife.

- 1. Determine the types of bats, birds, and federally listed species present at the

WPD site.

2. Determine the abundance/activity of bats, birds, and federally listed species present at the WPD site.
3. Based on results from (1) and (2), predict expected wildlife mortality at the WPD site after development.

KEY QUESTION: Can impacts be predicted and used to establish triggers and thresholds for mitigation actions?

- What tools and data are required to develop a decision-making framework for establishing thresholds of mortality and the level(s) of mortality that trigger action/mitigation?

4. Determine post-development mortality of bats, birds, and federally listed species at the WPD site.

KEY QUESTIONS TO ADDRESS WITH MORTALITY DATA:

What are the relationships between mortality of wildlife at WPD sites and environmental and weather variables?

Will mitigation effectively offset the loss of bats, birds, and listed species at the WPD site?

5. Determine the types of wildlife habitat (e.g., nesting habitat for grouse, roosting habitat for bats, etc.) affected directly or indirectly by the WPD.

KEY QUESTIONS RELATIVE TO HABITAT LOST OR IMPACTED:

On a local, regional, and national level, how abundant is the land cover type (habitat = species specific) that is being lost or made less suitable?

Is the land cover type or habitat for a specific species, population, or community of wildlife 'critical', 'of significant value', 'of scientific importance' or other local, regional, national, or international designation?

Are the impacts short- or long-term, and due to destruction or

displacement?

If loss and/or degradation of wildlife habitat are unavoidable, can mitigation offset those impacts?

Matrices are being prepared to evaluate the accuracy/precision of methods (tools) available to measure bat and bird populations/activity at wind facility sites. Additionally, matrices are being prepared to examine the uncertainties associated with (1) predicting bat and bird mortalities at wind facilities, (2) implementing measures to avoid and/or minimize wildlife fatalities at wind facilities, (3) predicting the direct and indirect impacts of wind facilities on wildlife habitat, (4) estimating the impacts of mortalities and/or habitat loss/degradation on wildlife populations, and (5) assessing the potential for mitigation measures to replace the loss of bats, birds, and/or habitat at wind facilities. The matrices for bats and birds are 50% complete and work is continuing.

The Scientific Tools and Procedures Subcommittee has no recommendations for the Wind Turbine Guidelines FAC to consider at this time.

QUESTIONS FOR THE FAC:

Is the subcommittee headed in the right direction?

Does the FAC desire us to address other issues?

Are we duplicating the efforts of other FAC subcommittees? If so, which, and should we continue or cease our efforts?

Are we working on nonessential areas? If so, which?

Hawk Migration Association of North America Industrial Wind Turbine Siting and Monitoring Policy

July 8, 2008 (HMANA Board approval)

The Hawk Migration Association of North America's official mission is to conserve raptor populations through the scientific study, enjoyment and appreciation of raptor migration. As a scientific, educational and conservation organization, HMANA collects data from hundreds of affiliated raptor monitoring sites throughout the United States, Canada and Mexico, and publishes a journal *Hawk Migration Studies* that includes data from participating hawk watches as well as articles on raptor conservation and other issues impacting raptors.

HMANA is concerned about the threat posed by industrial wind energy developments to migrating, nesting and wintering raptors. Wind conditions favorable for industrial wind energy projects may coincide with locations where concentrations of raptors occur. Industrial wind projects have been placed and are being proposed along known migratory flyways and near nesting and wintering concentrations of raptors. Some industrial wind energy developments have been clearly demonstrated to cause high mortality rates in a variety of raptor species, frequently as a result of inappropriate siting.

The National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA) and other federal legislation require federal agencies to carefully consider and assess the possible adverse effects in their projects and permitting practices. HMANA supports federal guidelines for the siting of wind power projects that are consistent with and at least as rigorous as provisions in the NEPA, the ESA, the MBTA and other existing federal legislation.

HMANA urges the establishment of final and mandatory design and siting standards—international, national and state—requiring that developers of industrial wind energy projects avoid known bird migration pathways and daily movement flyways, avoid features of the landscape known to attract raptors (such as ridgelines and coastlines), avoid areas formally designated as Important Bird Areas and avoid documented locations of any species protected under the federal Endangered Species Act. Such requirements are consistent with the U.S. Fish and Wildlife Service interim siting guidelines proposed in July 2003, which HMANA strongly supports. Unfortunately, delays in establishing permanent and binding regulations or guidelines have meant a lack of clear, unambiguous federal guidance to the state and local governments that must make decisions regarding the proper siting of proposed projects.

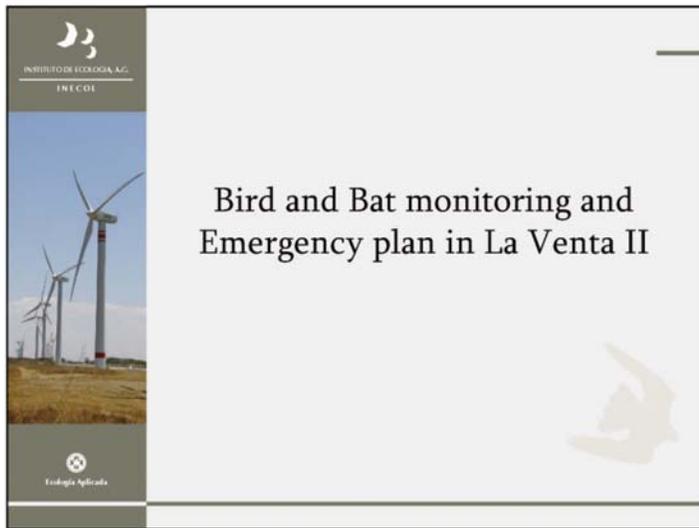
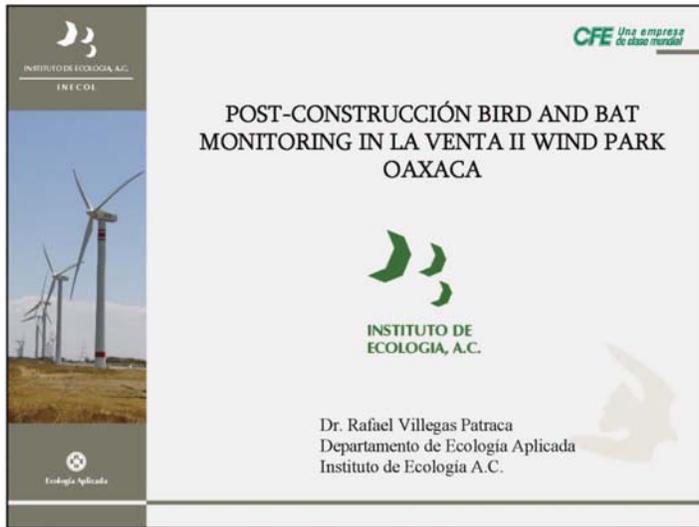
As articulated by the U.S. General Accountability Office report of 2005 and the National Academy of Science report of 2007, there is currently a lack of knowledge about the impacts of new-generation turbines on raptors. Accordingly, HMANA urges the establishment and

consistent application of pre-construction and post-construction monitoring procedures for industrial wind power projects that are capable of improving the understanding of risk to wildlife posed by industrial wind power projects. Because knowledge of raptor migration and other behavior patterns is incomplete and raptor monitoring demonstrates high year-to-year variability in numbers of migrants at most sites, mandatory design and siting standards must require the collection of at least three years of pre-construction study data for projects where landscape features, natural history patterns or other data suggest raptor concentration is possible. Pre-construction studies of raptor behavior should not be limited to migration issues but should be comprehensive and include not only the risk associated with direct turbine strikes and possible avoidance behavior, but also terrestrial habitat degradation and its effects on nesting and wintering raptors, as well as the effect of such degradation on migrating raptors' roosting needs.

When multi-year preconstruction studies confirm migration, wintering or breeding season concentrations of raptors in a particular area, then plans for development in that area should be abandoned and development forbidden; if such study shows minimal concentration of raptors, or if specific designs can be demonstrated to pose minimal danger to wildlife present in the area, then projects can be considered. In such cases, when developers have invested in diligent efforts to locate wind power development appropriately, it is still possible that post-construction monitoring might show an entire project or individual turbines to be particularly fatal to raptors: when this happens, turbines must be decommissioned or their operation suspended during the periods when the problematic turbines are found to be most destructive. Developers must agree to such remedial action as a precondition of project approval by federal, state and local permitting agencies.

HMANA urges that international, national and state and provincial standards for pre- and post-construction monitoring be promulgated and enforced that will make possible the scientifically valid assessment of risk associated with industrial wind power development. In light of the absence of binding standards for pre- and post-construction monitoring, monitoring protocols must be specifically designed for each project by qualified and independent consultants in collaboration with federal or national regulatory and conservation agencies (e.g. the USFWS), state or provincial agencies, appropriate non-governmental conservation and scientific organizations and independent experts. The protocol for this monitoring and the monitoring results must be peer-reviewed and publicly accessible.

HMANA supports alternative energy technologies if they can be shown to pose minimal risk to wildlife when appropriately designed, sited and developed. New approaches to wind turbine technology and design in particular might be possible in the near future that pose less risk to wildlife and habitat. HMANA urges investment in research into such new technologies and their development.

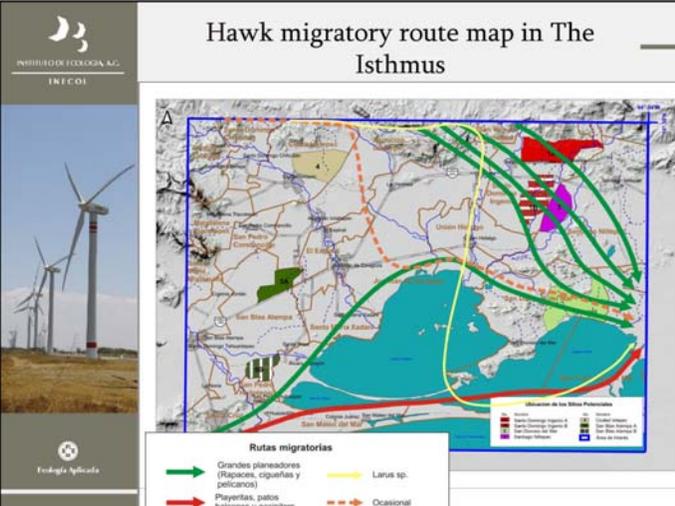


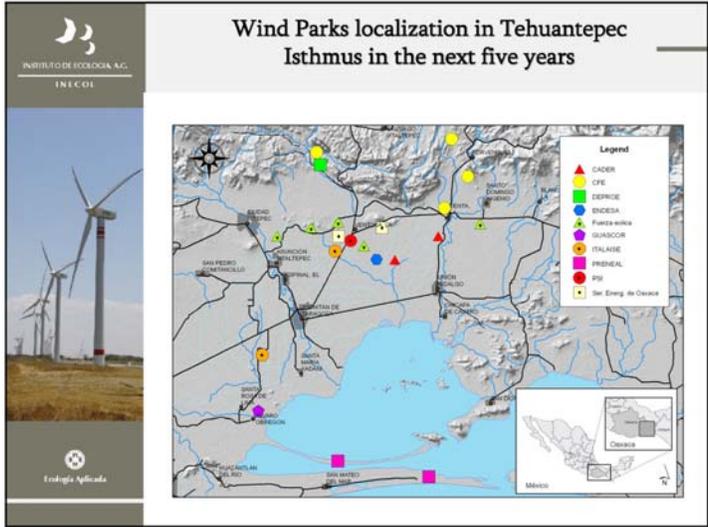
Why ?

- Environmental Impact Assessment La Venta II
- Two pre-construction monitoring
- World Bank
- Semarnat
- National Electricity Company (CFE)



Hawk migratory route map in The Isthmus





• World Bank were agreed with CFE and adequately documented in the revised EA report and Emissions Reduction Purchase Agreement (ERPA)

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INECOL

Research aims

- Temporary shutdown
- Night lighting
- Bird and Bat monitoring
- Stakeholder consultation
- Recommended next steps

Ecología Aplicada



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INECOL

Temporary shutdown

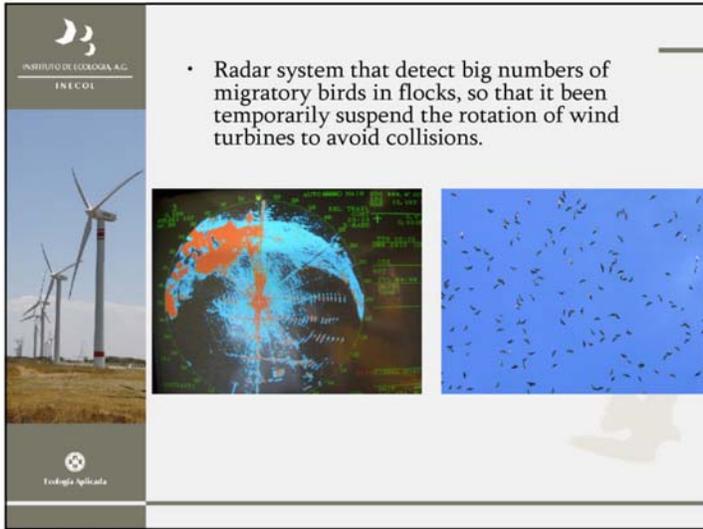
- A highly effective mitigation measure is available is temporary shutdown, to lock the rotors in place during peak migration periods. Implementation of this measure reduce the mortality of migrating birds, especially by day.

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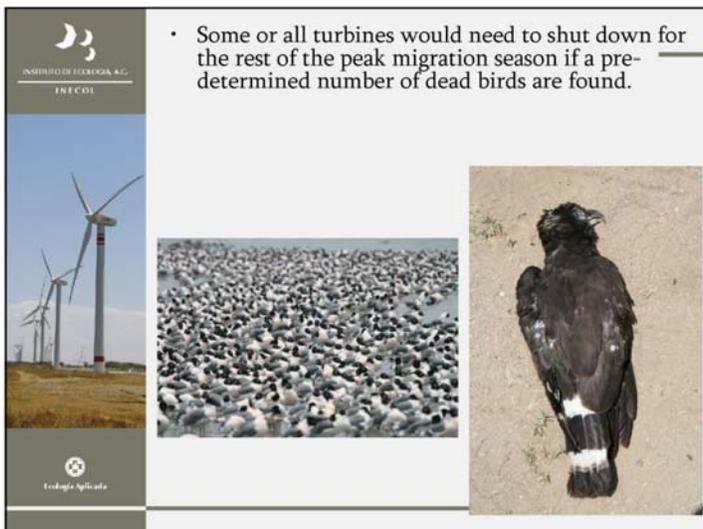
- Radar system that detect big numbers of migratory birds in flocks, so that it been temporarily suspend the rotation of wind turbines to avoid collisions.



Ecología Aplicada

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INECOL

- Some or all turbines would need to shut down for the rest of the peak migration season if a pre-determined number of dead birds are found.



Ecología Aplicada

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The economic opportunity cost of temporary shutdowns should be minimized through careful scheduling of turbine maintenance

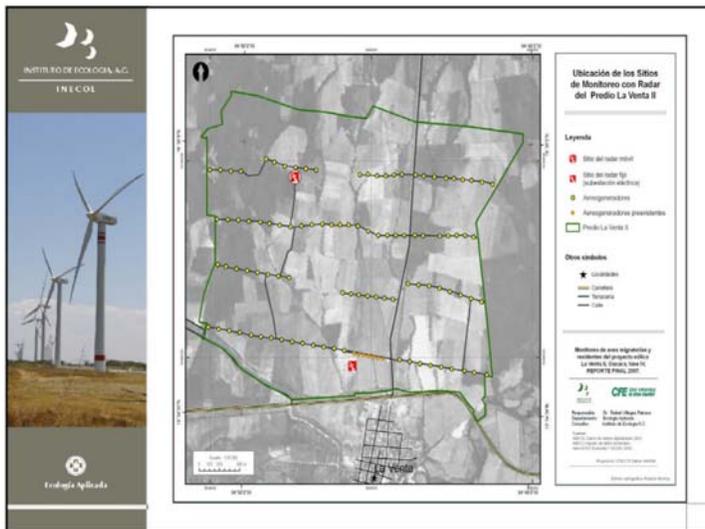
Ecología Aplicada

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INECOI

Commitments with the Radar

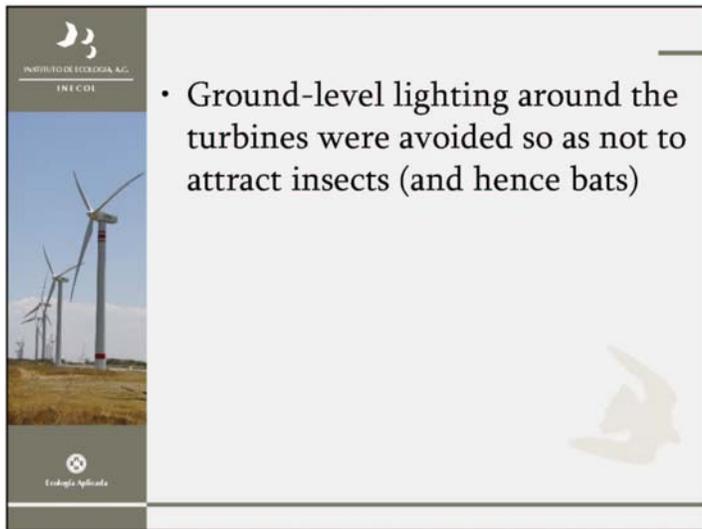
- Radar helps as a first alert in bird diurnal migration season mainly in peaks days of fall season

Ecología Aplicada

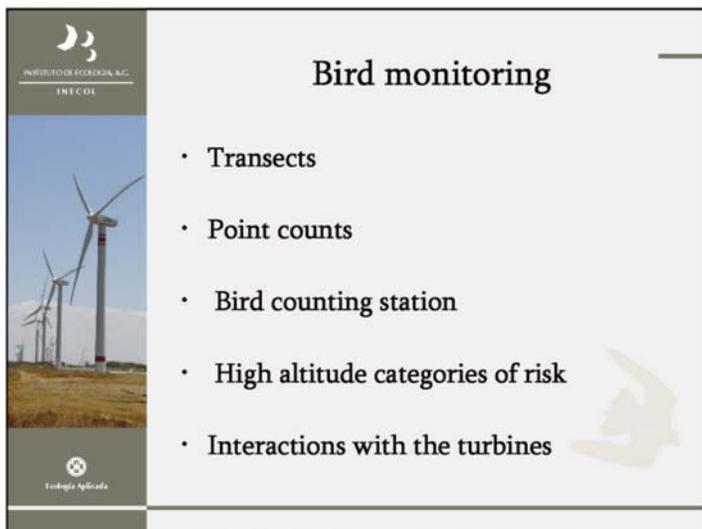


Night lighting

- currently recommends “illuminating the plant during night time” as a bird mortality reduction measure.
- Tower lighting is required by law, white strobe lights (with the longest possible interval between pulses, and the pulses synchronized for all turbines within the wind farm)



• Ground-level lighting around the turbines were avoided so as not to attract insects (and hence bats)



Bird monitoring

- Transects
- Point counts
- Bird counting station
- High altitude categories of risk
- Interactions with the turbines



- Death bird transects
- Radar Monitoring
- Bird and Bat mist-netting
- Bird Nest search
- Bat Caves Search

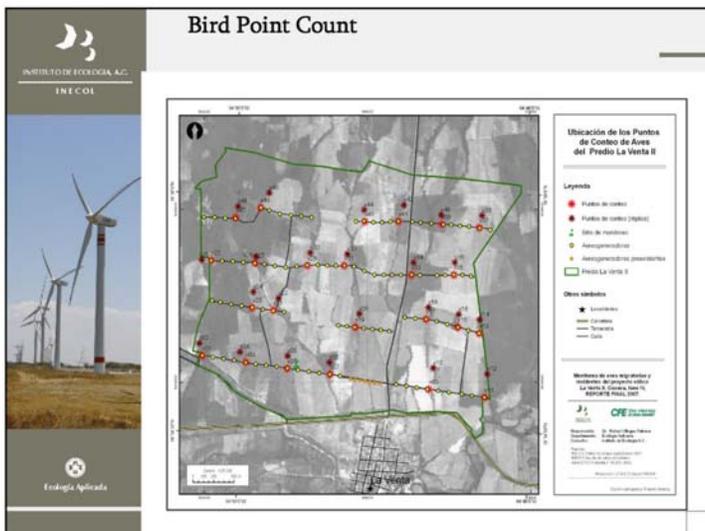


Transects



Transect	Longitud
T. Norte	2530 m.
T. Oeste	2540 m.
T. Este	2450 m.
TOTAL	7520 m.





Bird counting station

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Logo: Ecología Aplicada

High Altitude categories

Alturas de Vuelo

120m

90m

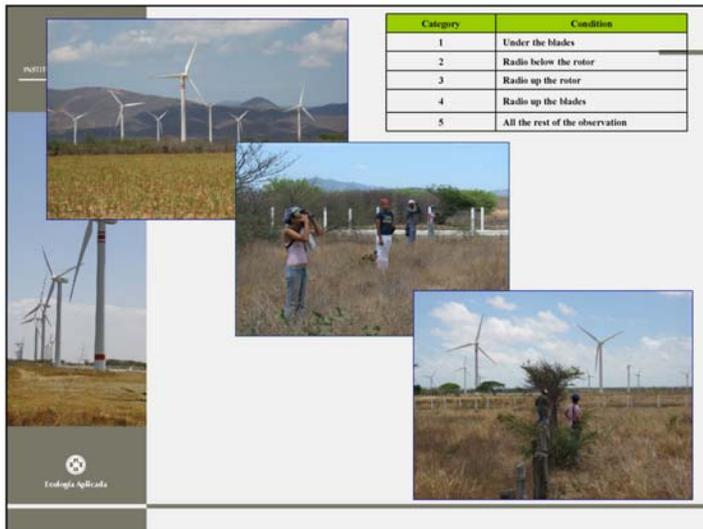
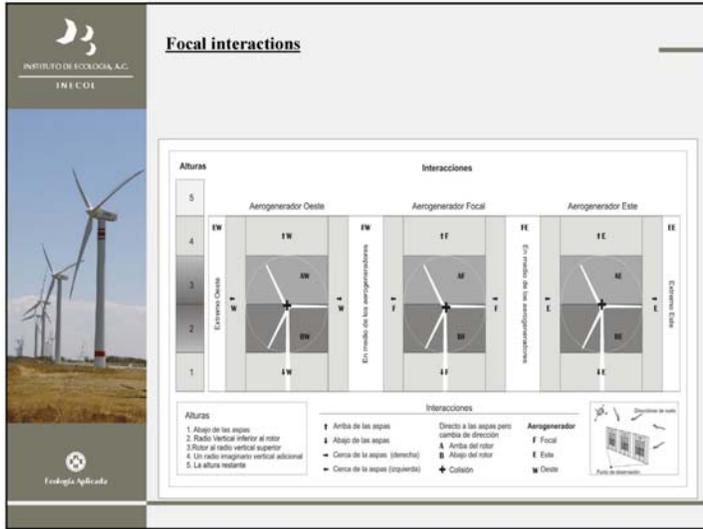
60m

30m

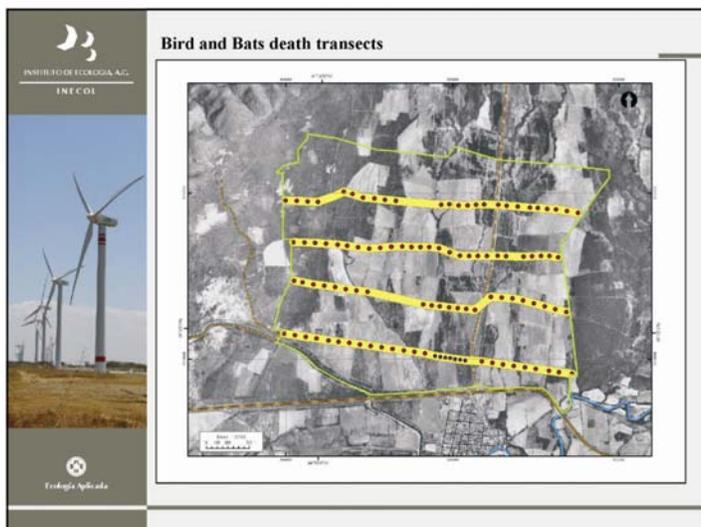
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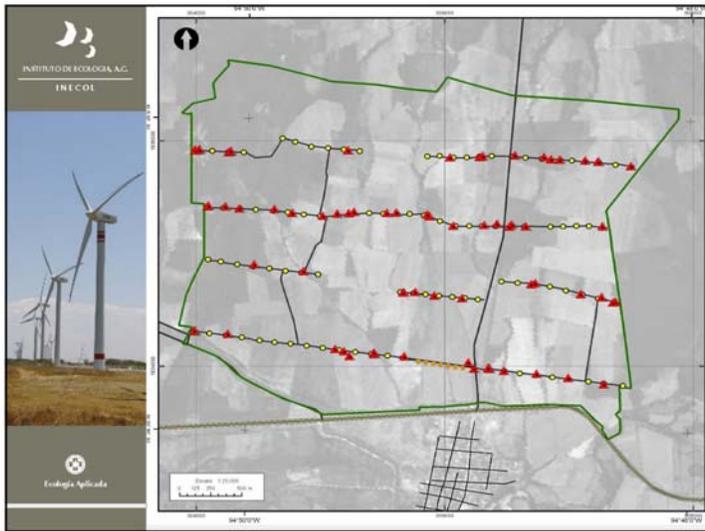
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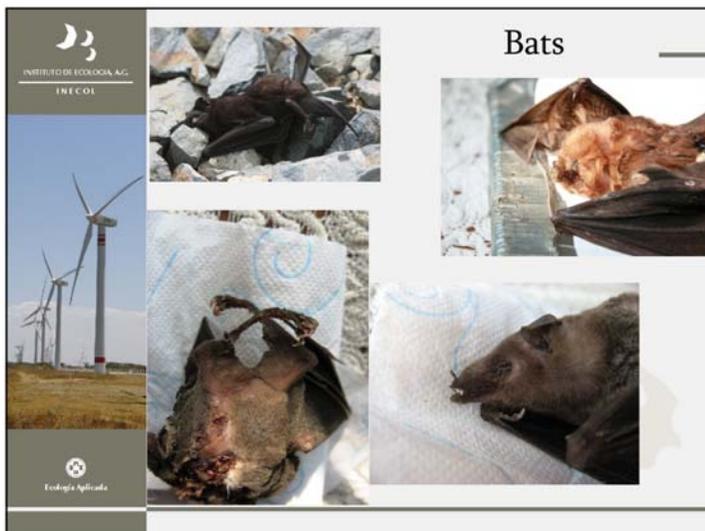




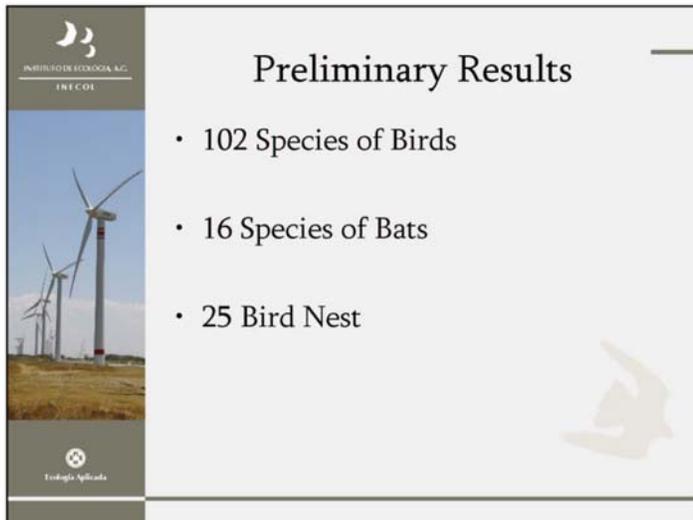










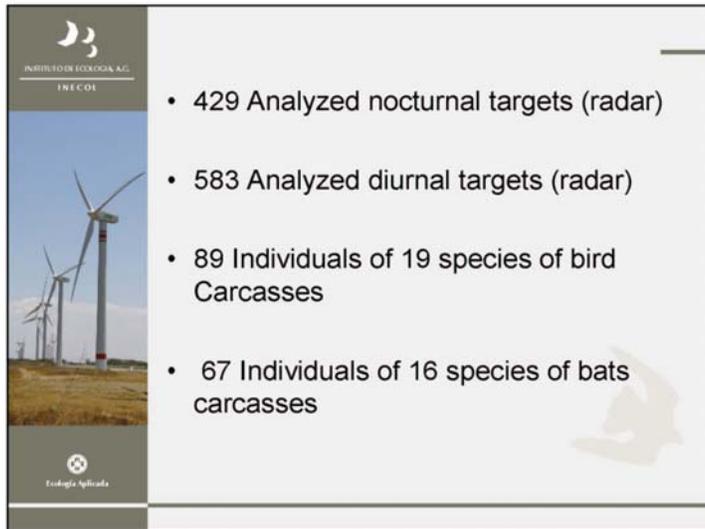


Preliminary Results

- 102 Species of Birds
- 16 Species of Bats
- 25 Bird Nest



- 16 bird species with a conservation status by the Mexican Law
- 3 Endemic Species
- One specie of bat is considered at risk by the Mexican law
- Twelve additional species are considered at risk by IUCN.

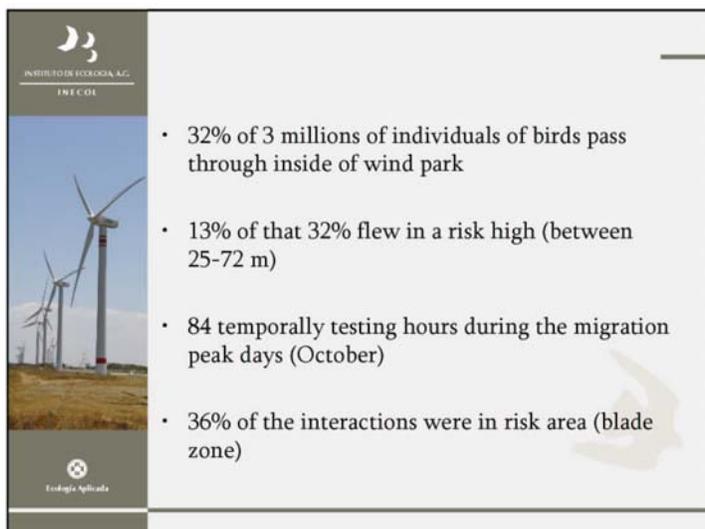


• 429 Analyzed nocturnal targets (radar)

• 583 Analyzed diurnal targets (radar)

• 89 Individuals of 19 species of bird Carcasses

• 67 Individuals of 16 species of bats carcasses



• 32% of 3 millions of individuals of birds pass through inside of wind park

• 13% of that 32% flew in a risk high (between 25-72 m)

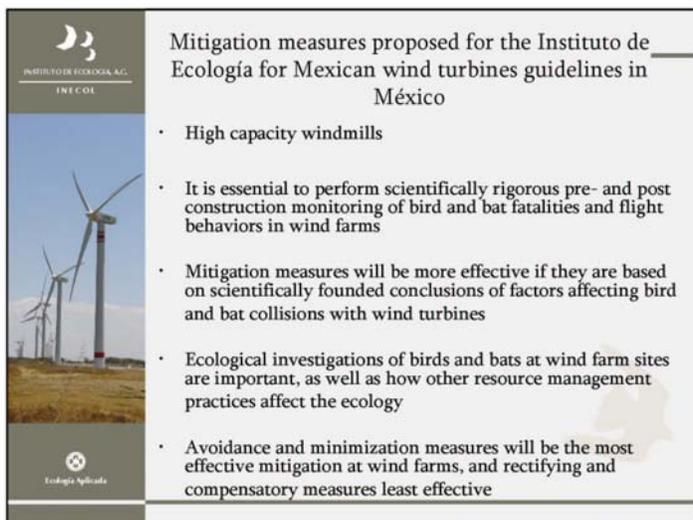
• 84 temporally testing hours during the migration peak days (October)

• 36% of the interactions were in risk area (blade zone)



New Methods for next season in La Venta II Wind Park

- Nocturnal acoustic monitoring
- Night vision goggles
- Other vertebrates (non flying mammals, amphibian and reptiles)
- Environmental education in local schools
- Landscape analysis (habitat for Vertebrates)



Mitigation measures proposed for the Instituto de Ecología for Mexican wind turbines guidelines in México

- High capacity windmills
- It is essential to perform scientifically rigorous pre- and post construction monitoring of bird and bat fatalities and flight behaviors in wind farms
- Mitigation measures will be more effective if they are based on scientifically founded conclusions of factors affecting bird and bat collisions with wind turbines
- Ecological investigations of birds and bats at wind farm sites are important, as well as how other resource management practices affect the ecology
- Avoidance and minimization measures will be the most effective mitigation at wind farms, and rectifying and compensatory measures least effective



INECOL

- Avian risk at wind farms differs greatly from site to site, with the majority of sites likely being low risk, at least for most of three years.
- Relocate selected, highly dangerous wind turbines
- Shut down turbines during time periods found to be killing surprisingly large numbers of birds or bats
- Install flight diverters at the ends of turbine rows
- Remove broken and non-operating wind turbines
- Paint blades effectively

Ecología Aplicada



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The Field Crew

Ecología Aplicada

US Fish and Wildlife Service
Wind Turbine Guidelines Advisory Committee

July 23-24, 2008

Next Steps

The US FWS Wind Turbine Guidelines Advisory Committee met and agreed to the following next steps.

<i>Subcommittee products/ calls will be scheduled during following weeks:</i>	
August 13-20:	<ul style="list-style-type: none"> • Science and Tools and Landscape Habitat Subcommittees meet in one call <ul style="list-style-type: none"> • quality assessments – common vision how to assess quality in both • develop protocol for how to use the data • Other Models Subcommittee call
After August 18:	<ul style="list-style-type: none"> • Existing Guidelines Subcommittee call • Table of Contents Subcommittee call
August 28:	<ul style="list-style-type: none"> • Other Models Subcommittee to provide language to Existing Guidelines Subcommittee
End of August:	<ul style="list-style-type: none"> • Legal Subcommittee call
After September 5:	<ul style="list-style-type: none"> • Draft reports due to Existing Guidelines Subcommittee: <ol style="list-style-type: none"> 1. Science and Tools flesh out level of detail as an example for Existing Guidelines; • Schedule Joint calls: <ul style="list-style-type: none"> • Landscape and Science/Existing Guidelines • Other Models and Existing Guidelines
After September 6 additional calls to be scheduled	
<u>The next scheduled FAC Meetings Are:</u>	
<ul style="list-style-type: none"> • October 21-23, 2008 • January 27-29, 2008 • March • ? 	

Notes from FAC Discussion

The Committee agreed to use FWS definition of Wildlife as working draft, legal and perhaps other subcommittees may provide recommendations on what wildlife to focus on – for purposes of recommendations to Secretary

Parking Lot Issues to be Addressed by the FAC in the Future

- Develop recommendation on how to address risk
- Implementation/incentives to be developed by FAC members for discussion in October.
- Table of Contents to be developed into a ‘one-text’ for discussion in October.
- Some FAC members will draft for the full FAC review, factors to consider when developing mitigation plan.

Tasks for FAC Facilitation Team

- Development of glossary, based on terms provided by all Subcommittees (*Facilitation team will be keeper*)
- Detailed schedule of Subcommittee deliverables (September)
- The FWS will host a Private lands panel for the October 2008 meeting; (*nominations due for panel is August 15*).

FAC Direction to Subcommittees

- *To the extent possible, subcommittee’s will reach consensus recommendations for their product to present and discuss at the October 2008 Meeting.*

Science and Tools

- Work with Landscape Habitat Subcommittee to
 - define protocol for how to use Landscape Habitat tool
 - develop a common vision of how to assess quality in both maps and science tools matrices
- Notes on handout distributed at July 23-24 meeting, (*see attached*).
 - Page 1 of handout distributed at July 23-24 meeting:
 - Bottom full paragraph: Subcommittee will ‘review factors that assess risk’
 - (2.) Incorporate behavior into ‘abundance/activity’ of bats, birds, and federally listed species present at a WPD site.
 - Page 2
 - Goal for recommendations would be to establish a process for establishing thresholds.
 - Under ‘KEY QUESTIONS’: delete “Will mitigation effectively offset loss of bats, birds, and listed species at the WPD site”; replace with “*To what extent can loss of bird and bat habitat at a site be effectively mitigated? If loss or degradation of wildlife or habitat is unavoidable to what extent can it be effectively mitigated?*”
 - Page 3: (5) assessing ...*strike* “potential” and *insert* “effectiveness

Landscape Habitat

- Notes on handout distributed at July 23-24 meeting, (see attached).
 - Working with Science and Tools Subcommittee
 1. Quality assessments – common vision how to assess quality in both
 2. Accurately characterize what are strengths and weaknesses of data bases
 - Provide report to FAC at October meeting

Risk and Uncertainty and Other Models

- Notes on handout distributed at July 23-24 meeting (see attached)
 - By July 28th develop table including attributes of each ‘program or model’ suited to wind development; send to all FAC members through Rachel London.
- Flesh out Avian Protection Plan applied to wind power (Wildlife Protection Plan) and blend in with guideline outline/framework.
- Provide report to FAC at October meeting

Legal

- Notes on handout distributed at July 23-24 meeting (see attached)
 - Add introduction – audience is FAC and scope.
 - Edit Outline Headings (1) and (2) into “lay language” and incorporate edits from FAC.
- Provide report to FAC at October meeting

Existing Guidelines

- Notes on handout distributed at July 23-24 meeting, (see attached).
 - Use main **bold** headings as outline/backbone for national framework; determine how products from legal, other models, scientific tools, and landscape habitat mapping can be incorporated into framework.
 - Determine what to include in the framework that is scientifically or technically the best available information. (*Science and Tools, Legal, Other Models Subcommittees to provide recommendations*)
- Provide report to FAC at October meeting

Guiding Principles

- Notes on handout distributed at meeting July 23-24 (see attached).
- Agreement on draft submitted to FAC: 1-10(as edited by FAC with additional edits to #4:
 - “Parked” premises: Determine if can edit premises into principles to determine if FAC can agree to language.
 - Provide report to FAC on #4 at October meeting

Create New 'Incentives Committee'

- Brainstorm list of ideas re. Incentives through e-mail exchange.

Create "Table of Contents" Committee