

U.S. Fish & Wildlife Service
WIND TURBINE GUIDELINES ADVISORY COMMITTEE

Federal Advisory Committee Meeting

USFWS Mountain-Prairie Regional Office
134 Union Boulevard
Lakewood, Colorado

June 18, 2008

– Meeting Summary –

On June 18, 2008, the Wind Turbine Guidelines Advisory Committee convened its third meeting at the USFWS Mountain-Prairie Regional Office in Lakewood, CO. See Attachment A for the meeting agenda and Attachment B for the participant list.

For copies of the slides presented at the meeting, please visit the U.S. Fish & Wildlife Service website at www.fws.gov/habitatconservation/windpower/wind_turbine_advisory_committee.html.

Meeting Objective:

- Discussion and clarification of objectives to guide the Wind Turbine Guidelines Advisory Committee in its development of recommendations to the Secretary of the Interior.

A summary of the one-day Committee meeting was prepared by consultants Robin Gregory, Value Scope Research, and Graham Long, Compass Resource Management, and is included in its entirety below. The agenda included a time slot for public comment at the end of the day. See Attachment C for the written comment submitted by members of the public. A set of Next Steps were identified based on the outcomes of the meeting. A Next Steps document was distributed to the Committee following the meeting, and is included in this summary as Attachment D.

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

¹ The 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.

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 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..

3.0 Results

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.

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.

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.

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).

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

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

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

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.

3.2 Illustrative Objectives Hierarchy

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).

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.

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

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.

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 wildife, 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 approach 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, state, 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 people at local level to make decisions.

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 landcape 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).

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)

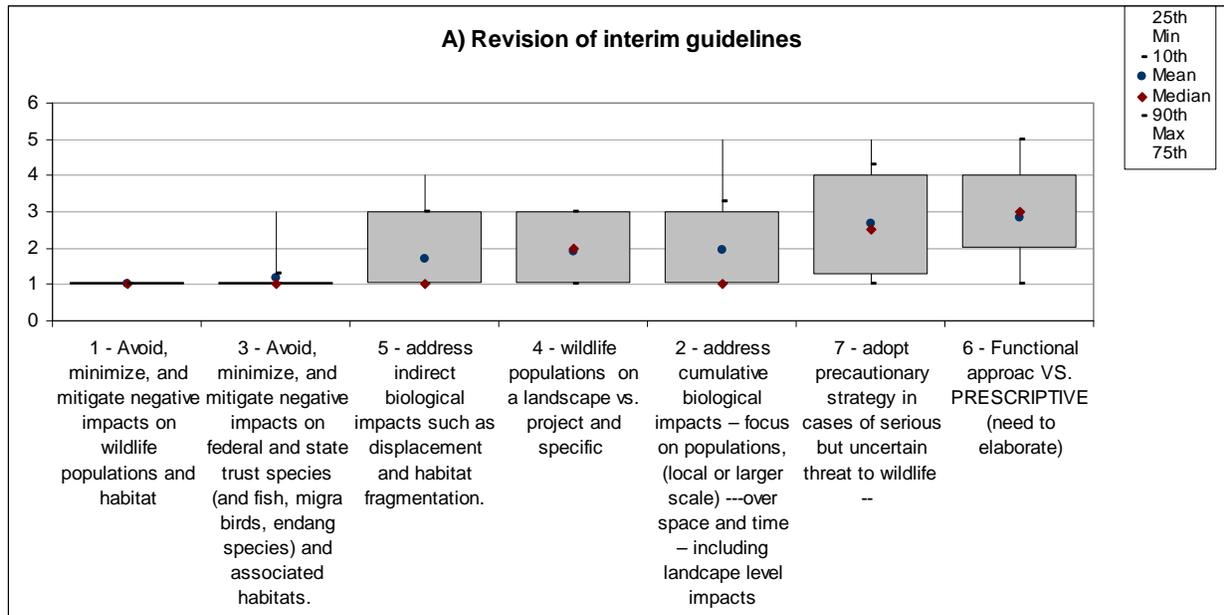


Table 3B: CHARTER GROUP B, SORTED BY MEAN

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.

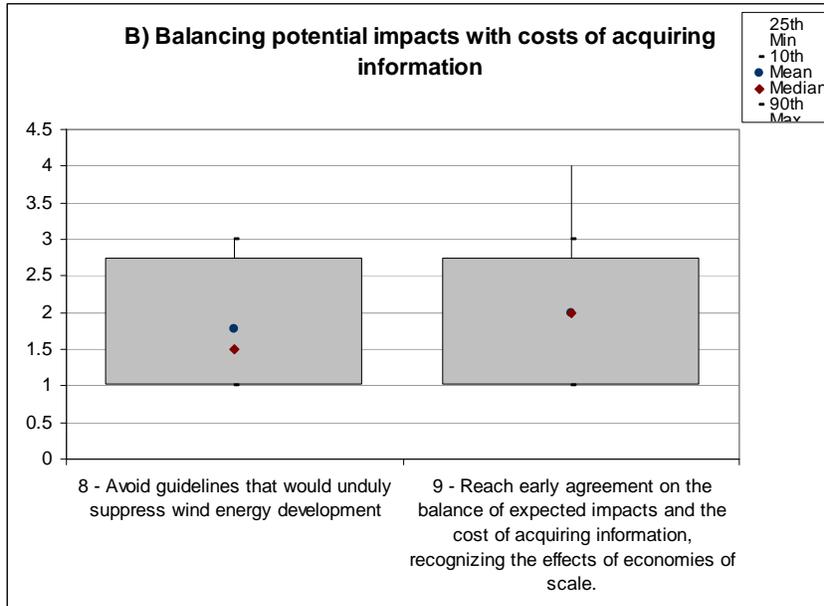


Table 3C: CHARTER GROUP C, SORTED BY MEAN

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.

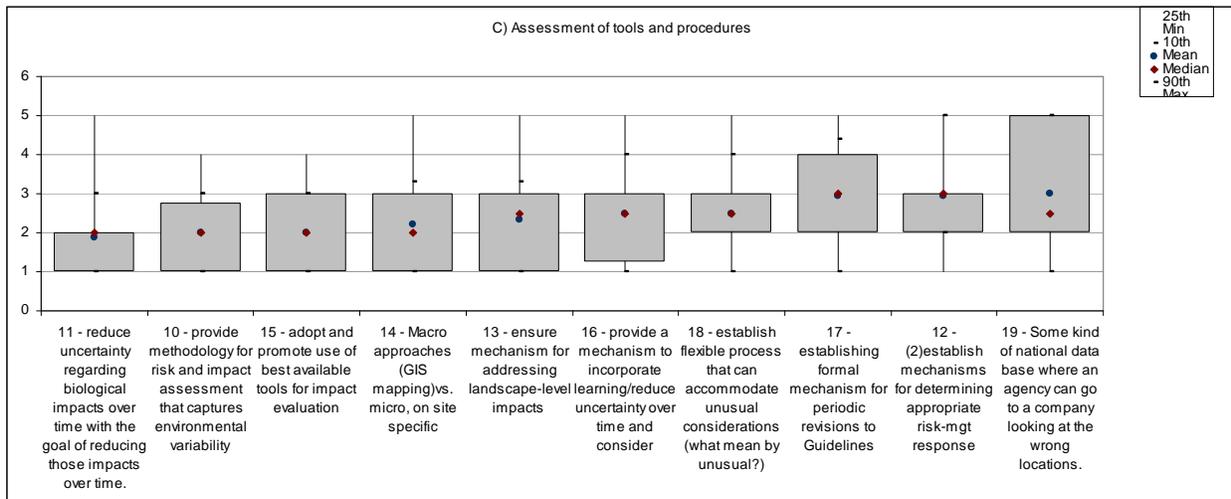


Table 3D: CHARTER GROUP D, SORTED BY MEAN

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

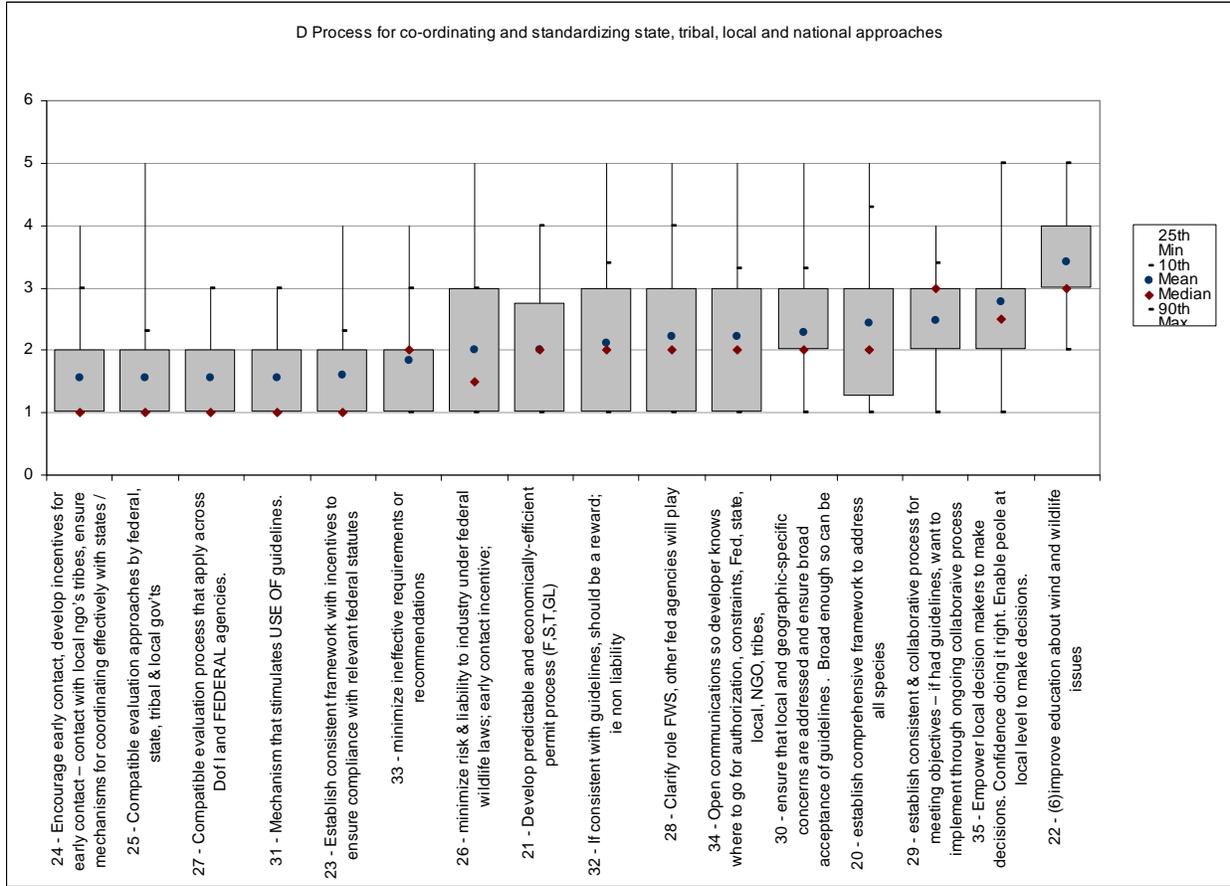


Table 3E: ITEMS NOT ASSIGNED A CHARTER GROUP, SORTED BY MEAN

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.

ATTACHMENT A

Draft – v2

6.9.08

**Wind Turbine Guidelines Advisory Committee
Objectives & Scoping Workshop
Robin Gregory/Graham Long
Denver, CO – June 18 2008**

Meeting Agenda

- 8:00 Introductions and workshop goals (D. Stout)
- 8:15 Review of previous discussions (FAC and other case studies)
 - scope
 - principles
 - objectives
- 9:15 Group elicitation: FAC objectives and scope
- 10:00 Coffee/juice break
- 10:15 Breakout groups (one hour, then reconvene)
- 11:45 Lunch (and break for outside air)
- 1:00 Introduction to performance measures
 - purpose
 - choice of scales
- 1:30 Group elicitation: performance measures
- 2:30 Illustrative weighting exercise
- 3:00 Coffee/juice break
- 3:15 Results of weighting exercise: discussion
- 3:45 Key questions:
 - using objectives to create effective guidelines
 - addressing uncertainty
 - overview philosophy (role of Adaptive or Precautionary approaches)
 - dealing with data gaps & data quality
 - role of subcommittees
 - coordination with parallel wind/wildlife efforts
- 4:15 Next steps, responsibilities and schedule (D. Stout/A. Arnold)
- 4:40 Public Comments
- 5:00 Close

* FWS Regional Office, 134 Union Blvd, Lakewood Colorado

ATTACHMENT B

**WIND TURBINE GUIDELINES ADVISORY COMMITTEE:
STRUCTURED DECISION MAKING WORKSHOP**

**June 18, 2008
Lakewood, Colorado**

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ATTACHMENT C

PUBLIC COMMENT

Name: Jim Sturrock
Ranch: Lonesome Pines Land and Cattle Co
Location: Grover, Colorado

I feel like a dog face pulled from the trenches going before the Chief of Staff.

Let me describe the field of battle.

The Ranch has 4000 acres with four miles of escarpment with a Golden Eagle nest, a pair of Prairie Falcons, various hawks including the Red Tail, Great Horned Owl and on top Sharp Tail Grouse. In the escarpment there are Limber Pines that are all new growth. There is a stump by ring count that was 1500 years old when converted to BTU's, probably during the construction of the Transcontinental Railroad along the Wyoming border.

It is on a fly way. At one time I would wake up to find the yard covered with Robins. After a couple of days of lay over, I would find them gone. What's left of the population still spends a day or two in lay over. The population is 1/3 of what it was prior to the West Nile virus epidemic.

There has been a strike, not on my property, but on the property just to the north. A hawk was chopped in half. It was down played as being only a sub-adult. Yet only a quarter mile away stands a Hoodoo off the escarpment with an active hawk nest on top of it.

I am not talking about a ma and pa wind farm of only 10 to 12 turbines. This is a farm with 285 turbines with a planned second phase of equal number.

The wind farm may not have eminent domain, but the transmission lines do through the Federal Energy Commission. The contractor of the transmission lines does understand the Eagle Golden Eagle Act. On the 1 1/2 miles across my land, they have installed every possible eagle deterrent know: spikes on the cross arms, cones on top of poles and reflectors along the top wires. The transmission line is one mile north of the eagle's nest. But, on the other hand, when it came to my contract, a buffer of 25 feet for the utility pole location from the edge of the escarpment was interpreted to mean bull dozing the escarpment back on the bottom for the 25 foot buffer.

I have 10 turbines that I receive royalties on. Another 12 are on land that I purchased for \$200.00 per acre at auction. If the land had been auctioned with royalties, there were a number of buyers willing to pay \$1000.00 per acre. Normal fallowed land was going for \$400.00 to \$500.00 per acre. The auction included 9000 acres in the three corner area (Nebraska, Colorado, and Wyoming).

Between the wind farm construction impact and the blizzard of 2006, I hope to have the ranch back together in another year. For example, they (the wind farm) damaged a High Tensile Electric fence and claimed "it is fixed" by driving a metal T post into the ground attaching the positive charge wire to it to making a direct ground. As President Clinton said " it is all in the definition of the word IS".

It is said that President Johnson once commented while filling his cabinet-that you should bring in members of the opposition. It is better to have them in the tent pissing out than to have them on the outside pissing in. I was the last individual to sign on in March of 2006 recalling President Johnson's comment. My thought process: maybe on board, I might be able to have a little influence.

My lease calls for a study, which started at the end of nesting season in July of 2006. Post construction study is being done starting in February of 2008. Both studies are being done by

ATTACHMENT C

West. I feel that they are doing a damn good monitoring job. They place a Mallard Duck below various turbines to determine shelf life of the possible bird strike. I can take you to a pair of foxes who greatly appreciate the Peking Duck. They do not even question the reason for the Easter Egg Hunt every other day.

Schedule of Events:

March 2006 Signed contract

August 2006: Weld County Commissioners approve the permit

October 2006: Final Project Design based on location of B26 turbine on my property

November 2006: Construction commences

December 2006: 1st Ammendment to contract

December 2007;; Went Commercial

Post survey started February or March of 2008

Let me tell you Voluntary Compliance does not work. IT DOES NOT WORK!!!

Over here on the left, one member of this commission stated "We have the stick, what we need is the carrot"

Us farmers-if we wish to receive a Welfare Check or tax credit for conservation easements-must comply with all the rules and regulations set forth by the government. It is our choice to volunteer to accept the requirements in return for receiving a welfare check. It is still our choice on whether to volunteer or not.

I am often referred to as just a disgruntled land owner. You damn right I am disgruntled. There are seven clauses to the lease that are in noncompliance. For example a simple one- I was to receive a copy of the avian study. I have yet to receive it. Why do I have to sue to get compliance to a signed and recorded contract. And you expect volunteers to step forward. At this time all I can say is that the attorney's (theirs and mine) are talking.

I fully realize that I am like the little mouse in the ballad who stood back on his hind haunches in the middle of the bar room floor roaring "Bring on the gosh darn cat".

Any questions?

Jim Sturrock

ATTACHMENT C

Good Afternoon.

My name is Kyle Paulson, Permitting Coordinator for Clipper Windpower Development Company, a subsidiary of Clipper Windpower. The Clipper family of companies specializes in the development and manufacture of wind energy technology and the development, construction, and operation of wind energy projects.

Based on the vision and direction of our company's founder and CEO, Jim Dehlsen, we at Clipper strive to deploy our technology and develop our projects with the utmost integrity and economy while minimizing our adverse impacts to surrounding communities and the natural environment.

Clipper supports this Federal Advisory Committee's efforts and believes these efforts will ultimately establish greater clarity and consistency regarding the methods and protocols for evaluating impacts to wildlife by all levels of government.

The primary concept that Clipper advocates for today is that these guidelines are developed as a framework of standardized methods and protocols that are flexible in their application, not as a "one size fits all" set of minimum standards. Each project should be recognized as unique and therefore the necessary level of effort for evaluating impacts to wildlife will inherently vary from project to project.

Again, Clipper greatly appreciates the effort being undertaken by the members of the Committee. Thank you for the opportunity to comment today.

ATTACHMENT D

Wind Turbine Guidelines Advisory Committee

Next Steps Resulting From June 18, 2008 Workshop

Draft for review and comment

- Edit issues/values discussed by FAC and distribute for review and comment
- Ranking results edit and distribute to FAC for review and comment
- Discuss issues/values and ranking results at July 23-24, 2008 meeting and finalize, if possible.
- In discussing values/issues and ranking, the FAC agreed to return to the following “parking lot” tasks
 - definition of wildlife, address risk uncertainty, and prescriptive and functional (either at the next meeting or between July and October),
 - how/or whether to address economic benefits and costs of wind power – in context of recommendations, and
 - determine whether there is any threshold for agencies to take actions on private lands

- FWS team and Facilitator(s) will distribute:
 - summary from June 18 Workshop ASAP
 - logistics sheet for July 23-24 meeting, and July 22 Field Trip
 - agenda for July 23-24 meeting
 - confirmed conference call schedule and schedule conference calls for workgroups that are not yet scheduled
- FWS will monitor progress of Nominated Alternates and apprise alternates of their status once the Secretary has reviewed the application package.

- All Subcommittees:
 - Meet by conference call to:
 - Review and continue with work plan
 - Review issues/values and determine if the Subcommittee can address any of them; if not, recommend whether another group may be able to address them or recommend that a new working group be formed.
 - Prepare a report to the FAC for the July meeting including at least:
 - Status of Subcommittee progress
 - Offer product for review and comment by FAC
 - What additional issues does Subcommittee need to address and whether additional expertise is needed (for example Risk Uncertainty Subcommittee).
 - Be prepared to offer insights about whether Subcommittee can bring more refined product to FAC at October meeting.

ATTACHMENT D

- Principles Subcommittee review values/issues and determine if original drafted principles should be modified or replaced by values/issues. (Note: FAC discussed two kinds of principles (a) those for the FAC itself (internal); and (b) principles that might offer guidance or context for FAC recommendations (external).