



Land-based Wind Energy Guidelines

Montana Wildlife & Wind Energy
Virtual Workshop

April 29, 2021



Overview

- Promote siting wind projects to avoid significant adverse impacts;
- Encourage scientifically rigorous surveys, monitoring and research;
- Produce comparable data;
- Mitigate significant adverse impacts;
- Voluntary (FWS advisory)
- Still need to comply with ESA, MBTA, BGEPA



FWS Authorities

- **Endangered Species Act**
 - Sec 7 applies when a Federal nexus exists
 - Sec 9 prohibits unauthorized “take” of T&E species
 - Sec 10 can authorize “take” on private lands
- **Migratory Bird Treaty Act**
 - Prohibits unauthorized “take” of >1,000 species, nests or eggs
- **Bald and Golden Eagle Protection Act**
 - Prohibits unauthorized “take” of eagles, nests, parts
 - Permits to “take” available (2016 Rule, 2013 Land-based Wind Energy ECP Guidance)

Montana T&E Species

- **3 Fish:** pallid sturgeon (E), white sturgeon (E), bull trout (T, CH)
- **4 Birds:** whooping crane (E), piping plover (T, CH), red knot (T), yellow-billed cuckoo (T)
- **4 Mammals:** black-footed ferret (E/XN), grizzly bear (T), Canada lynx (T, CH), northern long-eared bat (T)
- **4 Plants:** water howellia (T), Ute ladies' tresses (T), Spalding's campion (T), whitebark pine (P)
- **2 Insects:** meltwater Lednian and Western Glacier stoneflies (T)



Pollinators

Western Bumble Bee

- SSA initiated fall 2020
- Surveys in Montana ongoing
- Status review in 2023



Yellow-banded Bumble Bee

- Not warranted for listing – August 2019



Suckley's Cuckoo Bumble Bee

- Petitioned for listing in April 2020

Pollinators

Monarch Butterfly

- Currently a candidate for listing
- USFWS will propose listing the monarch in 2024, if listing is still warranted



Regal Fritillary

- USFWS initiated Species Status Assessment (SSA) in 2020
- Montana has single historical observation from Custer County in 1894

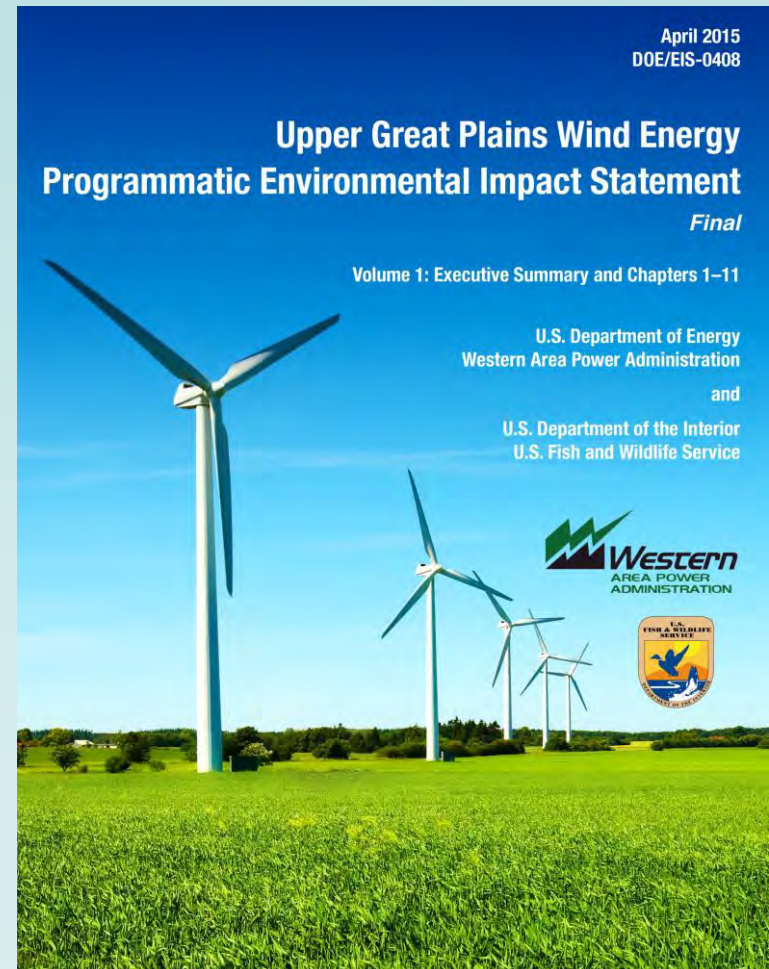


Dakota Skipper

- ESA listed, threatened in 2014
- No known observations in Montana

Upper Great Plains Wind Energy Programmatic EIS

- WAPA interconnects
- FWS easements
- 6 states, including MT
- Requires WEG consistency
- Requires ECP (permitting separate)
- Programmatic informal consultation for 11 MT sp.



WEG Tiered Approach

Decision framework for

- collecting information in increasing detail to
 - evaluate risk and
 - make siting and operational decisions.

Consists of 5 tiers:

1-3 pre-construction

4-5 post-construction



Key Terms

- Species of concern or habitat fragmentation concern
- Plant communities of concern
- Significant adverse impact
- Utility-scale wind (>20MW)
- Community-scale (> 1 to 20MW) and Distributed wind (1KW – 1MW)



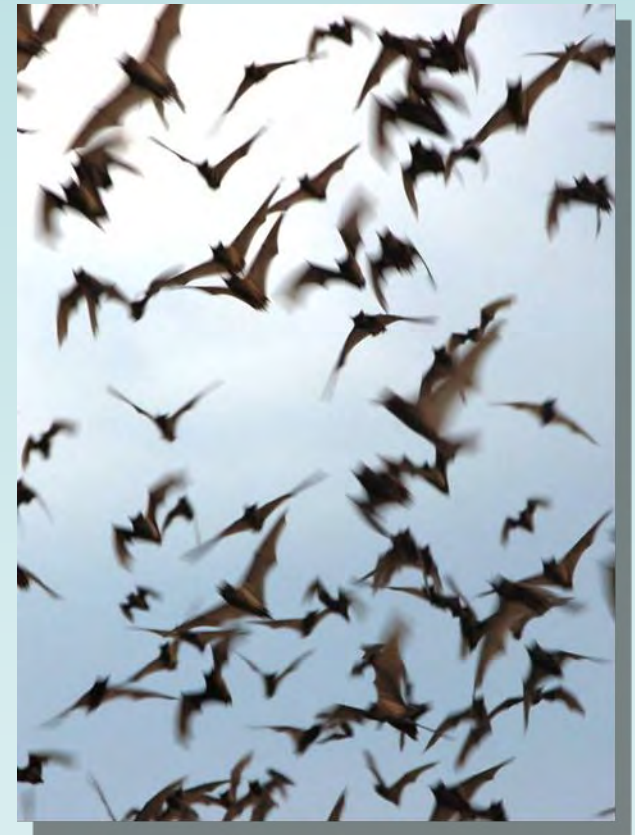
Scope and Scale

- Guidelines designed for **utility-scale** land-based wind energy projects
- **For distributed or community-scale** wind projects:
 - consider the general principles; answer Tier 1 questions using publicly available information.
 - fatality monitoring recommended
- **Appropriately sited** small wind projects are not likely to pose significant risks to species of concern.



Communication Protocol

- Outline of intended communication between developers and Service.
- Suggests documents or information to be exchanged.
- Key is to meet early and at strategic intervals



Tiers

- Tier 1 - Preliminary Site Evaluation
- Tier 2 - Site Characterization
- Tier 3 - Field Studies
- Tier 4 - Post-construction Studies
- Tier 5 - Other Studies



Tiered Approach

- Embodies adaptive management
- Collect increasingly detailed information to facilitate project decisions (effort:risk)
- Decision points: significant adverse impact probability is
 - low; or mod-high, but can be adequately mitigated (adopt mitigation and post-construction monitoring)
 - high, but cannot be adequately mitigated (delay or abandon)



Pre-Construction Tiers

- Tiers 1- 3: inform decisions, mitigation
 - baseline resources, risk/mitigation potential
 - potential survey methods and metrics
- Developers decide whether to proceed to the next tier and to implementation.
- Timely communication and sharing of information enables Service and partners to provide technical advice (& vice versa).



Pre-Construction Tiers

Generally recommend Tiers 1-3 include:

- Habitat type mapping, including wetlands and other unique habitats
- Assessment of site context on the local landscape
- Local expert (FWP, BLM, Tribes, landowner) contacts
- Prey base assessment (prairie dog/ground squirrel colony mapping, fawning/calving, roadkill, etc.)
- 2 years general migratory bird survey plots across all habitat types and seasons (methods variable)
- Other site-specific avian use surveys (grouse leks; migration, roost, or foraging concentration areas, etc.) appropriate to location and season of use

Pre-Construction Tiers

Generally recommend Tiers 1-3 include (continued):

- 2 years bat acoustic surveys
- 2 years non-eagle raptor nest surveys
- 2 years eagle nest, 800-m plot, and other applicable eagle surveys per 2013 ECPG and 2021 FWS R6 eagle nest survey guidance
- Annual reports or interim results for discussion
- Assessment of risk and appropriate mitigation
- Post-construction monitoring discussion



Sample Tier 1-3 MT Data Sources

- MT Natural Heritage Program: T&E, Eagle, SOC, Plant COC, NWI data (<http://mtnhp.org/>)
- DNRC Sage Grouse Habitat Conservation Prog: maps and process (sagegrouse.mt.gov)
- FWP: 2020 Bat/Wind Energy Recommendations, Maps (<https://gis-mtfwp.opendata.arcgis.com/>), lek monitoring protocols
- Nearby wind projects (??)



Sample Tier 1-3 MT Data Sources

- FWS 2008 Bird Species of Conservation Concern: MT BCRs 10-Northern Rockies, 11-Prairie Potholes, 17-Badlands & Prairies (<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>)
- FWS Information for Planning and Consultation (IPaC): T&E, BCC (ecos.fws.gov/ipac/)
- FWS MT ES Field Office T&E lists: by county, National Forest, National Park, Tribal lands (https://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species.html)

FWS R6 Tier 1-3 MT Data Sources

- V3 2021 Buffer Recommendations for Wind Energy Projects (<https://www.fws.gov/mountain-prairie/migbirds/index.php>)
- V3 2021 Recommended Eagle Nest Survey Protocol for Wind Projects
- V3 2021 Golden Eagle Buffer Recommendations for Wind Facilities
- V3 2021 Wind Project ECP Recommendations
- FWS R6 Golden Eagle Page: models, reports (https://www.fws.gov/mountain-prairie/migbirds/species/birds/golden_eagle/)



Cumulative Impacts

- Comprehensive effect on the environment that results from incremental impact of a project
- Added to other past, present, and reasonably foreseeable future actions.



Best Management Practices

- Site construction
- Operation
- Retrofitting
- Repowering
- Decommissioning



Mitigation

- Avoid and/or minimize significant adverse impacts (includes siting, BMPs, etc.)
- Compensate for unavoidable significant adverse impacts
- Terms, commitments, triggers, & thresholds developed early
- Well-defined, bounded, feasible, commensurate with perceived/actual impacts



Mitigation Resource Examples

- FWS 1981, 2016 Umbrella and ESA mitigation policies (2016 policies rescinded but concepts apply)
- FWS 2013 ECPG (ILF option[s] available)
- MT Sage Grouse Habitat Cons. Program
- FWP 2020 Bat/Wind Recommendations
- FWS R6 GOEA and Wildlife Buffer Recommendations
- APLIC (aplic.org/documents.php)
- Literature (e.g., Shaffer and Buhl 2015)

Post-Construction Tiers

- How will (or did) we actually do on Tiers 1-3?
- Tier 4 Post-construction studies to estimate impacts
 - 4a Fatality Studies
 - 4b Assessing direct and indirect impacts of habitat loss, degradation & fragmentation
- Tier 5 Other post-construction studies
 - Will not be necessary for most wind energy projects if WEG followed



Tier 4a – Fatality Monitoring

- Fatality studies generally include
 - 1 to >2-year term (related to risk)
 - All seasons of species occupancy
 - Searcher efficiency trials
 - Carcass persistence trials
- Example PCFM Background Sources
 - USGS, FWP 2019 Spion Kop Report (local), literature, FWS R6 ETP ECPs/Permits
 - FWP 2020 Bat/Wind Energy Recommendations
 - FWS R6 Migratory Birds Program will determine PCFM requirements for eagle take permits



Tier 4b and 5 Studies

- Tier 4b Studies/Monitoring
 - Assess indirect impacts
 - Examples: raptor nest monitoring, grouse lek monitoring, bat acoustic monitoring
- Tier 5 “Other” Studies
 - Not “research” – focused on Project-level issues
 - Table 3 decision framework
 - Fatalities > predictions, mitigation ineffective, etc.
 - Examples: demographic impact assessment, study of relationships between fatalities and covariates



Appropriate Documentation

- Developers / operators are responsible
- Internal records / files
- Environmental studies / survey reports
- Bird and Bat Conservation Strategy (BBCS) –
FWS R6 Guidance at:
<https://www.fws.gov/mountain-prairie/migbirds/index.php>



Bird & Bat Conservation Strategies

- Purpose:
 - Pre-construction it provides the documentation of analyses, studies to support the tier process
 - Post-construction it provides written record of actions to avoid, minimize, compensate for potential impacts
- Completion can be in stages; any format
- BBCS is voluntary; Service review is advisory only



Local Contacts



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<https://www.fws.gov/ecological-services/energy-development/wind.html>