

# Alta X Eagle Monitoring Program



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# Background

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Site assessments 2006-2009

Consultation with Agencies November 2010

1<sup>st</sup> Draft Eagle Permit Application submitted March 2011

Biological Opinion Issued to BLM for the Alta East Wind Project in May 2013

Construction began May 2013      Construction Complete June 2014

Final EA September 2016

Eagle Permit issued December 2016

# Avian Monitoring

3 years of General Avian Mortality Studies which followed the WEG the CEC Guidelines was completed March 2017.

Eagle Fatality Monitoring began May of 2017 and will be complete April 2019

Nesting/Breeding Monitoring is on-going

# Compensatory Mitigation

Compensatory mitigation was required to offset the take of 3 eagles at a 1:1.5 ratio.

A \$200,000 deposit was made into the US Fish and Wildlife Pacific Southwest National Fish and Wildlife Foundation Bald and Golden Eagle Mitigation Account for retrofitting of power poles.

If take is lower than 3 during the term of the permit, compensatory mitigation will be credited pro rata to future renewal of the permit.

# Avoidance and Minimization Measures

**Informed Curtailment is contracted through Alta Environmental Services**

**Biological monitors must be approved by the Service and are present at the Observation Tower all daylight hours, 365 days a year.**

**Biological monitors follow the approved Alta Wind Projects Golden Eagle and Condor Monitoring Protocol. The procedures have been fine-tuned for Alta Operations.**

**All raw curtailment data is provided to the Service annually.**

# Curtailment Data for Year 1

90 Golden Eagle curtailments occurred during the May 2017-May 2018 monitoring period.

Curtailments lasted from 0-68 minutes

78% of curtailments lasted 15 minutes or less

# Curtailment Data for Year 2

70 Golden Eagle curtailments occurred during the monitoring period of May 2018 – December 2018

Curtailment lasted from 0-74 minutes

Curtailments lasted an average of 21 minutes



# Eagle Fatality Monitoring

Eagle Fatality Monitoring Plan was developed with, and approved by, the Service and submitted within 30 days of permit issuance

Applied for and received a SPUT

One year of monitoring has been completed and the 2<sup>nd</sup> year of monitoring will be complete April 2019

After consultation with USFWS and BLM the 2<sup>nd</sup> year monitoring frequency was reduced from 30 days to 60 days (100% coverage)

Quarterly and Annual SPUT reports are submitted to USFWS and CDFW for all raw avian data collected on the project site

# Eagle Monitoring Results Year 1

## ▪ Fatality Searches

- May 2017 – May 2018
- 240-m X 240-m square plots centered on each of Project's 48 turbines
  - Substantial overlap among plots leads to >120 m coverage in many areas
- 28-day search interval (13 rounds of searches)
- Fatalities Found
  - No eagles
  - 17 large birds (including 2 BUOW, 2 RTHA, 1 unidentified non-eagle raptor), 13 small birds, and one bat

## ▪ Bias Trials

- Followed integrated carcass persistence and detection methodology
- Used only raptor carcasses
- Searcher efficiency (n=10)
  - estimated to be 80% based on first/single search, 100% based on multiple search
- Carcass persistence (n=5)
  - Two went missing in 4<sup>th</sup> week, three others lasted 84+ days
  - $r_{\text{Hat}}$  (i.e., probability of persisting through 28 day interval) = 87%

# Eagle Monitoring Results Year 1

## ▪ Fatality Estimate

- Evidence of Absence – zero eagle fatalities found
  - $k$  (factor by which searcher efficiency changes with each successive search) assumed to be 1.0
  - $g = 0.752$  (assuming 80% SEEF )
  - *EoA resulted in at least 80% probability that 0 eagle fatalities actually occurred*

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# Eagle Monitoring Results Year 2 (May 2018 to Present)



## ▪ **Fatality Searches**

- May 2018 – February 2019 (9 months)
- 240-m X 240-m square plots centered on each of Project's 48 turbines
- Increased search interval from 28 to 60 days in coordination with USFWS
  - Increased search interval was based on EoA simulations indicating it would have no substantial influence on results at 80% credible interval (using year 1 bias trial data)
- Fatalities found through mid-January
  - No eagles
  - Two large birds (RTHA and BNOW) and 9 small birds

## ▪ **Bias Trials**

- Continued with integrated carcass persistence and detection methodology
- Used raptor carcasses +1 TUVU (n=31 carcasses for Years 1 and 2 combined)
- Searcher efficiency (n=31) estimated to be 90% based on first/single search, 100% based on multiple search
  - 28 of 31 found on first search, 2 on second search, and 1 on third search
- Carcass persistence:  $r\hat{H}$  (i.e., probability of persisting through 60-day interval) = 95%

- **Fatality Estimate** – 2-year estimate to be calculated upon completion of field studies