Compensatory Mitigation in California

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Hoary Bat

Photo Credit: JOSH HYDEMAN

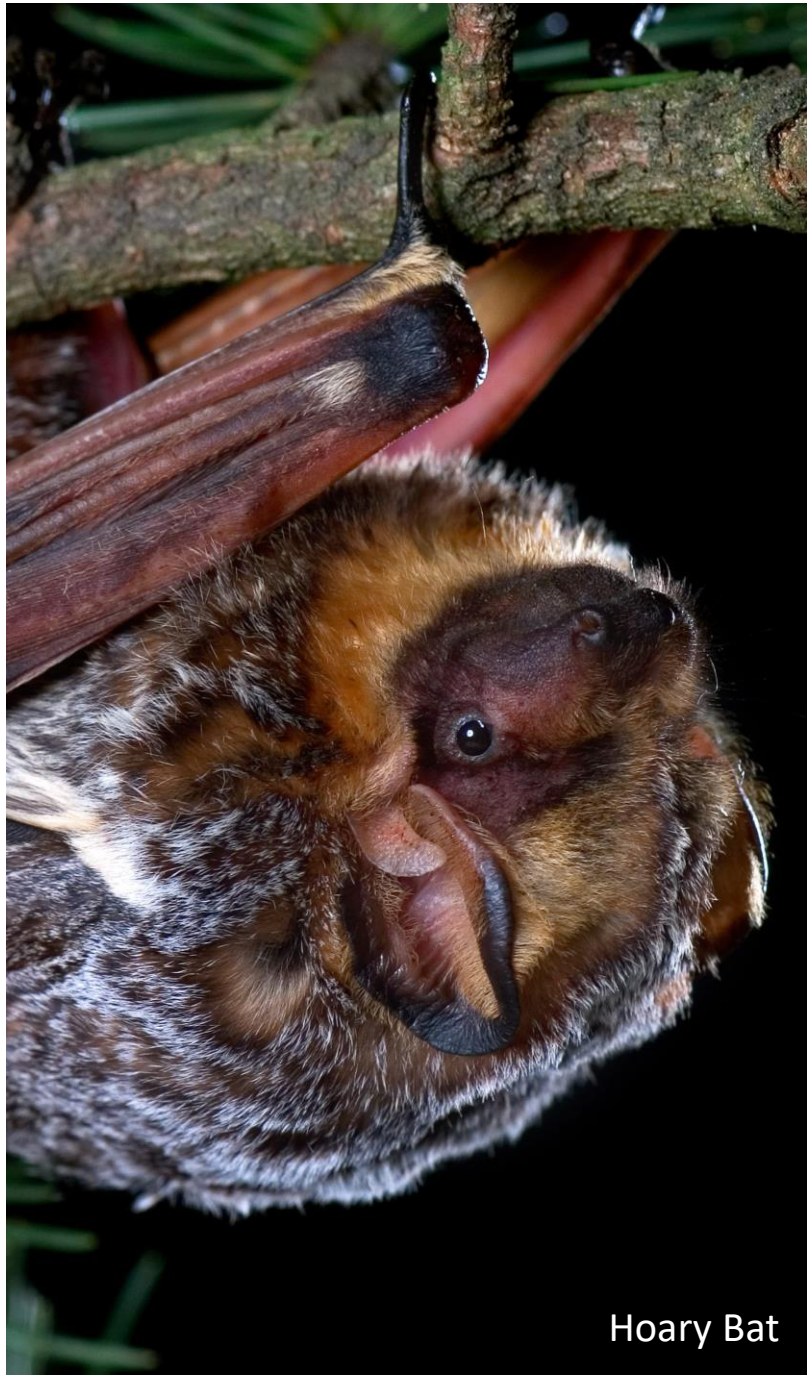

Photo Credit: MERLIN TUTTLE and MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

Hoary Bat

Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

California Regulatory Context

Project approval pathways for land-based wind energy

- Local Government Conditional Use Permits
- AB-205 - California Energy Commission, in consultation with other state agencies

Relevant laws

- California Environmental Quality Act (CEQA)
- California Endangered Species Act (CESA)

Red Bat

Photo Credit: JOSE GABRIEL MARTINEZ FONSECA

California Endangered Species Act

CESA prohibits the take of any species of wildlife designated by the California Fish and Game Commission as **endangered, threatened, or candidate species**. CDFW may authorize the take of any such species if certain conditions are met.

In this context, the term "**take**" is defined by Fish and Game Code section 86 as **hunt, pursue, catch, capture, or kill**, or attempt to hunt, pursue, catch, capture, or kill.

Incidental Take Permittees must implement species-specific minimization and avoidance measures, and **fully mitigate the impacts of the project**. (Fish & G. Code § 2081 (b); Cal. Code Regs., tit. 14, §§ 783.2-783.8)

Silver-haired Bat

Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

California Environmental Quality Act

Serves to:

- Disclose to the public the significant environmental effects of a proposed project
- Prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring
- Enhance public participation in the environmental review process through scoping meetings, public notice, public review, hearings, and the judicial process
- Improve interagency coordination through early consultations, scoping meetings, notices of preparation, and State Clearinghouse review

California Environmental Quality Act

Each and every significant effect on the environment **must be disclosed in the EIR and mitigated if feasible** (CEQA Guidelines §§ 15126.2 & 15126.4).

For the purposes of CEQA, **CDFW is charged by law to provide, as available, biological expertise** during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

NOTE: CDFW staff cannot make decisions or intercede on CEQA projects under the jurisdiction of another lead agency.

Hoary Bat

Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

Case Study from the Altamont Pass

Three projects are now implementing:

Curtailment

- Blanket curtailment up to 6.0 m/s from April-September and up to 5.0 m/s in October
- Feathering blades up to manufacturer's cut-in speed year-round, day and night

Bat Behavior and Habitat Use Studies to Inform Adaptive Management

- Carcass and tissue submission to USGS Renewables Wildlife Solutions Initiative
- Analysis of wind speeds in relation to acoustic bat activity and fatality patterns
- Motus tower installation

Red Bat

Photo Credit: JOSE GABRIEL MARTINEZ FONSECA

Compensatory Mitigation Example

California wind energy projects have just started to implement avoidance and minimization actions to reduce bat fatalities.

One instance of compensatory mitigation for impacts to California bat populations:

- A $25,000 payment from one project supports hoary bat migration research, which fills critical information gaps and directly informs adaptive management to minimize significant impacts.

Hoary Bat

Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

At-Risk Species

Hoary bats are at risk of severe population decline[1, 2].

Under the lowest risk scenario, best available science indicates that hoary bat populations could experience a **50% decline by 2028** if existing bat fatality rates at wind facilities continue.

In April 2023, Canada's federal scientific advisory board on at-risk species deemed the hoary bat, Eastern red bat, and silver-haired bat eligible to be listed as endangered.

[1]Friedenberg & Frick 2021
[2]Rodhouse et al. 2019

Project Site (Survey Years)	Project Size (MW)	Post-construction Fatality Survey Methods	All Bats (Bats/MW) Mean (95% CI)	All Bats (Bats) Mean (95% CI)	Hoary Bat (Bats/MW) Mean (95% CI)	Hoary Bat (Bats) Mean (95% CI)	Species Composition
Golden Hills (2016-2019)	86	7-day intervals dog searchers 105m radius (circle) 30% of 48 turbines	5.55 (5.15–5.95)	477 (442–511)	2.54 (1.44–8.29)	218 (124-712)	TABR: 48% LACI: 46% LAFR: 2% UNIDENTIFIED: 5%
Golden Hills North (2018-2020)	46	7-day intervals dog searchers 105m radius (circle) 50% of 20 turbines	8.88 (6.36–11.40)	400 (293–524)	1.39 (0.68–2.10)	64 (31-97)	TABR: 78% LACI: 16% LAFR:1% UNIDENTIFIED: 5%
Summit Winds (2022)	58	7-day intervals dog searchers 105m radius (circle) 35% of 23 turbines	5.89 (5.04-7.48)	339 (290-430)	0.53 (0.33-0.82)	30 (19-47)	TABR: 73% LACI: 12% UNIDENTIFIED: 11% LANO: 2% LAFR: 1%
Hatchet Ridge (2010-2013)	101	14-day intervals human searchers 63.5m radius (square) 50% of 44 turbines	4.20 (90% CI = 2.86-5.98)	426 (290-606)	0.92 (0.63-1.32)	94 (34-94)	LANO: 49% LACI: 22% TABR: 19% UNIDENTIFIED: 10%

Silver-haired Bat

Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL

Summary

Compensatory mitigation requirements for significant impacts to bat populations fall under CEQA requirements to minimize impacts to the extent feasible.

Currently, no bats are listed nor proposed for listing under CESA. However, best available science indicates risk of severe population decline.

Feasible avoidance, minimization, and mitigation strategies to reduce bat fatalities from land-based wind energy projects are being implemented for non-listed bat species.

Additional resources are needed to support such collaborative, science-based strategies to reduce bat fatalities and, if effective, may preclude the need to list migratory tree roosting bat species.

Thank you!

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Photo Credit: MICHAEL DURHAM/MINDEN PICTURES, BAT CONSERVATION INTERNATIONAL