



# WIND ENERGY & AUDUBON CALIFORNIA

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Who is this lady?

# Regulatory Framework

- **Migratory Bird Treaty Act of 1918**
- **Federal and California Endangered Species Act**
- **Bald and Golden Eagle Protection Act**
- **California Environmental Quality Act**
- **National Environmental Policy Act**

# Legislative Framework

- AB 32
- 2002: Senate Bill 1078.
- 2003: Energy Action Plan I
- 2005: Energy Action Plan II.
- 2006: Senate Bill 107
- 2008: Governor Schwarzenegger issues Executive Order S-14-08 requiring 33% renewables by 2020.
- 2009: Governor Schwarzenegger issues Executive Order S-21-09 2011:
- 2011: Senate Bill X1-2, signed by Gov. Edmund G. Brown, Jr., codifies 33% by 2020 RPS.

# Why Audubon California?

- Wind Energy has **impacts on birds and habitat**
  1. Mortality from turbine collision
  2. Habitat fragmentation
  3. Habitat loss
  4. Interruption of movement
- We have expertise on **impacts of wind energy on birds**
- We have expertise on **conservation planning and we know where the birds are**

# California's Important Bird Areas



# Audubon California's work on wind

- 2004 **Altamont Litigation by Bay Area chapters**
- 2004 **Kern County Litigation by Los Angeles Audubon**
- 2005 **Wind Conference in LA by Audubon California**
- 2007 **CEC Guidelines for siting**
- 2010 **Settlement at Altamont**
- 2011 - **24 chapters in California engaged in wind projects**
- 2010 - **State office engaged in DRECP**

# Lessons learned on wind energy in California - **Altamont**



6 years &  
\$600,000

- Litigation and settlement cost Citizens for Clean Renewable Energy and 5 Chapters of Audubon over 6 years and \$600,000 in resources to achieve reduction in mortality.

Metal in the  
Ground

- Once the metal is in the ground it is extremely difficult to influence operational changes

New  
technology

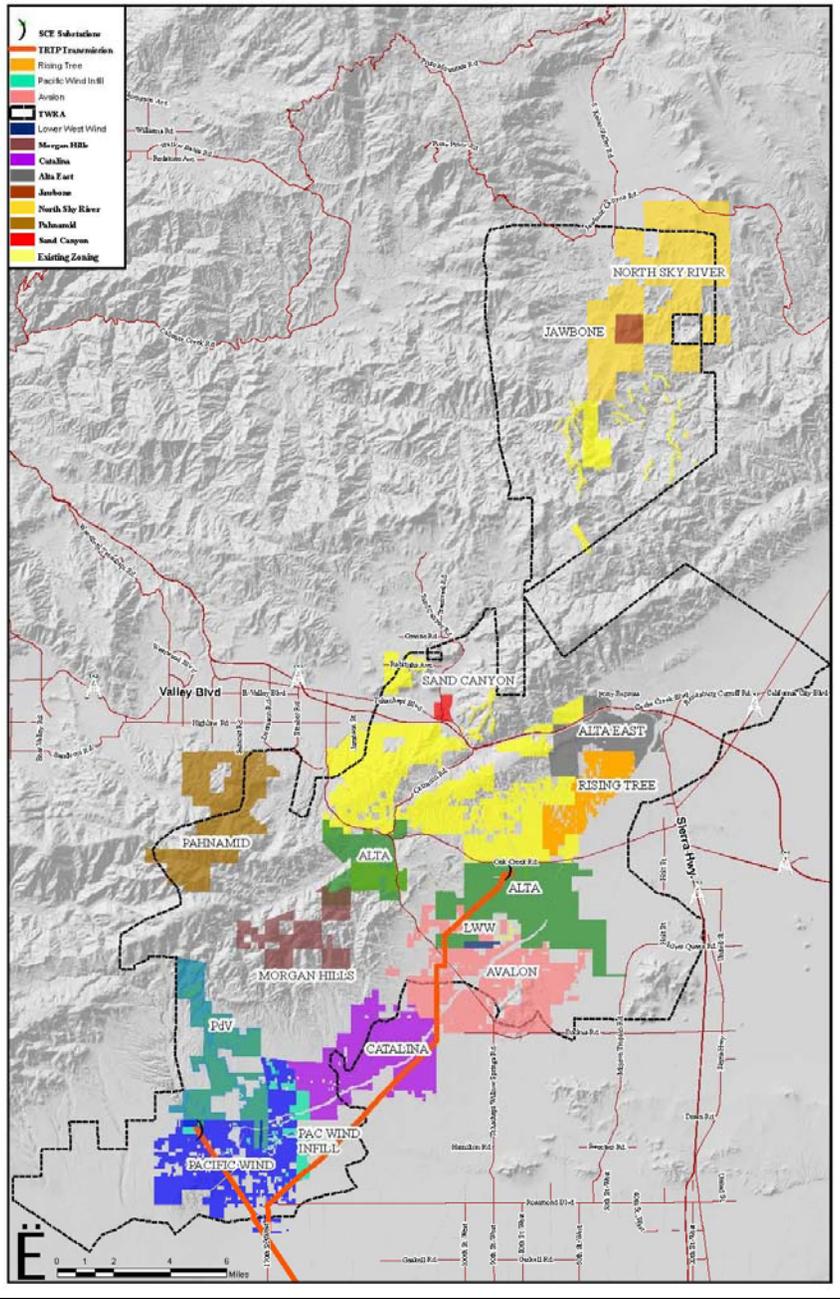
- New technology (repowering) provides opportunities for improvement

Wildlife  
Agencies

- Where were the state and federal wildlife agencies?

# Wind Projects in California to be online by 2012

- 83 projects in review
- 27 in Kern County
- 6,861+ MW
- 487,000 acres BLM Public lands – (7/2011)
- 120,000 acres private lands



2009/2010 ANNUAL REPORT  
BIRD AND BAT MORTALITY MONITORING  
PINE TREE WIND FARM  
KERN COUNTY, CALIFORNIA

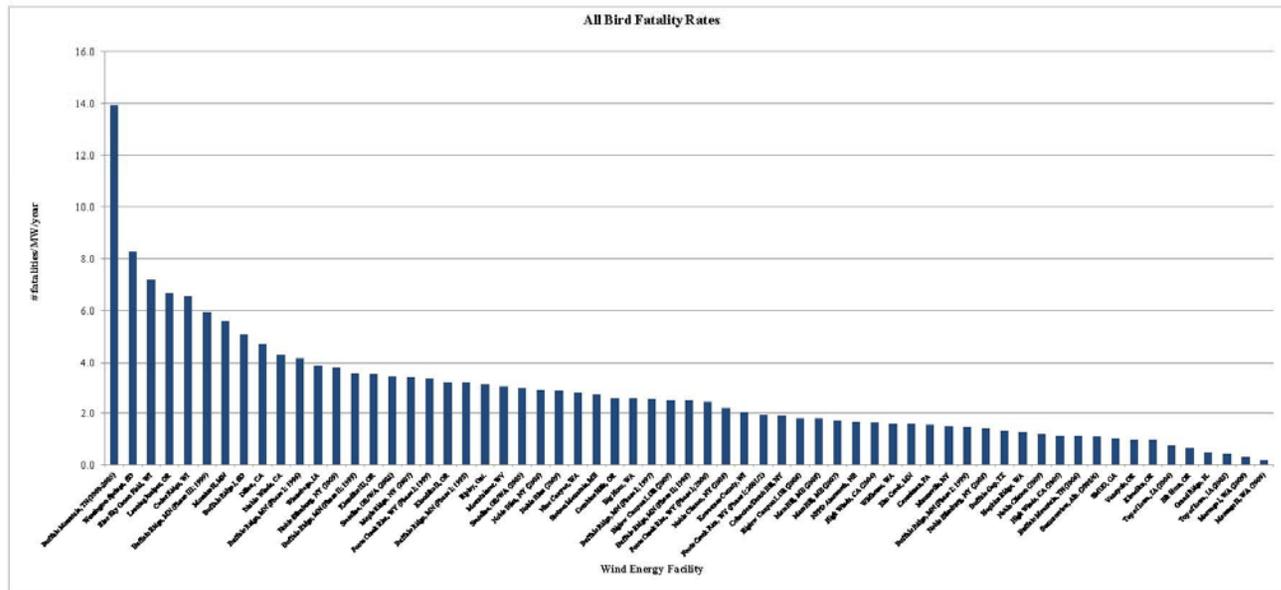


To:  
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**Figure 1.1. All bird fatalities per nameplate MW per year at North American facilities with published fatality data.**

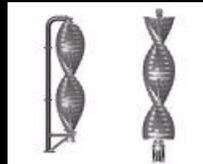
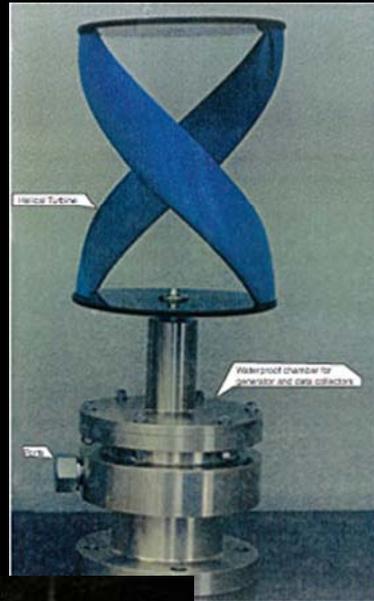
Data from the following sources:

Buffalo Mountain, TN (2000-2003)	Nicholson et al. 2005	Combine Hills, OR	Young et al. 2006	Munnsville, NY	<b>Stantec 2008b</b>
Blue Sky Green Field, WI	Gruver et al. 2009	Big Horn, WA	Kronmer et al. 2008	Buffalo Ridge, MN (Phase I; 1999)	Johnson et al. 2000a
Leaning Juniper, OR	Gritski et al. 2009	Buffalo Ridge, MN (Phase I; 1997)	Johnson et al. 2000a	Noble Ellenburg, NY (2006)	Jain et al. 2009a
Buffalo Ridge, MN (Phase III; 1999)	Johnson et al. 2000a	Biglow Canyon I, OR (2009)	<b>Jeffrey et al. 2009a</b>	Buffalo Gap, TX	Tierney 2007
Diablo Winds, CA	WEST 2008	Buffalo Ridge, MN (Phase II; 1998)	Johnson et al. 2000a	Hopkins Ridge, WA	Young et al. 2007
Buffalo Ridge, MN (Phase I; 1996)	Johnson et al. 2000a	Foote Creek Rim, WY (Phase I; 2000)	Young et al. 2003b	Noble Clinton (2009)	<b>Jain et al. 2010b</b>
Buffalo Ridge, MN (Phase II; 1999)	Johnson et al. 2000a	Noble Clinton, NY (2008)	Jain et al. 2009b	High Winds, CA (2005)	Kerlinger et al. 2006
Stataline, OR/WA (2002)	Erickson et al. 2004	Kewaunee County, WI	Howe et al. 2002	Buffalo Mountain, TN (2006)	Fiedler et al. 2007
Maple Ridge, NY (2007)	Jain et al. 2008	Foote Creek Rim, WY (Phase I; 2001/2002)	Young et al. 2003b	Summerview, Alb. (2005/2006)	Brown and Hamilton 2006
Foote Creek Rim, WY (Phase I; 1999)	Young et al. 2003b	Cohocton/Dutch Hill, NY	<b>Stantec 2010</b>	SMUD, CA	URS et al. 2005
Klondike II, OR	NVC and WEST 2007	Biglow Canyon I, OR (2008)	<b>Jeffrey et al. 2009a</b>	Vansycle, OR	Erickson et al. 2000a
Buffalo Ridge, MN (Phase I; 1998)	Johnson et al. 2000a	Mars Hill, ME (2008)	Stantec 2009a	Klondike, OR	Johnson et al. 2003
Mountaineer, WV	Kerns and Kerlinger 2004	Mars Hill, ME (2007)	Stantec 2008a	Top of Iowa, IA (2004)	Jain 2005
Stataline, OR/WA (2003)	Erickson et al. 2004	NPPD Ainsworth, NE	Derby et al. 2007	Elk Horn, OR	<b>Jeffrey et al. 2009b</b>
Noble Bliss, NY (2008)	Jain et al. 2009d	High Winds, CA (2004)	Kerlinger et al. 2006	Grand Ridge, IL	<b>Derby et al. 2010g</b>
Noble Bliss, NY (2009)	<b>Jain et al. 2010a</b>	Wild Horse, WA	Ericksen et al. 2008	Top of Iowa, IA (2003)	Jain 2005
Nine Canyon, WA	Erickson et al. 2003b	Elm Creek, MN	<b>Derby et al. 2010d</b>	Marongo I, WA (2009)	<b>URS Corporation 2010a</b>
Stetson Mountain, ME	<b>Stantec 2009b</b>	Casselman, PA	<b>Arnett et al. 2009b</b>	Marongo II, WA (2009)	<b>URS Corporation 2010b</b>

# Proven Mitigation Measures

- Avoidance
- Repowering
- Curtailment
- Reduced Cut-in speed – may help bats

# New Technology - turbines



“In 20 years, I think it’s going to be more of the same” – Nancy Rader, CALWEA, LA TIMES, July 24, 2011

# New technology – radar detection



Norway



Texas



California



Long  
Island

# Birds and Animals of Special Concern

- California Condor

- Golden Eagle

- raptors

- migratory songbirds in spring and fall

- bats



## California Condor GPS Locations: 2005

### Legend

#### Condor Activity

High Density

Low Density

• 2005 GPS Locations

Kern Wind Projects

Condor Critical Habitat

Hopper Mountain NWR

Bitter Creek NWR

Tejon Ranch

Wind Wolves

Carrizo Plain NM

USFS Region 5

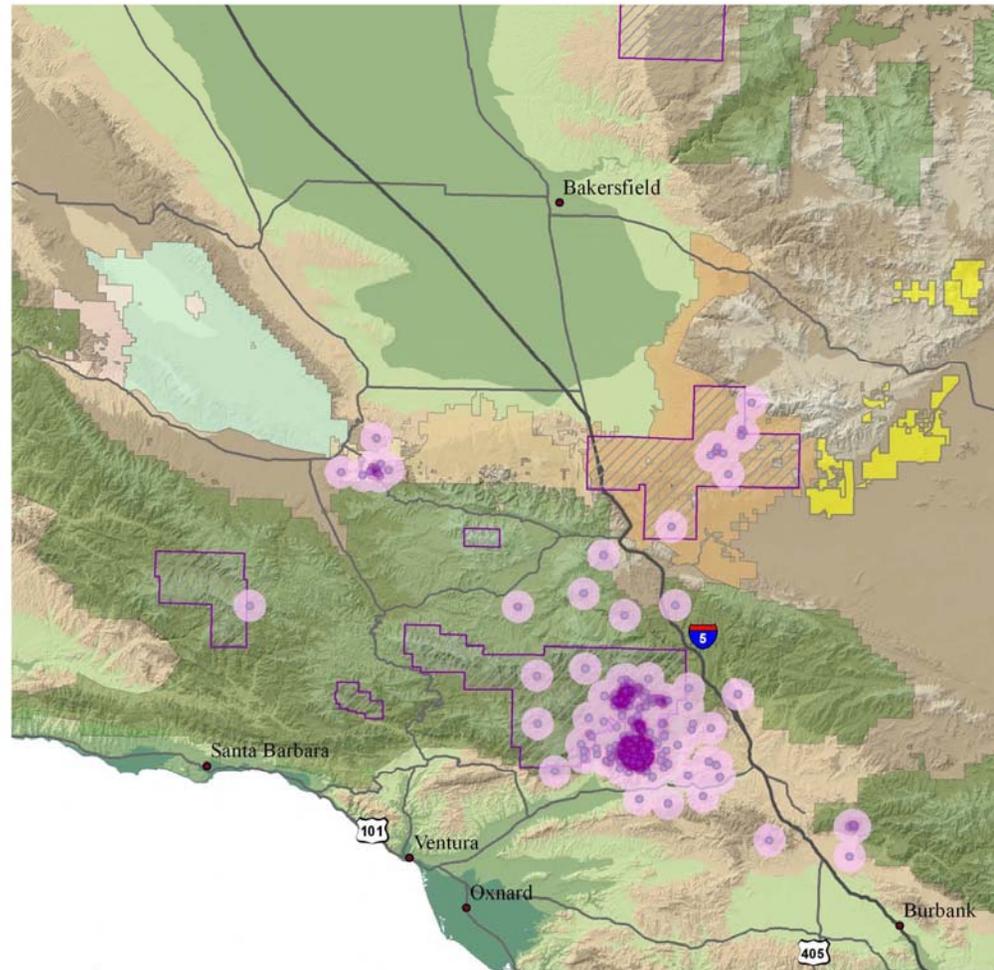


Kilometers

0 5 10 20

Miles

0 5 10 20



## California Condor GPS Locations: 2009

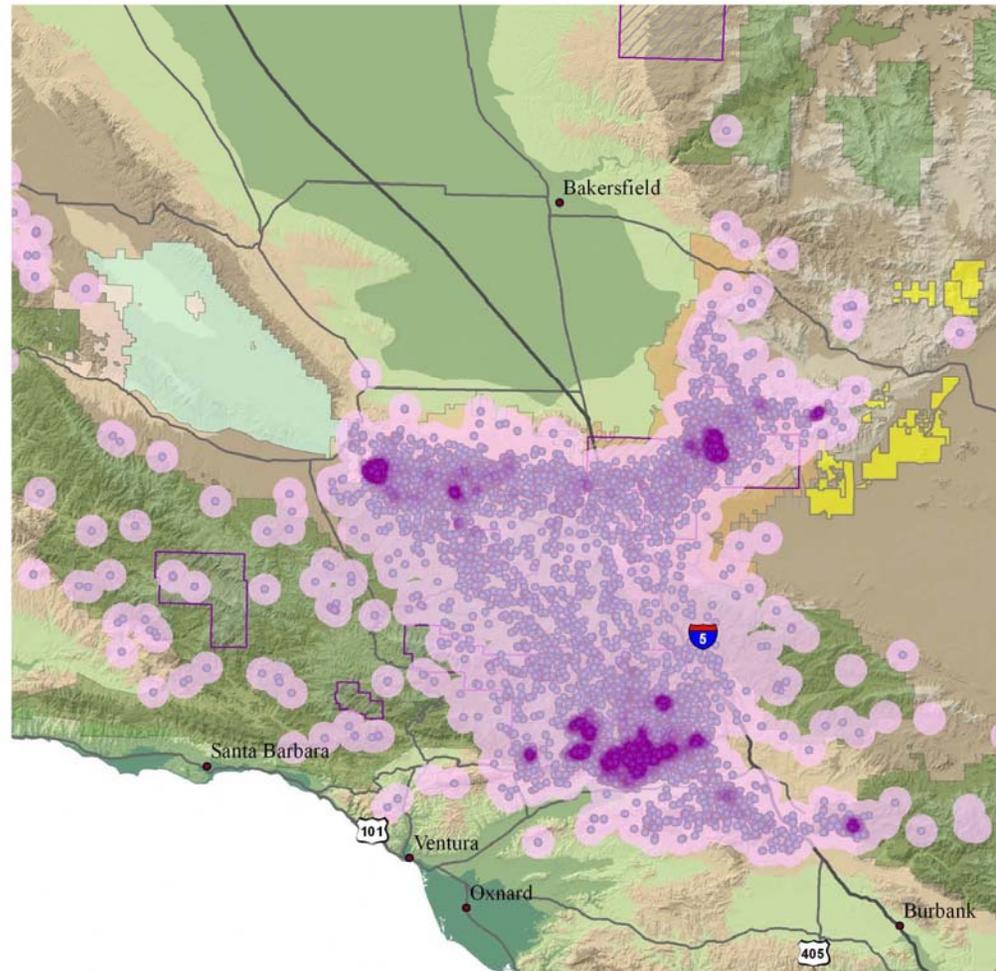
### Legend

- Condor Activity
- High Density
  - Low Density
  - 2009 GPS Locations
  - Kern Wind Projects
  - Condor Critical Habitat
  - Hopper Mountain NWR
  - Bitter Creek NWR
  - Tejon Ranch
  - Wind Wolves
  - Carrizo Plain NM
  - USFS Region 5



Kilometers  
0 5 10 20

Miles  
0 5 10 20







# AUDUBON TOOLS

- National and State Policy Advocacy
- Strong Science
- Conservation Expertise
- Public Opinion
- Litigation as a last resort

