

*Estimate of annual mortality rates, Kittitas Valley Wind Power Project, summer 2011 through spring 2013 (Year 1 and Year 2).*

Species group	Carcasses found	Mortality estimate for site	95% CI (±) per site	Mortality estimate per turbine per year	95% CI (±) per turbine per year	Mortality estimate per MW
<b>Year 2</b>						
All bats	14	32	17 - 59	0.66	0.34 - 1.22	0.31
All birds	67	155	110 - 237	3.23	2.29 - 4.93	1.54
All small birds	47	105	67 - 178	2.18	1.38 - 3.70	1.04
All large birds	20	51	29 - 90	1.05	0.58 - 1.87	0.50
Grassland/shrub steppe birds	19	45	25 - 86	0.93	0.51 - 1.78	0.44
Nocturnal migrants	15	32	15 - 60	0.66	0.30 - 1.23	0.31
Raptors <sup>a</sup>	1	3	3 - 14	0.06	0.04 - 0.29	0.03
Other or unknown avian <sup>b</sup>	32	76	39 - 142	1.58	0.80 - 2.94	0.75
<b>Year 1</b>						
All bats	7	13	3 - 28	0.26	0.06 - 0.58	0.12
All birds	54	108	81 - 156	2.23	1.67 - 3.24	1.06
All small birds	35	73	49 - 104	1.51	1.02 - 2.16	0.72
All large birds	19	37	19 - 69	0.76	0.38 - 1.44	0.36
Grassland/shrub steppe birds	19	40	25 - 65	0.83	0.51 - 1.34	0.4
Nocturnal migrants	26	44	26 - 72	0.9	0.54 - 1.49	0.43
Raptors <sup>a</sup>	3	10	3 - 25	0.19	0.05 - 0.51	0.09
Other or unknown avian <sup>b</sup>	6	16	4 - 38	0.31	0.07 - 0.78	0.15

<sup>a</sup> The number of found carcasses is < 5, interpreting estimates cautionary

<sup>b</sup> Includes birds not identified to species and birds that are not grassland/shrub steppe, nocturnal migrants, or raptors

*Regional comparisons of bird and bat mortality estimates, adapted from Johnson et al. 2011.*

Facility Name	Fatalities per megawatt (MW) per study period				References
	Bats	All Birds	Raptors	Nocturnal Migrants	
<b>Columbia Plateau Ecoregion</b>					
Big Horn I, WA	1.9	2.6	0.15	0.57	Kronner et al. 2008
Biglow Canyon I, OR (Year 1)	1.99	1.76	0.03	0.44	Jeffrey et al. 2009
Biglow Canyon I, OR (Year 2)	0.58	2.47	0.04	0.88	Enk et al. 2010
Biglow Canyon II, OR (Year 1)	3.78	7.72	0.2	7.19	Enk et al. 2011
Combine Hills, OR	1.88	2.56	0	0.27	Young et al. 2006
Condone, OR	-	0.05 <sup>a</sup>	0.02 <sup>a</sup>	-	Fishman Ecological Services 2003
Goodnoe Hills, WA	0.17	1.4	0.17	-	URS 2010a
Hay Canyon, OR	0.53	2.21	0	-	Gritski and Kronner 2010a
Hopkins Ridge, WA (Year 1)	0.63	1.23	0.14	0.46	Young et al. 2007
Hopkins Ridge, WA (Year 2)	1.39	2.99	0.07	1.36	Young et al. 2009
<b>Kittitas Valley, WA (Year 1)</b>	<b>0.12</b>	<b>1.06</b>	<b>0.09</b>	<b>0.43</b>	<b>Stantec 2012</b>
<b>Kittitas Valley, WA (Year 2)</b>	<b>0.31</b>	<b>1.54</b>	<b>0.03</b>	<b>0.31</b>	<b>This report</b>
Klondike I, OR	0.77	0.95	0	0.35	Johnson et al. 2003
Klondike II, OR	0.41	3.14	0.11	2.11	NWC and WEST Inc. 2005
Klondike III, OR	1.17 <sup>a</sup>	3.19	0.15	0.9	Gritski et al. 2010
Klondike IIIa, OR	0.23 <sup>a</sup>	2.54	0	-	Gritski et al. 2009
Leaning Juniper, OR	1.98	6.66	0.21	1.56	Gritski et al. 2008
Marengo I, WA	0.17	0.48	0	-	URS 2010b
Marengo II, WA	0.27	0.16	0.05	-	URS 2010c
Nine Canyon II, WA	0.32	0.06	0	-	Erickson et al. 2005
Nine Canyon, WA	2.47	2.76	0.05	0.45	Erickson et al. 2003b
Pebble Springs, OR	1.55	1.93	0.04	0.84	Gritski and Kronner 2010b
Rattlesnake Road, OR	2.87	2.2	0.06	-	Gritski 2010a
Stateline II, OR/WA	0.95	1.23	0.11	0.68	Erickson et al. 2007
Stateline, OR/WA	1.7	2.92	0.09	0.83	Erickson et al. 2004
Tuolumne (Windy Point I), WA	0.94	3.2	0.29	-	Enz and Bay 2010
Vansycle, OR	1.12	0.95	0	0.32	Erickson et al. 2000
Vantage, WA	0.65	1.6	0.35	-	Ventus Environmental Solutions 2012
Wheat Field, OR	0.69	1.4	0.6	-	Gritski 2010b
Wild Horse, WA	0.39	1.55	0.09	0.88	Erickson et al. 2008
<b>Average</b>	<b>1.10</b>	<b>2.15</b>	<b>0.10</b>	<b>1.10</b>	

<sup>a</sup> These estimates are not adjusted for searcher efficiency or scavenger removal; study methods differed from other projects and were not as rigorous; therefore this estimate should be regarded as a minimum mortality estimate and it was not used in calculation of the mean values.

<sup>b</sup> Sum of raptor fatality rate (0.1 fatalities/MW/study year) and non-raptor fatality rate (1.8 fatalities/MW/study year)

<sup>c</sup> Results reported as fatalities per turbine per study period

*Summary of raptor nest observations during aerial and ground-based raptor nest surveys in April and May, 2013, Kittitas Valley Wind Power Project, Washington.*

ID	Year nest first observed	Status			Species observed in 2013	Distance to turbine (Turbine ID)
		2002	2011	2013		
1	2002	Inactive	Active	Inactive		6.1 (A3)
2	2002	Active	Likely active	Active	Red-tailed hawk	3.7 (B5)
3	2002	Inactive	Active	Active	Red-tailed hawk	1.2 (B4)
4	2002	Inactive	Could not locate	Active	Red-tailed hawk	3.6 (B5)
5	2002	Active	Could not locate	Active	Red-tailed hawk	1.9 (B5)
6	2002	Active	Inactive	Gone		0.3 (E1)
7	2002	Inactive	Gone	Gone		0.3 (B6)
8	2002	Active	Gone	Gone		0.5 (H7)
9	2002	Inactive	Inactive	Active	Red-tailed hawk	1.3 (B6)
10	2002	Active	Gone	Gone		0.8 (H1)
11	2002	Inactive	Active	Gone		0.8 (I11)
12	2002	Inactive	Active	Inactive		2.8 (C7)
13	2002	Inactive	Gone	Gone		1.9 (I11)
14	2002	Inactive	Inactive	Gone		2.0 (I10)
15	2002	Active	Could not locate	Could not locate		3.0 (I1)
16	2002	Active	Gone	Active	Red-tailed hawk	3.2 (I1)
201	2011		Inactive	Gone		1.0 (E3)
202	2011		Active	Inactive		1.5 (B1)
203	2011		Active	Likely Active	Red-tailed hawk	1.7 (A4)
204	2011		Inactive	Could not locate		1.7 (A3)
205	2011		Likely active	Could not locate		1.8 (G2)
206	2011		Active	Inactive		2.0 (I1)
301	2013 - new			Inactive		3.3 (B5)
302	2013 - new			Likely Active	Red-tailed hawk	4.5 (A3)
303	2013 - new			Active	Red-tailed hawk	0.4 (H6)
304	2013 - new			Active	Red-tailed hawk	3.0 (B6)