



# ecology and environment, inc.

International Specialists in the Environment

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December 19, 2008  
Mr. David Steeb  
Desert Claim Wind Power LLC  
P.O. Box 4  
Woodinville, WA 98072

**RE: Addendum - Impact Analysis to Wetlands and Streams  
Desert Claim Wind Power Project, Ellensburg, Washington**

Dear Mr. Steeb,

Desert Claim Wind Power LLC (Desert Claim Wind) proposes to develop a 190-megawatt wind energy facility on 5,200 acres of privately and publicly owned land in unincorporated Kittitas County, Washington. Located approximately 8 miles north of the City of Ellensburg, the proposed project would include construction of wind turbine generators, access roads, power collection system, substation, operation and maintenance building.

Ecology and Environment Inc., (E & E) reviewed the project layout map (Figure 1) of the Desert Claim wind energy facility to determine potential impacts from the turbine foundations, access roads, power collection system, and substation/maintenance building may have on wetlands, streams, and their respective buffers. We concluded that Desert Claim Wind Power has carefully micro-sited the proposed locations of the project infrastructure and our analysis shows there would be no impacts to the onsite sensitive areas.

E & E performed wetland and stream surveys during the Kittitas County FEIS process in June and July 2003. Additional surveys were conducted on Washington Department of Natural Resources land in June 2006 and on private land in July 2008. The sections below discuss the affected environment of wetlands and streams within the proposed project area and the impact analysis on those resources from the proposed project.

## **Affected Environment**

The proposed project area is located within the central portion of the Upper Yakima River drainage basin. The Yakima River begins on the eastern slope of the Cascade Mountains at Keechelus Lake in the Upper Kittitas Valley and flows southeasterly through the lower plateau and river-bottom lands to the Columbia River, draining an area of approximately 6,155 square miles.

The region surrounding the proposed project area is comprised predominately of upland environment and can be described as open country with shrub-steppe-covered rolling hills and flats. Typically, the dry environment of eastern Washington limits wetland areas to the immediate vicinity of perennial streams, seeps, and springs.

#### Streams

Streams located within the project area drain into the Yakima River, upstream of Ellensburg and approximately 40 miles downstream of the river's headwaters. Because the Yakima River Basin receives little direct precipitation (8.9 inches per year), these streams are primarily fed by the snowmelt of the ridges to the north of the project area (WRCC 2007).

Within the project area, 21 streams were identified, evaluated, and delineated. Of these streams, seven were classified as Type 3 streams (segments of natural waters which are not classified as Type 1 or 2 and have a moderate to slight fish, wildlife, or human use). The remaining 14 streams were classified as Type 4 streams (segments of natural waters within Kittitas County which are not classified as Type 1, 2, or 3 waters, and have a channel width of two feet or more between the ordinary high water marks) and Type 5 (segments of natural water within Kittitas County which are not classified as Type 1, 2, 3, or 4 waters, and have a channel width of two feet between the ordinary high water marks, including streams with or without well-defined channels). Type 4 and 5 streams are not truly waters, but are waterways which are intermittent in nature and may be dry beds at any time of the year. According to the Kittitas County Critical Areas Ordinance (KCCAO), the buffer width for Type 3 streams is 50 feet and Type 4 and 5 streams are 15 feet. The ordinance does not classify irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, stormwater runoff facilities, or other wholly artificial watercourses as streams (Kittitas County 2007). For more detailed information regarding the stream inventory, refer to the Desert Claim Wind Power FEIS 2004 (Appendix B Stream and Wetland Delineation Report.)

#### Wetlands

Wetlands features within the area were identified and evaluated, and the wetland boundaries were delineated. Within the project area, a total of 67 wetlands were identified.

Of the 67 wetlands, 65 were classified as Category III wetlands. Category III wetlands are those that do not satisfy categories I, II, or IV criteria, and have a habitat value rating of 21 points or less. According to the KCCAO, these wetlands have a buffer of 80 feet. For more detailed information regarding the wetland delineation, refer to the Desert Claim Wind Power FEIS 2004 (Appendix B Stream and Wetland Delineation Report.)

Two wetlands were classified as Category IV according to the classification defined in the KCCAO. Category IV wetlands are: i) hydrologically isolated wetlands that are less than or equal to one acre in size, have only one wetland class, and are dominated (greater than 80 percent aerial cover) by a single non-native plant species; or ii) hydrologically isolated wetlands that are less than or equal to two acres in size, have only one wetland class, and greater than 90 percent aerial cover of non-native plant species. According to the KCCAO, Category IV wetlands have a buffer width of 25 feet.

## **Impact Analysis**

The analyses of temporary and permanent impacts from the proposed project are based on the facility layout completed in September 2008 (Figure 1).

### Streams

Potential impacts to streams and stream buffers, as a result of construction activities, could include disturbance of the streambed and banks, disturbance to or removal of riparian vegetation adjacent to stream banks, potential filling in or relocation of parts of the ephemeral or intermittent streams, and erosion and sedimentation which could degrade water quality.

There are six Type 3 stream or irrigation ditches crossings for access roads and the power collection system. To eliminate potential impacts to these streams and their associated buffers, road crossings would be permanently bridged. In locations where the power collection system intersects these water bodies, crossings would occur either by bore under the water body, or cross over it via bridge crossings or power poles, completely avoiding impacts to streams and their buffers.

Based upon this analysis, there would be no temporary or permanent impacts to any streams or stream buffers from turbine pads, access roads, or the power collection system.

### Wetlands

Potential impacts to wetlands and their buffers as a result of construction activities could include removal of wetland or buffer vegetation, potential filling of the wetland, soil compaction from heavy equipment, and erosion and sedimentation which could degrade water quality.

There are two wetland crossings for the power collection system. To eliminate potential impacts as a result of these wetland crossings, crossings would occur via a bore under the wetlands, or cross over via bridge crossings or by power poles, to avoid impacts. By implementing these measures, our analysis concludes there would be no temporary or permanent impacts to wetlands or their buffers from turbine pads, access roads, or the power collection system.

Sincerely,  
ECOLOGY AND ENVIRONMENT, INC.



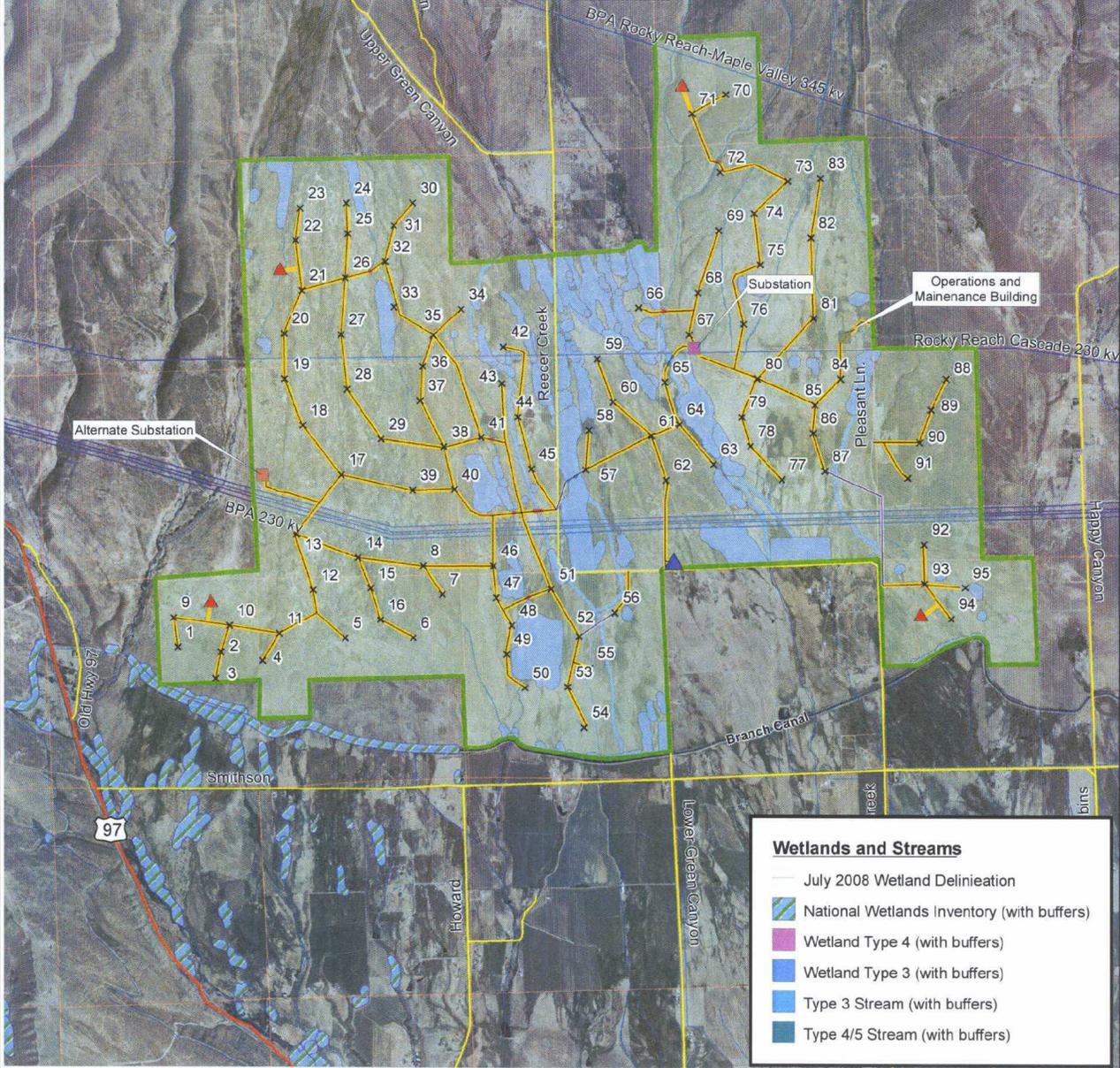
Cameron Fisher, Senior Biologist  
E & E Seattle

Attachment

Cc: N. Roster, E & E Portland  
R. Weinman, Seattle

**Legend**

- × Turbine Location Fixed (9/30/2008)
- ▲ Meteorological Tower
- ▲ Kiosk
- Alternate Substation
- O&M Building
- Substation
- Section Lines
- Proposed Power Collection System
- Cross-Country Power Collection System (buried with boring if needed for stream crossing)
- Potential Directional Drilling
- Project Area Road
- Proposed Project Road Stream Bridge Crossing
- Regional Transmission Lines
- US Highway 97
- Local Roads



**DESERT CLAIM WIND POWER**

Kittitas County, Washington

Figure 1  
Wetlands and Streams  
within the  
Project Area

Date: 9/30/2008      GIS Analyst: avh  
Map Source Information: NAIP  
2006 Kittitas County

...desert\_claim\turbine\_layout\_7-24-08\figures\figure wetlands with project features with ownership.mxd