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**Date:** 8/15/01 11:47AM  
**Subject:** Fen Policy for flat tract canyon coal

*0/007/005*  
*Internal*

Please find attached, the U.S. Fish and Wildlife Service -- Region 6, Petland Mitigation Policy Considerations. It prints out fairly well except for the figures. I think you'll find this useful in defining fens.

At the bottom I have also attached a fen definition from the special conditions of the Sacramento office of the Army Corps of Engineers regional permit. I've copied the definition and included a Web links for the entire permit.

We may also want to involve Nancy Keate with the the Utah Division of Natural Resources. I believe she heads up the State wetlands office. Her office was moving, but she may still have her previous number of 801-538-1548.

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----- Forwarded by Dana Allen/EPR/R8/USEPA/US on 08/15/01 11:20 AM -----

Dennis\_Buechl  
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 cc:  
 08/13/01 Subject: Fen Policy  
 01:13 PM

Attached.

(See attached file: Fens2nd.ver)(See attached file: Fen.att)  
 (See attached file: Fens2nd.ver)(See attached file: Fen.att)

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 Proposed Regional Conditions for Nationwide Permits  
 Sacramento District

For use of any existing and proposed Nationwide Permits (NWP) with the following attributes you are required to notify the Corps of Engineers (Corps) using the "Notification" procedures of the NWP program (General Condition 13). This will be a "Corps Only" notification:

All activities which would affect histosols (including fens). Histosols are organic soils that have organic soil materials in more than half of the upper 80 cm. (32 in.), or that are of any thickness if they overlay rock or fragmental materials that have interstices filled with organic soil material. A fen is a type of histosol that receives significant inputs of water and dissolved solids from a mineral source, such as runoff from a mineral soil or ground water discharge. Its vegetation is minerotrophic.

source: <http://www.spk.usace.army.mil/cespk-co/regulatory/SPKregcondNW.html>

[https://www.nwp.usace.army.mil/op/g/Regs/RC\\_web2.pdf](https://www.nwp.usace.army.mil/op/g/Regs/RC_web2.pdf)

FWS/R6  
ES

Memorandum

To:Project Leaders for Ecological Services, Refuges and Wildlife, and Fish and Wildlife Management Assistance, Region 6

From:Regional Director, Region 6

Subject:Regional Policy on the Protection of Fens, As Amended

This policy was originally approved by Acting RD Mary L. Gessner on June 8, 1998. As a result of input received from users, Region 6 decided to clarify some of the language regarding the soils aspect of fens. The modifications are minor from a policy standpoint.

One of the Fish and Wildlife Service's wetland priorities in Region 6 (the Mountain-Prairie Region) is the protection and conservation of fens. Fens are wetlands that are primarily made up of organic soil material (i.e., peat or muck). Because they take thousands of years to develop, they are essentially irreplaceable. Many fens occur in the Mountain-Prairie Region, particularly in the middle to higher elevations of the Rocky Mountains and in the Nebraska sandhills. However, most fens are small and occupy an extremely small percentage of the overall landscape. They probably occupy much less than 1 percent of the total area in Region 6 and comprise only a small percentage of the total acreage of wetlands.

Although fens only occupy a minor portion of the landscape, they perform important hydrological and water quality functions. For example, rare native cutthroat trout often benefit from the water cleansing action of fens in headwaters of streams. They also often possess unique biotic assemblages, especially fens that are high in pH and calcium. The definitions of various classes of fens, the scientific justification for special consideration for these habitats, the functions of fens, and literature references are described in the attachment.

Because of their uniqueness and importance, Region 6 decided that all its functioning fens, which were identified on U.S. Geological Survey, National Wetlands Inventory, or other maps, and for which location information has been provided to applicable regulatory agencies, fall within Resource Category 1 of the Service's "Mitigation Policy" (Federal Register, Vol. 46, No. 15, February 4, 1981). The mitigation goal for

Resource Category 1 is *no loss of existing habitat value*. In other words, because of the irreplaceability of the type of habitat, every reasonable effort should be made to avoid impacting that habitat type.

Functioning fens are those that (a) continue to support native plant communities and perform the functions inherent to fens or (b) have the potential to rapidly recover those functions with the removal or rectification of drainage, grazing, or other impacts.

Maps and other readily available documentation, such as descriptions of the functions of the fens, will be provided to applicable regulatory agencies (e.g., Corps of Engineers and State departments of water quality). When practicable, this information will be provided by Ecological Services and other Region 6 field offices in advance of project development to assist project planners in accordance with the intent of the Mitigation Policy.

I also encourage other agencies to help gather this important documentation. For example, the locations of fens also should be obtained (a) when wetland delineations are conducted in conjunction with project planning and development of permit applications under section 404 of the Clean Water Act and (b) for analysis of mitigation requirements for "Swampbuster" and section 404 violations. These wetland delineations should identify any fens in the project impact area and distinguish them from other wetland types. Fens identified during those delineations should be added to the regulatory agencies' databases and considered to be categorized as Resource Category 1 habitats.

For the purposes of this policy, fens will be defined as wetlands with organic material accumulations that are ground water driven. In other words, they may receive water from rain, snow, and surface sources. However, the hydrology, minerals, and nutrients that support the wetland are derived principally from ground water sources. Fens in Region 6 also normally have pH's above 5.5 and are dominated by grasses, sedges, or willows.

Region 6's recommended definition of a fen also includes soil characteristics. To qualify for this policy, the wetland soils should meet the Natural Resources Conservation Service's definition of a Histic epipedon or a Histosol in at least some part of the contiguous wetland, unless justified otherwise on a functional basis by a scientist with substantial expertise in fens. Histosols are widely recognized as organic soils formed by slow accumulation of plant debris in waterlogged situations where growth exceeds decomposition and decomposition progresses very slowly. Fens in the Rocky Mountains have particularly slow decomposition rates because of the cold climate.

The 1998 USDA "Keys to Soil Taxonomy" require that Histosols have organic soil materials and meet one or more of four criteria, which are described in the attachment to this policy. One of the criteria requires that organic materials constitute two-thirds or more of the total thickness of the soil to a densic, lithic, or para lithic contact *and* have no mineral horizons or have mineral horizons with a total thickness of 10 cm or less.

In accordance with those criteria, fen wetland complexes can have a significant presence of mineral soils in layers or mosaics, and they may support unique minerotrophic flora. Fens also are not required to have thick organic layers. Such fen wetlands are common in the Rocky Mountains. They meet the aforementioned hydrologic criteria, are saturated throughout most if not all of the year, and may occur on high gradients or in headwater systems.

Mitigation for losses of fen wetlands is problematic because, as mentioned above, the rate of organic material (e.g., peat) accumulation in fens is extremely slow. For example, many of the fens of Colorado are over 10,000 years old with organic soil accumulation rates ranging from 4.3 to 16.2 inches per thousand years. In consideration of this slow accumulation rate, such wetlands cannot seriously be considered a renewable resource. In addition, removal of organic material (e.g., for peat mining) results in alteration of site hydrology and the substrate in which fen plant species can grow. Therefore, onsite or in-kind replacement of peat wetlands is not thought to be possible. Furthermore, at present there are no known reliable methods to create a new, fully functional fen or to restore a severely degraded fen.

Because of their vulnerability, protection of all fens are a priority in this Region, including those which have not yet been mapped and officially designated as Resource Category 1. Accordingly, in a letter dated April 1, 1997, I requested the applicable Division and District Engineers of the U.S. Army Corps of Engineers to revoke the use of Regional and Nationwide Permits pursuant to section 404(e) of the Clean Water Act for projects involving fens. This position was reiterated when the Corps proposed modifying its Nationwide Permits in 1998. I am pleased to note that, as a result, the Corps is giving increased attention to fen protection during permit processing in this Region.

With regard to individual permit applications, Region 6 field offices will encourage the Corps to closely scrutinize all applications involving fens to ensure they meet the requirements of the Environmental Protection Agency's Section 404(b)(1) Guidelines. For example, the project sponsor must prove that, in accordance with section 230.10(a), every effort to avoid the impacts has been made through selection of the least damaging alternative, there is no practicable alternative for nonwater dependent activities, and the siting of a water-dependent project in a fen is essential to the project.

If those requirements are first met, every reasonable effort must be made to minimize potential adverse impacts through project modifications and project conditions then in accordance with Section 230.10(d) of the Guidelines. The ES Offices should encourage their counterparts in the Corps to require that projects with the potential to adversely affect fens strictly adhere to the mitigation sequencing requirements of the Memorandum of Understanding between the Department of the Army and the Environmental Protection Agency, dated February 6, 1990. Unavoidable impacts remaining after those steps have been satisfied must be fully compensated when practicable through restoration of nearby and in-kind fens that have been previously degraded but which are recoverable (e.g., through elimination of grazing or restoration

of hydrology).

Similar steps should be required for other federally funded, licensed, or constructed projects affecting fens that are subject to the requirements of the Fish and Wildlife Coordination Act, Endangered Species Act, Migratory Bird Treaty Act, or National Environmental Policy Act. This type of increased scrutiny also should be applied to natural wetlands that surround or are immediately adjacent to fens because they may not easily be separable and their functions will often overlap.

Proposed in-kind restoration mitigation for unavoidable impacts to fens should be thoroughly evaluated for likelihood of success before a permit is issued. Because of the high degree of uncertainty associated with attempts to mitigate impacts, the success of proposed mitigation should be demonstrated prior to project initiation, and thorough postproject monitoring and reporting should be required. Furthermore, all such applications will be considered on a site-specific, case-by-case basis.

Because unavoidable impacts will rarely be satisfactorily compensated by replacement of in-kind habitat, Region 6 Ecological Services Field Offices will normally recommend denial of all permits for projects that may adversely affect functioning fens. However, they also will look for opportunities to restore degraded fens. Draining, mining, and filling of all fens will be strongly discouraged. In addition, concentrated efforts will be made to encourage relocation of proposed reservoirs and linear projects (e.g., roads, utility lines, and canals) that might impact fens, when practicable.

Furthermore, restoration and proper management of fens should be given high consideration during the development and implementation of management plans on refuges and other public lands. Opportunities for restoration of fens also should be an area of focus for partnership opportunities with other agencies, citizens' organizations, and private landowners.

Copies of this policy were provided to several Federal and State agencies for their consideration, and this information will be available to other applicable entities for use in project planning and decisionmaking. However, the policy does not have any legal authority over Government or private decisions, and it does not affect ongoing, authorized development. The purposes of this policy are to help ensure consistent and effective recommendations by Service personnel and to provide other Federal, State, and local government agencies advance notification of Region 6's position regarding fens.

The attachment to this policy further describes the characteristics of fens in general but only specifically discusses fens in Colorado. Therefore, I reiterate the request stated in the cover memorandum to the draft policy that was sent to Region 6 ES offices for review. Please continue to work with the Natural Heritage Programs and other sources of data in each State so we can broaden the base of our knowledge on fens in other States in Region 6 and further substantiate the position Region 6 has taken in this policy. Please keep my ES staff abreast of new data development in this subject area.

Questions on this policy should be directed to Dennis Buechler, Senior Staff Specialist for Federal Activities, at (303) 236-7400, ext. 231.

Attachment

cc: See Distribution List

bcc: RO rf, RD rf  
ES file, rf

ES:DBuechler:cg:5/29/98  
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File: Wetlands:Fens  
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