



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

Snake River Fish and Wildlife Office  
1387 S. Vinnell Way, Room 368  
Boise, Idaho 83709  
Telephone (208) 378-5243  
<http://IdahoES.fws.gov>



Ross Blanchard  
Operations Engineer  
Federal Highway Administration  
3050 Lakeharbor Lane, Suite 126  
Boise, Idaho 83703-6217

FEB 15 2007

Subject: US 95 Lewiston Hill to Genesee; Key #7769—Nez Perce and Latah Counties,  
Idaho—Biological Opinion  
File #912.0301 2007-F-0179

Dear Mr. Blanchard:

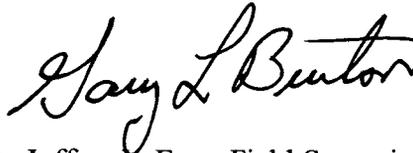
This letter transmits the Fish and Wildlife Service's (Service) Biological Opinion (Opinion) on the effects of activities associated with the US 95 Lewiston Hill to Genesee Highway project on Spalding's catchfly (*Silene spaldingii*), a species listed under the Endangered Species Act (Act) of 1973, as amended. In a letter dated December 7, 2006, and received by the Service on December 12, the Federal Highway Administration (Administration) requested formal consultation on the determination under section 7 of the Act that the unintentional covering with fill and subsequent restoration activities likely adversely affected the Spalding's catchfly.

This request from the Administration, the lead agency responsible for compliance with the Act, is for reinitiation of a prior consultation. In 2002, the Idaho Transportation Department (Department), the non-federal representative undertaking the action, requested concurrence from the Service that the project would not adversely affect Spalding's catchfly. We provided a letter of concurrence on May 6, 2002, (OALS #1-4-02-I-599). Our concurrence was based primarily on the Department's efforts to protect the listed plant through purchasing an easement and realigning the highway right-of-way to avoid the plant occurrence. However, these measures proved inadequate and the remnant patch of native vegetation containing Spalding's catchfly was covered with topsoil overfill during highway construction activities. The fill was subsequently removed during restoration operations. These actions, which potentially adversely affected Spalding's catchfly, were not addressed in the original consultation. The Department has proposed the establishment of a conservation easement and seed collection and propagation of Spalding's catchfly to mitigate the adverse actions. Propagating and transplanting Spalding's catchfly is intended to increase the numbers and distribution of plants in the project area (i.e., Lewiston Hill to Moscow) and is expected to benefit Spalding's catchfly populations in the project area. Any effects to the plant from the mitigation are not expected to be adverse; they will be insignificant, discountable or wholly beneficial.

The enclosed Opinion is based primarily on our review of your December 2006 Addendum to the 2002 Biological Assessment regarding the effects of burying and subsequent restoration of the Spalding's catchfly site. Our Opinion was prepared in accordance with section 7 of the Act and concludes that the survival and recovery of Spalding's catchfly populations were not jeopardized by the accidental burial and subsequent restoration of the catchfly site. A complete record of this consultation is on file at this office.

Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Clay Fletcher at (208) 378-5256 if you have questions concerning this Opinion.

Sincerely,



For Jeffery L. Foss, Field Supervisor  
Snake River Fish and Wildlife Office

Enclosure

cc: ITD-2, Lewiston (Funkhouser)

**BIOLOGICAL OPINION  
FOR THE  
US95 LEWISTON HILL TO GENESEE PROJECT  
KEY 07769**

**FEDERAL HIGHWAY ADMINISTRATION  
AND  
IDAHO TRANSPORTATION DEPARTMENT  
2007-F-0179**

**FEBRUARY 2007  
FISH AND WILDLIFE SERVICE  
SNAKE RIVER FISH AND WILDLIFE OFFICE  
BOISE, IDAHO**

## TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	1
<b>CONSULTATION HISTORY</b> .....	1
<b>BIOLOGICAL OPINION</b> .....	2
<b>I. DESCRIPTION OF PROPOSED ACTION</b> .....	2
<b>A. Action Area</b> .....	2
<b>B. Consulted on Actions</b> .....	3
<b>II. STATUS OF THE SPECIES</b> .....	5
<b>A. Listing History</b> .....	5
<b>B. Reasons for Listing</b> .....	5
<b>C. Species Description</b> .....	5
<b>D. Life History</b> .....	6
<b>E. Population Dynamics</b> .....	6
<b>F. Status and Distribution</b> .....	6
<b>G. Threats</b> .....	8
<b>H. Ongoing Conservation</b> .....	9
<b>I. Conservation Needs</b> .....	10
<b>III. ENVIRONMENTAL BASELINE</b> .....	10
<b>A. Status of the Species in the Action Area</b> .....	10
<b>B. Factors Affecting the Species in the Action Area</b> .....	11
<b>IV. EFFECTS OF THE ACTION</b> .....	11
<b>A. Direct and Indirect Effects</b> .....	11
<b>B. Effects of Interrelated or Interdependent Actions</b> .....	12
<b>V. CUMULATIVE EFFECTS</b> .....	12
<b>VI. CONCLUSION</b> .....	12
<b>VII. INCIDENTAL TAKE</b> .....	12
<b>VIII. CONSERVATION RECOMMENDATIONS</b> .....	13
<b>IX. REINITIATION NOTICE</b> .....	13
<b>LITERATURE CITED</b> .....	14

FIGURES

Figure 1. Topsoil overburden on Spalding’s catchfly site (Department photograph). .....3

Figure 2. Removal of excess material with equipment 5-10-06 (Department photograph). .....4

Figure 3. Finished look of slope after hand removal of additional materials with shovels .....  
(Department photograph).....4

## INTRODUCTION

The Fish and Wildlife Service (Service) has prepared the following Biological Opinion (Opinion) in response to the Federal Highway Administration's (Administration) request for formal consultation on the effects to Spalding's catchfly (*Silene spaldingii*) from the incidental burying of a plant occurrence during construction work on the US 95 Lewiston Hill to Genesee project. The Administration determined that the incident likely adversely affected Spalding's catchfly. Based on the analysis presented in the Biological Assessment (Assessment) for this action, the Service concludes that the survival and recovery of Spalding's catchfly populations were not jeopardized by the incident. Additionally, as the non-federal agency implementing the project, the Idaho Transportation Department (Department) has proposed mitigation expected to benefit Spalding's catchfly.

## CONSULTATION HISTORY

The Department and the Service have had the following meetings and correspondence concerning the catchfly incident.

- |                |  |
|----------------|--|
| May 6, 2002    | The Service sent written concurrence (OALS #1-4-02-I-599) to the Department that the US 95 project was not likely to adversely affect Spalding's catchfly. Our concurrence was based on measures designed to protect the plant. These measures included purchasing an easement and realigning the highway. |
| April 7, 2006  | The Service received a telephone call from the Department stating that the Spalding's catchfly site was covered by soil during highway construction activities and may have been destroyed.  |
| April 24, 2006 | The Service sent an email to the Department requesting official notice of the incident and plans to address potential destruction of Spalding's catchfly plants including the potential need to reinitiate consultation.   |
| May 1, 2006    | The Service received an email from the Department with a letter attached describing events to date and a proposal for removing the soil overburden from the catchfly site. The Service received a hard-copy of this letter on May 4.   |
| May 3, 2006    | The Service received a telephone call from the Department with an update on the plan to uncover the catchfly site. Because no Spalding's catchfly had emerged yet at a nearby site, the Department proposed beginning overburden removal within a week.  |

- May 12, 2006 The Service sent a letter to the Department detailing our understanding of the events as described in the Department's letter of May 4. In our letter, we acknowledged the Department's desire to reinitiate consultation and offered recommendations for the content of an Addendum to the 2002 Assessment. We also urged the Department to look for opportunities to implement recovery actions for Spalding's catchfly.
- May 22, 2006 The Service received an email from the Department with an attached letter describing the restoration effort. The Department requested that the Service advise them on the reinitiation process.
- May 25, 2006 The Service sent an email to the Department acknowledging receipt of the Department's email and report on restoration of the Spalding's catchfly site. Our email also outlined the reinitiation process.
- August 7, 2006 The Service received a telephone call from the Department with an update on reinitiation efforts. The Department indicated that it was working on a mitigation plan to include in the Addendum.
- September 7, 2006 The Service received an email from the Department containing a proposal to collect and propagate Spalding's catchfly seed and transplant the catchfly on occupied and suitable unoccupied sites.
- November 13, 2006 The Service returned a telephone call to the Department to discuss the contents of the Addendum. The Service agreed with the proposed contents. The Department explained that the Administration would be sending the Addendum to the Service with a request for formal consultation in accordance with a Memorandum of Agreement dated February 2003.
- January 9, 2007 The Service sent a draft Opinion to the Department and the Administration.

## **BIOLOGICAL OPINION**

### **I. DESCRIPTION OF PROPOSED ACTION**

#### **A. Action Area**

The Addendum describes the location of the Spalding's catchfly as the Mervyn Farm site, Nez Perce County, Idaho. The site is within the Highway 95 right-of-way between the highway roadcut and a cultivated field. The Idaho Conservation Data Center (CDC) identifies this site as Element Occurrence 11 (CDC 2006). CDC gives the general legal description as T37N, R5W, S22. The action addressed in this Opinion also includes proposed mitigation of collecting catchfly seeds, propagating the plants under controlled conditions, and transplanting the plants to areas of known or potential occurrences, identified in the Addendum as the Renfrew, Jensen, and Mervyn Farm's sites.

## **B. Consulted on Actions**

The action addressed in this Opinion includes activities that have already occurred associated with covering the catchfly site with soil (Figure 1) and the subsequent removal of topsoil (Figures 2 to 4). These are the actions that resulted in reinitiation of consultation because the previously consulted on action not only was modified (inadvertently) but also resulted in effects to Spalding's catchfly not previously considered.

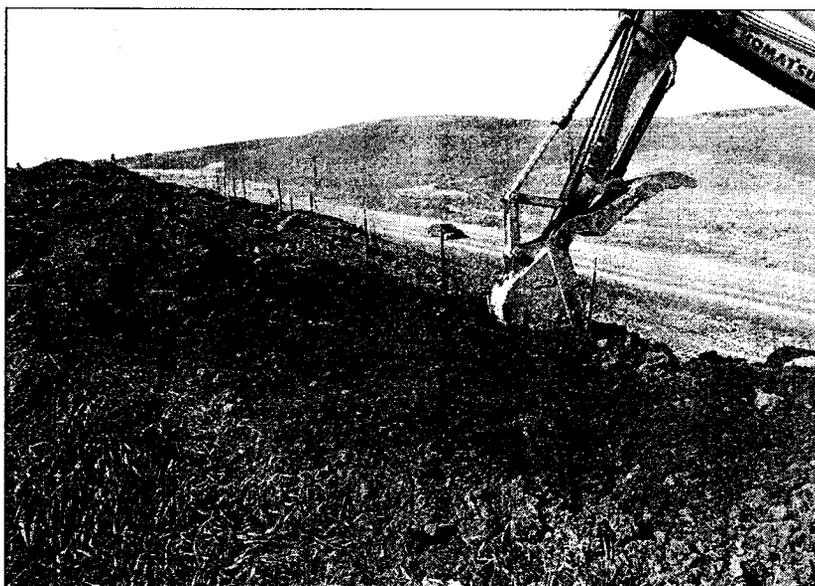
Around March 21, 2006, a highway construction contractor covered the catchfly site with topsoil. The Department discovered that the site had been buried and notified the Service on April 7. The Department halted highway work in the vicinity of the site and installed pedestrian fencing to prevent any further disturbance (Figure 3). On May 10, and following coordination with the Service, the Department contractor began removing topsoil overburden using an excavator with a smooth bucket. The contractor removed dirt down to about six inches above the ground surface. On May 18, 2006, the Department again met with the contractor to initiate the removal of the remaining fill using hand tools. Material was removed from throughout the site to within two to three inches of the existing ground line. The Department reported that native vegetation was beginning to emerge through the overburden in a few areas and it was felt that removal of additional material would be difficult without further disturbance to the site. Staff from the Department and CDC made visits to the site in May and August and did not find Spalding's catchfly present (the plant was also not found at a nearby unaffected site).

Proposed mitigation actions addressed in this Opinion include establishing a conservation easement to protect Spalding's catchfly at the Renfrew site, and collecting Spalding's catchfly seeds, propagating the plants under controlled conditions, and transplanting the plants to areas of known or potential occurrences, identified in the Assessment as the Renfrew, Jensen, and Mervyn Farm's sites. Seed collection is proposed for summer 2007 and transplanting for summer 2008. The Department will work with a private contractor, CDC, Idaho Department of Fish and Game, Palouse Land Trust,



**Figure 1. Topsoil overburden on Spalding's catchfly site (Department photograph).**

and the Service. The Service assumes that the combined expertise of these agencies, particularly that of CDC, as well as following an established protocol for seed collection (i.e., Collecting Seeds for Genetic Conservation, Berry Botanic Garden), will ensure that propagating and transplanting Spalding's catchfly will be accomplished with minimal impacts to the species.



**Figure 2. Removal of excess material with equipment 5-10-06  
(Department photograph).**



**Figure 3. Finished look of slope after hand removal of additional materials with shovels  
(Department photograph).**

We assume that remaining project components will proceed as described in the 2002 Assessment and concurrence letter. We expect that these remaining components, including all conservation measures, will be implemented as previously described, and will not result in any resource impacts not already considered. Therefore, any remaining activities will not be addressed in this Opinion.

## **II. STATUS OF THE SPECIES**

### **A. Listing History**

Spalding's catchfly was listed as a threatened species under the Act on October 10, 2001 (Service 2001). On April 24, 2000, the Service published a proposed rule finding it prudent to designate critical habitat for Spalding's catchfly (Service 2000). The Service has not yet designated critical habitat. The Service completed a draft Recovery Plan for Spalding's catchfly in October 2005 (Service 2005).

### **B. Reasons for Listing**

Section 4 of the Act and regulations promulgated to implement the listing provisions of the Act (50 CFR part 424) set forth the procedures for adding species to the Federal lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1) of the Act. Four of the five factors apply to Spalding's catchfly: the present or threatened destruction, modification, or curtailment of its habitat or range; disease or predation; the inadequacy of existing regulatory mechanisms; and other natural or manmade factors affecting its continued existence.

Specific factors threatening Spalding's catchfly include invasive nonnative plants, small geographically isolated populations or occurrences, changes in fire regime and fire effects, land conversion associated with urban and agricultural development, grazing and trampling by livestock and wildlife species, herbicide and insecticide spraying, off-road vehicle use, insect damage and disease, and impacts from drought and global warming (Service 2005). Although Spalding's catchfly is protected on federal lands, there is currently no protection for the species on private and state lands.

### **C. Species Description**

A member of the pink or carnation family (Caryophyllaceae), Spalding's catchfly is a very long-lived perennial herb found in late seral habitats. It has four to seven pairs of lance-shaped leaves and a spirally arranged inflorescence (group of flowers) consisting of small greenish-white flowers. The foliage is lightly to densely covered with sticky hairs. Plants range from approximately 8 to 24 inches in height (Lichthardt 1997). It has a deep fleshy taproot and the above-ground stalk breaks off easily (just above the root crown and dormant buds) when tugged or kicked.

#### **D. Life History**

Spalding's catchfly reproduces infrequently only by seed; it does not possess rhizomes or other means of vegetative reproduction (Lesica 1993). Bumblebees, especially *Bombus fervidus*, are the primary pollinators of Spalding's catchfly (Lesica and Heidel 1996).

Spalding's catchfly generally flowers from mid-July through August (Gamon 1991). Fruits mature in August to September. This species is known to exhibit prolonged dormancy (i.e., plants may not come up for one to several years). Lesica (1997) found that most plants spend nearly half their summers in dormant condition. Within a given site, many plants have the inherent ability to seasonally adjust production from complete dormancy to rosette formation only or to arrested shoot development with no flowering, all apparently in response to undefined environmental clues. Germination probably occurs in fall as well as spring. Rosettes are formed the first year, after which vegetative stems are produced. Flowering usually occurs during or after the third season (Lesica 1997). Existing plants send up new vegetation in mid-May and typically become senescent in September.

#### **E. Population Dynamics**

The fragmentation of Spalding's catchfly's habitat by human related activities has reduced the species to a mosaic of small populations (68 percent of the known remaining populations are composed of fewer than 100 individuals) occurring in isolated habitat remnants. Many of these small populations may not be viable into the future because small, fragmented populations with limited gene flow and susceptibility to inbreeding face a greater risk of extinction (Ellstrand and Elam 1993, Frankham 2003). Increasing the size and connectivity of the larger remaining Spalding's catchfly populations will be an important component of the recovery strategy for the species. Preserving representative populations across the range of Spalding's catchfly is also a key element of the recovery strategy.

For recovery (delisting criteria) of Spalding's catchfly, the Service proposes the preservation of 26 key conservation areas across the historical range of the plant with at least 500 catchfly individuals in each area. This goal is intended to preserve the available genetic variability within the species and provide for its long-term persistence (Service 2005).

#### **F. Status and Distribution**

The distribution and habitat of Spalding's catchfly are primarily restricted to mesic slopes, flats or depressions in grassland or steppe vegetation dominated by native perennial grasses such as *Festuca idahoensis* (Idaho fescue) or *Festuca scabrella* (rough fescue). Within its range, Spalding's catchfly occurs within five physiographic (physical geographic) regions: the Palouse Grasslands in west-central Idaho and southeastern Washington; the Channeled Scablands in eastern Washington; the Blue Mountain Basins in northeastern Oregon; the Canyon Grasslands of the Snake River and its tributaries (e.g., Salmon River) in Washington and Idaho; and the Intermontane Valleys of northwestern Montana. The Palouse Grasslands, a subset of the Pacific Northwest bunchgrass habitat type (Tisdale 1986a), are believed to have been at the center of Spalding's catchfly historical

range; However, currently fewer than 100 plants in seven scattered occurrences are known from this region (Hill and Gray 2005). With 4,700 plants in 11 locations, the Canyon Grasslands in the Craig Mountain area contain the largest known occurrences of Spalding's catchfly in Idaho.

Spalding's catchfly occurs within a wide range of elevations, reaching its extremes in Hells Canyon in northeastern Oregon, eastern Washington and adjacent Idaho. It occurs as low as 1,380 feet along the lower Salmon River in Idaho to 5,100 feet on the Wallowa Plateau in northeastern Oregon. Spalding's catchfly appears to be located in areas where enough soil moisture accumulates or is retained to provide the necessary mesic conditions it requires well into the growing season. The species is found in swales, on northerly aspects, and in association with other microtopographic features. Spalding's catchfly shows a close association with northerly aspects, particularly in the drier portions of its range, such as Canyon Grasslands and Channeled Scablands.

Within the United States, Spalding's catchfly is known from four counties in Idaho (Idaho, Lewis, Latah, and Nez Perce), four counties in Montana (Flathead, Lake, Lincoln, and Sanders), one county in Oregon (Wallowa), and five counties in Washington (Adams, Asotin, Lincoln, Spokane, and Whitman) (CDC 2003; Montana Natural Heritage Program 2003; Oregon Natural Heritage Program 2003; Washington Natural Heritage Program 2003). Only one element occurrence (EO)<sup>1</sup> record of Spalding's catchfly is known in British Columbia, Canada, and this site is located within 1 mile (1.6 kilometers) of plants in Montana (British Columbia Conservation Data Center 2004), therefore these plants are considered to be within one single population.

Since Spalding's catchfly was listed in 2001, increased survey efforts in suitable habitat have resulted in the identification of 27 new populations. In 2005, there were 124 separate EO records of Spalding's catchfly in 85 populations: 14 in the Blue Mountain Basins, nine in the Canyon Grasslands, 35 in the Channeled Scablands, nine in the Intermontane Valleys, and 18 in the Palouse Grasslands. When examined by state, there are 13 populations in Idaho, 9 in Montana (including a small population in British Columbia, Canada), 14 in Oregon, and 49 in Washington (Service 2005).

The number of individual plants in each population may range from one to several thousand. There are only seven populations of Spalding's catchfly that may be considered relatively large, each with over 500 individuals (Service 2005). The largest population with over 10,000 plants is at The Nature Conservancy's Dancing Prairie Preserve in Montana, followed by Garden Creek, Idaho, with approximately 4,000 plants. The other five large populations range from 500 plants at Coal Creek, Washington, to some 1,613 individuals at The Nature Conservancy's Zumwalt Prairie Preserve in Oregon. Approximately 75 percent of the total known individuals of Spalding's catchfly are found within these few large populations. Of the 85 known Spalding's catchfly populations, just over two thirds (58 populations) are small populations, each made up of fewer than 100 individuals. The current estimated total number of plants is approximately 24,500 individuals (Service 2005).

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<sup>1</sup> NatureServe. 2002. "An **Element Occurrence** (EO) is an area of land and/or water in which a species or natural community is, or was, present." Available at: <http://whiteoak.natureserve.org/eodraft/all.pdf>. For Spalding's catchfly, two observations are considered separate EOs if they are located 1 km or more apart. EOs, or groups of EOs, are separate populations if they are separated by one mile (1.6 km) or more (Service 2005).

It is expected that more populations of Spalding's catchfly will be found in the future as survey efforts increase. To date, survey effort has been lower on privately owned lands than on publicly managed lands. Yet even with this lower survey effort, thirty-one of the known populations of Spalding's catchfly (36 percent) occur on lands that are entirely in private ownership, with an additional 19 populations (22 percent) in partial private ownership. The participation of private landowners, including organizations such as The Nature Conservancy, will therefore be vital in the recovery of this species (Service 2005).

Furthermore, much of the remaining habitat occupied by Spalding's catchfly is fragmented. For example, Spalding's catchfly populations in Oregon are located at least 64 kilometers (40 miles) from the nearest known populations in eastern Washington. When such small populations with few individuals are isolated and genetic exchange is not possible, they become vulnerable to the loss of genetic variation and, ultimately, the loss of the population itself (Barrett and Kohn 1991; Ellstrand and Elam 1993).

It is not known how many Spalding's catchfly individuals and how much habitat may have been lost to human related activities during the last 150 years since European settlement of this region. Historical documentation indicates the species has always been relatively rare (Hitchcock and Maguire 1947), but because most land conversions within the plant's historical range took place before botanical surveys had been done, we may never know how extensive or numerous Spalding's catchfly once was. It is assumed that the loss and alteration of large portions of suitable habitat have resulted in a decline in population numbers (Service 2005).

Four population extirpations have been documented since tracking of Spalding's catchfly began in the early 1980's (Schassberger 1988, Gamon 1991, CDC 2003, Montana Natural Heritage Program 2003, Oregon Natural Heritage Program 2003, Washington Natural Heritage Program 2003). At least five other sites that formerly supported the species have been documented as having no plants present at the last visit (Washington Natural Heritage Program 2003). Populations are not necessarily considered extirpated, however, if sites are revisited and Spalding's catchfly is not found, because plants at these sites may be exhibiting prolonged dormancy. Subsequent visits are needed to confirm extirpations at such sites.

## **G. Threats**

Rangewide, Spalding's catchfly is threatened by several factors. Threats of greatest concern to the continued existence of Spalding's catchfly include, in order of priority, habitat degradation from weed invasion and livestock grazing; habitat loss and fragmentation and associated genetic pressures of small populations; alteration of fire regimes; predation by herbivores, including domestic livestock, native ungulates, rodents and insects; herbicide drift; and prolonged drought related to global warming (Service 2005).

Non-native invasive plant species have superior adaptations for exploiting resources, particularly in disturbed areas, and can cause irreversible ecological changes in the plant community. Invasive plant species are considered a threat at nearly all sites currently supporting Spalding's catchfly. Specifically, the threats posed by these species are competition for water, nutrients, light, and pollinators (Service 2001).

Predation of Spalding's catchfly by herbivores (deer, elk, domestic livestock, rodents and insects) has caused reductions in reproductive effort and seed crop. In addition to direct consumption of plants, grazing animals may also trample the plant community that supports Spalding's catchfly, thereby altering its composition and allowing the invasion of non native plant species.

Substantial portions of Spalding's catchfly habitat in the Palouse Grasslands, Wallowa Plateau, Channeled Scablands, and Intermontane Valleys have been converted to human uses. These uses include croplands, urban and residential development, and non-native range grasses. The effects of this habitat fragmentation threaten the small patches of native vegetation that remain in these areas. Fifty-two percent of known Spalding's catchfly plants are located on private land, and are likely threatened by land-use changes, livestock grazing, agricultural practices, and urbanization (Service 2001).

Spalding's catchfly and the plant communities, with which it is associated, have evolved with fire and have acquired adaptations to survive normal fire regimes (Daubenmire 1970, Tisdale 1986b, Johnson 1998). However, historic fire intervals for these communities are difficult to determine (Weddell 2001, Gray 2001), and the presence of invasive non-native weed species, habitat fragmentation, excessive livestock grazing, fire suppression, and increasing human activity have altered fire regimes (D'Antonio and Vitousek 1992, Hill and Gray 2004). Lesica (1999) concluded that prescribed fire can have a positive effect on Spalding's catchfly populations by removing litter and enhancing recruitment.

Prolonged drought has negative impacts on growth and reproduction, and global warming has potential to threaten the long-term existence of Spalding's catchfly. Climatic fluctuations may adversely affect this species and may contribute to the extirpation of small communities. These effects are often exacerbated by other factors, including pollinator competition, and depressed reproductive success.

## **H. Ongoing Conservation**

In Oregon, The Nature Conservancy inventories and monitors Spalding's catchfly in the Zumwalt Prairie area. The group is also developing a management plan for the area with a primary emphasis on grazing studies. Grazing will be managed to mitigate effects to Spalding's catchfly through restrictions on timing and by means of enclosures.

In Washington, the primary conservation focus is on grazing management and biological control of invasives, inventory and extensive monitoring. The Bureau of Land Management implements grazing management practices that include assessments of livestock use, pasture rotation, monitoring of use, and removal of livestock if use criteria are exceeded, and evaluation of plant community

composition and population trends (Hill and Gray 2004). A management plan for Spalding's catchfly at Fairchild Air Force describes a biological weed control program where four biocontrol agents were introduced in 1996 to control Canada thistle, diffuse knapweed, and spotted knapweed (Rush and Gamon 1999, Caplow 2001).

In Idaho, extensive inventory work has taken place. Several permanent transects have been established to study population dynamics and the effects of fire on the species. Also, genetic studies, pollination studies, and mapping of yellow starthistle within Spalding's catchfly populations have been implemented.

### **I. Conservation Needs**

Conservation recommendations published in the Conservation Strategy (Hill and Gray 2004), are designed to reduce the most imminent and pervasive threats to Spalding's catchfly and its habitat. In order of priority, the Conservation Strategy provides the following recommendations.

1. **Habitat Degradation:** develop guidelines for effective weed, livestock, and fire management, and habitat restoration.
2. **Inventory of Potential Unsurveyed Habitat:** identify areas with immediate survey needs.
3. **Habitat Fragmentation:** help protect pollinators, provide suggestions to reduce further habitat fragmentation and protect small populations on isolated habitat fragments, retain genetic diversity of threatened small populations, and suggest areas that would allow protection of groups of small populations.
4. **Monitoring:** identify priority monitoring needs and provide suggestions of appropriate monitoring methodology for accurate determination of population size, trends, and geographic differentiation to assess threats and management activities and provide guidance for future conservation and management decisions.
5. **Reporting and Record-keeping:** standardize and improve reporting and record-keeping across the four-state region of Spalding's catchfly occurrence.

### **III. ENVIRONMENTAL BASELINE**

#### **A. Status of the Species in the Action Area**

The action area is located within the Palouse Grasslands physiographic region in southeastern Washington and adjacent west-central Idaho. Beginning in 1880, the Palouse Grasslands have been extensively converted to farmlands. It is estimated that only 0.1 percent of the grasslands remain in a natural state. As stated previously, within the Palouse Grasslands physiographic region, there are fewer than 100 Spalding's catchfly plants in seven scattered occurrences (Hill and Gray 2005).

The CDC identifies the affected Spalding catchfly occurrence as EO 11. CDC gives this occurrence an EO rank specification of D. A rank of D indicates that there are fewer than 100 plants (only two plants were observed each year in 2001 and 2004). Few components of the native plant community remain. Introduced plant species cover is moderate to high and/or there is significant anthropogenic disturbance. The surrounding landscape is fragmented with many ecological and hydrological processes no longer intact (CDC 2006). CDC indicates that the population area is approximately one by two meters in area.

## **B. Factors Affecting the Species in the Action Area**

As already stated, the existing condition of habitat within the action area was degraded even before the inadvertent stockpiling of fill on the catchfly site. The location of the occurrence between US 95 and agricultural land exposes plants or seed bank at the site to increased risk from herbicide spraying (from both the highway and the agricultural land) and the spread of invasive weeds. We expect that burying the site with fill and the subsequent removal efforts will potentially result in further degradation in terms of ground disturbance, increased numbers of invasive weeds, disturbance of seed bank, and potential disturbance of pollinators.

## **IV. EFFECTS OF THE ACTION**

### **A. Direct and Indirect Effects**

Direct effects are defined as those that result from the proposed action and directly or immediately impact the species or its habitat. Indirect effects are those that are caused by or will result from the proposed action and are later in time but are still reasonably certain to occur (50 CFR §402).

The potential direct effects of burying and salvaging the Spalding's catchfly include physical damage to any emerging plants as well as disturbance and damage to any seed bank that may be at the site. These effects may result in extirpation of the plant at this site given that recent surveys have found very few plants<sup>2</sup>, the site is isolated, and habitat at the site has been rated as poor (CDC 2006).

The proposed mitigation may also affect Spalding's catchfly. Seed collection may reduce the reproductive output of individual plants and population viability. Field personnel may trample or damage individual catchfly plants while accessing seed collecting and transplanting sites. The Service expects that oversight and expertise provided by CDC and other agencies, and following established seed collection guidelines, will ensure that any effects to Spalding's catchfly from proposed mitigation actions will be short-term and insignificant. Mitigation implementation will benefit Spalding's catchfly by augmenting existing populations or by establishing new ones in areas of suitable habitat. The proposed mitigation will potentially increase the likelihood of success for similar recovery actions in the future by increasing our knowledge of catchfly propagation methods.

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<sup>2</sup> No plants were found during surveys conducted after the burial and restoration incident (see Addendum p. 2).

## **B. Effects of Interrelated or Interdependent Actions**

The Service did not identify any interrelated or interdependent actions associated the actions addressed in this Opinion.

## **V. CUMULATIVE EFFECTS**

Cumulative effects are the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Increased commercial and residential development is the main cumulative effect on Spalding's catchfly in the action area (Hill and Gray 2004). Development has the potential to extirpate remaining prairie remnant patches thereby reducing available habitat for Spalding's catchfly. Development may also directly destroy Spalding's catchfly occurrences or indirectly impact populations by facilitating the spread of invasive weeds through increased ground disturbance. Ground disturbance and habitat fragmentation may also impact ground-nesting bumblebees, the main catchfly pollinator (Steffan-Dewenter and Tschamtkke 1999).

## **VI. CONCLUSION**

The Service has reviewed the current status of Spalding's catchfly, the environmental baseline for the action area, the effects of the action, and the cumulative effects. It is the Service's biological opinion that burying and restoring the Spalding's catchfly site did not jeopardize the continued existence of Spalding's catchfly. Because the 85 known populations of Spalding's catchfly are widely spaced over several states, with individuals and groups scattered within them, even the extirpation of Spalding's catchfly at the Mervyn's Farms site (EO 11) is unlikely to affect the viability of remaining populations or the species as a whole. The proposed mitigation may result in insignificant short-term effects to Spalding's catchfly, but is expected to benefit catchfly populations in the long-term.

## **VII. INCIDENTAL TAKE**

Because the take prohibitions detailed under section 9(a)(1) of the Act do not apply to listed plants, those sections of the Act dealing with incidental take, Sections 7(b)(4) and 7(o)(2), generally do not apply to listed plants either. However, the Act provides limited protection by prohibiting the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of endangered plants on non-federal areas in violation of state law or regulations or in the course of any violation of a state criminal trespass law.

## VIII. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act requires Federal Agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends that the Administration implement the following conservation measures.

1. For on-going and proposed projects, work to ensure that all involved parties, including contractors, are aware of known occurrences of listed species in the action area, and are aware of and adhere to any protective measures or restrictions in place to protect those species.
2. Develop a detailed mitigation plan for collecting seed, propagating, and transplanting Spalding's catchfly. Include a description of how each of these steps will be accomplished. Include protection measures that demonstrate how existing Spalding's catchfly will be protected during mitigation implementation (e.g., following established seed collection guidelines, not digging near existing plants etc.). Also include a monitoring plan to assess the success of the mitigation. Provide a draft of this plan to the Service for review and comments prior to implementation. Also, provide the Service with your monitoring results. Your results will assist others in their conservation efforts for Spalding's catchfly.
3. Continue to work on recovery actions for Spalding's catchfly, including restoration of the plant's native bunchgrass habitat.
4. Conduct public outreach and education regarding the status and conservation/recovery of Spalding's catchfly

## IX. REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action.

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