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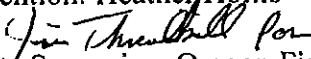
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Memorandum

To: Chief, Federal Assistance Group, Region 1. U.S. Fish and Wildlife Regional Office, Portland, Oregon
Attention: Heather Hollis

From: 
State Supervisor Oregon Fish & Wildlife Office, Portland, Oregon

Subject: Formal consultation for ODA Section 6 Grant for *Plagiobothrys hirtus* Recovery (FWS Reference # 13420-2011-F-0195)

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (Opinion) for funding through section 6 for a *Plagiobothrys hirtus* (rough popcornflower) (popcornflower) restoration project entitled "Recovering *Plagiobothrys hirtus* through Creation of New Populations in Protected Sites: Year 2 of 3". The project will be accomplished by Oregon Department of Agriculture (ODA). This Opinion was prepared in response to a request for consultation from the Region 1 Office on June 13, 2011. It is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

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BIOLOGICAL OPINION

INTRODUCTION

ODA's proposed action is entitled "Recovering *Plagiobothrys hirtus* through Creation of New Populations in Protected Sites: Year 2 of 3" (ODA 2011). The purpose of the proposed action is to contribute to popcornflower recovery through Recovery Action 1.2, under the Recovery Plan for the Rough Popcornflower (USFWS 2003). Recovery Action 1.2 identifies seed collection for the purposes of cultivation research, selection of introduction sites, propagation efforts, and eventual introduction into each recovery unit.

CONSULTATION HISTORY

On March 14, 2011, the Service's Region 1 received a project application from ODA. On June 13, 2011, the Oregon Fish and Wildlife Office received a request from the Region 1 Office for consultation under section 7 of the Act.

Action Area

The action area is defined (50 CFR 402) as, "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

The action will be conducted throughout the range of popcornflower, primarily on Federal, State, and municipal lands in Douglas County, Oregon in areas occupied by the plant, within each of the three Recovery Units and at the North Bank Habitat Management Area (NBHMA) as described in the Rough Popcornflower Recovery Plan (USFWS 2003) (See Table 1).

PROPOSED ACTION

Successful creation of new populations of popcornflower is essential to recovery (Recovery Action 1.2), and additional populations are needed to meet the downlisting requirements as specified in the Recovery Plan (USFWS 2003). In 2009, a three-year recovery project was undertaken to create five new populations of popcornflower in protected sites to substantially improve the status of the plant. The proposed action will occur on Federal, State, county, and/or municipal lands and any other sites that appear to have populations of over 100 popcornflower plants.

In 2009 and 2010 (Year 1), suitable habitat locations were identified on lands managed by Bureau of Land Management (BLM), Douglas County Public Works, and Oregon Department of Transportation (ODOT) for popcornflower reintroduction by employing a ODA-designed model to identify potential sites (Currin et al. 2005). Within the sites, a series of biologically suitable areas were selected. Over 10,000 seeds from four populations were collected, and tested for viability. Maternal line evaluations were also completed on selected seed, and this information will be used to develop cultivation and outplanting protocol that will maximize genetic diversity in the created population (Recovery Action 1.2.2).

The proposed action will be to continue this project by producing transplants and outplanting them into the selected Year 1 sites. Toward this goal, in Year 2, ODA will perform the following:

1. Collect additional seeds as necessary.
2. Germinate collected seed in growth chambers or greenhouse at OSU.
3. Transplant seedlings into 4 inch pots and cultivate until suitable size for outplanting.
4. Cooperate with land managers to complete site preparation at sites that have been identified as needing weed control, overstory removal, stream restoration, or other habitat enhancement. Continue to maintain weed control following outplanting.
5. Develop planting array and a monitoring protocol.
6. Outplant at selected sites, and collect baseline monitoring data.
7. Monitor created populations.
8. Collect additional data on weed infestations, hydrology, etc. to be used for adaptive management.
9. Update management plans for created populations using information from monitoring (Recovery Action 1.2.4).

Collection Standards

- Extreme care will be taken to avoid trampling or otherwise injuring popcornflower plants during project implementation and the number of site visits will be minimized.
- To minimize transport of non-native seeds and/or pathogens to or between listed plant sites, care will be taken to clean equipment and clothing prior to travel to popcornflower populations.
- All populations will be monitored annually to detect a significant loss or decline.
- Popcornflower seed will be collected from populations no more than every third year.
- The collectors will collect minimum numbers of seed from many plants, where possible, in the attempt to acquire a broad range of genetic variation while reducing the loss of genetic diversity to the collection population.
- Popcornflower seed will be transported to safe storage facilities upon collection by the ODA (ODA nursery grounds at Oregon State University in Corvallis).
- No plants will be destroyed, and these collections should have no significant impact at any of the localities (Amsberry, pers. comm. 2011).
- For populations numbering over 500 plants, up to 25 percent of an annual seed crop will be collected within a year to conform with safe seed collecting practices (Menges et al. 2004).

- For each popcornflower population with less than 500 but greater than 100 plants, up to 15 percent of an annual seed crop will be collected within a year to conform to safe seed collecting practices (Menges et al. 2004).
- Collected seed will be immediately bagged in paper envelopes and transferred to a cool dry place for storage.

ODA staff will collect popcornflower seed at a maximum of seven populations on Federal and State land in Douglas County and private land (Table 1). While conducting popcornflower seed harvest on any particular day, only a portion of ripe seed is typically available. Popcornflower may begin to produce seed in mid-July and may continue into August. It would be unlikely to collect more than 20 percent from an entire population at one time because even with the best planning it is difficult to predict an optimal collecting day. Most often, during a seed collection event, much popcornflower seed has already dropped to the ground from the plants while another percentage has still not yet matured. The amount of seed remaining on any particular plant on any one day, mature enough for collection is a small proportion of a plant’s annual output. At one seed collecting event, in one day, it is likely that only between 10 to 20 percent of popcornflower seed production for one year could be collected (Kaye, pers. comm. 2006).

ODA’s goal is to produce as many plugs as possible and then outplant into prepared sites (goal is 3,000 plants).

Table 1. Possible Sites for Popcornflower Seed Collection (FWS Reference # 13420-2011-F-0195)

	Recovery Unit	Site Name	Ownership	# Flowering Plants
1	Sutherlin Creek	Sutherlin Festival Grounds	Municipal	> 3,900 (2011)
2	Sutherlin Creek	Horse Pasture	Private	> 5,000 (2009)
3	Sutherlin Creek	Wilbur Mitigation Site	ODOT	> 3,000 (2010)
4	Sutherlin Creek	Oerding Popcorn Swale	TNC*	> 10,000 (2011)
5	Sutherlin Creek	Southside Swale	DSWCD**	6,300 (2009)
6	Yoncalla Creek	ODOT Yoncalla 2	ODOT	5,946 (2009)
7	NBHMA	Westgate Site	BLM	18, 210 (2009)

*The Nature Conservancy, **Douglas Soil and Water Conservation District

STATUS OF THE SPECIES

Popcornflower

Listing Status and Description

Popcornflower was federally listed as endangered on January 25, 2000 (USFWS 2000) and critical habitat was not designated. The species is also on the State of Oregon’s State Endangered Plant list. A recovery plan for the species was published on July 28, 2003.

Popcornflower is an annual herb in the borage family (Boraginaceae). Individual plants are between 7 (2.75 inches) to 60 cm (23.6 inches) tall, with narrow hairy leaves along hairy stems. Flowers are five-petaled, trumpet-shaped, mostly white with yellow centers, and positioned in a

hairy calyx. Flowers occur on paired coiled inflorescences. Each flower produces four tan to black-colored nutlets which will germinate readily (Amsberry and Meinke 2009). This species is endemic to northern Douglas County, Oregon in the interior Umpqua River watershed at elevations from 100 to 230 m (328 to 755 feet).

Population Trends and Distribution

The taxon was considered possibly extinct (Meinke 1982) until it was rediscovered in 1983 as a result of intensive field surveys (Kagan, pers. comm. 1997). At the time of final listing, popcornflower was known from 17 habitat patches and two experimentally established populations. These habitat patches occurred in 8 extant Element Occurrences (EOs) at that time.

At present 36 distinct patches, within 14 extant popcornflower occurrences, are distributed discontinuously from Yoncalla Creek, near Rice Hill, Oregon, south to the Sutherlin Creek, near Wilbur, in the Umpqua River watershed (Maddux and Meyers 2008; USFWS 2009) (Table 2). Of the 14 occurrences, five introduced populations have been established in the southern range of the population. Two naturally occurring popcornflower populations have also been augmented. Suitable habitat includes open vernal wet meadows, seasonally-ponding mudflats, or Oregon ash-swale openings dominated by native wetland-associated herbs and graminoids in valley lowlands.

Habitat Characteristics

The habitat and ecosystem conditions of popcornflower have been well-characterized (Amsberry and Meinke 2001, USFWS 2003). Popcornflower has only been known to occur on Bashaw, Conser, Curtin, Sibold clay, Nonpareil loam, Oakland clay loam, and Sutherlin clay loam. The great majority of popcornflower occurrences are found on Conser soils (USFWS 2010).

Popcornflower occurs in habitat that is seasonally saturated, such as wetlands, depressions in wet prairie, ditches, and swales, and often where there is presence of native wetland plants. The native plants commonly associated with popcornflower include perennials: *Deschampsia cespitosa*, *Camassia leichtlinii* (great white camas), *Carex feta* (green-sheathed sedge), *C. densa* (dense sedge), *C. unilateralis* (one-sided sedge), *Eryngium petiolatum* (rush-leaved coyote thistle), *Fraxinus latifolia* (Oregon ash), *Glyceria occidentalis* (western mannagrass), *Juncus effusus* (common rush), *J. oxymersis* (pointed rush), and *J. patens* (spreading rush). Annuals commonly associated with popcornflower include *Beckmannia syzigachne*, *Veronica scutellata* (skullcap speedwell), *Downingia yina* (cascade calicoflower), and *Limnanthes douglasii* (Douglas' meadowfoam).

Reasons for Decline

Many naturally occurring popcornflower populations have been fragmented due to urban development. The 2000 listing rule provided many cases where populations either became fragmented or were completely lost due to development. Since the Recovery Plan was prepared in 2003, three large occurrences have since been discovered, but two occurrences have become extirpated due to development, and two extensive populations, that were presumed extirpated, were recently observed (USFWS 2010) (Table 2).

Competition is also a threat to the species. In many popcornflower occurrences, the non-native plants, pennyroyal (*Mentha pulegium*) and teasel (*Dipsacus fullonum*) are present and grow in dense vegetation mats in otherwise suitable popcornflower habitat, preventing the species to germinate and grow. Some suitable popcornflower habitat areas that would otherwise be expected to accommodate popcornflower, are overgrown with another native competitor, spreading rush.

The effects of grazing on popcornflower are not well documented or researched. It does appear that when cattle are concentrated in small habitat areas occupied by popcornflower, the population appears sparse. Popcornflower when occurring in larger suitable habitat areas appears to tolerate horse and cattle impacts to some degree (e.g. Horsepasture 1 and Nonpareil sites in USFWS 2010).

Recovery Measures

Collected seed

Table 3 includes locations where popcornflower seed has been collected. Collected popcornflower seed representing the geographic range of the species is cryogenically stored at the Rae Selling Berry Seed Bank in Portland, Oregon, which has been approved as a Center for Plant Conservation facility.

Reintroductions and Augmentation

Five new popcornflower populations have been successfully introduced and three have been augmented by ODA and an environmental consultant. These new introductions did not extend the range of the species, but have slightly changed the known distribution of the species within the Sutherlin Creek Recovery Unit. The newly re-discovered Nonpareil population (Cole collection) (Table 2) places new emphasis on the conservation importance of popcornflower in eastern Sutherlin. During favorable years (years with average rainfall), known popcornflower habitat patches tends to exhibit increases in spatial distribution (ODOT 2008) with decreases (excessive or below average rainfall) common in poorer years. For example in 2009, during a season with average precipitation patterns, population counts at the Southside Swale and Sutherlin Festival Grounds numbered 6,300 and 8,000 plants respectively (USWFS 2010), however; in 2010, during a year with spring rains far above average, plants at the two locations numbered only 3,113 and 521 plants respectively.

Propagation Research

ODA has been actively involved in greenhouse propagation and outplanting of popcornflower since 1997 (Gisler and Meinke 2002). ODA has produced two reports that have been valuable in the propagation and reintroduction of the species. The two reports are, Developing biogeographically based population introduction protocols for at-risk plant species of the interior valleys of southwestern Oregon (Rough popcornflower) (Currin et al. 2005) and Rough popcornflower Population Augmentation at Douglas Soil and Water Conservation District (Roger Johnson) Parcel (Maddux 2006). Other studies and research have documented the utility of popcornflower re-introduction and augmentation (Maddux 2006; Amsberry and Meinke 2009).

Table 2. Extant and Extirpated rough popcornflower Occurrences (from rough popcornflower five-year review (USWFS 2010))

#	Site	EO	Recovery unit	Occupied Area (square meters)	Population size (latest census)	Notes	Status/ Current 5-year trend	Reserve *
1	Sutherlin 1/ Horsepasture 2	1	Sutherlin Creek	8,800	5,000 (2009)	Private; 1 patch extant, 1 extirpated	Extant/ Unknown	No
	Deady Crossing North	5	Sutherlin Creek	< 50	150 (2005)	Private; 2 patches	Extant / Declining	No
	Deady Crossing South	12	Sutherlin Creek	30	500 (2003)	Private property; 4 patches	Extant / Unknown	No
	TNC Oerding reserve- Strip Patch N	9	Sutherlin Creek	100,000	7,000 (2006)	Monitoring plan established; 3 patches	Extant/ Stable	Yes, TNC owned.
	TNC Oerding reserve /Glide Lumber Strip Patch S			53,000	8,100 (2006)			
	TNC Oerding Preserve Field Patch			89,000	15,000 (2006)			
2	Yoncalla North	2	Yoncalla Creek	0	0 (2005)	No plants seen since 1939 Peck collection	Extirpated	No
3	Nonpareil	3	Calapooya Creek/ Sutherlin Creek	> 10,000	Between 2,000 and 6,000 (2009)	1932 Cole Collection; Approximately 8 patches re-discovered 6 miles east of Sutherlin	Extant/ Unknown	No
4	ODOT Yoncalla South	4	Yoncalla Creek	200	5,000 (2009)	Annually monitored; 2 patches	Extant/ Stable	Yes, ODOT owned
6	Sutherlin Park/ Waite Street	6	Sutherlin Creek	277	8,000 (2009)	Annually monitored; 2 patches extant, 1 extirpated	Extant/ Stable	Yes, City owned.
7	Hawthorne	7	Sutherlin Creek	10	200 (2006)	Heavily impacted and fragmented; 1 patch	Extant/ Declining	No
8	Horsepasture	10	Sutherlin Creek	0	0 (2005)	Developed	Extirpated	No
9	Sheep Meadow	11	Sutherlin Creek	0	0 (2005)	Developed	Extirpated	No

#	Site	EO	Recovery unit	Occupied Area (square meters)	Population size (latest census)	Notes	Status/ Current 5-year trend	Reserve *
10	Val Street	13	Sutherlin Creek	0	0 (2005)	Private property	Extirpated	No
11	Stearns Lane	14	Calapooya Creek	5	100 (2008)	Private property; 1 patch	Extant/ Stable	No
12	Southside Road East	15	Sutherlin Creek	30	1,000 (2005)	Private property; 1 patch	Extant/ Unknown	No
13	ODOT Yoncalla 2	16	Yoncalla Creek	15	5,946 (2009)	Annually monitored; 1 patch	Extant/ Stable	Yes, ODOT owned
14	Westgate	None	none	1,000	18, 210 (2009)	Introduced; Annually monitored	Extant/ Stable	Yes, BLM owned.
15	Soggy Bottoms Patch	None	none	20	15 (2009)	Introduced; Annually monitored; 1 patch	Extant/ Declining	No
	NWYC Patch		none	10	350 (2009)	Introduced; Annually monitored; 1 patch	Extant/ Declining	No
16	Powerline	None	None	1	0 (2009)	Introduced; Annually monitored	Poor/ Declining	No
17	Wilbur Site	None	Sutherlin Creek	500	3,982 (2009)	Introduced; Annually monitored	Extant/ Increasing	No, ODOT owned.
18	Southside Swale Patch A	None	Sutherlin Creek	1,500	6,300 (2009)	Only two censuses performed; 8 patches	Extant/ Stable	Yes, DSWCD owned.
	Southside Swale Patch B			2,185	> 10,000 (2006)	Private Property; 12 patches	Extant/ Unknown	No
19	Goat Ranch	None	Calapooya Creek	10	75 (2005)	Introduced; 1 patch	Extant/ Unknown	No

* Identified reserves are considered to meet Criterion 1 in recovery plan: Protected from development and greater than 5,000 plants

Transplanting and salvage

Transplanting and salvage has only been partially investigated and final results are forthcoming. A single large transplantation effort was conducted in 2007 at the North West Youth Corps population on BLM land at the (NBHMA), removing plants from the Westgate population. Preliminary results show that the transplantation was minimally successful, but it may take several more years of monitoring to determine a final outcome.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the

Table 3. Seed Collections stored at the Berry Botanic Garden, Portland, Oregon between 1987 and 2001 (from *Plagiobothrys hirtus* (Rough popcornflower) 5-Year Review (USWFS 2010))

Location	Element Occurrence	Number of collections	Number of Presumably Viable Seeds in Storage
Berry Botanic Garden (seed from second generation, nursery grown-plants- origin not specified)	NA	7	460
Hawthorne	7	3	1,672
Horsepasture	10	1	626
Popcorn Swale	9	11	554
Soggy Bottoms (Introduced population)	NA	3	2,598
Southside Road East	15	1	25
Stearns Lane	14	11	232
Sutherlin 1	1	2	1,153
Westgate (Introduced population)	NA	42	2,571
ODOT Yoncalla South	4	35	6,945

Action Area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area which have undergone section 7 consultations, and the impacts of State and private actions which are contemporaneous with the consultation in progress.

Popcornflower environmental baseline within the action area is essentially the same as that discussed in the Status of the Species section because the action area encompasses the entire range of the species.

EFFECTS OF THE ACTION

Effects of the action refer to the permanent or temporary direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time but are still reasonably certain to occur.

Direct Effects

Removal of seed is a direct impact to popcornflower. The proposed action could result in the annual loss of up to 25 percent of seed from each population mentioned in Table 1. In addition, a reduction of propagule distribution within the population can allow for competitive plant species to make entry and colonize listed plant populations. Additionally, collectors also pose risks to the population by accidentally crushing plants while collecting and introducing noxious weed seeds.

Each seed collection from a popcornflower population of over 1,000 individuals will result in no more than a 25 percent seed reduction of the annual population seed yield. This is a seed reduction that is anticipated to be sustainable and not cause long-term losses of the genetic integrity of populations greater than 1,000 individuals (USFWS 2008).

These risks to harming individual plants by collectors and harming populations are reduced by the Collection Standards. The Service anticipates that with application of Collection Standards, the potential for loss of plant seed and loss of plants will not lead to jeopardy of the species because:

- The Service estimates collection populations will sustain a 5 to 25 percent loss of seed material per year.
- Results from research in modeling safe seed collection rates and collection periods by Menges et al. (2004) suggest proposed seed collection will be within safe limits to maintain the robustness of a population.
- Damage to popcornflower plants is expected to be low and plant mortality is not expected.
- No populations will be collected from that are composed of less than 100 reproductively mature plants.

Removal of seed from popcornflower populations could result in short-term, reduced recruitment at collection sites but will not damage mature plants or create disturbance. The Service would have concerns with seed collections from very small populations (less than 50 plants) or populations demonstrating declines. Most popcornflower collecting would be on populations that have at least 1,000 flowering plants or more and no collection would occur on populations numbering less than 100 reproductively mature individuals (Amsberry, pers. comm. 2011).

Popcornflower seed will be reserved for potential augmentation or introduction in the near future. Such a project must be covered under Section 7 or Section 10 of the Act and is not covered under this permit.

Indirect Effects

While collecting seed, trampling would not necessarily result in loss of individual popcornflower plants, but could injure plants. Since care would be taken to avoid trampling the popcornflower,

injury or mortality would be expected to result in the loss of no more than one percent per year in populations.

Vehicles, clothing and equipment can transport plant seeds, vegetative material and pathogens. Removal of leaf tissue may allow for the entry of opportunistic pathogenic organisms. Popcornflower may be harmed by introduction and spread of pathogens, noxious weeds and nonnative plants. Precautions will be taken to reduce the transport of non-native plants and pathogens, thus little impact is expected.

Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate permits conditions pursuant to section 10 of the Act or consultation pursuant to section 7 of the Act. Populations of popcornflower are expected to decline and disappear due to continued human development within the species' range.

Effects of these non-Federal actions to popcornflower may be compounded by other parties collecting seed, however, no other permits or projects for collecting popcornflower seed have been issued or been permitted.

Interrelated and Interdependent Effects

Regulations implementing section 7 of the Act require that the Service consider the effects of activities, which are interrelated and interdependent to the proposed Federal action (50 CFR section 402.02). Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent and interrelated activities are assessed by applying the "but for" test, which asks whether any action and its associated impacts would occur "but for" the proposed action.

No interrelated or interdependent actions would be associated with the proposed action.

CONCLUSION

After reviewing the current status of rough popcornflower, the environmental baseline for the action area, the effects of proposed action, and the cumulative effects within the action area, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the listed plant species. Seed collection is likely to adversely affect individual popcornflower plants in the short term while future outplanting of greenhouse plugs is anticipated to contribute to the long term restoration and recovery of these species. No critical habitat has been designated for popcornflower; therefore, none will be affected.

This no jeopardy finding is supported by the following reasons:

1. With the application of Collection Standards, harm and/or mortality to popcornflower due to actions under this plan are expected to be very low.

2. Because for populations greater than 500 reproductively mature plants, no greater than 25 percent of popcornflower seed would be collected from any site in any one year, ensuring that impacts would be sufficiently low.
3. Because for populations 500 or fewer reproductively mature plants, no greater than 15 percent of popcornflower seed would be collected from any site in any one year, ensuring that impacts would be sufficiently low.
4. During propagule collection activities, one percent or less mortality per year of popcornflower combined populations is expected.
5. The seed collection activities are not likely to permanently decrease popcornflower reproduction, numbers, or distribution. In fact subsequent propagation activities may increase the reproduction, numbers, and distribution of the species.
6. The majority of the anticipated mortality is associated with incidental damage to existing plant individuals and loss of seed. Implementing Collection Standards in accordance with the project description provides reasonable certainty that, following treatment, plant populations will likely be stable or increase in size over time.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act prohibits taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Section 7 (b)(4) and 7 (o)(2) of the Act do not apply to the incidental take of listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits 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.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs 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. We recommend the following conservation recommendations for popcornflower seed collection.

1. Extreme care should be taken to avoid trampling or otherwise injuring popcornflower during site visits, and the number of site visits will be minimized. No greater than 30 percent of the total number of plants should be visibly trampled during the growing season at a site in any one year.
2. To prevent the spread of pathogens, noxious weeds and nonnative plants, all equipment and clothing will be cleaned to remove mud, debris, and vegetative material prior to arriving at popcornflower sites.

3. ODA will provide a written report to the Service on the number of seed collected from each site, approximate percentage of population collected from, progress of actions, and any apparent impact on or benefits to the species. This report should be delivered to the Roseburg Field Office each year that seed is collected and should arrive at the Service office by December 31st following each year of collection. Please address reports to:

Sam Friedman
Roseburg Field Office
2900 NW Stewart Parkway
Roseburg, OR 97471

4. If excess popcornflower seed is collected, the permittee will coordinate with Service to make arrangements to transfer seed to the Rae Selling Berry Seed Bank, 11505 SW Summerville Avenue, Portland, OR 97219, for cryogenic storage.

Reinitiation Requirement

This concludes formal consultation with the Regional Office on funding a section 6 project to perform the Proposed Action on Federal, State, county, municipal, or private lands. As required by 50 CFR Part 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 adverse impacts to rough popcornflower are 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 that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of adverse impacts are exceeded, operations that are causing such impacts must be stopped and formal consultation must be reinitiated. An example that would indicate required reinitiation would be, during the course of seed collection, the level of effects exceeds what would be thought to be a low level (as witnessed by an 60 percent level of plants that do not emerge after two years, under average seasonal rainfall patterns, after seed collection or greater than 30 percent of plants trampled during the growing season); such effects represent new information requiring reinitiation of consultation and withdrawal of the permit. The permittee must immediately cease the action and provide an explanation of the cause of the effects and review with the Service the need for possible modification of the research design. This Opinion is valid for activities included in the Proposed Action that are completed prior to December 1, 2015.

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