Latah SWCD Spalding's Catchfly Seeding
on Paradise Ridge/Gormsen Butte KCA and surrounding areas
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Since 2013, the Latah Soil and Water Conservation District has been participating in recovery efforts for the ESA-listed Spalding's catchfly (*Silene spaldingii*) within the Paradise Ridge/Gormsen Butte Key Conservation Area (Paradise KCA) in Latah County, ID. This report summarizes the seeding efforts. See Latah SWCD Spalding's Catchfly Recovery Planting Summary and Habitat Restoration Report for more details on the plantings using containerized plants and results to date.

In 2017, Latah SWCD began trial seeding efforts on prairie remnants as well as in Conservation Reserve Program (CRP) sites to determine if broadcast and/or drill-seeding are viable methods of establishing Spalding's catchfly. Given the sensitivity of Palouse Prairie remnants to disturbance, remnant seeding was conducted via hand broadcast seeding while drill-seeding was conducted on CRP ground.

To date, broadcast seeding efforts have been conducted on prairie remnants in fall 2017, 2019, and 2020. Drill seeding on CRP within the Paradise KCA in fall 2018 and in a CRP location outside of the KCA in fall 2019. All seeded sites were revisited the following spring and will continue to be monitored as needed to determine seeding success. In 2016, the 2015 and 2016 seed lots for Spalding's catchfly seed were tested for viability and results showed >80% seed viability. Spalding's catchfly seedlings may have a high mortality rate (Lesica pers. comm.) and this has been supported by observations following seeding events on the prairie remnants. Tables 1 and 2 below provide results of monitoring in both the prairie remnant trials as well in the CRP locations.

Broadcast Seeding in Prairie Remnants Results

Seedling germination was observed at all sites in year 1 or 2 following the fall seeding (Figure 1). At several sites, seedlings were observed in both the first and second years following the seeding. However, until the 2023 monitoring year, no seedlings were observed to have returned as a 1-year-old plant on the prairie remnant seeding efforts. In 2023, several seedlings observed in 2022 at the P6, P7, and P8 sites returned as rosettes (Figure 2). This was exciting given that survival past the seedling stage had not yet been observed at these sites. These locations will be revisited in 2024 for an update on the survival of these plants.

Figure 1. Spalding's catchfly seedlings at P7, May 18. 2021.

Figure 2. Spalding's catchfly rosettes (1-year-old plants) at P7, May 23, 2023.

BROADCAST SEEDING MONITORING DATA - Prairie Remnants								
Plot Name	**Aspect**	**Planting Year**	**2018 seedling count**	**2019 seedling count**	**2020 seedling count**	**2021 seedling count**	**2022 seedling count**	**2023 data**
SP-2	W	2017	4	0	0	n/a	n/a	n/a
SP-4	NW	2017	24	7	0	0	n/a	n/a
SP-6	WNW	2017	1	1	0	0	n/a	n/a
SP-8	W	2019			4	0	n/a	n/a
SP-9	W	2019			33	0	n/a	n/a
C-4	NW	2017	23	7	0	0	n/a	n/a
H-6	ridgetop	2019			234	0	0	n/a
P5	W	2020				20	0	n/a
P6	W	2020				44	6	**6***
P7	NW	2020				103	47	**11***
P8	WNW	2020				0	35	**5***

Table 1. Summary of Latah SWCD Spalding's catchfly seeding monitoring efforts on Palouse Prairie remnants. *rosettes – returned as rosettes from previous year's seedlings.

Drill-Seeding in CRP Results

In fall 2018, Spalding's catchfly was drill-seeded into an existing stand of native grasses and forbs on CRP ground on Paradise Ridge (J-sites, Figure 3). For this drill-seeding event, 2.68 oz. (75.84 gm.) of seed was used over multiple acres. To monitor this drill seeding event, four transects between 191-243 feet in length were marked for relocation during the drilling event and were monitored annually in the spring. The competition on these sites was high given that these sites had previously been established with perennial vegetation. To date, Spalding's catchfly has not been detected on these 4 transects (Ja, Jb, Jc, Jd). See Table 2. These transects are no longer detectable and monitoring has been suspended.

Figure 3. May 29, 2020. J transect location.

In fall 2019, Spalding's catchfly was seeded into a 1-acre subset of a 50-acre prairie reconstruction project site in Latah County. Site preparation methods by the landowner/operator included systematically removing the existing non-native vegetation with herbicide several times a year during the two-year site preparation phase. During the drill-seeding, Spalding's catchfly seed was added to one opener of the small seed drill box in the Truax drill for application along with a mix of 10 native grasses and 15 native forbs. For this site, 1 oz (29 gm) of Spalding's catchfly seed was used. To establish the monitoring transects, we coordinated with the drill operator, flagged the location of the Spalding's catchfly seed output, and placed permanent markers at the start and end of three 50-acre transects (L1, L2, L3, See Figures 4-7). See Table 2 for monitoring results. During the 2020 monitoring event, all three L transects had significant numbers of Spalding's catchfly seedlings throughout and these seedlings were mapped along the transect for future monitoring. As Table 2 shows, most of the Spalding's catchfly seedlings detected in 2020 survived and emerged as rosettes or stem plants as detected during the 2021 monitoring event. This trend has continued through 202 and 2023 with plant numbers increasing annually. These three transects will be monitored as needed to determine Spalding's catchfly future success on this site.

Figure 4. June 17, 2020. L3 seeded transect.

Figure 5. June 17, 2020, Spalding's catchfly seedlings in L3 transect.

Figure 6. May 17, 2021. Spalding's catchfly rosettes and stem plants in L1 transect.

Figure 7. June 15, 2023. Spalding's catchfly stem plant in L3 transect.

DRILL SEEDED TRANSECT MONITORING DATA - In CRP fields								
Transect Name	**Aspect**	**Transect length (ft)**	**Planting Year**	**2019 seedling data**	**2020 seedling data**	**2021 plant data**	**2022 plant data**	**Notes**
Ja	W	191	2018	0	0	0		Ja-Jd were drill-seeded into an established stand of native grasses and forbs. Significant competition exists and no detection of Spalding's catchfly seedlings or plants has been detected to date
Jb	W	171	2018	0	0	0		
Jc	E to N	243	2018	0	0	0		
Jd	NE to NW	125	2018	0	0	0		
L1	NNW	49	2019		25	34	46	L1-L3 were drill-seeded into a prepared prairie reconstruction site with little existing competition at the time of seeding. Spalding's catchfly seedlings were noted and mapped along 3 transects in 2020. 2021m 2022, and 2023 data show returning Spalding's catchfly plants.
L2	WNW	50	2019		32	26	52	
L3	flat, slight S	50	2019		20	27	26	

Table 2. Summary of Latah SWCD Spalding's catchfly drill-seeding monitoring efforts.