

# Rusty Patched Bumble Bee Habitat Project

## Habitat Stamp Grant Final Report

Grant Agreement Number= 19-002H

Grantee: Pleasure Driveway and Park District of Peoria  
1125 W Lake Ave  
Peoria, IL 61614-5935

Grant Period 1/14/2019 – 1/14/2022

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### **Project Summary**

The Peoria Park District (PPD) along with the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program (PFW), the Illinois River Valley Pheasants Forever (PF) chapter, and Illinois Farm Bureau are working to restore and enhance prairies and woodlands in Peoria County to improve habitat diversity for the federally endangered rusty-patched bumble bee (*Bombus affinis*, RPBB). In addition to the RPBB, these projects will benefit the monarch butterfly (*Danaus plexippus*) and other native pollinator species, grassland songbirds, forest dwelling bird species, and overall ecosystem health.

### **Project Scope**

This partnership grant request was to fund the restoration of 43.0 acres of high diversity native prairie and enhance an additional 17 acres of existing prairie and woodland in Peoria County. Peoria County has one of the highest concentrations of known RPBB populations in Illinois outside the Chicago "collar counties." Beginning in 2017, the PPD and the PFW Program partnered to begin recovery efforts for RPBB on lands owned and managed by PPD. As more attention has been brought to the plight of the pollinators, more partners joined the effort to help PPD manage and improve their lands to conserve this species. The Habitat Stamp funds will be used to help meet existing management needs.

Habitat restoration activities included removing existing undesirable woody vegetation and exotic, cool-season grasses from former golf courses and turf-grass areas and restoring these areas to high diversity native prairie. This provides additional RPBB summer nesting and foraging habitat. Habitat enhancement activities focused on removing exotic invasive species in existing oak-hickory woodlands to provide additional RPBB overwintering habitat and increased floral resources for RPB queens post-emergence. Restoration sites included: Detweiller Riverside, Donovan Park, and Robinson Park. RPBB was confirmed at Robinson Park in 2013. All sites are within the U.S. Fish and Wildlife Service's RPBB High Potential Zone and/or RPBB Primary Dispersal Zone.

## **Project Description**

At Detweiller Riverside, 15 acres of cool season grasses were sprayed with Glyphosate herbicide, disked and planted with Pheasant Forever's Basic Pollinator and Pollinator Plus seed mix. This area is above the 26 ft Illinois River Flood zone and was formerly a golf course and dominated by cool season, turf-forming grasses. An additional 15 acres of former golf course that is within the 26 foot Illinois River Flood zone was over-seeded with Pheasant Forever's Wet Pollinator and Pollinator Plus mix. This 15 acre area was not initially sprayed with broad spectrum herbicide because it became evident that floods in the Summer of 2019 and 2020 had managed to kill off much of the cool season turf grasses. We did spot treatments of any present wetland invasive species in this zone prior to over-seeding. This is a site we are already seeing the expansion of the Federally Threatened, Decurrent False Aster (*Boltonia decurrens*).



Detweiller Riverside Photos:



Photo from spring 2019 showing flood zone (15 acres). This is the area where we did invasive species removal, disking, and conservation over-seeding with a broadcast seeder.



Photo of same flood zone in winter 2021 after removal and treatment of invasives, rough disking and over-seeding.



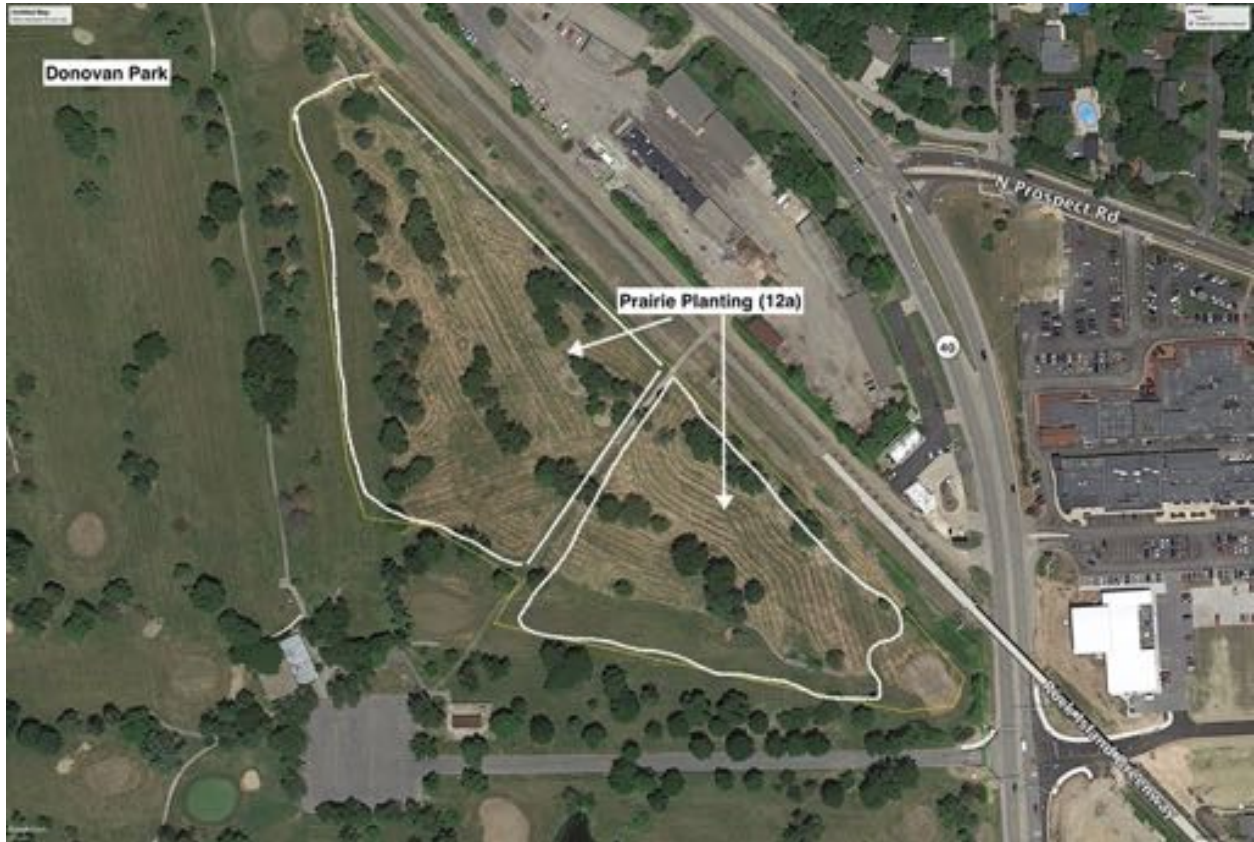


Part of the portion of Detweiller Riverside above the flood zone. This is after chemical burn-down of cool season grasses, disking, and planting.



Part of the portion of Detweiller Riverside above the flood zone. This is after chemical burn-down of cool season grasses, disking, and planting.

At Donovan Park, 12 acres of cool season grasses were sprayed with glyphosate herbicide, disked and planted with Pheasant Forever's Basic Pollinator and Pollinator Plus seed mix.





## Pictures of Donovan Park



Donovan Park Spring 2019 before restoration. Cool season grasses were sprayed, ground was disked, and then site was seeded with PF Basic Pollinator and Pollinator Plus Mix.



Fall 2021 after spraying and disking. Seeding two days before first snowfall.



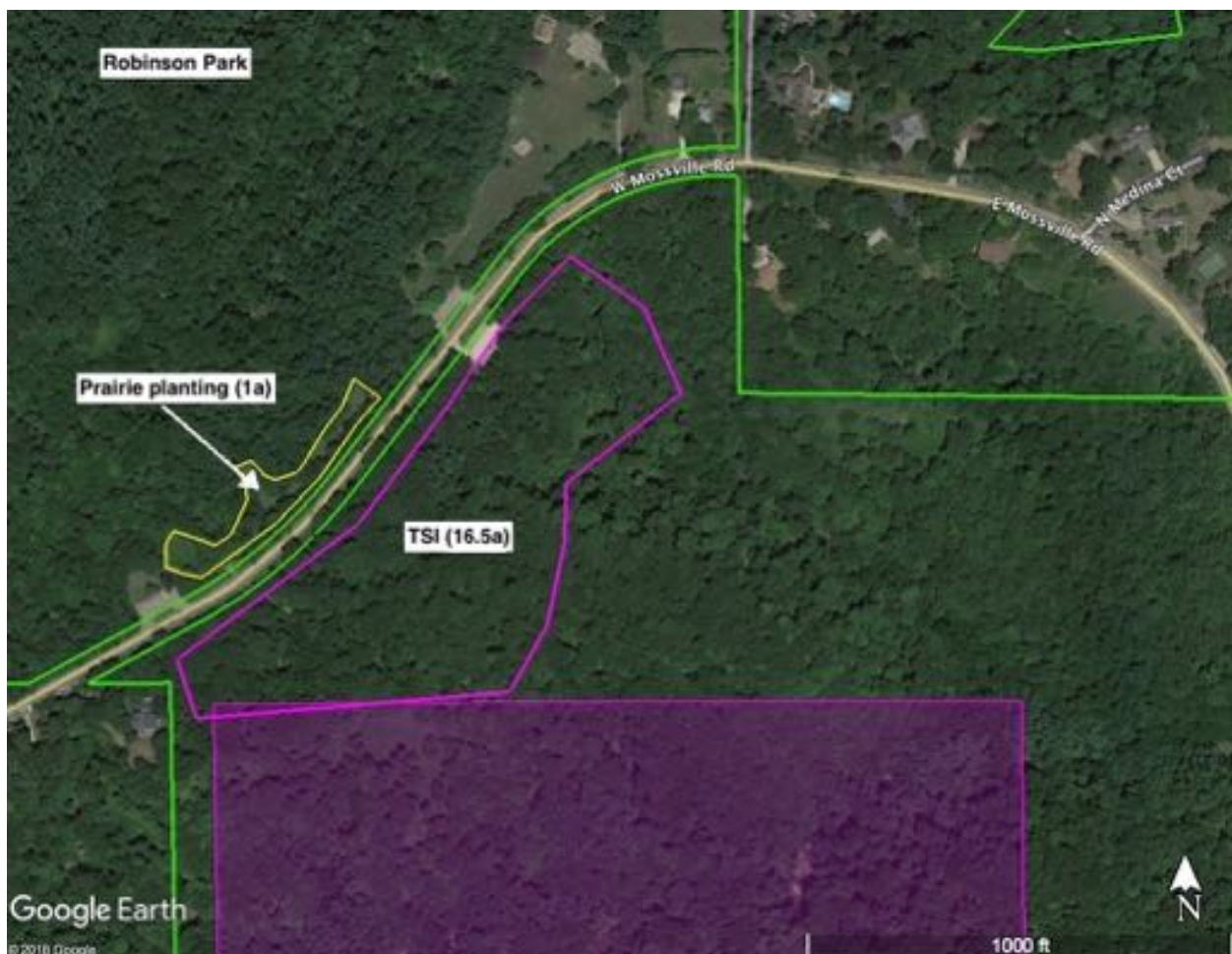
Another picture of the restoration site after spraying, disking and planting.



Another picture of the restoration site after spraying, disking and planting.



At Robinson Park, an additional 1 acre of prairie was established near an existing 1/8 acre prairie planting. Most of this area was mowed turf grass bordered with thick stands of Bush Honeysuckle and other invasive shrub species. The turf areas were sprayed with Glyphosate, and bush honeysuckle and other invasive brush was cut and stump treated. The resulting ground was disked and seeded with Pheasant Forever's Basic Pollinator and Pollinator Plus seed mix. Additionally, 15 acres of adjacent woodlands underwent timber stand improvement to remove Bush Honeysuckle, Autumn Olive. Additionally, young Sassafras, Red Elm, and Black Locust saplings were thinned and stump treated. This 16.5 acre woodland has a healthy overstory of oaks and hickories, along with numerous spring ephemerals that will respond positively to the thinning. The placement of this 16.5 acre woodland, and the resulting management of it will help connect our prairie plantings with existing Glacial Drift Hill Prairie habitat within Robinson Park Hill Prairies Nature Preserve to the south of the managed woodlands. This site is where we have known populations of Rusty Patched Bumble Bee (*Bombus affinis*) utilizing the small prairie plantings. Woodland management is crucial for over-wintering queen RPBB populations by enhancing spring ephemeral populations. The management strategy also will help connect the prairie plantings with the existing Glacial Drift Hill Prairie habitat.





Robinson Park Photos



Existing prairie planting where Rusty Patched Bumble Bee is known to be present.



Existing Hill Prairie, prior to woodland restoration. The adjacent woodland was opened up by removing exotic/invasive shrub species. The goal is to make this native habitat more accessible to RPBB that use the nearby prairie plantings.





Additional Prairie Planting area after invasive removal, disking and planting.



Woodland after timber stand improvement.





Woodland after timber stand improvement.



Hill Prairie after timber stand improvement.

## **Educational Components**

As part of our grant, we hosted an in-person pollinator workshop on August 10, 2019. This was in partnership with USFWS and the Illinois Farm Bureau. Over 45 participants came to our Tawny Oaks facility to hear presentations from USFWS, Illinois Nature Preserve Commission, and Illinois Farm Bureau and Peoria County SWCD. The day-long workshop was to familiarize landowners with the needs for protection, and ways of establishing, pollinator habitat. We also focused on the recent listing of the RPBB as a Federally Endangered species. We also did several community outreach programs to civic groups during the latter part of 2019. As part of the public awareness for RPBB that was generated by these efforts, our pollinator monitoring efforts documented a new sighting of RPBB in 2021. This sighting was confirmed and documented with USFWS.

Unfortunately, the COVID-19 pandemic prevented us from having more in-person workshops for the remainder of the grant cycle. We did modify our program delivery to an on-line presentation and conducted several more programs during 2020 and 2021. One of these online presentations is available online via the Peoria Audubon Society's YouTube channel.

<https://youtu.be/6S-q9oOTz8A>

Another video was prepared in 2021 for the Peoria Park District to use in promoting public awareness for the IDNR Habitat Stamp Grant and the work that was going on in our parks as part of the restoration process. A copy of that video is available here:

<https://parkshare.peoriaparks.org:1125/d/s/637763896964341142/mx7NfPMI6Y703YDppv0IGDzcuP2806eN-uN0AYxbL2Qg>





### **Project rollout and funding description**

Contractor Portion: Initial Scope of work for the Contractor portion of the grant was developed and the bid process started mid-2019. We selected the low-bid contractor. Later that year, the contractor we had chosen rescinded his bid and contract for the work. We re-bid the project in January 2020 and the project was awarded to Davey Resource Group. After the start of the COVID-19 Pandemic, and during the subsequent lock-down, we requested the extension of the grant period for 1 year. Davey Resource Group was able to initially visit the site in August 2020, and began the Robinson Park TSI portion of the grant in November of 2020. Davey then began ground preparation of Detweiller, Donovan, and Robinson in August 2021 and completed seeding of the same sites in November of 2021.

Partner cash portion of Grant: The grant included cash funding from several partners; USFWS (\$22,900), Illinois Farm Bureau (\$2,000), Peoria Park District (\$3,392.96), and Illinois River Valley Chapter of Pheasant's Forever (\$4,000) That funding was secured and subsequently used for portions of the contractor work and seed and supplies. (see appendix 6 for partner cash information)

Partner in-kind labor portion of the grant: In early 2019, the USFWS private lands biologist took a new position within USFWS outside our region. Unfortunately, USFWS was not able to re-fill that position until late 2020. Since we had anticipated the USFWS biologist's time as part of our match, we had to reassign the duties that were to be performed by USFWS staff to Peoria Park District staff to keep our match commitment active and the project moving to completion. PPD staff took on the role of monitoring, invasive species control, and contractor oversight. Once a new USFWS biologist came on board for our region in late 2020, we were able to include USFWS in the grant match category again.

Peoria Park District environmental staff provided ecological monitoring, contractor oversight, invasive species control, outreach programming, and leading volunteer workdays. PPD Support Service Staff provided ground preparation, invasive tree removal, rough mowing, and preparation of the site for contractors.

IDNR portion of the grant: Funds from IDNR's Habitat Stamp Grant were used for a portion of the seed purchase (maximum allowed by the grant was \$100/acre x 43 acres = \$4,300), and the portion of the contractor fees not covered by any other partnership funds. Grant funding additionally provided a 10% indirect cost recovery of those funds supplied by IDNR.

**Project habitat improvement synopsis:**

Acres of cool season grasses sprayed and disked	28
Acres of conservation over-seeding (spot-treatment of invasives and rough disked)	15
Total acres of prairie planted	43
Acres of woodland timber stand improvement	16.5

**Biological Importance:**

This grant achieved multiple goals of the State Wildlife Action Plan (SWAP). For the Farmland and Prairie campaign, this grant helps meet objectives 1b) “establish an additional 1 million acres of grassland, emphasizing upland. Establish and maintain treeless grasslands larger than 0.5 miles wide and ecological connectivity among grasslands and other habitat patches” and 2) “restore and manage high-quality examples of all prairie communities within all natural divisions within which they occur.” Additionally, for the Forest and Woodland campaign, this grant meets objectives 1d) “continued removal and control (fire, chemical, mechanical, and biological) of invasive exotic plants, especially within high quality natural areas,” and 1f) “foster collaboration among the Illinois Endangered Species Protection Board, Illinois Department of Natural Resources, U.S. Fish & Wildlife Service, U.S. Forest Service, and other agencies, universities, non-governmental organizations and institutions on recovery plans and actions for rare and declining species.” These projects took place in the Middle Illinois River Conservation Opportunity Area.

Species identified in the SWAP that benefit from this grant include the southern plains bumble bee (*Bombus fraternus*), regal fritillary (*Speyeria idalia*), Henslow’s sparrow (*Ammodramus henslowii*), Leconte’s sparrow (*Ammodramus leconteii*), and wood thrush (*Hylocichla mustelina*). Additionally, the federally threatened decurrent false aster (*Boltonia decurrens*) will benefit from this project as Detweiller Park has a confirmed population of this species and activities proposed there should enhance this population. Further, the activities in this grant that benefit the rusty patched bumble bee (*Bombus affinis*) align closely with those suggested in the Illinois Monarch Project to benefit summer breeding and migrating monarch butterflies.



**Budget Overview:**

Total matching funds for the project came in at \$70,483.51 and included cash and in-kind labor from the United States Fish and Wildlife Service Partners for Wildlife Program, The Peoria Park District, Illinois River Valley Chapter of Pheasants Forever, and the Illinois Farm Bureau.

Total IDNR funds requested total \$52,924.23, which is comprised of \$48,112.94 in direct costs (contractor fees and seed), and \$4,811.29 in indirect costs (at 10%).

<b><u>Partnership Funds/Items</u></b>	<b><u>Amount</u></b>	<b><u>Notes</u></b>
<b><u>Peoria Park District</u></b>		
Natural Resource Staff Time (In-kind)	\$ 15,850.80	See appendix 1
Forestry/Heavy Equipment Staff (In-kind)	\$ 20,004.17	see appendix 2
Applicant Cash (Seed)	\$ 3,392.96	See appendix 3
<b>TOTAL PPD COMMITMENT</b>	<b>\$ 39,247.93</b>	
<b><u>PFW Program</u></b>		
Salary- Private Lands Biologist (In-kind)	\$ 1,798.00	See appendix 4
Fuel/Transportation (In-kind)	\$ 537.58	See appendix 4
PFW Cash (Contractor payments)	\$ 22,900.00	See appendix 5
<b>TOTAL PFW FUNDS</b>	<b>\$ 25,235.58</b>	
<b><u>Illinois River Valley PF Chapter</u></b>		
Cash (seed and herbicide)	\$ 4,000.00	See appendix 3
<b><u>Illinois Farm Bureau</u></b>		
Cash (seed and herbicide)	\$ 2,000.00	See appendix 3
<b>TOTAL MATCHING FUNDS (PFW, PF, IFB, PPD)</b>	<b>\$ 70,483.51</b>	
<b><u>Funds from IDNR Habitat Satmp Grant</u></b>		
Contractor payments (site prep, chemical burndown, seeding)	\$ 43,812.94	See appendix 5
Seed (43 acres @ \$100/acre)	\$ 4,300.00	See appendix 3
<b>DIRECT FUNDS REQUESTED</b>	<b>\$ 48,112.94</b>	
<b>INDIRECT FUNDS RREQUESTED (10%)</b>	<b>\$ 4,811.29</b>	
<b>TOTAL IDNR FUNDING RQUEST</b>	<b>\$ 52,924.23</b>	