



Final report to Capital Region PRISM Project RFP 2023 Grassland Bird Trust Invasive Management



Grassland Bird Trust, (GBT) Inc., 501 (c)(3) is a nonprofit land trust conserving critical habitat for endangered, threatened and rapidly declining at-risk grassland birds. Our project title is, *Establishing Research Study Plots for Local Control of Invasive Brown Knapweed, Reed Canary Grass, and Wild Parsnip on the Alfred Z Solomon Parcels A & B of the Grassland Bird Trust Properties in the Grasslands of Ft. Edward New York.* **(Addendum e)**

GBT had several favorable outcomes this year; success seeking advice during the planning and implementation with the Capital Region PRISM staff, Saratoga PLAN, NYSDEC Region 5, Duke Energy, and Washington County Soil and Water. GBT land committee felt by May of this year that our management efforts in 2022 were successful because we could see substantial habitat improvement, meaning a reduction of invasive plants. CR-PRISM awarded funding for this project for \$18,770 with a total cost of \$20,114. This final report will summarize the findings from this year's management and research. **Please refer to addendums a – h for:**

- a. Summary chart for 2023 *presence / treatment* numbers entered into the *iMapInvasives* NY database.
- b. Map Locations of all nine square meter research study grids in the research areas AZS A and AZS B.
- c. Example of our Research Study grid data collection sheets used for collecting plant species density.
- d. Map of treatment area focused on by Gaia Ecological Services
- e. Maps of GBT Properties outlined in color for location of invasive plant projects.
- f. Screenshot of 2022 and 2023 spread sheet data for all research grids.
- g. Budget summary of the entire project and total volunteer hours.
- h. Annotated photos of research areas, plant treatments, and volunteers working doing plant management

Deliverables:

GBT mechanically treated 39.9 acres suppress our four Teir 4 invasive targeted plants, and herbicide treated 23.4 acres within those 39.9 acres for a total of 63.3 treated acres. We uploaded 16 entrees into the *iMapInvasive* database, and GBT logged 275 volunteer hours. With the guidance of Brian Primeau, NYSDEC Region 5 Bureau of Pest Management, GBT (with CR-PRISM's financial support) helped establish Brain Richardson, (NYS certified applicator) new licensed herbicide application business called Gaia Ecological Services. GBT applied for two wetlands permits for our invasive management, from the NYSDEC, and from USACE. The USACE's ruling was that "No Permit Required" and we were granted a permit from the DEC. GBT purchased **Play Clean Go** Boot stations with signage.

Year two - What we set out to do:

The main goal of this project is to restore grassland habitat by suppressing four well established Tier 4 plants. GBT goal was to align itself with the CR PRISM #3 goal objective 3.1 and 3.2 to reclaim habitat in New York State priority conservation area at-risk grassland species. This entailed an adaptive management approach that focused on learning to restore habitat through partnerships with CR-PRISM, and other stakeholders. Integrated pest management practices using manual, cultural, and least restrictive and selective chemical applications were applied during the planning and action phases of the project. CR-PRISM Work Plan Goal #1, Obj. 1.1 Develop and strengthen partnerships; GBT worked with Saratoga PLAN, Washington County Soil and Water, NYSDEC and USACE. We also adopted CR-PRISM Work Plan Goal #2, Obj. 2.1 ,2.2; Creating and ordering "Play, Clean, Go" signage and boot stations with education signage.

We asked CR-PRISM to fund the application; 1. Apply a selective herbicide (Milestone -Aminopyralid) to fifteen acres for local control of Brown / Hybrid Knapweeds (*Centaurea jacea*) in mid-September of 2023. 2. To study the possibility for applying the non-selective herbicide “Rodeo” (Glyphosate) for the control or Reed Canary Grass (*Phalaris arundinacea*) over one to two acres. 3. To apply Garlon 3a (selective herbicide Triclopyr) to Japanese Knotweed, Wild Parsnip (*Pastinaca sativa*) and Spotted Knapweed rosettes on Alfred Z. Solomon Parcel A (AZS A) during 2023 growing season. 4. To treat the field with agricultural lime in late fall based upon the 2023 soil test results.

How the project unfolded

Our first task was to Focus on the CR-PRISM work plan goal #1 objective 1.1, strengthening our partnerships with the New York State DEC and beginning of relationship with the U.S. Army Corps of Engineers (USACE) to develop our materials for our wetland permit applications. These endeavors were successful and resulted in receiving a DEC wetland permit. The USACE’s ruling was “No Permit Required” for our invasive management. We also collaborated with Saratoga PLAN sharing expertise that resulted in GBT adding a birding specialist to conduct our bird breeding surveys (Cole Scrivner) and developing a partnership with a local certified New York State applicator to carry out our treatment plans. We were able to share grassland management expertise, assessing at-risk birds and invasive plant management. Washington County Soil and Water Personnel (Amber Luke, and Corrina Aldrich) reviewed our soil samples and recommended a lime supplement to improve soil PH and make growing conditions less suitable for Knapweed. They recommended not to use any fertilizer until soil becomes less acid. GBT plans on hiring **Carovail Corp.** to apply the agricultural lime the late fall of 2023.

In early spring GBT volunteers cleared 800 square meters of Japanese Knotweed and Tartan Honeysuckle that adjoined 3 property boundaries. Following the CR-PRISM staff recommendations of best practices, GBT land stewards mechanically cut the entire 800 square meters of Japanese knotweed twice in preparation for the chemical treatment of this high-risk invasive species. Our spring work continued with our documentation of plant stem counts and photographs in our research plots and study grids established in 2022. This documentation clearly showed the early success of habitat restoration in the nine acres that we had treated in September 2022. We hired a local land steward to brush hog four acres of Reed Canary Grass to begin the management practice of suppressing this ubiquitous plant by taxing its rhizome carbohydrate storage.

Methods of capturing and reporting results: (Table 1 – Screenshot of portion of our spread sheet) See addendum f for all 2022 and 2023 nine square meter grid data.

Grid Plot	GPS Lat center of Grid	GPS Long center of Grid	Date	Grasses %	Brown Knapweed %	Sedge/Ru sh %	Forbes %	Native Shrub %	Wild Parsnip %	Canary Reed %	Invasive Shrub %	Thistle %	% other	% yellow winter cress	% Ann Ragweed	totals
27	May 2023 Plant Species Data from Reseach 9 sq meter Grids															
28																
29	1.1	43,16,43	73,31,42	5/4/2023	49%	44%	0%	7%	0%	0%	0%	0%	0%	0%	0%	100%
30	1.2	43,16,38	73,31,40	5/4/2023	95%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
31	1.3	43.27832	73.52868	5/4/2023	99%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
32	1.4	43.278	73.5278	5/4/2023	79%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
33	2.1	43,16,37	73,31,40	5/4/2023	53%	47%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
34	2.2	43,16,34	73,31,45	5/4/2023	93%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	100%
35	3.1	43,16,31	73,31,40,	5/4/2023	15%	76%	0%	7%	0%	0%	0%	0%	0%	0%	0%	100%
36	3.2	43,16,30	73,31,43	5/4/2023	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
37	4.1	43,16,32	73,32,09	5/23/2023	78%	0%	0%	7%	0%	3%	0%	0%	0%	0%	0%	100%
38	4.2	43,16,30	73,32,10	5/23/2023	0%	0%	0%	4%	0%	0%	88%	0%	0%	0%	0%	100%
39	4.3	43.273996	73.53769	5/23/2023	2%	0%	0%	1%	0%	18%	11%	1%	0%	2%	0%	100%
40	5	43,16,27	73,31,45	5/4/2023	50%	49%	2%	0%	0%	0%	0%	0%	0%	0%	0%	100%
41	5.1	43.27425	73.52844	5/23/2023	0%	0%	0%	1%	0%	0%	3%	0%	0%	0%	0%	100%

In April we continued to mark out, and document with photographs each research grid and the management activities. *iMapInvasive* data was uploaded several times during the growing season. Density and species type were documented throughout the spring and summer before brush hogging in both AZS A and B parcels. We continue to use the nine square meter stem counting data system in a string grid that was developed in 2022 which used 121 data points within each study grid.

(See addendum b see map of grid locations and addendum c for grid data sheet)

Mark Janey and Ron Renoni, GBT stewardship directors facilitated the plant species counts in our 16 study grids, each one being 9 square meters, and recorded the data on updated paper data sheets. These sheets were scanned into computers for record keeping and all plant stem species data was uploaded into excel spreadsheet for comparison of the 2022 and 2023 research and future management evaluations.

Adjustments to our original 2023 RFP

We observed that both reseeding attempts failed (using 4 different fescue, rye and clover seeds) in all the 2022 treated areas in October of 2022 and in April of 2023. In our chemically treated areas for WP in 2022 we observed in several patches young WP had sprouted and grown instead of the intended plant species we planted.

The wet early spring prevented us from disc harrowing two acres of RCG as planned and thus we concluded that reseeding this large of an area would not be successful. Through our partnership with Saratoga PLAN we were introduced to Brian Richardson who was a local New York certified applicator who agreed to review our management plan. GBT entered an arrangement to have Brian chemically treat species identified in our ISMP for this year and for the next few years. CR-PRISM was supportive of the relationship that we were developing with Brian Richardson and agreed to the proposed adjustment in our RFP to redirect funds from our management of Reed Canary grass to chemical management of Japanese knotweed, spotted/brown knapweed and wild parsnip. Our original RFP asked CR-PRISM for funding of \$16,468 and the new adjustment increased that funding to \$18,770.

Specific challenges to invasive species management in grassland habitat

The wet soils conditions of the GBT property curtailed not only our RCG experiment but also delayed our brush hogging by several weeks in all areas targeted for management. Coupled with the flexibility needed to carry out management during bird breeding season the wet weather and soils and mechanical breakdowns of mowing equipment added extra challenges this year. The weather conditions also impacted on our ability to have a local farmer bail the field cuttings that contained knap weed. We were planning to have this plant bailed and removed from our property, but this did not happen.

Partnerships are Key:

Region Five NYSDEC biologists continue to support our invasive species management while we restore grassland habitat. The region 5 office awarded our wetlands permit within two weeks of submitting our application. We also have a relationship with Duke Energy company which is building a 70-acre solar panel facility on an adjacent property. NYS DEC has allowed 46 acres of the GBT property to be part of the 113-acre mitigation acres for this solar project. Duke Energy also supports our management to restore grassland habitat and pays for the brush hogging 1/3 of this acreage in addition to the acreage funded by our CR-PRISM RFP every year as part of the overall management plan. GBT works with Duke

Energy’s environmental consultant, Mike Fishman, who inspects our property and meets with us during the summer. GBT continues to use the expertise of Washington County Soil and Water personnel to help interpret and strategize Agricultural lime and fertilizer applications based on our soil testing and soil conditions.

What we observed and learned regarding targeted invasive species Management

1. **Wild Parsnip:** In our original 2023 RFP we planned for only using mechanical management to keep this plant from flowering. We were very successful in cutting many thousands of stems with 40 Volt, weed trimmers with serrated blades along with using handheld-hedge trimmers (35 volunteer hours). We also cut thousands of stems with the tractor. As the growing season progressed, we observed a rebounding of the basal rosette of WP in areas where it was trimmed to the point where it appeared to regrow like a monoculture in some of these patches. We noticed that even though WP was common in AZS A it did not show up in the 9 m² grid counts very often so it is unrepresented. In grid 4.1 it was 3%, 4.2 was 0%, and 4.3 shows the most but only 18%.

Then we hired Brian Richardson to do chemical treatment and we targeted as many of the basal rosettes with Garlon 3a as the budget allowed. He reported that after his chemical treatment of many of these basal rosettes WP rebounded as well. His research gave credence to observations that WP also spreads by rhizomes and not just from seed. **All in all, our efforts did result in at least a 95% reduction in flowering and seed-bearing stems.**

2. **Japanese Knotweed-** We realized we had underestimated the size and density of this infestation. We took the challenge in stride of treating this plant that was growing amongst abandoned farm equipment, rock rubble, and a sloping topography. It grows with other invasive plants like honeysuckle and thistle. We were surprised how successful cutting the stems was with our 40 Volt trimmers fashioned with serrated blades no matter the thickness. We were also impressed by the vigorousness in the way JK grew back after the first cutting. A month later we did our second cutting, and the plant regrew about 50%. Two months later we had Brian do his first chemical foliar treatment with Rodeo. It was chemically treated with Rodeo and Garlon3a for a total of three times. **By the end of the growing season this plant was reduced by 90%.**

3. **Brown and spotted knapweed.** *In AZS parcel B it was readily obvious that the nine acres that was treated in 2022 had over a 95% reduction in brown knapweed in 2023. (Table 2 – Results)*

Year	Average % of stems in before treatment	Year	Average % of stems in treatment blocks
2022	Grasses: 25%	2023	Grasses 93.5 %
2022	Brown / Hybrid Knapweeds: 67%	2023	Brown / Hybrid Knapweeds: 1 %
2022	Forbes and Sedges: 8%	2023	Forbes and Sedges: 5.0%

When CR-PRISM staff came out to inspect our project we discovered small areas of young knapweed growing near the ground underneath a thick cover of grasses in 9-acre treatment areas. Tom Lewis sprayed those areas again in September. CR-PRISM staff recommended covering the research grids we were using for “control” data comparison. We did so with tarps so Tom Lewis could drive over them with his spray equipment. As the growing season progressed, we noticed that both spotted and brown knapweed were spreading in AZS parcel A.

Still following the recommendation of the DEC, the chemicals work more effectively if applied six weeks after mowing. Brian Richardson was hired to do selective chemical treatment to knapweed in AZS A with Garlon 3a after sections of the field were mowed.

4. **Reed Canary grass.** We observed the areas that were sprayed with rodeo in 2022, to eliminate the satellite infestations of RCG in AZS parcel B was reduced by 90% but certainly not eliminated. When Tom Lewis (Trillium Company) came to our property to look at treatment options, he concluded the spraying of Reed Canary Grass was not particularly effective, and declined to treat other satellite infestations that were observed. Reed Canary Grass continues to be a challenge, and how to manage and to keep it from spreading. Because of the wet spring we were not able to carry out the disc harrowing experiment to see if damaging the root system would make Rodeo more effective. In the treated areas in AZS parcel B where rodeo was used to suppress Reed Canary Grass, and subsequently reseeded with fescue and rye, we observed growing instead a monoculture of ragweed! Underneath the ragweed in several locations were newly sprouted knapweed seedlings.

Soil Sample Results: (Table 3) Using Argo-One nutrient guidelines by Cornell Univer.

Sample Year	Name	Field / Sample Name	Organic Matter %	Buffer ph	Soil ph	Phos (P)	Potassium (K)	Calcium (C)	Mag (MG)
2022	GBT	South Central Quad	10.46	5.3	5.7	Low	Very High		
2022	GBT	Northwest Quad	8.05	5.01	5.44	Med	Very High	High	Very High
2022	GBT	Northeast Quad	16.88	5.41	6.02	All Very High			
2022	GBT	West Wetland edge	9.79	4.7	5.38	low	All Very High		
2023	GBT	South Central Quad	8.27	5.55	5.81	Very low	All Very High		
2023	GBT	North Central Quad/wetland	7.96	5.26	5.33	Very low	High to Very High		
2023	GBT	3 Big Trees Field	12.68	5.12	5.66	Medium	All Very High		

Amber Luke and Corrina Aldrich (Wash. Co. S+W) interpreted the soil tests to help us plan on soil amendments. Based on the ph numbers after this year's testing they recommend applying 2 tons of Ag lime per acre in the sections that had not been treated with lime yet. Last year we applied one ton / acre and the ph did become slightly less acid, but not enough for the carbonates to work their way through the clay soils. To raise the ph, they suggested that it will take a few years for the lime to work through the soil.

Bird Breeding Surveys (BBS)

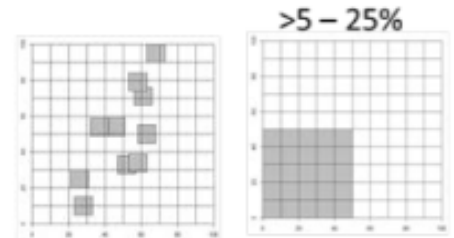
Wildlife Biologist Cole Scrivner and Dan Albano each completed two sets of BBS for a total of 5 survey points on four separate dates yielding a total of 20 surveys on GBT property. Common grassland species birds were noted on every survey such as Bobolink, Eastern Meadow Lark, Savannah Sparrow, and Kestrel. Less common species infrequently observed were Vesper sparrows and Norther Harriers. We also were asked by Cornell University to participate in a renewable energy ecology grassland habitat study because of our proximity to solar projects. Working in collaboration with the USGS, Cornell Researchers Steve Grodsky and Tim Boycott set up a sound recorder on our property that has a

500 meter radius. It recorded bird songs from 4 to 11am for 8 weeks. We are scheduled to receive this bird breeding species data later this autumn.

Recommendations from Kris Williams and Sam Schultz:

Sam and Kris did a project site inspection to GBT properties on August 29th joining them was Keith Swensen (GBT Board President) Mark Janey and Ron Renoni (GBT Stewardship Co-Directors) for the tour that lasted over 2 hours. GBT members certainly appreciate all the support and advice we have received from all CR-PRISM staff, and we also felt the visit/inspection was valuable. We discussed our successes and challenges. Here is a list of their recommendations we will work into our RFP for 2024.

- a. Quadrant sampling: Use a 1 square meter grid marked off every 10 cm to do more visual percentage estimates of invasive plants to evaluate their density and count the percentage of the meter they inhabit. This would make survey counts more time efficient and would give us faster presence and treatment results.



- b. Biocontrol of Purple Loosestrife: the heavy wet weather of this year had PL thriving in all our wetlands. A marked difference from 2022 where we saw lots of insect damage. This year the plants were very healthy, and we saw very little insect damage. We now have two contacts to source these insects. Corinna Aldrich also encouraged us to involve BOCES to raise lots of these insects.
- c. Reseeding with native seeded plant tops: harvest locally and bury these into the soil in the treated areas that would be easily dominated by invasive plants.

Take inventory of our shrubs and small trees growing in or near the fields. Remove the invasives and strategically plant desirable species suited to our soil conditions.

- d. Keep checking on knapweed growing under the grass: Young seedlings were noted in the treated areas and to make sure this does not turn into a huge infestation.
- e. Order plant plugs: if we do not have confidence in our seed sources investigate and purchase young plants in areas for restoration.

GBT Volunteers are Greatly Appreciated:

M. Janey and R. Renoni coordinated our awesome workforce and with a combined total of 275 hours. We successfully accomplished the tasks that were our goals this year. Our volunteers and summer intern expressed their satisfaction with carrying out the management of our GBT properties. They have seen the habitat improvements from last year to this year.

A hearty **Thank You** to CR- PRISM for their continued support! You folks make yourselves available for problem solving and additional resources making for essential partnership is the challenging work of invasive management.

Addendum a. Table of iMapInvasive uploads for Presence and Treatment 2023 GBT RFP

Plant Name / Location	GPS Coord of Polygons	Polygon Acres or Square M ²	Search Area #	Presence Numbers	Treatment Numbers	Dates and Other notes:
1. AZS A - RCG	43.27504, -73.53651	4 acres	1390648		32567	April - Brush Hogging 4 acres RCG
1. AZS A – J. K	43.28383, -73.53849	.20 acres Or 800 m ² x 2	1361695		30608	1st cutting in May Japanese Knotweed (JK)
2. AZS A – J. K	43.28383, -73.53849		1361696		30609	Second cutting June Japanese Knotweed
3. AZS A -JK	43.28383, -73.53849	.20 acres Or 800 m ² x 3	1390101		32485	Aug 9 th , 1 st foliar treated w/ Rodeo of JK
4. AZS A -JK	43.28383, -73.53849		1390102		32486	9/12, 2 nd foliar treated w/ Rodeo of JK
5. AZS A -JK	43.28383, -73.53849		1390103		32487	9/19, 3 rd treated w/ Garlon 3a of JK
6. AZS B - WP	43.27429, -73.5315	.16 ac/ 659 m ²	1368500	1337567	30749	Mechanically large WP patch on access rd by the new culvert
7. AZS B - WP	43.37674, -73.52741	2.1 ac, 8,460 m ²	1362758	1338666	30631	6/29 + 7/12 Pine forest NE along fence line and Dead Creek. Mechanically cut by hand
8. AZS B - WP	43.27421, -73.52902	.77ac, 3,100 m ²	1368502	1282117	30750	7/20 large patch near control grid 5.0 Mechanically cut with tractor.
9. AZS A – WP and Knapweed	43.27505, -73.53852	2.5 ac, 10,117 m ²	1368503	1282116	30751	7/20 Brush hogged WP north of and around parking GBT parking lot
10. AZS A - WP	43.27487, -73.53716	1.9 ac, 7,724 m ²	1390104		32488	8/22 + 9/6 chem treat follow up east and west of ditch area of WP and Knapweed
11. AZS A - Knapwd	43.27487, -73.53716	1.9 ac, 7,724 m ²	1390244		32495	9/19 + 10/2 chemical treat of Wp and BK
12. AZS B - Knapwd	43.27537, -73.52865	15 ac, 60,702 m ²	1390324		32515	Trillium treatment of 15 acres in big field
13. AZS A - Knapwd	43.27387, -73.53789	.1 ac, 412 sq m ²	1390632	1363068		August – Noted presence of knapweeds
14. AZS A - Knapwd	43.27387, -73.53789	.1 ac, 412 sq m ²	1390633		32557	10/3 - Chemical treatment with Garlon 3a
15. AZS A KW + WP	43.27477, -73.53782	1.9 ac, 8,000 sq m ²	1390639		32561	10/2 - Chemical treatment with Garlon 3a
16. AZS A KW + Wp	43.27421, -73.53637	2 ac, 8,100	1390635		32559	10/6 - Chemical treatment with Garlon 3a
17. AZS A and B	Additional areas brush hogged = 30 acres for preparing of treating with herbicides in both properties (20 in AZS B, + 10 AZS A)					
Total acres Mechanically treated is 39.9 acres , and Total acres herbicide treated is 23.4 , for a grand total of 63.3 treated acres						

Addendum b. Map of study grid locations on GBT property for 2023 Final Report

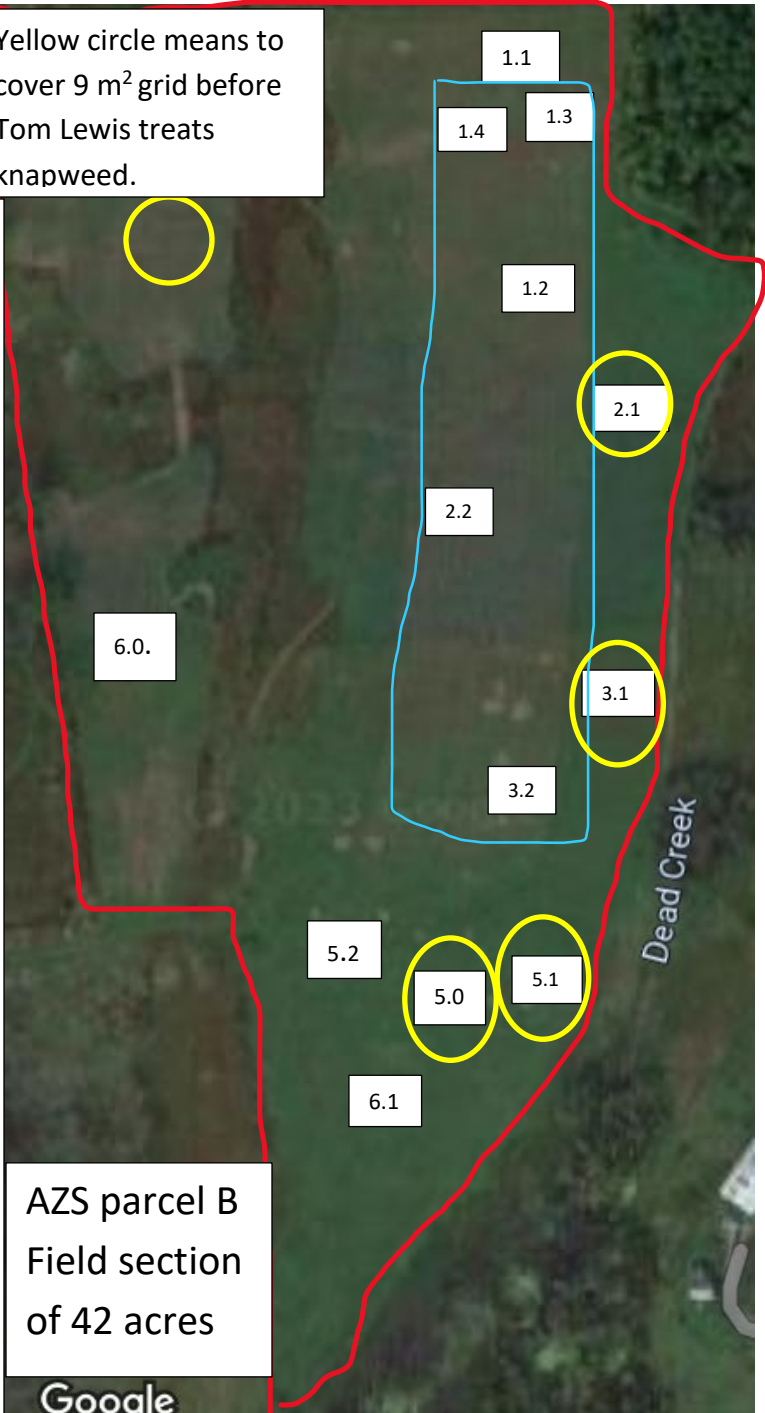
GBT Invasive Research Locations for all 10 ft X 10 Ft (9 sq meters) research grid squares inside and outside each larger study block acres in Both AZS A and AZS B. Larger study blocks are in blue outline.

Yellow circle means to cover 9 m² grid before Tom Lewis treats knapweed.



AZS Parcel A
of 14 acres

Grid #	Lat	Long
1.1	43.16.42	73.31.42
1.2	43.16.38	73.31.40
1.3	43.27832	73.52868
1.4	43.2780	73.5278
2.1	43.16.37	73.31.40
2.2	43.16.34	73.31.45
3.1	43.16.31	73.31.40
3.2	43.16.30	73.31.43
4.1	43.16.32	73.32.09
4.2	43.16.30	73.32.10
4.3	43.273996	73.537692
5.0	43.16.30	73.31.45
5.1	43.274250	73.528445
5.2	43.274464	73.529639
6.1	43.16.27	73.31.46
6.0	43.275485	-73.530973



AZS parcel B
Field section
of 42 acres

Addendum c. 9 square meter study grid example for GBT Final Report

NO Spray
+
NO Liane
applied

The
Control
Grid

**Grassland Bird Trust - Habitat Restoration Project
Plant Species Grid Plot Counts - Invasive Plant Research 2023**

Grid Plot # 5+0 control grid inside or outside 3 acres blocks

Observers names R. Renoni, M. Janey date 5/4/23

Each Grid Plot size is 9 square meters (100 sq feet);

Plant types noted at 30 cm intervals (1 ft) using the following codes.

Plants counted are: (numbers are used in grid with abbreviations when needed)

1. Grasses. All species except for Reed Canary Grass
2. Brown Knapweed (BK) or Knapweed spp
3. Sedge/rush (Sd/Ru spp)
4. Forb; Milkweed (MW), Stitchwort (SW), Cinquefoil spp (CQ), Ragweed (RW), Trifol (TF), Bell Flowers (BF), Purple vetch (PV), Goldenrod (GR), Aster spp (ASP)
5. Native Shrub spp: Dogwood (DW), Viburnum (VB), Sumac (S), Hawthorn (HT) Prickly Ash (PA)
6. Wild Parsnip (WP)
7. Reed Canary Grass. (RCG)
8. Invasive shrub spp; Buckthorn (BT), Asian Honey Suckle (AHS), Japanese Knotweed (JK), other
9. Other

O = Bare Soil
M = Mosses

Note: Top Wooden Edges of Grid squares always placed north

TOP	1ft	2ft	3ft	4ft	5ft	6ft	7ft	8ft	9ft	10ft	Ft #	
0 ft -	2	2	2	1	1	2	2	1	2	2	2	0
1ft	1	2	2	2	2	2	2	2	2	2	2	1
2ft	2	2	2	2	2	1	1	1	2	2	2	2
3ft	1	2	1	1	1	1	2	1	1	1	2	3
4ft	1	1	2	1	1	1	2	2	2	1	2	4
5ft	2	1	1	1	1	1	3	2	2	1	1	5
6ft	2	2	2	1	1	2	1	1	1	2	2	6
7ft	2	1	1	2	1	2	1	1	1	1	2	7
8ft	1	2	1	2	1	2	2	1	2	2	2	8
9ft	1	2	1	1	1	1	2	1	1	1	2	9
10ft	1	1	1	2	2	1	1	2	1	1	2	10

Notes: Plant types not represented by data points but still present in 100 sq ft plot. Other observations in each quarter section of grid. Table below is for tallying total plant numbers.

0	1	2	3	4	5	6	7	8	9
0	60	59	2	0	0	0	0	0	0






m=0


Few Small Rushes, but nothing else	
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Addendum d. 2023 Treatment Areas for Gaia Ecological Services to target for Wild Parsnip, Knapweed,




2023 Treatment Areas;

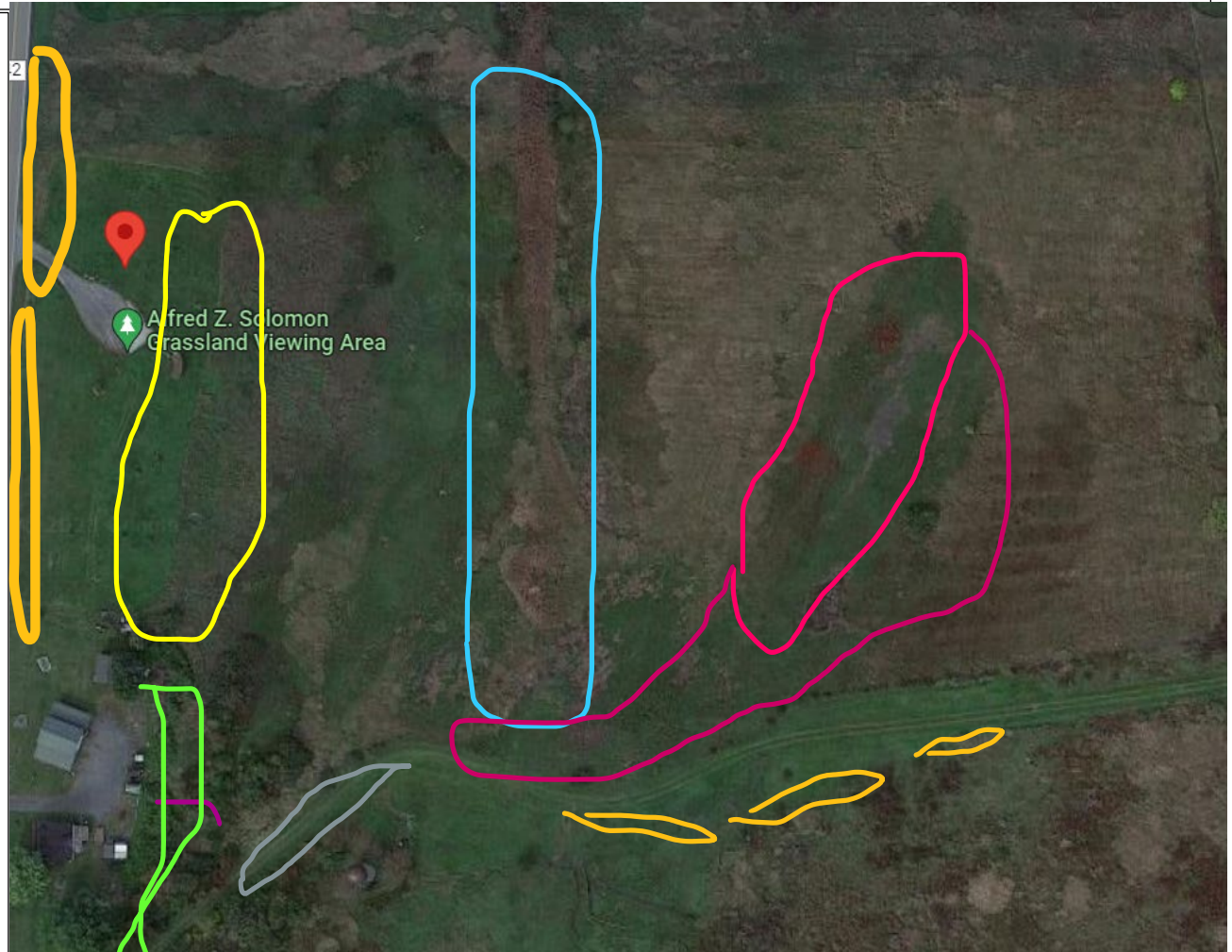
1. Wild Parsnip treatment-

- a. Along main road where area has not been mowed. 
- b. All areas of AZS A on slope below parking lot, 
- c. On both sides of wet area outlined in blue. 
- d. On the flat area of on both sides of rocky outcrops 
- e. Along access road on south side. 

- 2. Japanese Knotweed ;** Area behind Dudley's house and barns, along rocky fill slope and near top of access rd 

3. Knapweed Species:

- a. within fence line across silo, 
- b. On both sides of wet area outlined in blue. 
- c. All areas of AZS A on slope below parking lot and around parking lot To Dudley property line. 



Dates of Treatment:

Wild Parsnip

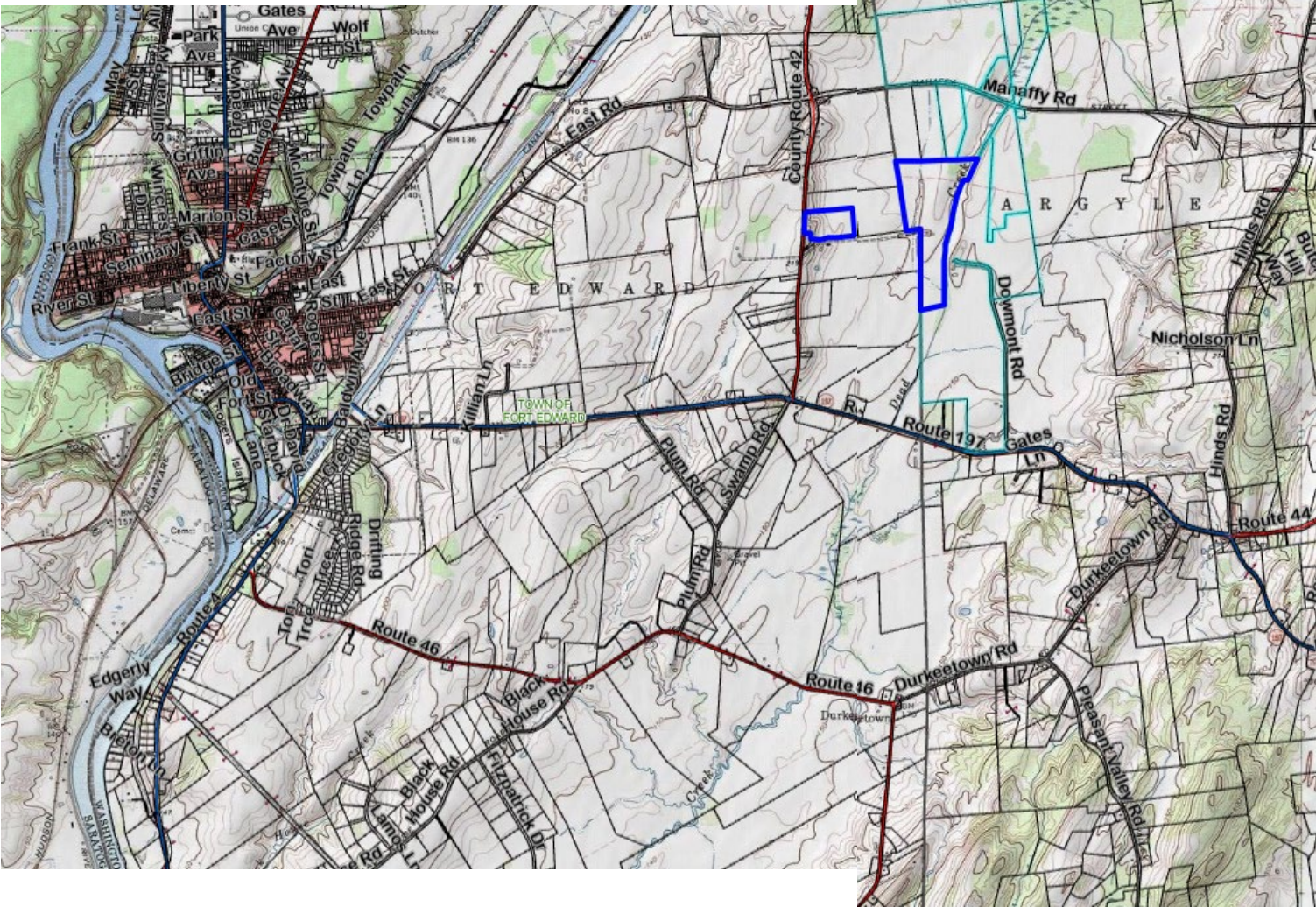
- A. Aug 22
- B. _Aug 23
- C. Sept 6
- D. Sept 12
- E. Sept 19 to Oct 2, and 10 / 6

Knapweed

- a. 10/6
- b. 10/2, 10/ 3, 10/ 6,
- c. Aug 23 and 24

Japanese Knotweed: Aug 8th Rodeo, Sept 12 Rodeo, Sept 19 Garlon3a

Addendum e: Outline of GBT properties in blue



Addendum g: GBT 2023 RFP Budget and Spending

	Items from Budget 2023 RFP fro CR-PRISM Project	actual cost	GBT Match	Amount covered by CR-PRISM
1				
2	Liability Ins	\$618.00	\$618.00	\$0.00
3	Flagging ribbons	\$14.99	\$0.00	\$14.99
4	Gal 10 in nails	\$24.36	\$0.00	\$24.36
5	Wild Parsnip Brushhog Access Rd Trail	\$375.00	\$0.00	\$375.00
6				
7	Brush Hogging Reed Canary Grass 3 acres	\$450.00	\$100.00	\$450.00
8	Hand cutting Loppers + clippers	\$45.96	\$0.00	\$45.96
9	Plastic Storage totes and trays	\$125.87	\$0.00	\$125.87
10	Tarps, shovels and rakes	\$45.96	\$0.00	\$45.96
11	Face shields and Tyvek suits	\$96.97	\$0.00	\$96.97
12	String Trimmer supplies	\$86.89	\$0.00	\$86.89
13	Herbicide Storage Cabinet and supplies	\$304.19	\$0.00	\$304.19
14	Membership in NISMA	\$200.00	\$200.00	\$0.00
15	subtotal for this section July reimbursement	\$2,388.19	\$918.00	\$1,570.19
16				
17	Gaia Ecological Herbicide Treatment thru 9/17	\$2,585.00	\$0.00	\$2,585.00
18	Trillium Herbicide Treatment 16 acres KnapWd and RCG	\$8,100.00	\$0.00	\$8,100.00
19	String Trimmer	\$188.76	\$100.00	\$188.76
20	Dudley for Brushhog 14 acres in AZS B	\$1,960.00	\$100.00	\$1,960.00
21	Subtotal for this section Submitted Sept 26 reimbursement	\$12,833.76	\$200.00	\$12,633.76
22	Covering 50 % of Herbicide Business Fee	\$460.00	\$0.00	\$460.00
23	Gaia Ecological Herbicide Treatment thru 10/8	\$2,385.00	\$0.00	\$2,385.00
24	Play Clean Go Boot Statiion and Signs	\$1,297.30	\$100	\$1,197.30
25	Soil Tests done Dairy One / Ag Cornell	\$54.00	\$54	\$0.00
26	Ag Lime Application 2 tons / acre for 7 acres	\$750.00	0	\$750.00
27	Subtotal for this section Submitted Nov 30th reimbursement	\$4,892.00	100	\$4,792.00
28	Total Spending for whole project	\$20,168.25	\$1,272.00	\$18,896.00
29		Projected budget cost to CR-PRISM		\$18,770.00
30			cost over budget	\$126.00
31	Total Volunteer Hours 275			



In April GBT volunteers' started management of a 800 m² infestation by clearing honeysuckle and last year's Japanese Knotweed growth enable access to new growth for cutting and spraying.



In May, M. Janey and B. Richardson assessing the reseeding efforts from October and April in the satellite patches of RCG and WP that were treated in 2022. No evidence of planted seeds had sprouted. Brian is pointing out the sprouting of large numbers of WP.



Examples of 9 M² string grids used for stem and species counts. M. Janey recording stem data within 9 m² study grids. Sixteen study grids were documented in 2023. Note density of Annual ragweed in 5.2.



July Brush hogging of WP stems and flowers along access rd. By 3rd week of August WP basal rosettes are growing in dense patches in same areas almost presenting as a monoculture.



B. Richardson from Gaia Ecological Services entire 800 m² patch of JK with Rodeo. JK and honeysuckle growing side by side.



AZS parcel A brush hogging to deplete carbohydrate storage in rhizomes of RCG, WP and BK. Large patches of WP north of GBT driveway parking lot identified for treatment by B. Richardson after mowing.

Addendum h – annotated photos RFP 2023 p. 4 of 6: Photo credit GBT and CR-PRISM



K. Swensen and M. Janey removing a small patch of BK within the 9-acre treatment area in AZS parcel B, but still growing. Tom Lewis rerated that area again in September of this year.



AZS parcel B brush hogging in August to get ready for 15-acre treatment of knapweed by Tom Lewis. BK present in large numbers. Orange markers delineate the edge of the 9 acres treated in 2022. Notice the dense patches of Annual Ragweed growing in sections treated with Rodeo last year and reseeded twice but failed to grow.



GBT volunteer T. Federlin and GBT Intern Laurie Devine looking for the boundaries of study grid. Tom is cutting patches of Bull and Canadian Thistle.



Tarp covers placed over 3 "control" 9 m² research grids. Tom Lewis removed them after he treated the field. Poor condition of Knapweed 5 weeks after being treated with Milestone on Sept 21st.

Addendum h – annotated photos RFP 2023 p. 6 of 6: Photo credit GBT Final Report



Sam Shultz and Kris Williams discuss project with Keith Swensen, Ron Renni and Mark Janey (not in picture)