

# Yampa River Leafy Spurge Project

## BIOLOGICAL CONTROL MONITORING DATA FIELDS

The Yampa River Leafy Spurge Project (YRLSP) uses Agterra's MapItFast (MIF) mapping application, running on Samsung Galaxy Tab Active2 (SM-T390) tablets for its field data collection. MIF data is uploaded to the Agterra website after each field session, where it resides until the end of each field season. After the field season ends, online monitoring data is exported from the Agterra site in shapefile format, and then imported to the YRLSP's offline ArcGIS geodatabase as feature datasets. Datasets to be made available for public download are subsequently exported back out of the geodatabase as independent shapefiles, before any KMZ format datasets and/or Excel data tables are generated.

Each step along this path may involve the automatic modification (typically a truncation) of what can already be some pretty obscure data field names. The following document lists the field names as they appear in the publicly downloadable version of the YRLSP's Biological Control Monitoring dataset. Where appropriate, it also provides some description of the data stored in each field.

For further information on leafy spurge biological control in the Yampa River Basin, see <https://www.yampariverleafyspurgeproject.com/biological-control>. For specific information regarding the YRLSP Biological Control Monitoring protocol, see the instructions and data sheet documents available in the YRLSP Documents list at <https://www.yampariverleafyspurgeproject.com/resources>.

### **FID**

“Field Identifier.” The unique ArcMap identifier for the dataset record.

### **Shape**

The ArcMap geometry.

### **latitude**

MIF generates the latitude value during field data collection.

### **longitude**

MIF generates the longitude value during field data collection.

### **elevfeet**

“Elevation in Feet.” MIF generates this value during field data collection. A zero value should be interpreted as a NULL value.

### **datesort**

This field displays the date on which the field data collection was made, in Year-Month-Day format (useful for sorting records chronologically).

### **reporter**

The name of the person(s) making the field data collection.

**affiliat**

“Affiliation.” The group or agency with which the reporter(s) are affiliated.

**newsite**

“Is this a new site?” During field data collection on the tablet, entering a “yes” value prompts the reporter to enter additional environmental data (the **geomorph**, **aspect**, and **vegetatn** fields). Because these data typically will not change year-to-year, a “no” value automatically skips these fields on the tablet’s field data collection form. Note that in 2019, *every* monitoring plot was conducted at a “new site” for YRLSP monitoring purposes, because no environmental data for any monitoring site had previously been collected.

**rec\_mon**

“Recommended for Future Monitoring.” At this time, this field is typically left blank, and will only have a “No” value if, during initial field evaluation, the reporter believes there are strong reasons for eliminating this site from consideration for future monitoring visits.

**sitename**

“Monitoring Site Name.” YRLSP Monitoring Sites are discrete areas of relatively homogenous habitat, in which one or more documented biological control insect releases have been made.

YRLSP Monitoring Site Names combine a nonspecific name for the general area (typically the current property landowner or managing agency unit name) with the unique Release ID number for the first biological control release recorded at that site. (See the downloadable Biological Control Releases file for the comprehensive list of Release ID numbers.) In a few cases involving legacy (pre-2019) biological control release locations, the YRLSP Monitoring Site Name can include two legacy Release ID numbers.

**geomorph**

“Geomorphic Description.” The field data collection tablet form provides a pick list of potential descriptions for the geomorphic status of the monitoring site (other geomorphic descriptions were sometimes added manually during field data entry in 2019):

- Active channel island
- Active channel bar
- River bank (edge of active channel)
- Seasonally inundated floodplain
- Irrigated agricultural field
- Irrigated ditch bank
- Upland

**aspect**

The aspect of the area within the monitoring plot and its general vicinity. Aspect is defined as the predominant downhill direction.

**vegetatn**

“Vegetation Type.” The dominant vegetation of the monitoring plot and its vicinity. Multiple types can be entered in this field. The field data collection tablet form provides a pick list of potential vegetation types (other vegetation types were sometimes added manually during monitoring field data entry in 2019):

- Sparsely vegetated
- Riparian herbaceous
- Riparian forest
- Agricultural crop (includes grass hay)
- Upland species

**spurcov**

“Leafy Spurge Canopy Cover.” The percentage of the area within the monitoring plot that is occupied by the leafy spurge canopy. The field data collection tablet form provides a pick list:

- Absent
- Trace (less than 1%)
- Low (1 to 5%)
- Moderate (5.1 to 25%)
- High (25 to 100%)

**weather**

The field data collection tablet form provides a pick list:

- Clear
- Partly cloudy
- Overcast
- Rain
- Other

**wind**

The field data collection tablet form provides a pick list:

- Calm
- Light
- Moderate
- Strong

**temp\_f**

“Temperature in degrees Fahrenheit.” Measured by thermometer during data collection.

**init\_spp**

“Initial Sample Species.” The YRLSP monitoring protocol begins by sampling the presence of leafy spurge biological control insects in the general area of (but not in) the monitoring plot, by performing 10 random sweeps with a 15-inch insect net on leafy spurge patches. The YRLSP monitoring protocol only differentiates insects in the *Aphthona* genus by color. (See the “YRLSP Biological Control Species ID Guide” available in the YRLSP Documents list at

<https://www.yampariverleafyspurgeproject.com/resources>). The field data collection tablet form provides a pick list for the initial sample results:

None

Aphthona – black (includes all black species of leafy spurge flea beetles)

Aphthona – brown (includes all brown species of leafy spurge flea beetles)

Oberea (the leafy spurge longhorn stem-boring beetle, *Oberea erythrocephala*)

#### **sweep\_spp**

“Sweep Plot Species.” The YRLSP monitoring protocol delineates five sweep-sampling points along each of four lines radiating from the center of the plot in the cardinal N, E, S and W directions, for a total of 20 sampling points in each plot. Each sampling point is then subject to four sweeps with a 15-inch insect net, making a total of 80 sweeps per monitoring plot. The Sweep Plot Species field records each of the biocontrol insect types observed during this operation. The YRLSP monitoring protocol only differentiates insects in the Aphthona genus by color. (See the “YRLSP Biological Control Species ID Guide” available in the YRLSP Documents list at

<https://www.yampariverleafyspurgeproject.com/resources>). The field data collection tablet form provides a pick list for the monitoring sweep-sampling results:

None

Aphthona – black (includes all black species of leafy spurge flea beetles)

Aphthona – brown (includes all brown species of leafy spurge flea beetles)

Oberea (the leafy spurge longhorn stem-boring beetle, *Oberea erythrocephala*)

#### **swp\_cnt**

“Sweep Plot Count.” This field records the total number of individual biological control insects collected during the 80 sweeps prescribed by the monitoring plot protocol (see the description in **sweep\_spp**, above). This number lumps together the totals for each of the three types of biocontrol species listed in the pick list for the **sweep\_spp** field.

#### **P\_A**

“Presence/Absence.” This field is manually added during final data processing after the field data has been entered into the YRLSP’s offline ArcGIS geodatabase. It provides a quick method of sorting records regarding the observed presence or absence of any leafy spurge biological control species during monitoring activities. A “yes” value can include observations (noted in the **comments** field) of biocontrol insects on vegetation in the monitoring plot vicinity, whether they were collected in a net or not.

#### **comments**

The comments field for the monitoring plot provides the option of including additional observations or qualifications of how the monitoring protocol was conducted.

#### **soiltype**

“Soil Type.” A soil sample is collected during the initial monitoring plot site visit, but final identification of the soil type is generally completed and entered into this field at a later date. Options include:

Sandy loam  
Loam  
Silt loam  
Sandy clay loam  
Clay loam  
Silty clay loam  
No developed soil

**nonsoil**

“Nonsoil Type.” If the plot falls under the “No Developed Soil” option for Soil Type (above), OR if developed soils are very limited in the plot area, this field allows for the selection of a nonsoil type. The field data collection tablet form provides a pick list:

Sand (<2mm)  
Gravel (2mm to 64mm)  
Cobble (>64mm)

**state**

**county**

**ownrtype**

“Property ownership type.”

**contact**

The name of the preferred contact person for the property.

**accperm**

“Permission for Access.”

**permtype**

“Permission Type.” YRLSP policy is to secure written permission before conducting any biological control monitoring activities, but in some cases verbal permission was considered adequate.

**rel\_yn**

“Was There A Biological Control Release Today?” The field data collection tablet form requires a “yes” or “no” value. A “no” value (signifying that no insects were released during the current monitoring activities) will automatically skip the biological control insect release data collection fields in the data form (which includes the **rel\_spp**, **rel\_cnt**, and **rel\_cmnts** fields).

**rel\_spp**

“Released Species.” The biological control insects available to the YRLSP for release are typically only identified to genus for the *Aphthona* genus. The YRLSP monitoring protocol further differentiates insects in this genus by color. (See the “YRLSP Biological

Control Species ID Guide” available in the YRLSP Documents list at <https://www.yampariverleafyspurgeproject.com/resources>). The field data collection tablet form provides a pick list for entering “species” in this data field, and multiple options can be entered:

None

Aphthona – black (includes all black species of leafy spurge flea beetles)

Aphthona – brown (includes all brown species of leafy spurge flea beetles)

Oberea (the leafy spurge longhorn stem-boring beetle, *Oberea erythrocephala*)

**rel\_cnt**

“Release Count.” The total quantity of biological control insects released on the monitoring date. This number combines the count for all three potentially released “species.”

**rel\_cmnts**

“Release Comments.” This text field is optional, but should be used (when applicable) to further specify the quantities of the individual “species” released on the monitoring date.

**nphoto, ephoto, sphoto, wphoto**

“Photograph File Number.” The YRLSP biological control monitoring protocol includes taking four photographs from the center of the plot, one for each cardinal direction.

**UTM87north**

The northing UTM for the plot point in NAD87, Zone 13N. This field was calculated after the field data collection was imported to the YRLSP’s offline ArcGIS geodatabase.

**UTM87east**

The easting UTM for the plot point in NAD87, Zone 13N. This field was calculated after the field data collection was imported to the YRLSP’s offline ArcGIS geodatabase.