



## **YAMPA RIVER LEAFY SPURGE PROJECT**

“... working together to establish an effective program of integrated management for leafy spurge...”

### **YAMPA RIVER LEAFY SPURGE PROJECT SCHEDULED MEETING**

**Wednesday 10:00am, August 11, 2021  
Hayden Town Hall**

#### Proposed Agenda

1. Welcome: Ben (5 minutes)
2. Introductions: (5 minutes)
3. Review Agenda: (5 minutes)
4. PowerPoint Presentation on the CWCB Grant Project: Mapping and Predicting Leafy Spurge Invasion in Northwest Colorado: Satellite Imagery and Ecological Niche Modeling: Chloe Mattilio, PhD Candidate in the Department of Plant Sciences at the Univ WY (30 minutes)
  - a. Presentation
  - b. Questions and Answers
5. Updates on YRLSP Summer Events (30 minutes)
  - a. Report on Biocontrol (Tamara)
    1. Releases
    2. Monitoring
    3. Field Tour
    4. Youth and Education
  - b. Report on 2021 Leafy Spurge Mapping (Pete)
  - c. Outreach
    1. Landowner List CO First Conservation District Meeting (Laurel)
    2. RC BCC Presentation (Ben)
  - d. Show Me Float, June 11<sup>th</sup> and 12<sup>th</sup> (John)
    1. Presence of Leafy Spurge
  - e. Follow-up with Bruce Johnson and J Quarter Circle Ranch (Tamara, Baili)

f. Other Events

6. Future Plan Discussion 2<sup>nd</sup> Edition John, Ben (20minutes)

1. Biocontrol 5-year Plan
  - a. Efforts in remaining 2 years
2. Integrated Management
  - b. Chemical treatments and biocontrol
3. Continue Outreach
  - a. Private Landowners
  - b. Partners
  - c. Sharing of information
4. Collaboration with Organizations who would continue Leafy Spurge Efforts

7. Partner Plans and Updates for 2020 Leafy Spurge Management: Group (20 minutes)

- a. CWCB Grant
- b. Friends of the Yampa and Donations Account (\$2,556.82)
- c. Routt County Weed Program
- d. Moffat County Weed and Pest Management
- e. Colorado Parks and Wildlife
- f. Yampa River State Park
- g. BLM
- h. CO State Land Board
- i. NRCS: Steamboat
- j. NRCS: Craig
- k. Dinosaur Nat Monument
- l. MC CSU Extension
- m. RC CSU Extension

9. Colorado Gives Campaign for Donations Ben (5 minutes)

10. Other (Group) 5 minutes

Next Scheduled Meeting: Discussion of future In-person or Zoom meetings

**YRLSP Regular Meeting:** Wednesday, October 13th at the Hayden Town Hall/Carpenter Ranch or By Zoom

Proposed Adjournment (12:00pm)

**Meeting Packet:**  
Proposed Agenda

**YAMPA RIVER LEAFY SPURGE PROJECT**  
**Wednesday, August 11, 2021**  
**Hayden Town Hall**  
**Final Meeting Notes**

**ATTENDEES:**

**Working Group Members Present**

Jesse Schroeder, Moffat County Weed and Pest  
Chloe Mattilio, University of WY  
Ben Beall, Routt County Citizen  
Tamara Naumann, Moffat County Citizen  
Pete Williams, Moffat County Citizen  
John Husband, Moffat County Citizen  
Baili Foster, NRCS Steamboat Springs  
Teresa Audesirk, Routt County Citizen  
Jonathan Murray, Routt County Weed Program  
Kristen Gornell, Routt County Weed Program

Ben Beall opened the meeting at 10:05. He thanked everyone for coming.

Ben asked if there were any changes or suggestions to the agenda.

John Husband said that Jesse Schroeder had to leave early so we should make sure that the items that needed Jesse's input should be moved up. Jesse responded that there has been a change in plans so he would be present for the whole meeting.

**First Discussion: PowerPoint Presentation on the CWCB Grant Project: Remote Mapping of Leafy Spurge in the Yampa Basin and Predicting Leafy Spurge Invasions in Northwest Colorado using Satellite Imagery and Ecological Niche Modeling. Chloe Mattilio, PHD Candidate, Department of Plant Sciences, University of WY**

Chloe's PowerPoint Presentation is available at [yampariverleafyspurgeproject.com](http://yampariverleafyspurgeproject.com) and directly using this link <https://www.yampariverleafyspurgeproject.com/chloemattilio>. Below are important points from Chloe's research and PowerPoint presentation. It is recommended that the PowerPoint be viewed to understand the data behind the following comments from the presentation:

**1. Identification of Leafy Spurge using Satellite Imagery in the Yampa River Basin**

Chloe's presentation demonstrated that leafy spurge can be very successfully identified using satellite imagery.

She was able to identify LS with 92% to 83% accuracy depending on the various method filters used. She validated the satellite imagery using comparisons with 271 locations mapped by the YRLSP efforts of on the Yampa River during 2019 and 2020.

Chloe's research results determined that infrared reflectance is the more useful in identifying LS.

## **2. Predictive Modeling of Leafy Spurge in the Yampa River Basin**

Chloe was able to produce a series of predictive modelling maps for the Yampa Basin.

Chloe used the Fremont County's Weed and Pest data of the spread of leafy spurge in Fremont County, WY, and YRLSP's mapping to predict where LS might spread. Note: LS was introduced into Fremont County 20 to 30 years prior to its discovery in Western Routt County in the 1970s. She used known environmental predictors i.e. soils, topography etc. in her modeling.

Chloe presented a series of maps to show where LS could eventually be found in the Yampa River Basin.

## **3. Need for Further Research**

Chloe's presentation ended with a list of "Next Steps," which will include a comparison of the modeling of the Yampa Basin and Fremont County with the Yampa Basin predictive leafy spurge invasion maps.

Chloe finished her presentation and asked if the Group had any questions.

Teresa Audesirk asked if leafy spurge needed to be blooming for satellite identification. Chloe answered, yes.

John Husband thought that the predictive maps would be beneficial to land owners and land managers. However, with the climate variability from year to year i.e., precipitation, how can the modeling show where the infestation might be in 10 years? Chloe said that the invasive risk was important but the modeling would have to be confirmed with future satellite imagery.

Baili Foster asked how difficult it was to see the on-the-ground leafy spurge. Chloe pointed out that that is why ground truthing the infestations is so important. Even with a mixed ground cover there was no difference in the identification do to the reflective spectral signature.

Tamara Naumann pointed out even considering similar colored flowered plants i.e., yellow sweet clover, rabbit brush, etc., that the sorting that Chloe has done in her research to get an 80% accuracy on identifying leafy spurge is a great accomplishment.

Baili wondered if Chloe had been able to identify leafy spurge under a canopy cover like the cottonwood forest. Chloe pointed out that any cover would obscure the ability of satellite imagery to identify leafy spurge. Chloe also pointed out that the algorithm can only identify 4m x4m or larger patches due to the pixel size of the imagery.

There followed a discussion that Chloe had been able to identify and ground truth leafy spurge infestations with willows along the river.

Ben thanked Chloe for the informative presentation and thought that this satellite mapping along with the YRLSP's leafy spurge mapping along the Yampa River and the predictions could be a valuable model for other organizations' attempts to manage noxious invasive weeds. Ben wondered if it would be possible for Chloe to write up her process with satellites and light parameters so the others could copy her model. Note: This will be addressed by Chloe in her PhD dissertation. Ben would like to see everyone review Chloe's PowerPoint presentation which will be posted on the YRLSP website.

Chloe added and wanted the Group to know that she has been conservative in her identifications and predictions.

**Task 1: Chloe to finalize the PowerPoint presentation and send to Pete.**

**Task 2: Pete to put Chloe's PowerPoint on [yampariverleafyspurgeproject.com](http://yampariverleafyspurgeproject.com)**

**Task 3: Chloe to share her PhD dissertation with the YRLSP so that the YRLSP can share with its partners so others will be able to replicate her identification method.**

## **Second Discussion: Report on Biocontrol Efforts**

Tamara passed out a packet of four sheets of the YRLSP's biocontrol efforts in Routt and Moffat Counties.

These sheets are:

1. YRLSP Map: Leafy Spurge Biological Control Releases Yampa River State Wildlife Area and Vicinity, 2019, 2020, and 2021
2. YRLSP Map: Leafy Spurge Biological Control Releases Moffat County, 2020 and 2021

To view or download these updated sheets go to the YRLSP website <https://www.yampariverleafyspurgeproject.com/biological-control>, then click on "YRLSP BioControl Release Locations".

3. YRLSP Biocontrol Summary 2019-2021 with location, beetle type, and amounts

4. Yampa River State Wildlife Area Leafy Spurge Biocontrol Summary with location, beetle type, and amounts.

The link to the information in #3 and #4, modified for ease of reading, is in the introductory text to the YRLSP 2019-2021 release location maps, found using the same directions mentioned above for the maps.

#### 2021 Releases:

Tamara related to the Group the difficulty this summer due to the drought and Front Range weather to accomplish the planned beetle releases. The beetles had a delayed emergence on the Front Range and the YRLSP volunteers were not able to collect beetles. Finally, when John Kaltenbach, CDA, delivered 3,000 *Aphthona* and 250 *Oberea*, the Little Yampa Canyon flow was too low to boat. The LYC had been where the YRLSP wanted to release beetles in 2021. The LYC will have to be a priority for 2022.

The beetles from John were released on the YRSWA and on McIntyre's near Maybell.

Tyler Jacox, CPW, with funds from CPW was able to purchase 9,000 *Aphthona* from Montana in July. These were released on the YRSWA, Loudy Simpson Island, CPW South Beach, and K-Diamond Ranch (Deakins) just below the CPW Duffy Mt. river access.

#### 2021 Monitoring:

Tamara relayed to the Group that 9 previous release sites were monitored this summer. Tamara stated that she and Tyler can see where the beetles have been released due to the damage to the leafy spurge. There was even a site at the Frog Pond in the YRSWA that looked like a bomb has destroyed the leafy spurge. She said that she has not yet been able to compare the photos from the releases and the monitoring.

**Task 4: Pete to post on the YRLSP website the packet with 4 sheets of the 2019,2020, and 2021 Biological Control Release Data**

**Task 5: The YRLSP will prioritize Little Yampa Canyon for biocontrol releases in 2022.**

**Task 6: Tamara will share with the Group and post on the YRLSP website the photos at the time of the beetle releases and the photos at the time of monitoring.**

### **Third Discussion 2021 Field Trip:**

Tamara related that the planned 2021 Field Trip for Agricultural Producers never took place due to lack of participation. There needs to be some way that the YRLSP can interest the landowners to understand the benefits of biocontrol.

Tamara did relate that in late July there was a Field Tour with Jesse, Doug VanTassel (MC Weed and Pest), Ben, Jonathan Murray, and Kristen Gorrel, where they visited Wagner and a treatment and release site on the YRSWA in order to figure out what sites would be appropriate for a 2022 Field Trip. This Field Trip would not only show biocontrol sites but talk about new chemicals for treatment and chemical management. Tamara also suggested that two other sites may be appropriate for the 2022 Field Trip: the Earle's Oxbows and the Frog Pond on the YRSWA.

**Task 7: The Group needs to figure out how to engage the agricultural producers and landowners.**

**Task 8: Tamara will choose the sites and schedule a landowner Field Trip for 2022.**

### **Fourth Discussion Youth and Education Event:**

Tamara told the Group that the Youth and Education Event was canceled due to limited interest from the Girls and Boys Club. We will try again in 2022.

This event was a project under the CWCB Grant. Tamara thought that there will not be an issue with CWCB to reschedule for 2022.

Baili suggested that Yampatika and the Rocky Mountain Youth Corps be contacted for 2022. Kristen said that she was working with the Rocky Mt Youth Corps on noxious weeds at Stagecoach Reservoir and that they would be a good fit.

**Task 9: Tamara and Baili along with the Youth and Education Committee will schedule a Youth and Education Biocontrol Event for 2022 and invite appropriate youth organizations.**

### **Fifth Discussion: Report on 2021 Leafy Spurge Mapping:**

Pete Williams said that he thought that the YRLSP had essentially completed the final mapping of the Yampa River. He along with Jay Gallagher, Chloe and Casimir Norton (Univ of WY) in July completed the 5 miles in Axial Basin from Government Bridge to Juniper that were missed in 2019 due to time constraints. They found and mapped 2 or 3 infestations that were 2 to 3 acres.

The leafy spurge infestations are now mapped from Hayden to East Cross. There are only two reaches that are not mapped: Cross Mountain Canyon and West Cross to Dinosaur National Monument. Pete said that he would expect there to be few infestations in the canyon. He knows there is leafy spurge on Cross Mt Ranch in the reach before DNM. He would like to map this at some point and he will continue to map and add to our existing mapping if he sees other infestations along the Yampa that have been missed. Another reach that could be remapped in the future would be the landowners who did not give permissions from Maybell to East Cross.

John thought that it would be a good idea to map the reach from West Cross to DNM as a check on Chloe's satellite mapping.

Ben thought that from looking at Chloe's presentation combined maps that it was difficult to see the actual mapped and the satellite mapped leafy spurge.

Chloe thought that it may be worth investigating how the two mappings might be displayed differently.

Tamara reminded the Group that the YRLSP mapping project was a part of Chloe's research on remote sensing. Our mapping is the ground truthing for the satellite imaging. Chloe's 80% accuracy on determining the presence of leafy spurge is great news.

Pete said that as he updates the website mapping to include Chloe's information that he would work on the wording and narrative to describe and support Chloe's research.

**Task 10: Pete and Ben will schedule a leafy spurge mapping trip by raft from West Cross to Deerlodge and ground truth Chloe's satellite leafy spurge infestations. Need to get permission from Cross Mt. Ranch.**

**Task 11: Pete and Chloe to decide if it is necessary for comparisons to have different maps of the river mapping with the satellite mapping.**

**Task 12: Pete to work on the narrative for the YRLSP website as to how and what form to show Chloe's satellite imagery and research.**

### **Sixth Discussion: Outreach**

Ben asked if Laurel Dietch was able to get a list of landowners from the CO First Conservation District Annual Meeting. Tamara said that Laurel had no one sign up showing interest in a Biocontrol Field Trip.

Ben informed the Group that he has not yet scheduled an update meeting with the Routt County BCC. He and Jonathan have talked about scheduling a meeting in September

and including the RC Weed Board. Tiffany Carlson will be back from maternity leave and would like to participate.

**Task 13: Ben, Tiffany and Jonathan will schedule a meeting to update the RCBCC on the YRLSP in September.**

### **Seventh Discussion: Show Me Float Update**

John told the Group that he thought the Show Me Float on June 11<sup>th</sup> and 12<sup>th</sup> went well. We had a good group of 16 attendees. He said that there was more visible leafy spurge than the last time he was in Little Yampa Canyon. In the location where we stopped to talk with the attendees about leafy spurge and the YRLSP, we were able to net a good number of beetles both brown Aphthona and Oberea.

John related that at our campsite, Friends, that we had a visit from Jacob Dewhirst, Yampa River State Park Manager and one of his staff and we were able to discuss the recreation opportunities of LYC with the attendees.

Ben added that on the second day of the Float Andrew Norton, CSU, was able to net beetles from two other sites along the river.

John said that he doubted that there had been any releases of beetles in LYC. This was confirmed by Tamara. She said that in 2019 she had collected a few black Aphthona from K Diamond Ranch. Pete thought that some of the beetles netted by Andrew were also black Aphthona.

### **Eighth Discussion: The Future Plan for the YRLSP, Second Edition**

John opened this discussion by stating that the YRLSP is made up of volunteers from Routt and Moffat Counties. What is the organization doing? It seems that biocontrol is the main interest and right now we have two years left on the YRLSP 5-year Biocontrol Plan.

Jesse said that a majority of landowners are not receptive of the idea of biocontrol. It just doesn't fit in with their expectations regarding the management of noxious weeds.

Ben suggested the YRLSP needs to put out a report to show what we have done and accomplished over the five or six years that we have been working on the leafy spurge along the Yampa. Is there a need to request grant funds for this report?

Tamara thought that the report idea was unnecessary that there was way more information on our website than could be in any report.

Jesse said that the knowledge that the YRLSP has gained needs to be shown to the agricultural producers. This knowledge needs to be not only biocontrol but also

chemical treatments. He emphasized that every year MC Weed and Pest has conversations with landowners along the river about the appropriate uses of different treatments for different locations, i.e., uses of certain chemicals near the river's edge.

Jesse pointed that after back-to-back years of chemical treatment a landowner can see a 70 to 80% reduction in leafy spurge and the costs is about \$35/acre, e.g. Wagner.

Baili suggested that there needs to be a way to compare the costs of different leafy spurge treatments over time. There needs to be included the costs of the time/labor component.

Tamara said that she is willing to keep putting in the time until we have a good message and to keep the efforts regarding biocontrol alive to see the outcome. She thinks that there is already a transition happening in regards to the approach to leafy spurge. There needs to be a greater effort to engage landowners. The YRLSP Partners need to continue to talk to each other and to work with each other.

John referenced Hannah Kuhn's report on her research of different chemical treatments for the CWCB Grant, and asked if these chemicals should be a part of the YRLSP plans for leafy spurge. Jesse pointed out that he didn't like the results of the Rencor treatments, other than maybe there was a reduction in seed production, and Rencor has restrictions on how close to the bank it can be used. Jonathan Murray said that RC Weed Program has seen mixed results with Quinclorax.

Terry asked if chemical treatments were negative to the beetles. Jesse said that chemicals reduce the beetles' food source. Tamara from her observations thinks that the beetles move to other infestations, especially the Oberea.

Tamara emphasized that she thought that the different Weed Programs are the best organizations to advise landowners on how to treat and what treatments are best for treating leafy spurge.

Ben told the Group that when he, Tiffany, and Jonathan have their meeting with the RC BCC that he would relate to them the YRLSP's thinking that the County Weed Programs are the best organizations to carry out the future management of leafy spurge.

Ben added that he thinks that this is an important discussion for the future of the YRLSP and that he and John would talk about a Future Plan Third Edition as an agenda item for another meeting.

**Task 14: Ben and John to discuss continuing to put The Future Plan item on the agenda for the December meeting.**

## **Ninth Discussion: Partner Plans and Updates for 2021 Leafy Spurge Management**

### **a. Friends of the Yampa:**

Ben reported that he had received an updated accounting sheet from Lindsey Marlow of the FOTY/YRLSP Donations Account. After the payment for the expenses of the Show Me Float (\$405.16 to Ben and \$81.85 to John) the balance is \$2,556.82.

Pete informed the Group that he will be invoicing the account for \$105 for Agterra for the MapItFast account expenses, and Tamara will be invoicing for \$280 for the cost of beetles from John Kaltenbach, CDA.

### **b. Routt County Weed Program:**

Jonathan reported that Don Stinton had backpack sprayed the infestation on the Stetson Ranch. The new owner is willing to continue to manage the infestation.

Jonathan also reported that RC Weed Program had purchased and released beetles on RCR 78A on the COG north of Hayden. Pete said that he would like to get the coordinates of the releases so that the YRLSP would have a complete file on leafy spurge beetle releases.

c. NRCS, Craig: Tamara thanked Laurel, NRCS, for completing the testing of seven previous soil samples from beetle release sites. Tamara is sending Laurel six more soil samples from the 2021 release sites.

**Task 15: Jonathan to get the coordinates to Pete for the RC Weed Program 2021 beetle releases so that Pete can put them on the YRLSP beetle release maps**

## **Tenth Discussion: Colorado Gives Campaign for Donations**

Ben explained to the Group that Tamara had opened a Colorado Gives account in 2019 and asked for donations from her friends. Ben wanted to know if the Group thought it appropriate to ask our supporter email lists for donations during this year's CO Gives campaign in December. Ben stated that he is willing to take the time to do the emails.

Tamara thought that a campaign for donations was unnecessary. If Moffat County, Routt County, and the RC Weed Board are willing to continue kicking in what we need that would be enough. Jesse said that donations from Moffat County are not a sure thing.

Ben will keep his offer open in case there is a need for donations in the future. For the time being donations could be made through the FOTY/YRLSP Donations Account during the CO Gives campaign.

**Task 16: Pete to check the YRLSP website to make sure that the Donation Button works.**

## **Eleventh Discussion: Next Meeting**

Ben pointed out that the next scheduled meeting was Wednesday October 13<sup>th</sup>. He asked the Group if he should schedule the meeting at the Hayden Town Hall or if they would like to have a Zoom meeting.

Tamara suggested that we move to quarterly meetings and that the next meeting be by Zoom. The Group concurred.

## **Suggested Agenda Items:**

Establish Dates for 2022 Events  
Report on the Closing of the CWCB Grant  
Chloe's Final Report

The next meeting will be on December 1<sup>st</sup> at 10:00. **Note: This is the first Wednesday in December to accommodate MC and RC Weed Programs' Statewide Weed Meeting.**

Meeting Adjourned: 12:15