

## EXCITING NEW PROJECTS FOR THE YAMPA RIVER LEAFY SPURGE PROJECT IN 2019 AND BEYOND

In late 2017, YRLSP partners began working on a grant application for submission to the Yampa-White-Green Basin Roundtable (YWG-BRT) <https://www.yampawhitegreen.com/>. Our goal was to secure funding to move our efforts forward in several key areas. In October of 2018, we successfully completed the application process, securing \$89,000 from the Colorado Water Conservation Board (CWCB) Water Supply Reserve Fund (WSRF) Yampa-White-Green Basin account <http://cwcw.state.co.us/LoansGrants/water-supply-reserve-account-grants/Pages/main.aspx>. Our grant application also included matching fund commitments from Moffat County (\$15,000 over two years), Routt County (over two years) and the University of Wyoming (\$12,600 over two years). Partner agencies and organizations will contribute more than \$34,000 toward in-kind match over the next two and half years. Friends of the Yampa <https://friendsoftheyampa.com/> stepped up to serve as fiscal agent and official applicant for the grant.

A clear nexus exists between leafy spurge distribution and water as a vector in the Yampa Valley. Because both environmental and agricultural uses of water are involved, the YRLSP sought BRT-WSRF seed money to show local grassroots support for a comprehensive long-term approach to addressing the leafy spurge threat to our agricultural systems and riparian habitats. In 2019-2020, the YRLSP will use BRT-WSRF dollars to support the following objectives:

- Work with stakeholders and the University of Wyoming to develop a robust, publicly available spatial data set documenting the current distribution of leafy spurge in riparian habitat associated with the Yampa River, tributary streams, and irrigation water delivery systems in the Yampa Valley.
- Support a graduate student, who will utilize remote sensing technology to direct and enhance monitoring and mapping efforts, and who will
- Develop a susceptibility model to predict where new leafy spurge invasion is most likely in Moffat and Routt Counties.
- Support a second graduate student, who will quantify the current seed load produced by leafy spurge populations in 4 (possibly 5) specific riparian habitats along the Yampa River and associated tributaries, and who will
- Study and evaluate best integrated management practices for reducing cover and seed production of leafy spurge in diverse riparian systems in the Yampa Valley.
- Develop a map of known and potential leafy spurge biological control sites in the Yampa Valley, and work with the Colorado Department of Agriculture, Colorado State University Extension, and other partners to develop kid-friendly monitoring protocols in anticipation of a future adopt-a-spurge-bug-patch program for engagement of local 4-H clubs, boys and girls clubs, school science classes, and other youth organizations. We aim to improve understanding and appreciation for the relationships between the river, associated riparian habitat, agricultural water delivery systems, and invasive weeds.

### WHO ARE THE PARTNERS?

- MOFFAT AND ROUTT COUNTIES
- UNIVERSITY OF WYOMING
- COLORADO STATE UNIVERSITY EXTENSION
- COLORADO DEPARTMENT OF AGRICULTURE
- COLORADO PARKS AND WILDLIFE
- COLORADO STATE LAND BOARD
- BLM—LITTLE SNAKE FIELD OFFICE
- NPS—DINOSAUR NATIONAL MONUMENT
- NRCS
- YRLSP VOLUNTEERS
- THE NATURE CONSERVANCY
- FRIENDS OF THE YAMPA
- COMMUNITY AGRICULTURAL ALLIANCE
- PRIVATE LANDOWNERS
- YWG BASIN ROUNDTABLE

YRLSP BUDGET SUMMARY—2 YEARS			
CONTRIBUTOR	AMOUNT	% of TOTAL	
CASH			
YWG Basin WSRF grant	\$ 89,000	54%	54%
Moffat County	15,000	9%	26%
Routt County	15,000	9%	
University of Wyoming	12,572	8%	
IN-KIND			
YRLSP volunteers	20,000	12%	20%
Other Partners (BLM, NPS, TNC, CDA, CPW, Moffat, Routt, CSU Extension)	14,000	8%	
TOTAL PROJECT COST	\$ 165,572		

### HOW DID LEAFY SPURGE BECOME ESTABLISHED IN THE YAMPA VALLEY?

Leafy spurge first appeared in the Yampa Valley approximately 40 years ago. It may have been introduced on contaminated road construction equipment or haying

equipment, allowing it to become established in riparian areas west of Hayden, near the Yampa River State Wildlife Area. It also became established in upland areas above Tepee Draw, north of Dinosaur National Monument—the result of contaminated hay dropped in a harsh winter long ago. That hay was probably produced in an irrigated hay field near the river. For many years, leafy spurge seemed unlikely to spread, but now it is on the move—in a big way.

#### HOW IS LEAFY SPURGE SPREADING?

The river and its associated irrigation ditches are the perfect distribution system for leafy spurge seeds. As seed capsules dry out in the late summer and fall, they pop open and the seeds are expelled some distance from the plant. Plants growing near water will send seeds directly in to the water. Periodic over-bank flooding also gathers seed lying on the ground and entrains it in the river.

The epicenter of the spurge infestation in Routt and Moffat counties is in the floodplain of the Yampa River between Hayden and Craig—this area has been infested for more than four decades. In contrast, only a handful of small spurge patches were present in Dinosaur National Monument in the years between 1995 and 2013. Then suddenly, there were a hundred patches, then 200, and by 2017, more than 300! It appears that the exceptional high water in 2011 distributed a threshold quantity of seed to riparian habitats downstream of Craig—in Little Yampa Canyon, Dinosaur National Monument, and out in to the Uinta Basin in Utah.

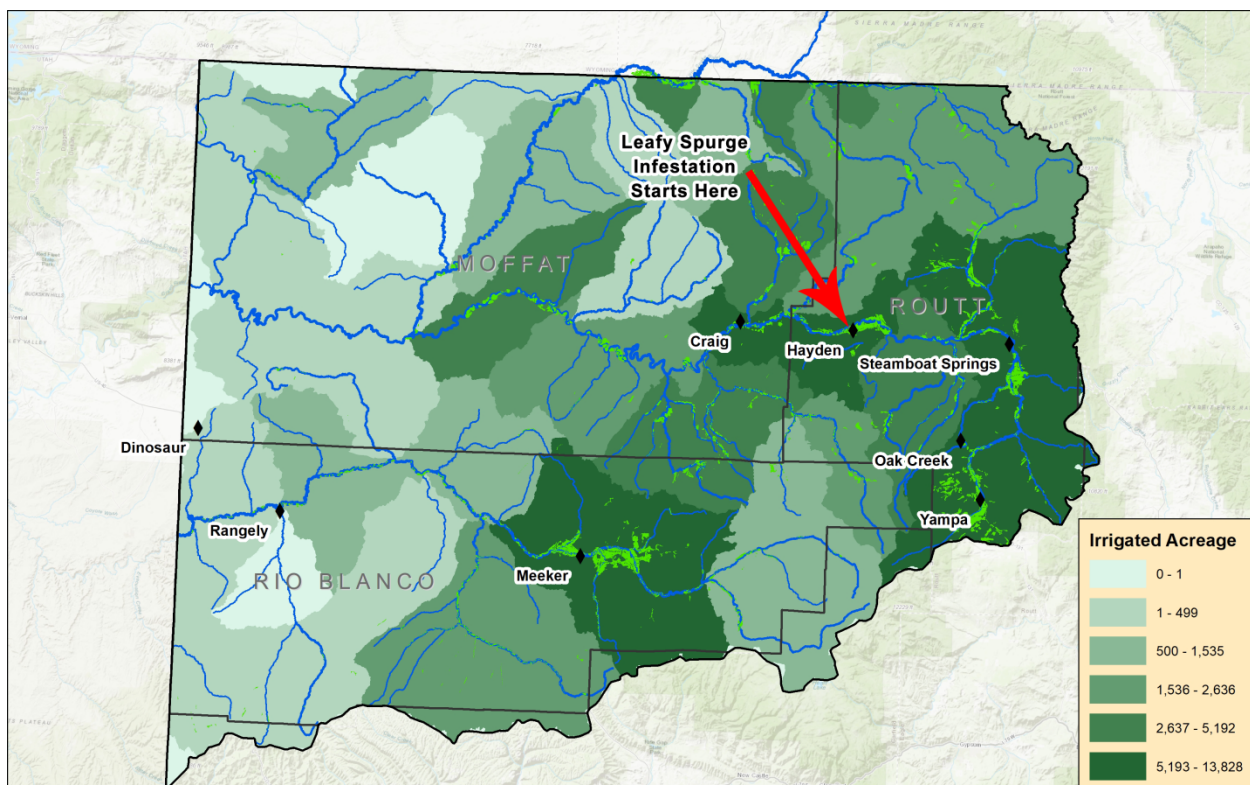


Figure 1: Irrigated acreage by sub-basin. Demand nodes are concentrated in the brightly-colored areas. The red arrow indicates the most upstream known leafy spurge infestation. New infestations have been documented from there downstream to beyond the confluence with the

Green River, especially since the high-water event in 2011. (Source: 2010 irrigated acreage assessment and modeling information from the Colorado Decision Support System (CDSS))

#### **WHY DOES IT MATTER?**

Leafy spurge is capable of degrading agricultural productivity, especially for cattle ranching and hay production. In this light, it represents a tangible threat to our agricultural economy and heritage. Cattle and horses will avoid areas infested with leafy spurge. Contaminated hay can be fed to cattle in upland sites, thereby expanding and accelerating the invasion process.

Leafy spurge is so aggressive it is capable of transforming entire plant communities on a landscape scale. In arid environments, riparian habitats comprise only a small percentage of the total landscape; for example, in Dinosaur National Monument only 1% of the vegetation is classified as riparian. The contribution of the 1% to regional biodiversity, however, is huge. Perhaps 70-80% of avian species diversity is dependent on riparian habitat for food, cover or nesting habitat. All native terrestrial wildlife species depend on healthy, productive plant communities.

#### **WHAT ARE THE OBSTACLES?**

Leafy spurge is difficult to manage. Some herbicides are effective, but are not labelled for use in riparian areas. Several biological control insects are available, but early efforts to establish populations in riparian habitat have not been successful. Hand-pulling only slows it down, it doesn't kill it. Some studies on targeted grazing with sheep and goats have shown promise, but are logistically complicated and expensive. Some people believe leafy spurge will not spread here, as it has in other places. Some people have no awareness of the invasion or its potential trajectory. Leafy spurge is a worthy opponent that is very well-adapted to our landscape. The YRLSP is working toward filling information gaps and implementing community and science-based solutions.

#### **HOW WILL THE YRLSP PUT BRT-WSRF DOLLARS TO WORK?**

Established management tools and techniques for managing leafy spurge in upland areas are less effective or unavailable for use in riparian areas. This project will provide the information necessary to develop a comprehensive integrated management program and will help everyone (agencies, land owners and the general public) become more informed about the risks that accrue from ignoring this problem.

#### **FOR MORE INFORMATION**

Contact Project Coordinator Tamara Naumann ([williapa@toast.net](mailto:williapa@toast.net)).  
See the Scope of Work and Map documents (attached).