

SUMMER 2026

Restoration in Action

Official Newsletter of the TWS Habitat Restoration Working Group

Working Group News

June Board Meeting Minutes

The Executive Board of the HRWG met on June 9th for their monthly meeting. During the meeting, they discussed the following:

- Speaker selections for their symposium titled “Wildlife Restoration Through Landscape Connectivity” at the 2026 TWS conference.
- TWS conference field trip logistics and updates.
- The removal of in-person working group meetings at the annual conference and the addition of working group tables in the exhibit hall.
- Creating a new HRWG logo and hosting a contest for a design.
- The HRWG hosts monthly board meetings on the second Tuesday of each month at 7:00 EST. Members will receive an email with the agenda and Zoom link the week before the meeting.

Not a member? Join today!

You can join the HRWG through your TWS account, under the “Membership” tab by selecting “Add Organizational Unit”. There is a \$5 membership fee that allows the HRWG to continue its mission of advancing the field of wildlife habitat restoration.

HABITAT
RESTORATION
WORKING GROUP
SUMMER 2026
ISSUE #4



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Management of Military Lands

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Resource Environmental
Solutions

Looking to get involved?

The HRWG is looking for motivated people who would like to serve on our executive board. Duties and responsibilities will vary depending on the available positions. We will have more information on vacant positions, nominations, and the election soon!

HRWG Symposium at 2026 TWS Conference

The HRWG is hosting a symposium titled “Wildlife Restoration Through Landscape Connectivity” at the 2026 TWS Annual Conference in Des Moines, Iowa. The symposium will be Thursday, November 5th from 1:30 - 5:00 PM.

Landscape connectivity has emerged as a central focus of conservation management and to further wildlife restoration. The objectives of this session are to review recent examples of management designed to restore connectivity on fragmented landscapes and access the wildlife benefits provided by this restoration.

Nine speakers have been selected to participate in the symposium, including two 30 minute presentations:

- Carolina Carmargo Gil, Centro de Investigación de la Caña de Azúcar Cenicaña - *Integrating Ecological Restoration, Functional Connectivity, and Biodiversity Monitoring in a Tropical Agricultural Landscape Through an 890km Riparian Corridor Network*
- Jerod Merkle, University of Wyoming - *Empowering agricultural producers to help conserve migratory big game: Introducing USDA’s Migratory Big Game Framework for Conservation Action*

The symposium will conclude with a panel discussion. We hope you join us!

Contributed Articles

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Wildlife
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Integrating Wetland Ecology in Habitat Assessment

Geordan Hussey, PSM, AWB

In the state of Colorado, the Northern Leopard Frog (*Lithobates pipiens*) is listed as Tier 1 Species of Greatest Conservation Need. Through factors such as habitat loss and the invasion of the American Bullfrog (*Lithobates catesbeianus*), populations of this frog have declined across much of western North America. When managing these species, the use of a habitat score can be a useful tool to identify factors that are negative, and positive, to the survival of Northern Leopard Frogs. However, how accurately can these tools reflect the ecological needs of the species?

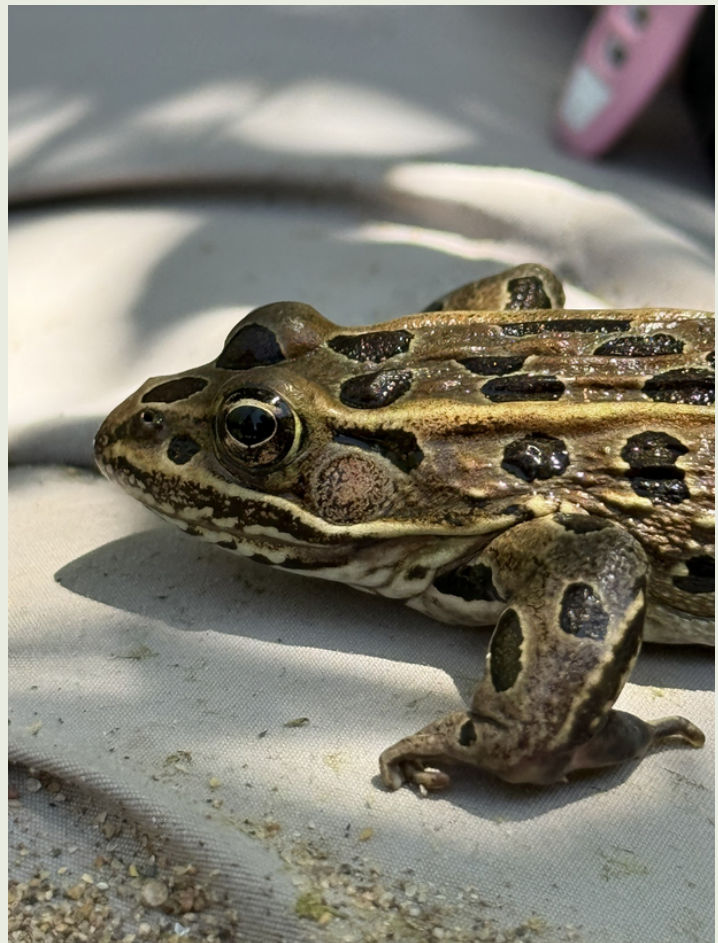


Photo of a Northern Leopard Frog by Geordan Hussey

Contributed Articles

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As part of a Professional Science Master's capstone project at Oregon State University, I evaluated and revised Colorado's existing Northern Leopard Frog Habitat scorecard. In 2016 Colorado Parks and Wildlife (CPW) released a Leopard Frog scorecard to be used by land managers. However, when using the scorecard, several opportunities for refinement became apparent. For example, while the scorecard measured factors such as emergent vegetation height and coverage, it did not account for invasive species or biodiversity. Additionally, water pH accounted for 16.3% of the breeding wetland habitat score, and 23% of the foraging habitat wetland score. If pH data was not available, or if the measurements fell outside the specified range, the resulting habitat score could be heavily influenced by a single variable. The issues in this scorecard, motivated me to make a more encompassing scorecard, that provided a better snapshot to land managers.

I began by completing a literature review on wetland ecology and Northern Leopard Frog ecology. Based on the literature review, I incorporated additional factors related to biodiversity, hydroperiods, invasive species, predator presence and wetland condition. Unlike the CPW scorecard, the revised version incorporated factors such as invasive vegetation, predatory species and broader wetland functionality indicators, providing a more encompassing assessment of habitat quality. The revised scorecard was then field tested alongside the CPW scorecard to directly compare their performance across five wetland sites. When comparing scores, it was shown that if a wetland is in pristine condition and suitable for Northern Leopard Frogs, then both scorecards will indicate that. However, if a wetland is in moderate condition, and needs restoration work, the revised scorecard may be a more suitable predictor due to the increased number of factors being scored. Furthermore, one of the field sites that was tested had a historic record of Northern Leopard Frogs. While the CPW scorecard rated the site at 75.13% the revised scorecard rated it at 93.33%. While this is a small sample size, it could indicate that incorporating additional ecological variables could provide a more comprehensive assessment of habitat suitability.

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While scorecards are a quick and efficient way to evaluate habitat for species of concern, they can also serve as valuable long term monitoring tools. By applying the scorecard annually, managers can identify habitat changes, emerging threats, and restoration needs before conditions become unsuitable for Northern Leopard Frogs. Additionally, tracking biodiversity, vegetation communities, and invasive species over time can help evaluate the success of wetland restoration and amphibian conservation efforts.

As wetland loss, habitat degradation, and the invasive species spread, habitat assessments tools will remain an important component of conservation planning for amphibian species. Additional field testing is needed, but incorporating broader wetland ecology principles in evaluations can help managers gain a more complete understanding of habitat suitability for Northern Leopard Frogs across Colorado. While the revised scorecard tends to be more conservative when evaluating wetland quality and functionality, it may help managers identify habitat limitations that could otherwise be overlooked, providing the Northern Leopard Frog with its best chance of survival.



Contributed Articles

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Restoring an 890 km Biological Corridor to Enhance Connectivity in Agricultural Landscapes

Carolina Camargo, Ph.D.

Agricultural development is essential for providing food, employment, and economic growth. One of the greatest challenges facing modern agriculture is how to reconcile productive activities with biodiversity conservation. In Colombia, the sugarcane industry has been exploring this balance for decades through innovative management practices that integrate agricultural production with ecological sustainability. A key example is the long-standing use of biological control for managing the sugarcane borer, *Diatraea* spp., one of the most important pests affecting sugarcane production in Colombia and throughout the Americas.



Biological corridor established along the Amaime River watershed, with the Central Andes mountain range forming the background. This corridor contributes to restoring ecological connectivity across an agricultural landscape and supports the conservation of native biodiversity. Photo courtesy of Carolina Carmargo.

Contributed Articles

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Since the 1970s, the Colombian sugarcane sector has relied on biological control for pest management. This strategy requires maintaining beneficial insects, including parasitoids and predators that naturally regulate pest populations. To support these organisms, herbaceous refuges were established within agricultural landscapes. These habitats provide food, shelter, and breeding sites for beneficial insects, helping sustain natural pest control. Although these efforts were initially implemented at a local scale, they demonstrated that conservation practices could generate direct benefits for agricultural productivity. This conservation strategy evolved from localized actions to a broader landscape-scale approach.

Since 2024, efforts expanded to the restoration and management of riparian ecosystems, drainage channels, and irrigation canals as ecological corridors capable of reconnecting habitats. These areas represent strategic opportunities to increase native vegetation throughout the Cauca River Valley while simultaneously improving environmental conditions for both wildlife and agricultural production.

The initiative began with a pilot study in the Amaime River watershed. The Amaime River originates in the Central Mountain Range of the Colombian Andes and flows through agricultural landscapes before joining the Cauca River. Although previous conservation efforts focused on upper watershed areas, the loss of native riparian vegetation in the lower basin highlighted the need to restore ecological connectivity to support biodiversity and protect water resources.

The objective of this study has been the development of functional connectivity for wildlife, particularly birds and mammals, which are being used as bioindicators of ecosystem recovery. To evaluate the effectiveness of restoration actions, we employ passive monitoring techniques such as acoustic sensors and camera traps. These technologies provide valuable information about species presence, movement patterns, and habitat use without disturbing wildlife. Early observations indicate that restored vegetation is already facilitating greater wildlife movement and helping reconnect previously isolated habitat fragments.

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Building on the success of the Amaime River pilot, the initiative is now expanding to thirteen additional riparian ecosystems as well as sections of the Cauca River across the flat valley region. Together, these restoration efforts cover 890 kilometers of a biological corridor, making this one of the most ambitious landscape-scale biodiversity initiatives associated with agricultural production in Colombia. The goal is to create a connected network of natural habitats that supports wildlife movement while providing ecosystem services essential for agriculture and local communities.

The project incorporates several complementary components that strengthen restoration outcomes. Community nurseries produce native plant species adapted to local conditions, supplying the vegetation needed for riparian restoration while encouraging local participation. Hydrological monitoring helps evaluate how conservation actions influence water availability and watershed functioning. Together, these actions contribute to rebuilding resilient ecosystems.

The benefits of this restoration strategy extend beyond conservation. Healthy riparian ecosystems help stabilize riverbanks, reduce erosion, improve water quality, and regulate water flows throughout the watershed. These ecosystem services are critical for sustaining sugarcane production in a region where agriculture depends heavily on reliable water resources. Furthermore, maintaining diverse habitats promotes biological balance by supporting beneficial insects and other organisms that contribute to natural pest regulation.

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One of the most important lessons from this initiative is the value of collaboration. The project requires the participation of local communities, sugarcane growers, sugar mills, environmental organizations, researchers, and governmental institutions. Building trust among these stakeholders has been essential for developing shared objectives and ensuring long-term commitment to restoration activities. The initiative is led through a collaboration between Asocaña and Cenicaña, demonstrating how agricultural production and environmental conservation can work together toward common goals. Through the restoration of riparian ecosystems and the creation of biological corridors, the project contributes to the conservation of biodiversity while strengthening the long-term resilience, productivity, and sustainability of one of Colombia's most important agricultural regions.



The native tachinid fly, *Genea jaynesi*. One of the principal biological control agents in the sugarcane in Colombia. The conservation and restoration of natural habitats contribute to maintaining populations of this beneficial insect, enhancing the natural regulation of pest species within agricultural landscapes.

Photo courtesy of Carolina Carmargo.

Submit an Article

We want to share your stories of environmental restoration! If you have a story of the struggles and successes of restoration work, please contact Lauren Gingerella at lgingerella@uga.edu. Articles are recommended to be 500-700 words in length and contain 1-3 images.

Contact Us

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