



Tech Transfer

New Tools for right-of-way (ROW) Management

This tech transfer session featured two guest presentations relevant to right-of-way (ROW) vegetation management and environmental applications. The first presentation reviewed research on socially facilitated habitat selection in birds and early results from a field study testing whether simulated bird vocalizations can influence habitat use in early successional pine savannah systems, with discussion of potential applicability to powerline ROWs and the need to avoid ecological traps. The second presentation described a proposal to strengthen knowledge transfer in remote sensing and geospatial workflows, and shared preliminary work demonstrating texture- and multispectral-based detection of woody vegetation using high-resolution satellite imagery as a scalable alternative to drone LiDAR for identifying small woody growth.

**Conservation on Rights-of-Ways: Socially Facilitated Habitat
Selection and Conspecific Attraction**

Presenters: Dr. Jonathan Valente, Auburn University (Alabama Cooperative Fish and Wildlife Research Unit) and Kylie Blake, Auburn University

The presentation introduced “socially facilitated habitat selection,” emphasizing that birds may choose breeding habitat not only based on direct assessment of habitat features but also by using social information—particularly the presence of conspecifics—as a cue for habitat quality. This behavior, termed conspecific attraction, can reduce the energetic and informational costs of searching for suitable breeding sites.

The speakers summarized how simulated social cues (e.g., decoys and call playbacks) have been used in conservation and restoration to attract birds to otherwise unused sites. Examples included island recolonization projects for colonial seabirds using decoys and call broadcasts, experimental call playback to increase breeding activity in an endangered coastal/forest species system, and a restoration context where call broadcasts rapidly increased settlement and persistence of a target songbird population after years of limited response to habitat restoration alone. A broader synthesis was noted in which most tested terrestrial species showed positive responses to simulated social cues.

Building on this framework, the speakers described a study focused on early successional pine savannah-associated birds affected by habitat loss linked to fire suppression and land-use change. The focal species were Bachman's sparrow, prairie warbler, and northern bobwhite. The work was conducted on properties in southern Alabama, using multiple sites with three conditions: a control condition that recorded but did not broadcast; a "location cue" treatment broadcasting male songs; and a "performance information" treatment broadcasting male songs plus additional calls intended to indicate mating opportunities and successful reproduction (including female and fledgling calls). Custom playback-and-recording devices were used to schedule broadcasting and recording at biologically relevant times, and recordings were analyzed using BirdNET to identify vocalizations and estimate detection probability.

Preliminary results were presented for the post-breeding season (July–August 2025) for northern bobwhite, as sample sizes for the other species were insufficient for statistical analysis at that stage. Detection probability for bobwhite was higher at treatment sites than at control sites, with treatment conditions showing substantially greater detection during the study period. Detection decreased over time across all conditions, consistent with reduced vocalization away from peak breeding. The speakers noted that the pattern did not clearly support habituation to broadcasts because controls showed a similar temporal decline. The study design also includes a pre-breeding season component (April–May 2026) followed by point-count breeding bird surveys to evaluate whether treatments influence breeding settlement.

The discussion connected this research to potential ROW applications, including the concept that powerline ROWs could function as restoration areas for early successional habitats, while highlighting key uncertainties: whether ROWs provide suitable habitat, whether attraction methods can reliably recruit target species, and how to ensure that attracting birds does not create ecological traps or sinks. The speakers indicated that sites were assessed for appropriate habitat structure before treatment placement.

Closing the Gap Between Geospatial Innovation and Industry Application; and Preliminary Woody Vegetation Detection Using High-Resolution Satellite Imagery

Presenters: Dr. Randy Pearson, GeoMARC, Southern Illinois University Edwardsville (SIUE) and Josh Pritsolas, GeoMARC, SIUE

This presentation focused on challenges in moving from geospatial "results" to operational capability in industry settings. The speakers described a recurring gap where projects often deliver maps, analytics, and reports ("the what") without fully transferring replicable workflows, logic, and methods ("the how"), limiting reproducibility and scalability. They also highlighted rapid changes in data sources, software platforms, and algorithms—especially in AI and machine learning—that can alter best practices even within a single project timeline. Additional issues included mismatches between vendor claims and operational realities, narrow conditions for tool performance, and solutions that are not yet practical at scale.

GeoMARC proposed a structured knowledge transfer approach focused on practical application rather than theory, covering topics such as selecting appropriate remote sensing data (satellite vs. drone; sensor types), data quality and integrity, realistic capabilities and limits of AI/deep learning, challenges in time-series analysis, appropriate use of vegetation indices, and intelligent sampling strategies that combine lower-cost and higher-cost data sources. Proposed delivery modes included short on-demand learning modules, hands-on workshops using real-world datasets and workflows, and periodic virtual briefings on what is working and what is not.

The technical update shared preliminary work addressing a persistent ROW challenge: detecting smaller woody vegetation (e.g., saplings) dispersed within grassy environments. Historically, this has required LiDAR or stereoscopic approaches. The speaker described testing high-resolution satellite imagery (Planet Labs SkySat at ~0.5 m) and developing a multispectral texture-based detection method that uses measures of local texture/roughness and spectral variability aggregated within zones to produce a normalized composite score indicating relative likelihood of woody canopy presence. Results from an Illinois study site showed strong spatial agreement between LiDAR-derived tree patterns and the texture-based satellite approach, including in sparsely distributed tree areas, with noted sensitivity to tree congregation/density rather than height alone (many trees discussed were under ~2 m). The approach was framed as a scalable pathway to estimate woody presence and guide broader assessments without relying on drone operations near powerlines.