

# RESEARCH COLLABORATIONS AND CITIZEN SCIENCE NETWORKS FACILITATE LOCATING IMMOBILE TRACKERS

G. RADCLIFFE & C. HERRINGTON



University  
of Victoria

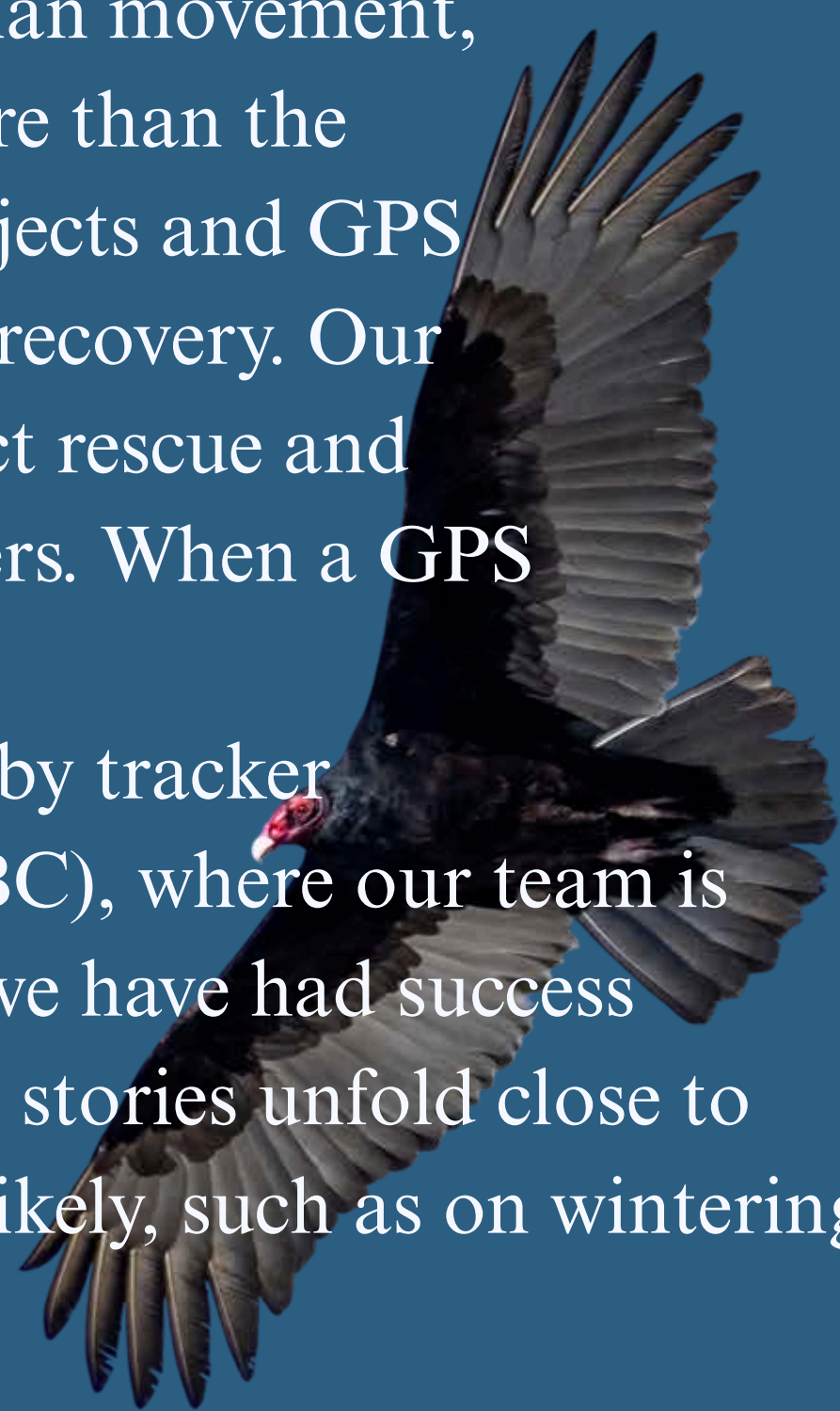


**The Raptors**

**mitacs**

## Context & Framing

GPS tracking technology has revolutionized the study of avian movement, but the success of long-term tracking projects hinges on more than the data collected. It also depends on the longevity of study subjects and GPS devices, which at times require field intervention and device recovery. Our research team has encountered several cases involving subject rescue and retrieval of both our own tracking devices and those of others. When a GPS tracker on one of our Turkey Vultures (TUVU) stops moving, our top priority is the welfare of the bird, followed by tracker recovery. During the breeding season in British Columbia (BC), where our team is based, we can respond quickly to non-movement. As such, we have had success locating birds and/or the trackers that they carry. But not all stories unfold close to home; Some trackers stop moving where recovery seems unlikely, such as on wintering ranges in the mountains of Mexico.



### Enter research collaborators and citizen science networks!

Programs such as eBird and iNaturalist can provide a convenient and powerful tool to locate and, with luck, recruit local collaborators to help.

## Case Study 2: Vulture Down near Culiacán, MX

“Mendes” was a hatch-year TUVU fitted with a transmitter in late summer 2023. After a successful fall migration to Mexico, the bird overwintered in the foothills of the Sierra Madre Occidental mountains, northeast of Culiacán, Sinaloa. Mendes returned to Vancouver Island in spring 2024, spent the summer roaming widely, and revisited its natal area before migrating south again that fall, arriving near its previous wintering site by October 9. On October 10, Mendes made a final short flight, then stopped moving. After four days of non-movement, we began searching for answers. Via ornithological publications, eBird, and iNaturalist, we identified researchers active in the area. We tracked down contact information in an effort to make a connection with someone willing to help. One of our messages reached the right person: biologist Eduardo Lizárraga in Culiacán.

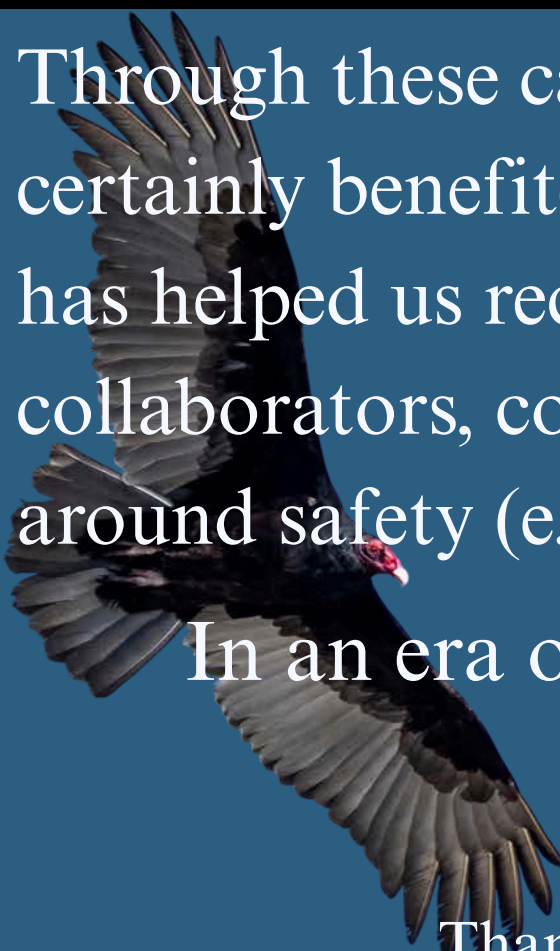


We coordinated with Eduardo, who first assessed the safety of the location with respect to recent cartel activity. Fortunately, he was able to safely investigate. Mendes was found deceased by the side of a road. Eduardo documented the scene, retrieved the GPS unit, and returned it to us. We were incredibly grateful — Fantastic, thank you so much, Eduardo! While the cause of death remains unknown, a large cow carcass nearby had recently attracted vulture activity. No other dead vultures or animals were found, so while poisoning or shooting couldn’t be ruled out, neither could it be confirmed.

## Final Thoughts

Through these cases, we've seen how research and citizen science networks can facilitate the international sharing of local knowledge and resources to enable site-specific tracker recoveries. This has certainly benefited our project, and we strongly encourage other researchers to pursue these avenues when a tracked subject stops moving in a distant location. Reaching out to on-the-ground allies has helped us recover devices, learn about subject fate, gain insight into regional threats and habitats, and build lasting connections. We've found it helpful to prepare a concise field protocol for collaborators, covering access, safety, note-taking, sample collection, and transmitter handling, to ensure consistency and to minimize risks. Local conditions can vary widely, so clear communication around safety (e.g., travel plans, working in pairs, protective gear) is essential. Where possible, covering field costs and offering a small honorarium is a meaningful way to thank volunteers.

In an era of limited research budgets and expensive equipment, each recovered tracker is a big win and a testament to the power of persistence and the global scientific community.



A very special thank you to our intrepid volunteers in Mexico, Eduardo Lizárraga (Culiacan) and Juan Carlos Pérez Magaña (Guadalajara). Thanks also to Pacific Northwest Raptors (“The Raptors”) and the University of Victoria for project support, both financial and practical. And to research collaborators at Hawk Mountain Sanctuary (JF Therrien, David Barber) and Coastal Raptors (Dan Varland) for their encouragement and support of our vulture project.

## Case Study 1: Immobile Tracker in BC, Canada

In 2020, Gill of the Pacific Northwest Raptors received a call from J.F. Therrien at Hawk Mountain. One of their tracked TUVUs (“Captain Haddock”), originally tagged in Arizona in 2017, was summering on Vancouver Island but had stopped moving in the Victoria area. J.F. asked if Gill could recover the unit and investigate the bird’s fate. Armed with the last known GPS location, Gill and Allan set off on the search. The site lay within a fenced Department of National Defence area, so access permissions were needed. The terrain was steep, forested, and bluffy, making the search feel like a wild goose chase despite relatively accurate GPS data.



After scouring the slope for some time, we were surprised to find the transmitter lying in the open beneath a large overhanging branch; a perfect perch for a vulture! There were no feathers or bones nearby despite a careful search. It is more likely that the bird had preened off the harness, which showed signs of wear from time and weather. The recovered unit was eventually returned to J.F. at a future Raptor Research Foundation (RRF) annual conference. (Gill and J.F. had originally met and talked vultures at an earlier RRF conference, so indirectly this recovery is thanks to RRF!).

## Case Study 3: Signal Dies in Michoacán, MX

“Humboldt” was a hatch-year TUVU outfitted with a transmitter on Vancouver Island in August 2024. After a successful fall migration, Humboldt settled near Lake Zirahuen in Michoacán for the winter. The bird was flying normally as of December 18, but over the next week, GPS signals became localized, with a final GPS fix coming in on December 24. Again, we reached out through eBird and iNaturalist and were fortunate to connect with Juan Carlos Pérez Magaña, a biologist based nearly 300 km away in Guadalajara. After confirming safe access, Juan hiked into the site and successfully located Humboldt's carcass and tracker (which was returned to us). Juan also provided detailed notes, habitat descriptions, and a bird list from his visit.



Juan noted the site was near an avocado plantation encroaching on forest habitat, a scenario in which wildlife poisoning is common. In addition to possible illness or other injury, visible holes of uncertain origin and nearby hunting activity suggest shooting as another potential cause of death. Great job, thank you, Juan!