

THE TRACKER



YERC'S NEWSLETTER

"Intelligence is the ability to adapt to change."

STEPHEN HAWKING

IN THIS ISSUE:

**SEARCHING FOR YELLOWSTONE'S
SECRETIVE CARNIVORES**

EPIIC TOPCODER CHALLENGE

ICE CLIMBING WITH WOLVES

NOTES FROM THE FIELD





Clockwise starting top left: Fisher, American Marten, Wolverine, Canada Lynx

SEARCHING FOR YELLOWSTONE'S SECRETIVE CARNIVORES

YERC's flagship program, YellowstoneNET, brings people, data, and technology together to solve Yellowstone's most pressing ecological problems

Deep in the forests of the Greater Yellowstone Ecosystem (GYE) you'll find a variety of mid-sized carnivores if you know where to look. These are the mid-sized members of the cat, dog, and weasel family: lynx, bobcat, mountain fox, fisher, marten, and wolverine. I like to include mink and river otters because we similarly know so little about them in GYE's high elevation forested streams. Recently, we've documented increases in river otters at 10,000 feet in elevation! Our research indicates that this increase in river otter distribution is due to warmer, shorter winters as well as abundant trout populations that they can

better access during the milder winters. We see these secretive carnivores, but how are they doing? What is their population health status?

And sometimes secretive carnivores even find us! It was last winter at this time when I was talking on the phone with a colleague and heard a scream outside my home near Kirk Hill south of Bozeman. I looked out my window to see a young male, 'tom', mountain lion 30 feet away on the back of a white-tailed deer. As I hung up the phone, the deer fell over with the lion's jaws deeply embedded in the

back of its neck. The young tom flipped it over with one swipe of its powerful forearm, detached its teeth from the back of the deer's neck and reattached to the upper throat in one seamless, split-second move. If it hadn't been for the large size and noise of these two large mammals, I would have missed the encounter. I have worked closely with two mountain lion researchers during my career and know how rare it is to see a mountain lion, let alone witness a 'kill' from start to finish, right out my window. So just think about all the times the smaller, more secretive nocturnal carnivores have slipped by our senses unnoticed.

YELLOWSTONE NET

For the smaller mid-sized carnivores that inhabit the forested mountains, such sightings are indeed rare, but that doesn't mean they are going extinct. Their populations could be recovering or in a steep decline and we simply don't know. The good news is that given enough time, effort, and knowledge of their behaviors, we can find them. Such is the story entitled *WildNET: An increasing amount of Wildlife in Northern Yellowstone*. This story includes a link to an article in *Yellowstone Science* entitled, *Finding Fishers* which chronicles the story of confirming what might be the rarest of all forest carnivores in the GYE. Throughout the first half of the 20th century, biologists assumed that it was absent in the lower 48 states - both the gray wolf and fisher were then considered the only absent vertebrate species in Yellowstone National Park (YNP). With the wolf reintroduction program, and some likely natural but unknown process, we now have both 'missing' species back in the GYE. There were sporadic reports of fishers including old specimens in the Smithsonian simply labeled 'Yellowstone' and a mounted fisher in Cody, WY from around

1900. Did they somehow survive the predator eradication era from 1850 to 1950?

JUST THINK ABOUT ALL THE TIMES THE SMALLER, MORE SECRETIVE NOCTURNAL CARNIVORES HAVE SLIPPED BY OUR SENSES UNNOTICED.

In a biodiversity sense, YNP is now considered intact because, as far as we know, all species present in 1492 are still here. Yet we don't know the current status of fisher, lynx, or wolverine – the three most rare and secretive in the GYE. And what about the status of bobcats? Marten? And the [mysterious mountain fox](#) noticed by fur trappers and park naturalists in the late 1800s. One thing for sure these secretive forest carnivores are notoriously difficult to study because they spread themselves out naturally at very low densities and inhabit remote, rugged, wilderness forests.

Recently, a wolverine captured by a camera trap near Mammoth Hot Spring, WY [made national news](#). This confirmed how rare a verifiable sighting is, as well as a testament to the quality monitoring program by biologists in YNP. However, by no means was it a measure of its population status in the YNP or the GYE. That will take a much more concerted, intensive effort. Yet there have been several pioneering research projects on wolverine in Yellowstone, notably Robert Inman (wolverine) and Kerry Murphy (lynx and wolverine), who both lead projects to capture, radio collar, and track these elusive forest carnivores that tend to inhabit higher elevations. Many of their research techniques were made possible by the landmark study in the lower 48 states conducted by Jeff Cope land thirty 30 years ago and lead to the founding of the [Wolverine Foundation](#). Even YERC research conducted by Patrick Cross benefited from the innovative techniques developed by Jeff's instinctive abilities and skills. Patrick slightly [modified Jeff's trapping techniques](#) to successfully and safely capture mountain fox in the Absaroka-Beartooth Wilderness at elevations ranging from 8,000 to above 10,000 during the winter. Do we really know what's out there? Should we know?

That answer was first and foremost in my mind when, to my utter astonishment, I read an article in New York Times in early March. Low and behold a more-than-rare bird species was ['rediscovered'](#) in Indonesia. This babbler apparently has been babbling to local inhabitants but not to researchers who last 'knew' about it 170 years ago from a specimen. Could this be a similar situation, where fisher, lynx, and wolverine, like babblers, have pockets of breeding populations or are they just passing through? Indeed, it takes a whole lot of effort, skill, and instinct to study a rare, secretive species that inhabit the remote areas around the globe. Maybe, most importantly, if we work together, we might know a

PREDICTING LYNX HABITAT WITH A SUCCESSION SIMULATION MODEL

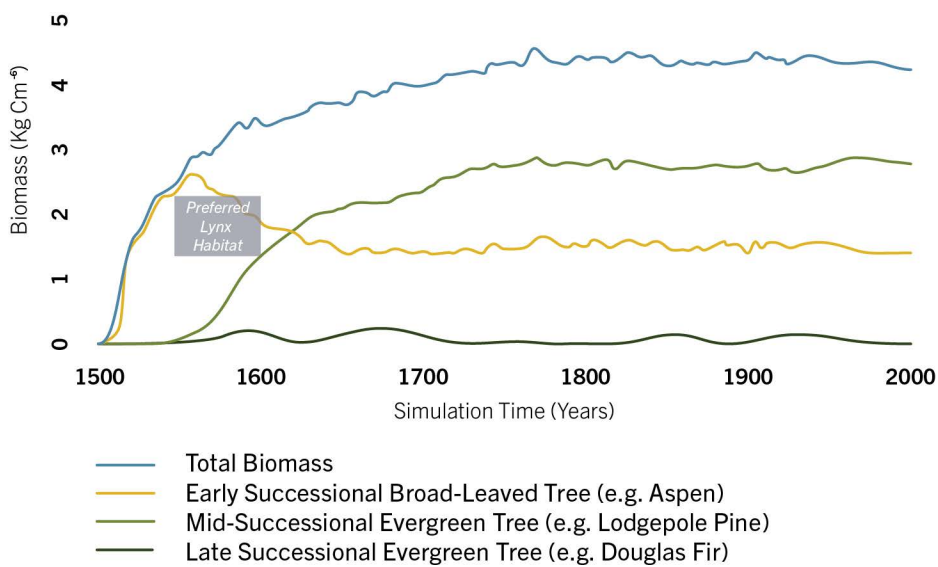


Fig. 1: Canada Lynx prefer early successional vegetation regimes, which can occur after fires such as those that burned in YNP during 1988.

whole lot more. What if the local inhabitants had somehow communicated the presence of the babbler during the past 170 years? How often does that happen around the globe? In Yellowstone? It's going to take more than a village to confirm their population status. It's going to take a cooperative community.

So, what if in Yellowstone, the world's first national park, we have a chance to continue and expand the needed monitoring efforts, work together and share data? That's why in 1992, YERC's Chief Scientist initiated a 5-year inventory and monitoring effort that resulted in the confirmation of fisher (3 photos and 18 likely tracks), wolverine (2 photos, 7 unmistakable tracks), and no lynx (see Table 1). However, an extensive park-wide effort by YNP park biologist Kerry Murphy did find a few pockets of lynx on the east side of Yellowstone Lake, outside of our study area. This prompted YERC to predict how habitat change might result in the increase of this isolated population. So we ran a habitat succession model with data from YNP to see if the succession of dominant tree species might create temporal windows of habitat preferred by lynx because certain habitats create snowshoe hare habitat conditions – those early successional stage forests with an understory for snowshoe hare, the preferred prey of lynx (Figure 1). Might snowshoe hare increase? Does a lynx walking in those forests make a sound? Leave a sign?

This is why we would like to continue our collaborative community effort to monitor these secretive forest carnivores. The surveys in the early 90s were supported by YNP and the USFS and both agencies have worked since then to monitor these species with slim to nonexistent budgets. Yet, verified sightings continue. Fur trappers report them, Montana Fish, Wildlife, and Parks have verified evidence of lynx, wolverine, and other rare carnivore species in areas no one predicted. Sportsmen and recreationists often report sightings. Even I saw a fisher cross the road

Species	Camera Traps			Snow-Tracking		
	Detection Events	Camera Nights	Detection Rate	Detection Events	Kms Covered	Detection Rate
American Marten	118	2,540	0.046	1,281	648	1.976
Fisher	3	2,540	0.001	18	648	0.028
Wolverine	2	2,540	0.001	5	648	0.008
River Otter	0	2,540	0.000	3	648	0.005
Fox	78	2,540	0.031	585	648	0.902
Coyote	23	2,540	0.009	2,094	648	3.230
Wolf*	0	646	0.000	55	223	0.246
Mountain Lion	1	2,540	0.000	7	648	0.011
Bobcat	0	2,540	0.000	2	648	0.003

Survey results of mid-sized carnivores and two larger species 1992-1997 testing efficacy of camera traps and snow-tracking of expert identified footprints. We 'assumed' lynx were absent from our study area in northern Yellowstone.

** Wolves only present in study area during final two survey winters*

in front of me during a blizzard in the winter of 1992 at Elk Creek in YNP – it looked like a long black cat with a long tail! Our field biologists have seen wolverine cross three times in front of their vehicles near the northeast entrance of YNP. Many of these rare carnivores are reported every year from road crossing, mortalities, measurements of fresh tracks, hair snagging devices, video wildlife cameras, and even photographs taken by non-biologists. Can we pull together this information and devise a better, more improved survey that our initial survey in the 90s?

So, there is no question they are present in the GYE but what do we know about the health of their populations? Are they blinking out as climate change reduces the snowpack and limits the distribution and denning habitat for female wolverines? Have warmer, shorter winters increased the number of river otters

now commonly seen at high elevations on the Beartooth Plateau? Do fisher, who specialize in preying upon porcupines, have enough to eat in order to reproduce and survive? Do lynx have enough mid-successional stage forests to support their needed snowshoe hare habitat types? Can marten survive on vole populations alone or do they need to augment their diet with tree squirrels? Do bobcat populations increase when trapping pressure is reduced? Knowing they are present by an occasional verified sighting does not answer these important questions. Yet, it's the perfect start to a verifiable monitoring program that can provide the information we need to make decisions in a timely manner – and that prevents population decline or local extirpation.

Robert Crabtree
 Co-Founder and Chief Scientist
[Join YellowstoneNET today.](#)



THE EPIIC TOPCODER CHALLENGE

Find out how we are creating an innovative data distribution of ecosystem diagnostics with volunteer developers from around the globe

Photo: Beartooth Pass. Peter Obermeyer

Since 1993, YERC has strategically focused on long-term research and monitoring of large watersheds, large landscapes, and entire regional ecosystems. At the same time we take advantage of both natural and policy experiments like the great fires of '88, wolf restoration, and climate change. This research at ecosystem scales has resulted in new breakthroughs such as adaptive ecology, a subdiscipline that copes with the many agents of change, but also has led to a new monitoring approach that uses iterative learning and artificial intelligence to support smart decision-making. Our approach has also led to precision ecology that uses the concepts of adaptive ecology to solve problems by simultaneously monitoring critical diagnostics - like human serum parameters only for living ecosystems - as suggested by our research and then to use those diagnostics for new types of predictions. Rather than a 30- or 50-year projection of what climate change might impact way down the road, we are pioneering two scientific breakthroughs: (1) short-term ecological forecasting (similar to weather forecasting) and (2) What-if-Scenarios, where decision-makers and stakeholders can see the consequences of their decisions (logging, restoration, development, disturbance, agriculture) in real-time. Imagine agencies, businesses, land-owners, and conservation

groups all gathered around the table to view What-if-Scenarios and make decisions before or as impacts occur. Think about how managers can build better and better BMP (Best Management Practices).

Our chosen ecosystem diagnostics for our RiverNET, LandNET, and WildNET programs optimize the tradeoff between economic constraints and ecological importance. Often the diagnostic you most need isn't available or you can't get it in a timely manner. Thus, our novel and pioneering approach not only requires the best, affordable diagnostics but also innovative distribution techniques for end-users and offering them in real time or at least with what we call the necessary turn-around time. For example, if you want to guide smart irrigation practices you might want to know soil moisture every day. If it's land-use planning every year can often be soon enough. Collectively, these challenges have guided us to create an internet platform we call **EPIIC (Ecosystem Prognosis, Impacts, and Information Cooperative)** which makes it possible to remove these barriers to better allow informed decision-making and conservation success in the Greater Yellowstone Ecosystem. And it's no small task to build EPIIC which has a central focus of intelligent decision-making to protect, maintain, and restore, if necessary, the integrity and health

of the natural resources we rely upon. Ecosystem health is the cornerstone of a well-functioning society, and without this resource, the well-being of humanity would be compromised. Like in human medicine, we also need to define a well-normal state as a standard or benchmark. As our ecosystems weather new and unprecedented environmental challenges, both natural and human-related, the essential need for accurate and timely environmental data can't be overemphasized.

As a result of this critical need for timely ecological data distribution, using new technologies, YERC has sought out a collaborative partnership with **Topcoder**, a recognized world leader in providing technological solutions, which is credited for designing our highly-efficient EPIIC user interface. With the help of Topcoder's **'Crowd for Good'** initiative, an innovative platform infrastructure is being constructed to more accurately host, access, and model the complex ecological data (diagnostics and predictions) that is so crucial in maintaining the health of the GYE!

A Road Less Traveled for the GYE: EPIIC Platform Challenge Series

Topcoders Crowd for Good initiative is a critical component to the functionality and complex infrastructure being designed and developed by Topcoder. Topcoder is asking



Photo: Ashton Jorgenson

its global community of developers to come together for the greater good of preserving the health of our fragile ecosystems and natural resources. This web of talented developers has the capability of developing digital complexities to further progress our vision of a highly efficient ecological data sharing platform. Topcoders global community of developers is tasked with furthering the design of the EPIIC user interface, alongside populating ecological data sets, and modeling ecosystem complexities. The process of producing this intricate framework is divided between four phase challenges:

Phase 1: Platform Experience Design (UI/UX)

Phase 2: Platform Infrastructure Development

Phase 3: Platform Feature Development

Phase 4: Population and Model Development (Data Science)

Phase 1, Platform Experience Design, has been completed. Topcoder is now well into phase 2 of this initiative.

Developer Incentives

To incentivize its global community of talented developers to get involved in the Crowd for Good/EPIIC production process, Topcoder and YERC are teaming together to award prizes based on Topcoder members who have gathered the highest amount of 'wins' throughout the challenge phases. Topcoder members that participate in the challenge have the chance to win the following prizes: YERC Topcoder Points - can be collected throughout the challenge series to win the overall grand prizes at product completion:

- YERC Swag (Top 2 winners)
- Hats
- Maps
- Topcoder TCO20 Points

Members whose submission is used in the EPIIC platform will get credited on the finalized platforms credits page. Members whose submission is used in the EPIIC platform will get a certificate of participation from both YERC, and Topcoder.

The grand prizes for this challenge series include:

- Yellowstone Guided Tour Packages (Excluding Travel Expenses)
- Five Yellowstone Virtual Ecological Workshops

EPIICs Rancher Dashboard Application

An essential key to executing EPIIC is to choose an issue critical to human and natural systems and build an end-to-end solution - from data collection to decision-making by end-users. For this we decided to build a dashboard application of diagnostics and interaction capabilities for ranchers and ranchlands in Montana. We think of it as a portal for Conservation Ranching Intelligence. With the help of Topcoders global community of developers, an application is being produced that is tailored to ranchers interested in conservation and both short-term and long-term profits. To accomplish this goal, we have initiated an organic collaboration with another organization that specializes in

EPIIC

sustainable ranching and works closely with Montana producers. As such we reached out to the [Western Sustainability Exchange](#) (WSE) and their resilient ranching program that includes generative agricultural practices. The Western Sustainability Exchange, a widely respected non-profit organization, has focused a significant amount of its efforts on aiding in the conservation of wildlife habitats, soil health, water resources, rural communities, agricultural land, and producers themselves. By doing so, the WSE has successfully implemented new and sustainable production strategies among more than 1,000 farms and ranches in the region and has educated and assisted thousands on the importance of sustainable farming and ranching practices. The Western Sustainability Exchange has fostered an incredible relationship with the ranching community in the Greater Yellowstone Ecosystem, and focuses on providing this community with both scientific and technical assistance. The WSEs core focus is to preserve Montana's precious ecosystems for future generations.

A ranchland monitoring program was also created with the help of the WSE that has the ability to efficiently distribute soil, vegetation, and biodiversity diagnostics to all ranchers who are willing to participate in the Greater Yellowstone Ecosystem. The diagnostics monitored are then streamed to the rancher dashboard application within the EPIIC platform and will allow all participating ranchers to easily access the key diagnostics collected from their land, in an all-in-one cloud-based platform. The data hosted within this collaboration is distributed using the complex EPIIC infrastructure that Topcoders global community of developers has tirelessly produced with YERC data scientists.

With the help of this rancher dashboard application, participating ranchers will have the ability to make informed decisions for the

health of their land, based on accurate and timely soil, vegetation, and biodiversity data that has been collected directly from their property. Lill Erickson, the executive director of the Western Sustainability Exchange stresses the importance of this collaboration in the form of "marrying excellent scientific practices with practical ground application". By doing so, this application is able to offer relevant scientific data on an accessible platform that is designed for easy use. With the production of an easily accessible platform for data distribution, Montana ranchers will have the essential information to manage ranchlands properly and more efficiently. Erickson highlights that the lack of a practical application providing important scien-

tific data has formed a substantial barrier to success for [regenerative agriculture practices](#). With the introduction of EPIICs rancher dashboard application, this barrier will be eliminated.

With the help of the Western Sustainability Exchange and Topcoders global community of developers, we hope to create a platform that inspires and educates individuals for the greater good of the Greater Yellowstone Ecosystem and Montana ranchlands.

Alexa Jorgenson
YERC Marketing Coordinator



[Help support our EPIIC Coalition](#)





YERC Intern, Frank Dean, ice climbing. Captured by Seth Anderson.

ICE CLIMBING WITH WOLVES: WINTER RECREATION AND NATURE

In the East Fork of Hyalite, just before the road closed on January 1st, my climbing partner and I hiked back to the Comet Alley to do some ice climbing. Only about a mile down the snowy but well traveled trail there was a freshly killed elk carcass laying not too far out of sight. Around the carcass, in the snow, there were the scattered prints of wolves. It was obvious a pack of wolves had taken down the elk the night before and had been feasting on it all morning. There were clear signs of the chase and the kill. After stopping to take a look at the carcass and inspect the fresh wolf prints, we began to wonder if we had chased and scared the wolves away from their needed food source? Were they close by

watching us and wanting to return? Had we, as humans, caused the elk to roam outside its normal habitat?

These local backcountry access areas have seen a substantial increase in traffic and use that tracks human population growth in the region but more so since the Covid-19 pandemic started almost one year ago. According to Friends of Hyalite's traffic counter, January 2021 saw a 67% increase in vehicle traffic from the previous year. This data indicates that because of this pandemic, more people are recreating in the backcountry. But what does this mean for the ecosystem, or more specifically, its wildlife? After reaching out

to Hilary Eisen with the Winter Wildlands Alliance, I learned about the impacts of backcountry use on wildlife, especially during winter when resident wildlife are energetically stressed. Many studies have been conducted on recreational impacts including a seminal study done in Yellowstone National Park in the late 80s that documented the fear and flight of elk from backcountry skiers. The elk were fitted with special radio collars that transmitted their travel path and a continuous heart rate signal from a surgically implanted heart monitor to document recreational impacts.

We also know that there are many other impacts to wildlife like elk, both natural like wolves, and human-induced, for example, logging, snowmobiles, agricultural practices, hunting, roads, and even hiking. Research and common sense observations also indicate that wildlife can become accustomed or 'habituated' to such impacts. We see, for example, elk returning to logging operations years after its start, deer returning to formerly irrigated pastures, and even trout returning to the same place they were captured and released within 5 minutes. What does this all say, what does it really mean over the long run? And most importantly, for human impacts, how do we know when enough is enough? Is the impact fleeting, does it cause long-term damage to the individual or at the population-level which is what agencies use as a metric for management decisions? And if it's too much, how do we mitigate, adapt to, or cease that impact? How do we measure a chosen metric and use it as an early-warning indicator to take action before the population declines?

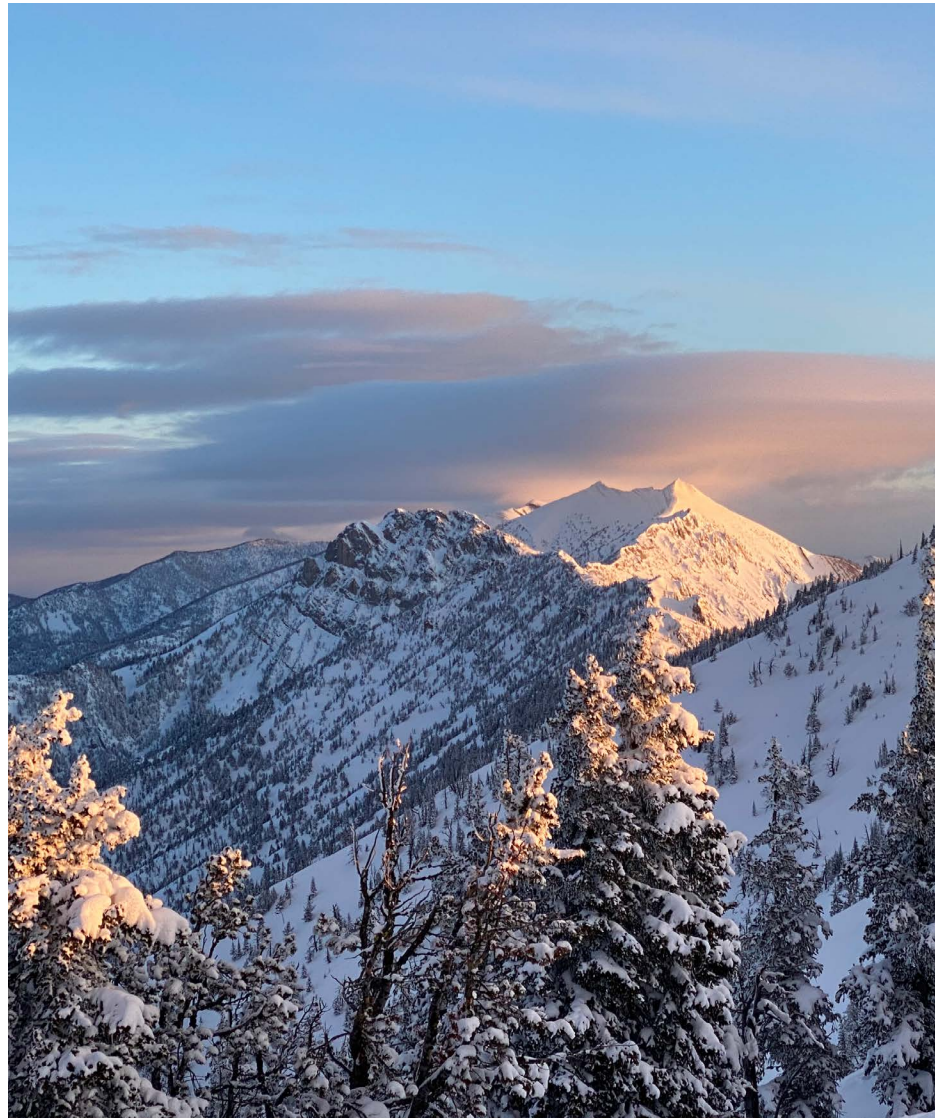
Most difficult is to try and factor out human impacts from natural impacts because research indicates that human factors can act independently from natural impacts and

WILDNET

cumulatively add up. Others compensate for one another while others are multiplicative. For example, in Yellowstone National Park we documented increased wolf mortality on coyotes caused a concomitant increase in mortality from other causes (mountain lions and vehicle strikes). Some coyotes were relegated to habitat where they encountered mountain lions and also sought habituated 'refuge' near roadways that were avoided by newly reintroduced wolves. Overall coyote populations declined but responded by producing more pups and maintaining the same or increased number of breeding pairs. That is not what we expected to find.

This illustrates all how incredibly complex nature can be. Individuals as well as populations respond differently to different impacts at both short-term and long-term time periods. They also interact with other species and are naturally responding to natural impacts such as climate, predation, and competition. To bring it to human terms, imagine trying to run a Yellowstone gateway business with so many factors interacting at so many levels and time periods. And some at small scales and others at larger market scales. Similarly, we humans have a very difficult time 'managing' an ecosystem let alone an individual species. This more than justifies long-term monitoring starting with a simple inventory of what's in your 'store' and how that inventory (population size) varies over time from impacts from within (how we manage our business) and outside market factors. One thing is for sure, when times are lean during the winter we have to carefully make decisions about how we run our business and if we even stay open during the winter season. For elk, and other energetically stressed wildlife during the winter, this couldn't be more true. It's the winter bottleneck that winter wildlife face every year. When small impacts could cost them their lives.

Meanwhile, Eisen is working on an updated report of recreational impacts and a previous report shows how a dramatic increase in



Bridger Bowl during the pandemic shut down, March 2020. Peter Obermeyer

backcountry use will impact the wildlife and ecosystem. The report from the Winter Wildlands Alliance was conducted on snowmobile use but includes the impact popular trails, such as the East Fork trail, can have on ungulates. With a 67% increase in traffic, it can be assumed these popular trails are seeing much more traffic and creating a negative impact on the surrounding wildlife. It has been suggested that these trails divide populations and habitats of wildlife.

Because of this significant increase in backcountry recreation, it can be reasonable to assume humans are creating an even bigger impact on the ecosystem during the critical

winter season when wildlife face so many other challenges in order to survive. Research suggests our favorite ice climbing approach trails, skin tracks, and snowmobile areas may actually create a cumulative amount of stress on wildlife. This stress could cause ungulates to be in areas they would not usually be or confined to areas much different than they are used too. Do these impacts keep them away from prime foraging areas? Although we may have scared the wolves off their fresh kill, could the increased use of that trail caused the elk to be there in the first place as they sought refuge away from wolves? Now we know why we need standardized long-term monitoring, especially during the critical



winter season for our resident wildlife that are energetically stressed in the winter.

These analogies may or may not put things into perspective. We sometimes don't have the resources we need to sustain our own businesses and livelihoods during difficult times like 2020. So imagine how difficult it is to try and manage nature. So we strive to do the best we can with those limited resources. The way forward starts with assessing our own impacts like my unintended disturbance of a wolf pack on a freshly killed elk. We have a great tradition in our country to mitigate the detrimental impacts of our actions. Along with mitigation is the ability to adapt our actions in a way that coexists better with the ecosystems we rely upon for our needs whether it be food, shelter, or even recreation.

Frank Dean

YERC Intern and Outdoor Enthusiast



[Sponsor a wildlife camera today.](#)

NOTES FROM THE FIELD

Meet Luke Wilde! Luke is a visiting NSF funded graduate researcher working with YERC this year to investigate the processes influencing the interannual trends in the demography and distribution of Yellowstone's northern elk herd in the winter. Luke grew up in Montana, where he first became interested in wildlife biology and natural resource management. While attending Gonzaga University (2017), Luke worked on bird and mammal projects in Washington, Costa Rica, Colorado, and Montana. He recently received his Master's from the University of South Carolina (2021) where he studied the influence of top-down and bottom-up controls on the early life survival of shorebird chicks in Alaska. He will be starting his PhD at the University of Wyoming to understand the influence predators and snow conditions have on mule deer migrating throughout the GYE.

Luke Wilde





Kaelyn Jackson, YERC Intern, collecting aquatic insects to be classified by A.I.. Photo: Owen Robbins

Using Facial Recognition Software for Insect Classification: More exciting things are happening here at YERC! Kevin Browder, a YERC intern currently completing his Computer Sciences degree at MSU, has successfully developed a mobile application with the ability to accurately identify aquatic insects! This application uses facial recognition technology (a form of Artificial Intelligence) to classify aquatic insects and directly populate YERC's RiverNET database!

We are thrilled to have been [featured](#) in the Bozeman Daily Chronicle for this incredible development. Helena Dore, a writer for the Bozeman Daily Chronicle covering this piece, did an excellent job of highlighting Browder's achievement, as well as the core values of our non-profit organization. For more information, check out this article titled "MSU student develops app to classify bugs" which was released on November 15, 2020.

Wildlife Cameras—The Key to Successful Wildlife Monitoring: Our WildNET program is passionate about developing innovative strategies to assess the health of wildlife native to the Greater Yellowstone Ecosystem! They allow us to measure and monitor the vital signs of population health among a variety of incredible species in our region! One way of accomplishing this is through our use of wildlife cameras or also known as video camera traps. Through the use of our wildlife cameras, we are able to monitor fluctuation of species populations, species survival rate through winter, as well as early identification of disease.



Anthony Voutsinas, YERC WildNET Volunteer, retrieving wildlife cameras from Forest Service Land.

NOTES FROM THE FIELD



Anthony Voutsinas, a YERC intern, has been tasked with retrieving our wildlife cameras that we have strategically placed on Forest Service land in Paradise Valley. With the help of these wildlife cameras, we are able to consistently and accurately monitor the health of our precious wildlife!

YERC on TV—Bob's Thoughts on Predator Killing Contests: Dr. Robert (Bob) Crabtree, YERC's executive director and chief scientist, was recently interviewed for a popular HBO television show, Real Sports with Bryant Gumbel. The main topic of this interview was the ecological impacts and social aspects of Predator Killing Contests. There are several hundred per year across the US while some states have recently banned them. The interview looks at the ecological, economic, and ethical ramifications of what some see as 'killing for sport' while others consider it beneficial.

This episode of Real Sports with Bryant Gumbel is planned to air on April 2021. We urge our followers to tune in to learn more on this controversial topic!

Alexa Jorgenson
YERC Marketing Coordinator
[Sponsor an intern](#)



WildNET Wildlife Camera Data

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