

RAPTOR VIEW RESEARCH INSTITUTE

2012



THE FLYWAY

A Newsletter of The Raptor View Research Institute

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MESSAGE FROM THE PRESIDENT



Welcome to Raptor View Research Institute's (RVRI) seventh annual newsletter. This year we decided to change up our newsletter a little. We have added some color and slight design changes. Additionally, we named it "The Flyway" based on our research endeavors centered on raptor migration ecology and our efforts to identify new raptor "flyways." Credit for the name goes out to our very good friend and colleague, Mat Seidensticker. Thanks Mat.

Montana is a big state consisting of many remote mountain and valley systems. This topography tends to disperse raptor migrants across the landscape, making it difficult to discover new migration concentration sites. Additional count sites help us fill in the missing pieces of the raptor migration puzzle in the state and the West in general, while expanding and creating great new research and educational opportunities. After nearly 20 years of personally exploring literally dozens of ridgelines and mountain top locations, I assure you, it can be very challenging.

Since 1979, when Fred Tilly discovered the fall Bridger Mountain Golden Eagle/raptor flight, a few other sites have only recently been found. These locations and who discovered them are as follows: Rogers Pass spring and fall migration (*Fred and Cathy Tilly*), Nora Ridge fall (*Rob Domenech*), Jewel Basin fall (*Dan Casey*), Bull Mountain (*Rob Domenech and Mat Seidensticker*) and MPG Ranch spring and fall (*MPG and RVRI biologists*). Exciting is one way to describe what is happening with raptor migration research in Montana. Please see the sections on *The MPG Ranch*, *Nora Ridge* and *the Bull Mountain* to learn about our 2011 migration counts, banding results and more.

Another important development in 2011 was the formation of the *Montana Golden Eagle Working Group*. This multi-agency/organizational partnership includes biologists, land managers and personnel from the *Bureau of Land Management*, *Montana Fish, Wildlife & Parks*, the *U.S. Fish & Wildlife Service*, *U.S. Forest Service*, *Montana Department of Natural Resource and Conservation*, *Craighead-Beringia South*, *Montana Peregrine Institute*, *Montana Audubon*, and *RVRI*. In part The Working Group was formed after our 2011 Montana Wildlife Society plenary session, *The Status of Golden Eagles in North America*. We suggested the formation of a group to help manage Golden Eagles in wake of the on-going energy boom across the West and now in Montana. The group is capably headed up by Catherine Wightman, Bird Conservation Coordinator with Montana Fish, Wildlife & Parks.

In closing, I hope that you are pleased with our accomplishments. As you read through this newsletter in its entirety or simply page through it, you will see that we continue to strive to do our best and stay true to our mission. We hope that you will consider us for a tax-deductible contribution. Your support is needed and ensures the continuation of our research, conservation and education programs. Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Robert Domenech".

Robert Domenech

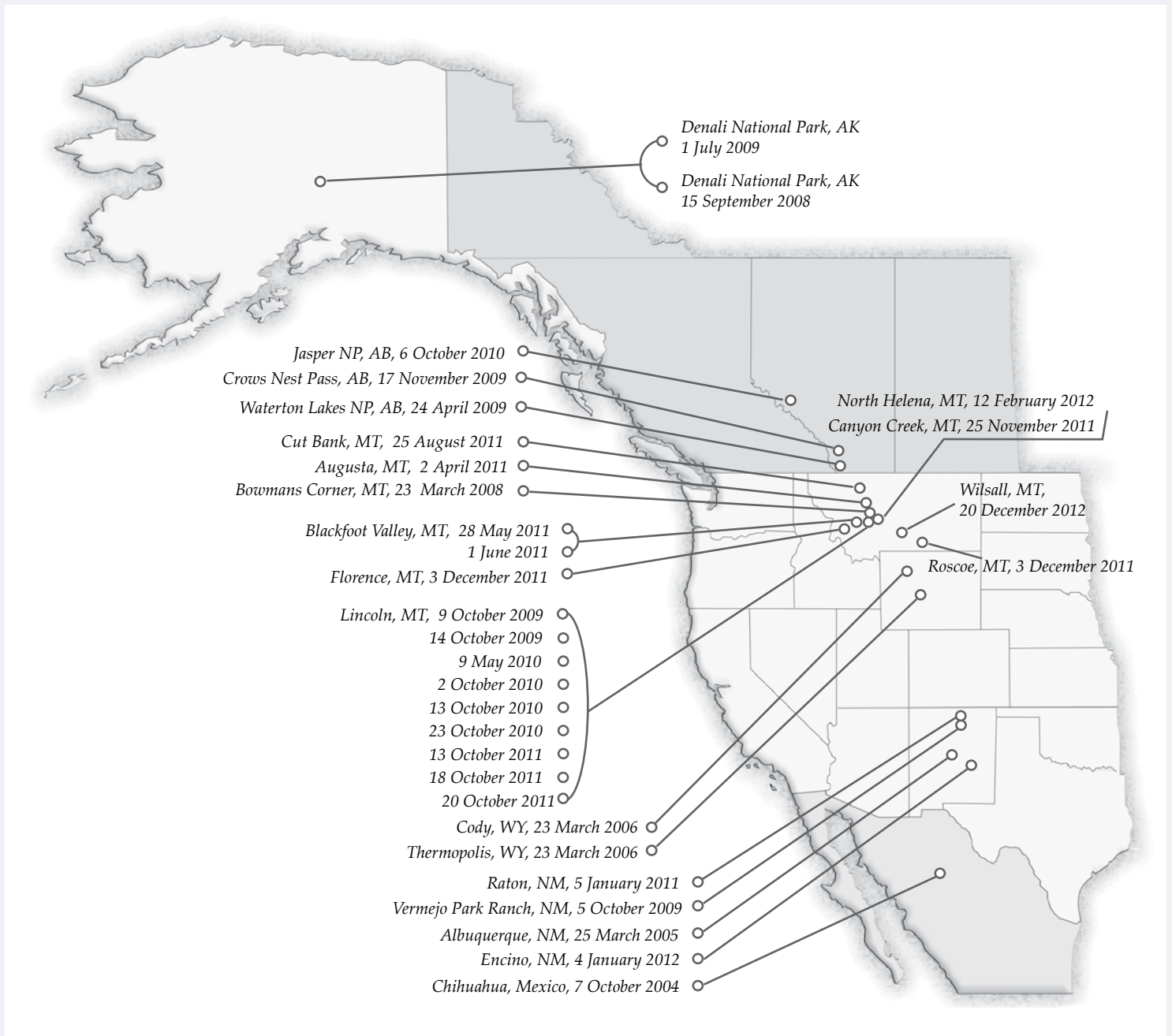


RVRI Executive Director Rob Domenech



Rob assisting with Osprey rescue

GOLDEN EAGLE WING TAG UPDATE 2012



Map of Golden Eagle Wing-tag encounters as of Spring 2012

RVRI has been applying vinyl wing-tag markers (blue with white alpha-numeric's) on all captured Golden Eagles since 2004, and to date 151 migrant eagles have been wing-tagged and banded from our stations. This technique is considerably more effective than banding alone as a means of identifying individuals and receiving return information.

These encounters are helping us learn more about Golden Eagle migratory ecology, such as, where migrants are wintering and summering, how far they travel, how long they live and the cause of individual eagle mortalities. In 2011, eleven of our wing-tagged eagles were encountered more than any previous year. This brings our total number of wing-tag encounters up to 33!

We are very pleased with our encounter rate of roughly 16% which is considerably higher than standard banding efforts alone.

As time passes and data continues to trickle in, we look forward to learning more of the outcomes of these marked individual eagles to learn more about Golden Eagles as a whole.

EDUCATION



RVRI continues to offer free, hands-on outdoor educational workshops for local school groups, youth homes, college students, community organizations, the general public, and for charitable events. We feel that 'the informal, non-traditional classroom' is a great way to augment conventional approaches to learning, while exposing students to a very unique outdoor education experience. We are able to involve students from a variety of backgrounds and circumstances in all aspects of raptor research, and introduce them to key ecological principles, raptor ecology, and conservation biology.

Raptor View's Education Curriculum

RVRI offers a comprehensive educational curriculum designed and written by Noel Nies- Nesmith, as part of her Masters Degree in Education. Noel deftly merges field research techniques and classroom learning into an informative, fun and complete format designed primarily for middle and high school age students.

Participants in our educational programs include:

Audubon Society, Missoula Youth Homes (MYH), Seeley-Swan High School, Potomac School, Willard Alternative High School, Flagship Youth Program, WORD (Summer Arts and Leadership Camp, Learning Times Child Care), Clark Fork Watershed Education Project, Natural History Center, and others.

All the participants of our programs experience a unique view into wildlife research and conservation that few people ever see. We feel this is particularly important with the kids, as we instill in them an appreciation for the often misunderstood 'bird of prey.'

Day in the Field

RVRI donates a day in the field for local community fundraisers, charitable events and other non-profit organizations. The day is spent working with RVRI biologists on one of our research projects. Participants assist directly in all aspects of our field work. We enjoy sharing our research and are glad we can help.

Groups and charities include: The Natural History Center, AniMeals, Missoula Children's Museum, Montana Audubon, Missoula Carousel Association, Footloose Montana, National Public Radio, YMCA, Traveler's Rest Preservation and Heritage Association, Paxon School (art curriculum fundraiser), U of M Legal Services -Environmental Law Group, and others. Please feel free to contact us if you think we can help.





FALL MIGRATION AND BANDING RESEARCH FROM NORA RIDGE

This fall we successfully completed our sixth season of research from Nora Ridge along the Rocky Mountain Front (RMF) in west-central Montana. This project is part of an ongoing effort to monitor trends in raptor populations of the northern Rocky Mountains, with an emphasis on Golden Eagles.

The Crew

As usual, we had a highly motivated field crew. Full season banders included RVRI executive director Rob Domenech, William Blake, Erik Enzien, Vince Slabe, Tyler Veto, Stephen "Step" Wilson, Sarah Norton and Adam Shreading. In addition Bryan Bedrosian showed up with an entire crew of his own, including Ross Crandall, Kathy and Dean Townsend, Jill Learned, Aaron Nolan, and Megan Ruehmann. When Bryan shows up, the energy level of the entire crew is amplified tenfold! Finally, after a two-year absence from the project we had veteran raptor migration specialists Fred and Cathy Tilly back to head up the Nora Ridge count.



Aaron Nolan with young Peregrine Falcon



Kathy Townsend with Cooper's Hawk



Jill Learned with Golden Eagle



William Blake with dark morph Rough-legged Hawk



Stephen "Step" Wilson with sub-adult Bald Eagle



Cathy Tilly, Sarah Norton and Tazzy scan for raptors

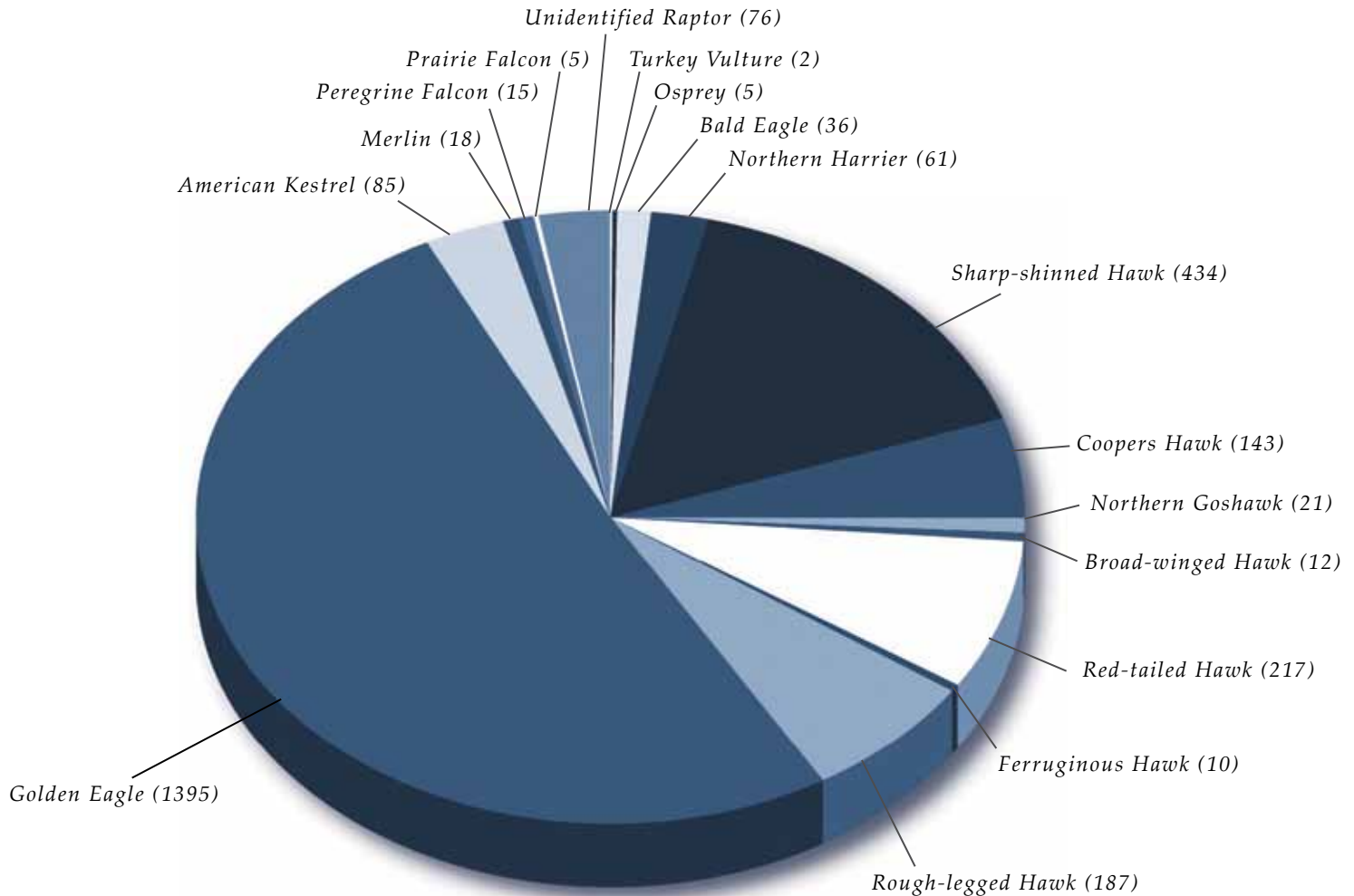


Tyler Veto with young Northern Goshawk



GOLDEN EAGLE AND FALL RAPTOR MIGRATION COUNT FROM NORA RIDGE

Observations were conducted from September 8th through October 30th. During this period, six days were suspended due to unworkable weather conditions. A total of **2,746** raptors were counted in **310** hours of observation, comprised of **16** species, including Turkey Vultures. The Golden Eagle total came in at **1397**. Peak days included **154** on October 9th, **220** on October 10th and **105** on October 17th. Golden Eagles comprised **50.8** percent of all observed migrants.

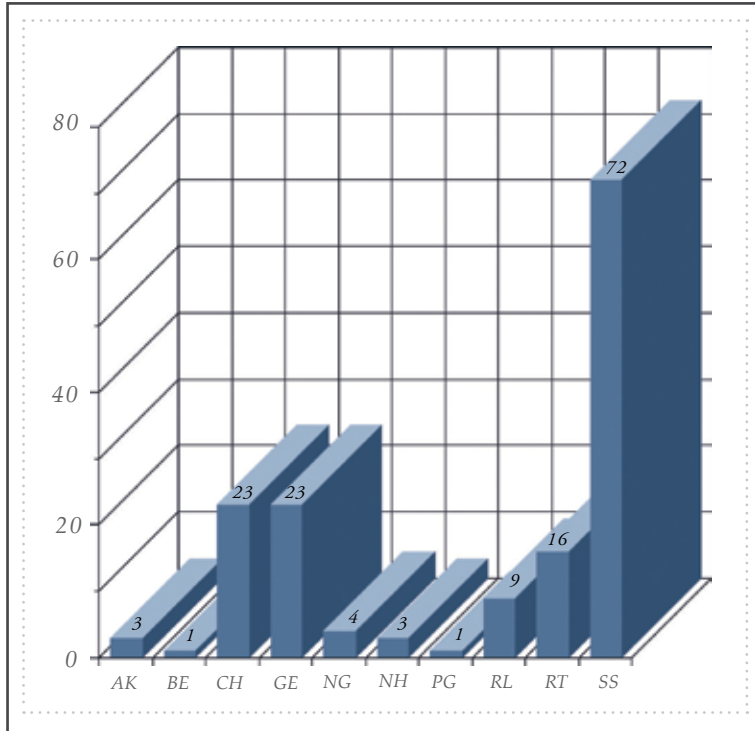


The Rough-legged Hawk (RL) migration numbers this season are note worthy. We observed 187 RLs during the count compared to 76 in 2010. On October 25th, 89 RLs were counted, this is the single highest count number observed for this project. Fred reports, the count was 50% higher than the 2007-2010 average. He also describes favorable flight conditions for the species, with light variable winds and colder than normal temperatures. Most of the RLs we count tend to cross the Continental Divide from the plains heading south or southwest past the count site, presumably destined for intermountain valleys.

William Blake photo



BANDING SUMMARY, NORA RIDGE



Banding Summary for Nora Ridge 2011

Banding Summary, Fall 2011

We banded from September 14th through October 27th (weather permitting), for a total of **35** trap days, compared with **36** in 2010. We banded a total of **152** raptors compared with 134 in 2010. We captured **23** Golden Eagles, with all but two caught on the ridge. In 2010 we set our record of **36** Golden Eagles, 33 of those caught on Nora Ridge. The difference was likely due to three days of steady rain during the first week of September. Timing is very important with regard to capturing migratory raptors.

Highlight Capture:

We had our first ever recaptured wing-tagged Golden Eagle (C-34) this fall. C-34 was first captured March 22nd, 2007 near Sterns Hall out on the plains of the Rocky Mountain Front. At the time, her age was estimated to be three-years-old based on plumage characteristics; her gender was determined in the field based on body measurements and later confirmed through DNA. She was re-sighted on Oc-

tober 14th, 2009 feeding at our Flesher Pass; road-killed deer bait station. She was encountered again October 18th, 2011 almost two-years to the day at the same location as in 2009. On October 19th she was re-captured for a close inspection.

She appeared to be in excellent physical condition, with tags holding up very well. She was parasite (lice and mite) free. Her eyes had lightened some in four years to a beautiful yellow-gold color. At the time of capture in 2007 she had sub-clinical levels of lead in her system at 30 micrograms per deciliter. This time around her lead levels were more than twice what they were in 2007. We find that greater than 50% of our captured eagles have elevated lead levels. What effect this has had or may have on C-34, and for that matter the population of Golden Eagles as a whole, remains to be discovered. One thing for sure, it can't be good.

After some standard measurements, photos and a small blood sample we released her to continue on her south-bound migration. We hope to encounter C-34 again, along what appears to be a regular migration route for her. Thanks to our dedicated crew and many helpful volunteers for making the fall of 2011 so successful. 🦅

Ronan Dugan photos





ADULT GOLDEN EAGLE SATELLITE TRACKING STUDY 2011

Compared to young Golden Eagles, adults are far less studied on migration with satellite telemetry. This is largely due to the difficulty of capturing wary adults. We can learn more about Golden Eagle migratory ecology as a whole by studying adults, as they are proven survivors and have completed their migratory journeys many times over.

Long-term migration count surveys of Golden Eagles on the Rocky Mountain Front flyway (RMF) indicate a 15 year declining trend in both fall and spring counts. This trend is more pronounced in the spring count totals and may be due, in part, to an increase in mortalities occurring on wintering grounds in the Lower 48. It is the goal of this project to learn more about Golden Eagle fall and spring migration routes, stopover areas, winter range movement patterns, and potential hazards within these areas.

Threats to migrating eagles include: power line electrocution, poisoning, shooting, lead contamination (due in-part to fragmented rifle bullets in carrion and gut piles), vehicle collisions, habitat degradation and others have been ongoing for many years. In addition, wintering ground destinations such as: Wyoming, Montana, Colorado, New Mexico and Texas have been subject to rapid habitat changes from the oil and gas development

boom of the last two decades. Furthermore, large scale wind farm developments are also a concern, especially when located along migration routes and wintering areas. Threats to Golden Eagles have clearly increased and may have reached the point where reproduction is unable to keep up with increasing mortality.

Our tracking data is being used by land managers in Wyoming and Montana, as energy development is expanding across these states very rapidly. One of the main goals of this project is to aid land managers and industry in the placement of these large scale facilities. Additionally, this project will help us better understand the ongoing effects of these industrial areas, as we observe how these satellite tracked eagles behave in and/or around these facilities.

This fall 2011 with major support from the Bureau of Land Management (BLM), we fitted five migrating adult male Golden Eagles with satellite transmitters, bringing our total to 11 over the past six years. Currently, we have six eagles with working transmitters from this project.

We have chosen these eagles people names: Elaine, Jerry, George, Cosmo, Newman and Uncle Leo. Calling them by their transmitter ID numbers gets old, dry and a



Step Wilson photos



RESEARCH (CONTINUED)



little confusing. Also, it may help others to keep track of them as well (see *below for details*).

Elaine Update:

On October 21, 2010 we fitted her with a satellite transmitter (see our 2010 newsletter @ www.raptorview.org to learn more). Elaine summered up near the Brooks Mountain Range in northern Alaska. On October 1st she began her migration south and arrived in Montana on October 29th 2011. Elaine once again wintering in Montana's Paradise Valley, north of Yellowstone National Park. We are glad to report Elaine appears to be doing well!

If you are interested in keeping track of Elaine or any of our other eagles, check out **Wildlifetracking.org** (a service of Seaturtle.org). Go to the top of the Home Page and click on ANIMALS → BIRDS → Rocky Mountain Adult Golden Eagle Project.

Our major partners of this project are: BLM Montana, Bryan Bedrosian with Craighead-Beringia South and Melanie Smith, GIS analyst with Audubon Alaska. Their support, passion, dedication and expertise, has been essential to the successes of this project. Thank you!

Ronan Dugan photo





RESEARCH (CONTINUED)

GOLDEN EAGLE RESEARCH PROJECTS 2011 • • • •

Determining Gender in Golden Eagles

Morphological measurements such as, wing-chord, tail length, body weight, etc., have proven to be reliable indicators in determining gender for several raptor species. In many raptors, females are often measurably larger than males, when we consider simple descriptors such as; mass and wing-chord. However, this is not always the case with Golden Eagles. By collecting DNA and comparing it to our suite of morphological measurements, we hope to identify the most accurate technique for sexing Golden Eagles in hand.

Wing-loading (near completed)

Wing loading is a key aerodynamic feature of flight, representing the relationship between weight and wing/tail surface area. It is associated with how a particular raptor species hunts for prey and the types of prey it can capture. Lightly wing-loaded raptors such as Harriers and Kites exhibit a slow, buoyant flight with a hunting strategy characterized as "searching" whereby they commonly hunt and fly in an energy efficient manner, not requiring great speed to capture their prey. Compared with "attackers" which are generally heavily wing-loaded raptors such as, the Gyrfalcon and Merlin. These powerful, high speed flyers employ a direct pursuit style of hunting, often aimed at a swift, larger bodied (*relative to their size*) prey species.

We need about ten more hatch-year Golden Eagle for the wing-loading project to be complete.

Ronan Dugan photo



Measuring culmen length of Golden Eagle

Step Wilson photo



Tail area is calculated on a young Golden Eagle as part of the wing loading study

Ronan Dugan photo





Eagle Lead Project (first phase completed)

Lead has long been documented as a serious environmental hazard to eagles and other predatory, opportunistic and scavenging avian species. Due to lead poisoning in the Bald Eagle, Golden Eagles and numerous waterfowl species, the use of lead shot for waterfowl hunting on federal and state lands was banned in 1991. Mounting evidence suggests that the problem persists and the source of the contamination is coming from gut (*offal*) piles left behind by hunters.

Golden Eagles are opportunistic feeders, known to scavenge offal piles and take wounded animals. To date we have lab analyzed blood from **162** Golden Eagles and have found that nearly half of our sampled eagles had elevated blood-lead levels. We will begin writing-up our findings for publication in a peer reviewed journal this winter, as this information has obvious land management and conservation implications. However, this is a long-term project and we will keep on sampling eagles for lead, adding to our growing database and continue with our educational outreach. We hope that over time, we will see a decrease in lead levels of our sampled eagles, as people learn more about the health hazards (*to humans and wildlife*) of using lead based ammunitions for hunting.

Stable Hydrogen Isotope Project (completed)

Every fall, thousands of northern latitude raptors migrate through Montana on their annual journey from breeding and natal areas to wintering grounds. Understanding where that raptor originated is our main question. By utilizing innovative sampling techniques, RVRI has been able to more accurately estimate that "place of birth."

Specifically, an isotope of hydrogen, called deuterium, was selected due to the ratios of deuterium changing consistently with latitude. With this technique we only need to take a "thumb-sized" feather sample, which then can be analyzed to determine the ratio of deuterium. By sampling only juvenile birds, whose feathers are grown in the nest, we can estimate the individual bird's natal origin.

We sampled fall migrant juvenile Golden Eagles and Northern Goshawks collecting **58** and **35** samples, respectively. We have completed analyzing the data and will finish writing up our results this year sometime for publication.

Ronan Dugan photo



Drawing blood from the brachial vein of a Golden Eagle for toxicology and DNA studies



BULL MOUNTAIN

Bull Mountain is located between Whitehall and Boulder, Montana, and is approximately 25 miles long. Mat Seidensticker (*long-time biologist with Denver Holt and Owl Research Inst.*) and I got together during the summer of 2005 to explore the Bull Mountain for potential hawk counting and banding sites.

Mat volunteered and soloed those first exploratory fall counts in 2005. Hawk watching on four days (9/26, 9/27, 9/29, 10/6) Mat tallied (20, 79, 43, 74) raptors migrants respectively. In short, he got onto a very concentrated flight of raptors for Montana standards. Mat said, "...the raptors were everywhere... high, low, near and wide...!" He talked about how some of the migrants were so close it appeared that they were going to hit him right in the face! Unfortunately, and due primarily to logistical and limited resources, it would take us until 2011 to return to Bull Mountain.

I called upon my longtime friend and mentor Steve Hoffman (*founder of HawkWatch International and current Executive Director of MT Audubon*) to evaluate the site. We scheduled five days of observation spread out throughout the season. Steve and I were very excited about the prospects of getting out in the field to conduct counts on Bull Mountain. I was thrilled to be hawk watching with Steve and to finally be back on top of the Bulls after so many years.

Vince Slabe (*long-time biologist with RVRI*) joined us. This would be the first of five epic days of hawk watching from the Bull.

On September 21st 2011 we reached the summit around 11:45 am for our first day of observation. We arrived to find the flight was already well underway, so scrambled to find a prominent location to position our Great-Horned Owl decoy used to lure in the passing migrants. They were rising up one after another, "...four sharpies, three coops, two harrisers, one red-tail..." It would be an all day affair with peaks of 30 raptors per hour. I can still hear Steve, "...this is NUTS...this is CRAZY...! We knew then we had something for sure and had to get back there right away.

We plan to develop this site, as a collaborative effort between RVRI and Montana Audubon, with our first season of full-time counting beginning in 2012!

Counts for the 2011 season went as follows: We observed on five different days 9/21 (99 counted), 10/2 (156), 10/3 (92), 10/10 (65) and 10/13 (24). Total hours = 26.4; raptors/hr average 16.5. We ended up with **436** raptors comprised of **14** species.

Totals by species: SS (132), CH (87), GE (79), RT (32), AK (30), BE (12), ML (11), NH (8), NG (8), BW (5), PG (3), RL (2), OS (1), UA (6), UB (5), UE (1), UR (13).



Montana Audubon director, Steve Hoffman and Rob on Bull Mountain



Bob Martika photo

Juvenile Sharp-shinned Hawk



RVRI POWER LINE RETROFIT PROJECT • • • • •

Power line electrocutions are one of the major human-caused mortality factors to medium and large sized raptors throughout North America. Depending on the particular power line configuration, location and time in operation, a single pole can be responsible for the mortalities of dozens if not hundreds of individual raptors. Most electrocutions and injuries are the result of the raptor landing between phases on the cross arm. When they close the circuit, via phase to phase, phase to ground, or otherwise, the birds become energized and often die on the spot. Electrocution is a huge problem in many areas of the West, especially across prairie lands and agricultural fields where utility poles are some of the only perches available for hunting and perching raptors.

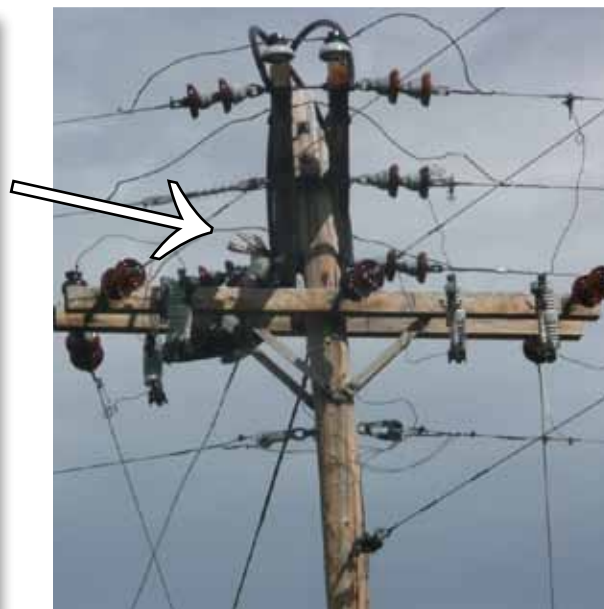
Electrocutions and related injuries to raptors are very preventable. Many utility companies now adhere to standards put forth by the Avian Power Line Interaction Committee (*APLIC*) for newly constructed lines (see *aplic.org* for more information). However, there are thousands of miles of older, poorly configured lines, many erected in the 1960s and 1970's that need attention and continue to kill raptors. Once more, Montana is undergoing a big push for renewable energies, as well as, expanding oil and gas extraction to meet the nations rising energy needs. This hazard persists and RVRI is doing all we can to lessen this on-going problem.

RVRI is currently working with state and federal biologists and investigators to reach out to all utility companies in Montana to aid them in identifying mitigating poorly configured utility poles. Making sure newly built utility lines and poles are properly configured and equipped with the latest in Avian Power Line Interaction Committee (*APLIC*) raptor safe configurations. This high source of large raptor mortality is very preventable.

Through the newly formed Golden Eagle Working Group, RVRI is collaborating with FWP, BLM, FWS, MT Audubon and others to work with utility companies both large and small, to see that Montana's power lines (*old and new*) are raptor safe. This collaborative effort in conservation and raptor protection is exemplary of how science, conservation, industry and others can and must work together to protect these ecologically vital, federally protected species. 🦅



Osprey foot burned off due to electrocution



Electrocuted Osprey hangs suspended on poorly configured utility pole



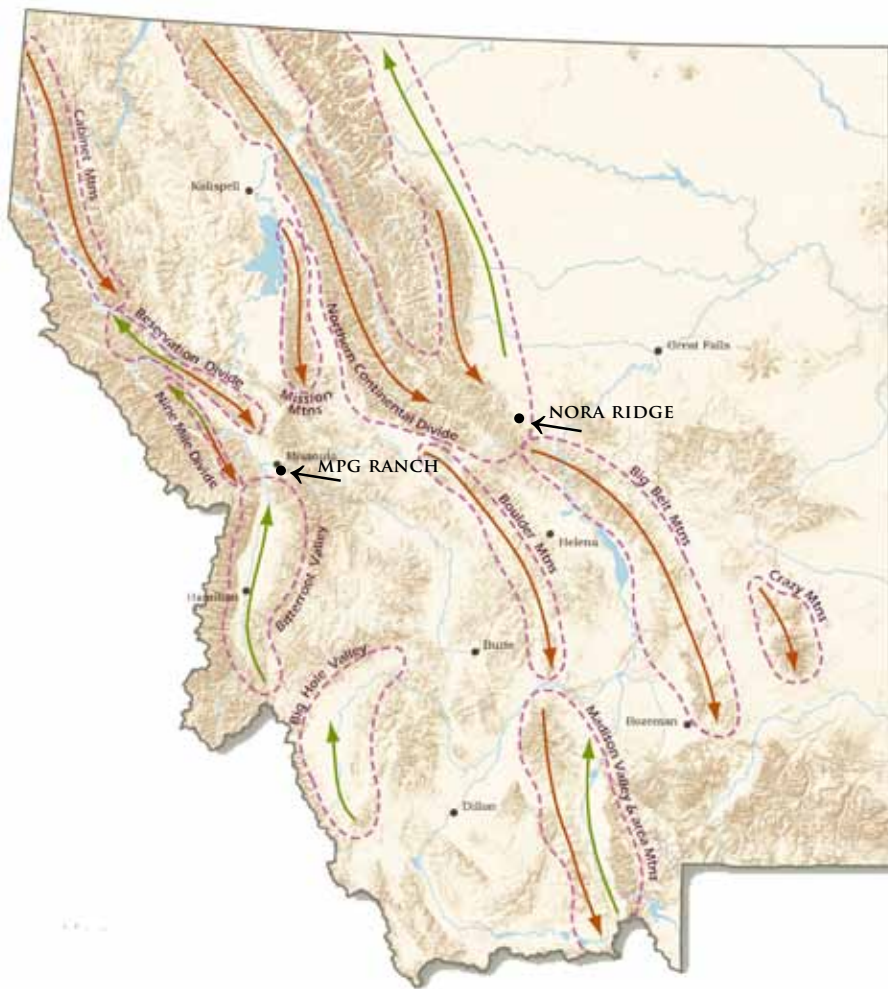
MPG RANCH COLLABORATION

In 2011 we partnered with the MPG Ranch to conduct a variety of conservation based raptor research projects. This roughly 8500 acre ranch is an incredible piece of property located in the north end of the Bitterroot Valley. It is an obvious migration corridor for raptors passing over west-central Montana. Habitat on the ranch ranges from river-bottom forest, open grassland, sage and bitterbrush shrublands, and conifer forest. The property was managed as a cattle ranch for over a hundred years, and consequently, ecosystem functioning is limited in some areas. The MPG ranch owners and staff are working diligently, using the best available science, to restore the ranch to historic ecological conditions.

As indicators species, raptors can serve as “barometers” of ecosystem health. By closely monitoring and researching raptor populations on the MPG Ranch, we can gauge the effects of restorative efforts. Projects we are working on include: fall and spring raptor migration monitoring, eagle toxicology, resident raptor color banding and Golden Eagle satellite tracking.

Raptor Counts:

The MPG Ranch has the distinction of being one of the only known locations in the West where raptor migration monitoring can be conducted in both the spring and fall. The overall numbers and the species diversity are very impressive for the intermountain region of the Rocky Mountains.



Map of Western Montana's Major Raptor Migration Corridors

• MPG RANCH FALL 2011 • RAPTOR MIGRATION COUNT

Turkey Vulture	50
Osprey	45
Bald Eagle	58
Northern Harrier	137
Sharp-shinned Hawk	383
Cooper's Hawk	167
Northern Goshawk	10
Broad-winged Hawk	6
Swainson's Hawk	9
Red-tailed Hawk	776
Ferruginous Hawk	5
Rough-legged Hawk	58
Golden Eagle	84
American Kestrel	225
Merlin	6
Peregrine Falcon	4
Prairie Falcon	9
Unidentified Raptors	50
Totals	2082



Resident Raptor Banding:

In 2011, we banded 34 American Kestrels and put color bands on their legs so that we can identify individuals from a distance. We will be watching the American Kestrels returning to the MPG Ranch this spring to assess fidelity to breeding areas and mates from last year, and to see where young from last year disperse.

Eagle toxicology study:

Four of five captured Golden Eagles were tested for blood-lead content. These four individuals had sub-clinical levels, which is troubling to us. Lead in blood has a half-life of 2 weeks; our results suggest that Golden Eagles are ingesting lead while in the Bitterroot Valley. These preliminary results warrant further investigation.

Golden Eagle Satellite Tracking:

In mid December, we put satellite transmitters on an adult male and female Golden Eagle. Their movements this winter have been surprising; they have made larger movements than we anticipated, moving through-out and even out of the Bitterroot Valley at some points. If all goes accordingly, we will be able to continue tracking their movements for three years.

Rob and Tyler securing satellite transmitter to a Golden Eagle



MPG biologist Kate Stone palm releases American Kestrel





OSPREY RESEARCH 2011

To date, we have accessed 36 nests and have taken blood samples (for heavy metal analysis) and banded 175 nestlings. Results are troubling, with many nestlings showing mercury levels 100 times higher than what would be considered toxic in humans.

We are proud to be partnering with several local experts, University of Montana researchers Dr. Heiko Langner and Dr. Johnny Moore (*Environmental Biogeochemistry Lab*) and Dr. Erick Greene (*Division of Biological Sciences and Wildlife Biology*), to closely examine the causes, locations and possible effects of mining-related contaminants on Ospreys and the ecosystems that support them.

The 2011 breeding season was hard on our area Osprey because of the extreme flooding due to an above average mountain snowpack and late thaw. In short, the adults couldn't catch enough fish in the muddy flood waters to feed the hungry nestlings. This resulted in roughly a 90% failure rate for our study population along the Clark Fork River. Of the few successful nests, three young died from vehicle collisions shortly after fledgling. Needless to say, we are hoping for a better breeding season in 2012.

To learn more about this project, please see our recent publication in the Archives of Environmental Contamination and Toxicology. The paper is titled: *Mercury and Other Mining-Related Contaminants in Ospreys along the Upper Clark Fork River*. We will be sure to make the paper available to all who are interested via our website, and Facebook page postings.



Erick Greene photo



Kurt Wilson photo

Banding an Osprey chick



Osprey Baling Twine Project

Ospreys have the bad habit of collecting baling twine to adorn their nests. Unfortunately, baling twine is a serious threat to Osprey, as they often get tangled in this very strong polypropylene rope. We have found baling twine in nearly every nest located in our study area. An Osprey nest that blew down in Missoula contained more than a quarter of a mile of baling twine!

One of our new research partners, Brooke Tanner, founder of the newly incorporated and developing Wild Skies Raptor Rehabilitation Center received a call about an Osprey that was, "...tangled in baling twine and dangling from a utility pole..." To complicate matters, the nest platform was located above dangerous power lines and the Osprey was hanging and swinging precariously close to those lines. The utility pole is managed by Missoula Electric Cooperative (MEC).

MEC linemen wasted no time in getting there. In just minutes, the crew expertly positioned their bucket truck under the nest. With large salmon dip nets in-hand, we positioned ourselves under the truck ready to catch the struggling bird should it fall. The lineman used a fiberglass pole with a bottle brush wire head to secure the line, and with another pole equipped with a knife, cut the twine. Carefully, the entangled bird was lowered it into our net. Success!

Brooke examined the leg and wing and determined the bird was okay. We quickly fitted the adult Osprey with a USGS aluminum leg band and freed it back into the wild. Crews then cut down the remaining twine.

This is a very preventable problem and one we will keep working on diligently to remedy. For more information or for copies of our Osprey and Baling Twine pamphlets contact projectosprey@mso.umt.edu or visit our website and check out our Osprey section at www.raptorview.org

Kurt Wilson photo



Osprey caught in baling twine

Kurt Wilson photo



MEC lineman rescuing Osprey



SWAINSON'S HAWK NESTING PROJECT

During the spring and summer of 2011 with help from Jim Brown with Five Valleys Audubon (FVA), Ken Furrow with Furrow Productions, Kristi DuBois with MT Fish, Wildlife & Parks, numerous private landowners and a dedicated core group of volunteers, we conducted our second systematic nesting surveys for Missoula Valley Swainson's Hawks.

In total, 14 territories were found, 13 in the Missoula Valley, and one near Davis Creek, in the north end of the Bitterroot Valley. We are defining "territory" where at least one adult was observed on site throughout the breeding season. Of those territories, we located five "occupied" territories where a pair was observed, but no nest was found or fledglings observed with adults. Curiously, of the six "occupied" territories, three had adult males observed with a second-year females. We had six "active" territories where incubation posture was observed. Three of the six "active" territories failed – one to raccoon depredation and the others from unknown causes. It should be noted, we did not approach or band nestlings at either of the failed nest sites prior to failure.

Observed SWHA productivity in our study area was 0.7 fledglings/occupied territory. We also found four "occupied" territories where we were unable to find a nest, suggesting they either didn't nest or the nest failed. We base this on the fact that no fledg-

lings were observed during the late July, early August fledging period with resident adults. Additionally, we confirmed about 30 active Red-tailed Hawk territories within our study area.

To date, we have banded 48 individuals and marked 35 with uniquely color-coded leg bands. These colored bands allow us to identify hawks from a distance and track individuals, while learning more about breeding behavior, survivorship, territoriality, nest site and mate fidelity. Every season we see a number of our color banded individuals. This 2011 season was no different with five encounters from earlier years. However, we had one this season that to me is our most interesting.

Highlight Re-sighting

On September 8, 2011 our friend Denver Holt, founder of the Owl Research Institute observed perhaps our most significant SWHA encounter to date. Denver reported SWHA (blue w/white polka dot [left leg]) our adult male from the long defunct Wal-Mart territory hunting on the Kona Ranch! This is the very first SWHA banded by us way back on June 8, 2005! This male was last observed by us on territory in 2006, the last year that territory was occupied. That same year one of his fledglings died after being struck by a car less than a hundred feet from the nest tree. Too add to this, Denver observed him with a banded (metal only) female, which fit the description of his mate! 🦅



Colton and Tyler with Swainson's Hawk

Ashley Jensen photo

RAPTOR VIEW RESEARCH T-SHIRTS NOW AVAILABLE!

RVRI has 100% organic cotton T-shirts available for purchase. We have 2 styles to choose from. They cost \$20.00 per shirt, shipping and handling included. Make your check payable to Raptor View Research Institute and specify type, size and number. You can also e-mail Rob at rob@raptorview.org and subject your message "T-shirt".



**T- Shirt Design #1
Front**



**T- Shirt Design #2
Back**

PARTNERSHIPS & COLLABORATIONS 2011

RVRI continues to develop partnerships and collaborate with other professionals to build on our research and expand our educational and conservation outreach. It is impossible to express how crucial these relationships are to our work. They develop out of need, common interest and passion for wildlife, conservation and the environment. Often it happens that, professional relationships turn into lifelong friendships.

We would like to take this opportunity to recognize some of these people, organizations and businesses.

Our sincerest thanks and appreciation go to Bryan Bedrosian with Craighead-Beringia South; Dr. David Ellis; Dr. Erick Greene and Dr. Heiko Langner with University of Montana; Five Valleys Audubon Society; Dr. Jim Lish with Oklahoma State University; Melanie Smith, Geographic Information System specialist; Missoula Electric Coop; Northwestern Energy; Paws-Up Ranch; Peter Sherrington with Rocky Mountain Eagle Research Foundation; Steve Hoffman with Montana Audubon; Jim Sparks with Bureau of Land Management; Steve Kloetzel with The Nature Conservancy; Pat Shanley with Helena National Forest; Ken Furrow, Furrow Productions; Brooke Tanner with Wild Skies Raptor Center; the MPG Ranch, MT Golden Eagle Working Group and others.

Board of Directors	<i>Rob Domenech</i> <i>President</i> <i>Missoula, MT</i>	<i>Kathy Gray PhD</i> <i>Secretary</i> <i>Chico, CA</i>	<i>Victoria Parks</i> <i>Treasurer</i> <i>Missoula, MT</i>	<i>Kelly Castleberry</i> <i>Director</i> <i>Missoula, MT</i>	<i>Noel Nies-Nesmith</i> <i>Director</i> <i>Missoula, MT</i>
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2011: A VIEW FROM THE FIELD



Ronan Dugan with Golden Eagle



Megan Ruehmann photo

Step Wilson with Rough-legged Hawk



Step Wilson photo

Sarah Norton with adult Northern Goshawk



Ronan Dugan photo

Steve Wyatt with the Helena National Forest



Step Wilson photo

Don Rakow releases Golden Eagle as Bryan Bedrosian watches on



Step Wilson photo

RVRI crew members Tyler and Sarah



Megan Ruehmann photo

Adult Male Northern Harrier



Ashley Jensen photo

Color bands on an American Kestrel



RVRI photo

Stephen "Step" Wilson with a Golden Eagle

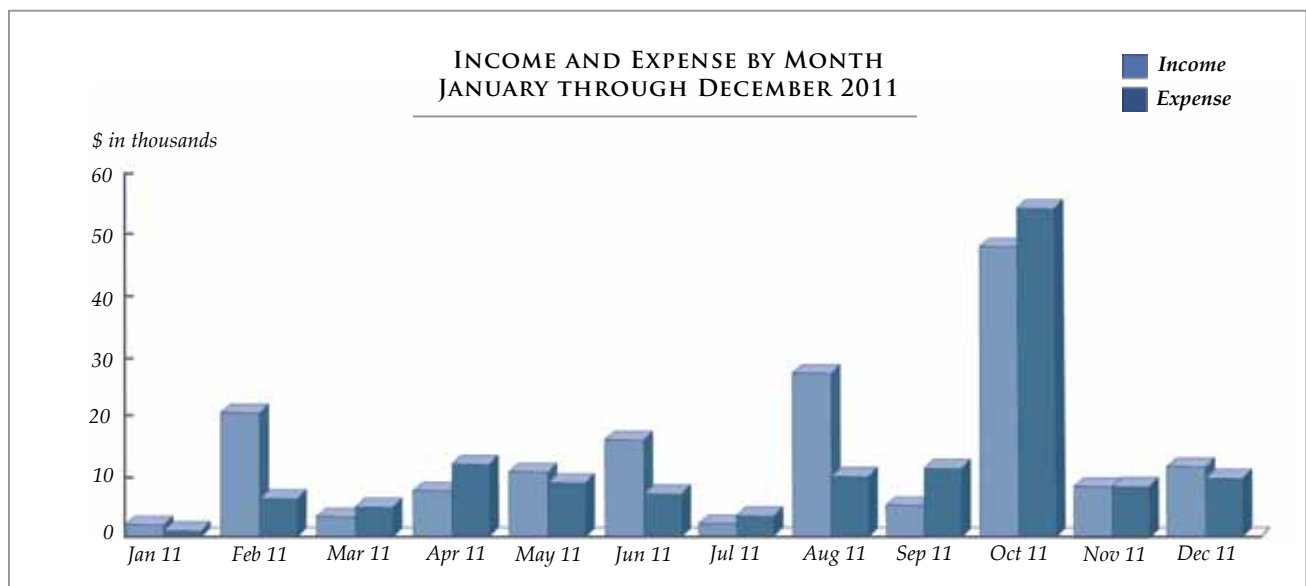
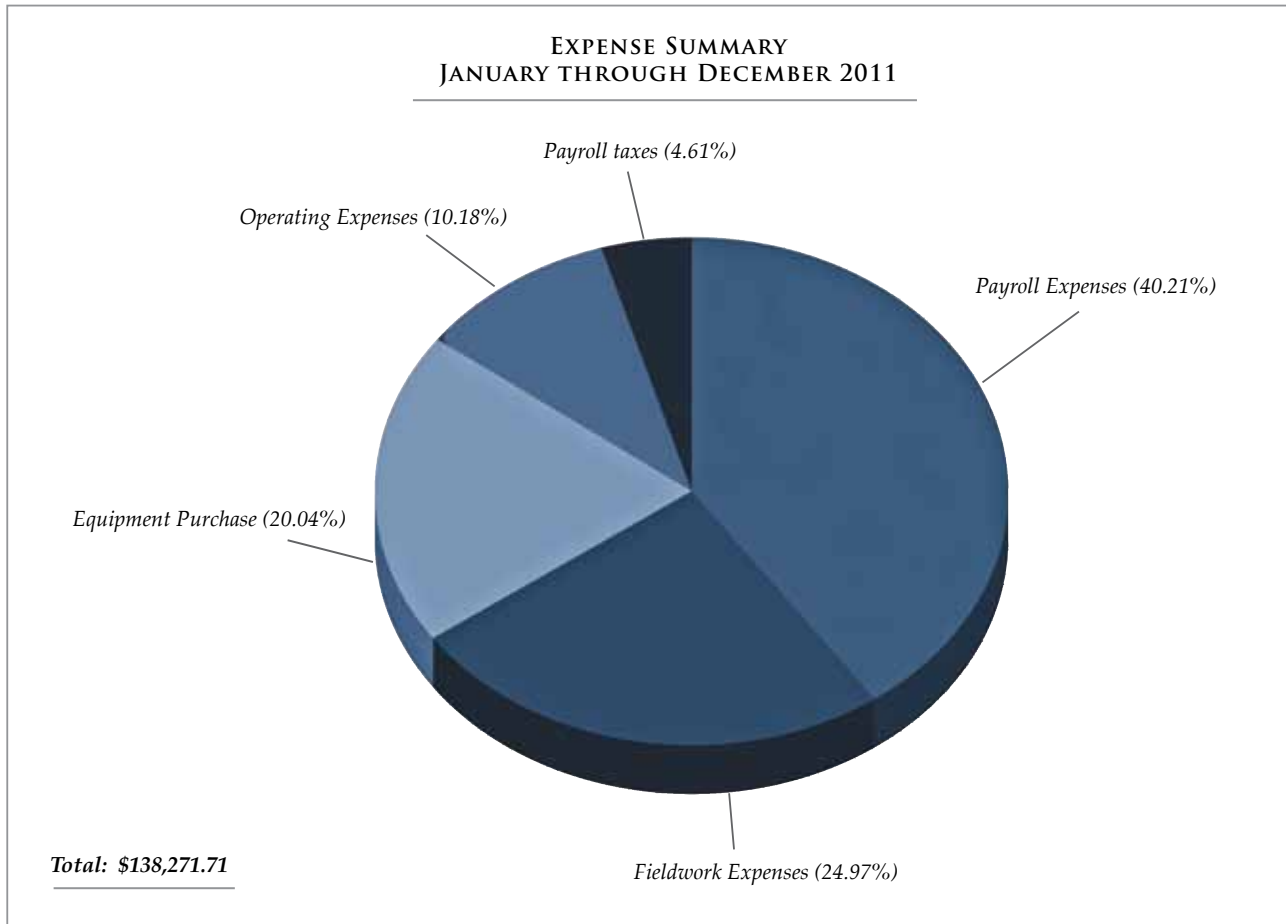


Tyler Veto releasing an adult female Golden Eagle equipped with a satellite transmitter on the MPG Ranch



Rob with hooded adult Golden Eagle, (inset) Adam Shreading holds Golden Eagle while Rob attaches a band

BUDGET NUMBERS



THANK YOU!



Here we recognize those foundations, organizations, businesses and individuals who have supported us through monetary donations, professional expertise and volunteer support. Without all these generous contributions RVRI wouldn't be able to accomplish all that we have.

ORGANIZATION & FOUNDATION SUPPORT

Bureau Land Management	Llewellyn Foundation	Owl Research Institute
Charlotte Martin Foundation	Kimron Veterinary Inst.	Patagonia
Cinnabar Foundation	Koret Foundation	Raptors of the Rockies
Clark Fork Coalition	LCAO Foundation	S.E.C. Charitable Corp.
Craighead-Beringia South	Maki Foundation	The Nature Conservancy
Fanwood Foundation	Mountaineer's Foundation	University of Montana
Fledgling Fund	MPG Ranch	Walker Family Trust
Five Valleys Land Trust	MT Fish, Wildlife & Parks	Yellowstone to Yukon
Helena National Forest	MT Audubon	
	Oklahoma State University	

BUSINESS SUPPORT

Allegra Print & Marketing	Erik Enzien Graphic Design	Salmon Logging
Ancare Veterinary Clinic	Irestone Web Design	Swarovski Optik
Alter Enterprises Inc.	Law Office of John J. Ferguson	Vann's
A & S Electric	Kettle House Brewery	
B.A. Builders Inc.	Law Office of J. Tiffin Hall	
Boyce Lumber	Missoula Veterinary Clinic	
Candy Goff-Bookkeeping	Missoula Electric Cooperative	
Dave Taylor Roofing	Montana Ace Hardware	
Dillon Tree and Landscape Co.	Northwestern Energy	

INDIVIDUALS

From assistants in the field, to detailed lab analysis and everything you could imagine in between; individuals make it happen. We wouldn't make it happen without their support. As always, we make an effort try to recognize everyone. Thanks to all of you!

Aiden Moon	Jessica Lindsay	Ross Crandall
Amanda Ormesher	Jerry and Jane Densel	Ryan Alter
Anicka Katrina-Hathaway	Jill Learned	Stan Lucier
Barbra Meek	Jim Lish	Megan Ruehmann
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Bob Walker	Kathy Gray	Tim and Noel Nesmith
Bonnie Snavely	Dean and Kathy Townsend	Victoria Parks
Brooke Tanner	Kelly Castleberry	
Bryan Bedrosian	Mat Seidensticker	
Charlie Simpson	Matt Young	
Christa Weathers	Melanie Smith	
Dave Taylor	Melissa Richards	
Denver Holt	Nate and Whitney Schwab	
Don Rakow	Nick Corvinus	
Erick Greene	Pat Little	
Heiko Langner	Pat Shanley	
Fred and Cathy Tilly	Paul Nisbet	
Jeff Hershkowitz	Rob Dillon	
Jennifer Calder	Rob Magana	





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ADOPT A WILD RAPTOR!



CONTRIBUTE TO RVRI THROUGH OUR 'ADOPT A RAPTOR PROGRAM'

When you adopt a raptor, you will receive a packet which includes an adoption certificate specific to your individual bird with band number, wing tag (*Golden Eagle only*), age, sex, size and when and where it was banded. You will also be notified of any follow-up information regarding re-sightings, re-capture and recoveries. Furthermore, you will get a 4 x 6 color photo of your adopted bird and an informative Natural History fact sheet.

AVAILABLE RAPTORS

Sharp-shinned Hawk	\$50
American Kestrel	\$50
Cooper's Hawk	\$50
Northern Harrier	\$50
Merlin	\$75
Prairie Falcon	\$75
Red-tailed Hawk	\$75
Rough-legged Hawk	\$75
Swainson's Hawk	\$100
Northern Goshawk	\$150
Golden Eagle	\$250
Golden Eagle with satellite transmitter	\$1500

RVRI photo



→ **WRITE DOWN THE RAPTOR YOU WANT TO ADOPT IN THE SPACE PROVIDED IN THE ENCLOSED ENVELOPE** ←

We are a **501(c)3 non-profit organization**; all donations are tax deductible. A receipt for your tax records will be provided.