

# RAPTOR VIEW RESEARCH INSTITUTE

Winter 2013



## THE FLYWAY

*A Newsletter of The Raptor View Research Institute*

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# MESSAGE FROM THE PRESIDENT



Thank you for reading Raptor View Research Institute's (RVRI) eighth annual newsletter. We revised the style of our newsletter by adding color and modifying the layout. Additionally, we re-named the newsletter "The Flyway." The name is based on our raptor migration ecology research projects and our efforts to identify new raptor migration "flyways" and corridors. We hope you like the new look!

It is hard to believe that it has been nine years since our inception! Frankly, as I look back over these past years, I am astounded by our growth. In 2004, RVRI activities revolved around the Golden Eagle migration ecology study in the Helena National Forest. In 2005, we initiated studies of Swainson's Hawk in western Missoula. Shortly thereafter, Osprey studies were commenced in the Missoula, Clark Fork and Bitterroot valleys. Currently, RVRI is partnering with the MPG Ranch in Florence, MT. This exciting collaboration is providing the opportunity for year-round field work, which is significantly increasing data collection. All of this growth is great as it advances our mission: conservation.

Not only are we experiencing growth with the passage of time, but we are also experiencing the need to publish our findings. We have published our Osprey toxicology research findings. And several of our other projects are nearing the peer-review process. For example, our study on spatial movements of adult Golden Eagles on critical wintering ground habitats is in the pre-publication stage. RVRI is proudly working with numerous well-regarded scientists to make all of this happen. Please see our research update sections for more on these and other on-going projects and collaborations.

Another important collaborative conservation development 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, and the Montana Department of Natural Resource and Conservation. Non-governmental organizations include Craighead-Beringia South, Montana Peregrine Institute, Montana Audubon, RVRI and others. This group was founded after our presentation at the 2011 Montana Wildlife Society meeting. We suggested the formation of a group to help manage Golden Eagle populations in the wake of ever increasing energy development occurring across the West. Through this cooperative group of accomplished professionals, we are pooling our collective knowledge to ensure healthy Golden Eagle populations and habitats, as well as responsible and sustainable energy development.

In closing, I hope you are pleased with our accomplishments. We will continue to do our best and stay true to our mission. Please consider us for a tax-deductible contribution. Your support ensures the continuation of our research, conservation efforts, and educational programs.

Sincerely,

A handwritten signature in black ink that reads "Robert Domenech".

Robert Domenech  
Executive Director, RVRI



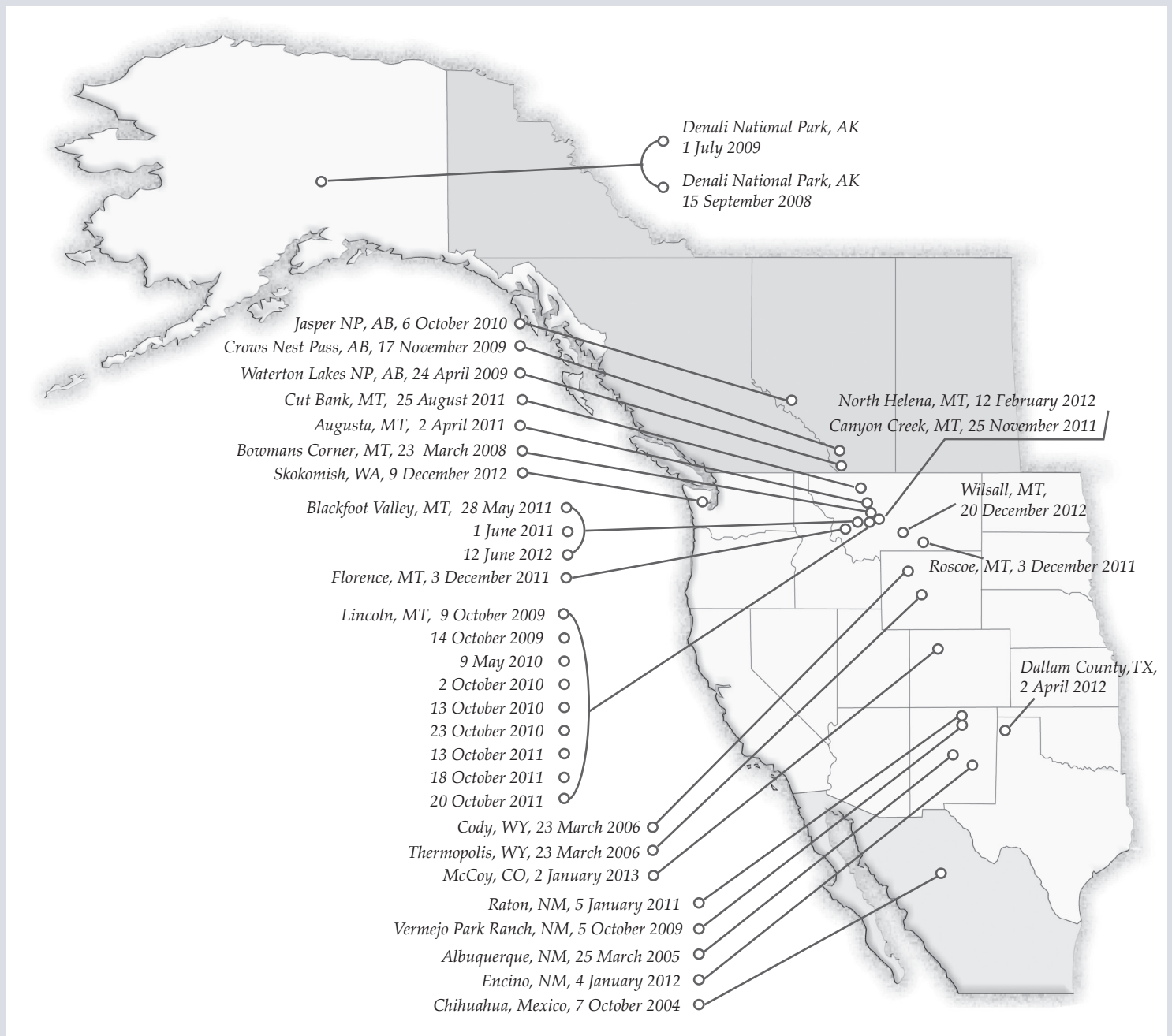
*RVRI Executive Director, Rob Domenech*



*Harlan's Red-tailed Hawk, (left) Female Black Merlin (right)*



# GOLDEN EAGLE WING TAG UPDATE 2012



Map of Golden Eagle Wing-tag encounters as of January 2013

**R**VRI has been applying vinyl wing-tag markers (blue with white alpha-numerics) on Golden Eagles since 2004. To date, 188 migrant eagles have been wing-tagged at our banding stations. This technique is considerably more useful than banding alone as a means of identifying individuals and receiving reencounter information.

In 2012, eight of our wing-tagged eagles were observed. Additionally, we received another encounter in January of

this year, bringing our total number of wing-tag encounters up to 34. Our re-encounter rate of 17% more than doubles the rate of standard banding efforts alone for the species!

These re-sightings are helping us learn more about Golden Eagle migratory ecology, including: where migrants winter and summer, how far they travel, how long they live and the cause of individual eagle mortalities.



# 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 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, YWCA, Animal Wonders, 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.

## NEW PARTNER AND COLLABORATOR

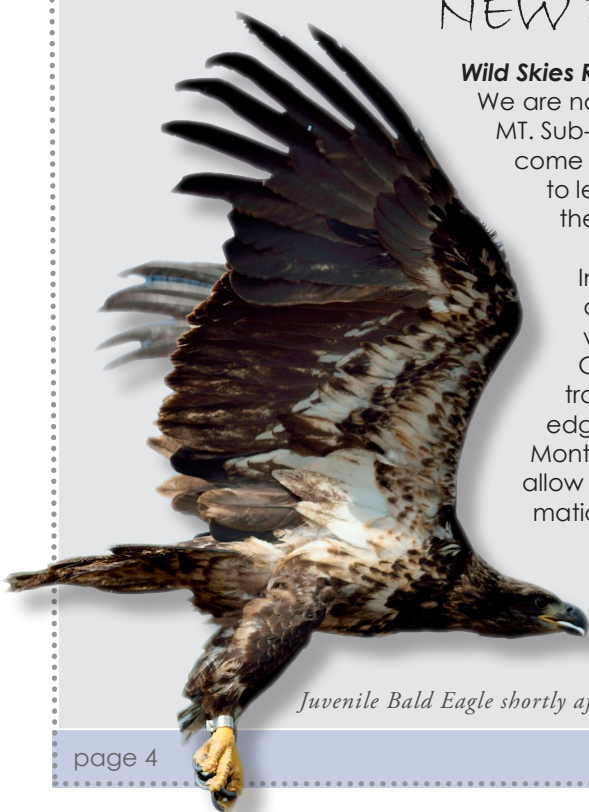
### **Wild Skies Raptor Center**

We are now proudly partnered with Brooke Tanner and Wild Skies Raptor Center, Missoula MT. Sub-permitted under our federal banding permit; Wild Skies is banding all raptors that come under their expert care that are released back into the wild. Banding will help us to learn more about the fate of these rehabbed birds. Nearly all admitted raptors are there due to human related causes.

In addition to banding, an exciting future project will be fitting rehabilitated Golden Eagles with satellite transmitters. To our knowledge, this will be a "first" for Montana. This technology will allow us to collect useful information about Montana's rehabilitated eagles. Thank you Brooke for helping our broken, feathered friends, get that second chance!



*Brooke Tanner*



*Juvenile Bald Eagle shortly after release*



# RESEARCH



## FALL MIGRATION AND BANDING RESEARCH FROM NORA RIDGE

This fall we successfully completed our seventh 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. Biologists included RVRI executive director Rob Domenech, Vince Slabe, Stephen "Step" Wilson, and Sarah Norton. In addition, the team was joined by two fulltime volunteer biologists Bracken Brown and Stacy Baker. Good friend Bryan Bedrosian with Craighead-Beringia South found time in his busy schedule to help out, as did Jim Lish from Oklahoma State University. Also on board and heading-up the Nora Ridge count were raptor migration specialists Fred and Cathy Tilly. We thank everyone for job well done!



*Stacy Baker*



*Sarah Norton*



*Vince Slabe*



*Jim Lish*



*Bryan Bedrosian*



*Bracken Brown*



*Stephen "Step" Wilson*

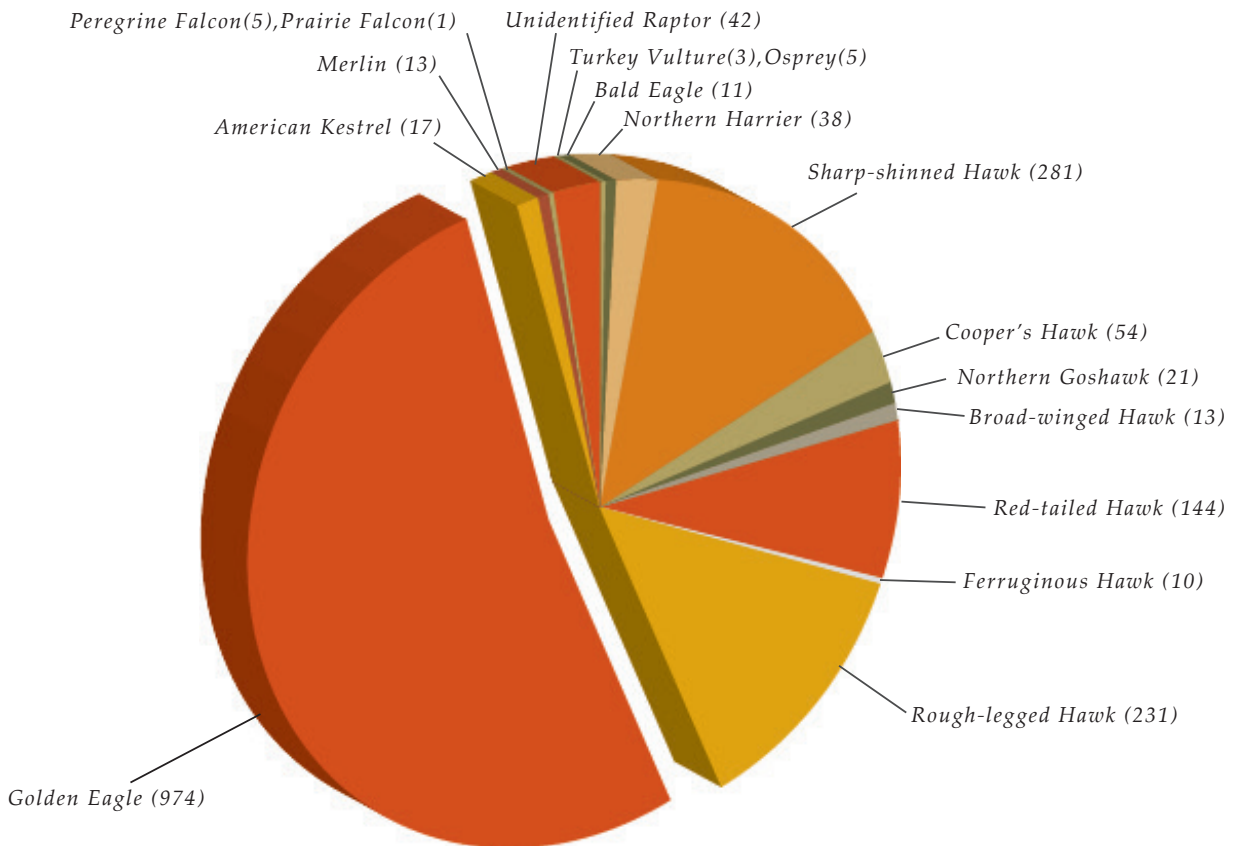




## GOLDEN EAGLE AND FALL RAPTOR MIGRATION COUNT FROM NORA RIDGE

Observations were conducted from September 25th through October 30th. The Nora Ridge count was started later in the season than in the past years. This was due to Fred and Cathy conducting further exploratory counts on the Bull Mountain, as well as, poor visibility due to smoky conditions in Lincoln from wildfires. It should be noted, our region's Golden Eagle migration doesn't really initiate until the third week in September.

During the count period, three days were suspended due to unworkable weather conditions. A total of 1,859 raptors were counted in 197 hours of observation (9.4 raptors/hour), comprised of 16 species, including Turkey Vultures. The Golden Eagle total was 974. Peak flight days were September 27th and October 10th with 128 and 177 raptors respectively. Golden Eagles comprised 52 percent of all observed migrants.

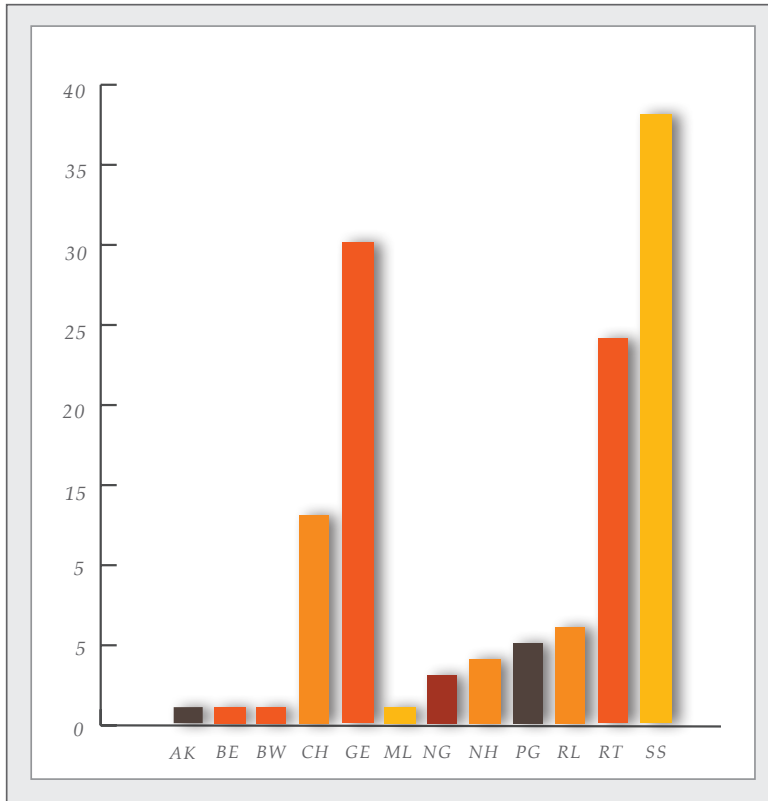


**The Rough-legged Hawk (RL)** migration numbers this season set a new record for our site. We observed 231 Rough-legged Hawks, 44 higher than the 187 recorded in 2011. This was 67% above the 2007-2011 average. Most of the Rough-legged Hawks we count tend to cross the Continental Divide from the plains heading south or southwest, past north end of the count site, presumably destined for intermountain valleys. Most individuals (90% of the 119 for which color phase was determined) were of the light color phase.





## BANDING SUMMARY, NORA RIDGE



*Banding Summary for Nora Ridge 2012*

### **Banding Summary, Fall 2012**

We banded from September 17th through October 21st. Our season was cut short by roughly a week, due to persistent cloud cover, rain and snow during the third week of October. These circumstances forced us to breakdown the banding station for concerns of getting snowed out and unable to access the ridge to pack our gear out. Though a short season, we managed to band a total of 127 raptors and 1 Common Raven.

### **Highlight Capture**

It is difficult to identify one particular highlight capture during a season filled with so many notable captures. I suppose our best day of the season was capturing two Golden Eagles for the Five Valleys Audubon group Day-in-the-Field. Since 2004, we have enjoyed having the group bring its heartiest of souls to our site to endure the arduous hike, sometimes bone chilling temperatures and high winds. Of course they appreciate every raptor banded, but have waited eight years to get a Golden Eagle.

Cynthia Hudson (group leader and dear friend of RVRI) went above and beyond in 2012, by leading participants to Nora Ridge from Missoula on two back-to-back days. The huge effort paid off, as we were fortunate in capturing three Golden Eagles (1 juvenile and 2 adults)! To round out the trip, we banded a beautiful "Harlan's" Red-tailed Hawk and adult Sharp-shinned Hawk.



*Golden Eagle*



*Banded tarsus of Golden Eagle*



## ADULT GOLDEN EAGLE SATELLITE TRACKING STUDY 2012

While historic threats to migrating eagles (power-line electrocution, lead contamination, poisoning, vehicle collisions, shooting, etc.) persist, many wintering destinations throughout the West have recently seen rapid habitat changes with the oil and gas development boom of the past two decades. More recently, large-scale wind farms are also a concern, as eagles are known to be killed by the sweeping blades. What effect these facilities may have on the Golden Eagle population is unclear.

Long-term counts of migrating Golden Eagles on the Rocky Mountain Front flyway indicate a 15 year declining trend in fall and spring counts. This trend is more pronounced in the spring, which may be due, in part, to increased mortalities on wintering grounds in the lower 48. Small changes in the mortality rates of long lived, slow to reproduce species, such as Golden Eagles, can have a significant effect on the population. To gain more information, we are using the latest in satellite telemetry technology.

Adult Golden Eagles are far less studied with satellite telemetry than young birds, largely due to the difficulty of capturing wary adults. Juvenile Golden Eagles have a mortality rate estimated to be nearly 70% the first year of life. Thus, we can learn more about the species' migratory, wintering, and breeding ecology by studying adults, as they are proven survivors.







To date, we have put satellite transmitters on 14 adult Golden Eagles and are currently analyzing their migratory and wintering habitat use. A major goal of this project is to aid industry and land managers in the placement of large scale energy-development facilities. We will better understand the on-going effects of these industries by observing how eagles behave in and around these facilities – some of which are massive.

We couldn't be more pleased with how this project has progressed. We are writing up our results and are going to submit our findings for peer review publication this year. Of the 14 eagles making up this study, an eagle affectionately dubbed "Elaine," has received the most attention. At three years and running, she may hold the record for satellite tracks for an eagle. Please see the update below on this most remarkable bird.

**Elaine Update:**

On October 21, 2010 we outfitted Elaine with a satellite transmitter (see our 2010 newsletter @ [www.raptor-view.org](http://www.raptor-view.org) to learn more). As she did in 2011, Elaine spent this past summer near the Brooks Mountain Range in northern Alaska. On September 25th, she left her summer territory and moved south along the Rocky Mountains and the Front Range, reaching Montana on October 27th. She then spent three weeks in the Big Belt Mountains east of Helena, MT, before arriving on her winter range in Montana's Paradise Valley on November 25th. This is the third consecutive winter she has spent in the area, and we were thrilled at her return! If you are interested in keeping track of Elaine, or any of our other birds with satellite transmitters, check out our website.

Our major partners in this project are: The Bureau of Land Management, The MPG Ranch, Bryan Bedrosian (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!



*Fine tuning the attachment of a satellite transmitter*





## GOLDEN EAGLE RESEARCH PROJECTS 2012 ● ● ● ● ●

### **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 raptor species, females are often measurably larger than males, when we consider simple descriptors such as; mass and wing-length. 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.







## **Eagle Lead Project**

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 unknowing hunters.

Golden Eagles are opportunistic feeders, known to scavenge and take wounded animals. To date, we have lab analyzed blood from 207 Golden Eagles and have found that nearly half of our sampled eagles had elevated blood-lead levels. We are writing-up our findings for publication in a peer reviewed journal this winter, as this information has obvious land management and conservation implications. This is a long-term project for which we will continue sampling eagles, adding to our growing database, while ramping-up our educational outreach. It is our belief, 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 more about where the raptors are coming from is our main question. By utilizing innovative sampling techniques, RVRI has been able to more accurately estimate that "place of birth" of juvenile Golden Eagles and Northern Goshawks.

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 for publication on 2013.





## RVRI POWER LINE RETROFIT PROJECT

Power line electrocutions are a major human-caused mortality factor to large raptors. Depending on the particular utility pole configuration, location of the line 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. This is especially problematic across prairie lands and agricultural fields where utility poles are some of the only perches available for hunting and perching raptors. As for a specific species, the Osprey poses particular risk, as they actively select for utility poles to construct their large stick nests.

Electrocutions and line strike 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](http://aplic.org) for more information). There are however, thousands of miles of older, poorly configured lines, many erected in the 1960s and 1970's that need attention and continue to kill raptors. 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 coupled with expanding urbanization means more utility lines and potential raptor power line interactions.

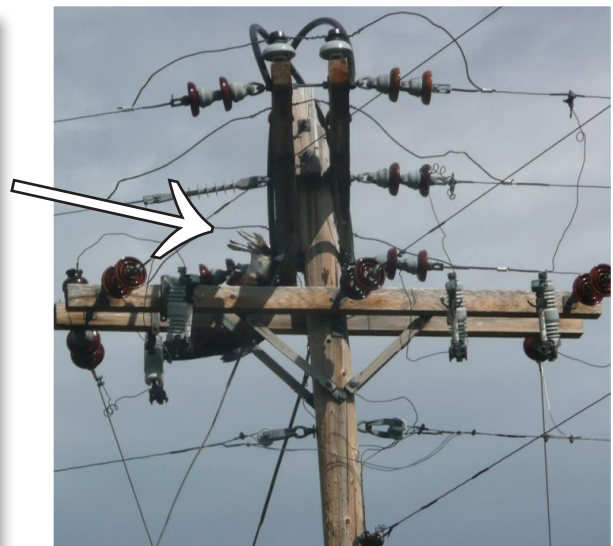
Through the newly formed Golden Eagle Working Group, RVRI is collaborating with FWP, BLM, FWS, MT Audubon and others to work with utility companies both large and small, to see that Montana's power lines (old and new) are properly configured and equipped with the latest in APLIC raptor safe standards. 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.

This summer one of our young color-banded Osprey in Missoula (C-58) was electrocuted near its nest shortly after fledging. Larry Weeks with Five Valleys Audubon discovered the dead Osprey and contacted us. We reached out to Sam Milodragovich (biologist with Northwestern Energy). Sam wasted little time in getting the offending pole retrofitted. This will ensure no other Osprey will fall victim to that pole.

Northwestern Energy hosted the APLIC conference in Great Falls, Montana this fall. RVRI was asked to lead a field trip for utility company biologists attending the conference. Weather was poor with some rain, snow and soaked in conditions. In spite of this, three hearty biologists made the trip. We accessed the ridge and were lucky enough to capture a Golden Eagle. They were thrilled. It was great to talk with these biologists about how the industry as a whole is really working hard to protect raptors across the country.



*Osprey foot burned off due to electrocution*



*Electrocuted Osprey hangs suspended on poorly configured utility pole*





## MPG RANCH COLLABORATION

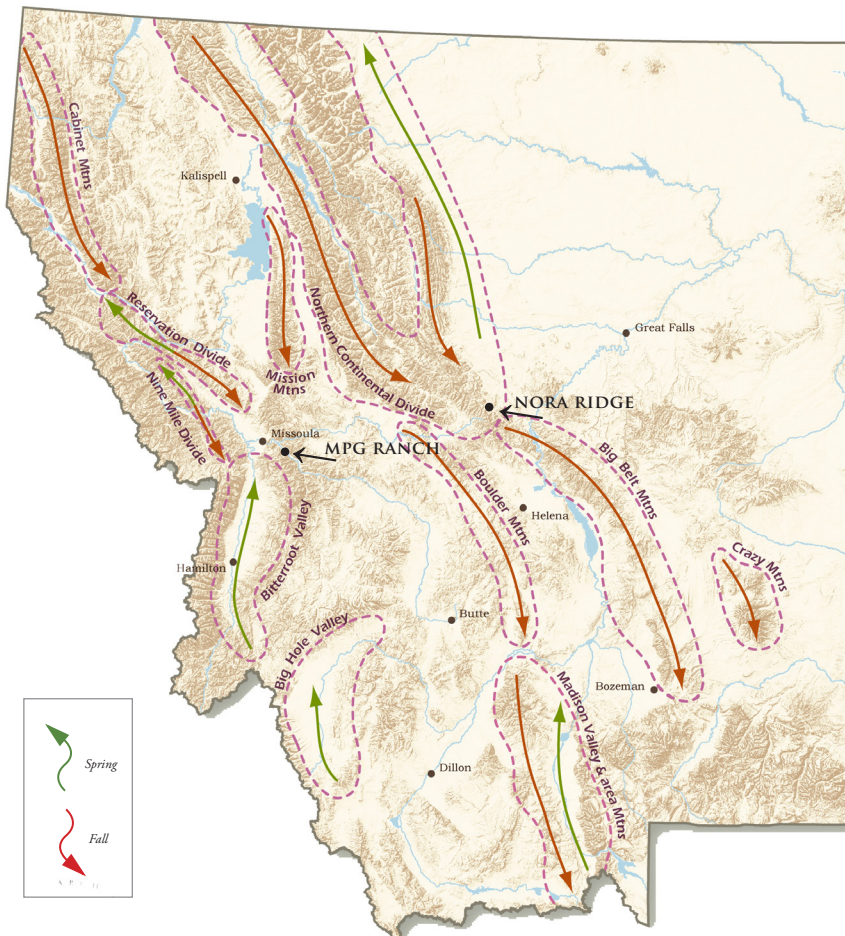
In 2011, we partnered with the MPG Ranch to conduct a variety of conservation-based raptor research projects. Located in the north end of Western Montana's Bitterroot Valley, the MPG Ranch is an incredible piece of property consisting of roughly 10,000 acres of riverbottom and coniferous forests, open grassland, and shrublands. In addition to providing breeding and wintering habitat for a variety of raptor species, its location along the Bitterroot Valley migration corridor makes it an ideal location for monitoring migrating raptors.

After being managed for cattle for over one hundred years, ecosystem functioning on the property 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 indicator species, raptors can serve as barometers of ecosystem health. By closely monitoring raptor populations on the MPG Ranch, we can help gauge the effects of restoration efforts.

### Spring/Fall Migration

The MPG Ranch has the distinction of being one of three known locations in the West, where raptor migration monitoring counts can be conducted in both the spring and fall. In both seasons the overall numbers and species diversity are very impressive for the intermountain region of the Rocky Mountains. This year we saw an increase in both counts from those conducted the previous year (Spring 2011: 1,286, Fall 2011: 2,163).

A combination of favorable spring weather and the use of a low-elevation observation site yielded an amazing count this spring of 2,618 raptors total. We saw surprisingly high numbers of Red-tailed Hawks, Turkey Vultures, Northern Harriers, and Osprey.



map courtesy of Montana Bird Conservation Partnership

### • MPG RANCH FALL 2012 • RAPTOR MIGRATION COUNT

Turkey Vulture	23
Osprey	28
Bald Eagle	114
Northern Harrier	203
Sharp-shinned Hawk	377
Cooper's Hawk	134
Northern Goshawk	20
Broad-winged Hawk	25
Swainson's Hawk	8
Red-tailed Hawk	766
Ferruginous Hawk	5
Rough-legged Hawk	253
Golden Eagle	91
American Kestrel	190
Merlin	9
Peregrine Falcon	8
Prairie Falcon	11
Unidentified Raptors	110
<b>Totals</b>	<b>2,375</b>

Map of Western Montana's Major Raptor Migration Corridors



## MPG RANCH COLLABORATION • • • • •

Our fall counts were hampered by weeks of thick, persistent wildfire smoke during peak flight periods. Counters frequently had less than one mile of visibility. Despite limited visibility, we recorded an astounding 2,375 raptors, with big migration pushes occurring late in the season. Our highest count day was November 7th, when 218 raptors passed overhead. Notable observations include the high counts of Red-tailed Hawks (766), Rough-legged Hawks (253), and Northern Harriers (203). Our count of 25 Broad-winged Hawks is remarkable because this species does not breed or overwinter in Montana.

A hearty "THANKS!" goes out to the counters who braved the elements, often scanning the skies for eight or more hours a day, over two months straight during spring and fall counts. MPG Ranch biologist Eric "Kerr" Rasmussen headed this "herculean" daily effort, leading counts in both spring and fall. Our seasonal hires could not have been better! Spring counters were John Csoka, William Blake, and Kris Guyman. Our fall counts were performed by seasoned veteran counter Daniel Harrington and very capable newcomer Cherin Chapman. It's difficult to imagine having better teams for these counts!

### **Banding Summary, Fall 2012**

We conducted our first full season, fall migration banding effort. We banded from September 7th through October 30th, capturing a total of 63 individuals of 10 different species including a Northern Pygmy-Owl and five Northern Goshawks. Thanks to Adam Shreading, William Blake, and Tyler Veto for their trapping efforts!

One adult Red-tailed Hawk banded September 13th was found dead on November 1st near Livermore, CA, a distance of ~ 700 miles. Biologists conducting mortality surveys found this hawk under a utility pole near a wind farm. Our hawk did not die in vain, as the stretch of utility poles where it was discovered has been retrofitted and made raptor safe.

### **Resident Raptor Banding**

In conjunction with MPG Ranch staff biologists, we have been monitoring all known nesting raptors on the ranch, including Golden Eagles, Bald Eagles, Osprey, Northern Harriers, Red-tailed Hawks, Cooper's Hawks, and American Kestrels. The high number of American Kestrel nests on the ranch (17 known active territories in 2012) has earned them special attention. Since 2011, we have captured over 80 and put colored bands on their legs so they can be identified from a distance. Re-sightings of color-marked individuals help us assess survivorship and fidelity to breeding areas and mates.

One remarkable story from the field is that of adult female AK22. Though she lost her mate shortly after their young hatched, with tireless foraging and nest defending, she was able to fledge all four of her young!







## **Eagle toxicology study**

Since March 2011 we have tested 16 eagles captured on the MPG Ranch for blood-lead content. Unfortunately, all but one tested higher than what we would expect from background exposure alone. Because lead is absorbed into the body from the blood within 2-3 weeks after ingestion, our results suggest that Golden Eagles are ingesting lead while in the Bitterroot Valley.

## **Golden Eagle Satellite Tracking**

In December of 2011, we placed GPS transmitters on one adult male and one adult female Golden Eagle on the MPG Ranch. Both eagles spent the winter roaming the entire length of the Bitterroot Valley. When spring arrived, they headed north to Alaska. The female traveled approximately 2,000 miles before settling on a territory in the southern Brooks Range. The male spent the breeding season in the Wrangell Mountains, approximately 1,500 miles from the MPG Ranch.

This fall we anxiously watched their movements to see when and if they might head back to the Bitterroot Valley. The eagles left their breeding territories in October, and to our surprise, by mid November they were back—we had locations for both birds on the ranch! This winter we plan to outfit up to ten more wintering Golden Eagles with GPS transmitters. We will use this data to gain a better understanding of how wintering Golden Eagles use the Bitterroot Valley.

## **Osprey Satellite Tracking**

This breeding season we outfitted all individuals from two Osprey nests with GPS transmitters on the MPG Ranch. During the breeding season, individuals stayed fairly close to their nests, foraging along the main stems, braids, and sloughs of the Bitterroot River. The adult females were the first to leave the Bitterroot Valley, then the offspring, followed by the adult males. While the adults took more direct routes to their wintering grounds, the hatch-year birds' movements were less deliberate—one of the young settled along the Blackfoot River, never travelling more than 50 miles from its nest, while another spent nearly two months in Oklahoma before continuing to the Gulf Coast of Texas.

The longest distance traveled was by an adult female who is spending this winter on the Pacific Coast of Nicaragua five miles northwest of the border with Costa Rica. She traveled this distance of nearly 3,000 miles in just 18 days. This work is being conducted by RVRI in partnership with the MPG Ranch, and with University of Montana researchers Dr. Erick Greene and Dr. Heiko Langner as part of a larger regional study on Osprey ecology.





## OSPREY RESEARCH 2012

### **Osprey Toxicology & Baling Twine Projects**

To date, we have accessed about 40 nests, drawn blood samples (for heavy metal analysis) and banded 251 nestlings. In 2012 we banded and sampled 54 individuals. This makes our Osprey project one of the largest and most comprehensive of its kind. 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 Langer 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 and possibly atmospheric contaminants on Ospreys and the ecosystems that support them.

To learn more about this toxicology 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.

### **Color Banding**

In 2010 we began color banding Osprey, (blue with white numbers), as this greatly enhances our chances of identifying individual from a distance. Similar to our other color marking projects, to band individuals' with a metal USGS band only, almost always means they must be recaptured or found as mortalities to gather more information on that banded individual. We color banded 96 individual Osprey and the encounters are starting to come in.







## **Color Band 35**

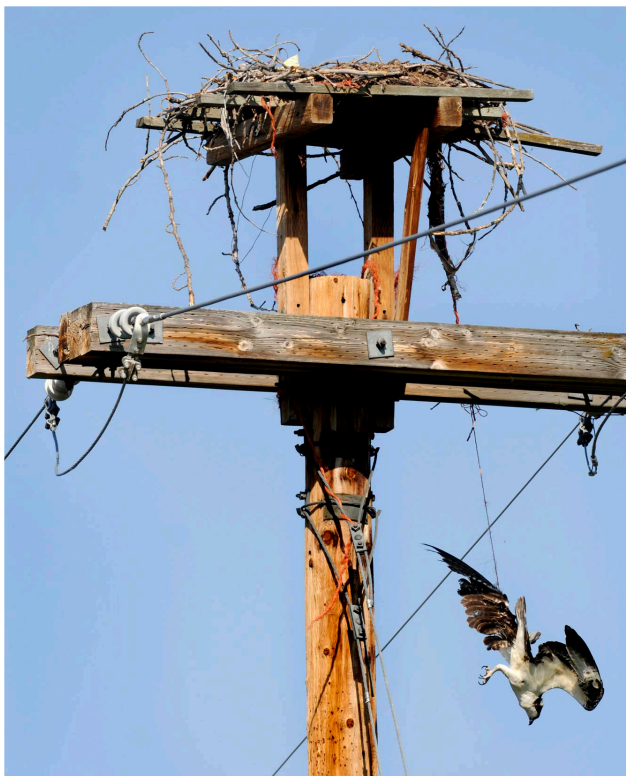
On August 17, 2012, Kimi Smith observed an Osprey with a blue band at the Metcalf Wildlife Refuge. Kimi skillfully captured some in-flight photographic images. In these photos, one can clearly make out the number on the band. This is a great piece of data, as according to available information, migratory Osprey return to their natal (summer) regions when they are three-years-old. "Blue 35" was back at two-years of age. Was this birds' arrival back an anomaly or something that occurs regularly with the species that simply hasn't been observed before? We look forward to encountering more of these uniquely color banded individuals, as we learn more about our area Osprey.

## **Baling Twine**

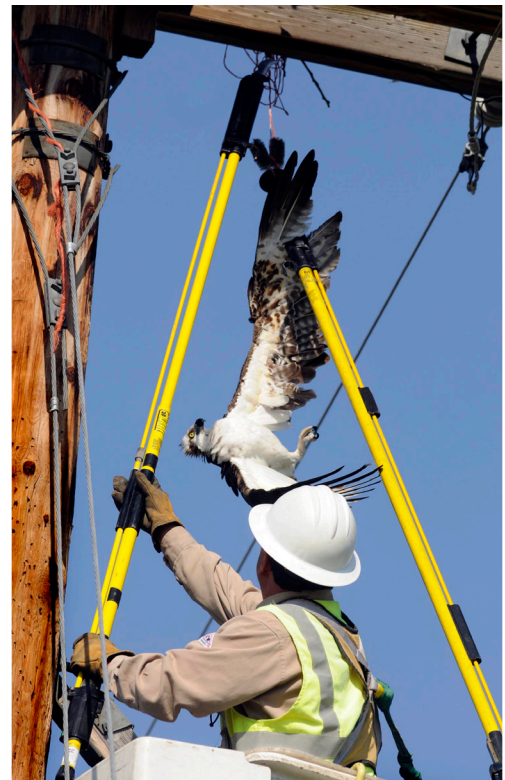
Ospreys have the bad habit of collecting baling twine to adorn their nests. Unfortunately, baling twine is a serious threat to Osprey, as they often get tangled in this durable polypropylene rope. We have found baling twine in nearly every nest located in our study area. For example, one Osprey nest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

Every summer we get calls about Osprey tangled in baling twine. We always drop whatever we are doing to see if we can rescue these tangled birds. It is important to get to the Osprey quickly, before it suffers irreparable damage by way of amputation, heat stress, broken bones and so on. Unlike many other human-caused environmental problems facing wildlife, this is a simple one, with an easy fix. We ask landowners and stewards to please clear their fields and property of the deadly twine. By simply picking up the loose strands and properly disposing of the material, we can save untold numbers of Osprey.

To help spread the word, Erick and Anne Greene put together an informative pamphlet addressing this issue. For more information or for copies of this Osprey and Baling Twine pamphlet contact [projectosprey@mso.umt.edu](mailto:projectosprey@mso.umt.edu) or visit our website and check out our Osprey section at [www.raptorview.org](http://www.raptorview.org).



*Osprey caught in baling twine*



*MEC lineman rescuing Osprey*



## SWAINSON'S HAWK NESTING PROJECT . . . .

During the spring and summer of 2012, with help from Jim Brown of Five Valleys Land Trust and Ken Furrow of Furrow Productions, as well as numerous private landowners, we conducted our third systematic nesting surveys for Swainson's Hawks (SWHA) in Missoula Valley.

Since 2005, 17 known territories have been identified in the Missoula Valley. In 2012, SWHAs were encountered in 11 territories. Of those territories, we located four occupied territories, but no nest was found or fledglings observed with adults. We had only seven active territories this season. Of these, five were successful in turning out young, for an average productivity of 0.9 fledglings/occupied territory, compared to 0.7 in 2010 and 2011.

In addition, we confirmed over 30 active Red-tailed Hawk territories within our study area. To date, we have banded 54 individuals and marked 43 with uniquely color-coded leg bands. Sixteen individuals have been encountered, giving us a roughly 37% encounter rate for color banded birds! 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.

### Highlight Re-sighting

In 2008 SWHA (white w/teal polka dot [left leg]) was captured on the grass valley of Missoula, less than a mile from the Kona Ranch/Mullan Road. This bird was encountered in the same area during the breeding seasons of 2009 and 2011. On August 2, 2012 Ken Furrow and I re-encountered him on Kona Ranch/Mullan Road, with his mate, which was banded with metal only. We suspect she is one of ours, captured prior to our color banding study. After many hours of observation, Ken and I discovered the nest area on a wooded hillside comprised of mature Ponderosa Pine and Douglas-Fir trees. The pair nested more than two miles from their daily hunting grounds on Kona Ranch. In spite of the relatively long distance between nesting and hunting areas, they successfully fledged two young.



*Rob with Missoula Valley Swainson's Hawk*



*Swainson's Hawk*



# RAPTOR VIEW RESEARCH T-SHIRTS NOW AVAILABLE!

RVRI now 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](mailto:rob@raptorview.org) and subject your message "T-shirt."



**T- Shirt Design #1  
Front**



**T- Shirt Design #2  
Back**

## PARTNERSHIPS & COLLABORATIONS 2012 . . . .

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 and Ross Crandall with Craighead-Beringia South; Dr. David Ellis; Dr. Erick Greene and Dr. Heiko Langner with University of Montana; Five Valleys Audubon Society; Five Valleys Land Trust; Dr. Jim Lish with Oklahoma State University; Melanie Smith, Geographic Information System specialist; Missoula Electric Coop; Northwestern Energy; 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



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# 2012: A VIEW FROM THE FIELD



*Red-tailed Hawk*



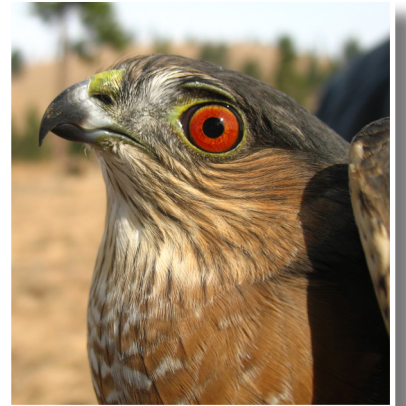
*Rob releasing Golden Eagle*



*Red-tailed Hawk*



*Cooper's Hawk*



*Sharp-shinned Hawk*



*Peregrine Falcon*





*Rough-legged Hawk*



*Red-tailed Hawk*



*Sharp-shinned Hawk*



*Jim Lish with Golden Eagle*



*Golden Eagle*



*Northern Harrier*



# SPECIAL INTEREST



Tyler Veto comes full circle, to head-up his first day-in-the-field for the Flagship Program-Willard Alternative High School students

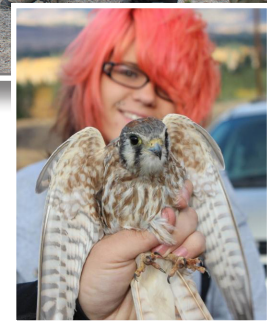
Way back in 2005, Whitney Warren and Charlie Simpson led a handful of Willard-Alternative High School students to our raptor banding station near Lincoln, MT. Tyler was one of those students. So moved by his experience, he accompanied his teachers for a Saturday morning return trip the very next day. He was the only student to make that weekend trip. As I recall, on that day we captured and banded a juvenile Northern Goshawk and that was all it took. Tyler had what raptor enthusiasts refer to as "raptor fever!"

The timeline has blurred over the years, but in short, he never really stopped coming around. With unbridled enthusiasm that couldn't be denied, Tyler showed-up at our field house (often unannounced) time and time again. He was always welcome and before long, had managed to carve himself out a little niche in our small, tightly knit crew of field biologists.

Eight years later, Tyler is now a Wildlife Biology student at the University of Montana. He has become an integral part of RVRI. He has learned the subtle nuances of raptor identification, as well as become a first-rate raptor trapper and handler. Furthermore, he has learned how to convey natural history facts and information about the raptors we study and the projects on which we are working.

In fact, this fall, with cooperation from The MPG Ranch, Tyler guided a small group of Willard Alternative High School Students who were eager to trap and band a raptor. As is sometimes the case, however, it was a slow day for raptors. Yet, Tyler persevered and made the day by capturing and banding an American Kestrel for the group!

*"Tyler's passion for his work was easily noticed by the students and they loved it. I know it was a day they won't forget."* -Vanessa Nie, The Flagship Program, Willard Alternative High School





# 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.

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In the interest of their privacy, we no longer list the names of our private and individual constituents, as many of them wish to remain anonymous

## INDIVIDUALS ●

From assistants in the field, to detailed lab analysis and everything you could imagine in between; we could not make it happen with out their generosity. As always, we make an effort try to recognize everyone. Thanks to all of you!

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