Raptor View Research Institute
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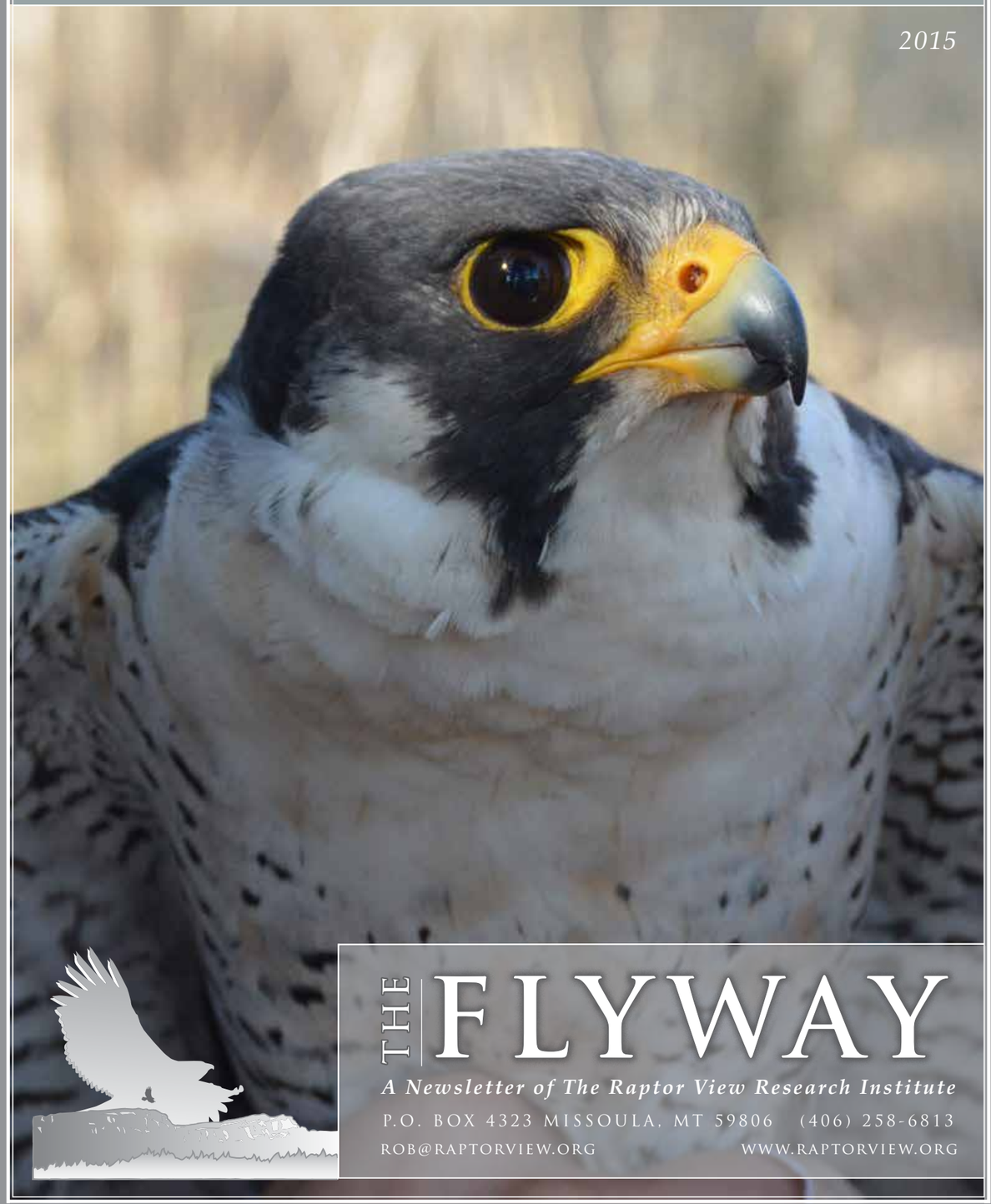
Your support is needed and ensures the continuation of our research, conservation and education programs. Thank you.

RAPTOR VIEW RESEARCH INSTITUTE

2015



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) annual newsletter. It has been eleven years since our inception – where does the time go!? In 2004, we formed RVRI to pursue our migratory Golden Eagle research along the Continental Divide near Lincoln, Montana. Back then, we were a handful of extraordinarily dedicated volunteers working tirelessly to learn all that we could and succeed on that single project. However, first we had to become skilled at capturing migratory Golden Eagles, which was not…how should I say, unproblematic. Our first banding season in 2001 was dismal, as we captured only four Golden Eagles. In 2015, working two banding stations and applying all that we have learned over the years, we banded 43 – a record season! To say the learning curve was steep would be a gross understatement, but learn we did. We have now grown to become one of the leading raptor research organizations in North America.

These days we are in the field year-round, heading up a variety of exciting conservation and education-based research projects and collaborations. Our focus continues to be long-term, population-based research, where we gather large amounts of data to better understand what is happening in a given population on a local, regional, or landscape scale. This newsletter provides the details and updates on many of our projects.

In addition to conducting research, we also offer free, hands-on outdoor educational workshops for local school groups, youth homes, community organization and the general public. Participants work side-by-side with our biologists and learn firsthand about our projects, raptor natural histories, as well as past, current and future conservation concerns. Participants always come away with a great appreciation for these remarkable birds.

As apex predators, raptors feed atop the food-web and thus serve as important bio-indicators (canaries in the coal mine) of ecosystem health and change. Indeed, if an ecosystem is off kilter, raptors are often the first to alert us of the problem. Whether it is environmental contaminants like lead and mercury, or the adverse effects of industrial and residential development on a given population, raptors will likely reveal that negative effect. Similarly, if raptor populations are healthy, we can often infer that the ecological system is healthy. This is why it is our priority to share our research results through scholarly journals, popular articles, social media and other outlets, to aid educators, conservationists, land stewards, industry, and the general public in making sound, science-based land management decisions. These decisions could be in your own backyard, or cover tens of thousands of acres.

As I close this letter, I hope that you are pleased with our accomplishments. We have stayed true to our mission and have worked diligently to reach this point in our development. To that end, I hope 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,

Robert Domenech

RVRI MISSION STATEMENT

The mission of RVRI is to provide knowledge of raptors (birds of prey) and the ecosystems that support them to the public andscientific community, through research conservation and education. As widespread predators inhabiting all terrestrial ecosystems, raptors serve as valuable indicators of ecosystem health. As "environmental barometers", or the "coal miner's canary", raptors are often the first obvious component of an ecosystem to show the negative effects of a failing system. RVRI believes that by protecting raptors and effectively managing for them, we are in turn, protecting the wild integrity of those ecosystems as a whole.

Swainson's Hawk Nesting Project

During the 2015 breeding season, with much help from Ken Furrow of Furrow Productions, and numerous landowners, we conducted our 10th survey for Swainson's Hawks (SWHA) nesting in the Missoula Valley.

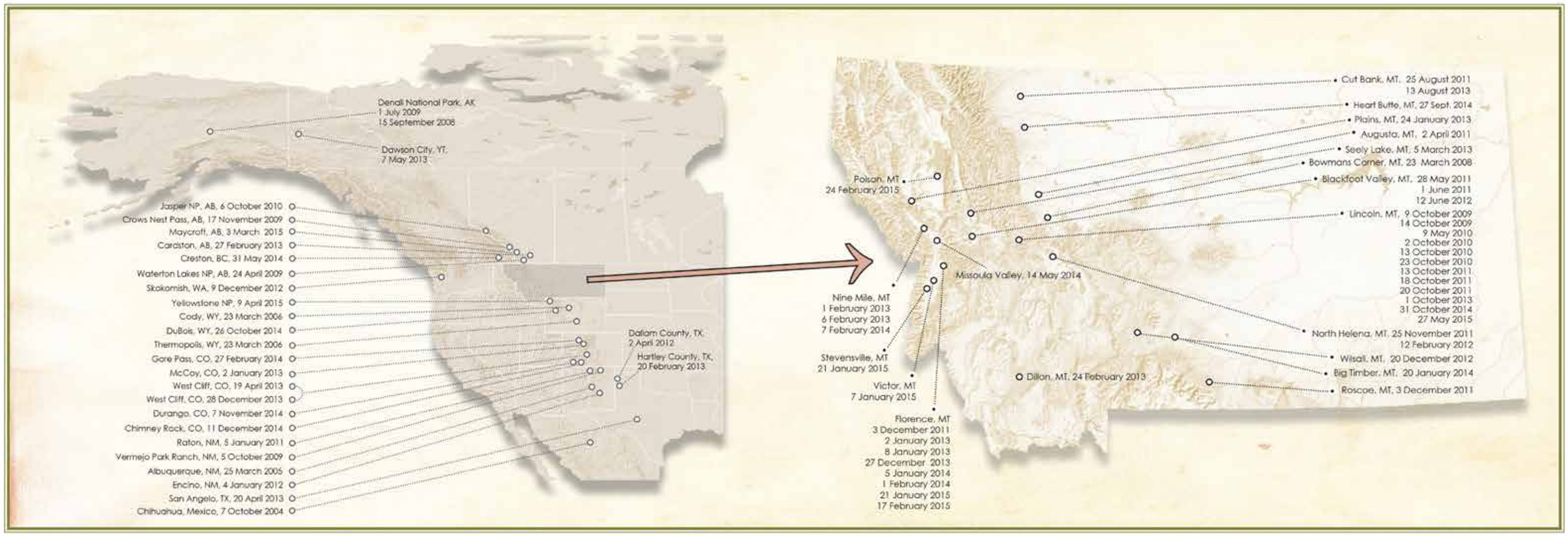
Overall since 2005, we have identified 17 SWHA territories (areas where one or more adults are observed throughout a breeding season). Within those territories, we banded 62 individuals and marked 51 with uniquely color-coded leg bands. Colored bands allow us to identify individuals from a distance and "keep tabs" on individuals annually, while learning more about breeding behavior, survivorship, territoriality, nest site and mate fidelity. We have re-sighted 20 color marked individuals, for an encounter rate of 32%. Additionally, we have also documented six cases of natal dispersal – where birds hatched in the valley have returned to nest in subsequent years.

In 2015 we encountered SWHAs on eight territories, and documented nesting efforts on seven. We also re-sighted five individuals. Of the seven nesting attempts, 11 young were fledged for average productivity of 1.5 young per nest (range equals 1-3 per nest).

We will continue working hard to better understand our Missoula Valley SWHA population, and determine what factors influence nest site selection, productivity, as well as nest failures and abandonment.

JESSICA LINDSAY, ROB DOMENECH WITH SWAINSON'S HAWKS

Golden Eagle Wing Tag Update 2015



In 2004, RVRI began applying wing-tag markers to Golden Eagles. These tags are blue vinyl with white numbers painted on. To date, we have wing tagged almost 300 migrant eagles at our banding stations and 30 wintering eagles in the Bitterroot Valley. Wing tagging provides us with invaluable re-encounter information on individual eagles that we cannot get from banding alone.

Our wing-tagged eagles have been encountered 76 times so far. These sightings help us learn where individuals winter and summer, how far they travel, as well as how long they live. We feel fortunate for these glimpses into the lives of these individuals, and hope to better understand the migratory ecology for the species as a whole. This project relies on citizen scientists who encounter auxiliary marked eagles and we sincerely thank all of the individuals who make this project possible by documenting their sightings!

Most importantly, mapping out wing-tag encounters clearly defines migration routes and seasonal ranges. Many of our eagles are re-sighted along the Rocky Mountain Front (RMF) where the convergence of the Great Plains and the Rocky Mountains creates a migration corridor from northern Canada to central Mexico. Migration count data has already shown the critical importance of the northern RMF, stretching from northern Canada to west-central Montana. Our wing-tag encounters along the southern RMF suggest this region is also very important for migrating and wintering Golden Eagles.

GOLDEN EAGLE, WING TAG #275

Education

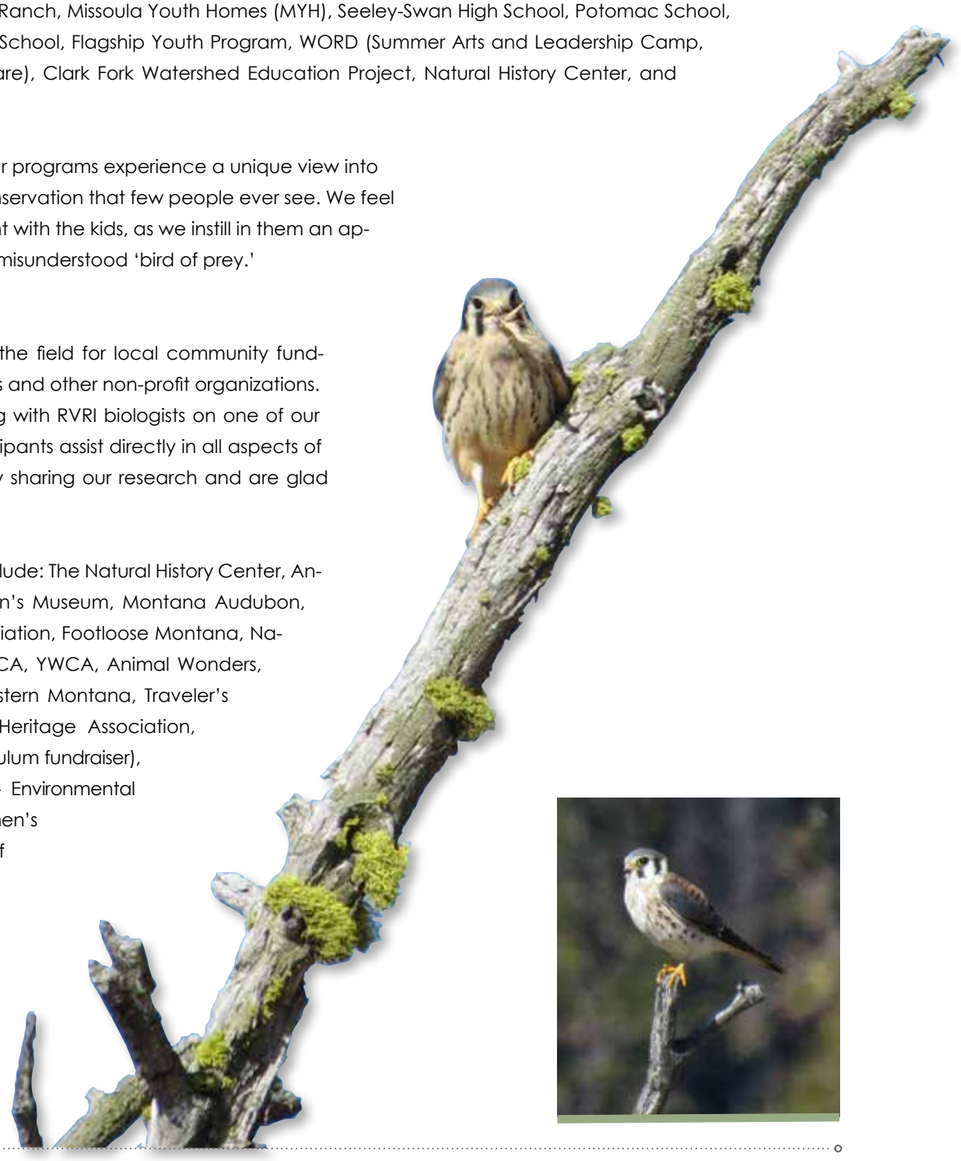
RVRI continues to offer free, hands-on outdoor educational workshops for local school groups, youth homes, college students, community organizations, the general public, and for charitable events. We feel that 'the informal, non-traditional classroom' is a great way to augment conventional approaches 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.

Participants in our educational programs include:
Audubon Society, MPG Ranch, 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 raptor 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, Humane Society of Western Montana, Traveler's Rest Preservation and Heritage Association, Paxon School (art curriculum fundraiser), U of M Legal Services - Environmental Law Group, The Women's and Children's Alliance of Idaho, and others.



AMERICAN KESTREL WITH GRASSHOPPER

Research

FALL MIGRATION AND BANDING RESEARCH FROM NORA RIDGE AND ROGERS PASS

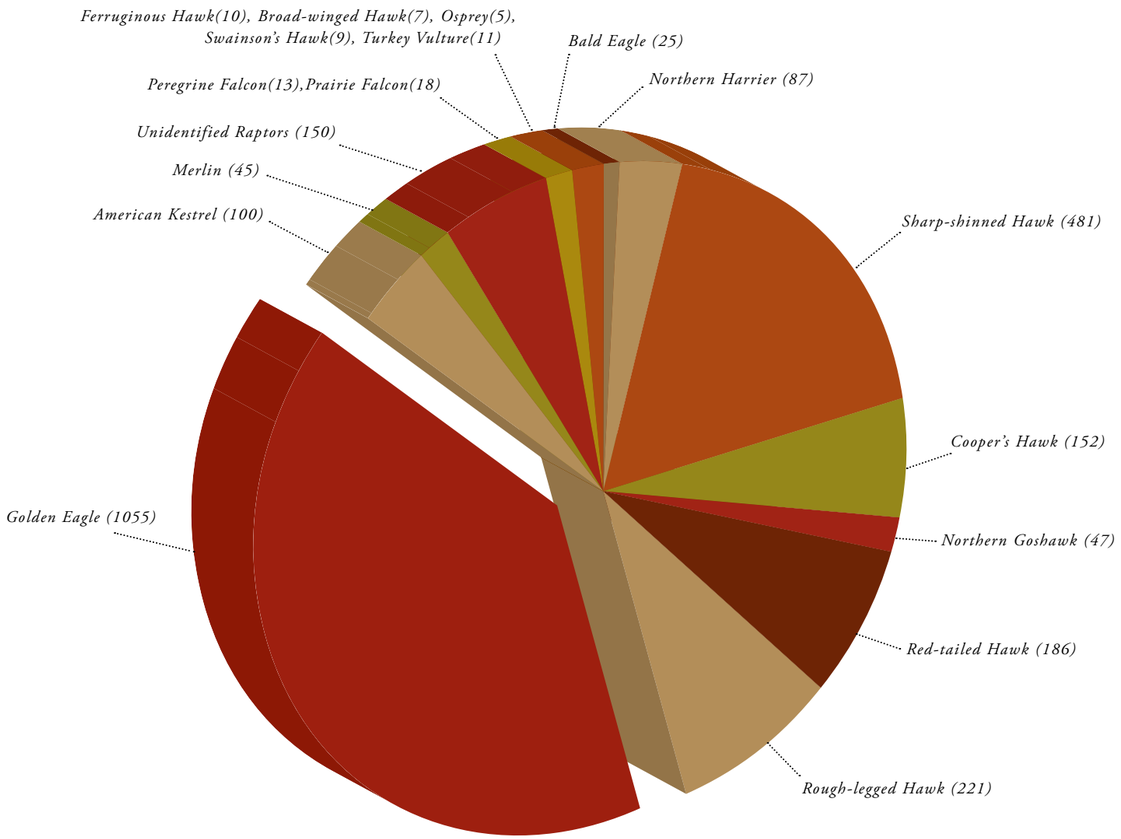
This fall we completed our ninth season of monitoring migrating raptors, with an emphasis on Golden Eagles, along the Rocky Mountain Front in west-central Montana. We operate two sites along the Continental Divide, Nora Ridge and Rogers Pass, where we band migrating raptors and record species composition, flight patterns, and total numbers observed, as well as local and regional weather conditions. Count numbers are typically similar between both sites, though we had higher overall raptor and Golden Eagle totals at Rogers Pass this year. We are excited to continue our long-term migration monitoring and banding research from both sites, which we have found is the most effective way to monitor the fall migration of raptors in our region.

The Crew
As always, we had a highly motivated field crew that went above and beyond expectations. Biologists included RVRI Executive Director Rob Domenech, Sarah Norton, Adam Shreading, Beth Mendelsohn, Erik Enzien, Cherin Spencer-Bower, Mary Scofield and Melissa Murillo. In addition, the team was joined by three full-time interns: Brian Busby, Avery Meeker and Danny Stark. Veteran trapper Hannah Beyl returned every weekend to volunteer her skills to the team and colleague Bryan Bedrosian made the trip from Wyoming to lend a hand. We thank everyone, including numerous dedicated volunteers for an amazing job!

LOOKING TOWARDS THE PLAINS FROM ROGERS PASS

GOLDEN EAGLE AND FALL RAPTOR MIGRATION COUNT FROM ROGERS PASS

We returned to Rogers Pass, located 3.5 miles northeast of Nora Ridge along the Continental Divide Trail, for the second year in a row after a 7 year hiatus from 2006 to 2013. We counted at Rogers Pass from September 6th through October 26th. We were unable to count on five of the 51 day count period due to weather. We counted a total of 2,622 raptors in 295 hours of observation (8.9 raptors/hour) at Rogers Pass, including 1,055 Golden Eagles. Peak flight days at Rogers Pass were September 25th and October 10th with 124 and 163 raptors respectively. This year's total Golden Eagle count at Rogers Pass was 28% higher than last year's total of 824.



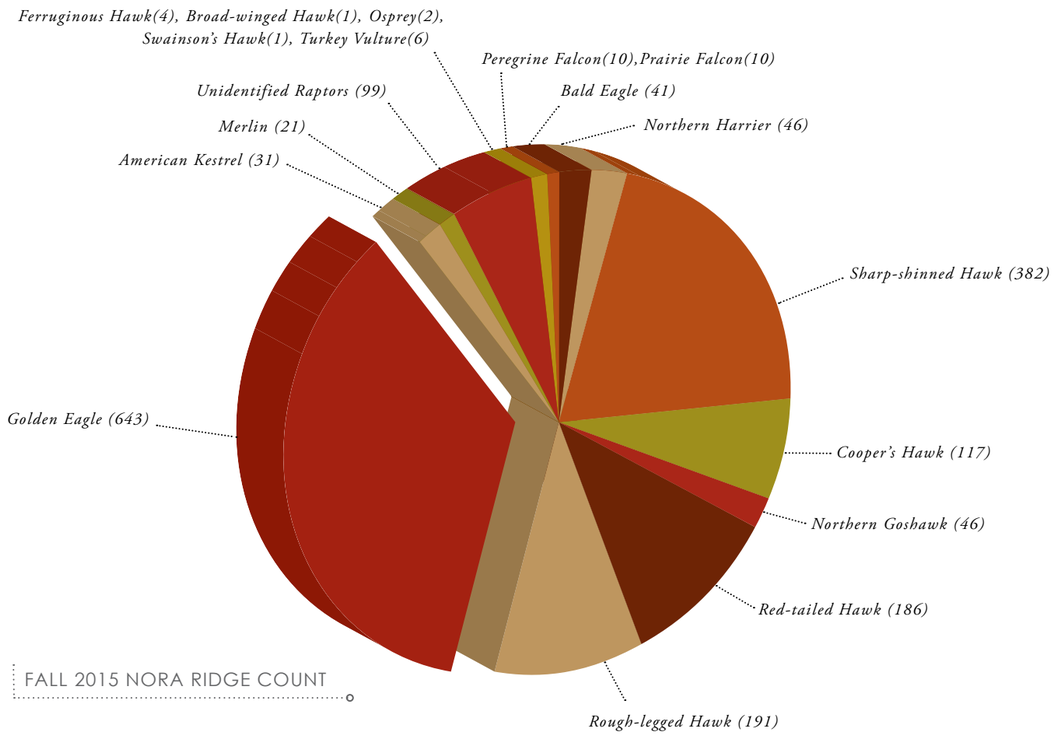
FALL 2015 ROGERS PASS COUNT

GOLDEN EAGLE AND FALL RAPTOR MIGRATION COUNT FROM NORA RIDGE

We counted migrating raptors at Nora Ridge from September 12th through October 26th. We were unable to count on five of the 45 days due to unworkable weather conditions. We counted a total of 1,824 raptors in 253 hours of observation (7.2 raptors/hour), comprised of 17 species, including 643 Golden Eagles. Our peak flight day at Nora Ridge was September 28th, when we counted 132 raptors. This year's total Golden Eagle count at Nora Ridge was just 55% the 2001-2014 average of 1,190 and 56% below last year's count of 1,448 Golden Eagles. The cause of this decline is unknown.

BANDING SUMMARY

We banded at both sites from September 12th through October 26th. We banded 43 Golden Eagles in total - a new season high! We captured 27 Golden Eagles on Rogers Pass and 16 on Nora Ridge. We captured 69 other raptors on Nora Ridge, and 75 other raptors at Rogers Pass, including Sharp-shinned Hawks, Cooper's Hawks, Northern Goshawks, Red-tailed Hawks, Rough-legged Hawks, Northern Harriers, Prairie Falcons and Peregrine Falcons at both sites.



FALL 2015 NORA RIDGE COUNT

ADULT GOLDEN EAGLE SATELLITE TRACKING STUDY 2015

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 have become a concern, as the sweeping blades are known to kill eagles. 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 over 40 adult Golden Eagles. We plan to expand this dataset in upcoming years, and share our findings through peer-reviewed journals. 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.

Our major partners in this project are: The Bureau of Land Management, the MPG Ranch, Teton Raptor Center and the U.S. Fish and Wildlife Service. Their support, passion, dedication, and expertise has been essential to the successes of this project. Thank you!

GOLDEN EAGLE RESEARCH PROJECTS 2015

Determining Sex in Golden Eagles (ongoing)

Morphological measurements such as, wing-chord, tail length, body weight, etc., have proven to be reliable indicators in differentiating between sex in several raptor species. Typically, female raptors are measurably larger than males (reverse sexual dimorphism) in mass and wing-length. This, however, 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

Wing loading, the relationship between weight and wing surface area, is a key aerodynamic feature of flight. It is associated with how a particular raptor species hunts 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". These birds commonly hunt and fly in an energy-efficient manner, requiring little speed to capture their prey. Heavily wing-loaded raptors like the Gyrfalcon and Merlin are known as "attackers". These powerful, high-speed fliers employ a direct pursuit style of hunting, often aimed at swift, larger bodied (relative to their size) prey species. Though a species of tremendous interest, little is known in terms of where Golden Eagles fit along this spectrum. We determined the wing loading of 33 Golden Eagles and compared individuals by age and gender. Our results indicate wing loading estimates for adult female Golden Eagles are among the heaviest reported for any raptor, and significantly heavier than other age and gender classes. Our findings were submitted for publication earlier last year, and are currently in review.

GOLDEN EAGLE

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 Bald Eagles, 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 lead bullet fragments left in gut piles from field dressing large game.

Golden Eagles are opportunistic feeders, known to scavenge and take wounded animals.

To date, we have lab analyzed blood from over 300 Golden Eagles, most of which had elevated blood-lead levels. We published our findings in the Archives of Environmental Contamination and Toxicology. We continue to sample eagles as a long-term project, adding to our growing database while ramping-up our educational outreach. We believe 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

Every fall, thousands of northern latitude raptors migrate through Montana on their annual journey from breeding and natal areas to wintering grounds. Where do these raptors come from? Using innovative sampling techniques, we have been able to more accurately estimate that natal origin, or "place of birth" of juvenile Golden Eagles and Northern Goshawks.

Specifically, we monitor the ratios of an isotope of hydrogen, called deuterium, which change 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 were grown in the nest, we can estimate the individual bird's natal origin. We analyzed feathers from 58 fall-migrant, juvenile Golden Eagles and published a manuscript in September 2015 in the Journal of Raptor Research.

RVRI RECENT PUBLICATIONS

Estimating Natal Origins of Migratory Juvenile Golden Eagles Using Stable Hydrogen Isotopes (2015). Journal of Raptor Research, 49, 308-315. *Domenech, R., Pitz, T., Gray, K. & Smith, M.*

Space Use and Habitiat Selection by Adult Migrant Golden Eagels Wintering in the Western United States. (2015). Journal of Raptor Research, 49(4): *429-400. Domenech, R., Bedrosian, B., Crandall, R. & Slabe, V.*

Lead and Mercury in Fall Migrant Golden Eagles from Western North Amercia (2015). Archives of Environmental Contamination and Toxicology, 1-8. *Langner, H.W., Domenech, R., Slabe, V. & Sullivan, S.P.*

Wing Loading in North American Golden Eagles (2015). Journal of Raptor Research, 50(1): 70-75. *Lish, R., Domenech, R., Bedrosian, B. & Ellis, D.*

Diagnostic Analysis of Veterniary Dried Blood Spots for Toxic Heavy Metals Exposure (2013). Journal of Analytical Toxicology, 37(7), 406-422. *Lehner, A.F., Rumbeiha, W., Shlosberg, A., Stuart, K., Johnson, M., Domenech, R. & Langer, H.*

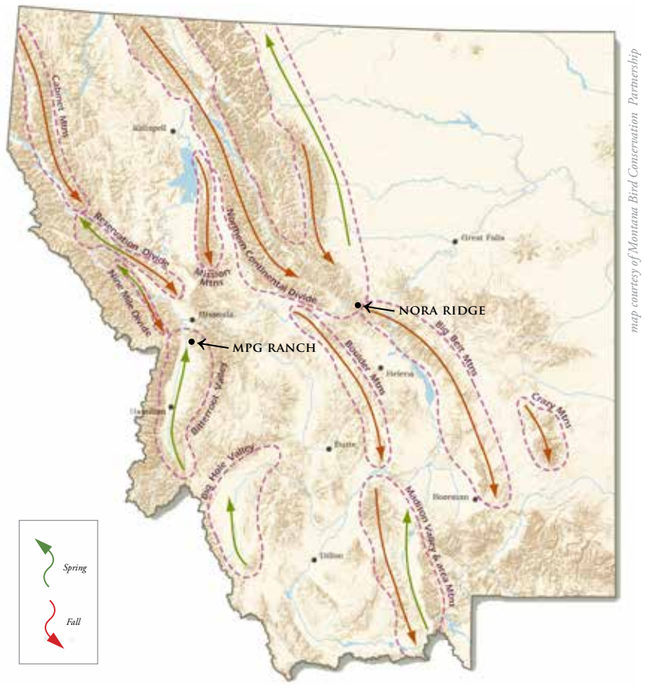
Mercury and Other Mining-Related Contaminents in Ospreys Along the Upper Clark Fork River, Montana, USA (2012). Archives of Environmental Contamination and Toxicology, 62(4), 681-695. *Langer, H.W., Greene, E., Domenech, R. & Staats, M.F.*

MPG RANCH COLLABORATION

In 2011 we partnered with the MPG Ranch to conduct a variety of conservation based raptor research projects. The MPG Ranch is roughly 10,000 acres of river bottom, coniferous forests, open grassland, and shrub lands in the north end of western Montana's Bitterroot Valley. The MPG Ranch owners and staff are working diligently to restore the ranch to historic ecological conditions. Because raptors serve as an indicator species of ecosystem health, we can help gauge the effects of restoration efforts by closely monitoring raptor populations on the MPG Ranch.

Spring/Fall Migration:
The MPG Ranch has the distinction of being one of the only three places in the West where raptor migration counts are conducted in both the spring and fall. Since 2011, we have conducted counts in both seasons and recorded impressive overall numbers and species diversity for the intermountain region of the Rocky Mountains.

We see a higher proportion of Turkey Vultures, Ospreys, Northern Harriers, Red-tailed Hawks and falcons at the MPG Ranch than at Montana's other count sites. Our spring total count was slightly higher than last year, but still well below 2012-2013 totals. Though rarely seen at Montana's ridgeline count sites, Turkey Vultures dominated our fall count for the third straight year.



map courtesy of Montana Bird Conservation Partnership

MAP OF WESTERN MONTANA'S MAJOR RAPTOR MIGRATION ROUTES

MPG RANCH FALL 2015 RAPTOR MIGRATION COUNT

Turkey Vulture	*921*
Osprey	*136*
Bald Eagle	*44*
Northern Harrier	*114*
Sharp-shinned Hawk	*415*
Cooper's Hawk	*213*
Northern Goshawk	*11*
Broad-winged Hawk	*72*
Swainson's Hawk	*43*
Red-tailed Hawk	*716*
Ferruginous Hawk	*1*
Rough-legged Hawk	*132*
Golden Eagle	*68*
American Kestrel	*291*
Merlin	*18*
Peregrine Falcon	*34*
Prairie Falcon	*26*
Unidentitfied Raptors	*131*
Totals	***3,386***

MPG Ranch biologist Eric "Kerr" Rasmussen headed this year's observation efforts again, and worked with an amazing team of counters including Cherin Spencer-Bower, John Csoka, Jessica Taylor, Emma DeLeon, Dan Cox, and Dave Meyer. Our crews braved the elements for over two straight months during spring and fall counts, often scanning the skies for eight or more hours a day. We were very fortunate to have such a great group of individuals; their enthusiasm, work ethic, and positive attitude made each season a success!

MPG Banding Summary, Fall 2015
In addition to counting, we conducted our fourth fall migration banding season this year on the MPG Ranch. We banded from September 7th through September 29th. With the support of the MPG Ranch, we focused our efforts on deploying GPS transmitters to track long-distance migrants of different species. We successfully outfitted two Cooper's Hawks, one Peregrine Falcon, one Prairie Falcon and three Red-Tailed Hawks with GPS tracking devices. In total we banded 36 individuals of 9 different species this year.

Resident Raptor Banding:
In conjunction with MPG staff biologists we have been monitoring all known nesting raptors on the MPG Ranch including Golden Eagles, Bald Eagles, Osprey, Northern Harriers, Red-tailed Hawks, Cooper's Hawks, and American Kestrels. Additionally, we have marked over 200 raptors with unique combinations of colored bands so they can be identified at a distance. Re-sightings of color-marked individuals help us assess survivorship and fidelity to breeding areas and mates. The high number of American Kestrels on the ranch has earned them special attention. Since 2011, we have captured over 150 American Kestrels on the MPG Ranch; over 30% of adults have been re-sighted in subsequent breeding seasons! This year we deployed 14 lightweight pinpoint GPS units on American Kestrels breeding on the MPG Ranch to find out where they spend winters.

clockwise from top left AMERICAN KESTREL, COLOR BANDED KESTREL, KESTREL WITH SATELLITE TRANSMITTER

MPG RANCH COLLABORATION

Eagle Toxicology Study:
Since 2011 we have tested over 80 Bald and Golden Eagles captured on the MPG Ranch for blood-lead content. Unfortunately, the vast majority (~90%) tested higher than what we would expect from background levels alone; many had toxic elevated levels and two had clinical levels. Raptors absorb lead into the body from the blood within 2-3 weeks, which means that lead exposure occurs while on wintering territories in the Bitterroot Valley. We believe that ingestion of lead bullet fragments left in big game gut piles and carcasses that eagles feed on provides the main source of this toxicity. Besides testing the eagles we capture for lead levels, we outfit Golden Eagles with wing tags or satellite tracking units, and Bald Eagles with blue numbered leg bands.

Golden Eagle Satellite Tracking:
This winter we plan to deploy five GPS transmitters on Golden Eagles captured on the MPG Ranch, which would bring the total number since 2011 up to 18. During the past four springs, we watched the eagles travel as far north as the Brooks Range above the Arctic Circle! In fall, each bird returns to Montana, showing a high degree of fidelity to the Bitterroot Valley.

Osprey Satellite Tracking
This season we set out to track individuals from three Osprey nests on/near the MPG Ranch for the fourth consecutive year. Two pairs successfully fledged young, though one pair used an alternate nest on top of a live power pole which prevented us from safely banding the young. On July 20th, we entered the North Center Pivot nest, and outfitted its three nestlings with GPS transmitters. One of the three nestlings perished during its fall journey, while the other two are alive and well on wintering grounds in Mexico.

GOLDEN EAGLE 208

On February 17, 2013, we captured a third-year female Golden Eagle and gave her wing tags with the number 208. We encountered her for the second time on December 28, 2013, near our Woodchuck trapping station. The eagle was encountered a third time January 7, 2015, while feeding on a deer carcass (pictured below) near the Fred Burr trailhead in the Bitterroot Valley.

On January 20, 2016, we recaptured 208 as she fed at our Woodchuck trapping station to test her blood-lead levels for a second time and inspect her wing tags after nearly three years of wear. Her wing tags were in excellent condition, and though her lead levels were higher than when originally captured, she was significantly heavier and well muscled. Since she was now an adult, we decided to remove her wing tags and outfit her with a GPS transmitter.

GOLDEN EAGLE 208 FEEDING ON CARCASS

HARLAN'S HAWK

We captured this adult Red-tailed Hawk December 4, 2013. The bird showed the characteristics of being a Harlan's Hawk, a northern-breeding variety of Red-tailed Hawk. After tracking her from her wintering grounds on the MPG Ranch up to her breeding grounds in Canada's Yukon territory for two years, there was little more to learn from her movements, so we captured her as she fed on our bait in the North Center Pivot bait on January 18, and removed her transmitter. She was in fantastic condition, and had gained weight since her original capture. Before releasing her, we gave her a colored band, so we can identify her in the future.

clockwise from top left MAP OF MPG HARLAN'S HAWK MIGRATION ROUTE, HARLAN'S HAWK, HARLAN'S FEEDING ON CARCASS

OSPREY RESEARCH 2015

Osprey Toxicology & Baling Twine Projects

To date, we have accessed about 40 nests, drawn blood samples (for heavy metal analysis) and banded over 350 nestlings. 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 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 and possibly atmospheric contaminants on Ospreys and the ecosystems that support them.

To learn more about this toxicology project, please see our resent 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.

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. Specifically identifying individuals wearing only a metal USGS band almost always means they must be recaptured or found as mortalities. In total, we have color banded over 200 individual Osprey and the encounters are starting to come in. So far we have had young Ospreys encountered along the Gulf Coast of Texas, in Mexico, Honduras and Guatemala!

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 is issue. For more information or for copies of this Osprey and Baling Twine pamphlet contact projectosprey@mso.umt.edu or visit our website and check out our Osprey section at www.raptorview.org

ADULT OSPREY FROM THE MPG RANCH NESTS SHOWING TRANSMITTERS

2015: A View From The Field

ROUGH-LEGGED HAWK

NORTHERN HARRIER

SHARP-SHINNED HAWK

GOLDEN EAGLE RELEASE

GOLDEN EAGLE RELEASE

MARY SCOFIELD AND NORTHERN HARRIER

DENVER HOLT - OWL RESEARCH INSTITUTE, ROB DOMENECH

RED-TAILED HAWK

KEN FURROW - FURROW PRODUCTIONS
BRYAN BEDROSIAN - TETON RAPTOR CENTER

HARLAN'S HAWK

HARLAN'S HAWK

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
Charlotte Martin Foundation
Cinnabar Foundation
Clark Fork Coalition
Craighead-Beringia South
Fanwood Foundation
Fledgling Fund
Five Valleys Audubon
Helena National Forest
Koret Foundation
Rocky Mountain-
Golden Eagle Research
Foundation
Liz Claiborne Art Ortenburg Foundation
Maki Foundation
Llewellyn Foundation
The MPG Ranch
Mountaineer's Foundation
Montana Natural History Center
Movebank.org
MT Fish, Wildlife & Parks
MT Audubon
Norcross Wildlife Foundation
Oklahoma State University
Owl Research Institute
Patagonia
Raptors of the Rockies
S.E.C. Charitable Corp
Seaturtle.org
The Nature Conservancy
University of Montana
Walker Family Trust
Wild Skies Raptor Center
Yellowstone to Yukon

BUSINESS SUPPORT

Ancare Veterinary Clinic
Alter Enterprises Inc.
A & S Electric
B.A. Builders Inc.
Boyce Lumber
Candy Goff-Bookkeeping
Chuck Irestone Web Designs
Dillon Tree and Landscape Co.
Furrow Productions
Grant Creek Ranch
Law Office of John J. Ferguson
Law Office of J. Tiffin Hall
Kettle House Brewery
Missoula Veterinary Clinic
Missoula Electric Cooperative
Montana Ace Hardware
Northwestern Energy
R.E.I.
Rustystring Graphic Design
Salmon Logging

CONSTITUENTS

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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Brian Busby
Brooke Tanner
Bryan Bedrosian
Charlie Simpson
Cherin Spencer-Bower
Christa Weathers
Chuck Irestone
Cynthia Hudson
Dan Cox
Danny Stark
Dave Taylor
Dave Meyer
David Haines
David Lopez
Denver Holt
Don Rakow
Emma DeLeon
Erik Enzien
Erick Greene
Eric Rasmussen
Fred and Cathy Tilly
Hannah Beyl
Heiko Langner
Jerry and Jane Densel
Jerry and Liz Cain
Jesse Varnado
Jessica Lindsay
Jessica Taylor
Jim Lish
Jim and Marci Valeo
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Kate Stone
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Kathy Gray
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Krist Hagar
Mary Scofield
Mat Seidensticker
Matt Young
Melanie Smith
Melissa Murillo
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Pat Little
Pat Shanley
Peter Sherrington
Robert Zirl
Ross Crandall
Sam Milodragovich
Sarah Norton
Shandra Rissmann
Stan and Marge Lucier
Stephen "Step" Wilson
Steve Hoffman
Tim and Noel Nesmith
Tyler Veto
Vince Slabe
Victoria Parks
William Blake

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 and subject your message "T-shirt."

DESIGN #1
FRONT VIEW

DESIGN #2
BACK VIEW

PARTNERSHIPS & COLLABORATIONS 2015

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 a need, common interest and passion for wildlife, conservation and the environment. As often happens, professional relationships turn into lifelong friendships.

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

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