

# RAPTOR VIEW RESEARCH INSTITUTE

Spring 2017



## THE FLYWAY

*A Newsletter of The Raptor View Research Institute*

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Welcome to Raptor View Research Institute's (RVRI) annual newsletter – the “flyway.” Here we summarize our research, conservation and education based activities. We have been at this for twelve years and are proud of what we have been able to achieve. Some of our long-term, population-based studies, such as our Golden Eagle research along the Continental Divide near Lincoln, Montana have been on-going since our beginning and continue offer important insights on this ‘species of concern.’ Others such as our satellite tracking of fall migrating Red-tailed and Cooper’s Hawks are just getting started. All of our studies help us to learn more about the natural histories and conservation challenges birds-of-prey face locally and on a landscape level in our modern world of human-induced change.

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. This is why it is our priority to share our research through scholarly journals, popular articles, social media and other outlets, to aid educators, conservationists, land stewards, industry, and the public in making sound, science-based land management decisions. These decisions could be in your own backyard, or cover tens of thousands of acres.

All of our projects incorporate educational components, mostly by-way-of free, hands-on, in-the-field workshops for local school groups, youth homes, community organization and the general public. These programs reach hundreds of attendees annually. Participants work side-by-side with our biologists and learn firsthand about our projects, raptor natural his-

ories, as well as past, current and future conservation concerns. People always come away with a great appreciation for these remarkable birds. We feel this is the first step in affecting long-term conservation of these protected species and the ecosystems they depend on.

A recent, innovative aspect to our educational outreach was made possible by our major collaborator and supporter - The MPG Ranch located in Florence, Montana. Since 2012 we have outfitted Osprey and Golden Eagles captured on the ranch with GPS satellite telemetry units (transmitters). The transmitters allow us to track and “observe” the movements and behaviors of the birds. Whether it is Golden Eagles that summer in northern Alaska or Osprey that winter in Central America, we keep tabs on these birds daily. In 2016, after much research and development, The MPG Ranch launched the new “raptor tracker” website. Now anyone in the world can track the birds as we do – this has unlimited outreach and education potential and promises to reach thousands. Please see page 6 for more details and go track some raptors.

As I close, I hope that you are pleased with our accomplishments. We have stayed true to our mission, doing our best to target priority research needs, while protecting raptors, the ecosystems and habitats they depend on. To that end, I hope you will consider us for a tax-deductible contribution. Your support is important 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 and scientific 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.



During the 2016 breeding season, as always, with much help from Ken Furrow of Furrow Productions, we conducted our 11th survey for Swainson’s Hawks (SWHA) nesting in the Missoula Valley.

Overall since 2005, we have identified 19 SWHA territories (areas where one or more adults are observed throughout a breeding season). Within those territories, we banded 65 individuals and marked 54 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 24 color marked individuals, for an encounter rate of 36%. Additionally, we have also documented seven cases of natal dispersal – where birds hatched in the valley have returned to nest in subsequent years.

In 2016 we encountered SWHAs on eight territories, and documented nesting efforts on four. We also re-sighted four color-marked individuals. Of the four observed nesting attempts, seven young were fledged for average productivity of 1.75 young per nest (range equals 1-2 per nest). We suspect more pairs may have successfully fledged young, but locating the nests can be very challenging. We have noticed that some pairs nest miles from where they hunt. Following those individuals from hunting grounds – almost exclusively in Columbian Ground Squirrel colonies - to nest locations across numerous private properties presents obvious difficulties.

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.

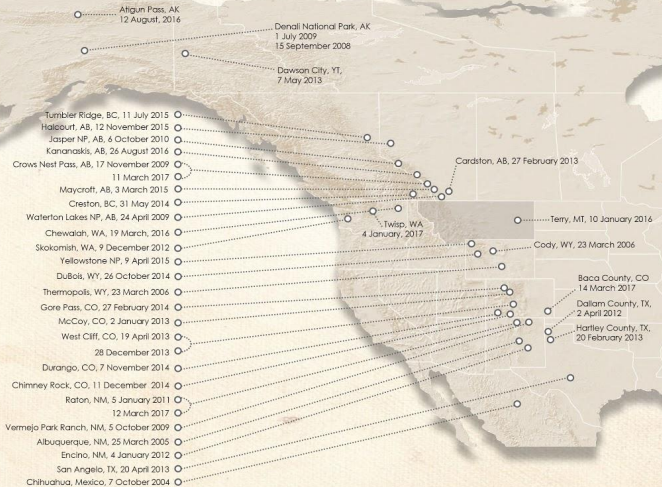
*As a side note: This season we had a first – an immature (2-year-old) female SWHA nest, and successfully fledge one youngster. We have observed immature hawks in early spring before, but none of them ever attempted to breed.*



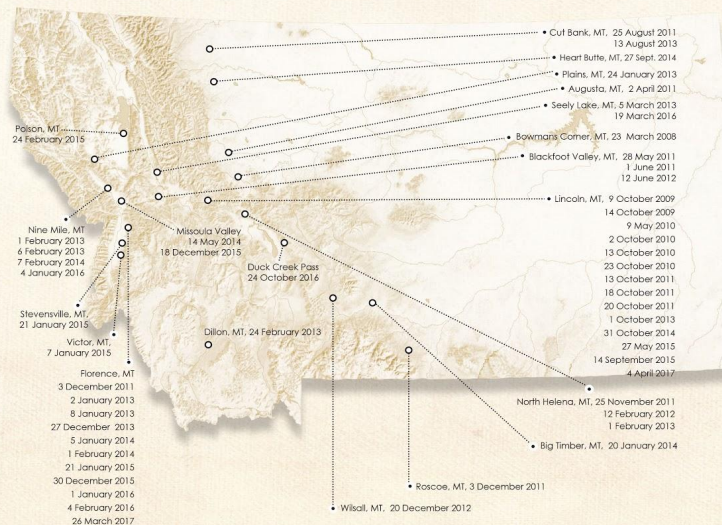
left, 2 YEAR OLD SWAINSON’S HAWK WITH NEST BUILDING MATERIAL, right, ROB DOMENECH WITH SWAINSON’S HAWK



# GOLDEN EAGLE WING TAG UPDATE 2017



WESTERN NORTH AMERICA



MONTANA

In 2004, RVRTI 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 of 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.



above, MAPS OF WING TAG RE-ENCOUNTERS ACROSS NORTH AMERICA

right, GOLDEN EAGLE, WING TAG # 296

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, Pofomac 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, National Public Radio, YMCA, YWCA, Animal Wonders, Humane Society of Western Montana, Paxon School (art curriculum fundraiser), U of M Legal Services - Environmental Law Group, The Women's and Children's Alliance of Idaho, Back Country Hunters and Anglers, Missoula Humane Society and others.

**MPG Ranch Raptor Tracker**

In 2016, after much research and development, The MPG Ranch launched the new "raptor tracker" website. Now anyone with a computer or smart phone can track the raptors as we do – see where they summer and winter, as well as follow them along their migration. This exciting new tool has unlimited outreach and education potential. To track the raptors, go to: [raptortracker.mpranch.com](http://raptortracker.mpranch.com)



COMMUNITY MEMBERS OF ALL AGES PARTICIPATE IN OUR OSPREY EDUCATIONAL WORKSHOPS

## FALL MIGRATION AND BANDING RESEARCH FROM NORA RIDGE AND ROGERS PASS



This fall we completed our tenth 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. Both sites shined in their own way—we banded over 30 Golden Eagles at Rogers Pass, and counted record numbers of migrants at Nora Ridge! 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**

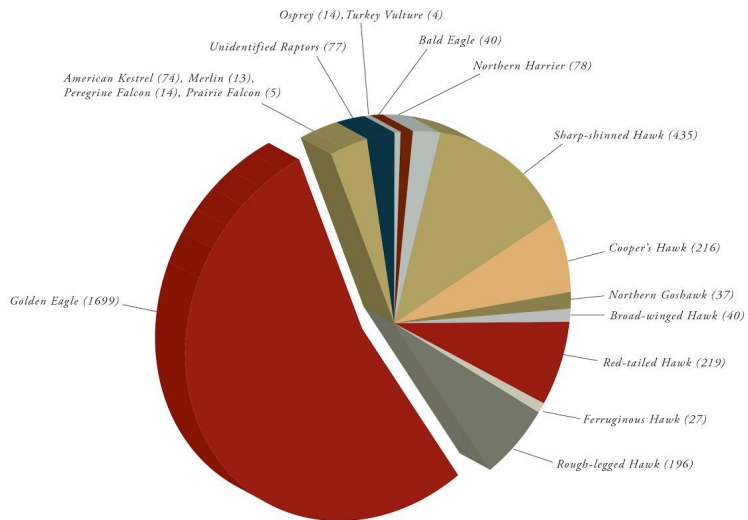
As always, we had a highly motivated field crew that went above and beyond expectations. Biologists included RVRI Executive Director Rob Domenech, Sarah Norton, Adam Shreading, Jordan Harrison, Erik Enzien, Rya Rubenthaler, Mary Scofield, Danny Stark, and hawk-counting legends Fred and Cathy Tilly. In addition, the team was joined by veteran trapper Hannah Beyl volunteered on weekends, and colleague Bryan Bedrosian made the trip from Wyoming to lend a hand. We thank everyone, including numerous dedicated volunteers for an amazing job!



clockwise from top left, SARAH, MARY AND RYA TEARING DOWN, JORDAN, NORA RIDGE, DANNY, RYA, ROGERS PASS BLIND

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

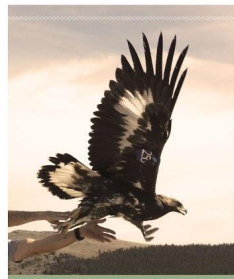
We counted migrating raptors at Nora Ridge from September 8th through October 30th. We were unable to count on seven days due to unworkable weather conditions. We counted a total of 3,188 raptors in 240 hours of observation (13.3 raptors/hour), comprised of 17 species, including 1,699 Golden Eagles! This was the most Golden Eagles and total raptors we have ever seen in a season, and we also saw record numbers of Cooper's Hawks, Red-tailed Hawks, Ospreys, Northern Harriers, and Ferruginous Hawks. Our peak flight day at Nora Ridge was October 13th, when we counted 243 raptors, 217 of which were Golden Eagles.



FALL 2016 NORA RIDGE COUNT

## BANDING SUMMARY

We banded at both sites from September 12th through October 25th. We banded 42 Golden Eagles in total - just one eagle shy of 2015's season high! We captured 32 Golden Eagles on Rogers Pass and 10 on Nora Ridge. We captured 46 other raptors on Nora Ridge, and 26 other raptors at Rogers Pass. The highlight of the season was October 13th at Rogers Pass, where we caught a record 7 Golden Eagles and a Gyrfalcon!



left row and bottom right, GOLDEN EAGLE RELEASE, right row, top and middle, GE TALONS, GE TALON AND BAND

ADULT GOLDEN EAGLE  
SATELLITE TRACKING STUDY 2016

While historic threats to migrating eagles (power-line electrocution, lead contamination, poisoning, vehicle collisions, shooting, etc.) persist, many wintering destinations throughout the West have 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 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 50 adult Golden Eagles. Due to the conservation and management utility of this technology we plan to expand this dataset in upcoming years, and continue to share our findings through scientific, 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 MPG Ranch, Teton Raptor Center, the U.S. Fish and Wildlife Service and the Bureau of Land Management. Their support, passion, dedication, and expertise has been essential to the successes of this project. Thank you!



top, GOLDEN EAGLE FITTED WITH SATELLITE TRANSMITTER bottom, SATELLITE TRANSMITTER

GOLDEN EAGLE 44

October 13, 2007, was a memorable day where we captured 5 Golden Eagles. We gave one of these eagles, a third-year male, wing-tags marked with the number 44. On February 20, 2013, we were contacted by a rancher who had photographed GE-44 on his land in northwestern Texas. This summer, our friend and fellow eagle researcher, Dr. Travis Booms (biologist with Alaska Game & Fish) photographed GE-44 in the Brooks Range of Alaska, nearly nine years after we banded him! We were thrilled to learn the eagle was alive and well, and to see the wing-tags in good condition. GE-44 is the first of our eagles to be encountered on both wintering and summer ranges, and is a great example of how effective auxiliary marking can be!



left, GE 44'S WINTER AND SUMMER RANGE, right above, GE 44 RE-SIGHTED IN TX, right below, GE 44 IN 2007. DAY OF CAPTURE

## GOLDEN EAGLE RESEARCH PROJECTS 2016

### Determining Sex in Golden Eagles

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.

### 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 350 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., Plitz, T., Gray, K. & Smith, M.

### Space Use and Habitat Selection by Adult Migrant Golden Eagles 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 America (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 Veterinary Dried Blood Spots for Toxic Heavy Metals Exposure (2013).

*Journal of Analytical Toxicology*, 37(7), 406-422. Lehner, A.F., Rumbelha, W., Shlosberg, A., Stuart, K., Johnson, M., Domenech, R. & Langer, H.

### Mercury and Other Mining-Related Contaminants 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.

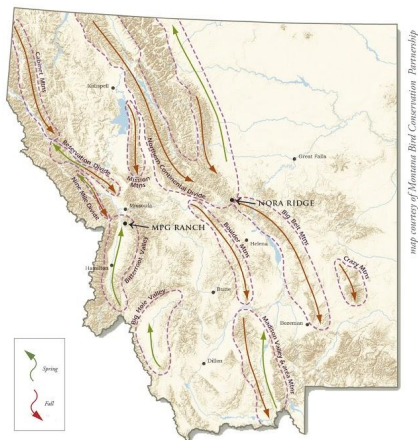
## MPG RANCH COLLABORATION

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. This spring's count was higher than the previous two years, but lower than the springs of 2012-2013. Our fall total of 5,771 is the most raptors we have seen since starting our surveys in 2011.



MPG RANCH FALL 2014 RAPTOR MIGRATION COUNT	
Turkey Vulture	2115
Osprey	173
Bald Eagle	103
Northern Harrier	114
Sharp-shinned Hawk	761
Cooper's Hawk	307
Northern Goshawk	21
Broad-winged Hawk	96
Swainson's Hawk	32
Red-tailed Hawk	1286
Ferruginous Hawk	1
Rough-legged Hawk	100
Golden Eagle	141
American Kestrel	330
Merlin	14
Peregrine Falcon	38
Prairie Falcon	20
Unidentified Raptors	119
<b>Totals</b>	<b>5,771</b>

MAP OF WESTERN MONTANA'S MAJOR RAPTOR MIGRATION ROUTES

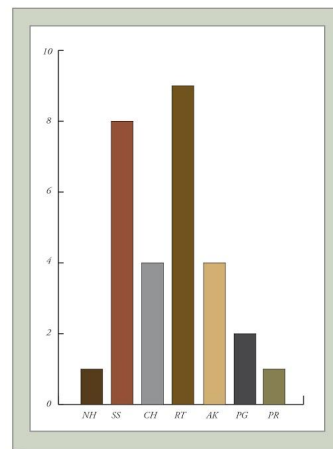
As usual, MPG Ranch biologist Eric "Kerr" Rasmussen headed this year's observation efforts, and worked with an amazing team of counters including Sarah Norton, Mary Scofield, Jessica Taylor, Samantha Diaz, Jack Toriello and Nathan Hough. Our crews braved the elements for over two straight months during 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 2016

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, two Peregrine Falcons, and four Red-Tailed Hawks with GPS tracking devices. In total we banded 29 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, 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. We believe monitoring the productivity of raptors nesting on the MPG Ranch will serve as a metric for improving ecological functions resulting from the extensive restoration efforts by ranch personnel.



left, MPG BANDING TOTALS, FALL 2016, right top and bottom, COOPER'S HAWKS



## MPG RANCH COLLABORATION

### Bitterroot Valley Eagle Lead Study

Since 2011 we have tested over 100 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 sub-clinical levels and two had acute, near lethal levels. Because elevated blood-lead levels indicate recent exposure, our results suggest eagles are ingesting lead while on their wintering territories in the Bitterroot Valley. We believe the main source of this lead is bullet fragments left in big game gut-piles and carcasses ingested by eagles. 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 deployed four GPS transmitters on adult Golden Eagles captured on the MPG Ranch, which brings the total number since 2011 up to 28. During the past four springs, we watched the eagles travel as far north as the Brooks Range above the Arctic Circle! In fall, most birds returns to Montana, showing a high degree of fidelity to their Bitterroot Valley wintering grounds.

### Osprey Satellite Tracking

This season we set out to track individuals from three Osprey nests on/near the MPG Ranch for the fifth consecutive year. All three pairs successfully fledged young, and in total we put transmitters on one adult female and six nestlings. Be sure to visit [raptortracker.mpranch.com](http://raptortracker.mpranch.com) to follow along with the Ospreys and Golden Eagles throughout the year!



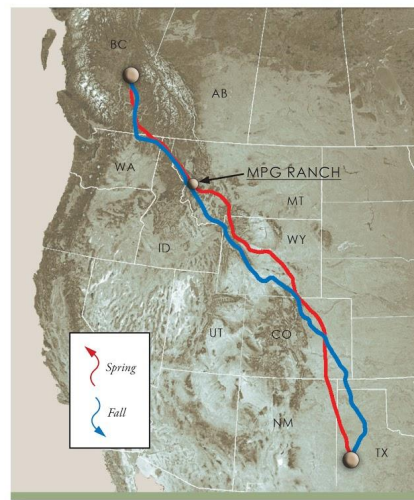
clockwise from top left. MPG WINTER TRAPPING CREW. MARY WITH GE, SHARP-SHINNED HAWK, PEREGRINE FALCON, GE ON CARCASS

## RTHA SATELLITE TELEMETRY STUDY

In collaboration with the MPG Ranch, RVRI began a satellite telemetry study on Red-tailed Hawks (RTHA) in 2013. In total, we have instrumented 8 individuals (3 adult and 5 immature) and are thrilled with the success of this project thus far. Our birds can be found wintering as far south as Baja California and summering as far north as Northwest Territories, Canada!

RTHAs come in a variety of color morphs and sub-species. One of the most fascinating is the Harlan's Hawk. This northern ranging sub-species, of Alaska and northwestern Canada was once recognized as a separate species. It has unique colors and feather patterns that set it apart from all the others.

This beautiful hawk was captured 9/22/2015 during the fall migration. It shares feather patterns and colors of Harlan's and Calurus (western) RTHAs. Because of this, we are treating it as an intergrade of the two races. Note the spots down the center of the tail feathers, rufous neck and nape, as well as white throat and indistinct patagial marks on the under-wing. To our knowledge, this is only the second Harlan's type to be tracked via satellite telemetry. See RVRI's Flyway Spring 2016 to see tracks of the first.



left. SPRING AND FALL MIGRATION ROUTES OF TRANSMITTER EQUIPPED, POSSIBLE HARLAN'S/CALURUS HAWK INTERGRADE

## OSPREY RESEARCH 2016

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

To date, we have accessed about 40 nests, drawn blood samples (for heavy metal analysis) and banded about 400 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 local expert, University of Montana researcher Dr. Erick Greene (Division of Biological Sciences and Wildlife Biology), to closely examine the causes, locations and possible effects of mining-related heavy metal contaminants on Ospreys and the ecosystems that support them.

To learn more about this toxicology project, please see our 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 bands with white numbers), as this greatly enhances our chances of identifying individuals 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



left, OSPREY, right, BANDING AN OSPREY CHICK

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!

### **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).



left, OSPREY CHICK TANGLED IN BALING TWINE, right, OSPREY



# 2016: A VIEW FROM THE FIELD



SHANNON NOON  
WITH GOLDEN EAGLE



ROB WITH ADULT  
NORTHERN GOSHAWK



JUVENILE  
GYRFALCON



ADULT  
COOPERS HAWK



ADULT  
PEREGRINE FALCON



TY HARRISON RELEASING GOLDEN EAGLE



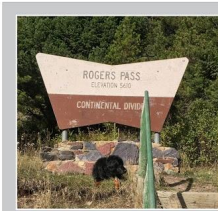
MARY SCOFIELD WITH GE 335



GOLDEN EAGLE SOON AFTER RELEASE



ROB WITH MISSOULA YOUTH HOME GROUP



SAMMY AT THE TRAILHEAD, left



SNOWY DAY ON NORA RIDGE, middle, KIDS TESTING OUT THE BOW NET, right



# 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 RVRTI wouldn't be able to accomplish all that we have.

## ORGANIZATION & FOUNDATION SUPPORT

Bureau Land Management  
Charlotte Martin Foundation  
Cinnabar Foundation  
Clark Fork Coalition  
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Rocky Mountain Golden Eagle Research

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Wild Skies Raptor Center  
Yellowstone to Yukon

## BUSINESS SUPPORT

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A & S Electric  
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Boyce Lumber  
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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 without their generosity. As always, we make an effort to recognize everyone. Thanks to all of you!

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Tim and Noel Nesmith  
Vince Slabe  
Victoria Parks  
William Blake



## RAPTOR VIEW RESEARCH T-SHIRTS NOW AVAILABLE!

RVRTI 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."



DESIGN #1  
FRONT VIEW



DESIGN #2  
BACK VIEW

## PARTNERSHIPS & COLLABORATIONS 2016

RVRTI 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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