

# PACIFIC RAPTOR

GOLDEN GATE RAPTOR OBSERVATORY

ISSUE

38

FALL  
MIGRATION  
2016



PUBLISHED NOVEMBER 2017

GOLDEN GATE  
NATIONAL  
PARKS  
CONSERVANCY





The workbench at a GGRO banding blind. The can holding the Red-tailed Hawk is specially fitted for the species and gender of the raptor. It keeps the bird calm by shielding its vision and holding its wings still.

Photo: Traci Tsukida

— FEATURE CONTENTS —

I

EDITORS NOTE

THE CRAIGHEADS AND THE GGRO

3

ANNOUNCEMENTS

HAWKWATCH

6

BY THE NUMBERS

9

MENTORING: A HAWK HILL TEACHING TOOL

10

FROM ENGLAND TO RAPTORLAND

BANDING

11

BELOW AVERAGE NUMBERS BUT THE DROUGHT IS OVER

14

BANDER'S PERSPECTIVE: COMPARING FALCONS

16

WILDLIFE RESCUE AND GGRO BAND RECOVERIES

29

TELEMETRY

ABOUT PEOPLE & BIRDS, NOTES FROM AN APPRENTICE TELEMETRIST

31

OUTREACH

MIGRATION STORIES BREAK DOWN BARRIERS

33

RESEARCH NOTE

A CONTINENT-WIDE VIEW OF AMERICAN KESTRELS

37

PEREGRINATIONS

LYNCH CANYON, SOLANO COUNTY

39

IN MEMORY OF

LEWIS COOPER & CHANDLER ROBBINS

# THE CRAIGHEADS AND THE GGRO

*Allen Fish*

Last fall, at the peak of migration, GGRO hawkwatcher Wade Eakle wrote me a note that John Craighead had just died—at 100 years of age. My heart sank for a minute, but then what do you say about someone who lives to be 100? Bravo!

Bravo would certainly apply here. I am guessing that whether you know it or not, most of you have been inspired by the Craighead family. Their collective curiosity for all things wild, and their passions for learning about wildlife and wildlands, were nothing if not infectious. And they are everywhere.

In the mid-1930s, twins John and Frank Craighead, then aged 19, walked into the National Geographic offices to say hi. The editors were so taken by them that they published their first article, “Adventures with Birds of Prey,” in the July 1937 issue. Eight more Craighead articles followed over two decades. They wrote books together, about raptors, but also about wildflowers, wilderness survival, and bears. They founded the Craighead Institute to monitor large wildlife of the Rocky Mountain bioregion.

This was all part of a simple idea: that large animals need large expanses of land, and that ecologists must think in “large” terms such as watersheds and corridors and bioregions to protect their populations. To accomplish research on such a scale, the Craigheads pioneered the use of radio and satellite telemetry on bears, tracking 600 black bears and grizzlies over the course of their careers.

I discovered the Craigheads when I found a copy of their first book, *Hawks, Owls, and Wildlife*, on the shelves at Kepler’s Books in Menlo Park, California, when I was in high school. Bought it, ate it, cover to cover. It’s an almanac of raptor ecology and behavior, from Michigan and Wyoming, and with bits of data from all over. But my library still reflects that kind of nerdiness.

Although John and Frank seemed to form the nexus of “Craigheadlandia,” I have come to learn from GGRO volunteers that just as many of my naturalist colleagues were inspired by John and Frank’s sister, the author and artist Jean Craighead George. It is difficult to judge who had the greater impact, but it is safe to say that if we pooled the Craighead siblings, the effect is nothing short of magnificent.





You will know Jean's name most likely from her book *My Side of the Mountain*, but some of the other titles might also pique your memory: *Frightful's Daughter*, *Moon of the Mountain Lions*, *Julie of the Wolves*, and *There's an Owl in the Shower*. Jean was the very definition of prolific, and to count all her titles, I transferred Jean's list of titles from Wikipedia to an Excel page.

From 1948 to the present, Jean Craighead George published 123 books, including just a few re-packaged compilations. Jean herself passed on in 2012, but new titles have appeared into 2014. Think about that, a 66-year publishing career! Jean was writing Young Adult literature for half a century before J. K. Rowling even thought about Harry Potter and his Snowy Owl.

There's a GGRO-Hawk Hill connection too. Back around 1988, I got a phone call from filmmaker Charlie Craighead who hoped to visit Hawk Hill with his friend, bird painter John Sill. I pretended to be stumped: "Craighead, Craighead—where have I heard that name?" Charlie mentioned that he was Frank's son, so that I might remember to be polite. I was polite, in awe really, and we had a great day of watching the Golden Gate raptor flight with Carter Faust.

Still another GGRO-Craighead connection was made possible by the occasional visits in the 2000s to Hawk Hill from Humboldt State University ornithology professor Luke George with a team of his students. Son of Jean, Luke launched the careers of hundreds of Humboldt State graduates, and only recently retired from academia to work with Bird Conservancy of the Rockies. He has published dozens of scientific papers on broad ecological concepts, on landscape and habitat ecology, as well as on the ecology of many western bird species.

I was talking to Buzz Hull, GGRO's Research Director Emeritus, about the many effects of the Craigheads, and Buzz brought them together like this: "The thing that I got from reading *Hawks*, *Owls*, and *Wildlife* was an abiding belief in the raptor daily routine and how likely one is to find the same individual raptor in the same location during the same part of the day during a given season of the year. I continue to believe the idea of raptors having a daily routine to be true; and to some extent, I base my wintering raptor studies on that idea. ●



# ANNOUNCEMENTS

*Allen Fish*

## RENEWING GGRO'S SCIENTIFIC ADVISORS

In 1986, GGRO's third year of operation, we brought together a group of Bay Area ornithologists to review our early research plans, datasheets, questions, and directions. The group met twice, organized by Judd Howell, GGRO's founder and GGNRA's Resource Ecologist, and me.

The 1986 advisory team comprised true ornithological luminaries. We had Dr. Robert Bowman from San Francisco State University, Dr. Henry Weston from San Jose State University, Dr. Michael Morrison of UC Berkeley, Dr. Richard Olendorff from the U.S. Bureau of Land Management, Drs. Luis Baptista and Steve Bailey from California Academy of Sciences, and Drs. Gary Page and Dave DeSante from Point Reyes Bird Observatory (now Point Blue Conservation Science). The meetings were chatty and productive and included the kind of excitement that you'd find at the start of something mysterious and fascinating.

More than 30 years later, many Golden Gate raptor mysteries have been uncovered, while many more remain—guaranteeing that the coming decades will be as riveting as the past few have been. Many people have contributed to the research agenda of the GGRO: our own staff, volunteers, and interns; our NPS and Conservancy colleagues; and an unclassifiable range of interested people on the sidelines, from biologists to educators.

Yet, all along the path, there has been a group of Ph.D. scientists who have worked closely with the GGRO. Many have published or presented scientific results on our behalf; some have supervised graduate students working on GGRO projects.

It is time to acknowledge their commitment to our model of citizen science and wildlife monitoring as a new list of GGRO scientific advisors. All are familiar faces for GGRO because all are people who have carried our work into the world, and who continue to do so.

### Many thanks and welcome to our Scientific Advisors:

**Dr. Christopher Briggs,** *Lecturer, Hamilton College*

**Dr. Derek Girman,** *Professor, Sonoma State University*

**Dr. Michelle Hawkins,** *Professor, University of California, Davis; also Director, California Raptor Center*

**Dr. Judd Howell,** *Emeritus Director, USGS Patuxent Wildlife Research Center; also H.T. Harvey & Associates*

**Dr. Joshua Hull,** *Adjunct Professor, University of California, Davis*

**Dr. John Keane,** *Ecologist, Sierra Nevada Research Center, U.S. Forest Service*

**Dr. William Merkle,** *Wildlife Ecologist, National Park Service*

**Dr. Ravinder Sehgal,** *Associate Professor, San Francisco State University*

**Dr. Elizabeth Wommack,** *Curator, Vertebrate Museum, University of Wyoming, Laramie* ●



## 2016

# RESEARCH PUBLICATIONS & PRESENTATIONS



**TERESA ELY**, GGRO's banding manager, presented her Master's research from the University of Nebraska, Lincoln, "Morphological changes in American Kestrels suggest multiple causes contribute to widespread population declines," at the 2016 Raptor Research Foundation (RRF) conference at Cape May, New Jersey. Teresa incorporated kestrel data from seven different banding sites across North America to capture the most complete picture of kestrel ecology. Some of the banding datasets extend back 30 years.



**EMILY ABERNATHY** completed her Master's degree in 2016 at the University of California, Davis, under the supervision of GGRO's long-time research advisor, Dr. Joshua Hull. Emily presented her work at the same RRF conference in Cape May. Her title: "Secondary anticoagulant rodenticide exposure of Red-tailed Hawks migrating through the Marin Headlands, California." Emily found an 8.2% rate of rodenticide contamination in nearly 100 juvenile Redtails studied during GGRO's fall migration research.



**CHARLENE LUJAN VEGA** completed her Master's degree in Veterinary Medicine in 2016, working with Dr. Michelle Hawkins, director of the California Raptor Center. Charlene's study—"Chlamydiaceae in free ranging hawks (*Buteo* spp.) in northern California"—was done in cooperation with GGRO and other raptor researchers. Of nearly 300 hawks sampled, 1.4% were infected with Chlamydia. Charlene presented her findings at the annual meeting of the American Association of Zoological Veterinarians in July 2016, and she is now the Research Coordinator for the Global Health Initiative in Peru.



**KATHARINE TOMALTY**, UC Davis doctoral graduate, published part of her dissertation in 2016 in the *Journal of Raptor Research*. Her primary findings: "Juvenile Red-tailed Hawks displayed two distinct peaks of migration, one in mid-September and a second in mid-November. In contrast, the number of migrating adults increased steadily through mid-November, and declined thereafter, with adult females migrating earlier than adult males and the mean passage date for both sexes much later than documented at other North American hawk watch sites." ●

# ACKNOWLEDGEMENTS



Starting with this issue, the annual journal of the Golden Gate Raptor Observatory is re-titled *Pacific Raptor*, leaving behind a proud 32-year history as the *Pacific Raptor Report*. Although reformatted in size and style to better adapt to your bookshelf, backpack, and briefcase, the *Pacific Raptor* will keep you informed about the GGRO's adventures as it always has. With this issue, we offer a deep bow of thanks to Bill Prochnow, our founding designer, who kept the *Pacific Raptor Report* fresh and innovative for more than three decades. Also, a warm welcome to our new designer, Carol Klammer.



*The Greg Hind Endowment*

The GGRO is made possible by the time, exertion, passion, and learning contributed by more than 300 volunteers, approximately one-third of whom have been with us for more than a decade.

We are also made possible by the budgetary and staff support of both our sponsoring organizations, the Golden Gate National Parks Conservancy and the National Park Service.

And finally, we are made possible by financial contributions—donations from hundreds of volunteers, individuals, funds, foundations, and corporations—and particularly by the immense generosity of the Greg Hind Endowment, founded by Leslie and Troy Daniels. To all our supporters, thank you for giving GGRO the chance to further our mission: to monitor and protect California's birds of prey. ●

*Dayleader and Mentor Czar Bob Power models the 2017 GGRO hawkwatcher style, including the eggshell Ensolite® pad to ease chiropractor costs.*

Photo: Alison Taggart-Barone



# BY THE NUMBERS

*Step Wilson*

The 2016 Hawkwatch was conducted from August 15 to December 4. The five new interns assisted 223 volunteers who counted 443 hours over 85 days and sighted 20,353 raptors from Hawk Hill in the Marin Headlands. This number is well below our past 10-year average—and one of our lowest in 30 years.

We had 27 days when weather prohibited us from counting for any part of the day. Nineteen days were fogged out, six days were lost to rain, and two days were a combination of both rain and fog. This is the third highest amount of days without counting since 1992. Teams counted for about an hour on five days before losing visibility and ending the count early.

But the lack of count hours doesn't seem to be the driving factor. We counted for a comparable number of hours in 2001 and 2012 but still logged 4,700 and 5,000 more sightings, respectively.

All species contributed to this low figure except Sharp-shinned Hawks, Broad-winged Hawks, Ferruginous Hawks, and Bald Eagles, which were comparatively higher than their averages. Although Broad-winged and Ferruginous hawk sightings were 22% and 78% higher than average, their combined numbers—289 and 48 respectively—account for less than one percent of our total sightings.

Sharp-shinned Hawks account for almost 14% of our total sightings, with 4,138 recorded, and this year they increased 6% over their 10-year

average. Bald Eagles increased 33%, but with total sightings at 8 for the year, their sightings account for 0.02% of our average total sightings.

Golden Eagles are sighted 20 times on average. This year only 13 were seen, representing a 35% decrease from their 10-year average. Osprey and White-tailed Kite decreased 24% and 79%, with 67 and 20 sightings respectively. Only 354 Northern Harriers were counted, a decrease of 44%.

Of the Cooper's Hawks, 1,998 sightings represent 9% of the total count and a 22% decrease. Northern Goshawks were not seen this year, which is not unusual.

American Kestrel sightings decreased 48% from their 10-year average of 443. This species has shown passage rates dropping across the country at other count sites since the turn of the century. Peregrine Falcons, our second-most sighted falcon, had 199 sightings—a 16% decrease from its 10-year average. Merlins only showed a slight 4% decrease with 178 sightings. Only two Prairie Falcons were seen, representing a 72% decrease from the average of seven.

Swainson's Hawks had a 29% decline from their 10-year average of seven. Rough-legged Hawks also are rarely or irruptively sighted, with a 10-year average of six. Only four were counted in 2016. Red-shouldered Hawks, with a 10-year average of 491 sightings, were down 46% with only 265 counted.



**STEP WILSON** was a GGRO bander in the 1990's, and now is in his second year of service as GGRO's Hawkwatch/Outreach Manager.

Both Red-tailed Hawks and Turkey Vultures decreased significantly from their averages. They make up almost 64% of the total count. These two species were at 61% and 72% of their 10-year average sightings, at 5,676 and 5,998 respectively.

As we know from genetics work done by Joshua Hull, Red-tailed Hawks show two migration peaks at the Marin Headlands, with the second wave occurring after October 1. The Red-tailed Hawks associated with the second wave were found to be genetically different from the first, demonstrating markers associated with the Great Basin region.

Separating adult and juvenile Red-tailed Hawks in 2016 versus their 10-year average, in both the first and second wave, showed a distinct decline in juveniles during this second wave. ●



*Twenty-five year GGRO veteran Pat Overshiner—the only volunteer to have served as a bander, telemetrist, docent, and hawkwatcher—offers up a freshly brewed cappuccino on Hawk Hill.*

Photo: Mary Kenney

## BALD EAGLE FROM CHANNEL ISLANDS VISITS MARIN HEADLANDS

One of the “extra” Bald Eagles we saw this year—eight total as opposed to the average of six—represented more than just a number. On November 4 an adult Bald Eagle was sighted and counters noticed it had blue patagial tags. Using scopes and large camera lenses, they confirmed the numbers: 72.

That afternoon team members learned more about Bald Eagle A-72. The eagle hatched April 23, 2010 on Santa Rosa Island (in the Channel Islands National Park), and was banded, wing-tagged, and outfitted with a transmitter June 16 by the Institute for Wildlife Studies as part of their Bald Eagle research in the Channel Islands. The bird fledged July 8.

From the information we received, the eagle moved between Santa Rosa, Santa Cruz, and Anacapa Island before dropping its transmitter on Santa Cruz Island on January 12, 2014. On April 5 it was photographed at Big Sur “hanging out near and with the condors.”

On January 21, 2015 it was seen near San Simeon in central California and the next sighting reported to us was October 15, 2016—about three weeks and 150 miles from our sighting at Hawk Hill. ●



## RAPTOR-SIGHTINGS - MARIN HEADLANDS

	AUTUMN 2016 494 Hours		10-YR AVERAGE (2004-2015)* 443 Hours	
	Sightings	Raptors/hour	Sightings	Raptors/hour
Turkey Vulture	5,998	13.53	8,323	16.83
Osprey	67	0.15	88	0.18
White-tailed Kite	20	0.05	95	0.19
Bald Eagle	8	0.02	6	0.01
Northern Harrier	354	0.80	627	1.27
Sharp-shinned Hawk	4,138	9.34	3,893	7.87
Cooper's Hawk	1,998	4.51	2,543	5.14
Northern Goshawk	0	0	1	<0.01
Red-shouldered Hawk	265	0.60	491	0.99
Broad-winged Hawk	289	0.65	237	0.48
Swainson's Hawk	5	0.01	7	0.01
Red-tailed Hawk	5,676	12.81	9,250	18.70
Ferruginous Hawk	48	0.11	27	0.05
Rough-legged Hawk	4	0.01	6	0.01
Golden Eagle	13	0.03	20	0.04
American Kestrel	229	0.52	443	0.90
Merlin	178	0.40	186	0.38
Peregrine Falcon	199	0.45	236	0.48
Prairie Falcon	2	<0.01	7	0.01
Unidentified	862	1.94	1,226	2.48
<b>Total</b>	<b>20,353</b>	<b>41.2</b>	<b>27,712</b>	<b>56.0</b>

\*2010 and 2013 data not included due to partial seasons

## MENTORING: A HAWK HILL TEACHING TOOL

*Step Wilson*

**T**he GGRO Hawkwatch Mentoring Program was resurrected in 2016 by dayleader extraordinaire Bob Power. The concept of mentoring was initiated a few years ago, giving apprentices a chance to practice for a day in the field with a seasoned volunteer.

This extra field time freed new volunteers from regular regimented count duties, and allowed them to focus on flight styles of any raptor in the sky. The new volunteer could better concentrate on a raptor's changing postures and shapes; discuss with someone what they are seeing; and learn the mentor's process, devices, and important factors for species recognition. These trainings went well beyond any semi-static slide show or even video used in the morning

meetings. This in situ training brought raptor identification to life.

Priority scheduling was given to apprentices. With their preferences secured, Bob then scheduled second-, third-, fourth-, and other-year hawkwatchers interested in improving their skills. About 50% of the apprentices scheduled sessions during the eight-week program, along with a few non-first year volunteers.

According to Bob's feedback, this program was beneficial for mentors and mentees alike. These findings clearly indicated the importance of our mentoring program in helping beginner and intermediate hawkwatchers hone their raptor in-flight identification skills. ●



## FROM ENGLAND TO RAPTORLAND

*Christina Cambie*

I'm told that 2016 was one of the lowest-hour count years since Hawkwatch began in 1986, but for me, it was one of the most eventful years of my life.

After long and serious consideration, I made the decision to emigrate from London to San Francisco. I arrived in California with plans to explore Wine Country, discover interesting architecture, and maybe even spot a few driver-less cars. It only took a few weeks in my new home to realize I preferred looking for raptors.

Leaving friends, family, and job security behind is daunting. So when I stumbled upon GGRO I was pleased to find not just a way to indulge a new hobby, but an established, welcoming community of people to learn with and from.

Despite having no previous hawkwatching experience, GGRO provided me with free training. Being completely new to the subject, I was concerned I may not be able to make any meaningful contribution as a volunteer. However, the support and reassurance I received helped me overcome my initial reservations.

And while last August was the foggiest start to the migration season in quite some time, for me it was a blessing in disguise. The slow start provided me with an opportunity to explore further afield.



Photo: Alison Taggart-Barone

With loaner binoculars and the benefit of my GGRO training, I began hiking in Marin County and was quickly spotting Turkey Vultures, Red-tailed Hawks, and even an Osprey.

I felt quite intimidated on my first day hawkwatching with such experienced people. Fortunately,

not only were my questions welcomed, but people took great care to look for moments to help me learn and to boost my confidence.

And then, late one afternoon about midway through the season, I saw a juvenile Bald Eagle passing us on Hawk Hill and giving an incredible display. This was my first time seeing the American icon and it was a dream come true. It was one of just eight Bald Eagles spotted during the 2016 migration.

At the end of the season I felt a great sense of achievement having mastered some of the basics of hawk identification. But for me, Hawkwatch has not only been about my time up on the hill. Talking with local people has pushed me to spend time enjoying and discovering more of what the San Francisco Bay Area has to offer, and I have had some fantastic adventures as a result. It has left me with a renewed motivation to explore America.

Now when I travel, I'm looking for hawks. ●



**CHRISTINA CAMBIE** is a second year apprentice with the GGRO Hawkwatch. She is also a waterbird docent on Alcatraz Island and a field worker with the Marin Wildlife Picture Index project.

# BELOW AVERAGE NUMBERS BUT THE DROUGHT IS OVER

*Teresa Ely*

With just 1,281 hawks banded compared to the 10-year average of 1,481, the year 2016 was a below average one for us. There are many factors that can contribute to changes in populations, and it is hard to pinpoint why we were low. The weather was not in our favor during the peak of migration; we had a lot of hot days when birds moved high and slow through the Headlands. We had a lot of rain towards the end of the season.

It will be interesting to see what happens in 2017. California received so much rain we are officially out of the drought. With rain comes more food resources for hungry raptor nestlings, but sometimes the rain can have the opposite effect and nests can fail. Hopefully we'll see more successful fledglings, and more birds migrating in the fall!

## ACCIPITERS

Sharp-shinned Hawk numbers were down 11% and Cooper's Hawks about 20% less than the 10-year average. For both species, GGRO tends to trap roughly 3:2 females to males. This season was similar, with 58% females and 42% males banded. Male Sharp-shinned Hawks continued to trickle through into late November.

## FALCONS

We banded a mere 24 American Kestrels, the second-lowest record since 1998 (when we banded 22)—a 60% decrease from the 10-year average. While alarming, this is also unsurprising as my own analysis of GGRO data has shown a population decline since 2000. One interesting note: there has been a sex ratio reversal in our trapping numbers in recent years. From 2002 to 2010, we banded more female birds, while from 2011 on (with the exception





*Left: A bander checks the molt on an adult Peregrine Falcon. Adults are told by the barred underbelly, open breast medallion, and bright yellow fleshy parts.*

*Photo: Beth Wommack*

*Previous page: 2016 GGRO intern Emily Pierce releases a juvenile Red-tailed Hawk back to migration.*

*Photo: Emily Pierce*

of 2014 and 2016) we banded more males than females, at a ratio of 3:2! The 2016 season was about 1:1.

Prairie Falcons decided to make an appearance late in the season. Looking at trapping data from 1996 to 2016, the average capture date is between September 1 and 10. Data shows that a “second wave” arrives during November. Peregrines were abundant in 2016 with 11 trapped—but only nine banded. One was a foreign recapture originally banded as a nestling at Moss Landing. The other had old injuries consistent with a mammalian predator and we decided to release it unbanded.

### BUTEOS

Red-tailed Hawk captures were down by 25% from the 10-year average. We maintained the sex ratio trend for juvenile Redtails, averaging 60% males and 35%

females banded (the rest being “Unknown Sex”). With our new adult Redtail sexing key, it will be interesting to look at those data in the future!

Broad-winged Hawks continued to be trapped on a regular basis since 2012, two in 2016, with an average capture date of September 28.

### OTHERS

The three Northern Harriers banded were not the lowest banded in one season but close to it. Looking at harrier totals across the last 10 years, let’s hope this is the downswing of a cyclic pattern. The data from 1996 to 2016 shows that harrier numbers are cyclic (and lots of other research show this) but when you look at the pattern, not only is there a cycle of high and low years, it seems to be on a downward trend overall. ●



**TERESA ELY** is a former GGRO intern who returned here in 2016, a week after earning her Masters at University of Nebraska, to take on the Banding Manager role.



## RAPTORS BANDED - MARIN HEADLANDS

	AUTUMN 2016	Annual Average* 1993-2015**	Totals 1983-2016
Northern Harrier	3	11	314
Sharp-shinned Hawk	463	479	12,330
Cooper's Hawk	503	565	15,226
Northern Goshawk	0	0	6
Red-shouldered Hawk	12	17	450
Broad-winged Hawk	2	1	40
Swainson's Hawk	0	0	10
Red-tailed Hawk	229	313	9,770
Ferruginous Hawk	0	0	2
Rough-legged Hawk	0	0	6
Golden Eagle	0	0	2
American Kestrel	24	56	1,434
Merlin	34	31	759
Peregrine Falcon	9	4	101
Prairie Falcon	2	2	48
Eurasian Kestrel	0	0	1
<b>Total</b>	<b>1,281</b>	<b>1,481</b>	<b>40,499</b>

\* 2013 data are not a complete season due to government shutdown.

\*\* 1993-2015 are used for this comparison due to similarity of methods and effort.

# BANDER'S PERSPECTIVE: COMPARING FALCONS

*Jennifer Ho*

As banders, we are taught to identify 19 species of raptors that we are most likely to see at Hawk Hill, but rarely do we see some of them in hand. This season I was lucky enough to compare the two large falcons—Peregrine and Prairie—in hand, on the same day.

We had been communicating over the radio with nearby Slacker Blind, which was located just up the hill from us. For most of the day, both teams had been watching a Peregrine fly back and forth between the two blinds, hoping to lure it into one of our nets. I had never seen a big falcon up close,



**JENNIFER HO** has been an enthusiastic and prodigious contributor to the banding program since 2012. She currently works as a veterinary technician.

*Previous page: Bander Jennifer Ho gets ready to release a juvenile Peale's Peregrine.*

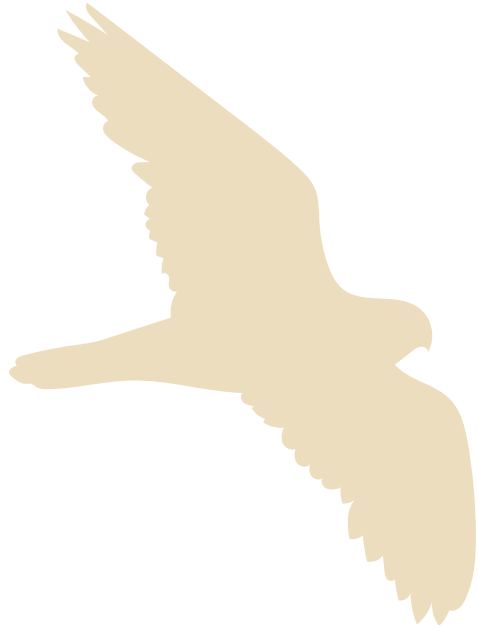
Photo: Nancy Brink

and while I was hopeful one of our two blinds could tempt it to stay for a visit, I had been taunted by them before and knew not to get too excited.

Eventually, both blinds lost sight of the Peregrine and shifted our attention to the other birds in the sky. Just when we had almost forgotten about the Peregrine, a bird appeared out of thin air and immediately went for our main trap, getting in a matter of seconds. It was large, and a falcon. A Prairie Falcon!

Prairies are a rare sight in the Marin Headlands, and even rarer to be seen up-close by banders. Although they are sometimes described as a "pale Peregrine," that comparison does not do them justice. This bird was breathtaking, with creamy white feathers on her face and belly, and soft pale brown on her back and head. A thin light-brown moustache graced either side of her cere, and she was amazingly calm and quiet the entire time we spent with her. This was not only my first Prairie Falcon, but also the first large falcon I was ever able to have in hand. I was in pure bliss!

Then we got a call from Slacker Blind on the radio: they had caught a Peregrine. I ran up to the neighboring blind, not only because I had never seen a Peregrine up-close, but the opportunity to compare the two large falcons seen in the Marin Headlands was one I could not pass up. The difference between the two juvenile females was profound.



While the Peregrine and the Prairie were similar in size and wing shape, the Peregrine was slightly larger and had a bulging crop. Where the Peregrine was dark, the Prairie was light. Instead of a thin light moustache, the Peregrine had a dark helmet that covered her whole head in inky black feathers. Her body was heavily streaked with dark feathers on a buff-colored belly, and her back was equally dark. Where the Peregrine had dark streaking over her underwing coverts, and the Prairie had lighter wings with dark wingpits.

I will never forget this once-in-a-lifetime situation. As wonderful as it is to be able to see these birds up-close, the chance to apply the knowledge I gained studying these birds during my training as a bander is truly priceless. I was able to study their markings in great detail and see the similarities and differences between the two species, before both stunning birds continued on their journeys with a band that will hopefully give us even more information in the future. I can't wait to see what else we learn from these two beautiful falcons. ●



# WILDLIFE RESCUE AND GGRO BAND RECOVERIES

*Nancy Brink & Marion Weeks*

On August 13, right before the 2016 banding season started, GGRO staff received an email from Erin Fisher, wildlife technician at Peninsula Humane Society (PHS) in San Mateo, CA: “We admitted a Red-tailed Hawk on 8/7 from San Francisco who was found grounded at Grant and Jackson. Her band number is 1967-07328, banded near Sausalito on 8/30/15 and she is carrying a solar-powered backpack transmitter (we assume it is a GGRO transmitter).”

The Redtail (Recovery #1412) was indeed a female banded as a juvenile the previous August 30 by GGRO’s former Research Director Buzz Hull and outfitted with a GSM transmitter. She was dubbed “Ouch” by Buzz for her nippy tendencies.

GGRO staff corresponded with Erin and another PHS wildlife tech, Tani Myers, who reported they had found “no immediately apparent cause” for the hawk’s lack of flight. She was “extremely thin ... might just need fattening up.”

By August 18, Ouch was “flying normally, behaving appropriately.” She was released weighing 1300 grams—a few grams more than when she was



*Trapped by GGRO in 2016, this Peregrine was banded as a nestling by Glenn Stewart at Moss Landing in 2015*  
Photo: Isabel Lawrence

banded. And an interesting twist—both Erin and Tani are now members of raptor banding teams at the GGRO (they began their training in the weeks before they contacted us about the Redtail).

We are always excited to receive notice of an encounter with one of “our” banded hawks, particularly when we learn that she is still out flying, hunting, and—hopefully—raising young. Profound stories connect hawks, banders, and people who report hawk encounters. But this report underscores for us a significant relationship in our follow-up work with wildlife rescue organizations and people who care for injured raptors.

Each year, GGRO receives reports from the Bird Banding Laboratory (BBL) in Patuxent, MD, of hawks we’ve banded in our blinds in the Marin Headlands—and that are then encountered by someone going about their daily lives. The “finder” reports a band number by phone or online to the BBL, the federal agency that issues bands for all bird species in North America, maintains a database of all birds banded, and notifies banders of encounters with their banded birds.



**NANCY BRINK** is a filmmaker and writer, who assists with band recovery follow up, and has spent the last eighteen autumns enjoying fall migration with the GGRO.

**MARION WEEKS** has spearheaded band recovery correspondence for nearly 25 years.

The report usually requires follow-up by the band recovery team, led by the intrepid Marion Weeks, to fill out details, correct misinformation, and create a more complete picture of the condition of the hawk when encountered. Information provided to us from wildlife rescue or “rehab” facilities and personnel is particularly important, helping us to more fully understand the lives, health, and mortality of raptors moving through the Marin Headlands.

Over the years, we’ve had reports from organizations from significant distances. In Canada, we’ve had multiple reports from OWL (Orphaned Wildlife Society) in Delta, BC, and from WildARC (Wild Animal Rehab Center, Victoria, BC). Recently, we received a report of a juvenile Cooper’s Hawk from Liberty Wildlife Rehabilitation Center, in Scottsdale, AZ. Reports come from far corners of California—as far away as California Wildlife Center in Thousand Oaks and Humboldt Wildlife Center, in Eureka.

But the majority of such reports come from wildlife rescue organizations in the greater Bay Area, where raptors are subject not only to the usual challenges that make life difficult for young animals—like learning to hunt and coping with wild weather—but to a disproportionately number of human-created hazards. They crash into windows. They are electrocuted on high-tension wires. Cars hit them. They eat rodenticide-infested prey. They are still (although less frequently these days) shot.

These are the situations rehabbers deal with on a regular basis; staff and volunteers both do the hard work of trying to not only treat individual birds, but also contribute to a better understanding of threats to wildlife. They are one of our most effective partners in discerning details about the health and mortality of mostly young hawks we band—such as exposure to rodenticides and other persistent hazards—that

help build a case for actions to protect raptors.

We also receive information that advances our understanding of raptor biology. In the case of “Ouch,” photos sent by Erin and Tani provide clear detail of the bird’s transition from juvenile to adult plumage—as Allen Fish noted, it was exciting to receive a “known-age Redtail molt record” for a juvenile bird we had banded.

This year, 14 reports of 59 encounters, almost one-quarter of the total, came to us through wildlife rescue organizations. Some have predictably sad outcomes. A Cooper’s Hawk brought to Lindsay Wildlife Museum’s hospital was found in a backyard in San Pablo with blood and an open fracture on her shoulder, possibly from hitting high tension wires. “Very broken,” noted the Lindsay staff; they had no hope that pinning the shattered bones would fix the problem or prevent the bird from suffering. The staff had to euthanize the hawk, who appeared otherwise healthy and in good condition.

Staff at rehab facilities must decide daily whether treating an injured or ill hawk will allow successful reentry to the wild or just prolong its suffering. This year, 10 hawks reported by rehabbers died or had to be euthanized (recovery #’s 1401, 1402, 1389, 1420, 1385, 1408, 1414, 1430, 1424, and 1425).

But there are also success stories. Numerous hawks arrive with serious problems and leave in good health. This year, four (recovery #’s 1159-B, 1409, 1412, 1428) were successfully released, to safe areas as close to where they were found as possible.

Sometimes GGRO is able to provide information to the wildlife rescue folks about the bird’s condition at time of banding, which can help provide them with perspective as well. Marion Weeks spoke with Ashton Klutz of the Santa Rosa Bird Rescue Center (SRBRC) about a juvenile male



Red-tailed Hawk (recovery #1428) found less than a week after banding: “A Good Samaritan brought the bird into the Bird Rescue Center in Santa Rosa, CA. No obvious fractures found but dehydrated and lethargic with scabs on abdomen.” He was thin, cold, with some bruising. They had the hawk’s eyes checked “just to be safe,” confirming that the hawk could see; all was well.

After a couple of weeks of care and testing its hunting skills, #1428 weighed 1173 grams—a substantial gain from her banding weight of 865 grams, and her admission weight of 808 grams. She was released, flew up into a tree, preened, muted, and flew away about a half hour later.

We occasionally receive confirmation of good work by wildlife rescue organizations through subsequent reports on a particular hawk. This year, a juvenile female Red-tailed Hawk (recovery #1146-B), banded in August 8, 2010, was photographed and reported by Bob Gunderson at

Fort Mason in San Francisco on August 25, 2015.

He noted the hawk “flew right over us and stood there with the rat it caught and started to pull it apart and then eat it.” Our first report on this Redtail came on April 16, 2012, when she was brought to the PHS, treated for a drooping left wing, and released. What a treat for all of us to have Bob’s photos to confirm that this Redtail is still out there!

This year, eight different wildlife rescue organizations were represented in our recoveries: Badger Run Wildlife Rehabilitation (Klamath Falls, OR); Lindsay Wildlife Museum (Contra Costa County); Monterey County Wildlife Rehabilitation, ASPCA (Monterey County, CA); Peninsula Humane Society (San Mateo County, CA); Santa Rosa Bird Rescue Center (Sonoma County, CA); WildCare (Marin County, CA); Sonoma County Wildlife Rescue (Sonoma County, CA); and Wildlife Center of Silicon Valley (San Jose, CA).

We extend our appreciation to them for the work they do and for sharing information that helps us increase awareness about migrating raptors and develop strategies for raptor conservation. ●

*GGRO bander for 21 seasons, Claire O'Neil instructs her niece—and 2016 intern—Chase O'Neil on proper banding technique.*

Photo: Chase O'Neil



## BAND RECOVERY UPDATES

**1272-B** Juvenile male Red-tailed Hawk banded on 8/19/13 by Danny Pirtle; photographed at community gardens at Fort Mason, San Francisco, San Francisco Co., CA, on 8/4/16 and again on 8/8/16. Reported by Bob Gunderson, who describes the bird as “pretty much a resident of Fort Mason.” Peter Cole previously photographed the bird at northwest edge of San Francisco’s Golden Gate Park, between “late October through mid-December of 2013” when he finally got enough photographs to read the entire number.

**1146-B** Juvenile female Red-tailed Hawk banded on 8/18/10 by Steve O’Neill; photographed and reported by Bob

Photo: Bob Gunderson



Gunderson while birding at Fort Mason, San Francisco, San Francisco Co., CA, on 8/25/15. “The bird flew right over me and landed right in front of us and stood there with the rat it caught and started to pull it apart and then eat it.” Previously, this bird was “caught due to control operations” on 4/16/12, at an unknown location in San Francisco and taken to the Peninsula Humane Society where it was “not flying, (had a) drooping left wing... but no fractures...started self-feeding after 3 days and released on 4/21/12.”

**1159-B** Juvenile Red-tailed Hawk banded on 8/22/01 by Marc Blumberg; found sitting on a horse water-trough with an injured wing on 8/2/16 at Penngrove, Sonoma Co., CA. Claire DeMartini used a towel to chase it down;

the bird was taken to Sonoma Co. Wildlife Rescue. This 15-year-old Redtail was diagnosed as having a “fractured ulna via gunshot, piece of ulna obliterated where fractured, leaving a gap, [with the hope] that because positioning is good that callous will heal bones together.” After much dedicated care the bird was finally released on 10/12/16. It was previously trapped and released by an independent bander at East Penngrove on 6/19/11.

**1356** Juvenile male Red-tailed Hawk banded with both metal and color bands on 8/25/15 by Anna Fryjoff-Hung; found 10/5/15, dead of assumed electrocution given proximity to a power pole above the bird and apparent burn marks across its back and near its feet. Reported by Alex Pries, a wildlife biologist for PG&E at Point Reyes National Seashore, Marin Co., CA. Alex discovered the Redtail while checking for potential impacts to California red-legged frogs.

**1374-B** Juvenile male Red-tailed Hawk banded with both metal and color bands on 8/23/15 by Stephanie Szarmach; photographed after catching and killing a ground squirrel on 7/10/16 at Cowell

Photo: Lisa Sheridan



College, University of California, Santa Cruz, Santa Cruz Co., CA; reported by Provost Alan Christy. This bird was previously photographed at a garden next to the UCSC Arboretum on 11/20/15, while diving for and eating a Jerusalem cricket.

## NEW BAND RECOVERIES

**1381** Juvenile male Sharp-shinned Hawk banded 11/28/15 by Ryan Bantley; found dead on 1/18/16 by Laine Hendricks and Jenny Bates, “when my dog went outside and to the corner where there is a little stepstool. We had to pry it off the stepstool.”

**1382** Juvenile female Red-tailed Hawk banded on 11/26/15 by Elan Carnahan; found by Brady Renninger on 1/2/16, and believed to have been killed by a predator. Brady and his wife were hiking on their remote property outside Healdsburg, Sonoma Co., CA. They got to a seasonal creek and found remains of many birds, including the banded Redtail. The body was headless; the head about 10 feet away. The carcass still had blood in it; they speculated that it was dead a week or less.

**1383** Juvenile male Red-tailed Hawk banded with both metal and color bands on 8/25/15 by John Ungar; found dead on 1/13/16 at Belmont, San Mateo Co., CA; reported by Megan Caldwell of San Mateo County Mosquito and Vector Control District (SMCMVCD). The bird was found that morning on the patio of a private resident. SMCMVCD picked up the bird to examine it for West Nile Virus (the test result was negative). Megan said the bird was not “emaciated and had no obvious signs of disease or broken bones. It did have a partially-healed abrasion to the back of the head, one toe missing, and some other abrasions on its feet.”

**1384** Juvenile male Red-tailed Hawk banded with both metal and color bands on 10/3/15 by Ryan Bantley; photographed on 1/21/16 by Yu-Che Huang at Craig Regional Park, Fullerton, Orange Co., CA. He said the bird had caught a small animal and started

eating it immediately as evident in its full crop in one of the photos shared with us.

**1385** Juvenile female Red-tailed Hawk banded on 12/14/15 by Jeff Robinson; found on 2/1/16, at a landfill at Marina, Monterey Co., CA, by a falconer who took the bird to the SPCA of Monterey County (SPCAMC). The bird had an old injury to its wing, exposed and shriveled tendons, and was emaciated and dehydrated. Due to the condition of the tendons, they determined that they would not be able to save this bird. It was euthanized on day of arrival; reported by Leah Gast of the SPCAMC.



*GGRO Intern Violet Kimzey shows the rounded wing of an adult Sharp-shinned Hawk. Photo: Beth Wommack*

**1386** Juvenile male Red-tailed Hawk banded on 11/28/08 by John Ungar; found dead on 2/5/16, in a tree near an owl nest behind the office of a private duck club on Bradmoor Island, 15 miles SE from Suisun City, Solano Co., CA. Reported by Rhiannon Klingonsmith, an environmental scientist. The bird was described as “emaciated, no odd characteristics, not

shot, no broken bones, no wounds, pretty fresh—maybe 48 hours to three days.”

**1387** Second year Red-tailed Hawk banded on 11/17/98 by Claire O’Neil; found decapitated on 1/29/16 by Ellen Lesli at her residence in Inverness, Marin Co., CA. She called both Point Reyes National Park Headquarters at Bear Valley and Point Blue offices to find where to report the band number; one of our banders answered the phone at Point Blue and subsequently confirmed that the band number was one of ours. Banded 18 years ago, this is one of our oldest recoveries.

**1388** Juvenile female Red-tailed Hawk banded on 11/1/11 by Nick Villa; found dead after being recently hit by a motor vehicle on 1/21/16. It was found alongside a road 10 miles WNW of Keizer, Marion Co., Oregon; reported by Martin Nugent of the Oregon Department of Fish and Wildlife.

**1389** Juvenile female Cooper’s Hawk banded on 9/26/15 by Ray Arpon; found after a probable window strike on 2/25/16 at Mill Valley, Marin Co., CA. Nat Smith, of WildCare, stated that due to the detached retina, the Cooper’s Hawk was euthanized the day of admission; reported by Kate Lynch of WildCare.

**1390** Juvenile male Red-tailed Hawk banded on 11/27/15 by Randy Breaux; found dead on Old San Jose Road in Soquel, Santa Cruz Co., CA, on 2/15/16. Reported by John Brimling, who did not see any notable injuries.

**1391** Juvenile female Red-tailed Hawk banded on 11/24/14 by Diane Horn; on 1/31/16, the bird “tried to attack our chickens, but when it dove it hit our fence and became entangled in the wires,” reported Elizabeth Garcia. Elizabeth, who years ago

banded birds as part of a San Francisco State University program, removed the bird from the fence. It had blood near the nose. She placed it in a dark cage in the garage to calm it. Upon returning to the garage, she found the hawk had gotten out of the cage. Before she could open the garage door to free it, it flew through the windowpane, leaving a bird shaped hole. The bird continued to fly and appeared to be OK. Elizabeth lives on a ridge-top ranch in a rural area about 10 miles south of Ukiah, Mendocino Co., CA.

**1392** Juvenile male Red-tailed Hawk banded on 8/28/15 by Eddie Bartley; skeletal remains found on 2/6/16, behind the historic RCA (radio communications center for the Coast Guard) buildings at the Point Reyes National Seashore near Inverness, Marin Co. CA; reported by Robin Wolcott.

**1393** Juvenile female Red-tailed Hawk banded on 12/19/15 by Ryan Bantley; found dead on 2/22/16 by Jeff Green, who almost “tripped over it” as he walked on the sidewalk at Geary and Gough Streets in San Francisco, San Francisco Co., CA.

**1394** Juvenile male Red-tailed Hawk banded with both metal and color bands on 9/10/15 by Kris Vanesky; Andrew Highland sighted the bird perched in a Monterey pine at Mussel Rock Beach Park, Daly City, San Mateo Co., CA on 1/22/16. He took a photo when it launched into the air—he discovered the color band when correcting the photo’s exposure.

**1395** Juvenile male Cooper’s Hawk banded on 9/18/15 by Jeff Robinson; found dead on 3/20/16 at San Juan Bautista, San Benito Co., CA. Keith Rodgers reported seeing the bird in his backyard trying to fly, but not able to get over his fence. He was not able to locate the bird at that time, but found it dead on the lawn a couple of days later.

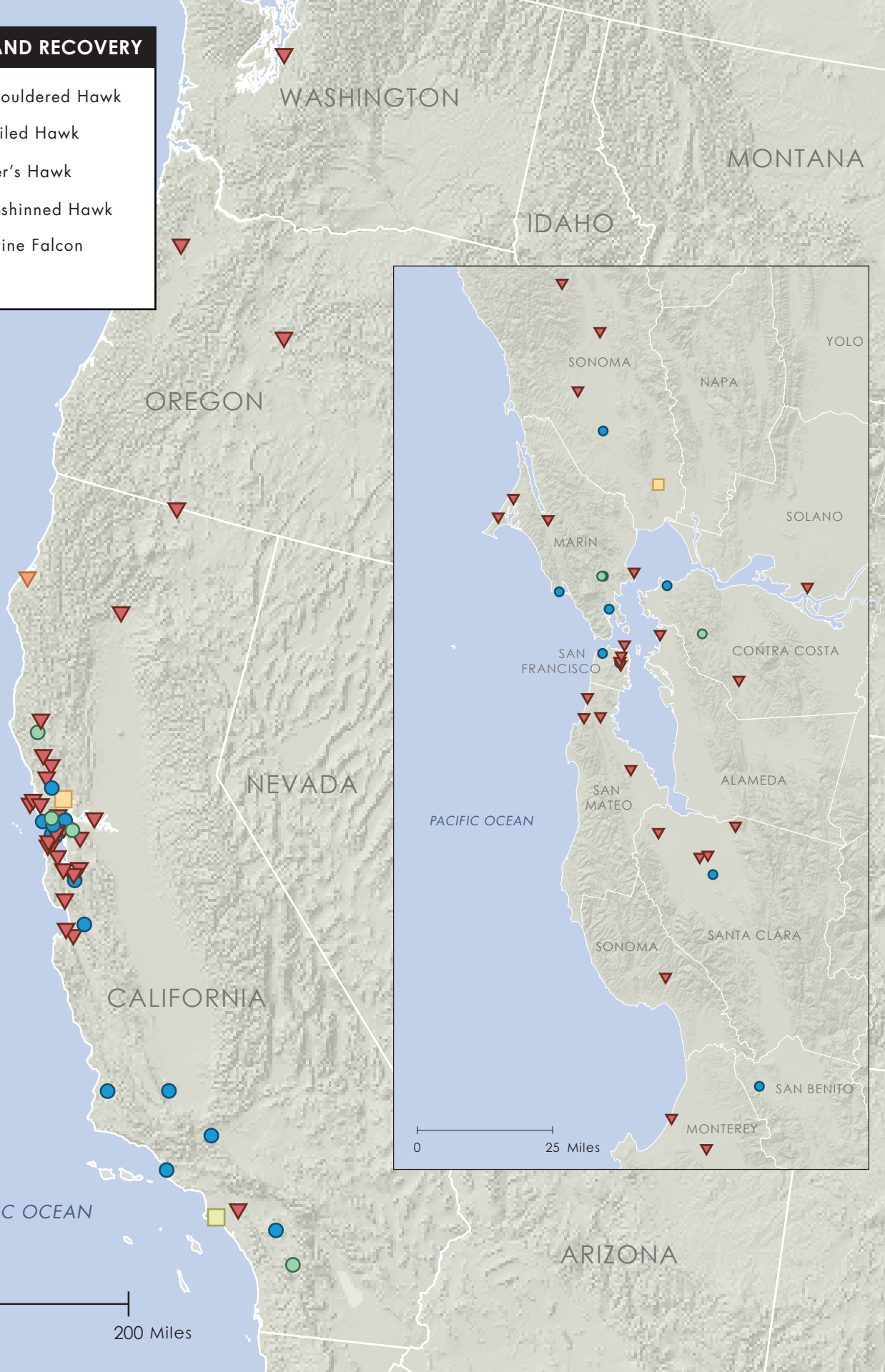


## SPECIES BAND RECOVERY

- Red-shouldered Hawk
- Red-tailed Hawk
- Cooper's Hawk
- Sharp-shinned Hawk
- Peregrine Falcon
- Merlin



0 200 Miles



**1396** Juvenile female Cooper's Hawk, banded on 9/29/15 by Anna Fryjoff-Hung; found dead on 10/18/15 at Cotati, Sonoma Co., CA, by Thomas Dedini and reported by Thomas Mathiesen. They have an aviary for about 35 parakeets; the bird was found about 3 feet from the cage under a rhododendron bush, dead for less than a day. Thomas notes that raptors visit the aviary occasionally.



*GGRO Operations Manager Laura Young moonlights as a Red-tailed Hawk bander.*  
Photo: Craig Tewell

**1397** Juvenile female Sharp-shinned Hawk banded on 9/27/12 by Buzz Hull; found dead on 3/29/16, at the side of Highway 128 in Yorkville, Mendocino Co., CA; reported by Isaac Devenny. He noticed the bird on his way to the airport to pick up a friend; on the return trip he stopped to pick it up. "It was not run over, it was fresh." He sent the banded leg to us, which is now used in our outreach efforts.

**1398** Juvenile male Red-tailed Hawk banded with both metal and color bands

on 9/6/14 by David Wood; sighted and photographed on 11/11/15 by GGRO banders Anne Ardillo, Siobhan Ruck, and Tara McIntire, at Point Reyes National Seashore, Marin Co., CA; reported by Anne Ardillo.

**1399** Juvenile male Red-tailed Hawk banded with both metal and color bands on 8/30/14 by Laura Young; trapped in order to prevent collision with aircraft on 3/24/16 at Moffett Air Field, Santa Clara Co., CA. Reported by Erik Chow of the USDA's Animal and Plant Health Inspection Service (APHIS), who described the bird as a "very healthy, very angry adult Redtail" that came in "hard and fast onto the trap." The bird was taken to the Livermore Hills for release.

**1400** Juvenile male Merlin banded on 11/18/15 by Stephanie Szarmach; found dead on 3/1/16 at Arnold Drive, Sonoma, Sonoma Co., CA, in a grape bin 4 x 4 feet wide filled with 24 inches of water. Reported by Fausto Sanchez, who discovered it when he emptied the bin but "could not identify the [species of] the bird as decomposition had begun."

**1401** Juvenile male Red-tailed Hawk banded on 9/6/14 by Steve O'Neill; found on 4/29/16 at Pacifica, San Mateo Co., CA, on Highway 1; reported by Shirley Chan of Peninsula Humane Society (PHS). "The bird appeared to have been hit by a car, but it was hard to be sure; it had been deceased for a while," per Tani Myers, PHS Wildlife Technician.

**1402** Juvenile male Red-tailed Hawk banded with both metal and color bands on 8/23/15 by Ray Arpon; found standing in the median strip where highways 280 and 380 meet at San Bruno, San Mateo Co., CA. Delivered by Animal Control to PHS on 5/12/16; reported by Erin Fisher of PHS. X-rays determined the bird had a fractured scapula and a shattered synsacrum and

was immediately euthanized, according to Tani Myers, PHS Wildlife Technician.

**1403** Juvenile male Cooper's Hawk banded on 9/18/15 by Brian Smucker; found dead 5/30/16 by Kempton Dunn at his home undergoing renovation at San Francisco, San Francisco Co., CA.

**1404** Juvenile male Cooper's Hawk banded on 10/4/15 by Elan Carnahan; found dead lying on the street on 10/15/15, on a stormy day at Taft, Kern Co., CA. Reported by Zak Crabb who said, "it had huge talons, we thought it might be a baby condor...another friend thought it might be a Golden Hawk [sic]."

**1405** Juvenile female Cooper's Hawk banded on 10/13/12 by Tara McIntire; found dead, dry, and slightly flattened under a shed on 5/28/16 at Lake Hughes, Los Angeles Co., CA; reported by Jenny Canfield.

**1406** Juvenile male Red-tailed Hawk banded on 9/3/14 by Bridget Bradshaw; found on 6/5/16 at a very busy intersection at San Francisco, San Francisco Co., CA. Presumed to have been hit by a car, the bird was dead by the time SF Animal Control Officer Peter Flores arrived, who reported the band.

**1407** Juvenile male Red-tailed Hawk banded on 9/25/10 by Misha Semenov; struck by a Southwest Airlines plane on 6/21/16 at Mineta San Jose International Airport, San Jose, Santa Clara Co., CA; reported by Miranda Campos, APHS. The San Jose tower documented that flight #722 struck the bird on the leading edge of a wing during its take-off roll. It is unknown if the plane sustained any damage; it was inspected in Burbank, CA.

**1408** Juvenile male Red-tailed Hawk banded on 8/21/12 by Eddie Bartley; observed on 6/27/16 as it swooped down in front of a truck on Highway 101 two miles south of Salinas, Monterey Co., CA. Jonathan White reported the bird; he stopped and picked up the injured bird and called the Monterey County Wildlife Rehabilitation ASPCA. The ASPCA acknowledged receiving a hawk DOA that day, but could not confirm if it was our banded Redtail.



*GGRO Hawkwatch Manager Step Wilson studies the molt pattern on an adult Red-tailed Hawk.*

Photo: Isabel Lawrence

**1409** Juvenile female Red-tailed Hawk banded on 9/5/15 by Lynn Bantley; caught due to injury on 7/14/16 at San Francisco, San Francisco Co., CA; reported by Patrick Hogan of PHS. Tani Myers, PHS Wildlife Technician, reported that the bird probably had head trauma, as the right eye swelled shut after a couple of days. "Our vet found blood clots and after it was treated for a few weeks it was deemed to have partial vision." The bird was released on 8/2/16.



**1410** Juvenile female Red-tailed Hawk banded on 11/7/15 by Nancy Mori; found in a decomposed state and headless on 7/7/16 by Rob Gropper while walking along shoreline of Lake Washington, at Seattle, King Co., WA. Rob mentioned nearby old-growth forest is home to many owls. Owls are known to leave some prey headless.

**1411** Juvenile female Sharp-shinned Hawk banded on 10/16/15 by Andrew Bradshaw; found dead on 8/16/16 at Lafayette, Contra Costa Co., CA, by Mike and Toni Lewis. Mike found the bird in ivy behind their garage; it was “crispy dry...had been there for a while.”

**1412** Juvenile female Red-tailed Hawk, banded by Buzz Hull and fitted with a solar-powered transmitter, on 8/30/15; found grounded on 8/7/16 at San Francisco, San Francisco Co., CA, and admitted to PHS; she was “extremely thin on intake... might just need fattening up.” With no other observed injuries, after a week of supportive care she was still not capable of flying. Her transmitter was removed to do x-rays, and returned to GGRO. By 8/16/16, she was able to get up to about 8 feet in the air; by 8/18/16 she was “flying normally, behaving appropriately” when she was released back to San Francisco.

**1413** Juvenile male Red-shouldered Hawk banded on 10/27/14 by Melanie Echanique; found on 8/14/16 by Frances Maunder and her husband, while bicycling to Fortuna on Highway 101. They found the bird freshly dead on the side of the road a half-mile north of Fernbridge and Ferndale off-ramp at Humboldt Co., CA, south of Eureka.

**1414** Juvenile female Cooper’s Hawk banded on 9/4/16 by Robert Heim; found alive on 9/7/16, grounded in backyard at San Pablo, Contra Costa Co., CA, and

taken to Lindsay Wildlife Museum (LWM). Diagnosed with an fracture at the shoulder and without hope of the broken bones being pinned, the hawk was euthanized that same day; reported by Marcia Metzler of LWM.

**1415** Juvenile Red-tailed Hawk banded on 12/14/01 by Ina Lockwood; the round, unopened band was found “shiny amongst the pine needles...no bones or feathers near site” on 9/22/16 just out of Prineville, Crook Co., OR. Reported by Robert Morton, who noted that site was near where hunters are known to camp and a pack of coyotes hunt.

**1416** Juvenile Red-tailed Hawk banded on 9/24/03 by Greg Beuthin; found alive



*Twenty-first century raptor conservation: Twitter helps track Red-tailed Hawk number 1416.*  
Tweet courtesy Laura Young

on 9/28/16 in a building’s light well at San Francisco, San Francisco Co., CA; reported by Stephanie Pone of SF Animal Control. One of the Redtail’s eyes was cloudy; they speculated if it was blind in that eye it

might account for the bird getting into the light well. However, as the Redtail was transferred from the net to a transport box, it got loose and flew away without any difficulty. Note that this hawk was recovered 13 years after its banding.

**1417** Juvenile female Red-tailed Hawk banded on 9/14/16 by John Ungar; found dead on 9/25/16 on side of Highway 37, Sonoma Co., CA, under a tree; reported by Kahyah Harrold Eliyah. She noted that the bird's "head was bloodied, tongue was out, the body sort of folded up."

**1418** Juvenile male Red-tailed Hawk banded with both metal and color bands



Photo: Karen Werner

on 8/25/15 by Anna Fryjoff-Hung; sighted and photographed on 10/8/16, at Sandy Wool Lake at Ed R. Levin Park at Milpitas, Santa Clara Co., CA. Reported by Karen Werner, who proclaimed, "here's to many more fall migrations for him!"

**1419** Juvenile female Cooper's Hawk banded on 10/1/16 by Diane Horn; found dead on 10/12/16. Caught three feet off the ground in netting of

a trampoline in backyard of a home at San Francisco, San Francisco Co., CA; reported by Kathryn Rivers.

**1420** Juvenile male Cooper's Hawk banded on 9/26/13 by John Keane; found injured on 10/17/16 on roadway at San Anselmo, Marin Co., CA, and brought to WildCare of San Rafael. Due to the unreparable fractures of the wing the hawk was euthanized; reported by WildCare personnel.

**1421** Juvenile female Cooper's Hawk banded on 9/22/15 by Stephen Wilson; found dead on 10/26/16 at Menifee, Riverside Co., CA. Reported by Andrew Terrel, who noted that only the lower torso with the banded leg was found.

**1422** Juvenile female Cooper's Hawk banded on 9/20/06 by Steve O'Neill; found dead with a pigeon on a balcony after striking a window at Oxnard, Ventura Co., CA; reported by Jen Beltran.

**1423** Juvenile female Cooper's Hawk banded on 10/19/16 by Buzz Hull; flew into a living room window at Bolinas, Marin Co., CA, on 10/25/16 and died; reported by Gary Page, who was home at the time. Note that Point Blue ornithologist Gary Page was one of our first GGRO Scientific Advisors back in 1986.

**1424** Juvenile male Red-tailed Hawk banded on 11/28/14 by Jeff Robinson; reported by Laura Hale of Badger Run Wildlife Rehabilitation at Klamath Falls, OR. The Redtail was brought to them from Doris, Siskiyou Co., CA, on 11/24/16 with a fractured left elbow deemed unreparable, thus, the hawk was euthanized that same day. The actual finder is unknown, but the BBL listed cause of the injury as "struck by a motor vehicle."

**1425** Juvenile female Cooper's Hawk banded on 9/13/16 by Michael Armer; reported by Elizabeth French of Wildlife Center of Silicon Valley as recovered on 11/26/16 at San Jose, Santa Clara Co., CA. The bird had severe injuries: possibly burned, ulcerated skin, matted rump, exposed vertebrae at tail, feathers frayed, missing talons and hallux. Despite extensive injuries, the bird amazed staff when it flew around the triage area. When fed, the hawk regurgitated food; despite treatment with antibiotics and pain meds, the bird did not recover and was euthanized on 11/29/16.

**1426** Juvenile female Peregrine Falcon banded on 10/11/16 by Michael Armer; caught due to injury on 11/28/16 by Shannon Cowan, who saw a hawk in a yard at an industrial park where she works at Long Beach, Los Angeles Co., CA. "Some guys were trying to get it to move using 2x4's." She called them off, threw her jacket over it and put it into a box to take it to a rescue center. Despite no obvious injuries, the bird died before she could take it to a rehabilitation center.

**1427** Second-year female Red-tailed Hawk banded on 8/18/16 by Emily Weil; found on 12/9/16, dead on roadway at junction of two expressways at border of Sunnyvale and Santa Clara, Santa Clara Co., CA; reported by Animal Control Officer Jeremy Selbach.

**1428** Juvenile male Red-tailed Hawk banded with both metal and color bands on 12/2/16 by Craig Tewell; found on 12/7/16 at Sebastopol, Sonoma Co., CA, and brought to the Santa Rosa Bird Rescue Center by "Elson" of the Sebastopol Fire Department. The Redtail had no obvious fractures, but was thin, cold, dehydrated, and lethargic, with some bruising and scabs



*Coopers Hawks like this one account for many of GGRO's band recoveries. Photo: Jeff Robinson*

on its abdomen. It was rehabbed in an aviary until strong enough to be released on 12/26/16. Reported by Ashton Klutz, who noted an admission weight of 808 grams and a release weight of 1173 grams!

**1429** Juvenile female Red-tailed Hawk banded on 9/21/16 by Katie Herrmann; sighted and reported by GGRO Bander Mary Malec at the McLaughlin East Shore State Park, Berkeley, Alameda Co., CA. First sighting was on 10/15/16; it took several more days, until 11/7/16, to read the full set of numbers on the band. The bird was not observed for several weeks, but returned in early February 2017.

**1430** Juvenile female Red-tailed Hawk banded on 8/19/15 by Sara Hurley; found injured on 12/26/16, near a freeway off-ramp at Danville, Contra Costa Co., CA, possibly hit by a car. It was taken to Lindsay Wildlife Museum for evaluation; reported by Amber Engle of LWM. The band on the leg appeared "as if it was compressed side to side, with associated tissue damage." The bird was euthanized that day as the injuries were so severe.



**1431** Juvenile female Red-tailed Hawk banded with both metal and color bands on 10/22/15 by Nicole Beadle; found dead on 1/25/17, hanging upside-down from a fence with talons caught on top and bottom of a board at Windsor, Sonoma Co., CA. Reported by Korey Kohl, whose wife notified him of the commotion their dogs were making behind a backyard shed. Korey stated that the hawk was on the neighbor's side of the fence and the dogs were unable to reach it.

**1432** Juvenile Red-tailed Hawk banded on 11/30/94 by Neal Johansen. Peter Figura, of the CA Department of Fish and Wildlife, at Redding, Shasta Co., CA, reported finding a plastic bag at their door containing the two legs, one banded, on 1/3/17. There was no note, nor any clue as to how, where, or when this bird met its end.

**1433** Juvenile female Cooper's Hawk banded on 10/5/16 by Steve O'Neill; recovered alive on 1/13/17, inside a pigeon cage at Santa Maria, Santa Barbara Co., CA. Reported by Aaron Pusser, who said the bird probably couldn't find her way out. She had already killed a pigeon before she was caught, the band number read, and released.

**1434** Juvenile male Sharp-shinned Hawk banded on 9/22/12 by Marc Blumberg; found dead on 1/23/17, inside a chicken coop at a rural address at Warner Springs, San Diego Co., CA; reported by Virginia Van Dyke. ●

*Below: The 2016 interns banded together on one last, chilly, December day—favored with a beautiful adult Red-tailed hawk to celebrate. Left to right: Violet Kimsey, Chase O'Neil, Isabel Lawrence, Emily Pierce, Robert Heim*  
Photo: Emily Pierce





# ABOUT PEOPLE & BIRDS

## NOTES FROM AN APPRENTICE TELEMETRIST

*Michelle Bain*

**T**iming is important in raptor radiotelemetry. A “chase bird” must be captured two or more hours prior to sunset so that there is time for the transmitter-carrying bird to find a roost after being released and settle in for the night.

The first two days of our tracking schedule were rained out but on October 17 the weather cleared. Teams hustled to get ready, testing the receiver and transmitter settings. Equipment bags and maps were double-checked and complete. We were finally set; we just needed a bird.

Then it happened! Midday the banders radioed the office—a juvenile Cooper’s Hawk had been trapped that met the size and health requirements to be a telemetry bird. The news brought a flurry of activity into the room. GGRO

Operations Manager Laura Young, joined by Libby Rouan and Andrea Laue, rushed to retrieve the bird we had dubbed “Paula.”

Everything was moving fast. Suddenly, Laura returned carrying Paula—I had never been this close to a wild creature and she was majestic. I could feel adrenaline rushing through me. Watching Laura hold the bird was a first-hand education. She knew exactly what to do to keep the bird calm. Laura and Theresa Rettinghouse worked together to attach the device to a single tail feather. It was as if I were watching a skilled surgical team as the tiny transmitter was applied with special care and confidence.

With the transmitter secured, Paula was ready to go. One team followed Laura to the release point just below



**MICHELLE BAIN** was a Special Education Teacher for Marin County Office of Education for 40 years before joining the Hawkwatch and Radiotelemetry programs.

Hawk Hill. Once in flight, teams spent the day listening to the beeping sounds of her transmitter as she moved around the Headlands, not far from her point of release. Libby and I positioned ourselves to the south near the Golden Gate Bridge toll plaza, where we stayed until it was time to meet up with the other two teams to review and plan for the first full day of tracking.

The next day, Libby, Andrea, and I headed to Panorama Road near Mt. Tamalpais just before sunrise. Libby had checked maps and made calculations the night before and thought this would be an ideal location for picking up the beeps of a Cooper's Hawk flying north.

We were positioned here for most of the day but heard no signals. For the first time, I realized hours can go by without bird contact. Nevertheless,

we continued our antenna sweeps and logged data every 15 minutes. We moved to several other locations that day, with our last stop on the trail at the end of Country View above Tennessee Valley, in Mill Valley. We started to get signals! Our energy perked up as we made contact.

My final tracking day would end after our dinner meeting, but I longed for more time to chase Paula. The teams spent two more days moving around Marin County perched on peaks with yagis, before deciding she had given them the slip and headed south.

What stands out to me about radiotelemetry is that it's as much about people as it is about birds! We are ambassadors for raptors and bring science into the community. Our simple interactions with hikers, tourists, and students touch the lives of countless people. ●

## RADIOTELEMETRY

2016



Name	Species/Age/Sex	Tracking Dates	Net Direction	Net Distance	Last Known Location
Paula	Cooper's Hawk juvenile female	Oct 17-19	Southeast	Less than 1 mile	Marin Headlands



# MIGRATION STORIES BREAK DOWN BARRIERS

*Audrey Yee, Allen Fish, and Step Wilson*



**G**RO staff celebrated a second year of outreach programs in alliance with our colleagues at the Crissy Field Center (CFC). Both GGRO and CFC are long-term programs of the Golden Gate National Parks Conservancy in cooperation with the National Park Service (NPS). In 2016, we refined our raptor migration educational program to directly link bird migration with human movements, particularly relevant since many of the students we serve have close familial links with the immigration experience. We re-named the experience, *Migratory Story*.

In *Migratory Story*, fourth-grade students explored the essential question, “Why do living things move?” and learned how the same factors that affect the migration of birds may affect human animals as well. Through classroom activities introducing critical thinking, study of taxidermied raptors, and first-hand raptor observation in the Marin Headlands, students learned to think a little like bird biologists in the field and a little like anthropologists studying human migration. This year, the program was offered in three parts:

*Left: NPS ranger Kelsi Ju shows a Cooper's Hawk skin in the first class visit. Center: Students scan for hawks above Pt. Bonita during their field visit. Right: Back in the classroom, Warith Taha helps students track migration on relief maps.*

Photos: Alison Taggart-Barone



AUDREY YEE is a Development Officer for the Parks Conservancy.

A classroom visit was led by an NPS ranger, a GGRO raptor expert, and CFC staff, and built off of the question—why do living things move?—using raptor specimens and learning the reasons for different types of migrations.

A field visit to Hawk Hill was also staffed with a ranger, a raptor expert, and CFC teachers, and allowed the students to conduct real-time observations of migration at Hawk Hill. We used games to review how and why living things move, observing and identifying wild raptors, and collecting data similar to the GGRO hawkwatchers.

Another classroom visit to create stop-motion animations was a new feature to the program, where students could explore migrations by creating their own stop-motion animation clips, with support from a ranger and CFC art and media teachers. These clips illustrated reasons for animal and human migration and ultimately were edited together to create an entire migration story to be shared with the students' families and communities to begin a dialogue beyond classroom walls.

This year 290 students participated in *Migratory Story*, coming from five different San Francisco schools: Chinese Education Center, Hillcrest Elementary, John Muir Elementary, Longfellow Elementary, and Mission Education Center. These included fourth-graders schools who speak in five languages, including English language learners and special needs students. The participating schools collectively serve:

73%

Socioeconomically  
disadvantaged  
Students

92%

Non-white Students

36%

English Language  
Learners (ELL)  
Students

*Migratory Story* aligned perfectly with the National Park Service's Centennial objective of bringing every fourth grader to a national park and also met California Department of Education Next Generation Science Standards.

Critical to the *Migratory Story* success in 2016 was having costs covered for supplies but especially for 16 shuttle bus trips from San Francisco to the Marin Headlands. These and other costs, as well as inspiration for the program's founding comes from our good friend Tom Meyer, as a gift in memory of his wife, volunteer GGRO bander and judge, the Honorable Jennie Rhine.

The 2016 season also benefitted hugely from the great organization and leadership, the language talents, and the natural exuberance of NPS Ranger Kelsi Ju, who coordinated the program among the three partners, the Parks Conservancy's Golden Gate Raptor Observatory and the Crissy Field Center along with the National Park Service. Our great thanks to all our *Migratory Story* teachers and coordinators for their talents and commitment to the project: Alex Paz; Charity Maybury; Francis Taroc; Ilana Somasunderam; Isabel Lawrence; Kelsi Ju; Lan Ngo; Mags Hines; Nancy Caplan; Simonne Moreno; Step Wilson; Violet Kimzey; and Warith Taha. ●





# A CONTINENT-WIDE VIEW OF AMERICAN KESTRELS

*Teresa Ely*

Many avian species with widespread distributions show morphological variation, including raptors such as Sharp-shinned, Cooper's, and Red-tailed Hawks, as well as Great Horned Owls and many songbirds. There are general patterns in this geographic variation. For example, raptors in western parts of North America often show significantly longer wings and tails (except for Cooper's Hawks) than conspecifics from eastern flyways, and inland migrants tend to have lower flight-surface loading compared to coastal conspecifics.

American Kestrels show geographic variation in morphology, including body mass\*. Previous studies have focused on data collected at only a

few migration sites such as Cape May Point, NJ; Goshute Mountains, NV; and Manzano Mountains, NM, and have not included kestrel populations from the West Coast or the Midwest in their analysis. Furthermore, North American kestrel populations have been declining since the mid-1990s, and kestrels have shown concomitant changes in body mass and wing chord in most locations across North America.

I used a continental-scale, multi-decade database on kestrels captured at seven banding sites during fall migration to evaluate regional patterns of body size, wing chord, sexual size dimorphism, and wing loading in kestrels.

\* (Ely, TE, et al. *In prep.*)

## WEIGHT AND WING CHORD

Why are weight and wing chord so important? These morphometrics (all kinds of measures taken from a study species), especially of juvenile birds, can tell us information about the environmental conditions of an annual cycle in the bird's life. Shortages of food—potentially caused by changes in climate, habitat availability or quality, land use, or pesticide applications—could limit the resources needed for survival and reproduction. Food availability is important in all times of a raptor's life cycle—from reproduction, nestling growth, fledgling success, and into adult life. Survival during migration depends on acquiring sufficient food during different periods of the year.

Previous studies have shown that kestrels are heavier on average in the East than in the West. My data analysis shows that kestrel weight differed significantly among sites and sexes. The female kestrels at Boise Ridge, ID, were 8% to 9% larger, and males were 6% larger than those of the same sex at Hawk Ridge, MN; Manzano Mountains, NM; and the Goshute Mountains, NV sites. Female kestrels from Lucky Peak, ID, and Cape May Point, NJ, were 5% and 3% larger, and males were 3% larger than the birds found at Hawk Mountain, PA, and the Golden Gate Raptor Observatory (Figure 1).

Just because kestrels have been documented as heavier in the East than in the West does not mean that they have longer wings in the East. Wing chord differed between sites and sexes (Figure 1). Female and male wing chords at the Manzano Mountains were approximately 1% longer than those at Lucky Peak and the Goshute Mountains. Kestrel wing chords in the Manzano Mountains were approximately 2% longer than those at Golden Gate, and approximately 3% longer than for birds at Hawk Ridge, Hawk Mountain, and Cape May. This makes sense when you think about the areas where the birds are migrating through—which I will touch on below.

An animal's body size may evolve in response to temperature, resource availability, and predation risk. Unfortunately, fall migration sites sample migrating birds that have nested north of the sites, but the actual locations of birds banded are unknown. As such, breeding areas of the kestrels used in our study are unknown, and it is difficult to assess how any of these factors actually affect body mass variation across sites. However, it is possible to use differential wing loading, which is correlated with body mass, to infer something about different kestrel populations.

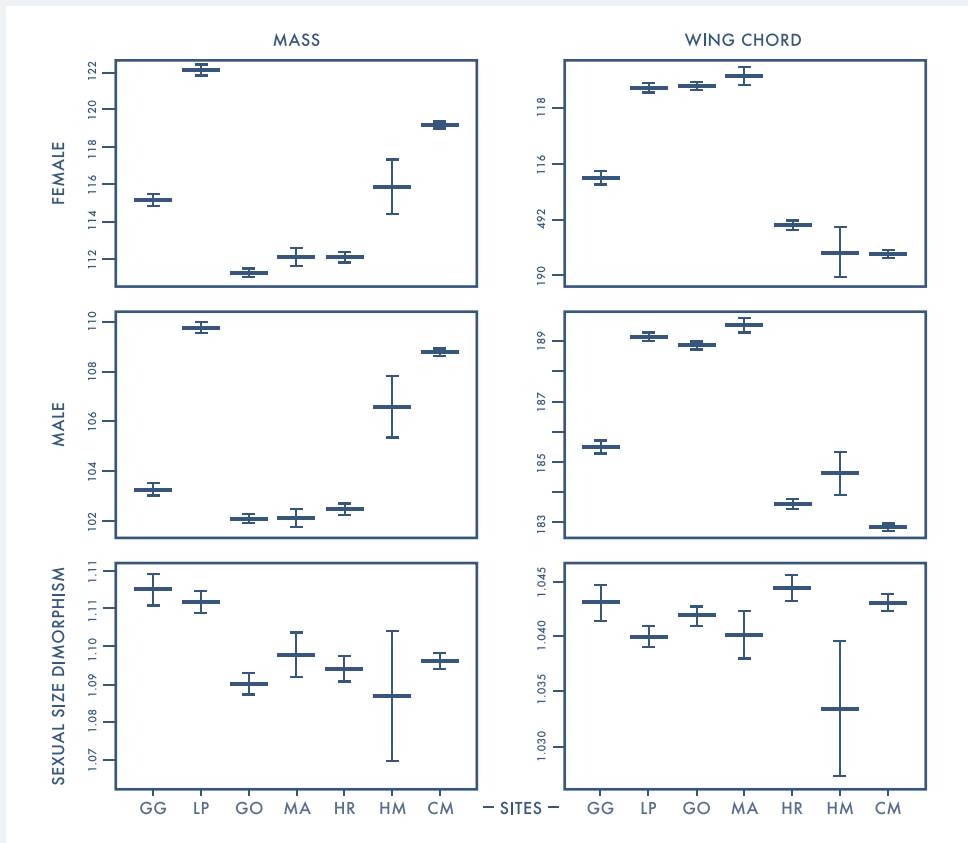
## WING LOADING

Wing loading is how much weight the wings carry, measured in grams per millimeter. It is different for raptors that spend a lot of time in the air versus those that do not. A light bird with wide wings (imagine a vulture) has a lower wing loading and greater potential for lift, than a heavy bird with small wings (imagine a grouse). Birds that migrate along the coast have different flight strategies and wing loading than birds that use flyways through vast deserts or through the Midwest.

I found that kestrel wing loading index differed between sites and sexes (Figure 2). Wing loading index was higher in females than males across sites. Overall, kestrels at Cape May Point and Lucky Peak had the highest wing loading index while kestrels in the Manzano and Goshute Mountains had the lowest wing loading index.

The kestrels migrating along coastal migration sites—Cape May and Golden Gate—are generally heavier and shorter-winged, and thus have heavier wing loading. These birds with heavier wing loading have increased maneuverability, which aids in flying through forested areas typical of these regions.

Kestrels that migrate through the central North America or Great Basin region, such as the Goshute Mountains and Manzano Mountains,



**Figure 1.** Average mass and wing chord for males and females with standard error bars, sexual size dimorphism for mass and wing chord with standard error bars for each site. GG: Golden Gate Raptor Observatory; LP: Lucky Peak; GO: Goshute Mountains; MA: Manzano Mountains; HR: Hawk Ridge; HM: Hawk Mountain; CM: Cape May. (Locations are on x-axis West to East)

are typically longer-winged, weigh less, and have lighter wing loading. Birds with light wing loading can glide more slowly and rise more rapidly with updrafts, which are common in the open, warm, and dry Intermountain West. We expect to see birds in the Intermountain and Southern Rockies flyways with light wing loading because regions with vast deserts lined by mountains should have increased updrafts and thermal patterns, relative to the coasts.

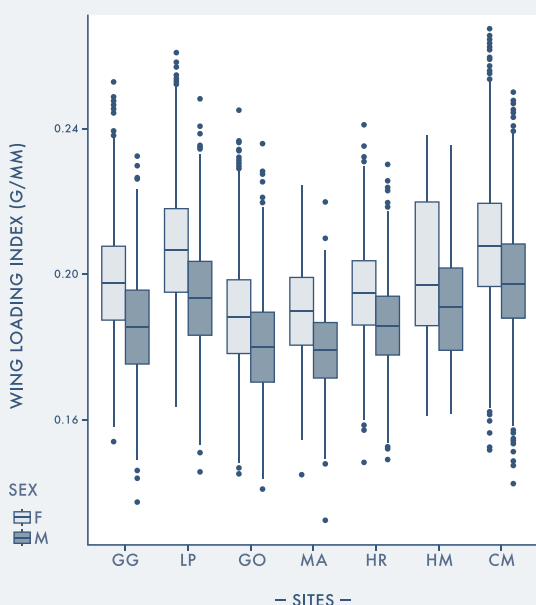
### SEXUAL SIZE DIMORPHISM

Sexual size dimorphism (SSD) is when the male of a species is larger than the female of that same species; raptors generally show reversed sexual size dimorphism where the male is smaller than the female.

As a result of variation in male and female wing chord and body size across sites, size dimorphism also varied across sites (Figure 1), but the pattern of spatial variation was not the same for wing chord and body mass. Dimorphism for mass was greatest in the two westernmost sites, Golden

Gate and Lucky Peak. The other five sites had lower but similar SSD for mass. Wing chord SSD was similar for all seven sites (Figure 1).

These results show that kestrel variation in sexual size dimorphism across regions takes on different patterns for mass and wing chord. Kestrels at the two most western sites show greater female v. male mass than from kestrels east of the Rocky Mountains, but the sexual size dimorphism in wing chord is similar across all sites.



**Figure 2.** Wing loading index for female and male kestrels for each site with upper and lower hinges (similar to first and third quartile), whiskers extend  $\pm 1.58$  IQR (inter-quartile range) of the hinge. Data beyond the end of the whiskers are outliers.

*Previous page: GGRO bander and docent Siobhan Ruck shares a just-banded American Kestrel during a raptor release program. Photos: Violet Kimzey*

There are many hypotheses about the origin of reversed sexual size dimorphism. For example, females may be selected to be larger to deter the occurrence of offspring-killing behavior by the male. Alternatively, reversed SSD might have arisen as an adaptation that reduces competition between the sexes for similar prey size in the nesting territory. Although we still don't understand what drives reversed SSD in general, these results indicate that the mechanisms may vary in magnitude regionally.

This "cross-continental" perspective on the variation of American Kestrel mass and wing chord shows greater complexity than what was previously known, and that eastern kestrels are generally larger than western kestrels. Our data show that some regions in the West have larger birds and birds with longer wing chords. Most importantly, the interacting forces on body mass and wing chord across the continent have generated a complex pattern of variation in sexual size dimorphism and wing loading that remain poorly understood. ●

*This is a snapshot of Teresa Ely's Masters' thesis at the University of Nebraska, under the supervision of Dr. John DeLong, incorporating American Kestrel data from seven migration sites across North America.*



# LYNCH CANYON, SOLANO COUNTY

*Robert Heim*

Upon returning in early January 2017 from a holiday break, the GGRO staff was quick to notice that something about the interns was amiss. Violet was dressed in clean clothes, I was lacking a sunburn, and Chase was spending an unhealthy number of hours in front of a computer screen. What had become of the messy and weathered aspiring field biologists that the GGRO staff knew so well?

It appeared that a few weeks of data proofing, band inventory, and other office tasks at Building 1064 had left the interns feeling out of place. In keeping with past years, Laura Young suggested that the gang take an outing to a well-known raptor hotspot. Perhaps a day of relaxed mid-winter hawkwatching would remedy the interns' woes. Laura proposed the Lynch Canyon Open Space in Solano County, and on January 16 we piled into the distinctively smelling Ford Explorer and took off.

Arriving at Lynch Canyon in the late morning, we were greeted by temperatures in the low 50s and a breeze that pierced our sweaters. It had been a while since we last dressed for a day in the field, so we welcomed the need to throw on layers. The landscape was rolling hills with cattle. Lynch Creek, flowing steadily after recent storms, was

lined by oaks, bays, and sycamores. While still fumbling in the parking lot, we began to spot birds of prey. The first species of the day, a White-tailed Kite, set the tone for the day.

We began our outing on Lynch Road. Only a few steps into the hike, we added three more species. An adult female Northern Harrier hunted a hillside while a dark morph adult Red-tailed Hawk circled overhead and a juvenile Sharp-shinned Hawk glided past.

Minutes later, we crossed paths with a familiar face. One of the GGRO's own hawkwatchers, David Sexton, happened to be out getting his winter fix of raptors. Alongside David, we watched a pair of adult Golden Eagles soar above a nearby slope. Familiar with the area, David explained that this was a local pair. Our mouths were agape as we watched the eagles above. We would continue to have views of the eagle pair throughout the day.

Upon reaching the junction of the Middle Valley Trail and Lynch Road, we turned right to continue on Lynch, and paralleled the creek. The chatter of songbirds became increasingly loud as we walked further. Emily, responsible for maintaining our bird list, was equally as excited by passerines and woodpeckers as she was by birds of prey. Through the branches and tangles of the riparian area, we



**ROBERT HEIM** was a 2016 GGRO Intern, who more recently served as a field technician with the California Condor Recovery Program.

caught glimpses of Western Scrub-Jays, Spotted Towhees, and Northern Flickers.

From Lynch Road, we headed left onto Tower Trail and began a moderate ascent. The trail was thick with mud and cow patties. Struggling to gain traction, we spent much of our time on the Tower Trail looking down. Skyward glances, however, proved to be rewarding. We watched a female American Kestrel land in a large dead oak tree with a small mammal in its talons.

The Tower Trail brought us to a ridgeline that offered many vantage points. We got a great dorsal view of a buteo with long wings and three points of white: an adult Ferruginous Hawk! Shortly after, Chase got on a male Northern Harrier that was among a number of soaring Redtails and teetering vultures.

A picnic table located at the junction of the Tower and North Ridge trails was as an ideal spot for lunch. Sandwiches and snacks were pulled out from backpacks, but the hawkwatching continued. From our table we saw an impressive range of raptors, including Golden Eagles, White-tailed Kites, Northern Harriers, American Kestrels, Redtails, Ferruginous, and a Rough-legged Hawk!

Violet spotted the Roughleg from among a few soaring Redtails. She noticed white on the tail, and quickly shared her excitement. We dropped our lunches and, with elbows rested on the table, got our binoculars fixed on the bird. A quick ventral view showed the belly-band and carpal patches. Unfortunately the bird was too distant for us to confirm an age, but the species identification was spot-on.



High raptor activity, coupled with panoramic views, made our lunch spot difficult to leave. The air was still chilly, however, so we were motivated to get our bodies up and moving. We descended the southern slope of the ridge we had climbed via the Lower Trail. Socks were again at risk of saturation as we tried to avoid muddy areas. From the Lower Trail, we passed through two cattle gates and turned left.

We followed the Middle Valley Trail, which borders the south fork of Lynch Creek. A fence-line separated the trail from the adjacent creek. We scanned the posts of the fence for perched raptors, finding a juvenile Red-shouldered Hawk. Our movements startled the forest buteo, and it disappeared into the nearby willows.

Views of Redtails, kites, harriers, and the eagle pair entertained us back to Lynch Road. We'd seen over 30 species, including 10 raptors, over the course of the day. The weather had been brisk yet cooperative, and the visibility ideal. Exploring a new location and applying the skills we had attained during the GGRO migration season was fulfilling. Thanks to the GGRO staff for the opportunity. ●

*A male Northern Harrier above  
Lynch Canyon. Photo: Don Bartling*

# LEWIS COOPER

1930–2017

*Keith Gress*

I will remember Lew best for his kind and quietly confident smile, his dedication to our Monday 1 Hawkwatch team, to the science of the birds, and to the GGRO as a whole.



Photo: Nella White

Lew volunteered for the GGRO for 25 years. As a long-time GGRO volunteer, I can say with experience that Lew's was a remarkable commitment! I can't think of much else in my lifetime that I've committed to doing for such a long time. It says a lot about the GGRO and the people who make it as special as it is today. Lew is one of them.

When I first arrived at the GGRO in 1996, I liked that Lew was a "Zeiss guy" on a platform full of Swarovski optics. He was unique. When I was

growing up in eastern Pennsylvania, all of the official hawk counters at Hawk Mountain had Zeiss binoculars, the rubber-armored 10 x 40s. I could only afford Bausch + Lomb 10 x 50s that must have weighed over a kilogram!

I also liked that Lew had Zeiss binoculars and a Bausch and Lomb scope. He looked to me to be an "old-school" birder in the truest sense. It reminded me of what it was like when I started watching birds at my grandfather's birdfeeder, and later learning the hawks from my weekend perch on a cold hard rock on Hawk Mountain's North Lookout.

When I return to Hawk Hill for another fall Hawkwatch season, it will be slightly strange without Lew. Right now that makes me sad. And now that I think of it, what'll I put down on my Returning Volunteer Form? For the last 20 years I've always indicated "Lew's Day" as my preference. See, it's strange already, but in a funny way that I think Lew would appreciate.

In my experience, great organizations require a strong foundation of committed team members, a clear mission, and leadership that can deliver the message. I consider Lew to be one of the GGRO's foundational bricks. He was a part of the community, the team, and the mission for 25 years.

He delivered the message not only as the dayleader for the Monday 1 Hawkwatch; he also left his words for all of us in the Hawkwatch journal—sometimes in haiku—and great memories of all who spent time with him on Hawk Hill. Lew did it all with a gentle kindness, humility, confidence, a great sense of humor, and the determination to will the fog away.

Lew Cooper leaves me, and all of us, just a little bit better for having known him. And isn't that really what a volunteer is supposed to do? Thank you, friend. Rest in peace. ●



KEITH GRESS grew up in the shadow of Hawk Mountain, PA, and has hawkwatched for GGRO since 1996.



# CHANDLER ROBBINS

1918–2017

Judd Howell, Ph.D.

It is hard to know the number of people Chandler Robbins' ornithological research and writings touched. He had over 60 years of federal service at Patuxent Wildlife Research Center, Laurel, MD, where he produced over 600 publications. Chan was active in the Caribbean, North, Central, and South America.

At the 2003 Neotropical Ornithological Conference in Puyehue, Chile, attendees came from nearly every quarter of the Americas, and each one seemed to have been a student of Chan's directly or through a workshop of one sort or another. Also, many of these individuals were in leadership positions in the various natural resources agencies and organizations of their respective countries, or were actively engaged in research."

That was just a glimpse into the breadth of Chan's impact. Chan founded the Breeding Bird Survey in 1966, the year I graduated from high school. His impact on me began over 40 years ago.

That journey began in the spring of 1974. I was finishing up a Bachelor's in Zoology at Montana State University and I signed up to take Ornithology. We used the *Golden Field Guide of North American Birds*, written by Chandler S. Robbins. Watching and identifying birds became a real joy for me, driving the two-lane roads of Montana at 70 to 80 miles per hour, identifying Bobolinks as they crossed in front of the speeding car.

In the spring of 1978, I was a newly minted graduate teaching assistant in Ornithology at

Arizona State University. Personally, through much of my early career, I did not really think about Chan or where he was, but my trusty *Golden Field Guide* was an ever-present companion, in the background of a career spanning decades.

Long story short, in the winter of 2002, I found myself unexpectedly promoted to Director of Patuxent Wildlife Research Center, and—lo and behold—at the home of Chandler S. Robbins. I was awestruck. Here was the author of the field guide that had greatly influenced my life and career (my daughters still tell the tale of being scared to death as Dad drove down the highway, saying, "Oh, there's a Red-shoulder!" Swerve!).

During my tenure at Patuxent, I saw Chan almost every day as he came to work; often I would go upstairs to visit him in his office to see what project he was up to at the time.

At the Neotropical Ornithological Conference, we took a field trip to Valdivia, including a boat trip up the Calle-Calle River. Chan was onboard, so I stood close by as he identified species after species. The air was warm and moist, the sun on the deck; Chan was in his element, thrilled at every bend in the river.

In 2008, I announced my retirement from Patuxent, and got ready to move back to California. One morning shortly thereafter, I stepped out of my office and Chan was talking to my secretary Marilyn Whitehead. As I approached, Chan turned to look at me and said, "What are we going to do without your leadership?" I was instantly moved. He had a tear in his eye. I almost broke down, honored that he saw such value in me. Chan was one of the most gracious, warm, and personable souls I have had the honor and joy to meet.

Yes, it is a love story. Chan filled the world with what he loved, birds, and the world loved him back. ●



DR. JUDD A. HOWELL was the Golden Gate National Recreation Area's first resource ecologist and the GGRO's founder.



## 2016 VOLUNTEERS

Emily Abernathy  
Rosa Albanese  
Sylvia Algire  
Jon Altemus  
Abdullah Arakozie  
Anne Ardillo  
Jenn Armer  
Kendra Armer  
Michael Armer  
Stefanie Arthur  
Patricia Bacchetti  
Michelle Bain  
Lynn Bantley  
Ryan Bantley  
Kathleen Barker  
Bill Barnaby  
Eddie Bartley  
Don Bartling  
Carie Battistone  
Nicole Beadle  
Tim Behr  
Katrina Belanger-Smith  
Maxine Berg  
Ronald Berg  
Ardith Betts  
Alan Bleiman  
Marc Blumberg  
Robert Blumberg  
Jeff Boissier  
Robyn Boothby  
Carroll Botvinick  
Ryan Bourbour  
Herb Brandt  
Randy Breaux  
Lucy Breslow  
Nancy Brink  
Jim Broadstreet  
Johnny Brown  
Mallory Brown  
Courtney Buechert  
Nicholas Buechert  
Ellen Burroughs  
Ryan Byrnes  
Christina Cambie  
Ruth Cantwell  
Phil Capitolo  
Christine Cariño  
Koby Cariño  
Caryl Carr  
Sally Cedarblade  
Linda Chambers  
Richard Cimino  
Jim Clausen  
Terry Coddington  
Kay Conneely  
Tom Conneely  
Meghan Cook  
Jason Cooper  
Lewis Cooper  
Sandra Corzantes  
Alma Counselman  
Deborah Crooks  
Chris Cruz

Nevin Cullen  
Susanna Czuchra  
Candace Davenport  
Belle Davis  
Jim Davis  
Dennis Davison  
Deanna de Castro  
Carmen DeLeon  
Russ DeLong  
Janine DeMartini  
Darby Dolan  
Michael Dolan  
Monina Dolan  
Ben Dudek  
Laura Duffy  
George Eade  
Kathy Eagle  
Wade Eakle  
Richard Eliason  
Nancy Elliot  
Catherine Elliott  
Anastasia Ennis  
James Fahlbusch  
Julia Farber  
John Farnsworth  
Richard Ferris  
Erin Fisher  
Sarah Flaherty  
Dan Foldes  
Ross Forman  
Brian Fukushima  
Jessa Gabriel  
Kathleen Gadoway  
Jen Gale  
Claire Gallagher  
Juan Garcia  
Jack Gedney  
Angelo Gilbert  
Maria Girard-Smith  
Dan Gottsegen  
Maureen Grabowski  
Jill Grant  
Alane Gray  
David Gregoire  
Keith Gress  
Edith Grosbellet  
Tess Gundogdu  
Aaron Haiman  
Joshua Haiman  
Mike Hall  
Jim Hallisey  
Mike Hammer  
Mary Ellen Hannibal  
Michael Harkins  
Katie Harrington  
JJ Harris  
Robert Heim  
Melissa Hero  
David Herrema  
Katie Herrmann  
Cheri Hinkley  
Jennifer Ho  
Lynn Hoerle  
Ruth Holbrook  
Nora Holmes  
Ryan Holmes

Tom Holmes  
John Holson  
Calvin Horn  
Sam Hontalas  
Diane Horn  
Dick Horn  
Kimberly Horrell  
Kate Howard  
Heather Hoyles  
Buzz Hull  
Josh Hull  
Sara Hurley  
Julian Hyde  
Angie Ippolito  
David Jesus  
Lynn Jesus  
Debbie Kahn  
Kanani Kauka  
Mamiko Kawaguchi  
Beth Kean  
John Keane  
Mary Kenney  
Violet Kimzey  
Melissa Kohner  
Ann Kositsky  
Doris Kretschmer  
Shelby LaMotte  
Joan Lamphier  
Dian Langlois  
Isabel Lawrence  
Natasha Lekach  
Cheryl Lentini  
Patricia Lessard  
Allison Levin  
Ann Linder  
Patrick Lindley  
Cathy Loewen  
William Ludan  
Tom Luster  
Eric Lynch  
Mary Malec  
Audrey Martin  
Robert Martin  
Megan Mayo  
JoAnn McAllister  
Cindy McCauley  
Tara McIntire  
Paul Meadow  
Horacio Mena  
Mona Mena  
Kim Meyer  
Lisa Michl  
Jennifer Miller  
Rachel Miller  
Steve Miller  
Sue Morgan  
Nancy Mori  
Tani Myers  
Jennifer Nazzal  
Joey Negreann  
Elizabeth Ng  
Jeanette Nichols  
Craig Nikitas  
Maureen Noon  
John Odell  
Christine Okon

Brian O'Laughlin  
Ana Olivar  
Rebecca Olsen  
Chase O'Neil  
Claire O'Neil  
Steve O'Neill  
Kenn Osborne  
Pat Overshiner  
Dana Owens  
Ron Parker  
Phoebe Parker-Shames  
Jean Perata  
Ralph Pericoli  
Jenni Peters  
Sean Peterson  
Ryan Phillips  
Emily Pierce  
Roy Pisetsky  
Janice Podoll  
Bob Power  
Ann Prentiss  
Bill Prochnow  
James Raives  
Katherine Raspet  
Tyson Read  
Michael Reese  
Don Reinberg  
Theresa Rettinghouse  
Nick Rettinghouse  
Eileen Richey  
Beverly Riehm  
Jeff Robinson  
Steve Rock  
Paul Romanak  
Diane Rooney  
Will Rose  
Laury Rosenthal  
Libby Rouan  
Siobhan Ruck  
Jane Rudebusch  
Dede Sabbag  
Peter Sapienza  
Juta Savage  
Sarah Sawtelle  
Linda Schneider  
Kaela Schnitzler  
Bob Schoettle  
Julia Schoettle  
Jack Schofield  
Lynn Schofield  
Terrie Schweitzer  
David Sexton  
Amanda Shafer  
Shannon Skalos  
Kate Skelly  
Brian Smucker  
Virginia Snider  
Curtis Snyder  
Tate Snyder  
Ed Sotello  
Christine Steck  
Tim Stoddard  
Linda Sudduth  
Candace Swimmer  
Natalie Tan-Torres  
Michelle Tattersall

Craig Tewell  
Holly Thomas  
Laura Thomas  
Nickolas Thurston  
Laura Tracy  
Traci Tsukida  
John Ungar  
Brad Valentine  
Kris Vanesky  
Doug Vaughan  
Jennifer Velasquez  
Nick Villa  
Jack Vogensen  
Jessie Vogt  
Heather von Bodungen  
Kristin Vorhies  
Megan Walla-Murphy  
Noreen Weeden  
Marion Weeks  
Kenneth Weidner  
Emily Weil  
Carol Weinstein  
Jill Weinstein  
Dave Wells  
Barbara Westree  
Nick Whelan  
Lisa Whitaker  
Daphne White  
Nelia White  
Jeff Wilcox  
Ken Wilson  
Beth Wommack  
Pat Wong  
Claire Woolf  
Jim Yampolsky  
Pauline Yeckley  
Laura Young  
Sabrina Young

## DONORS

Anonymous  
Cheryl Abel  
Lorne Abramson & Elana  
Lieberman  
George & Stephanie  
Almeida  
Leslie Andrews  
Caryn & Joe Ansel  
Kendra Armer  
Mike & Jenn Armer  
Loretta Armstrong  
Stefanie Arthur  
Lee Aurich  
Marylou Avanzino  
Paul Babwin & Karen Bell  
Patricia Bacchetti  
Diane Bahr  
Michelle Bain  
Chloe Banks  
Lynn Bantley  
Kathleen Barker  
Reginald & Katherine  
Barrett  
Mai-Liis & Don Bartling  
Guy & Jean Baty

Nicole Beadle	Kathleen Eagle	Sara Hurley	Jeanette Nichols	Birgit Schilling
Linda Becker	Peter Ehrlich	Jennifer Hyypio	Maureen Noon	Linda Schneider
Mukund Belliappa	Nancy Elliot	John Irwin	Ed & Marcia Nute	John Schofield
Sandra Berggren	Catherine Elliott & Tom	Cheryl Ishida & Dale	John Odell & Gloria Kemp	Leslie Schroeder
Anne Bernstein	Luster	Berner	Steven O'Donnell	Terrie Schweitzer
Ardith Betts	Richard Engle & Paula	Victoria Jackson	George & Martha Oetzel	David Sexton
Adam Birek	Horowitz	Kathy Jarrett	Christine Okon	James Shea
Alan Bleiman	Anastasia Ennis	Marcine Johnson	Brian O'Laughlin	Katrina Sherman
Carl & Jean Blom	Marian Erdelyi	Craig Jones	Rebecca Olsen & Ken	Carrie Sherriff
Marc Blumberg	Natalee Ernstrom	Peter & Lindsay Joost	Wilson	David Shuford
Robert & Marion	Norval Fairman	Mamiko Kawaguchi	Claire O'Neil	Martin Sidor
Blumberg	John Farnsworth	Susan Kelly	Jessica O'Neill	Shannon Skalos
Robyn Boothby	Tom Felts & Robin	John Knox	Kenneth Osbourne	Sandra Slichter
Olive Borgsteadt	Mitchell	Melissa Kohner	Patricia Overshiner	Mary & David Smith
Dix & Marilyn Boring	Richard Ferris	Allison Kozak	Elizabeth Palmer	Ronald Smith
Heather Borman	Jeanne Fidler	Cheryl Kraywinkel	Diane Parish & Paul	Virginia Snider
Glenada Borton	Virginia Fifield	Joan Lamphier	Gelburd	Sharon Solomon
Ryan Bourbour	Robertta Fischer	Barbara Lancaster	Ruth & Ron Parker	Sheila Sousa
Randy Breaux	George & Patsy Fish	Dian Langlois	Vick Parks	Patricia Spencer
Lucille Breslow	Sarah & Ian Flaherty	Lamar Leland	Katherine Pattison	Margaret Stanley
James & Patrice Britain	Gayle Fuetsch	Cheryl Lentini	Ruth Ann Pennell & David	Philip Steiner
James Broadstreet &	Laura Fujii	Patricia Lessard	Doneux	Deborah Stratmann
Cheri Hinkley	Theresa Gabel & Timothy	Peter Leveque	Jenni Peters	Linda Sudduth
Johnny Brown	Zumwalt	Allison Levin	Sean Peterson & Lynn	Hal Sugishita
Phyllis Browning	Kathleen Gadoway	Ann Linder	Schofield	Mark Sutherland
Lorraine Bruno	Leo & Jane Gaspardone	Marie & Barry Lipman	Roy Pisetsky	Candace Swimmer
Ellen Burroughs	Kris Geiger	David Loeb	Allan Plumb	Natalie Tan-Torres
Ryan Byrnes	Valinda Gillis	Cathy Loewen	Bob Power	Craig & Elise Twell
Diane Caliva	Morey Goldstein	Thomas Luster	David & Cay Pratt	Sally & George Thomas
Christina Cambie	Quentin Goodrich	Eric Lynch	David Presotto & Caryl	Laura Tracy
Hugh & Pearl Champion	Cindy Goral & Jerry	Chris Macintosh	Carr	Nicole Travers
Lynn Carew	Scharf	David & Lynne Madison	Bill Prochnow & Hulda	John Ungar
Oscar Carrillo	Maureen Grabowski	Mary Malec	Nelson	John & Janet Upton
Agnes & John Caufield	Alane Gray	Ron Mallory	William & Karin Rabin	Brad Valentine
Sally Cedarblade	Wayne & Else Greenstone	Nancy Martin	C. John Ralph	Linda Vallee
Linda Chambers	David & Iris Gregoire	Robert Martin	John & Cynthia Rathkey	Richard Vanderlugt
Richard Chambers	Dorothy Gregor	Charles Massen	Donald Reinberg	Kristina Vansky
Helen & Paul Chapman	Earl Gress	JoAnn McAllister	Gail Richardson	Diana Vasquez
Shelley & John Chesley	Keith Gress	Kirk & Jane McAllister	Eileen Richey	Nick & Denise Villa
Marshall Clark	Ewen McKechnie	Cindy McCauley	H. Allan Ridley & Helen	Jerry Vitenson
Terry & Zeo Coddington	Jeffrey Gualco	Maureen McCormick	McKenna-Ridley	Wendy Warrington
Sarah Cole	Mary Haack	Frances McDermott	Beverly Riehm & Randy	Mary & Roman Watt
Ron Colwell	Michael Hall	Mary McFadden	Borcherding	Noreen Weeden & Eddie
Huguette Combs	Lora Haller	Peter McGuire	Duane & Barbara	Bartley
Kay & Tom Conneely	Mike Hammer & Patricia	John & Leslie McQuown	Robinson	Marion Weeks & Stephen
Jason Cooper	Meadows	Terry Mead & Lois	Jeff Robinson	Blossom
Lewis Cooper	Barbara Hamrick	Reynolds-Mead	Steve Rock & Nancy	Carol Weinstein
Marilyn Cooper	John Harris	Paul Meadow	Brink	Jill Weinstein
Chris Cottrell	Judy Harris	Andrew Melomet & Diane	Paul & Mara Romanak	S. Paul Welles
Deborah Crooks	George Hartzell	Rooney	Jason Rosenfeld	David Wells
J.R. Crumpler	Hugh & Rosita Harvey	Horacio & Mona Mena	Elizabeth Rouan	Virginia & Richard Welsh
Reese & Kathleen Cutler	Steve Hayashi & Judy	Amy Meyer	Siobhan & Bill Ruck	Nick Whelan
Ludek Dadok	Winn-Bell	Karla Miller	Pat Rudebusch	Gretchen Whisenand
Anne Darragh & David	Pete Heller	Rachel Miller	Maggie Rufo	Lisa Whitaker
Ford	Melissa Hero	Steve Miller	Leonard & Elizabeth Rush	Nelia White
James & Drusie Davis	David Herrema	Nancy Mori	Dede Sabbag	Peter White
Pamela Dayton	Ann Heurlin	Denise Mortorff	Walter Sakai	M.K. & Karen Whyte
Deanna De Castro	Jan Hintermeister	Alida Morzenti	Serena Salomon	David Wiechers
Tom Delebo	Jennifer Ho	Kathleen Mugele	Ivan Samuels	Vicki Wilhite
Carmen Deleon	Lynn Hoerle & Jeff Wilson	Heidi Munzinger	Shankar Sankararaman	Edwin Williams & Joan
Janine DeMartini	Ruth Holbrook	Suzanne Murphy	Peter Sapienza	Halverson
Karen DeMello	Calvin Hom	Martha Murray	Charles & Susan Savage	Katie Winslow
Leslie & Charles Dicke	Sam Hontalas	Mikiye Nakanishi	Juta Savage	Elizabeth Wommack
Barbara Duncan	Jennifer Hopkirk	Soo-Hi & Alan Nayer	Michael Savino	Pat Wong
Karen Duncan	Richard & Diane Horn	Jennifer Nazzal	Rolf & Charlotte	Claire Woolf
Steve Dykes	Buzz Hull	Gregg & Sharon Niceley	Scherman	Nick Yatsko

Pauline Yeckley  
O'Brien Young  
Bob Zeiss

## ORGANIZATIONS

Adobe Systems  
Incorporated  
Birder's Garden  
Genentech  
Golden Gate Audubon  
Society  
March Conservation  
Fund  
Marin Horizon School  
Petit Teton Foundation

## DATA ANALYSIS & PUBLISHING FUND

Caryn & Joe Ansel  
Kendra Armer  
Mike & Jenn Armer  
Patricia Bacchetti  
William Barnaby  
Ardith Betts  
Roxanne Borcich  
Gleneda Borton  
James & Patrice Britain  
Johnny Brown  
Sally Cedarblade  
Marshall Clark  
Terry & Zeo Coddington  
Kay & Thomas Conneely  
Jason Cooper  
Chris Cottrell  
Pamela Dayton  
Deanna De Castro  
Tom Delebo  
Janine DeMartini  
Steve Dykes  
Catherine Elliott & Tom  
Luster  
Marian Erdelyi  
Norval Fairman  
Richard Ferris  
George & Patsy Fish  
Kathleen Gadway  
Alane Gray  
David & Iris Gregoire  
Jeffrey Gualco  
John Harris  
Judy Harris  
Steve Hayashi & Judy  
Winn-Bell  
Pete Heller  
Melissa Hero  
David Herrema  
Calvin Hom  
Sam Hontalas  
J. Pearce Hurley  
Sara Hurley  
Heather Ishak  
Mamiko Kawaguchi  
Masaru & Ida Kawaguchi

Mary Kenney & Joe  
Pasqua  
Cheryl Kraywinkel  
Joan Lamphier  
Patricia Lessard  
Ann Linder  
Elizabeth Madriz  
Maureen McCormick  
Frances McDermott  
John & Leslie McQuown  
Terry Mead & Lois  
Reynolds-Mead  
Mona & Horacio Mena  
Nancy Mori  
Tom Moutoux  
Jeanette Nichols  
Brian O'Laughlin  
Patricia Overshiner  
Elizabeth Palmer  
Ron & Ruth Parker  
Jean Perata  
Bob Power  
David Presotto & Caryl  
Carr  
Gail Richardson  
H. Allan Ridley & Helen  
McKenna-Ridley  
Marci Riseman & Evan  
Sagerman  
Jeff Robinson  
Steve Rock & Nancy  
Brink  
Dede Sabbag  
Jautrite Savage  
Linda Schneider  
John Schofield  
James Shea  
Polly Strahan  
Deborah Stratmann  
Mark Sutherland  
Craig & Elise Tewell  
John Ungar  
Karyn Vogel  
Erika Walther  
Wendy Warrington  
Marion Weeks & Stephen  
Blossom  
Jill Weinstein  
David Wells  
Nick Whelan  
Lisa Whitaker  
Elizabeth Wommack

## IN MEMORY OF PAUL ARMER

Lorne Abramson & Elana  
Lieberman  
Kendra Armer  
Karen Billings & James  
Russo  
Karen Duncan  
Pamela Evans  
Rachel Jones  
George & Martha Oetzel  
Genentech

## IN MEMORY OF LEW COOPER

Delsa & Joe White

## IN MEMORY OF WILLY FIVIS

Robert & Donna Fivis

## IN MEMORY OF CHARLES MASSEN

Guy & Mary Baty  
John & Nancy Griffin

## IN MEMORY OF TOM MOUTOUX

Mary Kenney  
Sue & Jim Liskovec  
Marianne Moutoux  
Clare & John Nash  
Patricia Overshiner  
Juta Savage  
Doug Vaughan

## IN MEMORY OF TOM PAPPAS

Jean Perata & Dennis  
Davison

## IN MEMORY OF JENNIE RHINE

Tom Meyer

## IN MEMORY OF DANNY TYREE

Stephanie & George  
Almeida  
The Tyree Family

## IN HONOR OF MIKE & JENNIFER ARMER

Charles Channing

## THE GREGORY HIND ENDOWMENT

Leslie & Troy Daniels



A program of the

**Golden Gate National Parks Conservancy**

Building 1064, Fort Cronkhite, Sausalito, CA 94965

(415) 426-5290 • fax (415) 331-7521

[ggro@parksconservancy.org](mailto:ggro@parksconservancy.org)



PARKS FOR ALL FOREVER™

The Golden Gate National Parks Conservancy is the nonprofit membership organization created to preserve the Golden Gate National Parks, enhance the experiences of park visitors, and build a community dedicated to conserving the parks for the future. To become a member, phone (415) 4R-PARKS, or visit [parksconservancy.org](http://parksconservancy.org).

Managing Editor/Operations Manager: Laura Young • Executive Editor/ Director: Allen Fish • Banding Manager: Teresa Ely • Hawkwatch/Outreach Manager: Step Wilson • 2016 Interns: Violet Kimzey, Isabel Lawrence, Robert Heim, Chase O'Neill, Emily Pierce • Design Director: Carol Klammer • Copy Editor: Michael Hsu • Designer Emeritus: Bill Prochnow • Research Director Emeritus: Buzz Hull • GGNRA Advisors: Bill Merkle, Daphne Hatch • Parks Conservancy Vice President, Conservation Stewardship: Sharon Farrell • Founder: Judd Howell • A special thanks for map assistance to: Zac Stanley.

*Pacific Raptor* is the annual newsletter of the Golden Gate Raptor Observatory, but we also welcome any raptorial articles based in the Pacific States and Provinces. *Pacific Raptor* is published by the GGRO, a program of the Golden Gate National Parks Conservancy in cooperation with the National Park Service.

The GGRO *Season Summary* is published in the winter. Subscriptions to both are \$40 per year with checks made out to "GGRO."



The National Park Service was created in 1916 to preserve America's natural, cultural, and scenic treasures, which today number 413, and to provide for their enjoyment by future generations. For information about the Golden Gate National Parks, phone (415) 561-4700, or visit [nps.gov/goga](http://nps.gov/goga).

# HAWK HILL'S DAYTIME OWL THE SHORT-EARED

*Allen Fish*

**W**e call it the Golden Gate RAPTOR Observatory, but wait—aren't owls also raptors? Yes, they are. Do we count owls migrating at the Golden Gate? Not without night-goggles. Do owls even migrate? Yes, and some even show up during the day.

When the nocturnal raptor assignments were made, Short-ears got short-changed. (OK, so did some other owl species as well: Pygmy, Snowy, and Burrowing all do a good share of daylight hunting.) But Short-ears are the owl that most often shows up during the daytime at raptor migration watch sites as well.

Short-ears seem like wannabe harriers, their body and wing-lines slim and drawn. They diverge in having a blocky head and thicker wings that tend to arc into a slight tip-droop when the bird is gliding, in contrast to the perky dihedral of the harrier. Also, there's no white rump patch on a Short-eared Owl.

GGRO Intern Isabel Lawrence mined 20 years (1997 to 2016) of our autumn hawkwatch data for Short-eared Owl records to see if there was any grand pattern to their appearances over Hawk Hill. There wasn't. But some interesting facts emerged:

- We tallied 16 Short-eared Owl sightings in 20 years, almost one per autumn
- We saw on average one Short-eared Owl for every 625 hours of counting
- Two count-years had three sightings each
- The earliest sighting was September 22, the latest November 12, with an average date of October 24



**COVER ART:** Short-eared Owl by Julio Gallardo. Julio is a long-time GGRO colleague and raptor biologist who recently completed his doctorate at the University of Mississippi.





Through the Gate  
Soft long fog hugs the Bay.  
Against the wind she hangs.

Lewis Cooper "Red-tailed Hawk"