Volunteers • Research • Hawkwatch
Outreach • Banding • Donors
The Golden Gate Raptor Observatory’s mission is to inspire the preservation of birds of prey. Our business is to monitor and study the bird of prey migration along the central California coast, particularly at the Marin Headlands, part of the Golden Gate National Recreation Area. We are dedicated to the conservation of raptors both through careful data collection and through involving the public in every aspect of our research. The GGRO is a program of the Golden Gate National Parks Conservancy and the National Park Service, and is made up of 290 community volunteers and a small staff.

GGRO Season Summary 2017
Compiled and edited by Laura Young
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Requests for or questions about GGRO data should be addressed to ggro@parksconservancy.org.

Cover Illustration: Peregrine Falcon (aquatint etching by Siobhan Ruck)
INTRODUCTION

Last October I travelled to Cape May Point, NJ, to join 150 bird-people from 28 states and provinces, from 15 countries as far away as Brazil, Iceland, Israel, and South Korea, at the second International Bird Observatory Conference (IBOC). Seventy-four bird organizations were on-hand. Some call themselves observatories, but others are stations, reserves, institutes, councils, centers, sanctuaries, labs, and chapters. So many names, but just one phrase describes them all: passionate bird-people.

2018 is a milestone anniversary year for bird conservation law. The Migratory Bird Treaty Act was passed by US Congress in 1918 to surpass states’ rights to micro-manage their own bird populations. Why should Congress have done this? And why call it a treaty? Two words: birds move. They move across state and international borders, and to be fully protected, the laws must move with them. Through 1976, four countries co-signed onto MBTA: Canada, Mexico, Japan, and Russia.

The MBTA isn’t perfect. Some of the birds we see each fall over the Marin Headlands fly well into South America. What an achievement it would be to have Panama and Argentina on the MBTA. But the MBTA is what we have today. It protects Bushtits and Bald Eagles. Its 100-year history is a foundation for international environmental law, and something to be truly proud of, and that’s why I am confounded by current proposals to weaken MBTA by giving industries a free pass around it.

IBOC and MBTA. These acronyms are deeply connected. Laws, especially international laws, to protect our magnificent wildlife are rare enough. When we get them on the books, we need to protect them as a goshawk protects her nest. That’s my message: laws need constituency. And that’s what bird observatories do. Observatories create constituency for wild birds, for bird migration, for refuges and sanctuaries. Ranging from the highly professional to the mom-and-pop, bird observatories bring science out of the closet and plug it into the real world.

Thank you for your support of bird observatories however you do your part. Wherever you travel, whatever birds you love, I hope you find the observatories that pertain, and do your bit to keep them happy and healthy. Our bird laws need them.

In December 2017, GGNRA’s Chief of Natural Resources, Dr. Daphne Hatch, retires after a quarter-century of service to the National Park Service. As an advisor, strategist, and fellow birder, Daphne has been a true partner in growing the GGRO, and we thank her deeply for her years of good counsel. The GGRO would not be possible without the great support of all our Park colleagues, from the Parks Conservancy, the US Park Police, and NPS. Great thanks to the volunteers, interns, and donors who are our constituency and life-blood, and are listed in the pages that follow.

—Allen Fish, GGRO Director
Volunteers

Emily Abernathy  Lucy Breslow  Chris Cruz  John Farnsworth
Rosa Albanese  Nancy Brink  Nevin Cullen  Michaela Figari
Jon Altemus  Johnny Brown  Susanna Czuchra  Robbie Fischer
Anne Ardillo  Arden Bucklin-Sporer  Candace Davenport  Erin Fisher
Jenn Armer  Marcia Budarff  Tim Davis  Katie Fitzgerald
Kendra Armer  Courtney Buechert  Dennis Davison  Dan Foldes
Michael Armer  Nicholas Buechert  Deanna de Castro  Andrew Ford
Stefanie Arthur  Ryan Byrnes  Carmen DeLeon  Ross Forman
Patricia Bacchetti  
Michelle Bain  
Jared Baker  
Lynn Bantley  
Kathleen Barker  
Eddie Bartley  
Don Bartling  
Carie Battistone  
Nicole Beadle  
Tim Behr  
Maxine Berg  
Ronald Berg  
Emily Berk  
Chris Bessett  
Sam Bessett  
Alan Bleiman  
Marc Blumberg  
Robert Blumberg  
Sara Bohnannon  
Jeff Boissier  
Bob Boles  
Laura Booth  
Robyn Boothby  
Carroll Botvinick  
Ryan Bourbour  
Andy Bradshaw  
Herb Brandt  
Randy Breaux  

Bander Traci Tsukida displays a Red-tailed Hawk. (Illustration by Laura Echávez)
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<td>Laura Young</td>
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<td>Sabrina Young</td>
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2017 was a dynamic year for GGRO research, both at home and at conferences. We currently have three active research partnerships with graduate students in the Joshua Hull Lab in the Animal Sciences Department at UC Davis. These include a range of topics: studying patterns of Merlin and Cooper’s Hawk genetics, examining the DNA of avian prey in Sharp-shinned Hawks and Merlins, and investigating rodenticide contamination in soaring hawks. Great thanks are due to Josh, our long-time research consultant and volunteer bander, and to students Ryan Bourbour, Breanna Martinico, and Emily Abernathy for their hard work.

We are also cooperators on two multi-partner studies based in other organizations: (1) a flyway-by-flyway study of American Kestrel genetics coordinated by Neil Paprocki of Hawkwatch International, our sister organization based in Salt Lake City, UT; (2) a review of mercury contamination in birds by the USGS and headed up by Josh Ackerman.

CONFERENCES

Allen Fish and Teresa Ely both presented GGRO talks at the National Park Service Science Symposium held at San Francisco in May 2017. Allen was also an invited speaker at the second Citizen Science Association held along the Mississippi River at St. Paul, MN, also in May, for a panel focusing on “place-based science” with Citizen Scientist author Mary Ellen Hannibal and marine biologist Dr. Julia Parrish. At St. Paul, Allen also helped instigate the first gathering of National Park Service Citizen Science practitioners, an initial group of 16 with roots across the continent, and coordinated by the new NPS Citizen Science chief, Dr. Timothy Watkins.

The annual Raptor Research Foundation was held in Salt Lake City, UT, in November 2017, and three of our four staff attended, while two of four presented: Step Wilson on the GGRO’s Migratory Story outreach program, and Laura Young on satellite-tracking Red-tailed Hawks. Veteran bander and USFS biologist John Keane delivered a synopsis of GGRO hawk count trends from 1990 to 2011, while Ryan Bourbour and Breana Martinico presented on their Master’s research projects. Of 167 talks and posters, 16 current or former GGRO staff, interns, and volunteers were co-authors, while 11 were primary authors. Finally and maybe most exciting, Teresa Ely somehow found time at the conference to bring together the first gathering of “Women in Raptor Research and Conservation.”
Vultures

Following more than a year of solidifying permits and preparation for a long-term study, “Rodenticides and Movement Ecology of Turkey Vultures in the Marin Headlands” Teresa Ely and Step Wilson convinced their first vulture to walk into a trap on December 1, 2017. Four Turkey Vultures were trapped and released back to the wild during December, each now bearing a light blue wing tag on the right wing with a 3-digit number, which may be read from a distance with binoculars. Great thanks to our awesome interns for their diligence in trap-checking, and to Melanie Piazza, Pete Bloom, Keith Bildstein, Bill Merkle, Chris Briggs, and Kris Vanesky for their support. We are also deeply grateful to the family and friends of bird-watcher and pioneering computer scientist Paul Armer. Donations in Paul’s memory provided the foundation for GGRO’s vulture research.

eBird

Also late in 2017, Step Wilson started the conversation with Cornell Lab of Ornithology eBird coordinator Brian Sullivan and GGRO’s informatics consultant Nathan Elliott to begin to transfer our 35-years of hawk migration counts into the immense eBird database. This is a huge opportunity for us to offer up the GGRO dataset to a wide audience for long-term use. Thanks to all the players in making this possible.

—Allen Fish

Wing-tagged Turkey Vultures can be reported to the Bird Banding Lab just like metal leg bands!
(Illustration by Laura Echávez)
### HawkWatch

#### Raptor-Sightings in the Marin Headlands During Autumn

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<th>2017 Season (468 hours)</th>
<th>Past 10-Year Average (2005-2016)* (488 hours)</th>
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<tr>
<td></td>
<td>Sightings</td>
<td>Raptors/hour</td>
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<tr>
<td>Turkey Vulture</td>
<td>7,063</td>
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<tr>
<td>Osprey</td>
<td>63</td>
<td>0.13</td>
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<tr>
<td>White-tailed Kite</td>
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<td>Bald Eagle</td>
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<tr>
<td>Northern Harrier</td>
<td>905</td>
<td>1.86</td>
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<tr>
<td>Sharp-shinned Hawk</td>
<td>3,107</td>
<td>6.39</td>
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<td>Cooper’s Hawk</td>
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<td>Northern Goshawk</td>
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<td>Red-shouldered Hawk</td>
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<tr>
<td>Broad-winged Hawk</td>
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<td>0.59</td>
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<td>Swainson’s Hawk</td>
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<td>Red-tailed Hawk</td>
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<td>Ferruginous Hawk</td>
<td>20</td>
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<td>Rough-legged Hawk</td>
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<td>&lt;0.01</td>
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<td>Golden Eagle</td>
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<td>American Kestrel</td>
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<td>Merlin</td>
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<td>0.52</td>
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<td>Peregrine Falcon</td>
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<tr>
<td>Prairie Falcon</td>
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<td>Unidentified</td>
<td>906</td>
<td>1.86</td>
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<td><strong>Total</strong></td>
<td><strong>24,785</strong></td>
<td><strong>51.0</strong></td>
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*2010 and 2013 data not included due to partial seasons*

The 2017 hawkwatch season was conducted by 16 volunteer dayleaders with a couple extra in the wings for backup. We implemented a co-dayleader program this year with great success for a couple of the teams. All of the dayleaders guided their teams throughout the season making counts, instructing new

---

**Dayleaders**

Jon Altemus • Tim Behr • Laura Booth • Christine Cariño

Dennis Davison • Nancy Elliot • Keith Gress • Mary Kenney

Natash Lekach • Cheryl Lentini • Horacio Mena • Kim Meyer

Brian O’Laughlin • Bob Power • James Raives • Laury Rosenthal
volunteers and ensuring the accuracy of the reported data. Collectively, the dayleaders managed 175 volunteers (30 of which were first-year apprentices) five interns, and me.

All teams combined counted for 468 hours—about 4 days less than our ten-year average—which is impressive considering the conditions and experiences that swept across this season. The teams rose to every occasion. Dedicated hawkwatchers scanned those hours into 24,785 raptor-sightings (lower than our ten-year average, but up from last year’s total sightings.) They waited out fog and smoke and heat. They counted through busy-exciting days, and scanned on slow days to pick out distant raptors. The teams helped their fellow teammates with rides, snacks, and encouragement in identifying difficult birds. They offered their time, expertise, and homes to a few who needed it. I couldn’t be more proud to be a part of this most excellent canopy.

—Step Wilson

Our 2017 Outreach program was anchored on Hawk Hill by raptor-loving and people-savvy outreach interns Kaitlin McGee and Lara Elmquist, and master-minded by Step Wilson. Kaitlin and Lara provided weekend Hawk Talks in September and October, and were also on hand to assist with Raptor Releases. Great thanks to all of our docents listed below. Between NatureBridge classes and a broad swath of community groups, more than 1,800 people joined us on Hawk Hill for a GGRO program past fall.

For the third season, GGRO worked with the Crissy Field Center staff, led by Ranger Kelsi Ju, to provide the Migratory Story. This outreach program helps fifth-graders from Title One classrooms in San Francisco think about why animals move, whether raptors heading south for winter, or people looking for a better economic opportunity. Nearly 200 kids from seven schools joined us for two classroom visits sandwiched by a trip to Hawk Hill. Twenty teachers delivered programs, some completely in Mandarin or Spanish. Some kids crossed the Golden Gate Bridge for the first time in their lives. Great thanks to donor and visionary Tom Meyer for his support of this innovative program inspired by the passions of his late spouse, former GGRO bander, Judge Jennie Rhine.

—Allen Fish

Eddie Bartley • Carmen DeLeon • Lara Elmquist • Allen Fish
Buzz Hull • Kaitlin McGee • Craig Nikitas • Siobhan Ruck
Lynn Schofield • Noreen Weeden • Step Wilson
The 2017 season was below average in total birds banded, but above average in species diversity. The highlight was a Ferruginous Hawk banded on November 21. It’s GGRO’s first adult and the third banded overall; the previous two were banded in 1987 and 1990. On December 17, a juvenile Swainson’s Hawk was banded; the eleventh in GGRO’s history. Although numbers were down, we hit an all-time high of 11 Peregrines banded! Red-tailed Hawks started off strong; however, the November wave did not show up. We color banded 93 Red-tailed Hawks, 19 Cooper’s Hawks, and placed patagial tags on four Turkey Vultures. Fewer adults were banded this year, only 40 compared to last year’s total of 57.

We welcomed two new dayleaders and six new siteleaders. Fifteen second-year apprentices stayed the course for the 2017 season, making great progress despite experiencing fewer birds than in 2016.

—Teresa Ely

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**Day Leaders**

Anne Ardillo • Mike Armer • Eddie Bartley • Robyn Boothby • Marc Blumberg

Nancy Brink • Carmen DeLeon • Russ DeLong • Teresa Ely • Claire Gallagher

Buzz Hull • Josh Hull • David Jesus • Mamiko Kawaguchi • John Keane • Craig Nikitas
Ninety-three Red-tailed Hawks were given both metal and color bands in 2017. (Illustration by Danielle Husband)
D O N O R S

Dorothy Gregor §
Earl Gress
Keith Gress
Jeffrey Gualco
Mary Haack
Michael Hall
Jill Harley
John Harris
Judy Harris
George Hartzell
Jennifer Haynes
Kathleen Hazelton-Leech
Helen Heitkamp
Pete Heller
Lars Hellerslien
Melissa Hero §
David Herrema §
Ann Heurlin
Jan Hintermeister
Lynn Hoerle & Jeff Wilson §
Calvin Hom
Sam Hontalas §
Jennifer Hopkirk
Richard & Dian Horn
Richard & Terry Horrigan §
John Irwin
Heather Ishak §
Kathy Jarrett
Marcine Johnson
Craig Jones
Peter Joost
Mamiko Kawaguchi §
Mary Kenney
& Joe Pasqua §
Nancy Kittle
John Knox
Melissa Kohner
Pattie Krueger
Joan Lamphier
Barbara Lancaster
Dian Langlois §
Owen Leibman
Elizabeth Leite
Lamar Leland
Cheryl Lentini
Kimberly Mauch
Ronald Maykel
Cindy McCauley
Maureen McCormick
Frances McDermott §
Peter McGuire
Heidi Munzinger
Mikiye Nakanishi
Soo-Hi Nayer
Jennifer Nazzal
Gregg Niceley
Jeanette Nichols §
Maureen Noon
Ed Nute
John Odell
Christine Okon
Brian O'Laughlin
Rebecca Olsen
& Ken Wilson
Martin O'Reilly
Douglas Overman
Patricia Overshiner §
Ron & Ruth Parker §
Vick Parks
Gene Pedrotti
Ruth Pennell
Allan Peoples
Jean Perata
& Dennis Davison §
Jenni Peters
Sean Peterson
& Lynn Schofield
Roy Pisetsky §
Allan Plumb
Audrey Polster
Bob Power
Megan Prelinger
David Presotto
& Caryl Carr §
Carol Prince
Bill Prochnow
& Hulda Nelson
C.J. Ralph
John Rathkey
Tyson Read
Donald Reinberg

Intern Ashley Santiago scans the horizon on hawkwatch.
(Illustration by Laura Young)
## DONORS

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### IN MEMORY OF

- **Willy Fivis:**
  - Robert & Donna Fivis

- **Charles Massen:**
  - Guy & Mary Baty
  - Rigdon Currie
  - John & Nancy Griffin
  - Sandra Massen
  - David & Carla Parkinson
  - Katherine Preston
  - Jennifer, Rob, & Cecilia Wolf

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

- **Tom Pappas:**
  - Jean Perata
  - & Dennis Davison

- **Jennie Rhine:**
  - Thomas Meyer

- **Danny Tyree:**
  - Stephanie & George Almeida
  - The Tyree Family

- **In Honor of Mike & Jennifer Armer:**
  - Charles Channing

### ORGANIZATIONS

- Birder's Garden
- Columbia Sportswear
- Genentech
- March Conservation Foundation §
- Marin Horizon School
- Mount Diablo Audubon Society
- Santa Clara Valley Audubon Society

### THE GREGORY HIND ENDOWMENT:

- Leslie & Troy Daniels

### 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
### Number of Raptors Banded 1983-2016, Marin Headlands*

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*Data compiled by Teresa Ely. 2016 data are through January 5, 2017.

**Not a complete season; missed October 1-16,2013, due to government shutdown
### Number of Raptor-Sightings 2005-2016, Marin Headlands*

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(raptors per hour)

* 2010 data are not included here because two count sites were used and data are not directly comparable; 2013 data not included due to incomplete season caused by government shutdown

** Total includes 1 Mississippi Kite.
GGRO Season Summary 2017

VOLUNTEERS
RESEARCH
HAWKWATCH
OUTREACH
BANDING
DONORS

The Golden Gate Raptor Observatory is a program of the Golden Gate National Parks Conservancy in cooperation with the National Park Service.