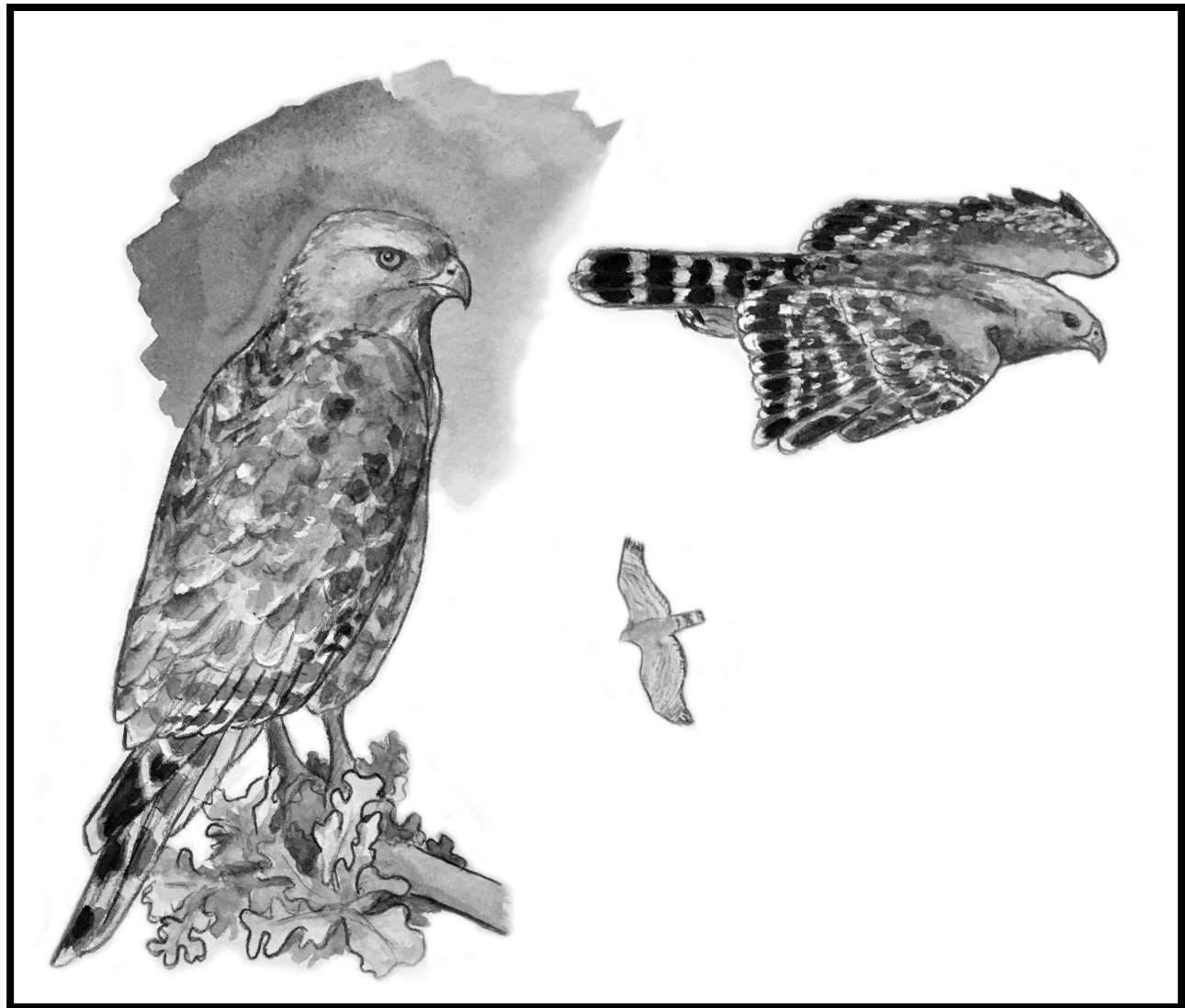


Golden Gate Raptor Observatory  
*Season Summary 2020*

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VOLUNTEERS • HAWKWATCH • BANDING • RESEARCH

GOLDEN GATE  
NATIONAL  
**PARKS**  
CONSERVANCY

*Building 1064 illustration by Siobhan Ruck*



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## GOLDEN GATE RAPTOR OBSERVATORY

The Golden Gate Raptor Observatory is a program of the Golden Gate National Parks Conservancy in cooperation with the National Park Service, made up of over 230 community volunteers and a small staff. GGRO's mission is the preservation of California raptors through scientific research, outreach, and community involvement. Each year, we monitor and study the bird of prey migration on the central California coast, particularly at the Marin Headlands, part of the Golden Gate National Recreation Area.

*Season Summary 2020* is dedicated to the memory of Russ DeLong, GGRO Bander from 1983-2020.

Our deep gratitude to the Gregory Hind Endowment Fund, and to the nearly 350 individual donors for their critical support of the Golden Gate Raptor Observatory.

*GGRO Season Summary 2020*

Compiled and edited by Kelsie McInnis.

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Questions, queries, and correspondence can be addressed to [ggro@parksconservancy.org](mailto:ggro@parksconservancy.org).

*Cover: Red-shouldered Hawk. Illustration by Lora Roame*

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## G G R O S T A F F

ALLEN FISH, GGRO DIRECTOR • KELSIE MCINNIS, OPERATIONS MANAGER  
TERESA ELY, BANDING MANAGER • STEP WILSON, HAWKWATCH & OUTREACH MANAGER  
BUZZ HULL, RESEARCH DIRECTOR EMERITUS  
JANET KLEIN, CONSERVATION SCIENCE DIRECTOR, GGNPC  
BILL MERKLE, WILDLIFE ECOLOGIST, GGNRA

# I N T R O D U C T I O N

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## *Drawing Inspiration from the Hawks*

Since 1983, the Golden Gate Raptor Observatory has been a community of Park volunteers and staff whose loves and lives have centered on the annual migration of raptors at the Golden Gate. With support and oversight from the Golden Gate National Parks Conservancy, in cooperation with the National Park Service, the GGRO has revealed new stories about raptor biology in its many aspects: population changes, migration ecology, predator-prey relationships, urban nesting, timing of migration, diseases and parasites, and the impacts of rodenticides and climate change on bird of prey.

As the only program dedicated to long-term monitoring of the raptor populations of the Pacific Flyway, it was shocking for us to reduce our fieldwork this year, both to respond to smaller staffing and budgets, and to re-strategize our field activities to be Covid-safe for volunteers and staff. The net result was that we had to suspend banding for the first time in nearly four decades. And for our four-person staff, we did an all-hands-on-deck to make a Covid-safe hawk count happen with just 15 expert volunteer hawk counters, some working four times more often than in a normal year.

I want to extend a deep bow of gratitude to all the banders who wanted to band but could not, and to all of the hawkwatchers who wanted to count but could not. It was extremely hard to whittle ourselves from 230 to 15 active field volunteers. Still, many of our non-field volunteers stepped forward to support GGRO's programming and community in new and creative ways this year. Collectively, you have been a resilient and supportive community throughout the year, especially given the stress on all of our lives.

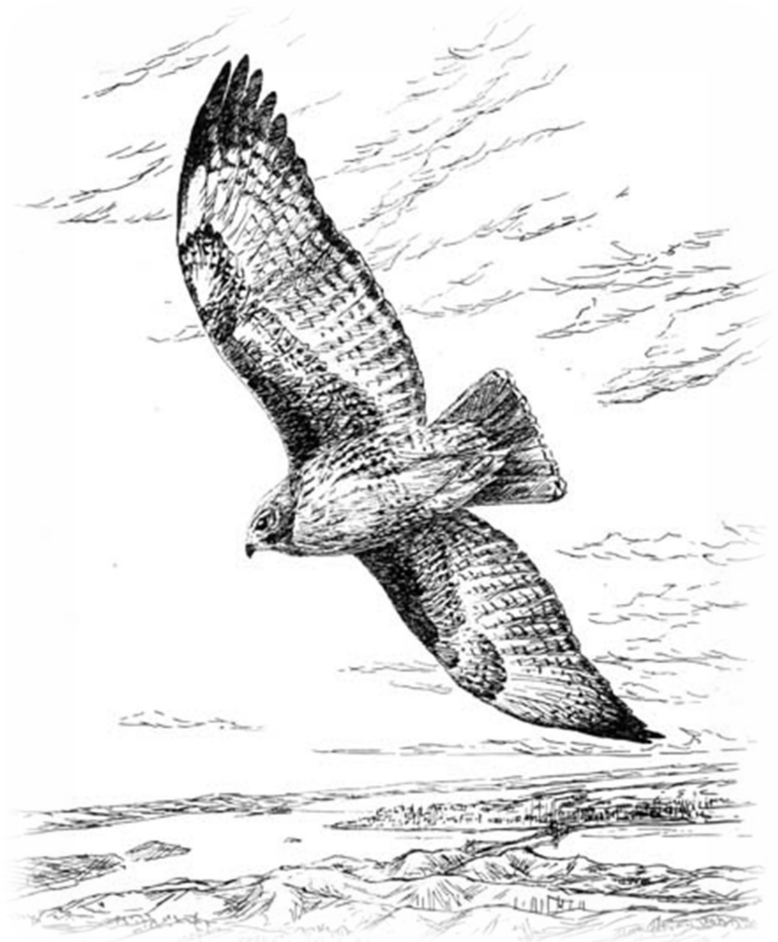
As we closed the 2020 year, the intense financial pressure on the Parks Conservancy hit home. With the pandemic worsening and park visitor sites mostly closed, we had to let go one-quarter of our Conservancy staff—an intensely difficult step. At the GGRO, our Hawkwatch Manager Step Wilson and Operations Manager Kelsie McInnis would both be moving on. Thanks to Kelsie and to Step for their years of hard work to improve the GGRO. We will miss your warmth, and your passion for people and birds.

My deep thanks to everyone who supported the GGRO during this difficult year. We received many texts and emails of support, as well as donations, all of which boosted our spirits and our resolve. We are also privileged to work with the most dedicated group of National Park Service and Parks Conservancy supervisors, coordinators, and scientists—all people who understand the deep value of a long-term continuous ecological database like ours.

Thank you,



— Allen Fish, GGRO Director



*Red-tailed Hawk illustration by Kevin Metcalf*

# VOLUNTEERS

<b>Emily Abernathy</b>	Christina Cambie	Wade Eakle	Michael Harkins
Jeff Acuff	Ruth Cantwell	Rich Eliason	<b>Erica Harris</b>
Jon Altemus	<b>Christine Cariño</b>	<b>Nancy Elliot</b>	JJ Harris
Jan Ambrosini	Andrew Cayer	Catherine Elliott	Melissa Hero
<b>Anne Ardillo</b>	Linda Chambers	<b>Anastasia Ennis</b>	<b>Kimberly Hettler-Coleman</b>
<b>Michael Armer</b>	Daniel Chelsky	<b>Michaela Figari</b>	Cheri Hinkley
Jennifer Armer	Rich Cimino	<b>Erin Fisher</b>	Nora Holmes
Stefanie Arthur	Conner Cimmiyotti	<b>Dan Foldes</b>	Tom Holmes
Patricia Bacchetti	Jim Clausen	Andrew Ford	Laurasia Holzman Smith
<b>Lynn Bantley</b>	Laura Coatney	Heidi Fuller	Calvin Hom
Ryan Bantley	Kay Conneely	<b>Lief Gallagher</b>	<b>Sam Hontalas</b>
Kathleen Barker	Tom Conneely	Jack Gedney	<b>Diane Horn</b>
<b>Eddie Bartley</b>			Heather Hoyles
Don Bartling			<b>Buzz Hull</b>
Tim Behr			<b>Josh Hull</b>
Ronald Berg			<b>Eric Jepsen</b>
Chris Bessett			Debbie Kahn
Sam Bessett			Judy Kaufman
<b>Lindsey Blessing</b>			<b>Mamiko Kawaguchi</b>
<b>Robert Blumberg</b>			<b>John Keane</b>
<b>Marc Blumberg</b>			Brigid Keegan
Sara Bohannon	Patrick Coughlin	<b>Alison Gee</b>	<b>Mary Kenney</b>
Jeff Boissier	<b>Deborah Crooks</b>	Brianna Gerard	Jane Kim
Bob Boles	<b>Susanna Czuchra</b>	<b>Zeka Glucs</b>	Melissa Kohner
<b>Robyn Boothby</b>	<b>Candace Davenport</b>	Jan Gostlin	Doris Kretschmer
<b>Ryan Bourbour</b>	Belle Davis	Maureen Grabowski	Joan Lamphier
Andy Bradshaw	Dennis Davison	Kathleen Grady	<b>Dian Langlois</b>
<b>Nancy Brink</b>	Susana de Trapaga	Alane Gray	Natasha Lekach
<b>Jennifer Brown</b>	<b>Carmen DeLeon</b>	Susan Greef	<b>Cheryl Lentini</b>
Marika Brown	<b>Russ DeLong</b>	Keith Gress	Patricia Lessard
Arden Bucklin-Sporer	Janine DeMartini	Chris Grogan	<b>Allison Levin</b>
Marcia Budarf	Crystal Dolis	Joshua Haiman	Ann Linder
Courtney Buechert	<b>Ben Dudek</b>	Mayu Hanabusa	Cathy Loewen
<b>Ryan Byrnes</b>	<b>George Eade</b>	Kris Handwerk Wiskes	William Ludan
Misty Cain	Kathy Eagle	Julie Hanft	Tom Luster



*Raptor release  
illustration by  
Siobhan Ruck*



# VOLUNTEERS

**Eric Lynch**

Mary Malec

**Robert Martin**

**Breanna Martinico**

Perry McCarty

**Cindy McCauley**

**Mark McCaustland**

**James McDermott**

Tomas McKay

Paul Meadow

Horacio Mena

**Daniel Mestizo**

Lisa Michl

**Rachel Miller**

Jennifer Miller

Margarita Montenegro

Daniel Monteverde

Sue Morgan

**Nancy Mori**

Tani Myers

**Craig Nikitas**

Wendy Niles

Maureen Noon

Virginia Nowak

Christine Okon

Brian O'Laughlin

Ana Olivar

Rebecca Olsen

Claire O'Neil

Steve O'Neill

**Taryn Orlemann**

Kenn Osborne

Pat Overshiner

**Sarah Parnell**

**Sean Parnell**

Julie Pearson

**Jean Perata**

**Jenni Peters**

**Sean Peterson**

Jeff Peterson

**Hailey Pexton**

Roy Pisetsky

Janice Podoll

**Bob Power**



*Hawkwatch illustration by Violet Kimzey*

**Bill Prochnow**

James Raives

**Cricket Raspet**

Sonja Raub

Eileen Richey

Beverly Riehm

**Lora Roame**

Jeff Robinson

**Steve Rock**

**Paul Romanak**

Diane Rooney

**Will Rose**

Elizabeth Rouan

Vanessa Roy

**Jane Rudebusch**

Rod Santos

Peter Sapienza

Juta Savage

**Sarah Sawtelle**

Jessica Schlarbaum

**Linda Schneider**

**Kaela Schnitzler**

**Jack Schofield**

**Lynn Schofield**

Paulette Sherry

**Shannon Skalos**

Tom Slyker

Ronald Smith

Rachel Sneed Zinn

Tim Strohane

Linda Sudduth

Ally Sung-Jereczek

Candace Swimmer

**Natalie Tan-Torres**

Christina Tarr

**Craig Tewell**

Laura Thomas

Holly Thomas

Kate Traynor

Leslie Tribe

**Traci Tsukida**

**John Ungar**

**Michelle Unger**

Brad Valentine

Emily Van Poetsch

Douglas Vaughan

**Michael Voeltz**

**Kristin Vorhies**

**Noreen Weeden**

**Marion Weeks**

**Emily Weil**

Carol Weinstein

Lisa Whitaker

Nelia White

**Jeff Wilcox**

Ken Wilson

Bright Winn

Pat Wong

**Woody Woodbury**

Jim Yampolsky

Pauline Yeckley

Sabrina Young

Kara Zambricki

Gretchen Zantzing


*All GGRO Volunteers listed here committed to volunteering in the 2020 season, but many individuals were not able to participate this year due to program suspensions and reductions caused by the Covid-19 pandemic. Volunteers whose names are bold participated in Hawkwatch, Bird Care, or a Banding Committee, but everyone listed here continued to support GGRO in various ways throughout 2020.*

# H A W K W A T C H

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## RAPTOR-SIGHTINGS IN THE MARIN HEADLANDS DURING AUTUMN



	2020			10-yr Average 2008-19*	
	Sep 16–Nov 20			Full Season Aug–Dec	
	Count	Rate		Count	Rate
Hours counted	165			470	
Turkey Vulture	2514	15.23		7388	15.72
Osprey	22	0.13		68	0.14
White-tailed Kite	11	0.07		64	0.14
Bald Eagle	18	0.11		11	0.02
Northern Harrier	255	1.54		543	1.16
Sharp-shinned Hawk	865	5.24		3947	8.40
Cooper’s Hawk	420	2.54		2221	4.73
Northern Goshawk	0	0		1	<0.01
Red-shouldered Hawk	124	0.75		422	0.90
Broad-winged Hawk	189	1.14		290	0.62
Swainson’s Hawk	1	0.01		7	0.01
Red-tailed Hawk	2456	14.88		8115	17.27
Ferruginous Hawk	8	0.05		28	0.06
Rough-legged Hawk	0	0		5	0.01
Golden Eagle	10	0.06		16	0.03
American Kestrel	99	0.6		340	0.72
Merlin	72	0.44		189	0.40
Peregrine Falcon	76	0.46		235	0.50
Prairie Falcon	0	0		5	0.01
Unidentified Raptor	186	1.13		999	2.13
TOTAL	7326	44.38		24,352	51.81

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

*Osprey illustration by Emma Regnier*

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# H A W K W A T C H

ROBERT BLUMBERG • DEBORAH CROOKS • GEORGE EADE • NANCY ELLIOT • MICHAELA FIGARI  
 DAN FOLDES • ERICA HARRIS • SAM HONTALAS • MARY KENNEY • CHERYL LENTINI  
 JAMES McDERMOTT • BOB POWER • JANE RUDEBUSCH • LINDA SCHNEIDER

# H A W K W A T C H

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The 2020 Covid-safe hawk count in the Marin Headlands demanded that we make some critical changes to meet safety standards to minimize or eliminate the risk of passing Covid-19 from person to person. Every change we considered had to be weighed against the possibility that the 2020 hawk count would be so changed that it might not be comparable to past years' counts. Did we succeed? We hope so, but future analyses must review that.

What changes were made? There is a long list, which we will post in the *Pacific Raptor* this summer, but as an example, we reduced the team size to 5 volunteer counters plus one GGRO staff person, where historically our count team-sizes varied from 6 to 18 people. It might seem like this would make for an automatic reduction in hawks counted, but the larger teams of the past also might have distracted each other from doing constant surveillance for hawks. The larger historical teams also included many apprentice hawk-counters, so the teams were teaching while counting. The small teams of 2020 were mostly made up of volunteers with 5 or more years' experience, so less teaching was required. The bottom-line is that the results of any of the changes will be nuanced and require a deeper data dive.

In all, and even with the weekends taken away, our GGRO hawk counters were heroic. Planned for and coordinated by GGRO Hawkwatch Manager Step Wilson, the three teams of five counters adhered to the Covid-safe methods and had a fabulous season. In total, we conducted 165 hours of counting, more than one-third of the hours of a pre-Covid year. We tallied over 7300 raptor-sightings, resulting in a raptors per hour rate of 44, slightly under the ten-year average.

All the 2020 results are spelled out in detail in the Hawkwatch 2020 chart, showing the contrasts with the previous ten-year count averages. I do want to warn folks not to take these numbers as exact comparisons, but as ballpark comparisons, for all the changes we made to keep the 2020 season Covid-safe. Great thanks to all our 2020 counters, and to the counters who could not be "official" but who came up to Hawk Hill to stand on the sidelines and wave their support, and huge thanks to the Park staff who guided the writing of our 2020 Covid-safe methodology.

— Allen Fish

# R E S E A R C H

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Although our field activities were hampered by the Covid-19 outbreak, some long-time research projects came to fruition as research articles in major journals. It is noteworthy that all of the studies below were led by GGRO volunteers or former interns. Great thanks to all the biologists, students, professors, and colleagues who propelled these articles forward. You can locate the original articles at our Parks Conservancy website:

<https://www.parksconservancy.org/our-work/ggro-publications>

Former GGRO Research Director, Dr. Chris Briggs, headed up two publications this past year. Chris worked with a nine-year dataset (2002-2010) on ecological aspects of nesting Cooper's Hawks in Berkeley, CA. The data were all collected by GGRO volunteers, led by community scientist Ralph Pericoli. Chris also developed a study using USGS Bird Banding Lab data and GGRO band recoveries to predict where autumn Red-tailed and Cooper's Hawks seen at the Marin Headlands might be nesting.

The first article on GGRO's Radiotelemetry study (1989-2015) was published, led by GGRO volunteer and seabird biologist Phil Capitolo. The article focuses on five Broad-winged Hawk flights tracked by GGRO volunteers from the Headlands to as far as the Mexican border; this is the only radio-tracking study for this species west of the Rockies.

Former GGRO intern Dr. Beth Wommack assembled co-researchers to analyze the isotopes in Sharp-shinned Hawk feather samples, a method of tracing migratory birds to their nesting regions. GGRO also continues a long-standing alliance with the Joshua Hull Lab at UC Davis, with some exciting research and publications coming up in 2021.

Although in-person scientific conferences were widely cancelled for the 2020 pandemic year, GGRO's Banding Manager Teresa Ely served on the Virtual Event Committee for the Raptor Research Foundation. In December, the committee produced a superb online two-day program of talks and workshops attended by 364 raptor biologists as a substitute for the annual RRF meeting.

— Allen Fish

# B A N D I N G

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The GGRO banding season was suspended for 2020 due to the Covid-19 pandemic, but the GGRO banders were incredibly productive. The Banding Training Committee pulled together an amazing set of virtual programming to keep banders and hawkwatchers engaged during a season they could not be in the field. Then a small group of banders spearheading a set of committees to help with planning for the banding program to safely resume.

The Banding Training Committee organized two types of virtual programming for our volunteers. First, *Intern Peregrinations* helped us catch up with our former interns and get a glimpse into what they have been doing at other migration sites. We virtually traveled to places like Cape May (New Jersey), the Goshutes Mountains (Nevada), Lucky Peak (Idaho), Commissary Ridge (Wyoming), Bonnie Butte (Oregon), Chelan Ridge (Washington), Manzano Mountains (New Mexico), Veracruz (Mexico), and finally we ended up at Hawk Ridge (Minnesota). The second program was our *GGRO Seminar Series* where we took a deeper dive into reading and discussing GGRO scientific journal publications. This required a bit of prep work because the goal was to help volunteers think critically about our research and have a meaningful discussion. One of our most current research collaborations about Merlin diets with Ryan Bourbour of the UC Davis Hull Lab was open to a wider audience, including our NPS and Conservancy colleagues.

Because of the many impacts of the pandemic on the Park, we have discussed how the banding program might change as a result. Banding volunteers wanted to find ways to help GGRO staff, and so formed the Banding Planning Coordination Committee (BPCC). The BPCC identified points where we needed the most help and developed a list of subcommittees that could plan both for the future of the banding program, and to keep GGRO thriving. This led to the formation of a new set of Banding Planning Committees (BPC), some new, some well-established but now expanded.

We have expanded the Banding Training Committee to include Volunteer Engagement projects. We have formalized the Banding Safety Committee. A new committee formed, that was long overdue, is the Equity and Inclusion Committee. I am excited to see more people get involved in the committee focusing on Research, as well as in Outreach and Education. Finally, we have a committee to help with Fundraising and another for Internships. The BPCC and all the BPCs, have worked incredibly hard for the past six months to support GGRO's long-term future. The Banding Planning Committees were initially formed to help the banding program, but we know that some of these committees encompass all of GGRO and its programs. We look forward to inviting hawkwatchers to participate in the future on these committees.

In February and March 2020, we were incredibly lucky to borrow live Turkey Vultures from the Lindsay Wildlife Hospital to attract new vultures to our trap. We tagged five vultures total, placing a satellite transmitter on one. Thank you to Lindsey Blessing for making the connections with Lindsay Wildlife Hospital, and to Lead Wildlife Rehabilitation Technician, Marcia Metzler. This project is possible due to partnerships with WildCare of San Rafael and Lindsay Wildlife Hospital in Walnut Creek, and funding from the Paul Armer Memorial Fund.

— Teresa Ely, GGRO Banding Manager



*Turkey Vulture illustration  
by Emma Regnier*

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## B I R D C A R E

RYAN BYRNES • SUSANNA CZUCHRA • CANDACE DAVENPORT • BEN DUDEK  
MICHAELA FIGARI • ERIN FISHER • ALLISON LEVIN • CINDY MCCAULEY • NANCY MORI  
TARYN ORLEMANN • SARAH PARNELL • SEAN PARNELL • SEAN PETERSON • CRICKET RASPET  
LORA ROAME • PAUL ROMANAK • SARAH SAWTELLE • MICHAEL VOELTZ

**Golden Gate Raptor Observatory**

**Golden Gate National Parks Conservancy**

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# *GGRO Season Summary 2020*

VOLUNTEERS • HAWKWATCH  
BANDING • RESEARCH



*Red-shouldered Hawk feather illustration by Lora Roame*