



# The Ardeid

Research & Resource Management at Cypress Grove Preserve

Audubon Canyon Ranch, Fall 1992

## COUNTING COWS ON THE HILLSIDE

### The Census Data We Count On

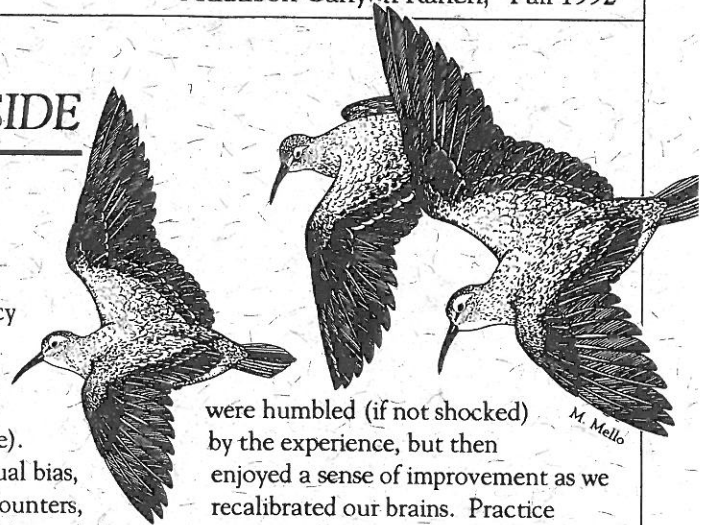
*The Tomales Bay Shorebird Project is in its fourth year. Twelve times per year, 15-20 volunteer field observers count all the shorebirds in the bay. Their ongoing commitment is impressive. And it's not an easy game. Gathering high quality data is a continual challenge.*

Shorebirds rarely stand in line to be counted. But experienced shorebird censusers know what it feels like to estimate a flock at nearly the exact same number as another observer. You get an empowering sense of knowing what is actually going on out there. However, estimates may concur and yet remain far from the mark because of shared observer bias. Over time, observers can become overconfident, even reckless. The truth is, no matter how hard you work at it you can never know how many birds are really there.

During two recent workshops at Cypress Grove Preserve, shorebird censusers

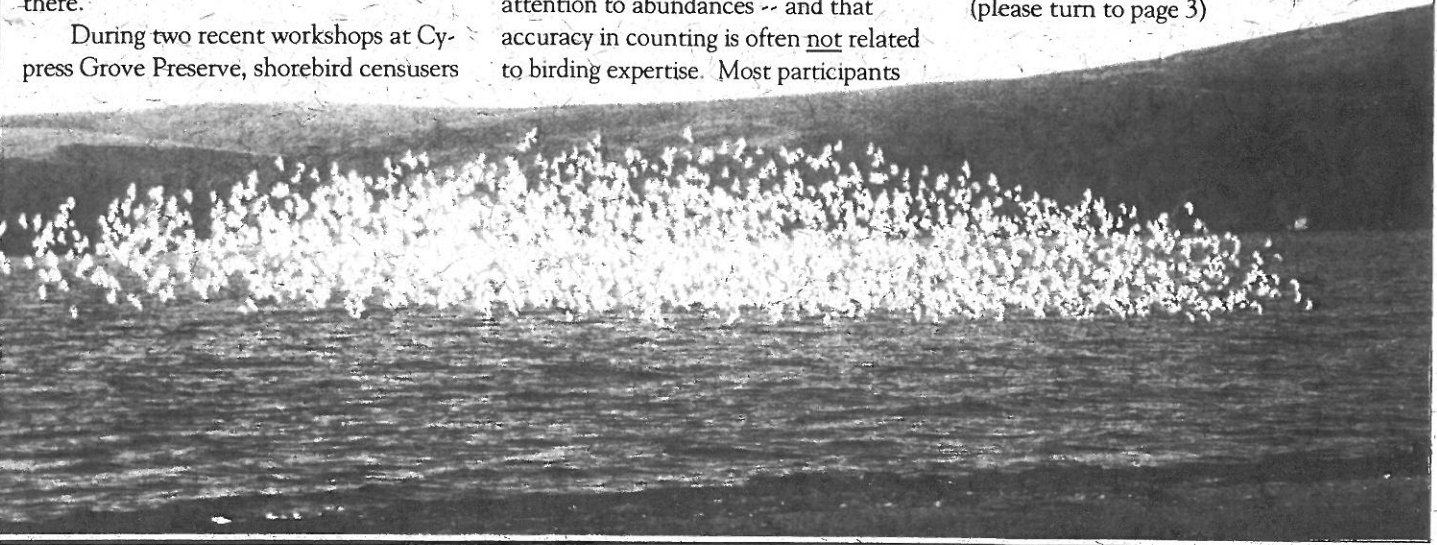
boldly checked their accuracy against precounted "flocks" (photos projected onto a screen and colored beans thrown across a table surface). Observers measured individual bias, adjusted their mental tally counters, tried again, then readjusted. In a quick check of group performance, the average group bias ranged from 8 percent below to 25 percent above the actual number -- not too bad. But individual estimates were sometimes a bit wild. Inexperienced observers tend to undercount. Knowing this, observers often overcount. As we wrestled with our perceptions, the central message was clear: *Check your field data carefully because the world is never just as it seems.*

Serious birders were reminded that excellent field ornithology requires an attention to abundances -- and that accuracy in counting is often not related to birding expertise. Most participants



were humbled (if not shocked) by the experience, but then enjoyed a sense of improvement as we recalibrated our brains. Practice clearly reduces bias. Even counting cows on a hillside can improve one's ability to perceive abundances in nature, which are, along with biodiversity, the fundamental parameters of ecosystems.

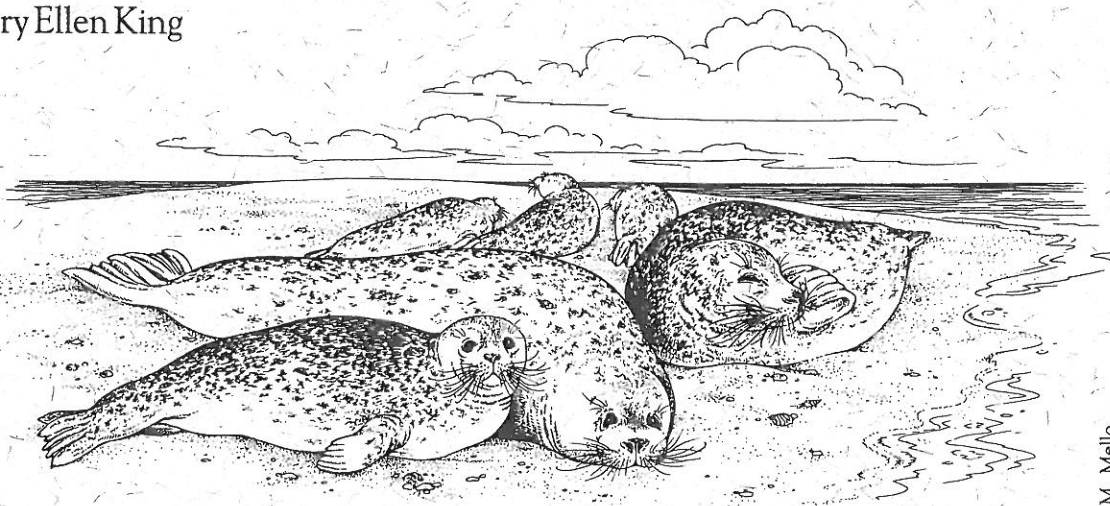
To control as many other sources of bias as possible, we follow a detailed census protocol. The protocol delineates (maps) 11 count areas, describes exactly how to cover each one, limits the count duration, sets census tides, establishes weather contingencies, defines strategies for dealing with movements of birds into or out of an area and recording unidentified (please turn to page 3)



# Tomales Bay Harbor Seals: A Colony at Risk?

Sarah Allen and Mary Ellen King

*Sarah Allen has been monitoring harbor seals in Point Reyes since 1982. Mary Ellen King has coordinated a field study on disturbance behaviors of harbor seals at ACR's Tom's Point on Tomales Bay since 1991 (volunteer field observers will be needed from March through June). This article is excerpted from a paper presented at the Third Biennial State of Tomales Bay Conference (1992). --JK*



M. Mello

Harbor seal colonies along the Point Reyes coastline represent about 20% of the estimated breeding population of the state of California. Tomales Bay is one of several locations along the Point Reyes Peninsula where harbor seals congregate onshore. Resting areas or "haul-out" sites in Point Reyes are found in remote areas on tidal sand bars, sandy pocket beaches, and offshore tidal ledges or islands. These haul-out sites are critical habitat for seals because of their historical, physiological and reproductive significance. They have historical significance because seals congregate at the same site for years, perhaps centuries. Seals benefit physiologically from resting onshore after several hours of continuous diving for food. Seals rest onshore mostly during daylight hours for an average of 7 hours per day and retreat to the water to feed at night. The sites are important for reproduction because seals give birth and nurse their pups on land.

We conducted surveys of harbor seals in Tomales Bay during the periods 1982-1984 and 1991-1992. In the 1982 survey we determined that harbor seals in Tomales Bay haul-out on the southeast side of Hog Island, on tidal mud flats extending from Tom's Point to Sand Point, and on pocket

beaches near Tomales Point along the west side of Tomales Bay. Between 1982 and 1984, the monthly average number of seals was least during the height of the breeding season (March-May;  $\bar{x}=156$ , range=85-275) and greatest during the winter (November-February;  $\bar{x}=194$ , range=93-355). This pattern contrasts sharply with all other haul-out sites in Point Reyes where maximum counts occur during the breeding season and followed by the annual molt period (June-August). Winter seal usage corresponds to when the Pacific herring spawn in Tomales Bay and several seals radio-tagged in

were similar, although higher in 1991.

Harbor seals, when hauled out on land, are sensitive to the presence of humans, and when approached to within 100-300 m, will characteristically retreat into the water en masse. Short-term effects from disturbance include disruption of the resting period and mother/pup separation. Long-term effects include reduced overall usage, reduced reproduction, or abandonment.

We measured several variables to determine the reactions of seals to human activities in Point Reyes and found that seals in Tomales Bay experienced the highest level of disturbance of all haul-out sites in the Point Reyes area (Table 1). Seals were disturbed during 49% of our surveys in 1983 compared to 29% at Drakes Estero. In 1992 the percentage was nearly double (81%).

Clam diggers and fishermen (51%) were the major source for disturbance, followed by boats (30%), hikers (14%) and dogs (5%). In a single day several hundred people were observed digging for clams on the sand bars between Sand Point and Tom's Point. The average number of people counted during surveys in 1991 was 350 with a maximum of

1225 seen in one day; on average, there were 4 disturbances per survey period. These months also coincide with the pupping season. More recently kayaks and other boats launched at Nick's Cove likely are having a negative effect

Disturbance measure	Tomales Bay	Other site*
Days disturbed	49%	29%
Vigilance (head alerts/min)	0.68	0.35
Alternate sites	28%	3%
Likelihood to rehaul	58%	85-100%
Reproduction	16%	24%
Pup mortality	22%	13%

\*More remote or relatively undisturbed site in Point Reyes

Drakes Bay migrated to Tomales Bay in the winter. The summer decline coincides with elevated levels of human activities in Tomales Bay. Maximum pup counts in 1982 (58), 1984 (45), 1991 (86) and 1992 (55)

on seals at Hog Island where seal numbers have dropped sharply in the past decade.

Our results, along with the depressed pupping rate at Tomales Bay compared to other less disturbed areas, suggest that there may be a relationship between harbor seal reproductive success and human disturbance in Tomales Bay. Additionally, pup mortality rates were higher in Tomales Bay compared to other sites in Point Reyes, and several pups were removed each year by people assuming them to be abandoned.

## Cypress Grove Preserve OPENING!



At a dedication on August 14th, 1992, Clifford Conly presented the Cypress Grove Preserve facility to Audubon Canyon Ranch. The *Clifford Conly Center* now houses the CGP library and meeting room. Thanks to Sue Baty and Diane Carpenter, materials are being catalogued in the new library.

## DUNN PROPERTY GOES TO GGNRA!

Thanks to the determined energy of Skip Schwartz, Barbara Boxer, Alan Cranston, and many others, federal funds were appropriated in September for the acquisition of 52 acres adjacent to Cypress Grove Preserve by the Golden Gate National Recreation Area. This action protects an important part of the east shore of Tomales Bay.

## Counting Cows... (from page 1)

fied species groups such as "dowitchers" or "yellowlegs," and explains when and how to use specific counting methods for different bird densities, behaviors, and counting situations (poor light, falcon interference, in-flight counts, mixed-species flocks). At our next practice session, we will systematically measure observer bias and chart our improvement -- such direct reality checks may be valuable in interpreting results of the Tomales Bay Shorebird Project.

# IN PROGRESS

## PLANT WARS

We have covered two 10 x 50-foot areas of African ice plant at Tom's Point with black plastic sheeting. After two of four months of complete shade, the ice plant appears mostly dead. Next question: will it regenerate? And what about the natives?

## TOMALES BAY PLANT SPECIES INVENTORY

We have adopted a standard system (Holland 1986) for classifying terrestrial plant communities and are forming a group of interested field observers to begin mapping vegetation and inventorying plant species around Tomales Bay.

## COASTAL PRAIRIE

Everyone is invited to help plant this year's cohort of native grass seedlings on January 16th at CGP. Exotic annual competitors have a very strong head start this year. Please call the ACR office if you can help (415/868-9244).

## HARBOR SEALS

Volunteer field observers are needed for the 1993 season (March-June) to study disturbance behaviors near ACR's Tom's Point (see article on page 2). Please call Mary Ellen King at 707/537-1546.

## SHOREBIRDS

Last year's nearly complete February departure of small sandpipers from the south end of Tomales Bay follows more subtle but similar declines over the previous two winters -- but not in the north bay habitats.

## AQUACULTURE

We are now in the fourth year of a five-year study of possible effects of oyster farming on the use of intertidal habitat by wintering shorebirds.

## COMMON YELLOWTHROATS

ACR field biologists are working on a study of yellowthroat foraging "niche" at ACR's Livermore and Olema Marshes. The 1993 breeding season will provide enough additional behavioral observations to complete this study.

## NORTH BAY COUNTIES HERON/EGRET PROJECT

The beginning of the nesting season always sneaks up on us in mid-winter. Additional observers are needed to monitor the many colonies in our region. Last August a colony of 3 pairs of Great Blues and one pair of Great Egrets was destroyed by developers at Bodega Harbor.

## WINTER WATERBIRDS

Surf Scoters in Tomales Bay have declined 50% in three years! Will numbers rebound if the Pacific herring population recovers? Experienced birders are needed to help census winter waterbirds by boat.

## HERON/EGRET VOCAL AGEING

Philip Greene and a team of field observers are recording vocalizations of known-age chicks. We hope to develop methods for ageing chicks and comparing reproductive timing at other colonies in the region.

## BLACK RAILS

Chris Wood is studying vocalizations of California Black Rails (listed as Threatened in CA) at Olema Marsh, and has discovered some undescribed calls.

## The Ardeid

Ardeid (Ar-DEE-id), n., refers to any member of the family Ardeidae, which includes herons, egrets, and bitterns.

*The Ardeid* is published twice yearly by Audubon Canyon Ranch as an offering to Field Observers, volunteers, and supporters of Cypress Grove Preserve. To receive *The Ardeid*, please call or write to Cypress Grove Preserve. Subscriptions are available free of charge -- however, contributions are gratefully accepted.

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# T H E W A T C H

The following Field Observers have contributed to CGP projects since the last newsletter:

- A = Aquaculture Project
- D = Harbor Seal study
- G = CGP gardens
- H = Heron/Egret Project
- I = TB Plant Sp. Inventory
- M = Marsh Monitor. Project
- P = Coast. Prairie Restoration
- S = TB Shorebird Project
- V = Heron vocal ageing
- W = TB Waterbird Census
- O = Other activities

- Shirle Akers (H)
- Sarah Allen (SD)
- Katrina Anderson (D)
- Dick Ashford (H)
- Bob Baez (SW)
- Norah & Hugh Bain (SH)
- Barbara Baldwin (V)
- Shirley Barker (GO)
- Sue Baty (O)
- Tom Baty (W)
- Gay Bishop (DHSW)
- Dana Bland (HS)
- Patti Blumin (H)
- Janet Bosshard (HP)
- John Boyd (HSW)
- Tom Bradner (H)
- Mary Brezner (H)
- Brian Bullick (H)
- Tom Byron (H)
- Cathleen Cannon (H)
- Marianne Caratti (H)
- Diane Carpenter (O)
- Lisa Cohen (S)
- Chris Cole (H)
- Nancy Conzet (H)
- Walt Creber (HP)
- Sam Dakin (WO)
- Eric Davis (H)
- Mark Davis (H)
- Patricia deBow (H)
- Mark Dean (S)
- Abel DeHaan (H)
- Roberta Downey (IP)
- Joe Drennan (W)

- Alma Dresser (H)
- Don Dvorak (O)
- Ted Elliot (H)
- Jules Evens (ASM)
- Joe Ferreira (H)
- Dave Ferrera (W)
- Sue Ferrier (D)
- Binny Fischer (H)
- Bob Fivus (HV)
- Virginia Fletcher (SHIPO)
- Grant Fletcher (SWHIPO)
- Carol Foley (H)
- Carol Fraker (H)
- Keith Fraser (H)
- Nicole Gallagher (SP)
- Rich Gibson (HP)
- Robert Gleason (S)
- Margaret Greene (H)
- Philip Greene (HV)
- Gayle Greeley (S)
- Peggy Gross (H)
- Madelon Halpern (H)
- Kirk Hastings (HSWPMO)
- Edna Hickok (H)
- Cindy Hutchins (D)
- Maggie Hynes (HIPMS)
- Tim Jenkins (H)
- Ruth Johnston (H)
- Gerald Karr (H)
- Susan Kelly (GHPO)
- Mary Ellen King (DHO)
- Carol Kuelper (S)
- Judith Lamoure (G)
- Laura Leek (W)
- Robin Leong (H)
- Michele Liapes (HIP)
- Karen Long (IP)
- Flora Maclise (SHO)
- Jo Maillard (H)
- Dallas Manwaring (G)
- Bob Martinez (H)
- Ellen Mcknight (H)
- Harmony Mercedes (H)
- Jane Merryman (H)
- Jean Miller (H)
- June Morgan (H)
- Milt & Pix Morgan (D)
- Gary Muerle (H)

- Dan Murphy (SW)
- Terry Nordbye (ADHMPS)
- Robert Northrop (H)
- Wanda Ochoa (D)
- Harold O'Connor (H)
- Joan Paddor (H)
- Karen Paull (D)
- Karen Pettit (D)
- Ray & Judy Peterson (H)
- Emeigh Poindexter (G)
- Myrlee Potosnak (H)
- Grace Pratt (H)
- Helen Pratt (HV)
- Sarah Puyans (H)
- Marian Rands (H)
- Janet Redner (H)
- Lyndsay Rehm (D)
- Linda Reichel (H)
- Livia Rosman (D)
- Ellen Sabine (DHS)
- Barbara Salzman (H)
- Fran Scarlett (H)
- Craig Scott (D)
- Elaine Senf (HPO)
- John Shoemaker (H)
- Dody Silver (V)

- Dana Silvernale (H)
- Guy Smith (H)
- Anne Spencer (HPSWO)
- Rich Stallcup (ASM)
- Jean Starkweather (H)
- Susan Stingle (D)
- Donna Svirsky (G)
- Judy Temko (HMPSO)
- Don Tiernan (H)
- Janet Thiessen (SHW)
- Elizabeth VanSandt (V)
- Bill Van Schaick (HSC)
- Tanis Walters (S)
- John Watkins (H)
- Patrick Welch (H)
- Adeline Whitmore (H)
- Diane Williams (SW)
- David Wimpfheimer (AHS)
- Chris Wood (HMO)
- Brett Woods (H)
- Katheryn Zimmerman (IP)
- Field Biologists
  - Jules Evens
  - Terry Nordbye
  - Rich Stallcup

- David Wimpfheimer
- Chris Wood
- Research Associates
  - Sarah Allen
  - Alison Brown
  - Faith Duncan
  - Jules Evens
  - Grant Fletcher
  - Phillip Greene
  - Todd Hopkins
  - Mary Ellen King
  - Flora Maclise
  - Helen Pratt
  - Rich Stallcup
  - Chris Wood
- CGP Intern
  - Maggie Hynes
- CGP Staff
  - Resident Biologist
    - John Kelly
  - Land Steward
    - Kirk Hastings
  - Administrator
    - Susan Kelly
  - The Ardeid
    - John Kelly

## IN THE FIELD

December	16	Tomales Bay Shorebird Census
	19	Tomales Bay Waterbird Census (& Pt. Reyes Peninsula Christmas Bird Count)
January	4	Waterbird Census Identification Class with Rich Stallcup (please call CGP for info)
	9	Tomales Bay Waterbird Census
	23	Tomales Bay Waterbird Census
	26	Tomales Bay Shorebird Census + <u>Extended Watch!</u>
February	8	Tomales Bay Shorebird Census + <u>Extended Watch!</u>
	9	North Bay Counties Heron/Egret Project Preseason Meeting for Field Observers (please call CGP for information)
	23	Tomales Bay Shorebird Census + <u>Extended Watch!</u>



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