

Research & Resource Management at Cypress Grove Preserve

Audubon Canyon Ranch, Summer 1993



## PATTERINGS ON THE SURFACE

ACR's Tomales Bay Waterbird Census takes an early look at the possible link between numbers of Surf Scoters and Pacific Herring. Field Observers, working from three census boats, have conducted a series of intensive, bay-wide counts each winter since 1989/90 to track populations of loons, grebes, cormorants, ducks, and other waterbirds.



*In winter, the smooth gray lines painted by slow movements of surface water on Tomales Bay are seldom left to blend on their own. Sheets of Surf Scoters racing to take-off, fray the*

surface in broad strokes, changing the texture and light on the water. With numbers of Surf Scoters reaching more than 10,000, the choral whistling of their wings during takeoff is loud and frequent. By influencing overall patterns, light, movement, and sound, Surf Scoters seem to define the compelling sense that Tomales Bay teems with life in winter.

Surf Scoters probably heavily exploit herring roe, which is spawned abundantly on blades of eel grass in winter. The luxuriant eel grass meadows that wave over the shallows of Tomales Bay are actually quite thrashed by the foraging activities of scoters and other wintering waterbirds. A large proportion of the blades break off. Scoters often bring up roe-laden blades of eel grass to consume at the surface. The broken blades form rafts that float across the bay, serving as a dispersal mechanism for eel grass invertebrates. The rafts eventually stack up as beach wrack along the shoreline, where they create habitat for other invertebrates that in turn become prey for shorebirds.

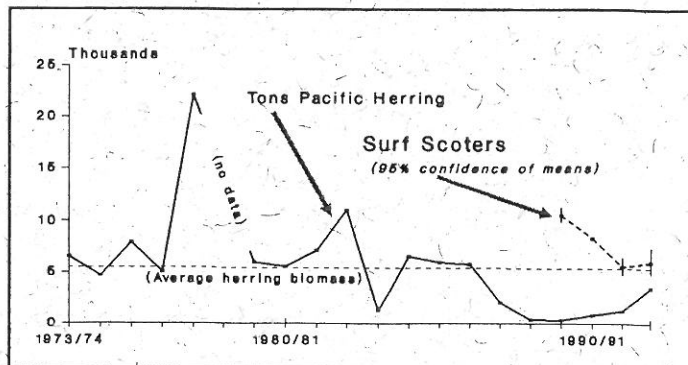
The herring roe fishery, which is the basis for the Pacific Herring fishery along our coast, began in

1973 after the Soviets banned the Japanese from fishing along their coast, opening up the herring roe market in Japan. The California Department of Fish and Game has estimated the herring spawning biomass annually since 1973 (see graph). The annual average spawning biomass is just under 6,000 tons per year -- which translates into 30-50 MILLION herring that swim into the bay in winter to spawn! The intensity of the feeding frenzy that accompanies the herring spawn is reflected in the rate of predation on the eggs by birds, fishes, and crabs -- estimated at 90% within a week of the spawn. And of course, many waterbirds, harbor seals, California sea lions, and larger fishes also prey on the adult herring. In 1987/88, the spawning population in Tomales

Bay crashed, although a partial recovery was observed in 1992/93. The spike in herring biomass in 1977/78 suggests a temporary movement of herring into Tomales Bay that normally might have returned to San Francisco Bay, where there was a nearly perfect inverse response (drop) that same year.

Surf Scoters declined 50% from 1989/90 to 1991/92 (see

(Please turn to page 3.)



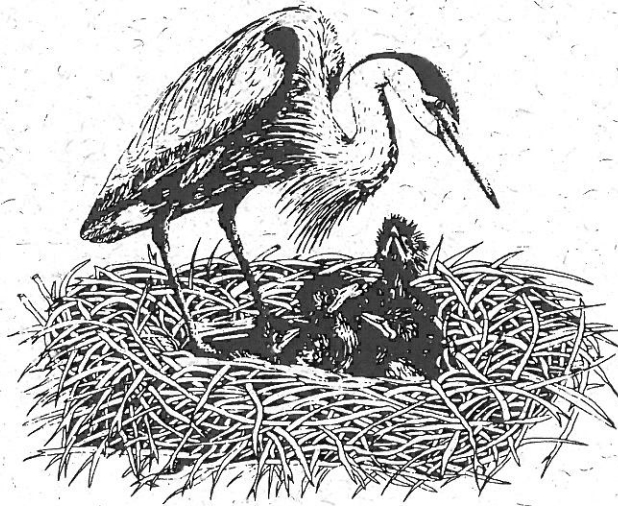
# Protecting Local Heronries

*The quiet destruction of nesting colonies continues, but Field Observers on ACR's Heron/Egret Project (HEP) have been in there fighting.*

ACR's Heron/Egret Project involves over 75 volunteer Field Observers in an annual program to monitor populations and reproductive success of Great Blue Herons, Great Egrets, Snowy Egrets, and Black-crowned Night Herons in five North Bay counties.

After nearly a century of protection, heron and egret nesting colonies are still under attack. The federal Migratory Bird Treaty Act prohibits the taking, killing, possessing, or transporting of herons or egrets, but their colony sites benefit from this protection only when occupied. Colony sites are therefore not protected during fall and winter. Attempts to destroy or remove nesting trees are often unopposed and successful. Wetland habitat protection is not enough because their traditional colony sites, often several decades old, are generally on adjacent upland habitat. (The extent of their wetland feeding areas is also declining, in spite of Clean Water Act protection, and this alone may threaten local populations through loss of food supplies.) Consequently, until legal protection for nesting sites is obtained, local action is the necessary course to protect heron and egret colonies in our region.

Last year, I received a telephone call from Dave Scheib in Danville. Dave had heard about ACR's Heron/Egret Project (HEP) and wanted to know what could be done to save the two-nest Great Blue Heron colony at Montair Elementary School in Danville. This colony site is one of only two known Great Blue Heron nesting sites in Contra Costa County. Although the property was owned by the school district, permission had been given to a neighbor to remove the Eucalyptus nesting trees because of a perceived fire hazard. Letters and telephone calls by ACR, Mount Diablo Audubon Society, local neighbors, and teachers, describing the biological and educational value of this nesting site,



Ane Rovetta

and a visit by the local fire department, persuaded the district business manager to reverse his decision that would have allowed removal of the trees. But not long after this battle was won, the district decided to sell the property to the same neighbor. The neighbor, as it turned out, wanted to acquire it, redefine his property line, and develop a second building site. His initial complaint of a "fire hazard" was evidently a smoke screen covering his goal to acquire and develop the property. More letters and telephone calls were made to the school district. A new school principle entered the picture. And a neighborhood group, called "Save Our Montair Environment," was organized to save the heronry. Finally, the school district decided to keep the property, and to preserve the nesting site as a valuable educational resource.

That same year, at the other end of HEP's five-county monitoring area, we observed a different outcome from a similar threat. A patch of Eucalyptus supporting three pairs of Great Blue Herons and one pair of Great Egrets was sold and quickly destroyed. The developer simply waited until August 10th, after the last birds had left the colony, before removing the nesting trees.

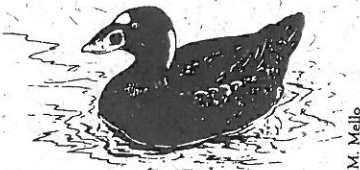
In Penngrove, Sonoma County, in spite of two years building neighbor-

hood support, Judy Temko and Abe DeHaan are not sure the colony they are monitoring is safe. This year, a huge Monterey Pine used by the 20+ year-old colony of Black-crowned Night-Herons, Snowy Egrets, and Great Egrets, was cut down by a property owner who resented the "noise and mess." The cutting was done in early February, just before the birds returned to occupy the nesting trees. The entire colony of 30-40 nests was abandoned. Later in the season, some Black-crowneds and Snowies attempted to nest in some live oaks nearby, forming a small satellite colony a half block from the original site. However, most of these attempts fell victim to unknown nest predators. Eleven Black-crowned Night-Heron nests appear to be surviving the season. The Snowies and the Greats are gone.

At least four other colony sites in our North Bay Counties area are under the creeping shadow of development threats. Because HEP involves local observers and maintains records of colony ownership, we can sometimes raise a red flag to inform others when nesting sites are threatened. But effective protection will require cooperation by planning and management agencies as well as strong local action. We hope future results from our study will help build a case for the protection of colony sites.

## HERONS & EGRETS OF AUDUBON CANYON RANCH

Helen Pratt has published a book on the life history and ecology of herons and egrets, based on 24 years of study of nesting colonies at ACR's Picher Canyon. Photography by Philip L. Greene and drawings by Ane C. Rovetta make this a beautiful and informative book for anyone interested in herons and egrets. *This is an excellent reference tool for HEP Field Observers (get it!).* To order, send \$15 (this includes tax, postage, and handling) -- or \$12 (20% discount) for ACR Field Observers, Docents, and Ranch Guides -- to the ACR Bookstore, 4900 Shoreline Hwy, Stinson Beach, CA 94970.



M. Meilo

### Patterings . . . (from page 1)

graph). However, there is no evidence of a decline elsewhere in the state. Unfortunately we cannot explain this trend because earlier records before the 1987/88 collapse of Pacific Herring are really variable, and earlier methods are not comparable. Now, ACR's Tomales Bay Waterbird Census has established a baseline capable of detecting population changes of 15 to 20 percent.

If Surf Scoter numbers in Tomales Bay are dependent on the herring and the herring continue to recover, we might expect more scoters in the future, as suggested by the slight increase in 1992/93. Perhaps there was a delayed decline in winter site faithfulness among Surf Scoters present before the herring crash, as suggested by record high numbers in 1989/90. A delayed decline could be adaptive, allowing winter populations to override short term declines in food supply. However, we may find no continuing pattern if scoters are able to shift preferences to other more available prey during low herring years. Besides feeding on herring eggs, Scoters also prey on molluscs and crustaceans in other bottom substrates.

Other waterbird species have continued to crowd the bay waters -- ubiquitous Bufflehead, huge rafts of Horned Grebes, calls of loons scattered evenly across the water -- apparently not affected by the loss of herring, although we don't know for sure. The next few winters will be interesting, as we watch for a possible recovery of the Pacific Herring and changes in waterbird abundances on Tomales Bay.

# IN PROGRESS

## PLANT WARS

We have removed African ice plant from four 10 x 50-foot areas at Tom's Point with black plastic sheeting. In December, we will determine if the ice plant has begun to regenerate and if natives have begun to reestablish. We hope to remove more ice plant at Tom's Point next year.

## TOMALES BAY PLANT SPECIES INVENTORY

We have adopted a standard system (Holland 1986) for classifying terrestrial plant communities, mapping vegetation, and inventorying plant species around Tomales Bay.

## COASTAL PRAIRIE

The third annual planting of native grass seedlings in the experimental plot at CGP was completed in January, and the young grasses are surviving well. An ACR Field Seminar on grass taxonomy was well attended. We will be gathering native grass seeds on Tuesdays in July. *Please call CGP if you can help (415/663-8203).*

## HARBOR SEALS

Field Observers continued to monitor disturbance behaviors of harbor seals near ACR's Tom's Point. The Gulf of the Farallones National Marine Sanctuary printed our *Harbor Seal Alert* fliers, which are distributed to visitors at Lawson's Landing. For the first time, clambers and other visitors on the sand bars are beginning to avoid haul-out areas! For more information, please call Mary Ellen King at 707/537-1546.

## SHOREBIRDS

Experienced birders are needed to help census shorebird populations on Tomales Bay. Each winter since 1989-90, late-winter declines of shorebirds on south bay tide flats have been greater than in the north bay. Seasonal differences in food availability between the north and south bay habitats should be investigated. Anyone looking for a serious field study, should call CGP!

## AQUACULTURE

We have completed 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 have completed field work on a three-year study of Salt Marsh Common Yellowthroat foraging "niche." Results of the study will help guide management of Livermore and Olema Marshes, and contribute to our knowledge of this Species of Special Concern.

## NORTH BAY COUNTIES HERON/EGRET PROJECT

A scientific paper on "The Distribution, Reproductive Success, and Habitat Characteristics of Heron and Egret Breeding Colonies in the San Francisco Bay Area," by John Kelly, Hellen Pratt, and Philip Greene, is *in press* in *Colonial Waterbirds*. Binny Fischer and John Kelly have begun to monitor reproductive success of Great Egrets on West Marin Island. An end-of season HEP pot-luck is planned (see back page).

## WINTER WATERBIRDS

The spawning biomass of Pacific Herring in Tomales Bay was below average, but suggestive of a building recovery. Will waterbird numbers rebound if the herring population recovers? (See article on page 1.) *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 Spp. Inventory
- M = Marsh Monitor. Project
- P = Coastal Prairie
- S = TB Shorebird Project
- V = Heron vocal ageing
- W = TB Waterbird Census
- O = Other activities

Debbie Ablin (H)  
 Dan Abraham (P)  
 Nancy Adess (H)  
 Sarah Allen (SD)  
 Andy and Lee Angel (H)  
 Nancy Angelesco (W)  
 Bob Baez (SW)  
 Norah & Hugh Bain (SH)  
 Nancy Barbour (H)  
 Sue Baty (O)  
 Tom Baty (W)  
 Rosilyn Bazaruto (W)  
 Gay Bishop (HSW)  
 Patti Blumin (H)  
 Janet Bosshard (HP)  
 John Boyd (HSW)  
 Tom Bradner (HW)  
 Mary Brezner (H)  
 Brian Bullick (S)  
 Tom Byron (H)  
 Marianne Caratti (H)  
 Diane Carpenter (O)  
 Nancy Conzet (H)  
 Walt Creber (P)  
 George Curth (W)  
 Sam Dakin (W)  
 Eric Davis (H)  
 Patricia deBow (H)  
 Mark Dean (S)  
 Abel DeHaan (H)

Roberta Downey (P)  
 Dick and Jenny Downing (H)  
 Joe Drennan (W)  
 Alma Dresser (H)  
 Ted Elliot (H)  
 Steve Engel (W)  
 Gayanne Enquist (W)  
 Tom Evans (H)  
 Jules Evens (ASM)  
 Dave Ferrara (W)  
 Binny Fischer (H)  
 Virginia Fletcher (SHIPO)  
 Grant Fletcher (SWHIPO)  
 Carol Foley (H)  
 Carol Fraker (H)  
 Keith Fraser (H)  
 Nicole Gallagher (P)  
 Rich Gibson (P)  
 Margaret Greene (H)  
 Philip Greene (HV)  
 Gayle Greeley (S)  
 Madelon Halpern (H)  
 Kirk Hastings (HSWPMO)  
 Bruce Hamilton (HW)  
 Daphne Hatch (W)  
 Edna Hickok (H)  
 Bill Hildreth (H)  
 Maggie Hynes (HIPWS)  
 Tim Jenkins (H)  
 George Jenkins (O)  
 Ruth Johnston (I)  
 Gerald Karr (H)  
 Susan Kelly (GPO)  
 Mary Ellen King (DHW)  
 Richard Kirschman (SW)  
 Carol Kuelper (S)  
 Judith Lamoure (G)  
 Laura Leek (W)  
 Robin Leong (H)  
 Michele Liapes (HWP)  
 Karen Long (P)  
 Flora Maclise (MHO)  
 Jo Maillard (H)  
 Dallas Manwaring (G)  
 Aspen Mayers (SW)  
 Jane Merryman (H)  
 Maggie Metcalf (H)

Jean Miller (H)  
 Shelly Monte (H)  
 June Morgan (H)  
 Dan Murphy (SW)  
 Laura Nelson (I)  
 Terry Nordbye (ADHMWS)  
 Joan Paddor (H)  
 Karen Paull (D)  
 John Petersen (H)  
 Ray Peterson (P)  
 Emeigh Poindexter (G)  
 Myrlee Potosnak (H)  
 Grace Pratt (H)  
 Helen Pratt (HV)  
 Linda Reichel (H)  
 Erich Reineker (W)  
 Ellen Sabine (WHS)  
 Barbara Salzman (H)  
 Karen and ...ndri (H)  
 Fran Sca...  
 Craig Sca...  
 Elaine Se...  
 Lorie Silv...  
 Anne Sp... (ISW)  
 Rich Stallcup (ASM)

Jean Starkweather (H)  
 Susan Stingle (P)  
 Donna Svirsky (G)  
 Judy Temko (HPS)  
 Don Tiernan (H)  
 Janet Thiessen (SHW)  
 Forest Tomlinson (SHW)  
 Bill Van Schaick (S)  
 Wendy Walker (HI)  
 Tanis Walters (S)  
 Penny Watson (W)  
 Ralph and Rosalie Webb (H)  
 Tom White (W)  
 Adeline Whitmore (H)  
 Diane Williams (S)  
 David Wimpfheimer (AWS)  
 Chris Wood (HMO)  
 Brett Woods (H)

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 Terry Nordbye  
 Rich Stallcup  
 David Wimpfheimer  
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 Faith Duncan  
 Jules Evens  
 Grant Fletcher  
 Philip Greene  
 Mary Ellen King  
 Flora Maclise  
 Helen Pratt  
 Rich Stallcup  
 Chris Wood

CGP Interns  
 Maggie Hynes  
 Wendy Walker

CGP Staff  
 Resident Biologist  
 John Kelly  
 Land Steward  
 Kirk Hastings  
 Administrator  
 Susan Kelly  
*The Ardeid*  
 John Kelly

## IN THE FIELD

July	6	Native Grass Seed Collecting (Please call CGP @ 663-8203 for information)
	13	Native Grass Seed Collecting
	27	Native Grass Seed Collecting
August	20	Tomales Bay Shorebird Census & Count Workshop
	30	Tomales Bay Shorebird Census & Count Workshop
September	11	Heron/Egret Project End-of-Season Potluck
	15	Tomales Bay Shorebird Census
	18-19	Tom's Point Overnight Work Party (Please call 868-9244 for information)
October	9	Cypress Grove Preserve Work Day (Please call 868-9244 for information)



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