

WESTERN TANAGER

Los Angeles Audubon Society

Volume 46

Number 8

May 1980

WATER IN A DESERT VALLEY

Article by Walton Wright

Photography by Lee Jones

"Could it be that the prosperous Imperial and Coachella Valley agricultural concerns will someday be victims of their own success?"

The Salton Basin is a low desert area, the floor of which lies from about 275 feet below to 100 feet above sea level. The lower part is occupied by the Salton Sea, which separates the Coachella Valley from the Imperial/Mexicali Valley. The valley is bordered by mountains. The lower part of the basin is poorly drained alkaline soils. The outer margins consist of stony or gravelly slopes. Between these two conditions the soils are productive and of high value. The Salton Basin comprises an area of approximately 8000 square miles and is unique in that more than 2000 square miles of it is below sea level. Of this, Coachella Valley contains 344 square miles the Imperial/Mexicali Valley 1,700 square miles.

The Coachella Valley, the Salton Sink, and the broad Imperial/Mexicali Valley south to the ancient delta divide of the Colorado River, form a single physiographic basin, triangular in outline. This basin is physiographically continuous with the Gulf of California from which it has been cut off by the low broad delta of the Colorado River. On the west are the Peninsular Ranges which begin at Mt. San Jacinto and extend southward through the Santa Rosa, Vallecito, and Laguna Mts. to the Cocopa Mts. of Baja California. The desert ranges on the north and east are a continuation of the San Bernardino Mountains and are referred to as the Cottonwood, Ironwood, Chocolate and Chuckawalla Mountains.

The basin is divided into two distinct parts by an ancient and more or less continuous beach line. This beach line lies from 40 to 50 feet above sea level and indicates the boundaries of a body of water that formerly filled the lower part of the basin. The area below the old beach was referred to as the Salton Sink. Beyond and above the beach line is an extensive desert region consisting of sand dunes, desert washes, broad alluvial fans and bajadas which gradually rise until they meet the steep mountain slopes.

The climate is arid, but with irrigation winter vegetables can be grown. The summers are long and hot. A maximum of 118°F or more may be recorded every month from May through September. The annual rainfall is about

three inches. About one half comes in the winter, with lesser amounts in the spring. Summer storms, particularly in August, may bring large volumes of water in a short time to restricted areas. Fall precipitation is equivalent to that in spring. The rainfall is not only insignificant, but it is distributed in such a way as to make it undependable for agriculture. Periods of more than 12 months may pass with no measurable rain.

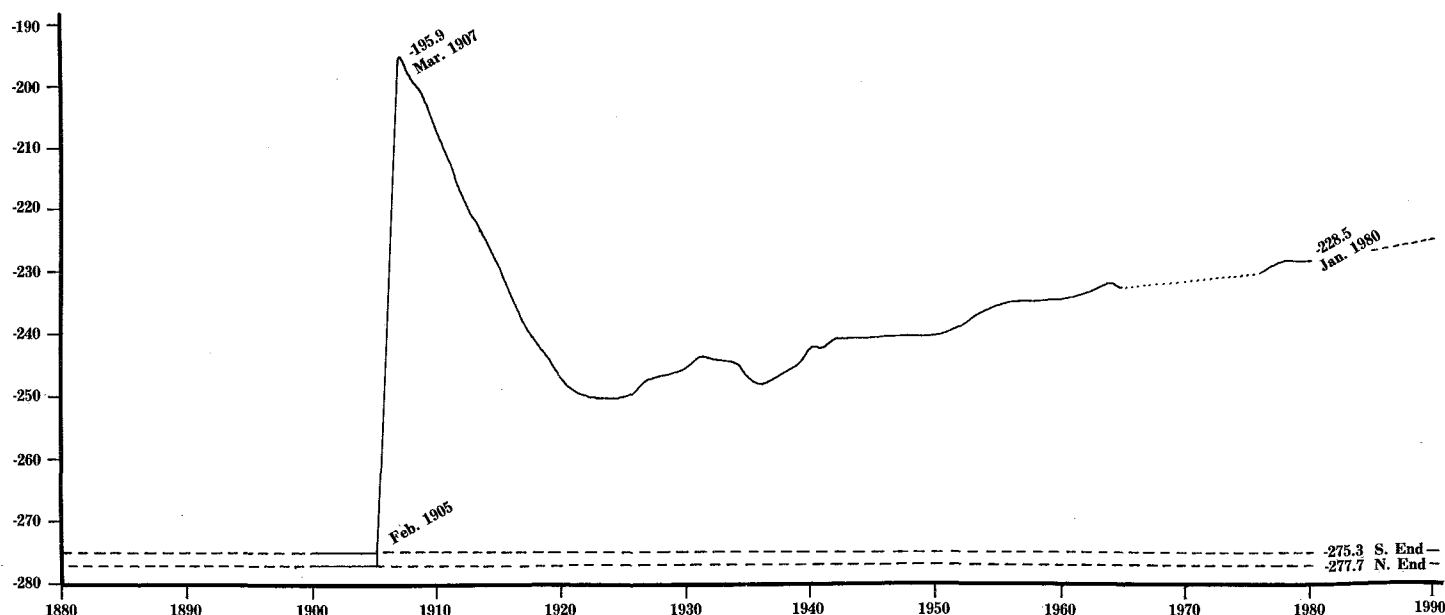
So low and uncertain is the rainfall in the basin that it is disregarded when considering crop irrigation requirements. It is reckoned with more for the delays, inconvenience and costs when fields are too muddy to work, and the damage it sometimes causes to crops.

Prior to building the Southern Pacific Railroad through the basin in 1879 the Salton Sink was an open desert. As a bonus for building this line the Government gave the railroad company every alternate section of public land for a number of miles on each side of its right of way. Thus one half of the valley was owned by the railroad. The greater part of the original holdings are still owned by the railroad company. A large proportion of the remaining public land was filed upon in 1885 and 1886 under the desert land act.

In 1894 the first strong flow of artesian water was obtained in the Coachella Valley, but still no agriculture was developed, since the cost of drilling by the methods then in use was prohibitive. In 1900 hydraulic drilling was started in the valley, which reduced the cost of wells. Within the next three years about 200 artesian wells were drilled.

There were very few settlers, however, until 1900, when it was possible to obtain relatively inexpensive artesian water for irrigation. From that time agricultural development has been continuous.

As the agricultural value of the Salton Basin became increasingly apparent, the supply of sufficient water for irrigation became a problem. In 1900 work was started on a canal system to bring water from the Colorado River into the basin. The transfer of water from the Colorado to the basin



Water Surface Elevations in the Salton Sink



Field of grain sorghum in the Coachella Valley under furrow irrigation.

seemed simple. The Colorado for years spilled its flood waters into the basin through two channels, the Alamo and New Rivers. The California Development Company, which built the canal, constructed its intake near Pilot Knob about 10 miles west of Yuma. The water was directed through a gap excavated along the side of the river and channeled through Mexico and back into the Salton Basin. Later, because of too rapid silting in the canal, another intake was cut on the Mexican side of the border. The flood danger from the Colorado was then not well understood and little preparation was made to handle the river at high water. In the spring of 1905, several unusually high flood waters substantially widened the gap made in the river bank for the canal and by summer when the highest water stage was reached, too much water was being diverted through the canal. The water could not be contained and soon began spilling over its banks. Efforts were made to dam up the intakes, but successive floods carried these structures away. After great effort and expenditure, the Southern Pacific succeeded in closing the break in November 1906, but a flood in the following month destroyed the repair work. The job had to be redone. With the receding of the flood waters the river was finally sealed off.

Prior to this the channels of the New and Alamo Rivers were small and practically dry except in times of flood. During this period the channels of both streams were greatly enlarged. The New River, especially, suffered extensive erosion which began near the outlet at the bottom of the basin and rapidly worked southward to beyond the international border. The Alamo River channel, while less extensively affected by the flood, was eroded and enlarged.

Prior to the flood of 1905-1906 the bed of the rivers in the southern part of the valley were shallow, and high water frequently overflowed the banks and formed new courses. A number of low areas were regularly inundated, forming temporary lakes or lagoons. One of these areas was Mesquite Lake, which received its waters from the overflowing Alamo. Since the deepening of the river channel there have been no overflows and the former lake is now a dry shallow basin.

Once inflow was shut off the lake began to shrink due to the intense evaporation. By the 1920's it had become stabilized at about -250 feet as the increment of waste water and drainage from irrigated areas largely compensated for the annual

evaporation. The lake fluctuated around that level until the mid-1930's when it began to rise again. Completion of the All American Canal, which brought more water into the Imperial and Coachella Valleys was the cause of this last rise. It has risen steadily ever since.

Irrigation water from the All-American Canal contains about 2000 pounds of salt per acre foot of water. If the irrigation water does not penetrate the soil deeply, most of the salt brought in by this water remains close to the soil surface. Ground water generally contains more salt than the irrigation water. When the groundwater level is close to the surface a good deal of it moves upward as a result of evaporation and plant use, thus increasing the salt content of the surface soil.

Plants take up water and leave most of the salts behind; therefore, salts tend to accumulate in the soil. If only enough water is applied to meet crop needs, then salts will build up in the soil. To keep salts moving down through the soil more water has to be supplied than that used by the crops. The excess water passes through the root zone carrying the salts. The percentage of water that must pass through the root zone depends on the salt content of the water and the salt tolerance of the crop.

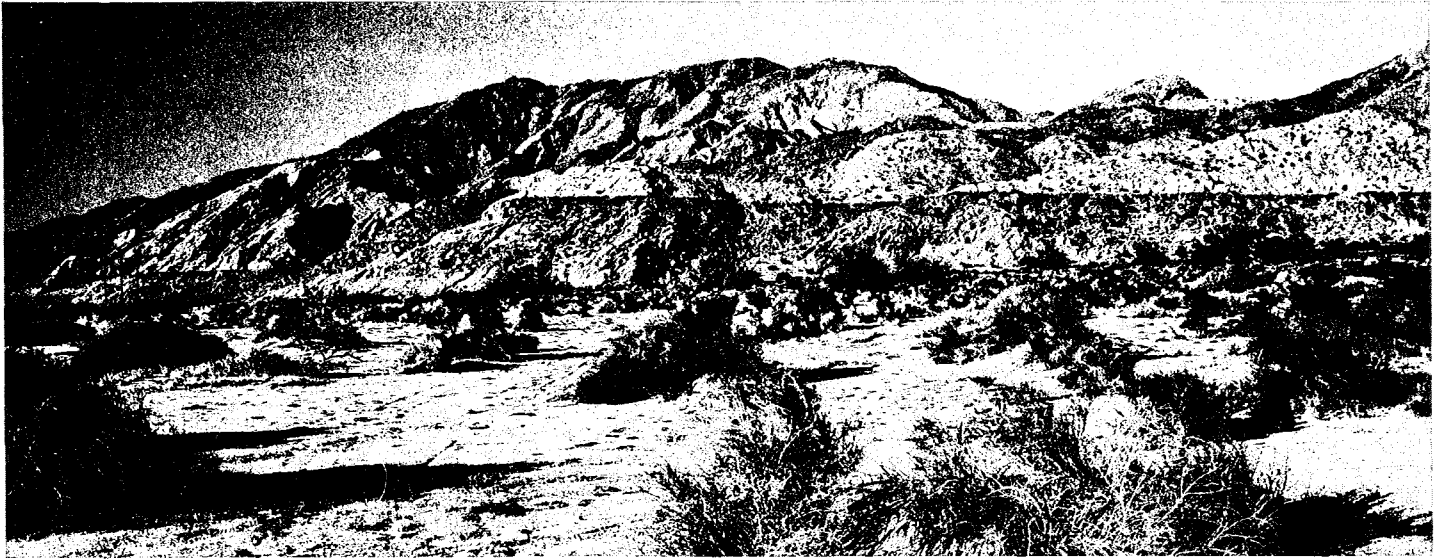
Adequate drainage is necessary for the removal of salt. If the natural drainage is not adequate then tile and open drains are constructed to improve the drainage.

Inflow to the Salton Sea, other than rain at the sea surface, occurs both as surface water and ground water flow. A small part of total inflow is derived from precipitation on the basin surrounding the sea, but in most years nearly all inflow is drainage from irrigation operations.

Surface flow into the sea comes from three principal sources: 1) Imperial/Mexicali Valley, 2) Coachella Valley, and 3) other tributaries. About 90% of the Imperial/Mexicali Valley inflow reaches the sea through the Alamo and New Rivers, and 10% is discharged into the sea from more than 30 minor channels and drains.

The drainage of the entire basin is toward the Salton Sea. There are no perennial streams on the floor of the valley. Following ordinary rains the water flowing off the mountains percolates into the porous sands and other deposits at the foot of the slopes without flowing over the surface of the valley floor. The surface water of the valley is derived almost entirely from the slopes of the San Bernardino and San Jacinto Mountains. From these slopes small perennial streams flow into the desert. Of these the largest is the Whitewater River, which has its source on Mt. San Geronio. Ordinarily this stream flows over the surface for only a few miles before it sinks into the sands. Thereafter it flows subsurface through the porous alluvium to the Salton Sea. During the years without surface flow its channel through the valley would fill with blown sand. Following exceptionally hard rains in the upper drainage it would overflow its channel and flow unrestricted the entire length of the valley. Such floods would, to some extent, erode the silty soils south of Indio and flood the town of Coachella.

To alleviate the flood problem a channel bordered by levees was constructed to conduct the flood waters through the lower part of the valley to the Salton Sea. It has been deepened and widened to form what the Coachella Valley County Water District refers to as the Coachella Valley Stormwater Channel. This nomenclature tends to mask the identity of what was once the natural flood course of the Whitewater River.



Shoreline of Lake Cahuilla west of Desert Shores showing dark calcium carbonate deposits at and below the water line and light-colored wave washed rocks above.

The principal surface water channel in the Coachella Valley is the Whitewater River (Coachella Valley Stormwater Channel). It discharges into the sea about 60% of the discharge water of the valley; 40% reaches the sea through 18 minor channels and drains.

Within the past 400 years a fresh to brackish water lake called Lake Cahuilla occupied the Salton Sink and formed the beaches, gravel bars, and other shoreline features. Rocks above this shoreline appear light because of wave action which produced steep slopes and cliffs and removed the desert varnish still found above the beach line. The darker rocks below the ancient shoreline, as Travertine Rock and the area generally south and west of Desert Shores, are coated with calcium carbonate. Beyond and above the beach line is an extensive desert region consisting of sand dunes, desert washes, broad alluvial fans and bajadas which gradually rise until they meet the steep mountain slopes.

Lake Cahuilla was but one of a number of lakes in the basin, each of which was formed by periodic flooding from the Colorado River. Each was subsequently reduced by evaporation.

In the process of weathering of parent rock and soil formation, a variety of mineral salts and other compounds are formed. Some of these are readily dissolved in water; others are practically insoluble. Under the arid conditions that prevail in the Salton Sink, the compounds are rarely entirely dissolved, or if dissolved, are soon recrystallized from solution, with the result that they are not removed from the soil profile, but remain in various forms within the soil.

The most common alkali, or soluble mineral salts, affecting the soils of the basin are sodium chloride (common salt), sodium sulfate (Glauber's salt), sodium bicarbonate (baking soda), and calcium chloride. These are all known as "white alkali."

Sodium chloride is found in high concentrations occurring over several thousand acres around the shore of the Salton Sea and extends in a narrow strip from the sea north-westward to a point about five miles above Indio. Sodium carbonate, under

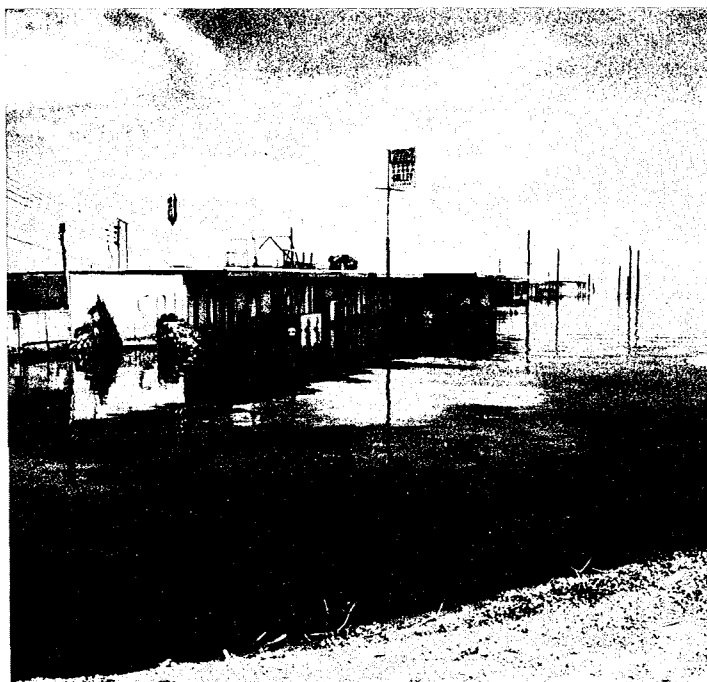
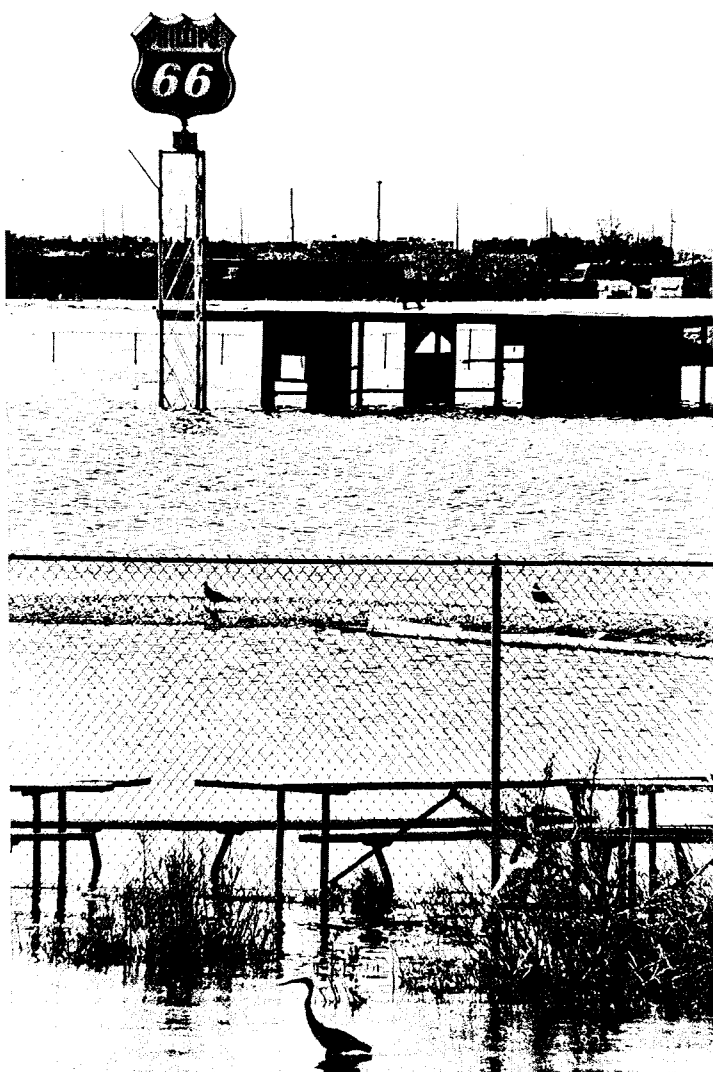
field conditions, is the most harmful. Because of its corrosive action on organic matter in the presence of moisture it produces a dark-brown or black stain on the soil surface, thus the common name "black alkali."

In addition to the above salts, calcium carbonate (lime) is abundant in all the soils of the basin. Although chemically alkaline, it is not considered an alkali, since normally it is only slightly soluble and not injurious to plants.

The degree of harm alkali salts exert on plants depends upon several factors—the kind, the amount, and the distribution of the salts; the moisture condition of the soil; and the kind of crops grown. The distribution of alkali salts is not and does not remain uniform, and the vertical distribution of salts is of great importance. A concentration of alkali salts at the surface of the soil may be sufficient to prevent the growth of all forms of vegetation, but with the same concentration localized at a depth of five or six feet there may be little interference with the growth of shallow-rooted plants.

In the reclamation of alkali lands the most practical and satisfactory method is to wash out the salts by leaching and drainage, thus removing them permanently from the plant root zone. The feasibility of this depends upon several factors: the water supply, the quantity available, the quality, its cost, the availability of drainage outlets, the porosity of the soils, and the type of soil salts.

The Salton Sea has re-encroached 2.4 miles in the 60 years since 1920. This is equivalent to 211 feet of shoreline per year being covered by the deepening sea. This encroachment continues unabated, the result of excess waste water from irrigation. Promising real estate developments of the 1950's and 1960's, such as at Salton City, never materialized. Those that did, if along the shore front, have since been inundated by the rising waters. Could it be that the prosperous Imperial and Coachella Valley agricultural concerns will someday, too, be victims of their own success? Perhaps more efficient use of irrigation water will stabilize the sea near its present level. But with stabilization comes a rapid increase in the Sea's salinity. There are no simple solutions.



In a guide book to Imperial County published some years ago by the Imperial Valley Development Agency, the following quote is found:

"Along the next 40 miles you will see excellent resorts—Desert Shores, Salton Sea Beach, Salton City—with fine clubs, hotels, and motels, full shopping facilities, golf courses and swimming pools—a new recreational world projected for the Southwest's burgeoning tourist industry."

The real estate brokers are now gone and the street signs serve as gravestones to developments that never were and other developments now being flooded by the rising sea. □



THE DISCIPLINE of BIRDING*

by Terry Clark

Can we really be serious about discussing the *discipline* of *birding* in the same terms as we would wonder about the peyote ritual of the Indian or the Catholic priest's consecration of the Mass? Are we not in danger of evoking the displeasure of the *ornithologists* and *conservationists* alike in their learned disapproval of our promiscuous mingling of the sacred and profane? After all, the *field guides* say nothing about *chasing vagrants*.

In this essay I would like to look at the meaning of what we may call the dimensions of *discipline*. For *birding* certainly has its ritual aspects, if we examine it in terms of the underlying meaning of *discipline*. *Discipline* could be simply defined as the formalizing of activity for the sake of constructively channeling energy in a way that promotes a *high list* and *good reputation*.

Unlike members of the ABA below him, a *serious birder* cannot count entirely on unconscious instinct to structure his activity. Because a *birder* is a rational animal, he must consciously discern what he ought to do to further his *lists* and *reputation*, and then undertake the labor of doing it. *Maintaining a high list* for a *birder* as a *competitive* animal is living a *high-pressured life*. We obtain *respect* by consciously doing that which is in accord with *ABA rules*. And if we will not make the effort to *list* rationally, we become slaves to our passions and eventually *lose credibility*.

In other words, *birders* are inclined by nature to do that which maintains a *high list* at *any price*, which is the *irrational* force we embody. To *compete* rationally, in the fullest sense of the word, is to be *disciplined*. And *discipline*, in its highest form, is precisely ordered to *protect our reputation* from our *competitors* by *compelling us to keep complete field notes*. With *good field notes* we can take full responsibility for our *identifications* and come into self possession...instead of simply *not being taken seriously*.

As a *growing membership* affects every aspect of *birding*, the *serious birder* finds his performance as a whole becoming increasingly *challenged* in terms of his *birding expertise*. The knowledge of *distribution*, the *publication of identification articles*, all become *necessary* to the *reputation*, no less important than the *birding* itself, because his *fame* serves to set him in the right *light* for an encounter with the waves of *new birders*.

It is *within* the *familiarity* of our *home state* that we enjoy the convergence of forces that support *our abilities*, just as the *bird* is supported *by its habitat*. This is to say that *in your home state* you have the *familiarity* you need to *bird successfully*. *In your home state* you have the *experience* necessary to *identify*

the *birds* you *see*. Conversely, the farther you are from *your home*, the weaker you are as a *birder*, regardless of how *many field guides* and *identification articles* you may have acquired.

As the ritualizing of our relationship to *birding* progresses, we find ourselves spending a lot more time *watching* the *birds* so as to come into phase with them. A mental note is not enough to internalize the song. To *bird* really well requires an intunement with *the birds* that only grows in time through long exposure, and requires a lot of tranquil waiting before you resonate together. This change takes place when we no longer dash about like a puppy dog, but take on the sobriety and circumspection of the seasoned *birder*, who contemplates the *habitat* at hand so as to be positioned to *pick out the vagrants*.

This self-restraint, of waiting for our sensitivity to grow, is the very ground of *discipline*. For without being sensitive to the field so as to know its rhythms we cannot help act out of phase with the *birds*. However, conscious self-restraint is not to be thought of as a straight-jacket, but as the poise of a *hawk*, *hovering* in readiness to *stoop*. In such a state of self-restraint, the *birder* is able to become increasingly more responsive to the movement of the *birds* and ever more perfectly able to maintain his *reputation* throughout the *birding community*.

Like the *hawk*, he never plunges wrecklessly ahead, but always holds a reserve of power that allows him to act with force and precision when the time is right. He *keeps* his *lists immaculate*, as a runner leaves no tracks. For the blades of *birding competition* are very sharp, which he uses to sculpture himself to a work of fine art by carefully timing his exposure to the cutting edge.

Discipline trims away the informality that would keep the performance from passing over the threshold of fine art. *Discipline* sustains the restraint necessary to stay in...focus... It is only when you are in focus that your life is real. Outside of this focus is nothingness.

For *birding* to be beneficial, it must be vital and responsive, with the whole person undergoing a concentration of his powers so as to attend to what is at hand with a singleness of mind. It is only through a *disciplined* relation to the *birds* that you come into the focus necessary to *count them on your list*. And *concentration* is potentiated in every way to be a medium for attaining this focus which is the proper end of all *birding* activity. A person *birding* in such a spirit stands out with awesome clarity. He is really in tune, if only for a few moments—but the only time worth living. □

LAAS Annual Picnic

The Los Angeles Audubon Society's annual picnic will be held on Sunday 13 July at the Charlton Flats Recreation Area. There will be an 8:00 a.m. bird walk preceding the picnic at 11:00 a.m.

*The original essay, "The Ceremony of Surfing," by Martin Tornheim, appeared in SURFER, March 1980, Vol. 21, No. 3. N.B. Only the words in italics were changed to conform to birding terminology.

Sandy Wohlgemuth

CONSERVATION

To borrow a phrase from a politician who shall be nameless, "We are living in an era of limits." He probably borrowed it from *"The Limits To Growth,"* a modest little book with a kick like Kentucky moonshine. Irregardless (as my Aunt Mathilda used to say) he's right. A glance at any newspaper will tell you that the cornucopia is getting low on fruit. Oil, water, mineral ores, timber, natural gas are becoming scarcer and more expensive. The prophets of doom keep us informed of the vital statistics: Americans burn 10,000 gallons of oil a second—one-third of the world's production—and use 40% of the planet's non-renewable raw materials. The average Phoenix resident uses 155 gallons of water a day; the average African, four. Etcetera.

From the President of the United States on down we are told that the magic word is *Conservation*. We are urged to adhere to the 55 mile-an-hour speed limit, lower our home thermostats in winter, and wrap our water heaters in cotton wool. Los Angeles Audubon and its allies are telling California that Mono Lake can be saved by simply conserving water. How much of all this falls on deaf ears? Worse, how much of it gives us guilt-feelings and turns us off? The difficulty is that we're still living with the mind-set of a time when gasoline was cheap and water and electricity seemed to be free as the air. It's a damned nuisance to have to think about turning out a few lights or putting on a sweater in the house rather than raising the temperature. And today's utility bills produce something very close to culture shock.

It seems reasonable, then, that changing circumstances require a change in our attitude toward energy and resources. Not a drastic alteration in our habits, but a new awareness of small changes that make a difference. It may be as inconsequential as turning off the faucet when we brush our teeth rather than letting the water run full blast as we scrub away. Like putting a brick in the toilet reservoir, these little savings may seem picayune, ridiculous, and even embarrassing, but if most of us join in, it all adds up.

During the drought of '77 we had mandatory control of water usage: no hosing-down sidewalks, no garden sprinkling between 10 a.m. and 4 p.m. We were all supposed to use 10% less water than the year before. In spite of the threat of penalties, only one-third of Los Angeles households cooperated. Yet the city's residents saved 17%! A remarkable feat. Even today, after controls have been removed, we are still saving 9% over 1976. What this means is that leaks were repaired and water-saving devices were installed in toilets and showers. More significantly, it means that many of us have gotten the message about conservation. We've developed new habits to replace the old, unthinking, wasteful ones. We've found that the mandatory restrictions of the drought made sense—and were not particularly onerous anyway. It has become second nature to some of us to take less time in the shower and put a full load in the dishwasher. The Department of Water and Power and the Gas Company tell us with each bill how much water, gas and electricity we used a year ago, comparing it with what we used during the most recent pay period. We can make a virtuous game of necessity and keep score. We might even save a little

money.

Which brings us to gasoline: a very sore spot for birders. The spectre of two-dollar-a-gallon gas hangs heavy over our heads. How much will our magnificent obsession suffer when we have to worry about the cost of going a mere 30 miles—and back? Or—perish the thought—deal with gas rationing? There are no easy answers. Car pooling will certainly help, but there is a fierce resistance hereabouts to the palpable loss of mobility when rides are shared. The inexorable pressure of price increases may break that resistance and introduce us to our friendly, neighboring birder. Every cloud has a silver lining. It makes sense to follow all the rules for good driving and good car maintenance. It may help to rationalize the weekend splurge of birding by using the car less during the week; riding a bicycle or walking on short neighborhood errands. The exercise will keep us young.

If we agree that conservation is a significant part of the answer to the problem of energy and resource deficiency then it seems only proper that we—Audubon people—lead the way. Awareness is the key. When a bottle bill to eliminate litter is on the ballot, let's talk it up and vote for it. We can recycle. We can fix our own leaky faucets. We can ask our legislators to push for solar power. Leapin' lizards, folks, if we don't, who will? □

Bald Eagles May Return To Catalina Island

With luck, the Bald Eagle may soar again on Catalina Island by the Fall of 1980, according to Doug Propst, president of the Catalina Conservancy, sponsor of the eagle project.

Bald Eagles were native to Catalina and the Channel Islands until the 1940s when human harassment through egg collecting and shooting, military activity and environmental pollution caused their decline.

David Garcelon, a student at Humboldt State University, initiated the project and will act as principal researcher. The goal is to establish on artificial nests six bald eagle chicks obtained from captive breeding sites or wild nests in Oregon and Washington. The chicks will be monitored continuously and fledged to self-sufficient status. Eventually, the chicks should reach maturity and establish a breeding colony on Catalina.

Catalina was chosen as the first reintroduction site among the Channel Islands because of its potential for isolation from human disturbance and of the existence of the Catalina Conservancy with its growing reputation for conservation.

The project will cost more than \$40,000, of which \$25,000 already has been pledged by private donors. Additional contributions are needed by the Conservancy to ensure the project's completion.

The Catalina Conservancy is a non-profit foundation that owns and maintains 86 percent of Catalina Island, an area larger than all of Los Angeles' city and county parks combined and considered by many as the finest recreational and wildlife resource available in Southern California.

Shum Suffel

BIRDS of the SEASON

Early May brings the peak of spring migration. The succession of first arrivals should now include all western migrants, even though the later species (such as Olive-sided Flycatchers, Willow Flycatchers, Bank Swallows, Swainson's Thrushes, and Yellow and Wilson's Warblers) will be coming through all month. From now through early June is the optimum time for spring vagrants from the east and south. Because passerine vagrants are sometimes thousands of miles off course, they are late, and because they are so few they are much sought after by compulsive birders. Most passerines are night migrants, so when morning comes they seek a place to rest and feed. If they are over inhospitable terrain—the ocean or the desert—they fly on until they find a haven—an island or oasis—or, tragically, until they drop from exhaustion onto the water or wasteland. It is these concentration points which receive saturation coverage in late May. With the high cost and need to conserve gasoline, it is unlikely that the Memorial Day extravaganza at the desert oases to the northeast of us will involve "forty birders from as far away as San Diego and Eureka, some of them planning to spend a full week" as it did in 1975. However, we can be sure that the area will be covered.

March was as dull as expected, with beautiful spring days, ample rain, and even the earliest wildflowers, but few new birds. The only report of a **Yellow-billed Loon** comes from the San Francisco Bay area where one was near the Richmond Bridge from mid-February on. A **Red-necked Grebe** in Ballona Creek on 2 March was the third in Los Angeles Co. this winter (Bob Pann). The 8 March trip out of Morro Bay to the Davidson Seamount (not L.A.A.S.'s) found about twenty **Black-footed** and three **Laysan Albatrosses** plus a single **Horned Puffin**, but very few shearwaters. Marianne Wallace watched some 200 **White Pelicans** flying west along the foothills above Monrovia on 3 March, and Bob Neuwirth saw an equal number near Mt. Wilson on the ninth. This is a traditional route before topping the San Gabriel Mtns. on their way to the Great Basin. A larger flock, up to 450, was over the Oso Pump Station near the Ridge Route on 30 March (Starr Saphir and Kurt Campbell). At this locality they may have been heading up the Central Valley to the lakes of eastern Oregon. A **Louisiana Heron** at the San Diego Bay saltworks was the only tropical heron since the **Little Blue** left McGrath. Henry Childs reports that **Cattle Egrets** were nest-building at Buena Vista Lagoon near Oceanside, a recent nesting area for this rapidly-expanding species. The female **Black Scoter** remained at Marina del Rey through March.

An apparent recent increase in **Red-shouldered Hawks** was well-demonstrated by the presence of a pair in the Huntington Gardens in San Marino, and another pair at the Arcadia Arboretum; both areas are completely surrounded by urban areas, and there were no Red-shoulders within ten miles of either place ten years ago. The adult **Broad-winged Hawk** reported last November in Rosemead was spotted again from a speeding car on the San Bernardino Freeway on 19 March (Jon Dunn). An early **Swainson's Hawk** was seen by Kurt Campbell and Curtis Morantz at the Oso Pump Station, 2 March and another flew over Jon Dunn's house in Encino on April Fool's

Day! A few **Ferruginous Hawks** were still at the field near the Chino prison in mid-March. Herb and Olga Clarke, accompanied by Arnold Small, scouted the Carrizo Plains on 22 March and found three **Rough-legged** and two **Ferruginous Hawks**, plus a **Merlin** and **Short-eared** and **Burrowing Owls**, but no **Sandhill Cranes**. A **Golden Eagle** soaring over the foothills above Arcadia was an unusual sight in an area where they were once regular (Hal Baxter). Some twenty-five **Bald Eagles** wintered in the Big Bear-Baldwin Lake area (Kimball Garrett), and a single Bald Eagle was at Silverwood Lake on the desert side of the San Bernardino Mtns. on 8 March (Henry Childs). Starr Saphir and Kurt Campbell's trip to the Owens Valley on 30 March failed to turn up **Sage Grouse** on their leks, but 76 (actual count) were seen flying across the road nearby. Jean Brandt's earlier attempt to reach the strutting grounds was frustrated by snow and bad weather.

An unusual concentration of 24 **Wandering Tattlers** at Marina del Rey on 31 March (Starr Saphir) undoubtedly represented spring migrants, as this is many more than the wintering population. The only **Stilt Sandpiper** away from the Salton Sea was in the Pt. Mugu Naval Air Station, where the previously mentioned **Ruffs** remained into March (Richard Webster). **Northern Phalaropes** wintered again near the south end of San Diego Bay. One of southern California's only **Glaucous Gulls** this winter was a first-winter bird at McGrath State Park 6-16 March (Louis Bevier and Paul Lehman), but the **Little Gull** was not seen there after 5 March. An unusual concentration of **Barn Owls** was reported near Temecula, in San Diego Co., by Zan Knudsen who found eight to ten owls on the fence posts along Route 79 every night in late February. It's good to hear that there are still **Burrowing Owls** on the coastal slope of Los Angeles Co., even though they may be migrants. One was present at the Torrance airport on 10 March according to Carl Dunlap. Hopefully the **Spotted Owls** will nest again at Switzer's Picnic Area in the San Gabriel Mtns., as a pair was seen perched near its former nest site by Dorothy Dimsdale on 15 March. The presence of *Chaetura* swifts (undoubtedly **Vaux's**) in coastal San Diego Co. was reconfirmed by observations of four to six birds on 17 and 23 February on Camp Pendleton by Cameron Barrows. A flock was previously found on the nearby Oceanside Christmas Count on 22 December. Our earliest reported **Black-chinned Hummingbird** was at Jerry Johnson's feeders in Marina del Rey 23-26 March, and another was in Claremont on 28 March (Phil Sayre). **Rufous Hummingbirds** must certainly have been scarce this spring, as there were no reports to date (28 March). The **Lewis' Woodpecker** at Forest Falls in the San Bernardino Mtns. was still there in mid-March (Doug Willick).

The **Tropical Kingbird** found by Steve Bonzo on 1 March proved difficult to relocate until mid-March when it was pinned down in a small park below the Whittier Narrows dam. The first report of a **Western Kingbird** was in San Timoteo Canyon, Riverside Co. on 13 March (David Koeppel). There were no **Eastern Phoebe** sightings in Los Angeles Co., but the Cardiffs found three along the Santa Ana River near Riverside. **Western**

Flycatchers, such as the one in Griffith Park on 12 March (Justin Russell) and one near Palm Springs on 9 March (David Koepfel) were migrants, although at least four were known to have wintered in southern California. The **Willow Flycatcher** and the two **Gray Flycatchers** stayed at the Arcadia Arboretum through March. The wintering **Olive-sided Flycatcher** in Griffith Park was seen again on 29 March (Kimball Garrett), but the nearby **Coues' Flycatcher** has not been reported since mid-month.

The **Varied Thrush** in Griffith Park was last seen on 9 March (Justin Russell). A flock of some fifty **Phainopeplas** in San Geronimo Pass on 19 March was unusual, as this is not normally a flocking species. These may have been desert nesters heading coastward after an early nesting season (although they normally do not reach the coast in numbers until late April). A Solitary Vireo of the *plumbeus* race (rare here) was at Hansen Dam in the San Fernando Valley on 28 February (Kurt Campbell); this was undoubtedly a wintering bird. Migrant Solitary Vireos were at the Arcadia Arboretum on 29 March and in the Claremont Botanical Garden on 30 March (Hal Baxter). An early **Warbling Vireo** was reported in Griffith Park on 9 March (Justin Russell), and a second was in Anaheim on 15 March (Doug Willick). Most of the warblers reported last month stayed on—the **Lucy's**, two **Yellows**, and two **Palms** near Harbor Lake, and, in Santa Barbara Co., the **Cape May** and the two **Grace's** (fantastic!). In Del Mar, San Diego Co., Guy McCaskie located a **Painted Redstart** in a private yard, and

later learned from the property owners that this was its third winter here.

Hooded Orioles returned about on schedule (males first, females later), with a male near Thousand Palms, Riverside Co., on 9 March (David Koepfel), and another male at Jean Brandt's Encino feeder on 12 March. A **Great-tailed Grackle** at the north end of the Salton Sea was at the edge of this species' rapidly expanding range (Henry Childs). The **Clay-colored Sparrow** at the Arcadia Arboretum stayed through March (Barbara Cohen), and one stayed at the Oak Canyon Nature Center, Anaheim, until at least 8 March (Doug Willick). Most previously-reported **Gray-headed Juncos** stayed into March, and another was in Joshua Tree National Monument on 23 March (Roger Linfield).

Exciting times are here. Now we might find tens of thousands of Sooty Shearwaters migrating off our coast, shorebirds in colorful alternate plumage in the marshes and lagoons, and possibly even Franklin's Gulls in stunning breeding plumage (black heads and rosy pink breasts) at Baldwin Lake where 25 were seen on 7 May 1972. Overhead, watch for migrating hawks, swifts, and swallows. In preferred habitat, passerine migrants—flycatchers, warblers, sparrows, etc.—will be everywhere. The problem now is to find the time and the gasoline to cover all the places which demand our presence this month. □

BIRDS OF SOUTHERN CALIFORNIA

by Jon Dunn and Kimball Garrett

The following account on the Surfbird is the first of a series of excerpts from the soon to be published *Birds of Southern California* by Jon Dunn and Kimball Garrett.

SURFBIRD *Aphriza virgata*

Fairly common (but very local) winter visitant, fairly common spring transient, and uncommon fall transient along rocky coasts and jetties. Three inland records for the Salton Sea, all in April.

Primary wintering localities include the rocky coast of northern San Luis Obispo Co., Playa del Rey LA, and La Jolla and Pt. Loma SD. Very rare in winter away from these localities. Fall transients are recorded most often at these known winter sites, with a scattering of birds elsewhere along the coast. Spring migration begins in late March; at this season flocks are found along the length of the coast, primarily on jetties and rocky shores, but to a lesser extent on sandy beaches. Casual along the coast in summer, with five published records for June. The first fall transients may arrive in mid-July, although the species is not easily found until mid-August.

Uncommon transient on the Channel Is.; has wintered on San Nicolas I.

Casual at the Salton Sea, with three April records as follows: 25 Apr 1967 NESS (5); 29 Apr 1967 North Shore Marina RIV (2); and 9-22 Apr 1978 Salton City IMP (up to five in a day, with perhaps as many as ten birds involved). Large flocks have been noted at the head of the Gulf of California; it is possible that some or all of these birds take an overland flight north and do not normally stop within the region. □

District	Habitat	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
C	b				—								
S	l				•••								

— = fairly common
 - = uncommon
 --- = rare but regular
 = casual
 • = individual record

C = coast and ocean
 S = Salton Sea/Imperial Valley
 b = beaches
 l = lakes

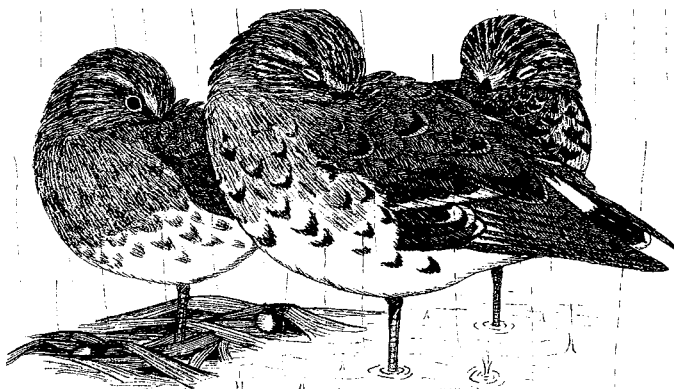


illustration by Lee Jones

Kimball Garrett

A CLOSER LOOK

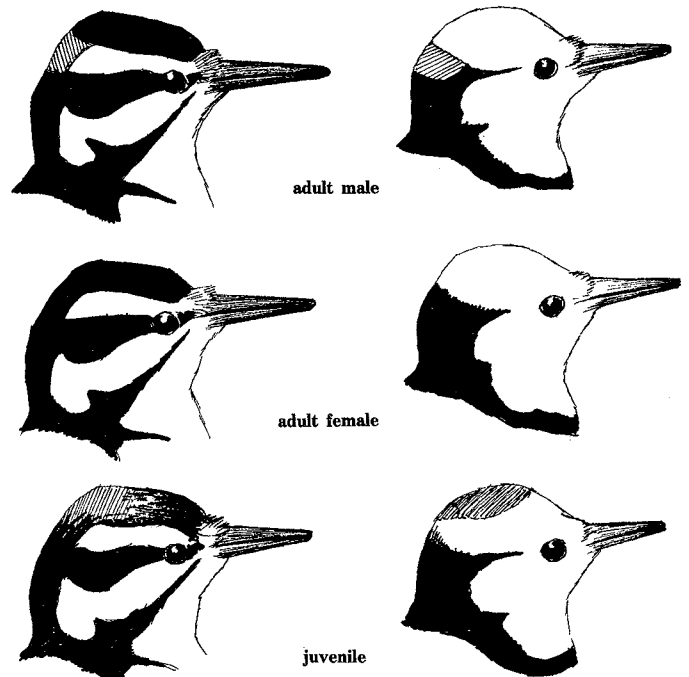
Woodpeckers are at once unique and familiar, and there is ample opportunity in southern California to study some thirteen species in or near the region. Their suite of adaptations to scansorial (climbing) locomotion and bark and sub-bark foraging is so impressive, complex, and successful that creationists opposing a theory of evolution through natural selection have even used woodpeckers as an example of how far-fetched (in their minds) natural selection must be! This month, however, we will deal with only a few aspects of plumage variation in the *Picoides* woodpeckers, using the widespread **Hairy Woodpecker** as an example.

The *Picoides* woodpeckers are the familiar "pied" woodpeckers, represented in southern California by the Hairy, Downy, Nuttall's, Ladder-backed, and White-headed Woodpeckers. Formerly placed in the genus *Dendrocopos*, they were recently merged into the Three-toed Woodpecker genus *Picoides* to satisfy a growing trend in the genus concept which would stress similarities and common evolutionary ancestry within a family, rather than emphasizing differences between species.

It is well-known that male woodpeckers have more red on the head and face than female woodpeckers (in most cases), and often the males are the only adult sex to possess red markings. In North America, those species where males and females are essentially identical (e.g. Red-headed and Lewis' Woodpeckers) are a minority. At the other extreme, male and female Williamson's Sapsuckers are so different that for decades they were thought to be separate species! The red markings of the male certainly function in sex recognition; territorial males are likely to be quite intolerant of other woodpeckers bearing this red "flag," and the red may be displayed prominently in agonistic interactions. In the 1930s, G.K. Noble performed a series of experiments with the "Yellow-shafted" Flicker, a dimorphic form in which the males possess a black "moustache" and the females lack it. He found that a male will actually attack its mate if she has had a black "moustache" artificially painted on, indicating the importance of specific head markings to the general demeanor of a woodpecker!

In all of our *Picoides* woodpeckers, the males have a bright red nape (or occiput) patch, while adult females always lack such a patch (see Figure). In the Nuttall's and especially the Ladder-backed Woodpeckers, this red of the male extends onto the rear crown. Thus these species are all quite easily sexed in the field. Note that both males and females of these species may "drum" (roughly, the woodpecker equivalent of song), contrary to indications of some sources.

The Hairy Woodpecker typifies the *Picoides* woodpeckers in that adult females lack red. It also possesses a more complicated character typical of many species of the genus: The juveniles of both sexes have red on the head. Until the post-juvenile molt is completed sometime in fall, both male and female Hairy, White-headed, and other woodpeckers have red on the crown. These birds should not be mistaken for adult males; the red is generally of a paler hue than that of the adult male, and forms a patch on the crown, rather than on the occiput. In addition, juveniles early in the fall tend to have



Hairy Woodpecker

White-headed Woodpecker

noticeably shorter bills than the adults, and a "softer" appearing plumage. At least in the White-headed Woodpecker, juvenile males tend to have more red than juvenile females. The social implications of the presence of red on juvenile female woodpeckers are not entirely clear. Juvenile *Picoides* woodpeckers usually associate closely with their parents for at least a few weeks after fledging, so the red doesn't seem to operate as a "weaning" mechanism (by provoking attacks by the male parent).

The Hairy Woodpecker also shows some geographical (racial) variation in southern California. The widespread breeding race (in the mountains, foothill canyons, and very locally in the lowlands) is *P. villosus hyloscopus*. From the White Mountains south (at least formerly) to Clark Mountain on the eastern Mohave Desert, the race *P. v. leucothorectis* occurs. It is somewhat larger and much whiter below than *hyloscopus*, but these differences are not obvious in the field. In the Pacific Northwest, Hairy Woodpeckers are dingy gray below; at the southern end of their range (in Central America south to Panama) they are nearly as small as a Downy Woodpecker and uniform brown below.

By June and July, woodpecker young of many species should be fledged, giving the observer the opportunity to see red, studying its extent in the juveniles of the various species, and perhaps elucidating some of the behavioral implications of this unusual plumage development.

Corrigendum: The captions for breeding season and non-breeding season male House Sparrows were reversed in last month's column. □

Rona Parrot

SQUAWK TALK

Life as a columnist ain't easy. I should change my column to "Dear Gabby." Or, perhaps, I should hire my clumsy sister "Crash" Landers to handle the positively staggering number of letters I've been receiving (would you believe five letters already in just over three months!). Of course space (not to mention local obscenity codes) doesn't permit me to publish all of them, so be patient! The following letter, however, from a budding young ornithologist was especially appealing. Kinda makes being a columnist worthwhile after all.

Dear Audubon Society,
(a concerned Ornithologist)

I want to tell you something that happend. At school Feb. 20, 80. My friend came up to me and said "Theres a humming-bird in the girls bathroom". So I went in there and there was a hummingbird buzzing against a (higher) window like a bee or a fly would. My teacher came and said (he) (I knew it was a female) was probly trying to get away from the wet and cold. I didn't really believe her because it was only sprinkling and it wasn't that cold. So she got a chair and grabbed him, took him to a sort of tree, or bush. And put him on a branch. I went to look at him and he didn't look scared, and he didn't try to fly away. In fact he looked pretty happy. I checked to see if his tummy was throbbing but it wasn't. The next time I came out she was gone! Do you know why she was in the bathroom? The door was open all the time. I forgot to tell you she would buzz then rest on the window cill. I checked but her foot wasn't caught. If you know the answer why she was in the restroom please write back if you aren't to busy.

P.S. I'm 11 years old.

Sincerely,
Heather Ahern
La Crescenta

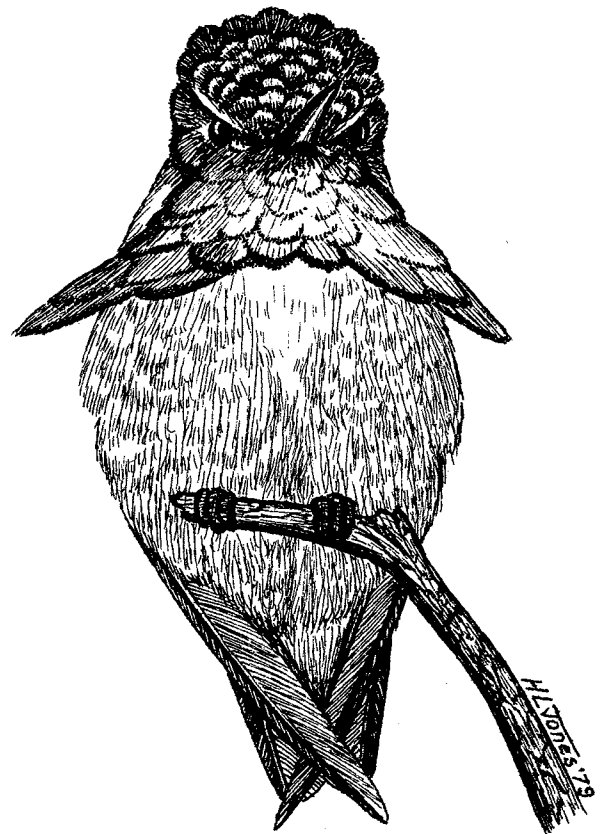
Dear Heather,

Unfortunately, most birds (wise old parrots excepted, of course) have not yet evolved the capacity (I hope you're using your dictionary) to comprehend glass. In other words, they reason (anthropomorphically, I'm out on a limb here) more or less along the following line, "I can see that tree over there, but I can't understand why I keep getting knocked down everytime I try to fly over to it." Windows and other transparent objects are not part of their natural environment. Birds never had to deal with such things until man came along. Imagine, for instance, my confusion when my former owners put a mirror in my cage. For years I thought I was happily married to the perfect mate—he was just like me in every way!

Sadly, birds will often batter themselves helpless trying to get through a window and never understand what invisible force keeps getting in their way. The best way to solve such a dilemma is to cover the window so the only source of light is through the open door. The bird will immediately fly toward the light and out the door!

But your female hummingbird was obviously quite smart in one respect. At least she knew to use the *girl's bathroom*!

Rona □



**WESTERN
TANAGER**

EDITOR Lee Jones

Published 10 times a year, monthly except January and July, by the Los Angeles Audubon Society, 7377 Santa Monica Blvd., Los Angeles, Calif. 90046

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CALENDAR

Los Angeles Audubon Headquarters, Library, Bookstore, and Nature Museum are located at Audubon House, Plummer Park, 7377 Santa Monica Blvd., Los Angeles 90046. Telephone: 876-0202. Hours: 10-3, Tuesday through Saturday.

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To make reservations for pelagic trips, send a check payable to LAAS plus a self-addressed, stamped envelope, your phone number, and the names of all those in your party to the Reservations Chairman, Audubon House. No reservations will be accepted or refunds made within 2 weeks of departure. To guarantee your space, make reservations as early as possible. Trips will be cancelled 30 days prior to departure if there is insufficient response. If you wish to carpool, please so indicate, and you will be contacted two weeks prior to the trip. There should be a separate check for each trip.

SATURDAY, MAY 10—San Francisquito Canyon. One of the finest remaining stretches of riparian woodland in Los Angeles Co., with breeding Bell's Vireos, Yellow Warblers, Lawrence's Goldfinches, etc. Sage Sparrows, Mountain Quail, and many other species occur on the slopes. Meet at 7:30 a.m. at the intersection of Seco Canyon Rd. and San Francisquito Canyon Rd. north of Saugus. Take Interstate 5 north to Hwy. 126 (Magic Mountain); follow Hwy. 126 east to Bouquet Canyon Rd., and take Bouquet Canyon Rd. north to Seco Canyon Rd. (Sign will say "San Francisquito Canyon"). Follow Seco Canyon Rd. north for 1.8 miles to the meeting place. Leader: Kimball Garrett, 477-5769.

TUESDAY, MAY 13—Evening Meeting, 8:00 p.m.; Plummer Park. **Larry Norris** will give a slide presentation entitled, "*Showy wildflowers of the Sierra Nevada from the foothills to the alpine high country.*"

SATURDAY, MAY 17—Morongo Valley. The peak of spring passerine migration, plus summer resident Wied's Crested and Vermilion Flycatchers, Bell's Vireos, Yellow-breasted Chats, Summer Tanagers, etc. An excellent time for vagrants at this desert oasis as well. Meet at 7:30 a.m. at Covington Park at the entrance to the Big Morongo Nature preserve, off Hwy. 62 in the town of Morongo Valley. Leader: Starr Saphir (213) 828-0146.

SATURDAY, JUNE 7—Griffith Park - Ferndell Beginners Trip. Chaparral and oak woodland species, with special instruction for novice birders. Meet at 8:00 a.m. at the Nature Museum on Ferndell Drive north of Los Feliz Blvd. Leaders: Art and Janet Cupples (213) 981-4746

TUESDAY, June 10—Evening Meeting 8:00 p.m. Plummer Park. **Jeff Froke** will present the evening program on *The ecology of feral parrots in southern California* emphasizing their exploitation by the exotic bird trade and the problems of importation into the U.S.

SATURDAY, JUNE 14—San Gabriel Mtns. Meet at 7:30 a.m. at the entrance to Charlton Flats Picnic Area along the Angeles Crest Highway. Montane breeding birds include Mountain Quail, White-headed Woodpeckers, Dusky Flycatchers, etc. The group will caravan from Charlton Flats to Buckhorn Flat. Leader: Fred Heath (213) 828-6524.

SUNDAY, SEPTEMBER 7—Morro Bay. Departure at 9:00 p.m. **Saturday** aboard the *Princess* from Virg's Landing, returning at 8:00 p.m. Sunday. There are 38 spaces available. Leaders: Bruce Broadbooks and Jon Dunn.

SUNDAY, SEPTEMBER 14—San Pedro to Osborne. Departure at 6:00 a.m. aboard the *Vantuna* from the USC dock in San Pedro, returning at 6:00 p.m.; 44 spaces available. Leaders: Olga Clarke and Kimball Garrett.

SATURDAY, SEPTEMBER 20—Monterey Bay. Departure at 8:00 a.m. aboard the *Miss Monterey* from Sam's Fishermans Wharf, returning at 3:00 p.m.; 38 spaces available. Leaders: Herb Clarke and Bruce Broadbooks.

SATURDAY, OCTOBER 11—Monterey Bay. Departure and return times, boat, landing and number of spaces same as for September 20. Leaders: Kimball Garrett and Arnold Small.

Executive Board Nominations

The following people have been nominated to serve on the executive board for 1980-1981:

President	Jean Brandt
First Vice President	Fred Heath
Second Vice President	Bob Shanman
Executive Secretary	Carol Friedman
Registrar	Andrea Kaufman
Recording Secretary	Jill Heaslet
Treasurer	Art Cupples

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