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M E M O R A N D U M

TO: Stillwater Bioreserve Team

FROM: Teri Knight, SNVPO

DATE: March 6, 1992

RE: Pyramid Lake

XC:

I found the attached item while I was rooting through the Death Valley Expedition files at the Library of Congress last week. This note was in the later papers of C. Hart Merriam, leader of the Death Valley Expedition. I thought it was interesting enough to pass along.

STILLWATER WMA
MAR 11 1992
FALLON, NEVADA

PELICANS AT PYRAMID LAKE, NEVADA

Charles H. Allen of Santa Clara, Calif, writing in 1901 states: (in 1888, probably June)

"On one of my trips to Nevada, I visited Pyramid Lake. During my stay I made an excursion to Rattlesnake Island [= Anaho Id.], an island apparently free from all predatory mammals.

I there found white pelicans, gulls, cranes and a few waterbirds nesting in great numbers. The pelicans were on the sloping bank of the south shore. Their nests were from six to ten feet apart all over this bank. A good portion of the young were hatched although there were many eggs yet unpipped. Around each nest there were piles of more or less decayed fish, mostly trout, that the parent birds had deposited for the sustenance of the young.

The old birds seemed quite indifferent to our presence, and we walked around among the nests as long as we could endure the odor. I roughly measured the area covered and made a careful computation of the number of old birds on the bank. It seems almost incredible, but I am, even now, confident that there were more than 350,000 of them.

They were constantly coming, depositing new supplies among the nests and going for more. They looked draggled and haggard, many of them having large excresences on the beak.

This lake is about two hundred fifty miles from the ocean "as the crow flies." There are numerous resting lakes between, along the route. I have often seen pelicans in both Webber and Independence lakes, about halfway."

Fairbanks, Harold W. 1901

Pyramid Lake, Nevada

Pop. Sci. Monthly, March 1901

pp. 505-14

date	Observer	# ~~egg~~ nests	# egg	# young	# adult
Aug 1882	Russel			1400	
1903	Chapman	4,181 E	139	4,000	seen 1,000
June 3, 1921	Eretmann	2,381 C.		950 E left lake	10,000 E
June 5 & 6, 1924	Hall	4,534	6234	816 in Aug	10,000
1931	Cooker				7,000 on Lake
June 9, 1932	Cooker	2994		300	6,000
June 21 & 22, 1940	Bond			3200	
July 3, May 15, 50	U.S.		16	4,168	5,000 on lake
June 14, 1942	alcorn	1761 in add.		1,553	
July 21	"	650			

The following was ~~copied~~ quoted from the notes of J.R. Alcorn

"California Gull, Anaho Island, Pyramid Lake, Washoe Co., Nevada. June 14, 1942.

Today I accompanied V.L. Mills, G.H. Hansen and Dr. Frank Richardson to Anaho Island. On the south side of the island a colony of nesting California Gulls were seen. There were 504 plus or minus nests that contained eggs or small young California Gulls. Many of the 504 nests contained eggs that were starting to hatch. No young birds were seen that were 1/4 grown.

Cormorant, Anaho Island, Pyramid Lake, Washoe County, Nevada. July 21, 1942.

An inspection of the S.E. tip of the island revealed 123 Cormorant nests. None contained live birds. No cormorants were seen at this S.E. corner as we approached. Sixteem of these 123 nests contained the dry disintegraded remains of dead young cormorants. These nests were seen to contain live young on June 14, 1942. Four cormorant nests were seen (20 plus or minus feet from shore line) on the east side, midway between the north and south ends. Three of these nests were empty. One contained three dead 1/3 grown young. They were judged to have been dead for about five days.

June 14, 1942. Cormorant. Anaho Island, Pyramid Lake, Washoe Col, Nev.

At the S.E. tip of the island a number of adult cormorants were seen to fly from the area as we approached (G.H. Hansen, V.L. Mills & F. Richardson). Examination revealed a number of young cormorants in nests that were closely associated together. Frank Richardson counted the nests and birds and found 20 empty nests that may have been occupied earlier this year. 45 nests that contained eggs or young birds. Nests that contained eggs usually had 4 in number in the nest. In addition there were about 76 young half grown dourble-crested cormorants in nests. These nests usually contained 3 or 4 young birds.

White Pelican, Anaho Island, Pyramid Lake, Washoe Co., Nevada. May 26, 44.

The following is a list of material that was seen on the ground among the nesting colonies of white pelicans. I saw some of the young white pelcans re-gergitate some of this material.

92 Chub (Siphateles) 1, 1, 7, 2, 2, 2, 1, 1, 7, 2, 3, 6," etc. "Total chubs 92.
1 Red Sucker 1 (14 1/2 inch fish).
1 Sacramento Perch 1 (8 inch).
4 Cui-ui sucker Total 4. One was 21 inches long and weighed 4 pounds. Copepods were seen at numerous places. They were most abundant in areas where pelican nests contained eggs only. Sometimes a mass of copepods containing about 200 individuals were piled in one location. 22 of these piles were seen. No attempt was made to identify fish that were partially digested.

White Pelican, Anaho Island. May 26, 1944.

Today Mr. Robert A. Drake and I arrived at this location before sun up. The object of the trip was to make observations on the birds life of the island. We counted the follwoing white pelican nests, eggs and young pelicans.

163 (1/4 plus or minus grown) white pelicans
585 (1/4 plus or minus grown) (wt. 2 to 5 lbs.) white pelicans
934 (1/5 " " " ") (wt. 1 to 3 lbs.) white Pelicans
2150 (1/8 " " " ") (wt. under 1 1/2 lbs.) white pelicans
1090 (under 6 days old) small white pelicans
495 (3 to 5 lbs) white pelicans
5417 young pelican total.

4238 white pelican nests, that contained from one to four eggs, were counted.

We estimate that if the adult pelicans pair off during the nesting period there are about 15,000 white pelicans nesting on the island, this includes both males and females."

NEVADA DEPARTMENT OF FISH AND GAME DIVISION OF GAME FORM 701

RAPTOR NEST LOCATION FORM

SPECIES: Prairie Falcon SITE NO. 24 22 16 COUNTY Washoe
LOCATION: Anaho Island

EYRIE STRUCTURE: Height _____ Exposure _____
Description _____
NEST PLACEMENT: Height _____ Exposure _____
Description _____
ALTERNATE SITE POTENTIAL: _____

ADULT ACTIVITY: _____
PRODUCTION: _____
DATE LOCATED: _____ TIME: _____ OBSERVER: _____

ANAHO ISLAND REVISITED

M. Vincent Mowbray sent us the following information ho to provide data concerning changes in the avian populations on Anaho Island over the years.

The recent item in the Pelican telling of a visit to Anaho Island in the early 1940's reminded me of my trips in 1948 and 1951. These trips were made with Dr. Harvey Fisher and Dr. Fran Richardson and their zoology classes. It is unfortunate that we did not make more specific notes concerning numbers on the 1951 trip as a basis for comparison. We did, however, have one conce and that was that the lake was much much lower than in 1948 and any further lowering of the water could easily have changed the island into a peninsula. It is possible that some of the other members of the parties may have kept notes and this item could stimulate them to provide further information.

The 1948 trip with Dr. Fisher and his class was on May 22. The most memorable thing about the trip was the large number of rattlesnakes encountered. They were under almost every flat rock around the East side of the island. Since the date was rather early in the nesting season most of the nests on the island contained eggs or very small young. We estimated 1000 White Pelican nests, 300 Double-crested Cormorant, eight Great Blue Heron and 1000 California Gull. Other birds noted were 30 Canada Geese, tw pairs of Prairie Falcons, and 50 Caspian Terns.

The 1951 trip with Dr. Richardson and his class was on July 6. I do not have any specific notes for this trip except for the records of banding. We banded 150 Pelicans, three Cormorants and and 10 California Gulls. There were a few returns from the bandi the most distant being shot at Laguna "Los Patos", La Palma Grand Municipio de Tuxpan, Nayarit, Mexico in the fall of 1951. Two Pelicans were also found in the San Francisco Bay area and two others survived to return to Anaho Island in 1955. One of the California Gulls was shot at the Alameda Dump in California in 19

STEVEBO

NOTES ON ANAHO ISLAND-COLONIAL NESTERS

1949 No mention of any trips to Anaho in the narratives.

1950 Trips were made on May 15, June 26 and July 3. Another trip was made on September 21 to check on nesting mortality and the results of the banding done on July 3.

	Nests	Young	Colonies
DCCO	1028	1650	5
CAGU	Not given	400	1

AWPE: On July 3 a total of 4,160 young were counted, they were divided among 14 colonies, or pods, containing from 10 to 850 individuals each. It was believed that our presence caused the death of some of the smallest young through excessive exposure to the sun, as the adults were quick to take to flight as we approached a colony. The backs of several naked young were found pierced with blood running from the punctures. Possibly this injury was caused by California Gulls. Pierced eggs with only part of the contents remaining also indicated gull predation. On July 3 we banded 50 young pelicans. On September 21 only 12 live pelicans were noted and these were scattered around the edges of the island. The colonies were abandoned. No attempt was made to count dead young of this species, but in the lower colonies, which were the only ones checked, mortality did not seem high when compared to that of the gulls and cormorants. We checked all dead young in the colonies where 50 well grown young were banded on July 3rd. We conclude banding had no detrimental effect on the young pelicans when banded at a late stage and the 2 young found with bands probably represented natural mortality. In addition to the 2 bands found on dead birds, we found 1 band on the ground, the bird having rotted away. This band later proved to have been 1 placed on a young pelican in 1940.

DCCO: 1 deformed young cormorant was noted; the bird had a deformed beak with mandibles that did not meet, was excessively hooked, and a missing eye. An estimated 1,650 young were produced from 1028 nests over 5 colonies. Out of 25 bands placed on young cormorants in July we recovered 7 on young which never left the nest. At the time of banding, these young were fully feathered and able to scamper from nest to nest, but could not fly. Despite their well developed stage, the recovery of 7 of 25 bands indicates that our banding had a detrimental effect on these birds. Of the 4 rookeries, mortality among the young in the rookery where banding took place was more than 2x that which occurred in the rookeries that were not banded. Because of this high mortality rate, we do not anticipate banding young cormorants in the future. The skeletons of very young birds that died at the time of hatching or shortly afterwards had disappeared by the time we did our September count, therefore they are not included in the table below. Banding took place in rookery 1. On July 3 1,650 young were counted in these rookeries; a count of 1650 young when compared to the total of 1028 nests indicates that many nests were abandoned at an early stage or eggs were destroyed by gulls.

DEFORMED PELICANS

	Nests	Dead Young
Rookery 1	211	48
Rookery 2	296	12
Rookery 3	250	19
Rookery 4	271	24

TOTALS 1028 103

CAGU: On May 15 an estimated 2,000 adults were at the colony; on June 26 most young were hatched approximately 300 young hatched but at least 200 were later found dead. Mortality was high, of the 600 young estimated to have hatched at the colony, the ground was littered with the pieces of an estimated 500 dead. These birds were at the same stage as when banded, able to run around but not yet able to swim. A total of 17 of the 50 bands put on were recovered. We believe heat was a significant mortality factor; our presence scared the adults away thereby subjecting the young to the high temperatures. We do not anticipate banding gulls in the future.
CATE: This bird has not been noted nesting on the island by previous observers. Apparently it is a new-comer. 25 nests were found at the gull colony.

1951 Two trips were made to Anaho, 1 on May 15 and the other on July 6.
AWPE: 11 colonies were counted this year; none were on the summit and the stage of nesting was not in all cases correlated with elevation. The number of nests indicates 5,650 paris, or a nesting population of 11,300; and estimated 3,742 young were produced.
DCCO: The May 15 trip was too early for counting cormorant young because laying was in progress; on July 7 almost all young had left their nests. A count of adults seems unfeasible but a nest count appears to provide a reliable indicator of the nesting population. 1,300 nests were counted in 4 colonies.
GTBH: At least 16 nests were present in brush along the shore next to the cormorant colonies. Nesting extended over a lengthy period.
CAGU: Counts of young, nests, and adults were made. 1,706 nests produced an estimated 684 in the single colony on the south shore.
CATE: 15 adults and 4 or 5 young were noted in the gull colony.

1952 Three trips were made, on May 18, July 1 and July 23.
AWPE: About the same number of pelicans using the area as there was in 1950 however, no colonies were present at the summit. Nesting was more advanced in the colonies at higher elevations while the reverse was true in 1950. In 1951 there was little correlation between nesting stages and elevation. A total of 5,862 nests were counted this year and an estimated 4,053 young were produced in 15 colonies. Assuming 2 adults to a nest the estimated nesting population for this year was nearly 12,000 adults.
DCCO: On June 7 a boat trip was made to the Pinnacles; only cormorants (of the colonial nesting species) were using the area, no attempt was made to count nests but there were undoubtedly well over 1,000.
GTBH: Nothing reported.
CAGU: An estimated 1500 nests were counted with about 1,400 young produced in the traditional colony on the south shore. The high mortality seen in 1950 and '51 was not seen this year. As usual, adult gulls worked over the pelican and cormorant colonies while we had the parents scared off. They ate eggs, disgorged fish, and on several occasions were observed killing young pelicans for a few choice parts, after which the rest was left.
CATE: The tern colony is just barely hanging on; we counted 8 young on July 1.

1953 Trips were made on June 18 and July 6.
AWPE: Colonies were located from the shore to the summit; there appeared to be no correlation between elevation and nesting stages. The count of young

was made about a week late and may be a little low because some of the young may have been on the water. The number of young was estimated at 3,803.
DCCO: Colony sites were the same as last year. There was a record number of nests, 1389, and a record number of young, 3000, produced.
GTBH: **Nothing recorded.**
CAGU: There appears to be little evidence of change in the status of nesting gulls from last year. An estimated 1,500 nests produced 900 young.
CATE: Terns failed to show up this year.

1954 The island was visited 3 times, twice by boat on June 24 and July 9, and once by plane on April 21.
AWPE: On April 21 observations indicated that the nesting colonies of pelicans had increased in size. An estimate of 7,000 adults was made for the whole island. The size of the pelican colony near the summit is the best indication of an increase in nesting birds. There were 59 nests at this site in 1950, none in '51 or'52, in '53 this nest count was not distinguished from the total count but was about twice as large as in 1950. The aerial observations of April 21, 1954 revealed the presence of perhaps 250 pelicans at this summit site, indicating that it may increase in size some 4 times greater than in 1950. This year, nests were not counted but the number of young indicated the presence of a number greater than at any time since 1950. Total young was estimated to be 5,340. Banded 566 pelicans.
DCCO: Recorded the largest number of nests ever found, 1,443. (No estimate of the number of young was provided).
GTBH: In the past these birds have always nested in the alkali weed along the lake shore. This year no nests were found in the alkali weed; instead the birds built nests on top of greasewood bushes farther inland. This is our first observation of the use of greasewood for a nest base. A total of 6 nests were found (no estimate of the number of young was provided).
CAGU: No noticeable change in the gull colony. Nest mortality and loss of young seems so high that the colony does not increase. Space may be the limiting factor, though crowding appears to be a preference, for nests are more thinly spaced around the periphery. 1,500 nests were counted (no estimate of young was provided).
CATE: The terns again nested among the gulls. They were concentrated at the upper limit of the nesting area away from water; in the past they have tended to nest almost at the waters edge. 17 nests were found (no estimate of young was provided).

1955 On April 8 a trip was made to Anaho to check out nest initiation. Two more visits were made in June. (Incomplete and confusing data were presented, couldn't determine if some of the counts represented young or adults).
AWPE: A total of 2,800 nests were counted; this is a reduction from previous years when nest numbers varied from 4,000 to 5,000 or more. An estimated 3,500 pelicans.
DCCO: There was a decline in this species; a total of 1,080 nests were counted as compared with last years nest count of 1,443. Estimated 500 cormorants.
GTBH: Only 1 adult was seen on April 8; assumed others were out foraging. In June only 2 nests were observed; the usual congregation of feeding birds was lacking.
CAGU: In April an estimated 1,000 gulls were present. In June, 2,000 adults

were at the nest site. High juvenile mortality was again noted.
CATE: Six nests were found in the gull colony.

1956 Visited 4 times; aerial reconnaissance on April 23 and boat visits on May 2 and 23, June 6 and 27.
AWPE: On April 23 it was estimated that 8,000-10,000 pelicans were in the colony; eggs could be seen in nests. Nested in 3 general locations; atop the island, the main colony on terrace along the northeast side of the island, and a new colony about 400 yards below the main one. The new colony began hatching 3 weeks before the main one. There was a slight increase in the size of the colony over a year ago; there were an estimated 3,600 nests.
DCCO: There were 3 colonies along the east side; 1 of 330 nests, one of 560 nests, and 220 nests in the 3rd. This year we had a total of 1,110 nests as compared to 1,080 nests counted a year ago.
GTBH: Three nests were found among the nests in the "new" pelican colony. The most herons seen during any visit were 14, observed on June 27.
CAGU: The gull population was estimated to be 2,600 birds at the nests. There were an estimated 1,750 nests, an increase over previous years. Young were seen in the nests on June 6.
CATE: Terns again nested within the gull colony; 11 nests were found on June 6.

1957 Visited May 15 and June 1.
AWPE: The nesting population was smaller this year; pelicans did not nest on top of the mountain this year. There were only 2 colonies; the large 1 contained approximately 2,400 nests, and a colony just below the main one that was new last year included 400 nests.
DCCO: Cormorants increased this year; they nested in 3 colonies totaling 1,580 nests.
GTBH: Herons were more abundant; they nested on greasewood within the "new" pelican colony. A total of 8 nests were seen this summer as opposed to the 3 seen last year.
CAGU: The gull population increased from 1,750 nests last year to an estimated 1,950 nests this year. The first young had appeared on June 1st.
CATE: No terns were found nesting within the gull colony this year.

1958 The island was inspected by air on April 16; visits were made by boat on April 26, June 17 and 20, and July 23.
AWPE: Pelican population increased considerably over last year; there were 4 colonies with an estimated 4,700 nests. Some 6,400 young were counted in July. April 16 pelicans were nest building, by April 26 approximately 65% of the nests contained 2 eggs. On June 20 pods totalling 4,300 young were observed. An additional 1100 nests containing young and eggs were noted (giving the total production estimate at 6,400 young). On July 23 it was apparent that some of the earliest hatched young were already able to fly. The majority of nesting was along the high terrace from the south to the north end (where they've nested for the past 4 years). A new colony of 150 nests was found at the north end of the tufa ridge which extends to the northeast at the north end of the island.
DCCO: Nested in only 1 area; colony contained an estimated 1,600 nests that produced about 3,200 young. They were incubating on April 25, and by June 20 about 500 young were on the water. A group of 300 new nests were found adjacent to the north end of the previously established colony.

GTBH: A colony of 33 nests was found along the northeast ridge where the new pelican colony was established.
CAGU: Colony was located on the south shell-sand beach. Nest building was just beginning on April 25. An estimated 1,700 nests, a 13% decrease from last year, were observed in June. On June 20, 3,000 young were counted most of which were 1/3 grown. By July 23, many of the young were flying, and only 550 adults and 600 young just reaching flight age remained in the nesting area.
CATE: No terns were observed at the gull colony as had been in the past.

1959
AWPE: Pelicans began showing up at Anaho in March but little nesting activity was observed until late May and early June. On June 26, 500 pelicans were banded; banding data on pelicans banded in previous years shows little erratic movement. Virtually all recoveries have been from an area directly to the south. A total of 3 colonies with an estimated 2,500 nests produced 3,500 young.
DCCO: Approximately 1,000 young were produced on the low cliffs on the east shore of the island; there were 3 colonies with approximately 1,500 nests. A number of dead cormorants about 1/3 grown were observed in the nests in mid-July; cause of death could not be determined. 90 cormorants were banded on June 26.
GTBH: One colony of 50 nests produced approximately 80 young.
CAGU: The colony on the south shore prospered; 2,000 nests produced an estimated 3,000 young.
CATE: One colony of 70 nests produced approximately 70 young.

1960 Aerial photos of the colonies were taken on May 4. (No map outlining colony locations was provided).
AWPE: A count of pelicans at nest sites (from aerial photos) indicated 3,468 nests on the lower slopes and an additional 132 nests on the top of the mountain for a total of 3,600 nests. On July 29, 4000 young pelicans were estimated to be reaching maturity. A few very young birds were also seen.
DCCO: By April 28 full scale nesting operations were underway; nests in the rookery contained from 1 to 5 eggs (most contained 3-5). Approximately 2,000 adults were seen at the rookery. 1,095 cormorant nests were counted from the photos. On June 12, a large percentage of the young birds were dead in the nests; size varied from newly hatched to 1/2 grown. Some efforts at renesting were noted on cliffs just north of the main rookery. This is the second season of significant loss for the cormorants; heavy lice infestations in the nests suggest this as a potential cause of the mortality. On July 29, a check of the nests in the pinnacles revealed that a die-off had occurred there earlier in the season. Disturbance caused by increasing levels of motor boat traffic is considered the most plausible explanation for cormorant mortality. Ground counts result in severe losses to the cormorants, flushing adults from their nests often results in losses of 100-300 cormorant eggs to the gulls.
GTBH: 50 nests were counted from the photos.
CAGU: On April 9, gulls were just starting to nest; a few eggs were observed but most nesting efforts were centered on nest building and territorial defense. Approximately 2,000 nests were counted from the aerial photos.
CATE: No tern nesting was noted.

1961 Aerial photos of the colonies were taken on May 8. (No map outlining

colony locations was provided).
AWPE: Count from the aerial photos indicate 3,650 pelicans were on nests. On June 2 production was well advanced with some nests still containing eggs and some with young up to 1/3 grown. Nesting was concentrated on the ridge extending to the north rather than along the bench on the east side of the island; no birds nested on top of the mountain as in previous years.
DCCO: Third consecutive year of poor nest success; boat traffic is the most reasonable culprit. On several occasions it was noted that a boat passing offshore within 400-500 yards would flush the birds off their nests resulting in the eggs and young being exposed to the sun and gulls. On March 24, 900 cormorants were present at the usual nesting cliff, only 1 egg was observed at that time. On June 2 approximately 1,000 nests were occupied, mostly with eggs, some just hatching. (Approx. 2,000 adults were in the area). When the cormorants were disturbed the gulls first consumed the regurgitated fish then gorged themselves on eggs; later observation in June indicated nesting efforts were largely unsuccessful.
CAGU: An estimated 2,150 adults were counted (from the photo). On June 2 hatching was just beginning. An estimated 2,000 young were produced.
GTBH: On April 21, 9 active nests were located on the north end of the island; nests contain 4-5 eggs each. 7 active nests were observed in June, estimate 20 birds were produced. Herons nested along the east side of the rocky ridge at the north end of the island.
CATE: About 50 terns attempted to nest within the gull colony; success is unknown.

1962 Aerial photos were taken on May 24 to provide a consistent (third successive year) means of estimating production. (No map outlining colony locations was provided).
AWPE: 3,235 active pelican nests were counted from the photos taken May 24th; this is based on crediting each pelican within the nest site as having an active nest. Ground observations indicate this to be a rather solid basis for an estimate, as there does not appear to be more than an average of 1 pelican on the ground for each active nest at this critical period in the production cycle. On May 29 2,198 nests were counted; believe some of the nests may have been destroyed by gulls. At this time several stages of production were evident. Some young were two-thirds grown with all intermediate gradations down to fairly new eggs. Stage of development appeared to be fairly well synchronized within local groupings. From observations of the number of clutch size and development they concluded that 1 young pelican was the maximum number produced from a single nest. Production was estimated at 3,000 young.
DCCO: The cormorant colony moved its location from near the east shore of the island (on the low bluff adjacent to the east shore of the island) to the high rugged cliffs on the west side. At their former nesting site the cormorants had suffered severe losses of young for 3 successive seasons--presumable as a result of molestation by boaters and death of young by exposure. On May 29 a ground count of the lower portion of the colony revealed 216 nests. The young from 136 nests had already matured, some were near mature, and 60 of the nests contained a total of 669 eggs. The total of young in 20 nests was 42. An aerial photo count of nests and adults on the high and fairly inaccessible cliffs revealed another 600+ nests. Early in the nesting season cormorants were seen nesting on several of the pinnacles on the north end of the lake.
CAGU: A ground count on 11 July indicated that a total of no less than

3,500 young were produced; many were already flying and out using the water. Predation by the gulls on other nesting species is still a serious concern. When pelicans leave the nests gulls first consume the remnants of fish lying around the nest, then go for the eggs, but were even seen to peck into the body cavity of young pelicans.
CATE: Seem to be on the upswing even though they nest in the midst of the gulls. A total of 250 adults were noted on nesting locations on May 29. On July 11 an incomplete count of young indicated at least 200 were produced. When disturbed the young terns and gulls head for the rocks for concealment.
GTBH: On May 29, 56 young herons were counted in nests in the greasewood on the south side of the island. Young were 1/2 to 2/3 grown, averaging 2.5 birds/nest.

1963
AWPE: Used both ground counts and aerial photos to determine estimates of young produced; approximately 2,500 young were produced from 1,000 nests in 3 colonies. On June 18 400 young pelicans were banded; on August 1, 115 young pelicans were marked with green dye. 20 other young-of-the-year were captured and taken to the Univ. of California where the were used in the study of the effects of pesticide levels. The dyed birds have been observed locally (Stillwater and Lahontan) and from Topaz Lake, Sacramento Refuge, Battle Mountain, and on the Minidoka Refuge (Idaho). When the birds were color-marked it was believed that they were approaching flight capability but at least 1 bird was capable of sustained flight; a bird was seen on Tule Lake NWR the same day it was dyed at Anaho. By the end of the year a total of 185 observations of dyed birds were made over a wide geographical area.
DCCO: Estimated 2,000 young produced from 1 colony of 800 nests. Again nested on the east side of the island. Evidence suggests that this site was abandoned last year in favor of the cliffs on the west side of the island.
GTBH: An estimated 50 young were produced in a single colony from 20 nests.
CAGU: Refuge personnel banded 500 gulls on June 25 (cooperation with Fred Gallup, Escondido, CA). 100 also received green leg bands in addition to aluminum bands. An estimated 2,500 young were produced from the traditional colony on the south side of the island.
CATE: Production is down significantly from last year; An estimated 60 young were produced; appears that a portion of the nests were not found during the ground counts, only 25 nests were located. 24 terns were banded.

1964 (No map of the colonies was provided).
AWPE: Pelican populations remained relatively stable this year compared with '63; 2,314 young birds were produced from 1,608 nests. The only significant changes from '63 to '64 was the colony structure, in '63 there were 3 large colonies, in '64 we had 6 smaller and widely dispersed colonies. 726 were banded over 2 days of effort (June 23 and August 4). Pelicans were color-marked for the third year this year in cooperation with the pesticide studies. 103 pelicans were marked with green dye (green dye was used in '63 with greater success than the pink dye used in '62). 185 observations were made of the 115 birds marked with green dye in '63. The bulk of the observations were made in the inland valleys of California but they ranged from Fort Peck, Montana to Salton Sea, California.
DCCO: Estimated 1,000 young produced from 415 nests. DCCOs had a substantial reduction in production from '63 they nest relatively close to the water's edge and are subject to continually increasing harassment from boaters.

GTBH: Estimated 80 young produced from 40 nests.
CAGU: Estimated 2,100 young produced from 1,000 nests. Gulls also had a significant reduction in production, they too nest close to the water's edge and are subject to harassment from boaters. 519 gulls were banded on June 23.
CATE: Estimated 70 young produced from 30 nests.

1965 (No map of the colonies was provided). Two trips were made to the island; 1 on June 21 to band pelicans and the other on July 15 to census colonial birds and trap mammals.
AWPE: On June 21, 452 pelicans were banded. 2,700 young pelicans were counted on July 15; 1,600 nests were reported.
DCCO: An estimated 900 young were produced form 375 nests.
CATE: Estimated 60 young from 30 nests.
CAGU: Estimated 2,500 young from 1,200 nests.
GTBH: 75 young from 40 nests.

1966 A trip to the island was made on 27 May to check on nesting progress. (Little info provided in the narrative, no map of the colonies, and very little descriptive text.
AWPE: Many pelican eggs had hatched at one site while none had hatched at another. 1,500 nests produced an estimated 2,550 young.
DCCO: An estimated 840 young were produced from 350 nests. On May 27 hatching of cormorant eggs appeared to be near its peak.
CAGU: On May 27th no gulls had hatched as yet; 1,200 nests produced an estimated 2,500 young.
CATE: No terns were seen on the 27th. 30 nests produced an est. 60 young.

1967
AWPE: Pelican nest sites vary from year to year. In '66 1 group nested near the top of the mountain, this year there was no nesting activity there. There was an increase in the number of colonies but a drop in production from last year. Total production from 7 colonies was 1,655. 2,286 adults were counted from aerial photos however this number only represents the number of adults in the colony when the photos were actually taken, other birds were definitely out feeding on the Delta. Author recommends that more research is needed in regards to the establishment of colonies. A new colony was established.
DCCO & GTBH: The location of these colonies remains relatively constant from year to year. DCCOs had 500 nests each with 2 to 4 eggs. Est. production 1,200 young; on June 8 they were just beginning to hatch. GTBHs nesting activity was confined to greasewood at south end of the island. Est. production 60 young; on June 8 both young and eggs were observed.
CAGU: Gull production increased. Production from 3,000 nests was estimated to be 4,500 young. Most nests contained 3 eggs; on June 8 there were still some unhatched eggs but there were also chicks that were able to run. The colony nests on the south shoreline.
CATE: A colony nests in the middle of the gulls, terns production decreased while gull production increased. . There was little antagonism observed between the 2 species. 20 terns were produced.

1968 All nesting activity was several weeks earlier than last year.
AWPE: Pelican production was up 87% with 3,090; more successful than last

year. They believe a major reason for increased production was less human disturbance during the nesting season. Little evidence was found of nest mortality. Hatching dates over several colonies appeared to be close together, on July 8 there were only 2 general size classes; 1 group was nearly grown (almost capable of flight) the other was still down-covered but highly mobile. Instead of seven distinct colonies as there were in 1967 this year nesting occurred all along the base of the mountain with two small outlying colonies.
DCCO: Production was about the same as last year, with 1,140 produced.
GTBH: Production was about the same as last year, with 66 produced.
GULLS & TERNS: Gull production was estimated to be 4,200 and tern, 24. Location and size of colonies were the same as in '67 (both nested on the beach area, on the south shore near the end of the peninsula.

1969
AWPE: On April 9, there were 3 groups within the main colony area, the largest group of ~1,200 were incubating eggs. A second group of 800 was laying eggs; some breeding activity was apparent and incubation had not yet begun. The third group of ~900 birds were still pairing and breeding. Most of the nesting occurred in 1 area, some was attempted on the southern portion of the island but was unsuccessful. Estimated production was 3,400 young, about 10% higher than last year.
DCCO: On April 9 3 groups of cormorants (200, 60, and 35) were observed in the traditional area. On June 30, found that the nests in this area had been abandoned, skeletons of young and adults were found. For the first time cormorants were found nesting in the greasewood among the pelicans. Uncertain as to why the traditional area had been abandoned but the inland site appears to offer better chances for nest success (adults are not forced to leave their nests each time a boat passes, thereby reducing the amount of time the young will be exposed to predation). Total number of nests was estimated at 200 (compared with 475 last year), approximately 600 young were produced.
GTBH: Herons also changed colony locations this year. On April 9 some nesting had begun at the old site (see map); of 12 nests checked 4 had 1 egg. On June 30 a few nests remained active in the traditional colony but most activity had shifted to the greasewood on the east side of the island. Estimated 50 nests averaged 4 young/nest.
CAGU: On April 9 gulls were defending territories but no eggs were found. Production was estimated at 4,000 young (~14% below last year).
CATE: 15 terns were sitting in the gull colony on June 30, but no nests were seen. No evidence that they nested.

1970
AWPE: Used 7 small colonies, deserted the northernmost colony early in the season. Several deserted nests were noted with crushed eggs. Data was collected by Don Knapp; Division of Wildlife Research has used colored patagial wing tags for the last 4 years in an attempt to determine the breeding history of pelicans. 1 pelican, wingtagged at one of the CA refuges, was sighted in the breeding colonies. 1,822 nests were counted over 5 colonies were considered successful. 150 other nests in a separate colony were abandoned. Appears that 1 young was fledged per nest therefore assume that an estimated 1,822 young were produced.
DCCO: Used their original nesting colony on the shoreline. Previous yr. they deserted this site and nested among the pelicans on the interior of the

island. Prod. was not ground checked because human disturbance increases the losses from gull predation on eggs and young.
GTBH: Most nested in greasewood on east side, some used the old site on the south side.
CAGU: Continue to nest on the gravel bar at the southeast corner of the island.
CATE: 25 were present in the gull colony but no nesting was known.

1971 Refuge personnel made no trips to Anaho in the summer of '71. Data were taken from aerial photographs taken by the Division of Wildlife Research.
AWPE: Birds were counted at nests from photos, 2975 nests were counted. Nesting success est 80% w/1.25 young/nest.
DCCO: Nested at their usual site on eastern shoreline. 496 nests were counted, nesting success est. 60% w/ 2.5 young/nest.
GTBH: Continue to nest in greasewood.
CAGU: Nested in their usual site on southeastern tip. 1,931 nests were counted. Prod est down 38%.
CATE: No production data available.

1972
AWPE: Complete count of breeding pop not made. April 26 est 2800 pelicans on island; July 12 2500 young pelicans counted (16% below last yr). 2 colonies this yr on upper flats east of hillsides.
DCCO: Some nests in shoreline colony being destroyed by wave erosion of the shoreline, new nests being established inland along the perimeter of colony only 30-40% of the original colony in use. Production down 9% (675 young), nest success 60% w/ 2.5 y/nest.
GTBH: Early July a few young in the nests but most in the surrounding greasewood.
CAGU: Est. 2% increase in production over last yr. Est. 70% nest success w/ 2 young/nest. By July 12 most young nearly full grown and moved to water.
CATE: No production this year, none seen around the colony where they nested last yr.

1973
AWPE: An estimated 6,800 adults produced 2,500 young.
DCCO: An estimated 640 young were produced.
GTBH: An estimated 50 nests produced 165 young.
CAGU: An estimated 3,050 young were produced.
CATE: No terns were produced.

1974
AWPE: In May chicks were just beginning to hatch in colony A, many of the adults in the area had lost their knobs. Production was down 46% from last year. An estimated 1,725 pairs were recorded as producing 1,725 young.
DCCO: Nesting success was 50% with an average of 2 young/nest. 350 pairs of cormorants produced an estimated 350 young.
GTBH: Production was down.
CAGU: Production increased 18% over last year. With 80% nest success and an average of 2.5 young/nest.
CATE: Approximately 70 adults were seen on May 21, however, no nests were found. Production was estimated to be 55 young.

1975 One record was found in the pelican file giving some information about nesting activities on Anaho in June.
AWPE: 1,600 nests were counted. Very few pelicans have hatched, most adults still incubating.
DCCO: 325 (does not specify wether this number represents nests or birds.
GTBH: 67 (does not specify wether this number represents nests or birds but because of where the value exists on the data sheet my best guess is that it represents the number of breeding pairs of herons.
CAGU: No estimate was made, colony was similar in size to 1974's nesting population.
CATE: No estimate was made, colony was similar in size to 1974's nesting population.

1976
AWPE: An estimated 7,000 adults produced 2,500 young.

1977
AWPE: July, Estimated numbers of nesting adults 3,000, non-breeders 1,000, and young produced 1,400.
DCCO: July, Estimated number of adults 700 and young produced 300.
GTBH: July, Estimated number 30 (does not specify adults or young).
CAGU: July, Estimated number 1,500 (does not specify adults or young).
CATE: No terns were seen using the island.

1978
AWPE: July, estimated number of nesting adults 3,420 and young 1,540. There is 1 main colony actually composed of 3 smaller colonies. 80% of the young are nearly grown while 20% are still downy.
DCCO: July, estimated number of adults 1,950 and young 850.
GTBH: July, 10-15 nests with a total of 60 herons (does not specify if the number of herons is adults, adults + young, or young.
CAGU: July, estimated total 800 (adults, adults + young, or young?).
CATE: No mention of terns in the notes.

1979
AWPE: July, estimates of total nesting adults 3,500, non-breeders 700, and young produced 1,575.
DCCO: July, estimates of total adults 2,300 and total young produced 1,250.
GTBH: July, 100 heron nests were counted.
CAGU: July, a total of 3,275 adults (2,975 breeders) were counted as well as 900 young.
CATE: No mention of terns was found in the notes.

1980
AWPE: Did not visit Anaho until late June. Few pelicans were incubating most hatching had occurred 2-6 weeks earlier. The pelicans had shifted their nesting colonies back to the benchland on the northeast side of the island. No colonies were found using the saddle on the mountain top as reported in 1979.
CATE: No nesting was noted by terns.
DCCO: Cormorants abandoned their previous nest site on the rocky tip of the northeast side of the island and nested amongst the pelicans on the benchlands.

1981

AWPE: May 27, an estimated 3,500 adults were nesting and another 320 non-breeders, estimate a potential for 4,227 young but only 1960 were actually counted. June 16, 370 adults and 3,020 young were counted. June 30, a estimated 3,785 young pelicans were counted.

DCCO: May 27, an estimated 1,460 adults were in 6 colonies, no estimate was given for the number of young. June 16, 1,510 adults and young cormorants were counted. June 30, no count of cormorants was provided in the notes however, they did note that most cormorants were down at the shoreline or on the water.

GTBH: May 27, 127 herons were nesting in the tops of greasewood along the east shore, young were not clearly visible and were therefore not counted.

CAGU: May 27, gulls (3,500) were beginning to nest but no young were yet visible. June 30, many adults had left the colony and most of the young were in very advanced stages of development; on average there was 1 young produced per brood but on occasion we did note the presence of 2. An estimated 650 young were produced.

CATE: May 27, 54 terns were establishing nest sites within the gull colony but no young were visible as yet. June 30, 5 young terns were counted, this was the first time terns production was positively documented in 5 years.

1982

AWPE: Results from a masters thesis study on pelicans were reported:
Anderson, J. 1982. Breeding biology of the American White Pelican at Pyramid Lake, Nevada. San Francisco State Univ.
Summary: Clutch size ranged from 1 to 4 eggs with a mean of 1.97. Approximately 1 chick fledged per clutch (corresponds with our method of estimating production). Peak mortality occurred during the first 3 weeks after hatching. Primary cause of chick loss appears to be dehydration or starvation of the second chick in 2 chick clutches. Predation by California Gulls does not play a significant role in chick loss. Anderson estimates that in recent history, the Anaho colonies may have supported a population of from 16,000 to 20,000 pelicans. Deliberate destruction of colonies by fishermen up until the 1930's reduced populations to about 10,000. The population eventually recovered to an average of 10-11 thousand in the early 50's. During that time production varied from 3,742 to 5,340, with a high of 6,400 young produced in 1958. Afterward the population varied, but generally declined between then and 1980. Since then, prod. has increased to 2,880 in 1981 and 3,350 in 1982, the latter being the highest record since 1959. Declines were probably caused by a variety of factors: pesticides, human disturbance, reduction in Pyramid fish populations, and droughts and changes in water and fish populations in feeding areas.

1983 NOTE: Came across a memo in the files entitled "Report on Dead Pelicans" that states that by May 27 of 1983 the number of pelicans is almost double from normal years with peak numbers near 2,000 birds. In normal years mortality during the spring period averages 10-15 dead pelicans, in 1983 40 pelicans were found. 6 pelican heads were sent in for contaminant analysis.

AWPE: Several factors influenced nesting and hatching success; there was also a significant shift in the use of colonies. Lake level was higher than normal thereby exposing at least 1 colony to view; boating may have added sufficient disturbance to promote nest abandonment. Fish runs at Pyramid were delayed which stressed the birds nutritionally; at Stillwater normal

spring levels of pelican feeding doubled and mortality tripled.
DCCO: Nesting was down from last year, inadequate food supplies and boater disturbance were assumed responsible.
CAGU: The colony increased in size and there was a corresponding increase in production.
GTBH: Production was down 42% from the previous year; subject to recreational disturbance.
CATE: Production was down 8% from the previous year.

1984 NOTE: I came across an interesting letter in the pelican file written by Brian Sharp (USFWS) to Steve Brechtel (Habitat Biologist, Edmonton Alberta) about a "management proposal" for pelicans where Brechtel quotes Markham that the non-breeding pelican population is estimated to be 5-10 times greater than the breeding pop. Sharp was interested because of the sudden sharp increase in the number of breeding birds on Anaho.
AWPE: Colony D, the largest in 1982 and on the initial 1983 count, only contained scattered groups of pelicans. colony B, the largest in subsequent counts in 1983 contained the most pelicans. This shift from colony D to B by nesting pelicans the latter part of 1983 and use this year is probably due to rising lake levels. Pyramid Lake elevation rose 11 feet since May of 1983. Last year, rising lake levels made colony D more visible to boaters which also may have produced significant disturbance. On May 16, 1984 6,175 adults were counted, an estimated 4,680 were nesting. Nesting is later this year than last; spring pelican use was reduced compared to 1983. This reduced use corresponds with earlier initiation of fish runs at Pyramid Lake, however, some refuge Marsh units were dewatered this spring to provide easier feeding for returning pelicans. Only 2 dead pelicans have been observed to date (19 May) on Stillwater. On June 19 approximately 4,080 young pelicans were counted with 2,946 adults.
DCCO: On May 19, 1,860 adult cormorants were counted, an estimated 815 of those were nesting. On June 19, 1,510 adults were counted on 955 nests.
GTBH: 80 nests were counted in greasewood between colony D and the east shoreline. An estimate of young/nest was 1.8. Approximately 115 adult herons were observed.
CAGU: On May 19, approximately 3,200 gulls were counted on the south side of Anaho at the traditional nesting site. June 19, almost 5,000 adults and 830 young were counted.
CATE: On May 19 and June 19, no terns were seen in the area.

1985 NOTE: the data records for this year are very confusing, I have tried to make the most sense out of them but I'm certain the reader will be confused.
AWPE: Count was made June 13, it was evident that nesting was ahead of schedule this year, a lot of chicks were 3/4+ grown and hanging around the shoreline. A total of 5,030 young were counted and 4,475 adults. Count was made July 10; 6,100 young were estimated to have been produced. Many of the adults appeared to be absent, not unusual considering that so many of the young were nearing flight stage. Some losses of adults occurred this spring in May as foraging was difficult at the delta due to water depth.
DCCO: On 30 May 1,140 cormorants were counted. On the 13th of June an estimated 2,600 young and 1,800 adults were counted.
GTBH: Some young were observed on June 13 but no count was given.
CAGU: On 30 May 1,900 gulls were counted. June 13th 900 young gulls and 1,800 adults were counted.

CATE: None were seen.

1986 The island was censused according to procedures in the Stillwater WMA station Wildlife Inventory Plan. Counts of nesting birds was conducted from a vantage point ~3/4's of the way to the top of the island, on the northeast side. Counts were done with a 20-60X spotting scope beginning around 1000. Exceptionally wet conditions in the Lahontan Valley have created almost ideal conditions for many species of colonial birds which nest on Anaho and feed in Lahontan.

AWPE: A record year with an estimated 10,700 nests and 21,500 adults. It was difficult to determine,without disturbing the nesting birds, if all the adults were actually incubating eggs or brooding young. It is possible that the numbers were actually higher than those estimated this year because the colonies were not well synchronized. This resulted in some birds fledging while other pairs were still brooding young. The number of young produced was estimated at 7,500 but the actual number may have been closer to 10,000. Since 1980, the number of young produced at Anaho Island has increased at an annual rate of 28%. Much of this increased production may be a result of an increase of nesting adults from other colonies. Perhaps adults displaced in the recent flooding in the Great Salt Lake are now nesting at Anaho. On May 14, 15,100 pelicans were counted (13,900 nesting adults and 1,200 loafers).

DCCO: Cormorants also had a good year with an estimated 2,500 nests and 5,000 adults.

GTBH: The nesting population of herons has been increasing steadily according to our population estimates. 135 nests and 270 adults were counted for Anaho, this may represent both a population increase and shifting of nesting areas. In 1986, we didn't find any herons nesting at the Pinnacles on the north end of the lake; and I am unaware of any nesting at the mouth of the Truckee River.

CAGU: Gulls were the second most abundant nesting species using Anaho. On May 13 there were an estimated 2,660 nests were counted with 3,550 adults at the nests; on June 12 there were 4,500 adults at nests but we were unable to ascertain the number of nests.

CATE: No evidence of tern nesting was found; in fact, no terns were even recorded in the area on any of the visits to the island.

1987 The exceptional conditions for fish eating colonial species of 1983-1986 began to decline in 1987. Fish die-offs from several thousand to over 7.5 million occurred at almost regular intervals on Stillwater.

AWPE: The nesting season was initiated 1-2 months earlier than most previous seasons. During the winter of 1986-87 between 20-30,000 pelicans wintered on the Carson Sink. They took advantage of the 7.5 million fish that were trapped in the receding sink. In 1986 on May 13, we had about 7,000 nests but no visible chicks. On the same date in 1987 we had almost 5,000 nests but the young (4,619) were very large and roaming the island. While collecting eggs for contaminant analysis on May 12 we noted 80 dead young pelicans. By June 18, we counted 5,840 young and estimated that a minimum of 6,000 would reach flight stage. Many birds from our last trip have fledged and probably departed from the island. We noted many more dead pelicans than in 1986. Estimate that a minimum of 200 chicks have died so far this season. At peak we estimated that 13,800 adults produced 5,500 young from 6,000 nests. In July we picked up a severely deformed pelican chick. It was almost ready to fly and represents the third bill deformity

we've seen this year. All of these birds were alive but will not be able to survive when the parents stop feeding them.
DCCO: 2,000 nests produced 5,400 young, this may be a slight underestimation since the colony is not totaly synchronized in nesting chronology. At best 6,000-6,500 might have reached flight stage. On July 15, most of the young cormorants had fledged. It became obvious that those cormorants which nested early were mostly successful, while those that nested at more normal dates or late were unsuccessful. We found 436 dead young, mostly entire broods, which indicated adults had abandoned nesting efforts.
GTBH: By June 18, we had 175 fledged young from 140 nestsor 1.25 fledged young/nest. This appears comparable with previous years.
CAGU: On May 13, 2,800 adults were counted in the nesting colony, we estimated that approximately 2,100 nests were established.
CATE: No terns were seen nesting this year.
BCNH: We found about 20 nests on several of our walking trips, but they were not observed form our elevated censusing points. This is a species that would be easily missed using the standard censusing methods. On balance it probably isn't worth disturbing the other nesting birds to get an accurate Night-heron count. Night lighting should be used to census this species, which will eliminate gull predation. Perhaps 25 nests with 50 birds are using the island.
SNEG: On July 14 we located a minimum of 2 nests, 1 with 3 small young and 1 with 1 small young. This is a first nesting record for Snowy's on Anaho.

1988 In general 1988 has been a tough year for fish eating birds in the Lahontan Valley. They are in poor body condition almost 1/2 of their normal body weights. The most common birds found dead at Stillwater are Pelicans, Black-crowned Night-herons, Western Grebes and Great Blue Herons.
AWPE: On our first offi ial count on May 26 we found that almost all of the nesting birds had abandoned their nesting efforts. At first we thought the abandonment might be caused by our egg collecting activities, but colonies that we didn't visit also abandoned nesting. We are now down to 325 birds with about 50 active nests. Birds loafing along the shoreline (1370) far outnumbered active breeders. At peak we estimated that 4,000 adults produced 35 young from 50 nests.
DCCO: There seemed to be good hatching success for those that did nest. 1,500 adults were seen on nests in April. On May 26, 975 adults were on nests and by June 15 there were 575 adults on nests. We estimate that the number of nests was probably around 575.
GTBH: Heron numbers appeared low as compared to 1986 & 87. On April 22 most of the 125 adult birds were attending nests but we didn't record any nests with eggs. By May 26 only 25 adults with 15 nests were seen. We estimate that 15 young were produced.
CAGU: On May 26, 3,300 adults were counted in the nesting colony, we estimated that approximately 2,500 nests were established.
CATE: No terns were seen nesting this year.

Seth B. Low, Biologist, Patuxent Research Refuge — September 25, 1950
Laurel, Maryland
Refuge Manager, Stillwater N. W. Refuge

Band Recoveries - Anaho Island

On July 3, 1950 we banded 50 pelicans, 25 cormorants and 50 California gulls on the Anaho Island Wildlife Refuge. These birds were young of the year, out of the nest and running around but unable to fly. The pelicans were still in the downy stage, the gulls were just beginning to feather out and the cormorants were fully feathered. The day was extremely warm and the fact that the young birds were evidently suffering from the heat caused us to limit our banding activities. We noted the adult birds shading the young in parts of the rookery not disturbed by our presence.

On September 21 we revisited the Island and examined as many of the carcasses of dead young as we could find for bands. The banding was responsible apparently for a considerable mortality among the cormorants and gulls, though not among the gulls. Three bands were recovered from dead pelicans, but each of these birds had survived for several weeks after the banding.

The following bands were removed from the dead birds:

Pelican bands (3) : 48-873502
48-873517
48-873519

Cormorant bands (7) : 498-48201
498-48209
498-48211 - 12
498-48218
498-48221
498-48225

Gull bands (17) : 495-46513 - 14
495-46516
495-46528 - 29 - 30 - 31 - 32 - 33
495-46535 - 36 - 37 - 38
495-46540 - 41
495-46544
495-46549

In addition to the recovery of the above bands a pelican band of another series was found on the Island. This band (No. 40-8095[illegible]92) had been used presumably by Bond who banded young pelicans at this location in 1940. The band exhibited unmistakable evidence of use, however, the bird which wore it had long since disintegrated and disappeared.

Thomas C. Horn
Refuge Manager
by LeRoy W. Giles, Biologist

Stillwater N. W. Refuge
Box 592
Fallon, Nevada

November 24, 1950

Dr. Seth H. Low
Patuxent Research Refuge
Laurel, Maryland

Dear Dr. Low:

At the present time we are preparing a manuscript based on recent investigations of the birds nesting on the Anaho Island N. W. Refuge. The recovery of three banded pelicans in southern California (birds which we banded this past summer) added new and apparently significant data. If further banding information is available it may be possible to include in the manuscript notes on the migration and winter range of the Anaho pelicans.

We are wondering therefore if your office would have the time to check through the files in order to determine whether previous band recoveries are on record. Dr. Richard M. Bond banded pelicans at Anaho in 1940, and we would like very much to get any recovery data resulting from either his work or that of other banders.

Any help possible in this matter would be greatly appreciated.

Very truly yours,

David B. Marshall
Refuge Manager

Bird-Banding
STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Refuge Manager, Stillwater N. W. Refuge, Box 592, Fallon, Nevada
DATE: November 30, 1950

FROM : Biologist, Bird-Banding, Patuxent Research Refuge, Laurel, Md.

SUBJECT: Banding Data for White Pelicans

Reference is made to your letter of November 24 requesting banding data for White Pelicans banded on Anaho Island, Pyramid Lake, Nevada.

The following recoveries from birds banded by Dr. Richard M. Bond are on file:

40-809573 6/2/41 probably found dead La Huerta, Michoacan, Mexico

40-809590 11/2/40 killed near San Pedro Chicozapotes near Oaxaca, Mexico 4-13

40-809595 letter of 4/11/46 Laguana de San Antomio, Co. of Rosa Morada, Nayarit, Mexico H-8

40-809603 10/18/40 killed Oriental, Puebla, Mexico J-13

40-809722 letter of 12/15/44 found dead Pyramid Lake

40-809746 11/15/48 shot Coamiles, Nayarit, Mexico

All of the above were banded as nestlings on June 21, 1940. Spellings and locations as shown on the cards have not been checked.

We assume that you have the records for 40-809592, 44-822032, 44-822050, and ~~40-809592~~. 8

If you desire any additional data, don't hesitate to write.

Seth H. Low

SHL/amv

ANAHO ISLAND INSPECTION - MAY 15, 1950

Observers: Giles and Nygren

Time on Island: 10:45 A.M. - 1:15 P.M.

Schedule: Circled island to determine condition and number of refuge signs. Added one new sign, otherwise posting in excellent shape. Then made brief inspection of nesting activities.

About 1200 California gulls at nesting site on sandy cove south end of island; another 500 swimming in lake adjacent. Nesting just getting underway with numerous depressions in sand lacking eggs. No young. Majority of nests with 2 eggs, quite a few with only one egg and several with 3.

Estimated ~~3000~~ 4000 pelicans ~~(about 25% male)~~ at rookery on northeast side of island. Another 1000 at mouth of Truckee River and on lake. Several nesting areas located on successively higher beach levels starting at waters edge and extending inland to base of cliffs several hundred yds. from water. Definite ratio between nesting progress and distance inland, being most advanced near the water. A few large-sized, but downy, young near water - no young but a number of eggs pipped at base of cliffs. Two eggs normal. Evidence of considerable predation on eggs by the sea gulls.

Nearly 1000 cormorants at nesting area near water in pelican rookery. No young. 4 eggs about average. An old, abandoned nesting site just south of present one. Nests constructed of alkali weed or Atriplex plastered with mud and lined with salt grass, cheat, and occasional feathers.

Ten nests of great blue heron in heavy growth of Atriplex, alkali weed. Small young in each.

Flushed a pair of doves from greasewood thicket on island but unable to locate nest.

Saw 40 (plus some too far distant to count) Canada geese. All in flocks. Flushed 2 mallards, edge of island.

Several grebes seen on water adjacent to island.

Eight vultures circled over cliffs. Possibly nesting on high ledges.

ANAHO ISLAND, PYRAMID LAKE, NEVADA, INSPECTION TRIP

June 26, 1950 1:30pm to 4:30pm

Observers: Marshall and Giles & Tom Trelease, state fisheries biologist

Schedule: Visited colonies as found by Giles and Nygren on May 15, 1950.

Western Grebe - Some in water around the water.
White Pelican - At all stages of reproduction. Six pods found, and a 7th having been so far along that no birds were present. On pod was seen on top of the island after we left the island and were out in the boat. Giles estimated 2500 young were present. This does not include the pod at the top of the island. Fish coughed up by the young birds were carp, Lahontan chubs and cui-ci. Possibly 75% were carp. Trelease counted 232 carp averages two inches long from one young pelican. One brown bullhead was found also.
Double-crested Cormorant - Several pods at all stages. 1,000 young estimated present. Cormorants were nesting near edge of water on hunks of tuffa. Their nests were high and contains much alkali weed. Most eggs were hatched.
Blue Heron - Didn't visit the nests this time but noticed around 10 blue herons near the lowest pelican pod.
Canada Goose - About 165 counted in small groups around edge of the island. Many appeared to be young of the year and could not fly.
Mallard - About 5 adults off edge of island.
American Merganser - 3 males and 2 females seen off island.
Turkey Vulture - Several circling around cliffs.
California Gull - Estimated 1500 adults at colony. Young birds walking around. Few eggs, as mostly hatched. Made no attempt to count the young. Nests were depressions in ground lined with algae or other vegetable material.
Caspian Tern - Small colony containing 25 nests in gull colony. Counted 40 adults. Most nests had eggs and a few had young just out of the egg. Nests were depressions in the ground. Had no vegetable material in them.

INSPECTION TRIP OF ANAHO ISLAND WILDLIFE REFUGE, PYRAMID L., NEVADA

July 3, 1950 10:00 am to 3:30pm
Observers: LeRoy Giles, Fred Wright, David B. Marshall and Thomas H. McAllister of Oregon State Game Commisssion.

Schedule: Visited all colonies to band young and make more complete estimates on the number of birds present. Estimates here given therefore supersede those made on May 15 and June 26, 1950.

Data given below also includes summary of observations made on May 15 and June 26. Dates ~~XXXXX~~ for observations below are for July 3 unless otherwise specified.

Birds

Eared Grebe - 2 seen in water off island.
Western Grebe - Saw only one, but several seen on June 26 and May 15.
White Pelican - Giles estimated 5,000 adults on May 15, which is the best observation to date on adults. Adults can be estimated to best advantage earlier in the season when more are present. Of the 5,000, 1,000 were at the mouth of the Truckee River. Since pelicans range ~~over XXXX~~ a vast area from this colony, many adults belonging to the colony went uncounted because of tours over the region. As an example on May 16, the day after Giles made his count 400 pelicans were counted on the Stillwater Wildlife Management Area.

4,160 young pelicans in 14 pods or colonies were counted on July 3. Also 16 eggs, some of which may not have been fertile. Nesting was more pregressed at lower levels on the island. As one went up the island to the top nesting ~~XXXXXX~~ was at successively ~~XXXXXX~~ earlier stages. Two pods were at the top of the island having 59 nests containing a total of 80 young and 9 eggs. Pipping of eggs and newly hatched young were observed at this location. These two colonies were overlooked on previous visits. About 8 young, all that were in the lowest colony had apparently left the island. This colony was observed on May 15. Pods or colonies found on July 3 are as follows:

1. 60 young
2. 200 young
3. 300 young
4. 60 young
5. 850 young
6. 750 young
7. 200 young and 3 eggs
8. 300 young and 4 eggs
9. 10 young
10. 50 young and ~~XXX~~ 8 eggs
11. 30 young and 1 egg
12. 350 yo ng
13. 200 young
14. 800 young

4160 young and 16 eggs.

On June 26 roughly 75% of the fish regurgiated by the young pelicans were carp, the remainder being chubs (Siphateles obesus) and cui-ui (Chamistes cujus). On July 3 no dead carp or cui-ui were observed to be regurgitated, ~~XXX~~

the only fish being chubs. Apparently feeding habits vary considerably during the season and may vary [illegible] through the day.

It is felt our presence caused the death of [illegible] smaller young through excessive exposure to the sun, as the adults were quick to take flight and abandon their young as we appreached a colony.

Several naked young had been injured in the back, as blood was running from this location. Possibly this injury wqs caused by California gulls. Pierced eggs found on May 15 also indicated gull predation.

It was difficult to get an accurate estimated on the number of pods, as pods would break up into several [illegible] when approached. Therefore [illegible] some pods counted as two many only be ~~young~~ one. Some colonies were ao close togehter that they could be considered ~~young~~ one. 50 young pelicans were banded.

Double-crested Cormorant - 1200 adults were counted at nesting colonies and elsewhere on the island. Five nesting colonies were found containing 1650 young and 17 eggs. Nesting was at all stages. Some young left the colonies and took to the water. Colonies were situated on tuffa along the water's edge shore distances apart. Nest material was alkali weed. The number of eggs or young to each colony were as follows: As estimated:

Colony
1. 400 young and 9 eggs
2. 225 young and 8 eggs
3. 250 young
4. 600 young
5. 175 young

1650 young and 17 eggs.

25 young cormorants were banded.

Blue Heron - On May 15 Giles and Nygren found 10 blue heron nests containing young. This trip 27 adults and/or young were observed away from the colony. [illegible] A nest with 4 young and another with 3 eggs was also found.

Canada Goose - Fred counted a total of 327. All in the water around the island. The young were too far along to tell from adults.

Mallard - Brood with 6 Class III young was seen. Also 12 mallards in two flocks of 6 each were seen.

Gadwall - 4 were seen with a flock of 6 pintail flying over the water along the edge of the island.

Pintail - one lone female on island's edge seen. A pair in the water and the flock of 6 mentioned above.

American Merganser - We chassed about 25 of them with the boat. They did not fly but flopped along in the water ahead of us.

ANAHO ISLAND TRIP, July 3, 1950 continued.

Turkey Vulture - Probably about 8 flying about over the top of the island.

Marsh Hawk - Observed a pair.

Prairie Falcon - pair on cliffs and flying about over top of island. Might have been nesting in hole seen present in rocks.

Marbled Godwit - Flushed 6 from edge of island.

California Gull - 2,000 adults were estimated present at the colony and in the air above it. The gull colony was at the south end of the island. An inspection of photographs of the colony ~~XXXXXX~~ brings ~~XXXX~~ forth an estimate of 300 young alive and 200 dead young. Reproduction thus appears very low with a high mortality. Young were out running around. It is felt considerable mortality took place through our presence, since we prevented adults from shading young from the sun. On our visit to the gull colony on June 26 we did not ~~XXXXX~~ notice such high mortality among the young birds and wondered if many did not die after we left. 50 young were banded.

Caspian Tern - This bird has not been noted nesting on the island by previous observers. Apparently it is a new-comer. There is nothing to add to the observations made on June 26, when the 25 tern nests were counted in the gull colony, except more of the young had hatched.

Mourning Dove - The observation by Giles and Nygren on this bird on May 15 constitutes the only record. A pair were seen by them.

Rock Wren - Rock wrens could be heard singing from the higher part of the island.

ANAHO ISLAND RESERVATION INSPECTION TRIP

September 21, 1950 10:00am to 2:30.
Observers - Giles and Marshall

Pyramid Lake

Western Grebe - Counted 1500 from where road first hits lake to point 2 miles down road. Many out in water to far to count in add ition. Counted 250 next four miles. Thought this many a bit unusual.

Anaho Island

Eared Grebe - About 10 around edges of island in water.
Western Grebe - 90 around edges of island in water.
White Pelican - Counted 12 around edges of island on shore and in water. Made search of lower colonies as far up as we banded on July 3. Looked at dead birds in search of banded individuals. Found two dead pelicans with bands. They were from fully feathered birds. Thus they survived for some time after banding, as banded birds were in downy stage. This loss can be considered natural mortality. In addition found on band on ground of 1940 series. No dead bird in vicinity. The band had been used, as was bent in circle. Probably one of bands used by Bond in 1940.
Double-crested Cormorant - 275 adults or young of year were along edge of water around edges of island. Counted nests and dead young in the four rookeries used this year. Results as follows: Rookery 1, 211 nests and 48 dead young, Rookery 2, 296 nests and 12 dead young; Rookery 3, 250 nests and 19 dead young; Rookery 4, 271 nests and 24 dead young. We did our banding in Rookery 1. The high mortality here indicates that our banding desturbed these birds. From the dead young in this rookery we found 7 bands of the 25 originally banded. All recovered bands here were from birds that failed to leave the nest.

211 - 48
296 - 12
250 - 19
271 - 24
1028 103

Mallard - saw 2 at edge of island.
Gadwall - 18 at edge of island.
Baldpate - 25 at edge of island.
Redhead - 1 male.
Ruddy Duck - 8 at edge of water in with coots.
American or red-breasted merganser, presumably American - 6 in female plumage flushed from edge of island.
Coot - 400, mostly opposity gull colony.
Turkey Vulture - 1 was circling over the island.
Gulls, California or ring-billed - 150 around edges of island.
California Gull - Looked over the colony. Estimated at least 500 dead young. They were no further developed than when we last visited the colony on July 3. From the 50 gulls banded on July 3 we recovered 17 bands. Looking for these bands was like looking for arrowheads. We know we didn't find all of them by any means. The dead young were badly disintegrated with a leg here, head there, and a wing somewhere else. Mortality must have been near 100% in this colony. Paced out the gull colony and found it to be cresent shaped, miximum length being 800 feet and maximum width 450 feet.
Horned Lark - Small flock observed flying over the island.
White-crowned Sparrow - Flock totaling about 20 birds on the island.

No birds left in any of the colonies.

Western Grebe. Several were present in the water at the edge of the Island.

White Pelican. The pelican colonies of the Island are by far the most important asset of the reservation. Best estimates of the number of adults present ware made on May 15 when 4,000 were present on the Island and another 1,000 were seen at the mouth of the Truckee River. Since pelicans range over a vast area from Anaho Island, this is far from being a complete count of adults. For example, on the Stillwater Wildlife Management Area, alone, 400 pelicans were counted on May 16th.

Nesting extended over a long period, and close to 15 nesting colonies were present. The proximity of some colonies to others made separation difficult. Colonies extended from the water's edge to the top of the Island. Nesting commenced at the earliest date on the lower slopes close to water. It became progressively later with distance inland and at the higher elevations. On July 3rd birds from the lowest colony were almost fully grown while at the top of the Island hatching was not completed. On May 15 young found near the water were in the downy stage while further up the Island pipping of eggs had begun. No activity was noticed at the summit of the Island at this time.

July 3rd appeared to be the best time for counting young as hatching was almost complete and few if any, young had left the area. At this time a total of 4,160 young were counted. These were divided among 14 colonies, or pods, containing from 10 to 850 individuals each.

It is felt that our presence caused the death of some of the smallest young through excessive exposure to the sun, as the adults were quick to take to flight as we approached a colony.

The backs of several naked young were found pierced with blood running from the punctures. Possibly this injury was caused by California gulls. Pierced eggs with only part of the contents remaining also indicated gull predation.

The table shows figures on pelican numbers as found by other writers who visited the Island. Some of these writers visited the Island too early or too late in the season to obtain good figures. Nevertheless, the table does indicate that pelican production was at a high level in 1950. Possibly it was the highest observed in the last 70 years. Many writers of the past found considerably human interference by both white man and Indian. This kept reproduction down, as the Indians took pelican eggs for food and white men destroyed eggs and young because of the fish eating habits of the birds. The small number of nests and young found by Alcorn was possibly caused by Naval Aviation activity over the Lake during the War.

On July 3rd we banded 50 young pelicans.

WHITE PELICAN POPULATIONS AT ANAHO ISLAND

Date	Observer	No. Nests Occupied	No. Eggs	No. Young	Adults
August, 1882	Russel			1,400	
1903	Chapman		139	4,000	
June 3, 1921	Evermann	2,381			
June 5 & 6, 1924	Hall	4,534	6,234	816 in nest	*10,000
June 9, 1932	Cooper	2,994		300 out of nest	6,000
June 21 & 22, '40	Bond			3,200	
June 14, 1942	Alcorn	1,761		1,553 out of nest	
May 15, 1950 July 3, 1950	Giles and Marshall		16	4,160	5,000

* This is an estimate of total adults using the colony, based on adults counted at Lake, those that came in after dark and those present in other areas at time count was made.

Double-crested Cormorant. The number of cormorants nesting on the Island has shown a tremendous increase in the last ten years. We found 1,200 adults using the Island for nesting as against 50 nests found by Bond in 1940. Hall makes no mention of cormorants using the Island for nesting.

On May 15 we found eggs but no young. By July 3, hatching was almost complete. Young were at all stages, some being able to fly. At this time 1,650 young and 17 eggs were counted. These were divided among five nesting colonies, all of which were situated on tufa deposits along the water's edge short distances apart at the northeast edge of the Island. Nest material was alkali weed.

Twenty-five young cormorants were banded.

Blue Heron. On May 15 ten nests were found which contained young. On July 3rd 27 blue herons were seen. Some of these were undoubtedly fully-grown young. Also at this time a nest with four young and another with three eggs were observed.

Canada Geese. On all three visits "honkers" were seen in the water around the Island. Many of these could not fly and were presumed to be young produced on the Island. Their plumage development was so far advanced that they were indistinguishable from the adults.

May 15? Bw

3A4.10

Stillwater Wildlife Management Area
Box 592
Fallon, Nevada

July 6, 1950

Mr. Thomas J. Trelease, Fisheries Technician
Nevada State Fish and Game Commission
Post Office Box 678
Reno, Nevada

Dear Tom:

Thank you for your prompt reply to our request for the Pyramid Lake data. However, several questions have come to our mind regarding your information, and I am enclosing your sheet so that you will be able to clarify our questions.

Do the figures you list under evaporation rate cover the actual yearly decrease in lake levels, or do they cover only the evaporation rate? If the latter is the case, do you have figures on the decrease in the lake levels, and are the figures for Pyramid or Winnemucca Lake?

If you don't have figures on the actual drop in water levels, possibly you would be interested in making a mark on the pyramid at the present water level, LeRoy and I have been thinking of doing this.

We visited the island last Monday. I am sorry you and Frank did not make it. We were just in time to still be able to band young gulls and cormorants, as the gulls especially were hard to catch.

While in Reno last Friday, I saw on your desk the pelican paper. I will send for one as it surely had some good information.

Very truly yours,

David B. Marshall
Junior Refuge Manager
By IEC

UNIVERSITY OF NEVADA
RENO, NEVADA

DEPARTMENT OF BIOLOGY

July 20, 1950

Dear Mr. Marshall:

Thanks a lot for your interesting notes on Anaho birds. I have been away for most of two weeks or might have acknowledged them sooner. I am listing below the estimates of the numbers of birds seen on Anaho on June 2,1950 by me and my class of four. The adult pelicans are hardest to estimate but I feel I may not be too far off. I know my estimate of young pelicans is too low. We did not go into most of the colonies. I have given the averages of estimates although it might have been better to give ranges.

Species	Est. # Adults	Young	Nests
White Pelican	6650 (atleast 400 more at mo. of river & Marble Buttes)	420	
Double-crested Cormorant	600 nesting pairs		
Great Blue Heron	11		7
Canada Geese	85 ad. and yng.		
Turkey Vulture	3		
Marsh Hawk	1		
Spotted Sandpiper	1		
California Gull	1300	1	400
Caspian Tern	34	0	19
Rock Wren	(heard)		

On June 14, 1942 J.R.Alcorn, G.H.Hansen nad I estimated a minimum of 3000 ad. pelicans, 1761 nests with eggs or young, and 1553 about half-grown young. The only species of bird seen then but not this June was one Red-tailed Hawk.

Sorry my estimates are not more complete. I have soma additional information in my notes you could look over when you may get in again or I may get down.

Sincerely,

Frank B. Richardson

Summary Sheet, Anaho Is., 1950 - 51

White Pelican

	Nests	Young
1950		4160
1951	5650	3742

Double-crested Cormorant

	Nests	Young	Left in nest Dead Young	No. colonies
1950	1028	1630	103	5
1951	1300		100	4

Calif. Gull

	nests	Young
1950		400
1951	1706	684

Stillwater Refuge
Box 592
Fallon, Nevada

February 26, 1951

Dr. Seth H. Low
Patuxent Research Refuge
Laurel, Maryland

Dear Dr. Low:

Thank you for your memorandum of November 30, 1950, in which you gave us data on white pelican band returns resulting from banding done by Dr. Richard M. Bond.

In continuing our preparation of a manuscript based on recent investigations of the birds nesting on Anaho Island National Wildlife Refuge, we find that Bond also banded seven young double-crested cormorants and 49 young California Gulls. We would appreciate it if you could check your files for any returns on these birds. They were banded by Bond in June, 1940.

We are sorry we previously overlooked the banding done on these addidtional species.

Any returns would make a valuable addition to our paper.

Very truly yours,

David B. Marshall
Refuge Manager

Bird-Banding

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Mr. David B. Marshall, Refuge Manager, Stillwater Refuge, Box 592, Fallon, Nevada **DATE:** March 23, 1951

FROM : Biologist, Bird Banding, Patuxent Research Refuge, Laurel, Md.

SUBJECT: Banding Returns from Anaho Island

In response to your request of February 26 the files have been checked for returns and recoveries from the Double-crested Cormorants and California Gulls banded by Bond on Anaho Island.

We have been able to find only one as follows: #40-671874 California Gull, banded June 21, 1940 as a young bird by R. M. Bond was found dead July 14, 1942 by S. M. Baker at Tubbs Island, San Pablo Bay, California.

Seth H. Low

Seth H. Low

SHL/amv

Calif. Gull - banded June 21, 40, a young bird by R. M. Bond was found dead July 14, 1942 by S. M. Baker at Tubbs Is., San Pablo Bay, Calif.

White Pelican - Found dead Nov. 3, 1950 near Topaz Lake, Mono County, Calif.

Milwaukee Public Museum
July 20, 1951

Dear Sir:

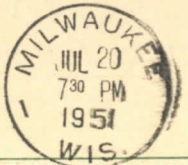
The account of the Pyramid Lake expedition appears in the 1930 Museum Yearbook, Vol. X.

A copy ~~if~~ is being sent under separate cover, with our compliments,

Very truly yours,
MILWAUKEE PUBLIC MUSEUM

A.W. Bauernfeind

A.W. Bauernfeind, Recorder





THIS SIDE OF CARD IS FOR ADDRESS

Mr. David B. Marshall
Refuge Manager
Stillwater Wildlife Management Area
Box 592
Fallon, Nevada

Stillwater Wildlife Management Area
Box 592
Fallon, Nevada

July 16, 1951

The Public Museum of the City of Milwaukee
Milwaukee, Wisconsin

Dear Sir:

It is our understanding that a field party from your museum carried out an investigation of the birds of Anaho Island, Pyramid Lake, Nevada, sometime in the 1920's, and published their findings in a yearbook of your museum. According to our information, this is probably in Vol. VI, VII or VIII, Part I, which are yearbooks for 1926, 1927 and 1928, respectively.

We would appreciate knowing where we might borrow a copy of this publication and the exact volume in which it occurred. This publication would add valuable information to a paper we are preparing on the present status of the bird-life on the Island.

Very truly yours,

David B. Marshall
Refuge Manager

Arano Island Inspection Trip
May 15, 1951

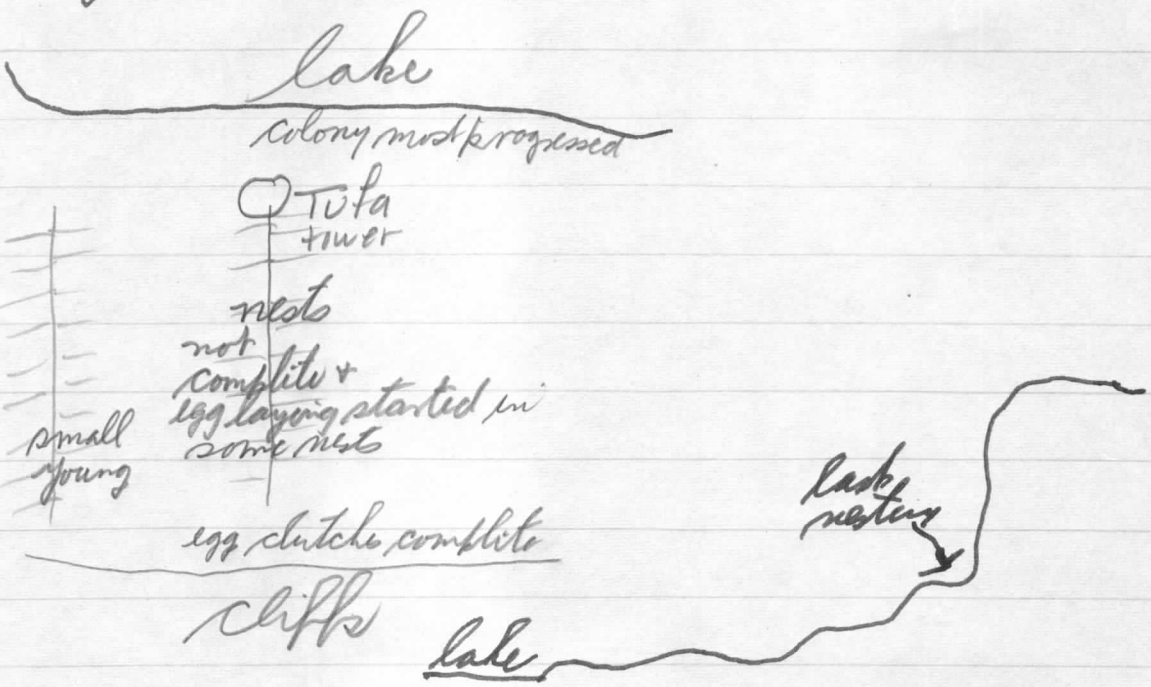
11:00 AM to 2:30 on island.
Visited nesting colonies
Observers - Wright, Giles & Marshall

Great Blue Heron - ~~Eleven~~ Sixteen nests of alkali weed on shoreline near cormorant colonies. Eggs only in some nests while in others young almost half grown. Nest data as follows:
~~Eggs~~ young $\frac{0}{4}$, $\frac{0}{3}$ (1 dead) $\frac{0}{2}$ $\frac{0}{0}$ $\frac{3}{1}$ $\frac{3}{1}$ $\frac{0}{3}$ $\frac{0}{5}$ $\frac{2}{0}$ $\frac{0}{1}$ $\frac{0}{2}$ $\frac{0}{3}$ $\frac{0}{4}$ $\frac{0}{0}$ $\frac{0}{3}$ $\frac{0}{2}$.

Double-crested Cormorant - didn't take much data on these, as thought it best to wait a couple of weeks until nesting more progressed. Some nests without eggs or under construction while others had as many as 8 eggs.

White Pelican - ~~Tried to~~ Counted nests in those colonies in which laying and nest building was thought complete. Nesting was further behind along and on sides of a ridge than at

colonies at higher elevations at base of cliffs. Since in some of these lower colonies along the ridge nest building was not even complete, a count of nests was put off until a later date. Nesting was most progressed at colony on lowest beach level. Here young about 1/4 grown were present.



No nesting yet on highest beach of island. Two egg ~~clutches~~ were rule where egg laying was complete. Never saw 3 or more eggs to a nest. Average clutch probably 1.7 or there-abouts as Hall found it. He divided the place into 11 colonies. Nesting was not far enough along in 3 of these

colonies to count nests. Eggs in some of the nests ~~too~~ were destroyed or missing. Consequently some nests were without eggs even in colonies where laying was thought complete. This made nest counting difficult and undoubtedly accounted for inaccuracies in counting because ~~some nests in~~ ~~of~~ the nest depressions were so poorly defined. If anything our count of nests was too low.

Data by colonies is as follows:

colony	no. nests
1	1224
2	379
3	2476
4	625
5	not counted. Egg laying & nest building still on
6	" " " " " " "
7	" " " " " " "
8	89
9	218
10	125
11	91
	5227

Fish found around Pelican nests were as follows:

Cui-ui — 2
Sacramento perch - 4 (all at one nest)
Carp - 2
Chub - 3

California Gull - Estimated ~~1700~~ 1800 adults at the colony. Then counted nests and reached a total of 1706 nests. Clutches probably complete in most nests, but in others ~~not~~ no eggs were ~~present~~ present but ~~no~~ nest depressions new. Count of nests probably low because nests without eggs very difficult to spot, but on the other ~~hand~~ hand there was probably some overlap in counting.

STILLWATER WILDLIFE MANAGEMENT AREA, CENSUS FORM, Anaho Is. UNIT OR SECTION

FALLON, NEVADA DATE May 15, 51

	Total		Total
Eared Grebe	1	Great Blue Heron	—
Western Grebe	2	American Egret	
Pied-billed Grebe		Snowy Egret	
White Pelican	✓	Black-crowned Night Heron	
Double-crested Cormorant	✓	American Bittern	
		White-faced Glossy Ibis	
Whistling Swan			
Canada Goose	adult in small flocks hanging around Island	1 F young, adults	125
White-fronted Goose			
Snow Goose			
Mallard	pair, 3 ♂	→	
Gadwall			
Baldpate			
Pintail			
Green-winged Teal			
Blue-winged Teal			
Cinnamon Teal			
Shoveller			
Redhead			Pair
Canvasback			
Scaup			
American Golden-eye			
Bufflehead			
Ruddy Duck			
Hooded Merganser			
[illegible]			2
Unidentified Ducks			
Coot			

	Total		Total
Turkey Vulture	5	Forester's Tern	
Red-tailed Hawk		Caspian Tern	
Swainson's Hawk		Black Tern	
American Rough-leg		Mourning Dove	
Golden Eagle		Burrowing Owl	
Bald Eagle		Short-eared Owl	
Marsh Hawk		Nighthawk	
Prairie Falcon		Red-shafted Flicker	
Sparrow Hawk		Arkansas Kingbird	
Valley Quail		Say's Phoebe	
Ring-necked Pheasant		Horned Lark	
Virginia Rail		Violet-Green Swallow	
Sora		Tree Swallow	
Snowy Plover		Barn Swallow	
Semipalmated Plover		Cliff Swallow	
Killdeer		Magpie	
Black-bellied Plover		Raven	2
Wilson's Snipe		Marsh Wren	
Spotted Sandpiper		Sage Thrasher	
Willet		Robin	
Greater Yellow-legs		Pipit	
Lesser Yellow-legs		Loggerhead Shrike	
Least Sandpiper		Audubon's Warbler	
Dowitcher		Yellow-throat	
Western Sandpiper		Western Meadowlark	
Marbled Godwit		Yellow-headed Blackbird	
Sanderling		Red-winged Blackbird	
[illegible]		Bullock's Oriole	
Black-necked Stilt		Brewer's Blackbird	
Wilson's Phalarope		Savannah Sparrow	
Northern Phalarope		Desert Sparrow	
California Gull	5	Brewer's Sparrow	
Ring-billed Gull		White-crowned Sparrow	
Unidentified Gulls		Song Sparrow	
		Rock Wren	1

Anaho Island Inspection Trip
July 6, 1951

10:00 am to 3:00 on island
Visited nesting islands - did not go around island
Participants - Marshall, Dr. Frank Richardson, Univ of Nev.; Vincent Mowbray, bird bander from Reno and ~~former~~ Univ of Cal. Zoology graduate; and Ted Frantz, student of Richardson.

White Pelicans - Counted nests in those 3 colonies where nest building and egg laying was not far enough along for a count last time. ~~Count of nests brought~~ a complete count of nests for the year stands as follows:

Colony	no nests	Colony	no nests
1	1224	7	310
2	379	8	89
3	2476	9	218
4	625	10	125
5	95	11	91
6	18	Total 11	5650

Total
5650
nests

A count of young was made. The young were ~~in~~ ~~of~~ 7 divided between 7 pods and the 3 colonies. Largest pods and almost all of the young were in 4 pods at the base of the cliffs. These 4 pods joined together & seperated in various combinations upon being disturbed. The large numbers in a group made counting difficult. The count was as follows:

Pod

1 – 70 } at waters edge – most fully grown
2 – 70 } may have missed some of these
3 – 270 } just below next 3 pods – 2/3 grown
4 – 600 }
5 – 1100 } Pods highest on island 3/4 grown
6 – 1400 }
7 – 68 at waters edge 1/2 grown

Colony –

5 – 61 }
6 – 23 } up to 1/3 grown
7 – 80 }

3742 young total

no additional colonies had been started since the last (May 15) visit. ~~and~~ Thus no nesting took place this year at the summit of the island.

The young pelicans at the edge of the island ~~had abs~~ were almost adult-like in appearance while in the colonies where the nest count was made some egg hatching may still have been scheduled. Colony 7 had 11 eggs still unhatched, and some may have been fertile. Some of the young in the 3 ~~new~~ newest colonies appeared to have been recently hatched while others in the colony moved about within the nesting site. ~~May~~ a large proportion of the nests had no young or eggs but appeared to have been used this year. No. of young + eggs in comparison to nests in these 3 colonies as follows:

Colony

~~7~~ 5 - 95 nests, 61 young.
6 - 18 nests, 23 young.
7 - 310 nests, 80 young + 11 eggs.

Mowbray, who had his own bands and a banding permit banded 150 young white pelicans with the assistance of Dr. Richardson. So few fish were found around the colonys that no check was made of these. I didn't see any. Dr. Richardson reported seeing some carp, a cui-ui and a number of unidentified fingerlings coughed-up by one bird.

Double-crested Cormorant — ~~Got~~ ~~to~~ a little too late to count young, as all but about 50 left the nests and were in the water. They were indistinguishable from adults. Made a count of cormorant nests thought to have been used this year. Results as follows: Worked from S. to N.

Colony	Nests	Dead young	
1	192	16	
3~~2~~	363	21	
2~~3~~	495	46	
4	124	1	
5	126	14	about 50 young left in nest here.
5	1300	98	

California Gull - Counted live young from rocks above colony. Total came to 684. ~~At least~~ around 100 or more dead were present throughout. Some of the young could already fly.

Caspian Tern - ~~At~~ 15 adults were counted and 4 or 5 young.

Blue Heron - 4 young out of most nests but found 4 nests with young which may not have been counted last time.

Other Birds - Around 50 canada geese along edge of island between pelican and gull colonies. Didn't go around island.

Raven - 2 over island

Amer. Merganser - about 15 near the Pyramid.

Western Grebe - 25 or so near the Pyramid.

Turkey Vultures - 1

Rock Wren - ~~Sent~~ heard singing

Canon Wren - One or 2 heard singing & calling.

Western Meadowlark - One flushed from alkali weed near edge of island.

Mowbray visited the island on May 22, 1948. ~~This was~~ with a class of Univ. of Calif. students headed by Hardy Fisher. Mowbray's notes reported approx 1,000 Calif gull nests present at that time (estimated, not counted). Also 50± Caspian tern adults in gull colony, but no nests as yet or evidence of nesting. His notes indicated the cormorant colonies were as large or nearly as large as at present. No counts were made, however.

Trips to the Island in 1952 were made on May 18, July 1, and July 23. Information obtained reveals that there were 5,862 white pelican nests in 15 colonies that contained 4,053 young. There were 710 cormorant nests in 6 colonies. Also there were 1,500 California gull nests in one colony that contained 1,400 young.

Data gathered on each species is as follows:

White Pelican. The number of white pelicans using the area was about the same as in 1950, or slightly above last year. Yet there were no colonies present at the summit of the island as in 1950. Nesting was more advanced in the colonies at higher elevations while the reverse was true in 1950. In 1951 there was little correlation between nesting stages and elevation. On the May 18 trip a count of nests was possible in most of the colonies. Those that remained were not sufficiently advanced for a count at that time and were counted on July 1.

The count of young was made on July 1. Inventory techniques and dates of counts were like those made last year. Because only half or less of the adults are present at any one time, the nest count serves as the best indication of the size of the breeding population. Assuming two adults to a nest, this would place the nesting population for this year at nearly 12,000 adults!

Double-crested Cormorant. The cormorants didn't do so well this year. These birds nest right on the shoreline, a fact which caused the flooding out of many nests from rising water levels. Two new colonies were established; each contained less than 50 nests. One w as in the gull colony and the other on the peninsula opposite the gull colony. Laying was not yet complete by May 18 and by the time of the following trip on July 1, most of the young had left their nests. The nest count was made on July 1.

Canada Goose. One dead young was found on the island. Around 100 m
moulting adults were present off-shore from the island.

California Gull. A nest count, made on May 18, showed about the same number of nests as last year. However, the high mortality of young that occurred in 1950 and 1951 did not exist this year. As usual, adult gulls worked over the pelican and cormorant colonies while we had the parents scared off. They ate eggs, disgorged fish and on several occasions were observed killing young pelicans for a few choice parts, after which the rest was left.

Caspian Tern. The tern colony in the gull colony is just barely hanging on. Eight young were counted on July 1.

Other Birds. Other birds seen on, or just off, the island includes western grebes, great blue herons, one raven with an egg in his bill, rock wrens, canon wrens, house finches, 18 American mergansers, a loggerhead shrike and one red-tailed hawk.

Food and Cover

On May 18 chub (Siphateles obesus) was the dominant fish found disgorged by young pelicans. Along with the chubs were small quantities of carp and several Sacramento perch (Archoplites interruptus). By July 23 these birds were consuming almost 100% carp. Cormorant foods ran about the same.

Trips to Anaho were made on June 18 and July 6 in 1953. The absence of a May trip prevented a nest count on white pelicans. However, 3,803 young pelicans were counted. Also, six colonies of double-crested cormorants contained 1,389 nests and 3,000 young. The 1,500 California gulls nests weere in one colony with 900 young.

Information by species follows:

White Pelican. This species again nested this year from the shore of the Island to the summit, 400 feet above the level of the lake. There was

little correlation this year between nesting stages and elevation. The count of young, July 6, may have missed some which were in the water. This count was made about a week late.

Double-crested Cormorant. This species had a record number of nests and produced a record number of young. Colony sites were the same as last year.

Canada Goose. No evidence of this species nesting on the Island was found. About one mile south of the Pyramid a flock of 350 honkers was seen. A flock of 25 was found just off the Island. Both flocks were seen on June 18.

California Gull. There appears to be little change in the nesting status of gulls from previous years. The Caspian terns which previously nested in the gull colony failed to show up this year.

The Island was inspected from the air by the Refuge Manager (Chester R. Markley) and Pilot-Biologist Ray Glahn on April 21, 1954.

The photos in the pictorial section, C-35 through C-42, were taken at this time. Initial observations indicate that the nesting colonies of white pelicans have increased in size. No evidence of actual nesting was apparent from the air, but the birds were sitting at the nesting sites. An estimate of 7,000 adult birds on the Island was made.

The size of the pelican colony near the summit of the Island, is the best indication of an increase in nesting birds. There were 59 nests at this site in 1950. It was not used in 1951 or 1952. In 1953 this colony was not distinguished from others in the nest count data, but was about twice as large as in 1950. The aerial observations of April 21, 1954, revealed the presence of perhaps 250 pelicans, indicating that it may increase in size some 4 times greater than in 1950.

One of the purposes of the aerial reconnaissance was a check for evidence of disturbance by the public. The discovery of rainbow trout fishing in the Lake this spring resulted in increased fishing ~~k~~pressure and boat use, which had been negligible the past few years.

Anaho Island was visited twice during the period, first on June 24 then again on July 9, 1954. All of the important nesting species of birds were found present in about the usual numbers.

White Pelican. Nests were not counted but a count of 5340 young indicated the presence of a number greater than at any time since 1950 ~~(see tabulation of production data which follows).~~ Only one previous count has been higher. In 1944, Ray Alcorn recorded 5,417 young.

One of the primary objectives of the June 24 trip was the banding of young pelicans. Ed O'Neill, Manager, Salton Sea Refuge, has been interested in determining to what extent, if any, Anaho birds contribute to the wintering pelican population at Salton Sea. Mr. O'Neill was present on this trip and provided the bands for marking 566 birds.

Double-crested Cormorant. The number of nests found was the largest ever recorded, 1,443.

Great Blue Heron. These birds have always, in the past, nested in dead alkali weed along the lake shore. This year no nests were found in the alkali weed. Instead, the birds built on top of greasewood bushes farther inland. This is our first observation of the use of greasewood for a nest base. a total of 6 nests were seen

California Gull. There has been no noticeable change in the nesting population of gulls. Nest mortality and loss of young seems so high that the colony does not increase. Space limitation may be responsible, though crowding appears to be a tendency for nests are much more thinly spaced on the periphery. a total of 1500 nests were counted

Caspian Tern. Only a few nest within the gull colony. This year 17 Nests were concentrated at the upper limit of the nesting area away from the water. In the past they have tended to nest almost at the water's edge.

A trip was made to Anaho Island on April 8, 1955, by the Refuge Manager (Markley) and Biologist (Giles). It was too early for bird nesting, but an inspection trip seemed advisable in view of increased fishing activities on Pyramid Lake.

The principal nesting species, the pelicans, cormorants and California gulls, were concentrated on the nesting areas but in numbers smaller than are to be expected after the start of nesting activities. An estimated 3,500 pelicans, 500 cormorants and 1,000 gulls were present. Great blue herons, which nest in smaller numbers, were evidently out foraging for only one was seen.

Miscellaneous water birds were noted in minor numbers on the lake adjacent to the Island. Three Canada geese, 31 gadwalls, 32 redheads, and 210 coots were seen. Grebes and mergansers were also present.

One trip was made to the island on June 15 and another on June 20, 1955. On June 15 the Refuge Biologist was accompanied by Hal Roth, outdoor writer from Berkeley, California. On June 20, the Biologist was accompanied by Miss Nell Murbarger, writer and photographer, from Costa Mesa, California.

White Pelican. A total of 2,800 nests were counted. This is a reduction from previous years when nest numbers varied from 4,000 to 5,000 or more.

Double-crested Cormorant. There was a decline in this species also. A total of 1,080 nests were tabulated. A year ago the total was 1,443.

Great Blue Heron. Only 2 nests were observed and the usual congregation of adults fishing along the shore was lacking. This species has decreased also.

Killdeer. One adult, displaying the cripple-wing act, was seen. However, the nest or young were not found.

California Gull. Two thousand adults at the nests were counted. This is somewhat more than the usual number. High juvenile mortality is again noted for the number of young was small in comparison to nest depressions and adults present.

Caspian Tern. Six nests were found in the gull colony. Nearly every year a few of these terns nest with the gulls.

The Refuge Manager and Pilot-Biologist Ray Glahn made an aerial reconnaissance of Anaho Island National Wildlife Refuge on April 23, 1956. The white pelicans, double-crested cormorants and California gulls had started nesting activities. Eggs of the white pelicans could be observed from the air. It was estimated that 8,000-10,000 white pelicans were in the colony, or about the same number recorded last year. A ground inspection on May 2 showed that thepelican eggs on the rookery at the lowest elevation were beginning to hatch. No hatching was in evidence at the higher pelican rookeries. Eggs were also present at both the gull and cormorant rookeries but no evidence of hatching. Considerable evidence was present of gull depredation on the eggs of both the pelicans and the cormorants. For this reason, public visitation, even for official purposes, should be at a minimum. It was noted that even boat traffic in close proximity to the Island causes cormorants to leave their nests to the destructive foraging of the gulls. The pelican rookeries appear to be a sufficient distance inland to offer a buffer against disturbance by boat traffic.

Anaho Island was visited on May 23, June 6, and June 27, 1956.

On May 23, eleven eared grebes were found just south of Anaho Island. Thirty-five Canada geese were found loafing along the shore on that date,

and on June 27 about 200 moulting Canadas were found there.

White pelicans nested in three general locations--atop the Island, the main colony on its usual terrace on the northeast side of the Island, and about 400 yards below that largest colony. It was interesting to note that the latter colony--a new one this year--began hatching three weeks before the main colony. There was a slight increase in the size of the colony over a year ago. There were an estimated 3,600 nests.

Double-crested cormorants nested in about the same numbers as a year ago. There were three colonies along the east side--one of 330 nests, one of 560 nests, and 220 nests in the third colony, for a total of 1,110 nests. This compares with 1,080 nests tabulated a year ago.

Great blue herons nested about the island. Three nests were found in the new, lowermost colony. The most herons seen during any visit were 14 observed on June 27.

The California gull population was estimated to be 2,600 at the nests, and there were an estimated 1,750 nests. This is an increase over previous years. Young were seen in the nests on June 6.

Caspian terns again nested within the gull colony. Eleven nests were found on June 6.

Anaho Island was visited on May 15 and June 1, 1957. The white pelican nesting population was smaller than last year, and pelicans that had nested atop the Island did not do so this year. There were just two colonies, the large one that contained approximately 2,400 nests, and a colony just below the main one that was new last year. It included 400 nests.

Double-crested cormorant nests increased. They nested in three colonies totaling an estimated 1,580 nests. This compares with 1,080 estimated last year.

Great blue herons that nest on greasewood clumps within the "new" pelican colony were more abundant. Where three nests were found last year, eight were seen this summer.

The California gull population increased from 1,750 nests last year to an estimated 1,950 this year. The first yound had appeared on June 1st.

No Caspian terns were found nesting within the gull colony this year.

Five visits were made to Anaho Island in Pyramid Lake during the nesting and brooding season in 1958. The Island was inspected on April 16 by air. Visits by boat were made on April 26, June 17 and 20, and July 23.

The white pelican population increased quite considerably over last year. There were four colonies present which contained an estimated total of 4,700 nests. Some 6,400 young were counted on the island in July.

On April 16, pelicans were in the process of nest building, and by April 26 roughly 65 percent of the nests contained two eggs. On June 20 pods totalling 4,300 young were observed. An additional 1,100 nests containing young and eggs were noted to form the basis for the foregoing production figure. During the July 23 visit, 4,400 young were counted, and it was apparent that some of the earliest hatched young were already awing.

The locations of colonies and nest sites shift somewhat each year. This year nesting was more or less continuous along the high terrace where the majority of the pelicans have nested for the past four years from the south to the north end.

A new colony of 150 nests was found at the north end of the tufa ridge which extends to the northeast at the north end of the Island. An aerial photograph outlining the 1958 nesting colonies is on file.

Double-crested cormorants nested in just one general location. The colony contained an estimated 1,600 nests that produced about 3,000 young.

Cormorants were incubating on April 25, and by June 20 500 young were afloat, and another 2,000 young were present in and about the nests in various stages of development. A group of 300 new nests containing eggs were found immediately adjacent to the north end of the previously established colony at that time. Total cormorant production for the season is estimated at 3,200.

The California gull colony was located on the south shell-sand beach as in past years. Nest building was just beginning on April 25. An estimated 1,700 nests, a 13 percent decrease from a year ago, were observed in June. On June 20, 3,000 young were counted, most of which were one-third grown. An equal number of adults were present. By July 23, many of the young were awing, and only 550 adults and 600 young just reaching flight age remained in the nesting area.

No Caspian terns were observed at the gull colony as had been the case in the past.

Great blue herons nested in greater numbers than in the past. A colony of 33 nests was found along the northeast ridge where the new pelican colony was established.

A few Canada geese were observed on the Island. Whether any nesting occurred is not known.

During 1959 six trips were made to the Anaho Island Refuge situated in Pyramid Lake from May to July 30. Use of the Island by colonial birds which nest there appeared to be on a par with that of recent years.

Pelicans commenced to show up at Anaho in March but little nesting by this species was observed until late May and early June. A total of 3,500 young pelicans were raised on Anaho this year.

Approximately 1,000 cormorants were raised on the low cliffs on the

east shore of the island. A number of dead cormorants about 1/3 grown were observed in the nests in mid-June. Cause of their demise could not be determined.

The California gull colony on the south shore prospered and approximately 2,000 active nests were noted in early June. Caspian terns nested in moderate numbers also and also a few blue herons. A few Canada geese were observed on most trips, but production was limited to a small number of broods.

On June 26, a banding party composed of Refuge Manager Ed O'Neill and Biologist Kridler from Sacramento Refuge, Mr. Fred Gallup of Escondido, California, and Managers Kiger and Hein attached bands to 500 pelicans, 326 California gulls, 90 cormorants, and 2 Caspian terns. Messrs. O'Neill and Gallup had banded there previously.

Banding data on pelicans banded at Anaho Island in former years reveal little or no erratic movement. Virtually all recoveries have been from an area directly to the south. Nearly all of 50 returns from previous banding are from Nevada, California, and Mexico, with the exception of single returns from Texas, Idaho, and Utah.

An increasing trespass problem is developing at Anaho Island as boat and water ski enthusiasts using Pyramid Lake multiply rapidly.

On May 4, 1960, aerial photos were obtained which were extremely useful in establishing an accurate nesting population. An actual count of pelicans at nest sites made from the photos indicated 3,468 nests on the lower slopes--additional nests situated on top of the mountain brings the total to approximately 3,600 nests.

A similar photo of the cormorant rookery revealed a total of 1,095 active nests on May 4. The California gull colony contained approximately 2,000 nests. No Caspian terns were noted. Great blue heron nests numbered 50.

A visit to the Island on May 26 revealed that most of the pelicans had hatched and the cormorants were also mostly hatched with some half-grown. On that date the eggs in approximately one-half of the California gull nests were hatched.

On the visit to the Island on June 12 it was revealed that a large percent of the young cormorants were dead in the nests. The size of the dead young varied from newly hatched to one-half grown. Considerable speculation as to the cause of this loss failed to develop any plausible cause for this loss. Some renesting of cormorants was noted on cliffs just north of the main rookery. This is the second successive year an appreciable loss has been observed on the nestling cormorants. Heavy lice infestation at the nests suggests this as a possibility. Efforts to determine cause of loss will be intensified next season.

On July 29 some 4,000 young pelicans were estimated to be reaching maturity. A few very young pelicans were noted on that date also. All cormorants had left the rookery by late July and the California gulls were also dispersed from their nesting colony.

A check of the pinnacles at the north end of Pyramid Lake on July 29 revealed that a die-off of nestling cormorants had also occurred there earlier in the summer.

Contacts with the Indian Warden on Pyramid Lake disclosed that public use on the lake continues to increase with from 100-200 boats on the lake on good weekend days. Due to mentioned wind and boat problems, Sunday patrol of the Island during the critical nesting and early brooding period was not pursued to the extent desirable. Excessive exposure of the young cormorants due to motor boats keeping the adults from the nests has been considered as a plausible cause of nesting losses.

This island was visited on March 24 and again on April 21, 1961. Following is an account of primary nesting species:

White Pelican. On March 24 only 150 pelicans were observed on or near the island. On April 21, an estimated 4,000 were present and nesting was commenced. The largest nesting group was located below the bench land on the north ridge. Most nests contained two eggs. A smaller nesting group was present farther north on the point of the ridge. This group had only started to "stake out" nests. It is planned to obtain a series of aerial photos on May 10 to utilize for detailed inventory of pelican and cormorant nests.

Double-crested Cormorant. On March 24, 900 cormorants were present at the usual rocky nesting cliff on the east side of the island. Only one egg was observed on that date. On April 21 only 260 cormorants were present and incubation was in progress. As this is considerably below the normal number nesting on the island it is possible part of the nesting birds have relocated in the pinnacles at the north end of the lake.

California Gull. At the time of the March visit, gulls were scattered over the lake expressing no apparent interest in nesting. On April 21 approximately 2,200 gulls were present at the normal nesting location on the sandy beach at the south end of the island. Only a few had started laying.

Great Blue Heron. Approximately 75 herons were present at the north point in March and on April 21 nine active nests were located. The nests contained 4-5 eggs each. Several other nests had been started.

Other Birds. Other birds noted on or near the island included the eared and western grebe, common merganser, coot, gadwall, bufflehead, Canada goose, common loon, western willet, house finch, rock wren, killdeer, white-crowned sparrow, red-winged blackbird, Say's phoebe, and barn swallow. Rather rare

sight observations included a black brant observed March 24 and a mockingbird on April 21.

Aerial photographs were obtained on May 8, 1961, of the nesting pelicans and cormorants and gulls on Anaho. An actual count from these photos indicated 3,650 pelicans and 764 cormorants virtually all of which were on nests. A visit was made to the Island on June 2 to determine the nesting progress. At that time pelican production was well advanced with nests containing eggs and young up to one-third grown. This year the pelicans did not nest as usual along the bench on the east side but concentrated on the ridge extending to the north. No pelicans nested on top of the "mountain" as in recent years.

The double-crested cormorants experienced the third consecutive year of poor nest success. While there is no conclusive evidence to pin point the reason for failure, the finger of suspicion is directed more and more to the boat traffic in the area. The nesting colony is located on a cliff adjacent to water on the east side of the island. On several occasions it was noted that a boat passing offshore within 400-500 yards would flush the birds off their nests resulting in eggs and young being exposed to a hot sun and gull predation. A breeding population of 2,000 birds was observed at the nesting area on June 2 and approximately 1,000 nests were occupied, mostly with eggs, some just hatching. At least 50 gulls were in the area upon arrival. They pounced into the nest area immediately upon departure of the cormorants and began gorging themselves on regurgitated fish. From fish they concentrated on the eggs at which time the observers vacated the area. That is the general pattern of gull activity when the cormorants are disturbed. A later observation in June indicated nesting efforts were largely unsuccessful.

The California gulls are also predaceous on pelican young and eggs as observed first hand. In one instance, a gull was observed to peck a hole through the back of a young pelican that was approximately one week old and weighing almost a pound. Also noted were gulls breaking pelican eggs and eating only the yolks.

The gull colony consisted of 2,150 adult birds as counted on an aerial photo. On June 2, hatching was just beginning.

About 50 Caspian terns again made a nesting attempt within the gull colony but success is unknown. Biologist Marshall reported almost total egg reduction in the tern colony during his visit there.

A total of 7 active great blue heron nests was observed in June. These birds nest along the east side of the rocky ridge at the north end of the Island.

Total production for Anaho Island birds is estimated as follows: pelicans 3,000; California gulls, 2,000; great blue herons, 20; cormorants, 50.

Rattlesnakes are quite common on the Island along with several species of lizards and mice.

Pleasure boating continues to increase in popularity on Pyramid Lake adding to the hazards of the nesting birds on Anaho Island. In just one year's time the peak daily boat traffic on weekends at the Lake increased from 200 to 400.

The island was inspected by plane on April 5, 1962. Numbers of white pelicans, double-crested cormorants, California gulls, and great blue herons appeared about equal to those present last year.

Of considerable interest and importance is the move of the nesting cormorants to high cliffs on the west side of the Island. Cormorants had been nesting at a low cliff area close to the water on the east side of the

island in recent years. Here they were subject to frequent disturbance by boaters. It seems likely the degree of disturbance will be less at the present location, even though the cormorants are very easily frightened from their nests.

It was observed that cormorants were also nesting on several of the rock "pinnacles" at the north end of Pyramid Lake.

Nesting activity appeared normal on April 5. Cormorants were obviously incubating and the gulls and pelicans were on the regular nesting grounds, indicating nesting activity was commencing.

To provide for consistency in evaluating the nesting populations of colonial watervirds at Anaho Island, aerial photos were obtained for the third consecutive year at all nesting sites on May 24, 1962. The quality of the photos was slightly inferior to those obtained with identical equipment in 1960 and 1961, (airplane and K-20 camera--plus the invaluable pilot service and technical advice of Pilot-Biologist Glahn). However, the photos are adequate to provide census data for record purposes.

Pelicans. The aerial photos indicate 3,235 active pelican nests on May 24. This is based upon crediting each pelican at the nest site with a nest. Ground observations indicate this to be a rather solid basis for estimate, as there does not appear to be more than an average of one pelican on the ground for each active nest at this critical period in the production cycle.

On May 29, 1962, Ray Alcorn of the Predator and Rodent Control Division and Manager Wiseman ran a quick count of active pelican nests, tallying 2,198. On this date some nests had been terminated--possibly due to gull predation. Several stages of production were evident on the May 29 date. Some young were two-thirds grown with all intermediate gradations down to fairly new

eggs noted. Localization of the several chronological stages of production was evident. Groups of eggs at the pipping stage, groups of newly hatched young, groups of young near traveling stage, etc., were in clear-cut groups with little mixing within the individual groups.

An interesting observation of the ground reconnaissance was the relation of young pelicans in individual broods or clutches. Two newly hatched young per nest were fairly common, although one young per nest was the rule--even in nests of newly hatched birds. It was concluded that survival of two pelicans from any one clutch was a rare situation--and no positive evidence of its occurrence was noted on this thorough ground survey of all nests. Within a few days one of any 2 or 3 young pelicans which occur in a single brood becomes dominant and the remaining bird (or birds) was soon starved, or tormented, to death. By the time the young weighed a pound or more, only one live bird per nest could be found. From this it may be concluded that the number of nests X 1 = maximum production.

It seemed fairly apparent that renesting of early nests lost to gull predation were compensated by renesting. Coordinating the counts of young pelicans found in pods during July with the aerial nest census data, it is apparent that pelican production this year was approximately 3,000 young.

As part of a pesticide residue study, Mr. James O. Keith of the Research Branch commenced work on a continuing study to determine the incidence of, and other data related to, the effects of pesticide residues in pelicans. The data obtained from the Anaho Island colony will be related to three other pelican nesting colonies located at Lower Klamath, Tule Lake, and Clear Lake Refuges in California. The relative isolation of Anaho Island from intense pesticide control activities will serve as a valuable check or control area .

Deails of the study included the collection of adults and eggs during May for analysis for pesticide residue. The results of these analyses have

not yet been received. Banding and color marking of 167 young pelicans near flight stage was accomplished to aid in establishment of migration and travel routes whereon pesticides might be encountered. A verbal report of several "pink-winged" birds at Malheur during late summer indicates some roving of the young prior to migration.

Dyeing, or color marking, was performed a little too early to be fully effective. Continuation of feather growth after coloring almost completely obscured the dye except for the wing coverts on many birds. This indicates the necessity of waiting until the birds are ready to fly before color marking.

Cormorants. The cormorant nesting colony removed itself from periled status this season by moving to a new nesting location on the west side of Anaho Island. Several successive bad nesting seasons had cuased some concern about the status of the cormorant--in spite of the low esteem it enjoys in some circles. At their former nesting location on the low bluff adjacent to the east shore of the Island, the cormorants had suffered severe losses of young for three successive seasons--presumably as a result of molestation by boaters and death of young by exposure.

In the high and rugged cliffs now being used by the cormorants, there is no reason for concern about human molestation. A ground check of a low portion of the new nest location on May 29 revealed 216 nests. The young from 136 nests had already matured, some were near mature, and 60 of the nests contained a total of 669 eggs. The total of young in 20 nests was 42. An aerial photo count of nests and adults on the high, rugged, and fairly inaccessible, cliffs revealed another 600+ nests.

California Gull. On May 29 there were a total of 2,500 California gulls at the sand beach nesting site on the south shore of the Island. A later

ground check of the area on July 11 indicated no less than 3,500 young California gulls produced--many of these already flying and out in the water near the island.

Predation on nests of pelicans, cormorants, and Caspian terns by this species continues to be serious. Observance from concealment of a group of pelican nests fromwhich the adults had been frightened indicated the voracious gulls move in with a decided preference for fish remnants lying about the nest; eggs seem to be next on the list, and on occasion the gulls boldly peck into the body cavity of the helpless young. The adult birds seem to be successful in preventing serious predation of both young and eggs to a degree. However, the ground check of nests on May 29 revealed some young with wounds a day or more old indicating the gulls do get to them on occasion even without human disturbance (or assistance).

Caspian Tern. Caspian terns seem to be on the upswing even though they nest in the midst of the predaceous gulls. A total of 250 adults was noted on nesting locations on May 29. On July 11 and incomplete count of young terns indicated at least 200 were produced. The young of both terns and gulls head for the rocks and brush when disturbed, with the terns definitely winning the race for concealment.

Great Blue Heron. On May 29, 1962, there were 56 young herons counted in nests in large greasewood clumps on the south side of the island. The young were one-half to two-thirds grown, averaging 2.5 birds per nest. In several nests one individual had been evicted by his stronger brothers and sisters to die a death of starvation.

Canada Geese. One brood of six young was present on the island on May 29.

An ecological study of Anaho Island has been proposed as a research project by Mr. Vern Woodbury of the University of Nevada. Mr. Woodbury

has been teaching in Reno and plans to conduct his studies at Anaho Island on weekends and during the summer. A prospectus for this study has been presented to, and approved by, the Regional Office. Mr. Woodbury plans to commence field work in 1963. He accompanied and assisted Bureau personnel one day with the pelican banding and coloring project.

Anaho Island Inspection Trip

May 18, 1952 - On island 9:30 to 12:30
Participants - Giles, Marshall, Ray Alcorn & son.
Schedule - did not go around island, but visited colonies

Western Gulls - Heard one.

White Pelican - Estimated 5,362 nests in 7 colonies as follows:

Colony I -	99
II -	9
III	224
IV	149
V	190
VI	23
VII	199
VIII	2830
IX	1281
X	358

Very difficult to ~~determine exact number of nests~~ obtain a good count in the two largest colonies. Largest and most progressed colonie at base of cliffs. These had young which were not quite ready to leave the nest. Colonies extended further south around base of cliffs than previously. One up from gull colony.

Double-crested Cormorant - Four colonies at same locations as last year. In addition 9 cormorant nests on the gull colony and probably some yet to be made. Laying not yet complete in the big colonies so nest count left for next time. Young in 3 or 4 nests.

Great Blue Heron - Didnt make nest count, but adults which flew up indicated from 10 to 20 nests present

Canada Goose - Saw 9 adults fly from shore & one dead young on island.

Calif. Gull - Laying probably not complete so nests should be counted again ~~as~~ next time. Alcorn counted 1433 nests with eggs.

Caspian Tern - Several seen.

Raven - One seen with egg in bill.

Rock Wren & House finche heard

Fish at pelican colonies mostly chub with smattering of cui-ui, carp and several Sacramento perch.

Anaho Is. Inspection Trip

July 1, 1952 - On island 11:00 AM - 4:30 PM
~~Participants~~ Observers - Marshall & as attached.
~~Route~~
Schedule - did not go around island but visited all colonies

White Pelican - Data from last visit and this place nest count as follows:

Colony I	99
II	9
III	224
IV	149
V	190
VI	23
VII	199
VIII	2830
IX	1281
X	358
XI	50
XII	250
XIII	65
XIV	63
XV	72
	5862

A count of young ran as follows:

Pod 1 – 40
2 - 49
3 - 18
4 - 50
5 - 53
6 - 40
7 - 250
8 - 28
9 - 9
10 - 66
11 - 1000
12 - 150
13 - 1200
14 - 800
15 - 300
4053

young in a few colonies still in nest. Hatching virtually complete. No colonies above base of cliffs. Calif. gull observed piercing and eating egg and picking up and killing small young when adults were frightened away from colonies.

Mortality appeared to be above normal. In colonies on north exposure this was particularly true. 74 dead young pelicans about 2/3rds grown were counted in one colony estimated 2 acres in size.

Double-crested Cormorant

Young had abandoned most nests. Many nests appeared to have been flooded out by the rising waters of the late. ~~Actual~~ This years nests estimated ~~at~~ to number only 710 as follows.

Colony	1	10
"	2	340
"	3	190
"	4	120
"	5	50
		710

Colony 1 new + on ~~edge~~ peninsula opposite gull colony. ~~a pair~~

Calif. Gull

1400 young estimated present

Other bird noted include rock wrens, canon wrens.

Caspian tern

6 young

Anaho Island Trip

July 23, 1952 - On island 11:00 AM - 3:00 P.M.

Participants - Mrs. Marion H. Beadle, Pasadena Calif., Dr. Richard G. Miller, Laura E. Mills, Mr. & Mrs. Gus Bundy RR 1, Carson City. + RB Marshall

Schedule - Trip purpose to obtain photographs. Visited all colonies and made boat trip around island.

White Pelican - Around 1500 young still on the island. Consuming almost 100 % carp. Only other fish noted were 3 bull heads

Double-crested Cormorant - A few young still in nests but all but about six of these went into the water upon close approach.

Calif Gull - many of the huge number of young now flying, but still at the colony or in the water nearby

Amer. Mergansers

18 flightless in water off south end of island.

Other Birds

Rock Wrens ± 1 Loggerhead Shrike and Red-tail Hawk

Anaho Island Inspection Trip
June 18, 1953 - 10:00 AM - 2:30 PM

Participants - Giles, Marshall & Mr. & Mrs. Earl A. Marshall of Portland, Ore.

Schedule - Counted cormorant nests and young, and gull young. Too late to start pelican nest count and too early for pelican ~~adult~~ young count.

White Pelican - Young count next trip. No notes made.

Double-crested Cormorant - Progressing S. to N. along edge of shore. Colony 1 - 714 young, 282 nests including 23 nests with eggs only. Most nests had young almost fully grown. Colony 2 - 952 young, 460 nests including 21 with eggs only. Colony 3 482 nests including 15 with eggs only. 1246 young. Colony 4 68 nests including 9 still without eggs

14 with egg only. 98 young at earlier growth stage than former colonies.
Colony 5 77 nests, including 46 with egg only and 3 empty. 26 ~~young~~ small young. Colony 6. 20 cormorant nests with egg in center of gull colony.

Calif. Gull. – Estimated 1500 adults at colony ~~on~~ on ground & in water. 1000 young + a few nests still with egg only.

Blue Heron – ~~about a dozen~~ 13 nests. ~~See LeBoy's notes.~~

Canada Goose. 350 along edge of lake about a mile S. of Pyramid Is. 25 at edge of island.

Anaho Is. Inspection Trip
July 6, 1953

Participants - Marshall, Fred Wright, Holart Brownell, Hollywood Photographer,

Schedule - Trip mainly for assisting Mr. Brownell in getting movies of bird for picture on Nevada.

White Pelican. - In 8 ~~birds counted~~ estimated a total of 3803 young. It appeared that this count may have been short because of young which ~~had~~ ~~the~~ were already in water.

Double-crested Cormorant. - Too late to make young count as most off the nests.

Calif. Gull - Estimated 840 young

Refuge Manager, Salton Sea Refuge, Brawley, California

July 13, 1954

Refuge Manager, Stillwater Refuge, Fallon, Nevada

White Pelican Banding, Anaho Island

A return trip was made to Anaho Island on July 9. At that time the carcasses of young pelicans found were examined for bands. The following were recovered:

509 - 04183
04283
04390
04410
04527
04592

Previous experience would indicate that the amount of mortality has not been excessive.

If you want the bands, please let us know and we will send them along.

Chester R. Markley

c.c. Regional Director (1-R)

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Refuge Manager, Stillwater Refuge, Fallon, Nevada DATE: April 27, 1955

FROM : Refuge Manager, Salton Sea Refuge, Brawley, California

SUBJECT: White Pelican Banding, Anaho Island, 1954

Thanks for your memo of April 11th.

There is always a fairly large number of young pelicans which never reach flight age for numerous reasons.

Unless a considerable number remain to be found the mortality at Anaho is much lower than at Salton Sea.

Since our last report to you we have received a return from Sutter Nat'l Wildlife Refuge of an Anaho Island pelican found dead (shot), November 1, 1954.

When you are finished with the colored transparancies kindly return them to us.

Best regards,

Edward J. O'Neill

Hi — this boy Karl is still in hopes that he will get a transfer some day for you — to work for bear getting certainly — We've had storms lately — the wind blew all over pelicans probably yesterday away

Anaho Island Trip - June 24, 1954

White Pelican: 3,000 + young estimated; a few in water swimming; hatching virtually complete. Banded 566.

Cormorant: Two large colonies on east side. About 15 nests in gull colony on south shore (noted last year also).

Calif Gull: 1500 adults estimated

Caspian Terns: 17 counted on upper edge of Gull nesting area.

American Mergansers: About 20 along or on SW shore of island.

Mallard: One brood 7I off south edge of island

Western (~~solitary~~) sandpiper:- rocks on E. shore; one seen.

Canada Geese: several noted off south shore

Personnel: Fred Wright
Markley + son
Milton Wakey
Giles

Anaho Island Trip - July 9, 1954

Personnel: Fred Wright
Hobart Brownell
Steven Czeirnack
Gene McDowell
Giles

White Pelican: Final count of young - 5,340:
140 young in colony on top. Mortality on top very high with as many carcasses as live young. Probably 300 nests on top.

Cormorant: Nest count in 6 colonies

20
82
628
361
15
337
1443

All young left nesting area for water.

California Gull: colony not checked.

Food of pelican:
carp, chub, Sacramento perch, one 14" sucker.
Last visit regurgitated fish noted were entirely chub. (see May-August 1952 narrative report)

Turkey vulture: 4 noted; one perched on island's peak; 3 in air.

STILLWATER WILDLIFE MANAGEMENT AREA CHURCHILL COUNTY, NEVADA

Bird Census Check-list

DATE April 8, 1955 TIME A.M. UNIT Anaho Island

VEHICLE (Boat, Car, Plane) OBSERVER Giles, Markley WEATHER clear, mild. lake calm

Whistling Swan						
Canada Goose						3
W-fr. Goose						
Snow Goose						
Ross's Goose						
Mallard						
Gadwall						31
A. Widgeon						
Pintail						
G-w. Teal						
B-w. Teal						
Cinnamon Teal						
Shoveler						
Redhead						32
Ring-nk. Duck						
Canvasback						
Lesser Scaup						
Goldeneye						
Bufflehead						
Ruddy Duck						
Coot						210

Eared Grebe	6	Mourning Dove	
Western Grebe	6	Barn Owl	
Pied-billed Grebe		Burrowing Owl	
White Pelican	3500	Short-eared Owl	
Double-brested Cormorant	500	Common Nighthawk	
Great Blue Heron	1	Belted Kingfisher	
Common Egret		Red-shafted Flicker	
Snowy Egret		Downy Woodpecker	
Black-crowned Night Heron		Western Kingbird	
American Bittern		Ash-throated Flycatcher	
Least Bittern		Say's Phoebe	
White-faced Glossy Ibis		Horned Lark	
		Violet-green Swallow	
Hooded Merganser		Tree Swallow	
Common Merganser	6	Rough-winged Swallow	
Turkey Vulture	2	Barn Swallow	
Sharp-shinned Hawk		Cliff Swallow	
Red-tailed Hawk		Black-billed Magpie	
Swainson's Hawk		Raven	
American Rough-legged Hawk		Crow	
Golden Eagle		Mountain Chickadee	
Bald Eagle		Marsh Wren	
Marsh Hawk		Sage Thrasher	
Prairie Falcon		Robin	
Sparrow Hawk			
California Quail		Ruby-crowned Kinglet	
Ring-necked Pheasant		Water Pipit	
Virginia Rail		Cedar Waxwing	
Sora		Loggerhead Shrike	
Snowy Plover		Starling	
Killdeer		Yellow Warbler	
Black-bellied Plover		Audubon's Warbler	
Common Snipe		MacGillivray's Warbler	
Long-billed Curlew		Common Yellowthroat	
Spotted Sandpiper		Yellow-brested Chat	
Willet		House Sparrow	
Greater Yellowlegs		Western Meadowlark	
Lesser Yellowlegs		Yellow-headed blackbird	
Least Sandpiper		Redwing	
Dowitcher		Bullock's Oriole	
Western Sandpiper		Brewer's Blackbird	
Marbled Godwit		Cowbird	
Sanderling		Western Tanager	
Avocet		House Finch	
Black-necked Stilt		American Goldfinch	
Wilson's Phalarope		Savannah Sparrow	
Northern Phalarope		Black-throated Sparrow	
California Gull	1000	Sage Sparrow	
Ring-billed Gull		Oregon Junco	
Forster's Tern		Brewer's Sparrow	
Caspian Tern		White-crowned Sparrow	
Black Tern		Song Sparrow	

STILLWATER WILDLIFE MANAGEMENT AREA CHURCHILL COUNTY, NEVADA

Bird Census Check-list

DATE June 15, 1965 TIME _____ UNIT Anaho Island

VEHICLE (Boat, Car, Plane) OBSERVER Giles WEATHER cool, windy

Whistling Swan						
Canada Goose						100
W-fr. Goose						
Snow Goose						
Ross's Goose						
Mallard						
Gadwall						
A. Widgeon						
Pintail						
G-w. Teal						
B-w. Teal						
Cinnamon Teal						
Shoveler						
Redhead						
Ring-nk. Duck						
Canvasback						
Lesser Scaup						
Goldeneye						
Bufflehead						
Ruddy Duck						1
Coot						

Eared Grebe	7	Mourning Dove
Western Grebe	5	Barn Owl
Pied-billed Grebe		Burrowing Owl
White Pelican adults at nest	2800	Short-eared Owl
Double-brested Cormorant nests	1080	Common Nighthawk
Great Blue Heron nests / young	2	Belted Kingfisher
Common Egret		Red-shafted Flicker
Snowy Egret		Downy Woodpecker
Black-crowned Night Heron		Western Kingbird
American Bittern		Ash-throated Flycatcher
Least Bittern		Say's Phoebe
White-faced Glossy Ibis		Horned Lark
		Violet-green Swallow
Hooded Merganser		Tree Swallow
Common Merganser		Rough-winged Swallow
Turkey Vulture	6	Barn Swallow
Sharp-shinned Hawk		Cliff Swallow
Red-tailed Hawk		Black-billed Magpie
Swainson's Hawk		Raven
American Rough-legged Hawk		Crow
Golden Eagle		Mountain Chickadee
Bald Eagle		Marsh Wren
Marsh Hawk		Sage Thrasher
Prairie Falcon		Robin
Sparrow Hawk		
California Quail		Ruby-crowned Kinglet
Ring-necked Pheasant		Water Pipit
Virginia Rail		Cedar Waxwing
Sora		Loggerhead Shrike
Snowy Plover		Starling
Killdeer nesting probably	1	Yellow Warbler
Black-bellied Plover		Audubon's Warbler
Common Snipe		MacGillivray's Warbler
Long-billed Curlew		Common Yellowthroat
Spotted Sandpiper		Yellow-brested Chat
Willet		House Sparrow
Greater Yellowlegs		Western Meadowlark
Lesser Yellowlegs		Yellow-headed blackbird
Least Sandpiper		Redwing
Dowitcher		Bullock's Oriole
Western Sandpiper		Brewer's Blackbird
Marbled Godwit		Cowbird
Sanderling		Western Tanager
Avocet		House Finch
Black-necked Stilt		American Goldfinch
Wilson's Phalarope		Savannah Sparrow
Northern Phalarope		Black-throated Sparrow
California Gull adults at nest	2000	Sage Sparrow
Ring-billed Gull		Oregon Junco
Forster's Tern		Brewer's Sparrow
Caspian Tern nests	6	White-crowned Sparrow
Black Tern		Song Sparrow

4 cormorant colonies - 580 nests
290
170
40 → in gull colony
1080

Anaho Island Spring 1956

Anaho Island visited on April 23, May 2 and May 23.

Aerial inspection of April 23 showed eggs on pelican nests and active use of all pelican rookeries by the birds.

Ground inspection of May 2 showed hatching underway on one pelican rookery at lowest elevation. Birds appeared to be 2-3 days old. Hatching also taking place at cormorant rookery. Only eggs at gull rookery

Ground inspection of May 23 showed hatching taking place at all pelican rookeries. Hatching not started on gull rookery. Hatching continuing on cormorant rookery with many birds on nests. Pelicans still laying eggs, some hatching and oldest young about 24-26 days old. Predation of gulls on cormorant and pelican rookeries not as intense as noted on May 2. One young pelican regurgitated a 14 inch snake.

Anaho Island Spring 1956

[Anaho Island visited]

Young pelicans 3 weeks old are
feed fish 12-14 inches long.
Sutherland and Cy La Tour with
Refuge Mgr. on trip of May 23, 1956

C.K. Marbley

PS Approximately 2800 gulls
" 1200 Cormorants
" 10,000 Pelicans
colony population

Anaho Island Observations
Spring 1956

Anaho Island was visited on April 23, May 2, and May 23.

The aerial inspection of April 23 showed eggs on pelican nest and active use of all pelican rookeries by the birds.

Ground inspection of May 2 showed hatching underway on one pelican rookery at lowest elevation. Birds appeared to be 2-3 days old + Hatching also taking place at cormorant rookery. Only eggs at gull rookery.

Ground inspection of May 23 showed hatching taking place at all pelican rookies. Hatching not started on gull rookery + Hatching continuing on cormorant rookery with many birds on nest. Pelicans still laying eggs, some hatching and oldest young about 24-26 days old. Predation of gulls on cormorant and pelicans noticed not as intense

as noted on May 2nd. One young pelican regurgitated a 14 inch sunfish. Young pelicans 3 weeks old are fed fish 12–14 inches long.

Sutherland and Cy LaTour with Refuge Mgr on trip of May 23, 1956.

Chas Markley

P.S. Approximately 2800 gulls
" 1200 cormorants
" 10,000 pelicans
(colony population)
Chas

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Regional Director, Portland, Oregon

DATE: December 6, 1957

FROM : Acting Refuge Manager, Stillwater Refuge, Fallon, Nevada

SUBJECT: Recreational Development - Pyramid Lake (1-R)

We do not have enough information on wildlife use of Pyramid Lake to answer Mr. MacDonald's November 29 memo and Mr. Merriam's letter as completely as we'd like to. But we can make some suggestions concerning Anaho Island bird populations, and moulting Canada geese.

On Anaho, disturbance of nesting birds during April, May, June, and the first half of July is the important factor to think about. There are two steps that should be taken into consideration with increased public use to keep disturbance to a minimum:

1) better protection from trespass, and
2) establishment of buffer zones around three sides of the Island.

To help solve the trespass problem, a single strand of wire along beaches where landings can be made may be advisable together with adequate posting. And more active patrol will be necessary. Possibly Indian officers who patrol the lake now can be designated Deputy Game Management Agents to patrol the Island.

A buffer zone around the north, south, and east sides would be desirable, but we realize difficult to establish and maintain. Certain colonies are especially susceptible to disturbances that occur along the east side of the Island so it is recommended that no developments be made on the east shore of the lake adjacent to Anaho that would encourage use of that part of the lake by the public.

During June each year, more than 1,000 Canada geese gather in Pyramid Lake to moult, and are flightless at that time. They prefer the rather remote northeast corner of the lake, but some are distributed all along the east side south as far as Anaho Island. Restrictions on the use of parts of the lake during the moulting period would be desirable, but rather impractical. But, again, if developments along the northeast and part of the east shore north of Anaho were barred, public use would be discouraged.

Other wildlife use is negligible. A very few Canada geese have been known to breed there, but it holds little potential as a goose breeding area. From 1,000 to 2,500 ducks have wintered there, but it cannot be considered an important wintering area.

Comment by F.A. big prepared 11/22/57

R Laythe will comment Barnaby Comment Please

In reply refer to: L-7423 Refuges

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
REGION FOUR
SAN FRANCISCO, CALIFORNIA
180 New Montgomery Street

November 18, 1957

Mr. Leo Laythe, Regional Director
U.S. Fish and Wildlife Service
Bureau of Sport Fisheries & Wildlife
1001 N.E. Lloyd Blvd.
P.O. Box 3737
Portland, 8, Oregon

Dear Mr. Laythe:

This Service has been requested to assist the Bureau of Indian Affairs in preparing a Master Land Use Plan for the Pyramid Lake Indian Reservation. The objective is to make this scenic and unique area available for development to accommodate public recreation on a long-term lease basis. There appears to have been increasing pressure for arrangements for boating, water sports, camping, trailer parks, vacation home sites and for services associated with these and other activities.

Only on the basis of judicious assignment of appropriate areas can such a program operate in the interest of the Indians as well as in the long-range public interest.

As you know, this spectacular desert lake is one of very unusual interest, geologically, historically, archeologically and in other respects, notably the remarkable sport fishery for which it has long been especially noted. Other wildlife values of a high order may well merit serious consideration.

Very limited funds and personnel make it problematical how far this Service will be able to participate directly in the planning indicated. However even if largely in an advisory capacity it would be highly advantageous to have an expression of opinion from your agency regarding areas around the lake which should be designated for game management or preserves. Hunting privileges, if any, would, of course, be subject to limitations and conditions imposed by the Indians in their own interest.

Any information regarding the foregoing which you may be able to provide will be very much appreciated.

Sincerely yours,

Lawrence C. Merriam
Regional Director

Fed Aid
Refuges

Your File
L-7423
Comments on
Orig. letter
please
JTB

November 21, 1957

Mr. Lawrence C. Merriam
Regional Director, Region IV
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

This Bureau has long been interested in the Pyramid Lake area because of its National reputation from the standpoint of fishing. As you are aware, the bill authorizing the Washoe Project specifically provides for funds for the restoration of the Pyramid Lake fishery.

This Bureau is at the present time working with the Nevada Fish and Game Commission and the Bureau of Reclamation in the development of plans associated with the fishery aspects of the Washoe Project. These plans are still in the preliminary stage, but we shall keep you informed from time to time as they develop.

Mr. Barnaby, of this office, is a member of the Recreation Subcommittee, of the Pacific Southwest Inter-Agency Committee, and it probably will be mutually advantageous for him to discuss this matter with a representative from your office at the next meeting of the subcommittee.

In the meantime we shall give consideration to the areas around the lake which should be designated for game management or preserves, and shall then advise you as to our views.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

JTBarnaby:rms

P/C sent to Fed Aid & Refuges
for Comment on 11/21/57

Refuge Manager, Stillwater Refuge, Fallon, Nev. Nov. 29, 1957

Regional Refuge Supervisor, Portland, Ore.

Recreational Development - Pyramid Lake (1-R)

Attached is a copy of Regional Director Merriam's self-explanatory letter of November 18.

We would appreciate your opinion as to the need and possibility of such a development and particularly the measures that would have to be taken to protect our interests at Anaho Island.

Attachment

KFMacDonald:hh



B4/B5
A3/A4
A4
B5
ABC
FRONT
A3
B4
1
2
2
B4/B5
A3/A4

1958

H = Heron Colony
P Pelican Colonies
G California gull
C Cormorant

1167
1045
1600
591
4403 White Pelican
- 1167
3235

Barnaby

Anaho Island
Nev.

(1-R) February 14, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

With further reference to your letter of November 18, 1957 on the proposed recreational development at Pyramid Lake, Nevada our primary interest other than for fisheries would be the protection of the 248 acre Anaho Island National Wildlife Refuge which was established by Executive Order September 4, 1913. The bird colonies using this island have attracted photographers and ornithologists from all parts of the United States. During the 1957 season, for instance, this island provided nesting as follows:

White pelicans	2800 nests
California gulls	1950 "
Double crested cormorants	1580 "
Great blue herons	8 "

Members of our staff are meeting with the staff members of the Nevada Fish and Game Commission within the next month at Fallon, Nevada, at which time the subject of recreational needs and development at Pyramid Lake will be discussed.

Need

We will advise you further following that meeting.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

cc: Mr. Wiseman

KFMacDonald:jc

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Regional Director, Portland, Oregon DATE: April 4, 1958

FROM : Refuge Manager, Stillwater Refuge, Fallon, Nevada

SUBJECT: Recreational Development - Pyramid Lake (1-R)

Mr. Laythe's memo of March 27 refers to attached copies of letters to Regional Director Merriam, NPS, and Mr. Groves relative to Pyramid Lake recreational development.

The copies referred to were not received here. It is requested that additional copies be made up and forwarded to us.

George L Wiseman

George L. Wiseman

mailed
4/7/58

Anaho Isl
Jeun

Refuge Manager, Stillwater Refuge,
Fallon, Nevada

March 27, 1958

Regional Director, Portland, Oregon

Recreational development - Pyramid Lake (1-R)

Refuge file

Attached is a copy of George L. Collins' letter of March 4 relative to the subject matter. In Mr. Sutherland's memorandum of December 6, it was suggested that consideration be given to establishing a buffer zone around the north, south and east sides of Anaho Island. This is in line with Mr. Collins' proposal and we would suggest that you follow through on that and decide the extent of the buffer zone that would be required and if possible, show this on a sketch map in order that we can request the Park Service to provide for this added protection in their recreational planning.

Attached are copies of our letters of this date to Regional Director Merriam, NPS and Mr. Groves. It is suggested that you confer with Mr. Groves in order that he may be currently advised as to our thinking and that we may benefit from any suggestions he may have.

Original signed by
LEO K. LAYTEN

Attachments

KFMacDonald:jc

RVD

SAB

Anaho Isl
Deed

(1-R)

March 27, 1958

Refuge file

Mr. Frank W. Groves, Director
Nevada Fish & Game Commission
Box 678
Reno, Nevada

Dear Mr. Groves:

In our letter of March 7 to Regional Director Merriam, National Park Service, a copy of which was furnished you, it was suggested that his office might wish to acquaint you with the request they have from the Bureau of Indian Affairs to prepare a master plan for the Pyramid Lake Indian Reservation.

In order to keep you currently advised on this general subject, there is attached a copy of Mr. Collins' letter of March 4 suggesting that consideration might be given to providing more protection to Anaho Island. We are therefore referring this matter to Refuge Manager Wiseman. We are also suggesting that he confer with you on this subject.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

cc: Mr. Wiseman

KFMacDonald:jc

Reply to file

(1-R) March 27, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

We appreciate the information furnished in Mr. Collins' letter of March 4 concerning the Pyramid Lake recreation development. We are passing the comments on to our Refuge Manager George L. Wiseman, Stillwater Wildlife Management Area, Fallon, Nevada, who looks after the Anaho Island Refuge and are requesting that he submit recommendations for giving added protection to the Anaho Island in line with Mr. Collins' suggestion.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

cc: Mr. Groves, Nevada F&G Comm.
Mr. Wiseman

KFMacDonald:jc

Laythe
Woodward (info)

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
180 New Montgomery Street
San Francisco 5, California

L7423

March 4, 1958

Mr. Leo L. Laythe, Regional Director
U. S. Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
1001 N.E. Lloyd Boulevard
Portland, Oregon

Dear Mr. Laythe:

Thank you for your letter of February 14 expressing interest in the Anaho Island National Wildlife Refuge in Pyramid Lake, Nevada.

Nothing regarding possible recreation use and development of that lake that has come to our attention leads us to believe that anything is being considered that would directly effect the island. However, there appears to be some agitation for a restricted homesite area on the east shore which could conceivably effect the refuge adversely, if indirectly. This could result from individual or group boat docks and attending activities, such as speed boating, water sports, etc.

In addition to indicating desirable "off limits" zones for such activities in the neighborhood of the island it seems probable that your agency would wish to indicate limits on the fronting lake shores opposite the island within which developments, if permitted at all, would be subject to special zoning or restrictions.

I believe the foregoing aspects of possible Pyramid Lake recreation development and use will be of some interest to your agency in considering measures appropriate for the protection of the National Wildlife Refuge in question.

Sincerely yours,

George L. Collins

George L. Collins
Regional Chief
Div. of Recreation Resource Planning

Copy to: F.M. Haverland, Area Director, Bureau of Indian Affairs

---MacDonald Noes
---Anderson
---Sargeant
---Jacox
---Hunter
---Carroll
---
x Reply
\ Discuss
o Review

Anaho Island

(1-R) March 7, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

With further reference to your letter of November 18, 1957 on the proposed recreational development at Pyramid Lake, Nevada, we advised in our letter of February 14 that our primary interest in that area is the protection of the 248 acre Anaho Island National Wildlife Refuge which was established by Executive Order September 4, 1913; also that at a meeting with Director Groves, Nevada Fish and Game Commission at Fallon, Nevada February 26 we would discuss the matter.

Mr. Groves indicated that his Department was interested in seeing some development for boat launching at the lake, but had not considered specifically the overall recreational needs and the related facilities. If we may suggest, it might be advisable for you to acquaint Mr. Groves with the request you have had with the Bureau of Indian Affairs in preparing a master plan for the Pyramid Lake Indian Reservation. We feel sure that the Department values the recreational potential and would in all probability be able to advance some worthwhile suggestions.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

Orders
PTS

cc: Mr. Groves, Nevada Fish & Game Commission

Note to Mr. Groves; Frank, this is the matter which I understand Mr. MacDonald discussed with you recently at the Stillwater meeting.

Copy to Museman 3/10/58

LLL

KFMacDonald:jc

(1-R) February 14, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

With further reference to your letter of November 18, 1957 on the proposed recreational development at Pyramid Lake, Nevada our primary interest other than for fisheries would be the protection of the 248 acre Anaho Island National Wildlife Refuge which was established by Executive Order September 4, 1913. The bird colonies using this island have attracted photographers and ornithologists from all parts of the United States. During the 1957 season, for instance, this island provided nesting as follows:

White pelicans	2800 nests
California gulls	1950 "
Double crested cormorants	1580 "
Great blue herons	8 "

Members of our staff are meeting with the staff members of the Nevada Fish and Game Commission within the next month at Fallon, Nevada, at which time the subject of recreational needs and development at Pyramid Lake will be discussed.

We will advise you further following that meeting.

Sincerely yours,

Regional Director

cc: Mr. Wiseman

Letter from Regional Director FWS Feb. 14, 1958
to " " NPS
During 1957 season

White Pelicans	2800	Nests
California gulls	1950	"
Double-crested cormorants	1580	"
Great blue herons	8	"

Anaho Island
Pyra

(1-R) March 7, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

With further reference to your letter of November 18, 1957 on the proposed recreational development at Pyramid Lake, Nevada, we advised in our letter of February 14 that our primary interest in that area is the protection of the 248 acre Anaho Island National Wildlife Refuge which was established by Executive Order September 4, 1913; also that at a meeting with Director Groves, Nevada Fish and Game Commission at Fallon, Nevada February 26 we would discuss the matter.

Mr. Groves indicated that his Department was interested in seeing some development for boat launching at the lake, but had not considered specifically the overall recreational needs and the related facilities. If we may suggest, it might be advisable for you to acquaint Mr. Groves with the request you have had with the Bureau of Indian Affairs in preparing a master plan for the Pyramid Lake Indian Reservation. We feel sure that the Department values the recreational potential and would in all probability be able to advance some worthwhile suggestions.

Sincerely yours,

Original signed by
LEO L. LAYTHE

Regional Director

Macs
P.S.

cc: Mr. Groves, Nevada Fish & Game Commission

Note to Mr. Groves; Frank, this is the matter which I understand Mr. MacDonald discussed with you recently at the Stillwater meeting.

Copy to Wiseman 3/10/58

LLL

KFMacDonald:jc

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Refuge Manager, Stillwater Refuge, Fallon, Nev. DATE: Nov. 29, 1957

FROM : Regional Refuge Supervisor, Portland, Ore.

SUBJECT: Recreational Development - Pyramid Lake (1-R)

Attached is a copy of Regional Director Merriam's self-explanatory letter of November 18.

We would appreciate your opinion as to the need and possibility of such a development and particularly the measures that would have to be taken to protect our interests at Anaho Island.

Kenneth F. MacDonald

Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
REGION FOUR
SAN FRANCISCO, CALIFORNIA
180 New Montgomery Street

In reply refer to:
I-7423

November 18, 1957

Mr. Leo Laythe, Regional Director
U.S. Fish and Wildlife Service
Bureau of Sport Fisheries & Wildlife
1001 N.E. Lloyd Blvd.
P.O. Box 3737
Portland, 8, Oregon

Dear Mr. Laythe:

This Service has been requested to assist the Bureau of Indian Affairs in preparing a Master Land Use Plan for the Pyramid Lake Indian Reservation. The objective is to make this scenic and unique area available for development to accommodate public recreation on a long-term lease basis. There appears to have been increasing pressure for arrangements for boating, water sports, camping, trailer parks, vacation home sites and for services associated with these and other activities.

Only on the basis of judicious assignment of appropriate areas can such a program operate in the interest of the Indians as well as in the long-range public interest.

As you know, this spectacular desert lake is one of very unusual interest, geologically, historically, archeologically and in other respects, notably the remarkable sport fishery for which it has long been especially noted. Other wildlife values of a high order may well merit serious consideration.

Very limited funds and personnel make it problematical how far this Service will be able to participate directly in the planning indicated. However even if largely in an advisory capacity it would be highly advantageous to have an expression of opinion from your agency regarding areas around the lake which should be designated for game management or preserves. Hunting privileges, if any, would, of course, be subject to limitations and conditions imposed by the Indians in their own interest.

Any information regarding the foregoing which you may be able to provide will be very much appreciated.

Sincerely yours,

Lawrence C. Merriam
Regional Director

Regional Director, Portland, Oregon December 6, 1957

Acting Refuge Manager, Stillwater Refuge, Fallon, Nevada

Recreational Development - Pyramid Lake (1-R)

We do not have enough information on wildlife use of Pyramid Lake to answer Mr. MacDonald's November 29 memo and Mr. Merriam's letter as completely as we'd like to. But we can make some suggestions concerning Anaho Island bird populations, and moulting Canada geese.

On Anaho, disturbance of nesting birds during April, May, June, and the first half of July is the important factor to think about. There are two steps that should be taken into consideration with increased public use to keep disturbance to a minimum:

1) better protection from trespass, and
2) establishment of buffer zones around three sides of the Island.

To help solve the trespass problem, a single strand of wire along beaches where landings can be made may be advisable together with adequate posting. And more active patrol will be necessary. Possibly Indian officers who patrol the lake now can be designated Deputy Game Management Agents to patrol the Island.

A buffer zone around the north, south, and east sides would be desirable, but we realize difficult to establish and maintain. Certain colonies are especially susceptible to disturbances that occur along the east side of the Island so it is recommended that no developments be made on the east shore of the lake adjacent to Anaho that would encourage use of that part of the lake by the public.

During June each year, more than 1,000 Canada geese gather in Pyramid Lake to moult, and are flightless at that time. They prefer the rather remote northeast corner of the lake, but some are distributed all along the east side south as far as Anaho Island. Restrictions on the use of parts of the lake during the moulting period would be desirable, but rather impractical. But, again, if developments along the northeast and part of the east shore north of Anaho were barred, public use would be discouraged.

Other wildlife use is negligible. A very few Canada geese have been known to breed there, but it holds little potential as a goose breeding area. From 1,000 to 2,500 ducks have wintered there, but it cannot be considered an important wintering area.

We will keep this matter in mind, and let you know if any other possibilities develop.

Dale E. Sutherland

Anaho Island

Pyramid Lake Ranch
Sutcliffe, Nevada,
January 10, 1958

Dept. of Interior
Refuge Manager
Fallon, Nevada.

Dear Sir:

Your new Anaho Island signs stands about 150 feet directly accross the road from where I live.

The behavior of so many motorists upon approaching this sign since its erection last summer finally gave me the urge to go over and read it.

A few yards north of this sign the gravel road leads off to the right toward the boat landing at the shore of the lake, well known to those who have local knowledge. These latter never hesitate at the sign, bear right and go about their business.

But the stranger - and I've been astonished at the number of Reno citizens who have never been to Pyramid Lake before, not to mention the greater quota from out of State, especially California - this fellow without local knowledge arrives in the vicinity of the beautiful sign and, though moving relatively slow, jams on his brakes to read. . . . The sign announces, "Anaho Island, a National Wild Life Refuge - A Bird Sanctuary - Tresspassing Prohibited"! . . .

How are these good people to know they are not on Anaho Island where the sign stands? There are puzzled and enquiring looks, hesitations, glances at the road curving to the right. . Mostly, such parties, after a long look around, move on straight ahead a few yards and turn their car around in front of our Trading Post, where most of them repair for information.

At this point you may have guessed the reason for this communication, based on the old adage that, "People believe in signs". From many talkings with our valued vacationists and tourists, it is to be wondered exactly what the literary contributor to your esthetically exquisite signs had in mind to convey!

The fact that even at this season strangers are moved to visit this region to experience, from my observations, the same enigma over the identity of Anaho Island, moves me to mention the matter for serious consideration as regards the human species involved.

Sincerely yours,

F. E. Osterkamp

F. E. Osterkamp
Pyramid Lake Ranch.

L7423

180 New Montgomery Street
San Francisco 5, California

March 4, 1958

Mr. Leo L. Laythe, Regional Director
U. S. Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife
1001 N.E. Lloyd Boulevard
Portland, Oregon

Dear Mr. Laythe:

Thank you for your letter of February 14 expressing interest in the Anaho Island National Wildlife Refuge in Pyramid Lake, Nevada.

Nothing regarding possible recreation use and development of that lake that has come to our attention leads us to believe that anything is being considered that would directly effect the island. However, there appears to be some agitation for a restricted homesite area on the east shore which could conceivably effect the refuge adversely, if indirectly. This could result from individual or group boat docks and attending activities, such as speed boating, water sports, etc.

In addition to indicating desirable "off limits" zones for such activities in the neighborhood of the island it seems probable that your agency would wish to indicate limits on the fronting lake shores opposite the island within which developments, if permitted at all, would be subject to special zoning or restrictions.

I believe the foregoing aspects of possible Pyramid Lake recreation development and use will be of some interest to your agency in considering measures appropriate for the protection of the National Wildlife Refuge in question.

Sincerely yours,

George L. Collins
Regional Chief
Div. of Recreation Resource Planning

Copy to: F.M. Haverland, Area Director, Bureau of Indian Affairs

Put on the East side of Cole off-limits to preserve its natural beauty. DEO

cc Wiseman

(1-R) March 7, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

With further reference to your letter of November 18, 1957 on the proposed recreational development at Pyramid Lake, Nevada, we advised in our letter of February 14 that our primary interest in that area is the protection of the 248 acre Anaho Island National Wildlife Refuge which was established by Executive Order September 4, 1913; also that at a meeting with Director Groves, Nevada Fish and Game Commission at Fallon, Nevada February 26 we would discuss the matter.

Mr. Groves indicated that his Department was interested in seeing some development for boat launching at the lake, but had not considered specifically the overall recreational needs and the related facilities. If we may suggest, it might be advisable for you to acquaint Mr. Groves with the request you have had with the Bureau of Indian Affairs in preparing a master plan for the Pyramid Lake Indian Reservation. We feel sure that the Department values the recreational potential and would in all probability be able to advance some worthwhile suggestions.

Sincerely yours,

Original signed by
LEO L. LATTIN

Regional Director

cc: Mr. Groves, Nevada Fish & Game Commission

Note to Mr. Groves: Frank, this is the matter which I understand Mr. MacDonald discussed with you recently at the Stillwater meeting.

LLL

KFMacDonald:jc

(1-R) March 27, 1958

Mr. Lawrence C. Merriam, Regional Director
National Park Service
180 New Montgomery Street
San Francisco, California

Dear Mr. Merriam:

We appreciate the information furnished in Mr. Collins' letter of March 4 concerning the Pyramid Lake recreation development. We are passing the comments on to our Refuge Manager George L. Wiseman, Stillwater Wildlife Management Area, Fallon, Nevada, who looks after the Anaho Island Refuge and are requesting that he submit recommendations for giving added protection to the Anaho Island in line with Mr. Collins' suggestion.

Sincerely yours,

Regional Director

cc: Mr. Groves, Nevada F&G Comm.
Mr. Wiseman

(1-R) March 27, 1958

Mr. Frank W. Groves, Director
Nevada Fish & Game Commission
Box 678
Reno, Nevada

Dear Mr. Groves:

In our letter of March 7 to Regional Director Merriam, National Park Service, a copy of which was furnished you, it was suggested that his office might wish to acquaint you with the request they have from the Bureau of Indian Affairs to prepare a master plan for the Pyramid Lake Indian Reservation.

In order to keep you currently advised on this general subject, there is attached a copy of Mr. Collins' letter of March 4 suggesting that consideration might be given to providing more protection to Anaho Island. We are therefore referring this matter to Refuge Manager Wiseman. We are also suggesting that he confer with you on this subject.

Sincerely yours,

Regional Director

cc: Mr. Wiseman

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Refuge Manager, Stillwater Refuge,
Fallon, Nevada

DATE: March 27, 1958

FROM : Regional Director, Portland, Oregon

SUBJECT: Recreational development - Pyramid Lake (1-R)

Attached is a copy of George L. Collins' letter of March 4 relative to the subject matter. In Mr. Sutherland's memorandum of December 6, it was suggested that consideration be given to establishing a buffer zone around the north, south and east sides of Anaho Island. This is in line with Mr. Collins' proposal and we would suggest that you follow through on that and decide the extent of the buffer zone that would be required and if possible, show this on a sketch map in order that we can request the Park Service to provide for this added protection in their recreational planning.

Attached are copies of our letters of this date to Regional Director Merriam, NPS and Mr. Groves. It is suggested that you confer with Mr. Groves in order that he may be currently advised as to our thinking and that we may benefit from any suggestions he may have.

Attachments

Regional Director, Portland, Oregon April 4, 1958

Refuge Manager, Stillwater Refuge, Fallon, Nevada

Recreational Development - Pyramid Lake (1-R)

Mr. Laythe's memo of March 27 refers to attached copies of letters to Regional Director Merriam, NPS, and Mr. Groves relative to Pyramid Lake recreational development.

The copies referred to were not received here. It is requested that additional copies be made up and forwarded to us.

George L. Wiseman

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Regional Director, Portland, Oregon

DATE: May 16, 1958

FROM : Refuge Manager, Stillwater Refuge, Fallon, Nevada

SUBJECT: Pyramid Lake Recreational Development (1-R)

c MacDonald
x Anderson
Sargeant
Jacox
Hunter
Carroll

x Reply
√ Discuss
Review

During the past several months possible recreational development at Pyramid Lake has been referred to in memoranda between the National Park Service, the Nevada Fish and Game Commission, and the Fish and Wildlife Service.

The subject has been discussed with personnel of the Nevada Fish and Game Commission with particular reference to development on the east side of the Lake which might have an effect on the Anaho Island National Wildlife Refuge.

Although no specific recommendations are submitted at this time we are in concurrence on the following:

Residential and other type of development such as concessions should be barred from the entire east shore of the Lake. Such development would seriously detract from the natural beauty of the area of the Pyramid and Anaho Island area. Such a measure would also result in some degree of isolation of Anaho Island since it would not be so readily accessible.

With this line of though concurred in by both the Nevada Fish and Game Commission and the Service, you will perhaps wish to contact Mr. Groves relative to more detailed recommendations of the Nevada Commission for Pyramid Lake development.

The matter of providing adequate protection to nesting birds at Anaho Island may perhaps be left to an evaluation of future conditions. Very possibly additional safeguards will have to be taken to adequately protect the security of the Island in the future. Some predictions are that the Island will be joined to the mainland within a few decades as water recedes. Good water years such as this one with appreciable flows going to Pyramid will perhaps alter this prediction.

This memorandum does not propose specific action, but is submitted for the purpose of keeping your office cognizant of thinking in the field.

George L. Wiseman

George L. Wiseman

Wiseman advised in telephone conversation had discussed w/ Groves

We will keep this matter in mind, and let you know if any other possibilities develop.

Dale E Sutherland

Dale E. Sutherland

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Refuge Manager, Stillwater Refuge, Fallon, Nev. DATE: February 29, 1960
US Game Management Agent, Fallon, Nevada

FROM : Chief, Division of Wildlife, Portland, Oregon

SUBJECT: Week-end patrol Pelican Island Area, Pyramid Lake

Public use of the Pyramid Lake area has increased to the point where there is considerable trespass on ~~Pelican Island~~ Anaho and this to the extent that serious interference is occurring during the nesting season. Judging from comments made by State personnel during our joint meeting in Reno on February 25, this problem will tend to become more acute.

It is obvious that we must give some consideration to patrol of the ~~Pelican Island~~ Anaho area during periods of principal bird activity. Accomplishing the patrol during periods of heavy public use and when the birds are in need of special protection involves several aspects of the Bureau's program and requires a well coordinated approach as well as some coordination in the use of boat equipment.

Because of the joint responsibilities of Management and Enforcement and Refuges in this instance, I am requesting that you two project leaders explore the problem fully and develop a coordinated program for protection of wildlife resources in the ~~Pelican Island~~ Anaho area.

Richard E. Griffith

Elevation in feet Pyramid Lake
U.S. Geol. Survey L.J. Snell Eng. in Chg.
SW

July 19, 1956	3805.56
Oct. 20, 1955	3801.90
Oct. 8, 1956	3804.25
Oct. 10, 1957	3801.64
Sept. 8, 1958	3803.75
Oct. 16, 1958	3803.06
Sept. 21, 1959	3799.92
Oct. 19, 1959	3,799.35
Sept. 21, 1960	3,796.44