

SAN ANDRES NATIONAL WILDLIFE REFUGE

Las Cruces, New Mexico

1967

PERSONNEL

Cecil A. Kennedy	Refuge Manager
John H. Kiger	Asst. Refuge Manager
Melvin L. Cahoon	Maintenanceman
Arthur E. Johnson (to 7/1/67)	Maintenanceman
A. Linda Stradling (to 9/8/67)	Clerk-Typist
Frances F. Samson	Clerk-Typist

TEMPORARY EMPLOYEES

Michael W. Bell	Maintenanceman
Thomas S. Bickle	Maintenanceman
Joe G. Carter	Maintenanceman
David E. Chalk	Maintenanceman
Jackson L. Durham	Maintenanceman
Richard J. Few	Maintenanceman
Robert C. Foster	Maintenanceman
Joe S. Giron	Maintenanceman
James N. Hanson	Maintenanceman
Richard O. Ley	Maintenanceman
Clifford D. McClure	Maintenanceman
Walter M. Mechem	Maintenanceman
James C. Roberts	Maintenanceman
Jerry K. Sintz	Maintenanceman
Daniel H. Sutcliffe	Maintenanceman
Stanley W. Taft	Maintenanceman
Robert A. Thompson	Maintenanceman
Robert D. Welch	Maintenanceman

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SAN ANDRES NATIONAL WILDLIFE REFUGE

ANNUAL NARRATIVE REPORT

1967

I. GENERAL

A. Weather Conditions

As usual January, February, March, April, and May were quite dry. No precipitation was recorded for April and May. High winds occurred during much of April and May. During the night of May 1 the temperature in the valley dropped to 21 degrees F. causing considerable damage to cotton, pecans, and fruit orchards in the valley.

The dry spell was somewhat relieved in June when more than an inch of rain fell over most of the refuge. During July over 2 inches fell on most of the refuge area. From 2 to 7 inches were recorded at the various rain gauges in August when shower activity occurred nearly every day for a two-week period. Rainfall tapered off progressively during September, October, and November. The first killing frosts were noted at the higher elevations in October. Total precipitation increased in December, much of it in the form of snow. An unusual amount of snow, 12 inches or more at the higher elevations, fell during December. Refuge roads at the higher elevations were closed even to 4-wheel drive vehicles. Schools in the valley closed due to ice-covered roads.

Official temperature and precipitation records from the Jornada Experimental Range Station are shown in table 1. Precipitation records for the refuge rain gauges are shown in tables 2 and 3.

B. Habitat Conditions

1. Water

All of the main springs provided water throughout the year. Some were running a little low in late spring and early summer, but summer rains recharged enough to increase the flows by mid summer. Near average precipitation late in the year kept the spring flows going strong. We expect springs to maintain an adequate flow

Table 1. Temperature and precipitation records from the Jornada Experimental Range Station.

Month	Precipitation		Temperatures	
	1967 In.	50-year ave. 1918 - 1967 In.	Maximum °F.	Minimum °F.
January	.00	.46	75	-6
February	.39	.37	75	9
March	.05	.30	86	16
April	.00	.21	88	25
May	.58	.37	94	21
June	1.45	.52	99	41
July	.48	1.71	101	62
August	1.60	1.75	101	51
September	1.82	1.48	93	45
October	.00	.91	90	20
November	1.26	.42	79	20
December	.95	.55	65	11
Total	8.58	9.05	-	-

Table 2. Precipitation as recorded at Rope Springs and Little Tank rain gauges.

Month	Precipitation			
	Rope Springs		Little Tank	
	1967	50-year ave. 1918 - 1967	1967	31-year ave. 1937 - 1967
in.	in.	in.	in.	
January	.00	.58	.00	.58
February	.77	.59	.56	.55
March	.13	.48	.14	.48
April	.00	.41	.00	.37
May	.39	.43	.46	.29
June	2.40	.92	1.71	.78
July	1.26	2.21	1.23	2.56
August	2.30	2.70	3.62	2.55
September	2.14	1.84	2.67	1.89
October	.00	1.14	.00	1.07
November	.45	.51	.63	.39
December	1.33	.70	1.31	.67
Totals	11.17	12.51	12.33	12.18

Table 3. Precipitation records for St. Nicholas, Goat Mountain, San Andracito, and Lead Camp - 1967

Month	Precipitation - 1967			
	St. Nicholas	Goat Mountain	San Andracito	Lead Camp
	in.	in.	in.	in.
January	.00	.00	.00	.00
February	.60	.55	.36	.62
March	.10	.06	.05	.08
April	.00	.00	.00	.00
May	.45	.30	.26	.26
June	2.64	2.08	1.05	1.20
July	2.11	2.85	2.02	2.71
August	5.67	2.06	1.83	4.42
September	2.68	2.99	1.68	2.35
October	.00	.00	.03	.00
November	.63	.70	.40	.49
December	.84	1.19	.63	.56
Totals	15.72	12.78	8.31	12.69

into the springtime. During much of the summer and early fall the wildlife was not dependent on live water as the frequent rains provided drinking water in artificial rock catchments.

2. Food and Cover

Vegetation and soil moisture content were at a low point in May. Beginning with the June rains the grasses and forbs especially responded well and other plant life showed new growth as the rains continued into September. Vegetation dried up in October as the rains nearly ceased. Food and cover conditions remained good throughout the remainder of the year as moisture conditions continued favorable.

II. WILDLIFE

A. Migratory Birds

1. Western Mourning Doves

Mourning doves were observed on the refuge practically every month of the year. Peak numbers were reached in August and September when an estimated 4,000 were using the area. Flocks of 30 to 40 doves were noted in the valley below the refuge in December so there is a relatively small wintering population.

B. Upland Game Birds

1. Quail

The Arizona scaled quail appear to remain the most numerous of the three species of quail on the refuge. Gambel's quail are a close second in numbers, and Harlequin quail (Mearns) are relatively few in number. The last reported observation of Harlequin quail was of 20 individuals at Dugout Springs in September of 1966. This past year appeared good for production of young scaled and Gambel's quail. The first pairing of Gambel's quail was noted on February 23 at San Andracito Spring. The first brood (Gambel's) was observed at Lead Camp Spring on June 23.

No chukar partridge were seen this past year so we assume the population is very low.

C. Big-game Animals

1. Bighorn sheep

The bighorns appeared to have a good year. There is no estimate of lamb production for this year, but the number of 7- to 9-month old lambs observed during the fall indicated good lamb survival. Another encouraging sign was the total number of yearling class sheep seen through the year. However, based on ram observations where age could be more closely estimated, the predominant age group at the present appears to be in the prime "middle age" class of 5 to 8 years. The opportunities were few to age rams reasonably accurately by counting annual growth rings on the horns. In most cases horn size was the determining characteristic. Several real "trophy" rams, from a big-game hunter's viewpoint, were observed during the year. All sheep seen appeared to be in good health.

A majority of the total number of sheep observations during the year was recorded by Mr. Robert Welch, an NMSU student who has nearly completed a study he began on the refuge in February of 1966. This is a project for his M.S. thesis on concentration of sheep. His study area involved various parts of the south end of the refuge, including Goat Mountain, West face of Bennett Mountain, St. Nicholas Canyon, Black Brushy Mountain, and Salt Canyon. Most of the observations were on Goat and Bennett Mountains.

Sheep observations were reported on 46 different days during the past year. These observations totalled 391 sheep seen and were classified as follows:

Rams	135
Ewes	126
Yearlings	40
Lambs	50
Unidentified	40

These sheep were observed in the following locations: Goat Mountain, 266; Salt Canyon, 64; Joe Taylor Spring or St. Nicholas Canyon, 27; Black Brushy Mountain, 13; West face of Bennett Mountain, 9; Ash Canyon, 5; Little Tank, 4; and Lower Bear Canyon, 3.

The largest single group of sheep seen during the year consisted of 10 rams, 9 ewes, 8 yearling ewes, and 4 lambs for a total of 31. They were observed on June 26 on the northwest face of Goat Mountain. The largest number of sheep seen in one day was 55 on July 13 on the southern part of Goat Mountain.

Past records indicate that the highest concentration of sheep is in the southern part of the refuge where most of this year's observations were made. Most sheep were observed just below the pinyon-juniper zone. Some were observed among the trees. Those noted at the lowest elevation were 3 ewes and a ram on an alluvial fan near the mouth of Salt Canyon.

The total refuge population of bighorn appears to have continued on an upward trend during the past year reaching a new high estimated at 270.

2. Gray Mule Deer

The deer did well again this year. Numerous observations were made of twin fawns. Yearling survival appeared good. The population was in balance with available water, food, and cover based on forage conditions, production, survival, and physical appearance of the deer.

In August the fawns were quite obvious. By late September the fawns had lost their spots and the bucks their velvet. As fall approached total deer observations progressively increased. During November an estimated 200 or more deer were observed by refuge personnel while pursuing various daily activities. Observations were numerous until shortly after the annual deer hunt began on December 9. Only 1 deer has been seen since the hunt ended on December 10. Besides hunter activity, the snow and cold have tended to keep them undercover.

We believe the present deer herd is a healthy one, and overall range conditions are good. Deer population statistics are listed below:

Population as of December 31, 1966	776
1966 increase estimated at 30 percent	233
Population as of December 1, 1967	1,009
Removed by hunting	212
Estimated 2 percent crippling loss	21
Total decrease from December 31, 1966	0
Population as of December 31, 1967	776

It is interesting to note that the statistics show the population to be identical on December 31 of 1966 and 1967.

Table 4 shows year-end population estimates of deer and sheep from 1942 to the present.

D. Fur Animals, Predators, Rodents, and Other Mammals

Coyotes were observed occasionally throughout the year. According to signs they are quite common. A few bobcats were seen in late spring and early summer. Tracks of one mountain lion were seen during the summer. One deer kill by a mountain lion was also noted in San Andres Canyon. One gray fox was observed in August at Rope Springs. Blacktail jackrabbits and cottontail rabbits are present but not numerous. Other mammals commonly observed are rock squirrels and antelope ground squirrels. A spotted skunk, the rarest of the three kinds of skunks on the refuge, was found dead at the Ash Canyon water tank in October.

In order to hold the bobcat, mountain lion, and coyote populations in check, 1080 bait stations were placed out on December 8, 1966, and picked up April 7, 1967. We have been authorized to establish four bait stations in 1968 under direct supervision of the Division of Wildlife Services.

E. Hawks, Eagles, Owls, Crows, Ravens, and Magpies

Sparrow hawks were observed on the refuge throughout the year. Swainson's hawks were common at the lower elevations. Their numbers increased during fall and winter in the valley. Prairie falcons were also observed and occasionally a red-tailed hawk. Golden eagles were observed throughout the year. They are known to nest on the refuge. Most eagle observations were made in the Ash Canyon area. A crippled golden eagle was picked up on the NASA Apollo test site near the refuge. It was treated by a U. S. Public Health Service veterinarian but died as a result of buckshot wounds.

F. Other Birds

Nothing to report.

G. Fish

None

Table 4. Year-end deer and sheep population estimates from 1942 to the present.

Year	Deer Population	Sheep Populations
1942	700	51
1943	1,428	62
1944	1,428	71
1945	1,010	78
1946	976	85
1947	1,121	100
1948	1,033	112
1949	1,027	130
1950	1,100	140
1951	900	100
1952	950	112
1953	800	53
1954	600	62
1955	750	70
1956	600	86
1957	631	92
1958	666	100
1959	666	121
1960	787	130
1961	842	142
1962	803	150
1963	814	165
1964	805	175
1965	797	200
1966	776	251
1967	776	270

H. Reptiles

Several rattlesnakes were observed on the refuge. Even more rattlesnakes were observed at elevations below the refuge on the Jornada roads, especially following summer rain showers.

I. Disease

Nothing to report.

III. REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

1. Roads and Trails

Much of April, May, and June was spent plating rough, rocky roads with dirt. This was valuable in reducing travel time as well as wear and tear on vehicles. A lot of July, August, and September was spent improving and maintaining other refuge roads. Cloudburst type rains caused many washouts during the summer. During October the final touches were put on the roads in preparation for the deer hunter traffic.

A cattle guard (Real Property #30) on the Taylor Well road was completely overhauled with new concrete foundation and grid constructed of railroad iron.

2. Water Development.

The lower Ash Canyon water tank was cleaned in February and flow to the tank was re-established in March. In November the spring box was relocated at the source of lower Ash Spring which feeds this tank. In August the Lead Camp Spring source was cleaned and the outflow pipe lowered. The Powder House dirt tank was cleaned with the D8 caterpillar in September. In November repair work was done on Burro, Burke, and Cottonwood Springs.

3. Miscellaneous

Most of November was spent in constructing signs, posting, and otherwise preparing for the annual deer hunt. Most of December's activities were also related to the deer hunt. Refuge personnel also helped the New Mexico Game

and Fish Department patrol on special deer hunts on two successive weekends. These hunts were the Oscura hunt, November 25-26, and the Salinas hunt, December 2-3. This assistance was much appreciated by the State. Other more important routine chores included maintenance of Service-owned heavy equipment and vehicles and care of refuge horses.

Two dozen or more surplus missile containers were prepared and used as road culverts. Refuge personnel assisted personnel of the Jornada Experimental Range, Agricultural Research Service, with installation of a submergible pump on the well that supplies water to our refuge shop.

Regularly scheduled screening of excess property was done at Ft. Bliss, Texas, and periodically at the White Sands Missile Range and Holloman AFB.

B. Plantings

1. Aquatics and Marsh Plants

None.

2. Trees and Shrubs

None.

3. Upland Herbaceous Plants

None.

4. Cultivated Crops

None.

C. Collections and Receipts

1. Seed or Propagules

None

2. Specimens

One golden eagle specimen (dead) was collected in December and turned over to Dr. Dale Zimmerman at Western New Mexico University in Silver City.

3. Other

We sold a total of 29 Golden Eagle Passports during 1967 compared to 36 in 1966. Total receipts were \$203.00

D. Control of Vegetation

None.

E. Planned Burning

None.

F. Fires

There were no fires in 1967. During Fire Prevention Week the annual cooperative fire inspection was conducted on the refuge and the Jornada Experimental Range. All refuge personnel and several ARS employees participated.

IV. RESOURCE MANAGEMENT

A. Grazing

No grazing occurred on the refuge except that of refuge horses.

B. Haying

None.

C. Fur Harvest

None

D. Timber Removal

None.

E. Commercial Fishing

None.

F. Other Uses

None.

V. FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report

On April 10, 1967, pellet group transects #1 and #2 on Goat Mountain were read by 15 wildlife students, 2 wildlife professors from New Mexico State University, and 1 refuge employee. The results are noted below.

Last read on: October 30, 1966
This reading on: April 10, 1967
Days between readings: 162
Time of readings: 1:30 P.M. to 3:00 P.M.
Light: Clear, sunny
Color paint: Orange
Wind: None
Weather: Very warm, approximately 85°

Transect #1

Transect #2

Deer per section: 15.19	Deer per section: 15.19
Sheep per section: None	Sheep per section: 1.51

On October 16, 1967, the two Goat Mountain transects were read again by 20 wildlife students, 1 wildlife professor from New Mexico State University, and 2 refuge employees. The results are as follows.

Last read on: April 10, 1967
This reading on: October 16, 1967
Days between readings: 219
Time of readings: 2:30 P.M. to 5:00 P.M.
Light: Dim
Color paint: Orange
Wind: Light to moderate, westerly
Weather: Overcast

Transect #1

Transect #2

Deer per section: 10.12	Deer per section: 25.85
Sheep per section: 6.74	Sheep per section: None

Mr. Robert D. Welch, a wildlife student at New Mexico State University, did a study on the refuge in 1966 entitled "pH Differences of Fecal Groups From Sheep and Deer." A report was submitted in January of 1967. The following is the abstract of that report:

"The pH values were determined for fecal groups of both desert bighorn sheep (Ovis canadensis) and mule deer (Odocoileus hemionus) immediately after dropping and at various ages of weathering, collected from areas believed to be typical to each species.

"At the .05 level there was a complete overlap in the confidence interval between the two species when an individual fecal group was considered the sample. When 50 fecal groups were considered a sample there was no overlap in confidence intervals between species. This method of identification shows to be invalid when used on a pellet transect."

Mr. Welch has nearly completed a Wildlife Management Study on the refuge entitled "Management Methods of Attracting and Congregating Desert Bighorn Sheep." This study is for his M.S. degree.

Mr. Joe G. Carter, a wildlife student at New Mexico State University, has nearly completed work toward his M.S. degree with a wildlife management study on the refuge entitled "Plant Ecology of Mountain Mahogany (Cercocarpus breviflorus)."

Periodic progress reports have been submitted on both projects.

VI. PUBLIC RELATIONS

A. Recreational Uses

Recreation on the refuge is largely limited to the annual deer hunt. Public use is limited by the Army's White Sands Missile Range and Defense Department's National Aeronautics and Space Administration. The deer hunt is covered under section on hunting.

B. Refuge Visitors

Listed below are the more important visitors during the year:

<u>Date</u>	<u>Name</u>	<u>Agency or Residence</u>	<u>Purpose</u>
<u>1967</u>			
<u>Feb.</u>			
9	Col. L. W. Krueger	Ft. Bragg, N. C.	Courtesy visit
<u>Mar.</u>			
6	Lewis Garlick	Asst. Reg. Dir., Coop. Services, Reg. office	Sikes Act meeting

<u>Date</u>	<u>Name</u>	<u>Agency or Residence</u>	<u>Purpose</u>
April			
10	Col. C. L. Shumaker	P.M. White Sands Missile Range	Meeting
10	Mr. Burns	Asst. P.M., White Sands Missile Range	"
18	Lewis Garlick	Regional Office, Albuquerque, N.M.	Wildlife con- clave (NMSU)
25-26	Marcus Nelson	Refuges Supv., Reg. Office	Land use agency
26	John Jones	Safety Officer, C.O. Washington D. C.	Safety inspection
May			
13-14	William T. Krummes	Reg. Director, Albuquerque, N. M.	Business
June			
16	Elmer Nitzschke	Solicitor, Reg. office	Visit
Aug.			
15-17	Roger Johnson	W/L Biologist, Reg. office	Sheep study

Other frequent visitors to the refuge have been:

N. M. State Game and Fish Dept. personnel
Professors and students, N. M. State University
Wildlife Dept.

Other organizations with which we have been in contact include the following:

Agricultural Research Service
Bitter Lake NWR
Bosque del Apache NWR
Boy Scouts of America
Bureau of Land Management
Bureau of Reclamation
Federal Bureau of Investigation
Ft. Bliss (excess property)
Future Farmers of America
Holloman AFB (excess property)
International Water and Boundary Commission
Kirtland AFB (excess property)
Kirwin NWR
Laguna Atascosa NWR
Las Vegas NWR
National Aeronautics and Space Administration
National Elk Refuge
N. M. State Highway Department

N. M. Wildlife and Game Conservation Association
Quivira NWR
U. S. Army Corps of Engineers
U. S. Border Patrol

C. Refuge Participation

<u>Date</u>	<u>Personnel</u>	<u>Activity</u>
January	Kennedy	Refuge tour - 2 members Boy Scout Discovery Unit
February	Kennedy	Talk to Discovery Unit, Las Cruces Boy Scout troop
March	Kennedy -	Campout on refuge with 14 Explorer Scouts and 2 leaders Supplied 6 films and various publications to the N. M. State University Wildlife Club for presentation during Wildlife Week
April	Kennedy, with Lewis Garlick, Asst. Regional Director Kennedy Kennedy Kennedy -	Conducted refuge tour for students from various universities attending the Wildlife Society Conclave Attended FFA banquet. He is an honorary member of FFA On overnight refuge camping trip with 5 local business and professional men Attended Land Use Agency meeting, Las Cruces office of the N. M. Game and Fish Dept. Supplied 6 films to local schools, N. M. State Univ. Wildlife Wives Club
May	Kennedy Kennedy and Stradling -	Showed film on bighorn sheep to Explorer Scouts, their families, and other adults Attended spring banquet, N. M. State Univ. student chapter of the Wildlife Society Supplied 8 films to Washington Grade School and Lynn Jr. High School

C. Refuge Participation (continued)

<u>Date</u>	<u>Personnel</u>	<u>Activity</u>
October	Kiger	Attended Wildlife Club meeting, NMSU
November	Kennedy Kennedy, Kiger, and Cahoon	Attended Wildlife Club meeting, NMSU Assisted the N. M. Game and Fish Dept. patrol the Oscura deer hunt
December	Kennedy, Kiger, and Cahoon -	Assisted the N. M. Game and Fish Dept. patrol the Salinas deer hunt Film "Best of Two Worlds" was supplied Wildlife Club, NMSU, for showing

D. Hunting

The following is the 1967 report for the San Andres-Organ special deer hunt:

GENERAL

The deer hunt just completed was considered a success. Only a minor accident or two was reported.

A meeting of law enforcement personnel representing the U. S. Fish and Wildlife Service, New Mexico State Game and Fish Department, NAEA, and the Military from White Sands Missile Range was held at the checking station about 10:00 A.M. on December 8. The checking station opened at 12:00 Noon to permit hunters to enter the area and make camp.

Law enforcement personnel who worked the hunt consisted of 19 men employed by the U. S. Fish and Wildlife Service, 10 by the State Game and Fish Department, and 6 by the Military.

Cooperation between the agencies involved in administering the hunt was very commendable.

WEATHER CONDITIONS

The weather was cold and windy with blowing snow for most of the first day of hunting. Many hunters apparently gave up early because of the inclement weather. The second day was clear and cold. Nighttime temperatures dropped to around 10 above zero in the mountains.

The refuge roads held up quite well as a result of recent rains.

HUNT KILL STATISTICS

From a total of 1300 permits issued, a total of 900 people hunted. They harvested 327 deer for a 36.3 percent kill.

<u>Bucks</u>	<u>Does</u>
Mature 163	Mature 102
Fawns 27	Fawns 35
Total 190	Total 137
Pct. 58.1	Pct. 41.9

The buck to doe kill ratio was about as usual. Hunter selectivity is, no doubt, still the prime contributing factor for such a kill ratio.

REFUGE AND VICINITY KILL

<u>Areas</u>	<u>Hunters</u>	<u>Kill</u>	<u>Approximate percent of kill</u>
Bear Canyon	67	44	66
Burke Spring	8	6	75
Goat Mountain	96	37	39
St. Nicholas	69	26	38
Salt Canyon	53	25	47
Ash Canyon	49	6	12
Rope Springs	92	13	14
Cottonwood Spring	23	1	4
New Well	10	3	30
Lead Camp	40	19	48
Dugout	40	16	40
San Andracito	34	6	18
Brock Tank	24	6	25
Goldberg	6	3	50
Parker Tank	2	1	50
Unknown	2	-	-
Totals	615	212	34

AREA OFF REFUGE

<u>Areas</u>	<u>Hunters</u>	<u>Kill</u>	<u>Approximate percent of kill</u>
South Highway 70	113	39	35
Isaacks Ranch	7	3	43
Lena Cox Ranch	62	34	55
Jim Cox Ranch	<u>103</u>	<u>39</u>	<u>38</u>
Totals	285	115	40

Hunter success on the overall hunt dropped from 44.4 percent last year to 36.3 percent this year. Success on the refuge and vicinity dropped from 42.8 percent to 34 percent. Total available permits last year was 1200 with 871 people hunting. This year 1300 permits were allotted with 900 people hunting.

OBSERVATIONS

A total of 25 bighorn sheep was reported seen by hunters and people working the hunt.

E. Violations

No apprehensions were made by refuge personnel. During the annual deer hunt three cases were prosecuted by the N. M. State Game and Fish Department for failure to check out at the checking station following the hunt.

F. Safety

As of December 31, 1967, we had accrued a total of 15,502 man-days without a lost-time accident. All literature received in this office relative to safety was brought to the attention of employees.

While no regularly scheduled safety meetings were held, the subject of safety was discussed with employees periodically on the job. Welding gloves, goggles, and respirators were primary safety equipment procured during the year. Ordinary shop hazards and those associated with the operation of heavy equipment on road work are most commonly encountered at this station. Vehicular travel throughout the mountain

roads on the refuge requires extra precautions. Also, the use of horses to cover this mountainous terrain is always a hazard. We consider ourselves fortunate to have maintained a good safety record.

Only one accident, a crushed finger, was sustained during the past year. This accident occurred while the employee was trying to release a stuck tailgate on a dump truck. Medical attention was required.

On April 26 Safety Officer John Jones of the Central Office conducted a safety inspection followed by a meeting with all refuge personnel.

VII. OTHER ITEMS

A. Items of Interest

On April 1 Manager Kennedy received an award from the Woodmen of the World as the Conservationist of the Year for 1966.

Mr. John Kiger arrived on June 9 from the Desert National Wildlife Range to assume duties as Assistant Manager.

Mr. Arthur Johnson resigned as maintenanceman effective July 1. Mr. Melvin Cahoon became his replacement effective August 1.

Mrs. Frances F. Samson entered on full-time duty August 31 as our new refuge clerk. Mrs. Linda Stradling's resignation became effective on September 8.

On October 6 all refuge personnel attended the funeral of John Shaul, a long-time employee of the New Mexico Game and Fish Department, who was stationed in Las Cruces.

In October Maintenanceman Cahoon received his 20-year service award.

On November 20 refuge personnel were given a grand tour of NASA's Apollo test site following a meeting about plans for the refuge deer hunt.

Commercial electric power was finally installed at the shop.

Mr. Kennedy suffered a heart attack on December 8 and has since been off the job recuperating. His condition has steadily improved to the present time. Needless to say, we miss him very much on the job and wish him a speedy recovery.

January 12, 1968

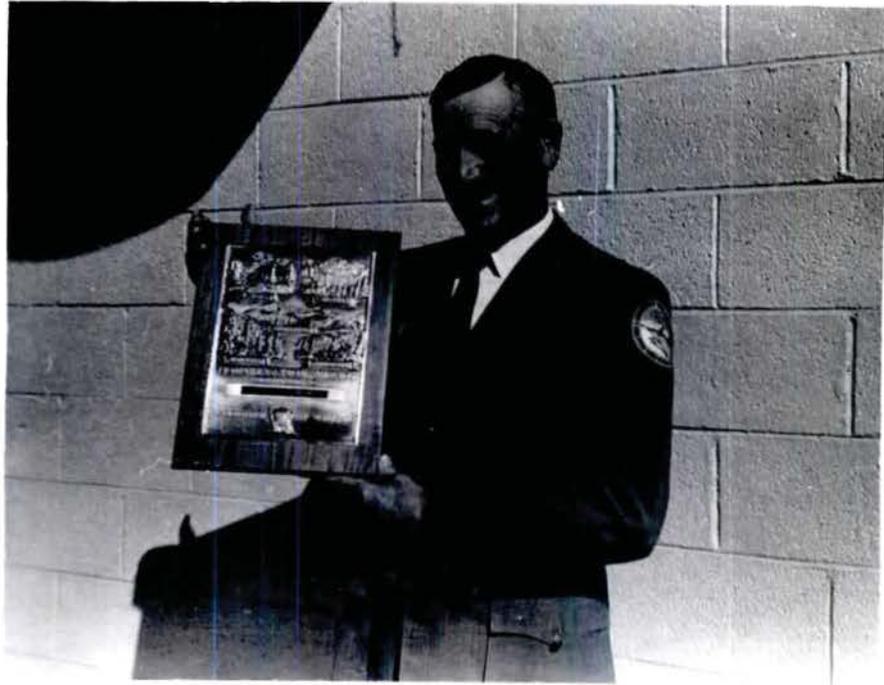
John H. Kiger
John H. Kiger
Acting Refuge Manager

W. Schmidt
Reviewed by
Assistant Regional Director-Operations

Date APR 26 1968



About one-fourth mile north of St. Nicholas Camp. A marked contrast to the terrain and vegetative cover shown in the cover photo. Ocotillo and pinyon pine are dominant plants in view. Photo taken in August.



Manager Kennedy with Conservation Award plaque presented to him by the Woodmen of the World at their state convention held in Las Cruces. Note clipping at end of photo section.



NOV 67

The D-8 caterpillar with dozer was used to open up canyon-bottom roads. Summer rainstorms cause runoffs that move boulders and generally obliterate roads.



NOV 69

The Model 12 caterpillar grader is an important machine for maintaining access on our many miles of refuge roads.



NOV 67

A cattle guard on the Taylor Well road was completely renovated with a new concrete foundation and grid constructed of railroad iron.



NOV 67

• NOV • 67



The Powder House dirt tank was cleaned out with the D-8. It stores water for deer in a foothill area.

• NOV • 67



The St. Nicholas artificial water catchment unit showing apron and storage tanks in the rear and the drinking tank up front.

NOV 67



A close-up of the float-operated drinking tank.

NOV 67



Old stock tank at Burke Spring now used only by wildlife, mainly deer.



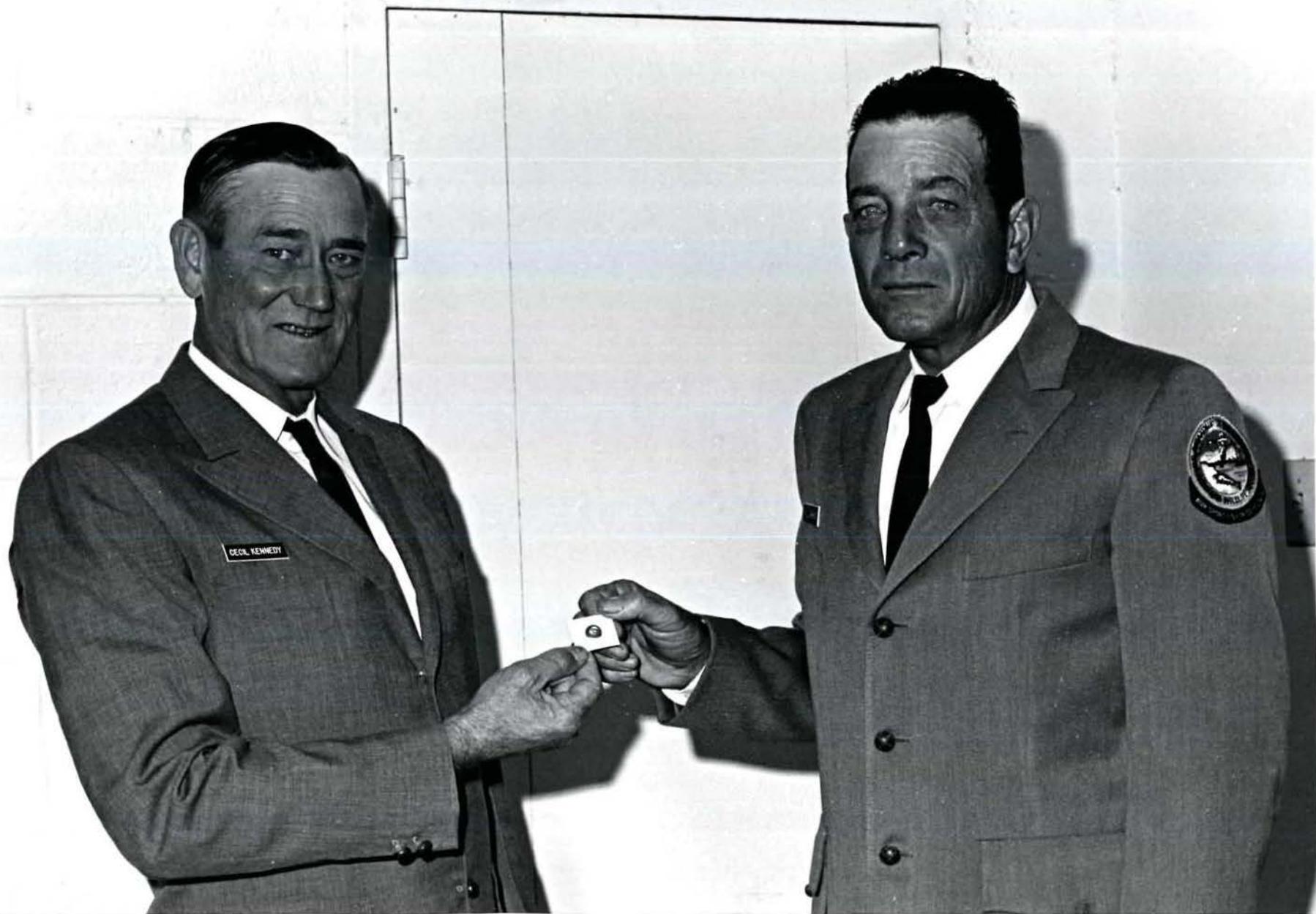
• 67

Deer hunters lined up waiting for the checking station to open.



• 67

St. Nicholas Camp soon after the first snow storm of the winter.



Melvin Cahoon, Maintencenceman, being presented his 20-year service pin by Manager Kennedy.

D. McKinney Back From WOW Parlay

6 Sun-News, Las Cruces, N.M.
Wednesday, August 16, 1967

Dan L. McKinney, 2675 Calle De Rosa, has returned to Las Cruces from a meeting of the National Fraternal Committee of the Woodmen of the World in Louisville, Ky.

Mr. and Mrs. McKinney and their daughter, Barbara, spent several days there while McKinney attended the July 25 meeting at the Stouffer's Inn of Louisville.

The committee's duty is to administer a fund derived from the income from a \$10 million endowment. Included in the fraternal benefits given members is payment of medical expenses up to \$1,000 for a member contracting tuberculosis and up to \$3,000 for a member contracting lung cancer.

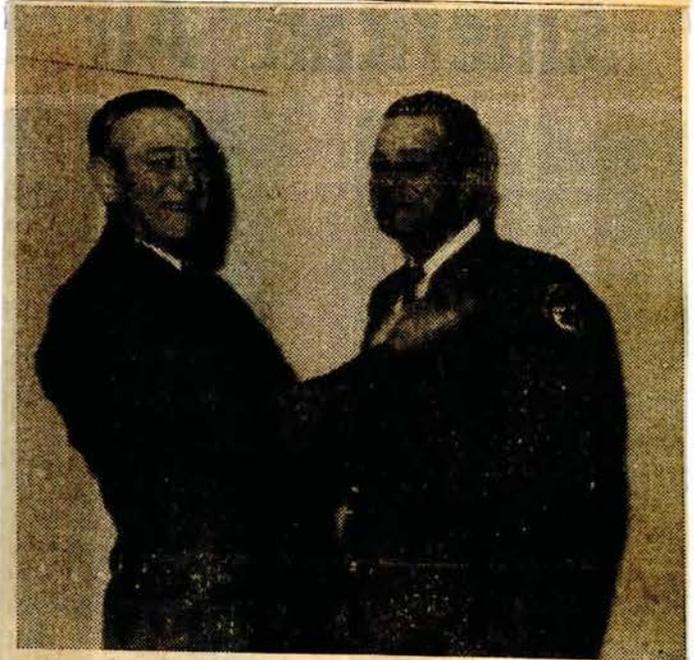
McKinney noted that the Woodmen held their state convention in Las Cruces in April. At that time, they presented to the Mesilla Valley Chamber of Commerce the two flagpoles which stand in front of the chamber building on West Picacho Ave.

This is an example of the type of civic projects the Fraternal Committee carries on, according to R. N. Dossmann, executive vice president of the Woodmen. Dossmann added that the Woodmen of the World has presented about 50,000 American flags to civic organizations and institutions around the country.

In 1966, 125 honor plaques were presented by Woodmen to outstanding citizens. Las Cruces attorney William Byron Darden was selected by Woodmen Camp 233 to receive this award.

Conservation awards are presented to a person doing an outstanding job in natural conservation. Cecil Kennedy of Las Cruces was chosen to receive the plaque by the local Woodmen units. His was one of 52 such awards presented in 1966.

4 — Citizen — Thursday, Oct. 26, 1967



MR. MELVIN L. CAHOON receives a 20-year pin after successfully completing 20 years of Government service, of which 8½ years were spent in the Army during World War II. Nine months of this service were spent in a German prison camp. Mr. Cahoon is presently employed by the U. S. Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife Refuge, Las Cruces, New Mexico. Cecil A. Kennedy, Manager for the refuge, is making the presentation.

3-1751
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge San Andres NWR Months of January to April, 19 67

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total Estimated Use
	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	
I. <u>Water and Marsh Birds:</u>										
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					M. Dove 1,000
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow					Eagle 15 D. Hawk 6 Raven 8
					 Reported by <u>Cecil A. Kennedy, Refuge Manager</u>

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) **Species:** Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) **First Seen:** The first migration record for the species for the reporting period.
- (3) **Peak Numbers:** Estimated number and inclusive dates when peak population of the species occurred.
- (4) **Last Seen:** The last refuge record for the species during the season concerned.
- (5) **Production:** Estimated number of young produced based on observations and actual counts.
- (6) **Total:** Estimated species days use (average population X no. days present) of refuge during the reporting period.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested. RECEIVED

* Only columns applicable to the period covered should be used.

NOV 1967
WILDLIFE SERVICES

3-17
Form NR-4
(June 1945)

SMALL MAMMALS

Refuge San Andres National Wildlife Refuge Year ending April 30, 1967

(1) Species Common Name	(2) Density		(3) Removals					(4) Disposition of Furs					(5) Total Popula- tion	
	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control*	For Re- stocking	For Re- search	Share Trapping		Total Refuge Furs Shipped	Furs Donated	Furs Destroyed		
							Permit Number	Trappers Share	Refuge Share					
Coyote			Total removal of predators by 1080 stations											10
Bobcat													8	
Mountain Lion													1	
Ring-Tailed Cat													6	
Badger													8	
Grey Fox													8	
Porcupine													10	
3 Species Skunk													25	
White-Tailed Antelope Ground Squirrel, Rock Squirrel, Rabbit, Rat													Numerous	

*List removals by Predator Animal Hunter

REMARKS:

Cecil A. Kennedy
Reported by Cecil A. Kennedy, Refuge Manager

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
- (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

RECEIVED
MAY 2 '67
WILDLIFE REFUGES

(Original to Washington 9/1/67)

WATERFOWL

REFUGE San Andres National Wildlife Refuge

MONTHS OF May TO August, 1967

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada										
<u>Cackling</u>										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										

NOTHING TO REPORT

3-175
Form NR-1A
(Aug. 1952)

MIGRATORY BIRDS
(Other than Waterfowl)

Refuge San Andres NWR Months of May to August, 1967

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total Estimated Use
	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	
I. <u>Water and Marsh Birds:</u>										
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove					M. Dove 2,000
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow					Eagle 10 D Hawk 6 Raven 6
Reported by <i>W. A. Semidy</i>					

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1751
Form No. 1A
(Aug. 1952)

MIGRATORY BIRD
(Other than Waterfowl)

Refuge San Andres Bay Months of September to December, 19 67

(1) Species Common Name	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total Estimated Use
	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	
I. <u>Water and Marsh Birds:</u>										
II. <u>Shorebirds, Gulls and Terns:</u>										

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove		4,000	September - present	throughout the period.	
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow		10	September - present	throughout the period.	

Reported by *John R. Kiger*

INSTRUCTIONS (See Sec. 7532, Wildlife Refuges Field Manual)

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: ~~spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc.~~ Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	For Re- stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Common Name	Cover types, total Acreage of Habitat	Number												
Desert bighorn sheep												1,009	270	
Gray mule deer													776	

Remarks:

Reported by John H. Kiger

INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated total number of young produced on refuge.
- (4) REMOVALS: Indicate total number in each category removed during the year.
- (5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.
- (7) TOTAL REFUGE POPULATION: Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

Refuge San Andres National Wildlife RefugeYear 1967

Botulism

Lead Poisoning or other Disease

Period of outbreak _____

Period of heaviest losses _____

Losses:

	Actual Count	Estimated
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

(a) Waterfowl	_____	_____
(b) Shorebirds	_____	_____
(c) Other	_____	_____

Areas affected (location and approximate acreage) _____

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.) _____

Condition of vegetation and invertebrate life _____

Remarks _____

Kind of disease _____

Species affected _____

Number Affected Species	Actual Count	Estimated
_____	_____	_____
_____	_____	_____
_____	_____	_____

Number Recovered _____

Number lost _____

Source of infection _____

Water conditions _____

Food conditions _____

Remarks Nothing to report.

PUBLIC RELATIONS
(See Instructions on Reverse Side)

Refuge San Andres National Wildlife RefugeCalendar Year 1967

1. Visits

a. Hunting 815 b. Fishing None c. Miscellaneous 155 d. TOTAL VISITS 970

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl	None		
Upland Game	None		
Big Game	615	57,215	FWS, State Military
Other			

Number of permanent blinds NoneMan-days of bow hunting included above NoneEstimated man-days of hunting on lands adjacent to
refuge 250

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes	N/A	
Streams and Shores	N/A	

1c. Miscellaneous Visits

Recreation 63 Official 92Economic Use None Industrial None

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	NO. OF GROUPS	NUMBER IN GROUPS	NO. OF GROUPS	NUMBER IN GROUPS
Sportsmen Clubs				
Bird and Garden Clubs	1	3		
Schools				
Service Clubs				
Youth Groups (Boy Scouts)	2	18		
Professional-Scientific	3	78		
Religious Groups				
State or Federal Govt.	4	14		
Other (Local business-men camp trip)	1	5		

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	1	Radio Presentations	None
Newspapers (P.R.'s sent to)	1	Exhibits (Movies shown to schools, etc.)	22
TV Presentations	0	Est. Exhibit Viewers	7,106

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and week-end samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

PLANTINGS
(Marsh - Aquatic - Upland)

Refuge San Andres National Wildlife Refuge

Year 194/67

Species	Location of Area Planted	Rate of Seeding or Planting	Amount Planted (Acres or Yards of Shoreline)	Amount & Nature of Propagules	Date of Planting	Survival	Cause of Loss	Remarks
	<u>NOTHING TO REPORT</u>							

TOTAL ACREAGE PLANTED:

Marsh and aquatic _____
 Hedgerows, cover patches _____
 Food strips, food patches _____
 Forest plantings _____

REFUGE GRAIN REPORT

Refuge San Andres National Wildlife Refuge

Months of Sept. through December, 1967

(1) VARIETY*	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF				(6) ON HAND END OF PERIOD	(7) PROPOSED OR SUITABLE USE*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
	NOTHING TO REPORT										

(8) Indicate shipping or collection points _____

(9) Grain is stored at _____

(10) Remarks _____

*See instructions on back.

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, ~~new-era-cowpeas, mikado soy beans, etc.~~ Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.
- (4) A total of columns 2 and 3.
- (6) Column 4 less column 5.
- (7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters granary," etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

ANNUAL REPORT OF PESTICIDE APPLICATION

Proposal Number	Reporting Year
	1967

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	NOTHING TO REPORT							

10. Summary of results (continue on reverse side, if necessary)