OPTIONAL FORM NO. 10
5010-103

UNITED STATES GOVERNMENT

Memorandum

Givens
Stieglitz
Rudolph
Wilson
Johnson
Carter
Oberheu
Early
Butts
Moffett
Gehrke
File
Copy to:

TO : Regional Director, Atlanta, GA DATE: July 28, 1972

FROM : Refuge Manager, Hatchie NWR

SUBJECT: Revised Refuge Objectives

Attached are the revised Refuge Objectives Statement, Parts I, II, III, and Planning Data Summary Guide for this station as per Mr. Stieglitz memo of June 23.

As pointed out in his memo and that of Mr. Martinson's of June 1, we have not made a complete overhaul of our objectives. We have made the necessary changes in code numbers, RBU values, etc. However, nothing changed significantly to affect our present operations or management practices so revised documentations were deemed unnecessary.

Dennis B. Jordan

Dennis B. Jordan

BUREAU OF SPORT FISHERIES AND WILDLIFE

INTER-OFFICE TRANSMITTAL

☐ Director, _____	☐ Regular Mail
☐ Regional Director, _____	☐ Air Mail
☐ Project Leader, _____	☐ Action
☒ Mr. Curtis Wilson--Division of Refuges	☐ Information

From	Office	Date
Refuge Manager	Hatchie NWR	12-17-71

Subject

Mr. Wilson:

Attached is Refuge Objective Statement, Qualitative Objectives, Quantified Objective Form & Planning Data Summary Guide, also documentation on each objective and resolving conflict. I have additional documentation on identiying conflicts and measuring amount of conflict. If you want this information let me know. Mrs. Powell will have to type it.

3-1908
(Rev.6/63)

(Attach securely to material to be transmitted

Division of Refuges
Atlanta, Georgia

COPY

FILE COPY

OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

Refuge: Hatchie

TO : Director, Bureau of Sport Fisheries and Wildlife (RF), Washington, D.C.
Deputy

DATE: September 29, 1972

FROM : Regional Director, BSF&W, ATLANTA, GA.

SUBJECT: Transmittal, Refuge Objectives Statement, Planning Summary Guide, and Related Material

Transmitted herewith are the Refuge Objectives Statement, Planning Data Summary Guide, and documentation and/or our comments on the indicated subjects below, as requested in your memorandum of June 21, 1971 on Refuge Objectives Review:

No documentation required or RO comment appropriate. [X]

		Documentation	RO Comment
1.	Major change in direction or emphasis in refuge program.	☐	☐
2.	Waterfowl objectives.	☐	☐
3.	Objectives modified by mandate.	☐	☐
4.	Additions and changes in Wilderness and Natural Areas.	☐	☐
5.	Objectives departing from maximum RBUs.	☐	☐
6.	Deviation from standard objectives setting process.	☐	☐
7.	Gross departure from System RBU values.	☐	☐
8.	Recommended revision of standard RBU value assigned output.	☐	☐
9.	Proposed additional outputs.	☐	☐
10.	Critically needed information.	☐	☐
11.	Land acquisition or disposition.	☐	☐
12.	Other matters.	☐	☐
	Candidate Objectives Statement and Documentation for WRH-4.	☐	☐

J. E. Limphill

5010-108

Refuge Objectives

Hatchie National Wildlife Refuge

Reviewed by:

Assistant Regional Supervisor — 9-29-72 Date

Approved by:

SEP 29 1972 Date

REFUGE OBJECTIVE STATEMENT

Refuge Name: Hatchie National Wildlife Refuge

Nearest town or Post Office: Brownsville

County: Haywood

State: Tennessee

Congressional District: 8

Region: 4

Flyway: Mississippi

I. BACKGROUND

A. Establishment authority

Hatchie National Wildlife Refuge was activated on November 18, 1965. The Acquisition Authority was under the Migratory Bird Conservation Act (45 Stat. 1222). The State Conservation Department approval was signed on January 22, 1962. When acquisition is completed, the refuge will contain approximately 11,000 acres. At the present time 10,400 acres are under the administration of the Bureau.

B. Primary Purposes

Due to the fast pace of destruction of waterfowl habitat in the hardwood bottomland areas of West Tennessee, as in other portions of the Mississippi River Delta, it was apparent that steps must be taken to preserve wetlands habitat and provide dependable feeding and resting areas for proper distribution of waterfowl throughout the flyway during migration and wintering periods. Thus, the primary purpose in the activation of Hatchie Refuge was to provide such an area. However, when developed, not only will the refuge winter ducks but will provide the necessary habitat in the production of resident wood ducks during the spring and summer and homes for other native wildlife species throughout the year. Hatchie will reflect the changing pattern of Bureau land management, where wildlife-oriented recreational opportunities and other public use programs now play an important part in our goals. Public use opportunities must be given high priority in planning for Hatchie's future, with 2,000,000 people within a 2-hour driving radius and 15,000,000 within a 5-hour drive, and Interstate 40 passing through the refuge.

C. Special Commitments

None

D. General aspect of the refuge

Hatchie Refuge lies approximately 38 miles east of the Mississippi River in West Tennessee. Memphis lies 50 miles to the southwest, Nashville 130 miles east northeast and Brownsville five miles north. It is bounded on the north by the Hatchie River and on the south by the foothills of the river bottom. It is predominately a timbered bottomland area. Open water, with the exception of several miles of Hatchie River which meanders along the north boundary, and Bear and Cypress Creeks running through the interior, is confined to ten small oxbow lakes located in proximity to the river, and five borrow pits along I-40. Generally the land elevations range from a low of 280 feet, mean Gulf Sea level, along the river to 375 feet in the adjacent foothills. Approximately 80 per cent of the refuge lies in the flood plain of the Hatchie River. Normally the bottom is flooded annually during the period December-March. The average annual precipitation is approximately 52 inches. Average temperatures range from a low of 41 degrees in January to 81 in July, with extremes of -13 to 109 degrees. The growing season averages 214 days. The average snowfall in the area is approximately 6 inches. Major cover types on the refuge are as follows:

Croplands	1,644
Grassland	45
Timberland	9,135
Bottomland	8,222
Upland	913
Marsh and Water	232
TOTAL	11,056 acres

II. QUALITATIVE OBJECTIVES

61 Wildlife-Wildlands Interpretation

Because more than 2 million people live within two hours drive, Hatchie Refuge has an excellent opportunity to influence mankind towards a more healthy environment where wildlife can flourish. Wildlife interpretation will be emphasized to a maximum point consistent with other major values the refuge provides. Our interpretation program will take the form of on-site foot trails, auto route, exhibits/demonstrations and other programs, all of which are specifically designed to significantly increase the understanding and appreciation of the environment by the public.

62 Environmental Education

The refuge's varied environments offer excellent field sites for environmental education. Some of these sites will be made available to students and teachers involved in programs dealing with ecology and environmental relationships. With the present interest in ecology and the environment it is felt that we are in an excellent position to provide area schools with a field laboratory for nature study.

63 Wildlife-Wildlands Recreation

It is felt that these activities, although certainly not comparable in value to our interpretative programs will play an important part in the overall refuge program. They will be provided the average on-site visitor, who, although may not be seeking an interpretative experience, finds the refuge more attractive to his particular need than other areas, if available. Controlled hunts will be used not only to help maintain healthy populations of wildlife within the habitat carrying capacity, but also to provide the opportunity for each individual to go afield and enjoy this great American heritage. This is becoming more and more important in this area, as well as throughout the country, with the rapidly decreasing areas available for the average hunter to use. There is certainly a need for this opportunity here at Hatchie with a metropolitan area the size of Memphis only a sixty-minute drive by Interstate highway.

64 Non-Wildlife Wildlands-Oriented Recreation

Here we are providing activities which in themselves are not associated with our mission or purposes, however, which find refuge lands and waters desirable sites. These will be provided until such time they become in conflict with other more desirable outputs.

65 Professional Services

Under this activity we will strive to make available our knowledge, views and facilities to other agencies, professionals and individuals seeking information which we may be in a position to provide.

66 Environmental Preservation

We will strive to seek out, identify and preserve not only unique environmental areas of national significance, but also assure the preservation of each refuge acre and maintain the natural quality and productivity of the environment. With the present accelerated rate of environmental degredation it is essential that each acre held in public trust be preserved and maintained in a manner to reflect our concern for stewardship and long term values.

67 & 68 Wildlife

Each species of wildlife occuring on Hatchie either directly or indirectly plays an important part in the natural scheme of wild things. Most of our managerial efforts for wildlife will be primarily directed towards only a few species. However, each species will be affected to some extent, if only through protection, and likewise the refuge will receive benefits from each species.

69 Refuge Receipts

Presently refuge receipts for Hatchie will probably be limited to forest products. However, on an area like Hatchie where a large percentage of our area is in timber, it is important that these lands be managed under sound forest principals, and economic returns should be realized when not in conflict with higher priority functions.

HATCHIE NWR

III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of EXPR.	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name		Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
61	Wildlife-Wildlands Interpretation	Acty. hr.							
610	Wildlife trails nonmotorized	"							
610-1	Self-guiding	"	0	0	13,000	975	200	13,000	visits
610-2	Conducted	"	0	0	24,000	2,400	240	24,000	"
611	Wildlife tour routes Motorized	"							
611-1	Self-guiding	"	0	0	136,000	10,200	90	136,000	"
613-0	Visitor Contact Sta.	"	0	0	150,000	11,250	500	300,000	"
614	Interpretative exhibits/demonstra.	"							
614-1	Self-guiding	"	0	0	75,000	5,625	360	150,000	"
615-0	Other wildlife interpretive prog.	"	120	6	7,400	370	500	150	programs
62	Environmental Education	"							
620-0	Students	"	0	0	16,900	2,535	100	2,800	students
621-0	Teachers	"	0	0	600	150	25	95	teachers
622-0	Professional Ser.	"	0	0	3,500	875		1,130	recipients
63	Wildlife-Wildlands Recreation	"							

HATCHIE NWR

III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name	EXPR.	Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
630	Hunting Migratory Birds	Acty. hr.							
630-5	Dove	"	0	0	4,000	200	300	2,000	Hunters
631	Hunting Resident Game	"							
631-2	Deer, gun	"	0	0	4,800	144	180	600	Hunters
631-3	Deer, bow	"	0	0	5,000	150	180	625	"
631-5	Squirrel	"	9,800	245	15,000	375	365	5,000	"
631-6	Raccoon	"	1,200	18	2,000	30	145	500	"
632	Fishing	"							
632-1	Warmwater	"	7,200	180	26,400	660	140	8,800	Fishermen
634	Wildlife observation	"							
634-1	Foot	"	120	6	500	25	20	500	Visits
634-2	Auto	"	1,020	51	4,400	220	100	4,400	"
634-4	Other	"	60	3	300	15	20	300	"
635	Wildlands appreciation	"							
635-1	Foot	"	200	3	1,000	15	20	1,000	"
635-2	Auto	"	1,700	26	8,500	128	125	8,500	"
635-4	Other	"	100	2	500	8	20	500	"

HATCHIE NWR
III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of EXPR.	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name		Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
636-0	Photography	Acty. hr.	20	1	600	30	15	200	Visits
637-0	Field trials	"	0	0	4,200	63	150	2	2-day trial
638	Public Affairs								
638-1	TV Programs	Each Prog.	0	0	10	10	1	10	Programs
638-2	Radio Programs	"	10	5	17	8	1	17	"
638-3	newspaper articles	Each Art.	3	2	52	26	1	1	Article/week
638-4	magazine articles	"	0	0	2	4	1	2	" /yr.
64	Non-W-W-oriented Recreation	Acty. Hour							
640-0	Camping	"	0	0	260,000	0	200	11,000	Campers
641-0	Picnicking	"	600	0	13,000	0	260	13,000	Picnickers
65	Professional Services								
650	Studies & Publications								
	Refuge Oriented Pub.								
650-1	By refuge personnel	Each Study	0	0	1	500		1	Study/yr.
650-2	By non-refuge pers.	"	0	0	2	1,000		2	Studies/yr.

HATCHIE NWR

III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of EXPR.	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name		Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
	Refuge oriented, unpublished								
650-3	By ref. personnel	Each Study	0	0	1	100		1	Studies/yr.
650-4	By non-refuge personnel	"	0	0	2	200		2	"
	Non-refuge oriented studies								
650-5	Published	"	0	0	1	100		1	"
650-6	Unpublished	Each Publ.	0	0	2	40		2	"
	Cooperative Programs								
655	Ecological Monitoring								
655-1	By Refuge personnel	Each Prog.	0	0	1	100		1	Program/yr.
655-2	By non-refuge personnel	"	0	0	1	100		1	"
656	Banding								
656-1	By refuge personnel	"	0	0	3	150		3	"
657-0	Other coop. progs.	"	0	0	1	100		1	"
66	ENVIRONMENTAL Preservation								
660-0	Natural Environments Preserved	Each Acre	10,400	208	11,056	221		11,056	Total refuge acreage

HATCHIE NWR

III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of EXPR.	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name		Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
67	Wildlife Maintenance								
670	Threatened species	Use Days							
670-4	Status undetermined	"	14	1	60	1	4	2	birds for a 1-mo. perio
671	Special Recog. Sp.	"							
671-1	Marsh & Water	"	8,600	4	15,000	8	300	40	Aug. pop.
671-1	Shorebirds, gulls Terns	"	15,800	8	20,000	10	600	55	" "
	Raptorial	"							
671-1	Other than eagles	"	45,900	46	50,000	50	500	137	" "
671-1	Doves & pigeons	"	114,900	57	200,000	100	2,000	550	" "
672-0	Wildlife Diversity	Each Species	200	40,000	200	40,000	--	200	Present bird list
673	Waterfowl Maintenance								
673-2	Geese	Use Days	2,200	2	22,500	22	800	375	Aug. winter population
673-3	Ducks	"	578,600	579	1,800,000	1,800	40,000	18,000	"
68	Wildlife Production								
680	Waterfowl production								
680-3	Ducks Group I	No. Prod.	1,400	1,120	3,000	2,400		3,000	Production per year

HATCHIE NWR

III. QUANTIFIED OBJECTIVES FORM

OBJECTIVE		UNIT of EXPR.	CURRENT		OBJECTIVES		OBJECTIVE in OTU CAP. or PEAK	OBJ. in other FORM	
No.	Name		Outputs	RBU's (thou.)	Outputs	RBU's (thou.)		No.	Units
680-3	Ducks-Group III	No. Prod.	800	160	1,000	200		1,000	Production per year
681-0	Species Transplanted	No. Anim.	0	0	25	250		25	Per year
682-0	Species Donated	"	0	0	10	20		10	"
69	Economic Benefits								
	Refuge receipts								
692-0	Forest products	Ea. Dollar	100	0	64,600	0		1,078,200	Bd.ft/yr.

HATCHIE NATIONAL WILDLIFE REFUGE

REFUGE OBJECTIVES DOCUMENTATION

Prepared: FY 1972

For: FY 1973

A. Code - 1001

B. Objective - Self-guiding foot trails

1. Assumptions:

a. This type of recreational development will probably be stressed primarily west of State Highway 76 especially during the planning period due to:
1). Very poor access to other parts of the refuge and anticipated high cost for development of adequate access elsewhere.
2). And because only 380 acres or 13 percent of the land is cut over, therefore leaving a higher percentage of land that would be suited for this type activity.

b. That the major access roads to the trails would be hard surfaced, due to the unappealing, dusty conditions of other type roads during heavy use periods.

c. That most of the trails would not require hard surfacing due to the cool-shady conditions in the "Bottom".

d. That the same trails would be used for both self-guiding and conducted walks--at least in the beginning.

e. That other activities would be offered the visitor, other than trails.

2. Output Quality Standard - Same as system standard - 75 RBU

C. Unit of Expression - Activity Hours (A/H)

D. Current Outputs - 0

E. Current RBU'S - 0

F. Quantity Needed (Demand-deficit) Peak - O.T.U.

75,000 Total demand A/H or Activity occasions (A/O) since we estimate A/O to be 1 hr.
.50 Est. Percent Sunday Demand
37,500 Total Sunday Demand
.50 Est. percent Sunday demand on Sundays of June, July, Aug.
18,750 Total Sunday demand--June, July, Aug.
÷13 No. Sundays
1,442 Avg. Sunday demand during peak period
.25 Est. percent use during peak Sunday period 1 hr. 2-3 P.M.
360 Estimated peak OTU, 2-3 P.M. any Sunday afternoon June, July, Aug.

G. Need (Demand-deficit) Total - With no present use here for this activity, and for lack of better information, we have based our demand figures on information obtained from Meeman-Shelby State Park located approximately 45 miles west of Hatchie. They have 5 nature trails totaling 53 miles, all of which are self-guiding. The area is fairly isolated. However, it has good acess to the park and is located only 18 miles from Memphis. They received a total use of 50,000 activity occasions last year with an average of 3 hours per occasion or 150,000 activity hours. It is felt that the bulk of their trail use is the result of people coming to the park for other reasons or for multiple reasons, such as camping, picnicking, etc., rather than primarily for walking nature trails. We believe this would also be the case here, that other activities would also be offered the visitor.

With this in mind it is felt that with an improved road system within the refuge, with the good access already available to the refuge and with proper trail development and advertisement, we could expect to receive at least half a demand of Meeman-Shelby State Park, which would be 75,000 activity hours per year. We will primarily emphasize shorter trails of 1 - 2 miles in length or around 1 - 2 hours in duration rather than the longer trails offered at Meeman-Shelby, and it is felt that these shorter trails would be more appealing to the visitor.

H. Ultimate capacity OTU

a. Assumptions and Facts

a. Approximately 8,000 acres flood annually (73 per cent) generally flood from December - April (150 days).
b. At present it seems unfeasable to build levees for flood prevention, but it may be something to consider ultimately.
c. Insects, weather conditions and other factors would limit trail use to 210 days a year on the average (from Tenn. Outdoor Recreation Plan-P 134).
d. 2 miles of potential trails would be unflooded year round.
e. 12 miles of potential trails would be unflooded only 215 days.

14 miles potential trails
50 quality cap./mile
700 peak OTU cap.

I. Ultimate Capacity - Total (A/H)

a. Potential trails available year round

2 miles/trails year round
50 quality capacity/mile
100 Total CTU
10 estimated turnover/day-maximum
1000 Total day use
210 No days actually available (58% of total 365)
210,000 A/H for year

b. Potential trails available only May-Nov. (215 days)

12 miles
50 Quality capacity/mile
600
10 Max. turnover/day
6000
125 No. days actually available
750,000
+210,000 Part a.
960,000 Total A/H ultimate capacity

215
.58
1720
1075
12470 or 125 actual days

J. Planning Period Capacity - OTU

4 miles potential trails during planning period
50 quality capacity/mi.
200 Peak OTU

K. Planning Period Capacity - Total

The 4 miles of potential trails will be available only May-Nov. due to flooding.

4 miles
50 Quality capacity/mile
200
10 No. turnovers/day
2000
125 No. days actually available
250,000 A/H

A. Code - 1002

B. Objective - Conducted foot-trails

1. Assumptions:

a. The same trails will be used for both self-guiding and conducted walks, except that the 6 mile overnight camp-trail will not be used.
b. That the refuge would be staffed with naturalist or other specialized personnel for this type activity.
c. That we could expect to get about the same demand for conducted walks as for self guiding, if self guiding were not provided and that if both were provided we would expect approximately 65 percent to prefer conducted tours.
d. The quality capacity would be 60/mile w/5 turnover/day.

C. Unit of Expression - A/H

D. Current Outputs (A/H) - 0

E. Current-Outputs (REU's) - 0

F. Need (Demand-Def.) (O.T.U)

Same as self-guiding - 360

G. Need (Demand-Def.) Total - 75,000 A/H

H. Ultimate Capacity - OTU

8 miles of potential trails
60 Q/C per mile
480 OTU

I. Ultimate Capacity - Total (A/H)

a. Trails available year-round
2 miles year round trails
60 Q/C per mile
120 Total OTU
5 est. tours/day
600
210 No. days actually available
126,000 A/H/Yr.

b. Trails available only May-Nov.

6 miles
60 Q/C per mi.
360
5 tours/day
1800
125 No days actually available
225,000
+126,000 Part a
351,000 A/H

J. Planning Period Capacity - OTU

4 miles
60 Q/C per mi.
240 Peak OTU

K. Planning Period Capacity - Total

4 miles
60 Q/C per mi.
240
5 tours/day
1200
125 days
150,000 A/H

A. Code - 1101

B. Objective - Self-guiding Auto Trails

1. Assumptions

a. That the demand and supply figures for "driving rough roads for pleasure" for Regions 7 and 8 (our service area) in the C.T.O.R.P. are accurate.
b. That if both self-guiding and conducted auto visits are offered, they will use the same trails.
c. That the trails will be hard surfaced.

2. Output Quality Standard - Same as system standard- 75 RBU

C. Unit of Expression - A/H

D. Current Outputs (A/H) - 0

E. Current Outputs (RBU) - 0

F. Need (Demand/Def.) - Peak OTU

136,256 Total Demand A/O
.50 % of total-Sunday demand
68,128 Total Sunday demand
.50 % Sunday demand during peak 3 mo. June, July, Aug.
34,064 Total Sunday demand-peak period
÷13 No. Sundays
2,620
.25 % Sunday use during peak hour period 2:00-3:00 PM
655 Peak OTU

G. Need (Demand/Def.) Total - Driving rough roads for pleasure

916,545 C.T.O.R.P. demand within our service area (A/O)
371,520 " supply " " : "
545,025 Demand/Def.

Assuming that 25 per cent of this D/D would want to drive nature trails if available:

545,025
.25
136,256 Act. occ. or A/H (est. A/) = 1 hr.)

H. Ultimate Capacity (OTU)

8.5 mi.
20 Q/C per mi.
170 peak OTU

I. Ultimate Capacity (Total)

1. Assumptions:

a. Quality capacity - 20 people/mile--5 vehicles/4 people
b. Standard Year - 240 days - T.O.R.P., p. 134
c. 8,000 acres flood annually (73%) for 150 days (Dec.-April) leaving 215 days unflooded.
d. That due to high cost of construction (because of flood conditions and specifications for nature trail) only 8.5 miles (2 trails) would be feasible for consideration.

8.5 miles
215 # days in service year due to flooding
1828
20 Q/C per mile
36,550
10 turnover rate/day
365,500 A/O or A/H - A/O = 1 hr.

J. Planning Period Capacity - OTU

4.5 miles-other 4 miles in heavy cutover area, not suited during P/P
20 Q/C per mile
90.0

K. Planning Period Capacity - Total

4.5 miles
20 Q/C per mi.
90
215 # days in service yr.
19,350
10 Turnover rate/day
193,500

A. Code - 1102

B. Objective - Conducted Auto Routes

1. Assumptions:

a. Same trails used for both conducted and self-guiding.
b. Demand est. to be same for each if only one offered; however if both conducted and self-guiding are offered, app. 65% of total would prefer self-guiding.
c. Quality capacity same for both types, however turnover rate for conducted is estimated to be half that of self-guiding.

2. Output Quality Standard - 100 RBU

C. Unit of Expression - A/H

D. Current Outputs (A/H) - 0

E. Current Outputs (RBU) - 0

F. Need (Demand-Def.) - Peak OTU

Same as for self-guiding - 655

G. Need (Demand/Def.) Total

Same as for self-guiding - 136,256,

H. Ultimate Capacity OTU

Same as S/G 170

I. Ultimate Capacity (Total)

Half that of S/G because torn-over rate is half - 182,750.

J. Planning Period Capacity - OTU

Same as for S/G - 90

K. Planning Period Capacity - Total

Half that of S/G because tornover rate is half - 96,750.

A. Code - 1201

B. Objective - Interpretive Center

1. Assumptions :

a. We could expect to receive a demand twice that of foot trails.

2. Output Quality Standard - 75

C. Unit of Expression - A/H

D. Current Outputs (A/H) - 0

E. Current Outputs (RBU) - 0

F. Need (Demand/Def.) Peak - OTU

360 For foot trails
X 2
720 OTU

G. Need (Demand/Def.) Total

75,000 for foot trails
X 2
150,000 A/H

H. Ultimate Capacity (OTU)

Assuming we had 10,000 sq. ft. space
÷ 20 Quality Capacity-1 person/20 sq. ft.
500 OUT

I. Ultimate Capacity (Total) (A/H)

500 Peak W/10 turnover/day
10
5,000
365 days
1,825,000 A/H

J-K Planning Period Capacities

Same as ultimate.

A. Code - 1301

B. Exhibits - Demonstrations, On-refuge, Self-Guiding

1. Assumptions:

These are exhibits and demonstrations which are not in the WIC and are not a normal part of a wildlife walk or drive and/or which require a special effort of some sort to understand and appreciate.

2. Output Quality Standard - Same as system standard 75 RBU

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU Value - 75

F. Need (Demand/Def.) Peak - Expect peak to be 50% of that for the WIC. 50% of 720 = 360.

G. Need (Demand/Def.) Total - Judge 50% of WIC demand would want to view demonstration.

150,000
.50
75,000 Act. hrs.

H. Ultimate Capacity (OTU)

Potential demonstrations:

1. Wood duck mgt./production
2. People and wildlife
3. Timber management
4. Deer population control
5. Banding
6. Farming
7. Suburban (backyard) wildlife management

Assuming these represent the 8 significant demonstrations, the refuge has capacity for:

8 demonstrations
20 people/demo-quality capacity
160 OTU for each site of exhibits

There are three potential sites for exhibits that could handle parking without degradation of environment: 160
3
480 OTU

A. Code - 1302

B. Objective - Rxhibits/Demonstrations, On Refuge, Conducted

Assume that everything here is the same as self-guiding except a far greater amount of interpretation that can be imparted by man talking to a group.

A. Code - 1303

B. Objective - Exhibits/Demonstrations, OffRefuge, Self-guiding

1. Assumptions:

Assume that the general area for participation here would be area fairs, parades, boat shows, etc.

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 0

F. Need (Demand/Def.) OTU The demand peak would be during the Mid-South Fair at Memphis--this would represent 90% of total demand.

651,032 Total activity demand
.90 % of total demand made up by fair
985,928.80
.15 % demand for 1st Sunday, peak day
87,889 Peak day demand
.20 % of peak day demand for 2-hr. period 3:00 5:00
17,577.80
+8 turnover rate/2 hrs.
2,197 OTU

G. Need (Demand/Def.) Totall

The Tenn. Outdoor Recreation Plan shows a demand in our service area for 1,302,065 activity visits for visiting outdoor exhibits (fairs, outdoor art shows, and similar exhibits; watching parades). The bulk of this use occurs at the Mid-South Fair at Memphis.

Assuming that an activity visit was for ½ hr:

1,302,065 total demand
.50 % demand interested in our exhibit
651,032 Total act. demand
+4 Act. visit ¼ hr.
162,758 A/H

H. Ultimate Capacity - OTU

Out capacity to provide an interpretative experience at these type things would be 100 per 15 minute period.

100 OTU

I. Ultimate Capacity - Total 100 OTU
4 turnover/hr.
400
16 hrs/day (open 8:00 am-12 midnight)
6,400 capacity/day
14 # days
89,600 A/H total

J&K Planning Period Capacities

Same as ultimate

A. Code - 1304

B. Objective - Exhibits-Demonstrations, Off Refuge, Conducted

Everything same as self-guiding except RBU value of 50

A. Code - 1401

B. Objective - Other Programs (Generally made up of off-site interpretative programs-Slide lectures, talks, etc.)

C. Unit of Expression - A/H

D. Current Outputs - 3,701 A/H

E. R.B.U. Value - 75

F. Need (Demand/Def.) Peak - OTU

Demand estimated to be 1 program with peak of 500 (School program)

G. Need (Demand/Def.) Total

Estimate with increased emphasis and advertising demand will double.

3,701 A/H 1970
X 2
7,402 A/H

H. Ultimate Capacity - OTU

Estimate ultimate capacity to be 1 program with peak of 1,000 people attending.

I. Ultimate Capacity - Total

Figure could provide 5/1 hr. programs per week to an average attendance of 50.

5
50
250 week total
52 wks/yr
13,000 A/H

J&K Planning Period Capacities

Same as ultimate.

A. Code 2001

B. Objective - Environmental Education

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 150

F. Need (Demand/Def.) Peak OTU peak demand estimated approx. 100 students.

G. Need (Demand/Def.) Total- Feel that we will receive the bulk of our demand from schools in our county. Only considering students below college level, because services to college students will generally fall under Professional Services Rendered. Within our county we have 10 public elementary schools with a total enrollment of 3,755; 1 public Jr. High School, 484 students; 1 public Sr. High School, 1,071 students; 1 private school Kindergarden-12 th grade, 310 students. Total students 5,620. Figure that if service was provided and emphasized we could expect half the students/teachers to take advantage of the opportunity.

5,620 ÷ 2 trips/yr. x 3 hrs./trip = 16,860 A/H

H. Ultimate Capacity OTU - Potential sites

1. Windrow Field-Bullpen Lake Area.
2. Hart Lakes Area
3. McCool clubhouse area
4. Dewatering area
5. Mann tract.

1 class/day/site x 5 sites x 30/class = 150.

I. Ultimate Capacity Total

150 OTU x 100 da. (5 mo.-if 4 233k/mO. of 5 da./week) = 15,000 visits x 3 hrs/visit --45,000 A/H. Reduce this to 40,000 for slippage because of weather, mixups, etc.

J&K Planning Period Capacities

Same as ultimate.

A. Code 3001

B. Objective - Duck Hunting

1. Assumptions:

a. That a quality waterfowl hunt here would attract slightly fewer hunters per day than our 1971 squirrel hunt.
b. This is assuming that although a lower percentage of hunters in a given area, participate in duck hunting as compared to squirrel hunting, our drawing area (service area) will be larger for duck hunting thus tending to somewhat balance in numbers.

2. Output Quality Standard 50 RBU

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 0

F. Need (Demand/Def.) Peak

Estimated to be approximately half our peak period during 1971 squirrel hunt, which was 378

+2

188 or 190

G. Need (Demand/Def.) Total

The average daily number of squirrel hunters for 1971 was 86. Figure it reasonable to assume an average daily demand of duck hunters to be slightly less--set at 70.

70 Avg. No./day
40 length of Aug. season
2800
4 avg. length of hunt
11,200 A/H

H. Ultimate Capacity OTU

Regulations permit opening of only 40% of refuge for migratory bird hunting. Therefore we would have 4,400 acres (round off to 4,000) of potential duck hunting. All our hunting would be GTR type hunting.

4000 acres of potential hunting
x2 Q/C/Ac. est to be twice for marsh hunting
800

I. Ultimate Capacity (Total)

We are assuming that to have quality hunting and preserve the resource we could permit hunting 3 days a week (Monday, Wed. & Sat.) from daylight till noon.

800 OTU
18 # hunting days during 40-day season
14,400 A/O per year
4 Avg. length of A/O
57,600 A/H

J&K Planning Period Capacities

We do not have the capacity for duck hunting during the planning period due to low refuge population.

A. Code - 3012

B. Objective - Dove Hunting

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 5-

F. Need (Demand/Def.) Peak

1. Assumptions:

a. That the peak OTU demand would be approximately 1½ times that of Duck hunting.

190 Peak OTU Duck Hunting
1.5
285

G. Need (Demand/Def.) Total

1. Assumptions:

a. That the average daily demand for dove hunting would be 3/4 that of duck hunting--this is based on my experience with dove hunting--my past experience indicates that after the first week or so of the season the participation drops off sharply, and that our service area for dove hunting would be slightly less than duck hunting, therefore:

70 avg. no. duck hunters/day
.75
52 avg. no. dove hunters/day
70 length of 3 seasons
3675 A/O per yr.
2 Avg. length of A/O
7,350 A/H

H. Ultimate Capacity OTU

1,763 acres potential dove hunting habitat-P. 14 S&M Plan
.33 Q/C-hunters/Ac.
582

I. Ultimate Capacity Total

582 OTU capacity
30 hunt/da. based on hunting 3 day/week only, to assure quality
17,460 A/O pr/yr. & protection of resource from noon-sundown
2 avg. length A/O
34,920 A/H

J&K Planning Period Capacities

Same as ultimate.

A. Code - 3104

B. Objective - Quail Hunting

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 25

F. Need (Demand/Def.) Peak OTU

1. Assumptions:

a. The average daily demand for quail hunting would be 25% that of squirrel hunting.

1935 A/O total demand from G.
.25 % of total demand occurring on Saturdays
483.75 Total Sat. demand
10 % of demand occurring on first Sat.
48.38 Total demand first Sat.
.75 % of first Sat. demand between 1-5 PM
36 OTU

G. Need (Demand/Def.) Total

86 Avg. daily demand for squirrel hunting, 1971
.25
21.5 Avg. daily demand-quail hunting
.90 length of avg. season
1935.0 A/O
4 Avg. length of A/O
7,740 A/H

H. Ultimate Capacity OTU

Refuge has a feasible potential of 1,800 acres that could be used for quail hunting.

1,800 Ac.
.02 QC/ac.
36.00 OTU

I. Ultimate Capacity Total

36 OTU
90 day avg. season
3240 A/O
4 Avg. length A/O
12,960 A/H

J&K Planning Period Capacities

Same as for Ultimate.

A. Code - 3111

B. Objective - Deer Hunt-gun

C. Unit of Expression - A/H

D. Current Outputs - 0

E. Current RBU's - 30

F. Need (Demand/Def.) Peak (OTU)

It is estimated that the average daily demand for gun deer hunting would be 1½ times that of the 1971 squirrel hunt (86/day). Also feel the peak demand (OTU) would be about the same as for the 1971 squirrel hunt (378) rounded up to 400 for population increases.

G. Need (Demand/Def.) Total

86
1.5
129 avg. daily demand
25 avg. length of Tenn. season
3,225 A/O
8 avg. length of A/O
25,800 A/H

H. Ultimate Capacity OTU

The refuge has a feasible potential of 11,000 acres that could be used for deer hunting. However under the split season now used in Tennessee, we could count on only about ½ the area being available during the last season because of flood conditions.

11, 00
.02 Q/C-ac.
220.00 OTU

I. Ultimate Capacity Total - A/H

a. 1st season-entire 11,000 acres.

220 OTU
16 avg. length 1st season
3,520 A/O
8
28,160 A/H

b. 2nd season-Estimate only about half of refuge (5,500 ac.) could be counted on not to be flooded during avg. years (9 day season)

5,500 Ac.
.02
110 OTU
9 days
990 A/O
8 Avg. length of A/O
7,920 A/H + 28,160 = 36,080 A/H

J&K Planning Period Capacities

Same as ultimate.

A. Code - 3112

B. Objectives - Deer Hunting - bow - 29 day season.

C. Unit of Expression - A/H

D. Current Outputs - 0

E. RBU Value - 50

F. Need (Demand/Def.) Peak

It is estimated that the average daily demand for bow hunting would be 1/5 that of gun hunting and that the peak OTU demand would be 1/4 that of gun deer hunting.

400 ÷ 4 = 100 OTU

G. Need (Demand/Def.) Total

129 avg. daily demand for gun hunting
+5
26 avg. daily demand for bow hunting
x30 # days in season
780 Total demand A/O
x 8 avg. length of A/O
6,240 A/H

H. Ultimate Capacity - OTU

We have a feasible potential of 11,000 acres that could be used for deer hunting.

11,000
x.02 QC/Ac.
220.00 OTU

I. Ultimate Capacity - Total

220 OTU/cap
20 length of season
6380 Act. occ./yr.
8
51,040 A/H

J. Planning Period Capacity - OTU

Same as ultimate--220 OTU

K. Planning Period Capacity - Total

Same as Ultimate--51,040 A/H

A. Code - 3130

B. Objective- Squirrel Hunting - 127 day Tennessee season

C. Unit of Expression - A/H

D. Current Outputs

A/H = 7,082 (1971)
RBU's = 7,082 x 25 = 177,050

E. RBU Value - 25

F. Need (Demand/Def.) OTU

Estimate peak demand to increase approximately 25% by end of planning period.

378 Peak OTU 1971
.25
94.50
+378
472.50 = 472

G. Need (Demand/Def.) Total

Figure the 1971 demand will increase approximately 25% by end of planning period.

7,082 1971 demand
.25
1770.50
+7082
8852.50 = 8,852

8,852 is for a 30 day period
x 127 full season
37,465 demand

H. Ultimate Capacity - OTU

9,500 potential acres for squirrel hunting
.05 Q-C/Ac.
475 OTU

I. Ultimate Capacity - Total

a.)Before flooding (Aug. 20-Nov.30)
(9,500 ac. for 95 days)
475 OTU
95 days
45,125
3 A/O average
135,375

135,375
+ 7,200
142,575 A/H

b.) After flooding (Dec. 1-Jan.1)
(1,500 ac. for 32 days)
.05
75 OTU
32 days
2,400
3 A/O average
7,200

J&K Planning Period Capacities - Total

Same as ultimate.

A. Code - 3132

B. Objective - Rabbit Hunting-Length of Average Tennessee Season 99 days Nov. 6- Feb. 12.

C. Unit of Expression - A/H

D. Current Outputs - 0

E. RBU Value - 25

F. Need (Demand/Def.) Peak OTU

Estimate average daily demand in our area for rabbit hunting would be about the same as for quail hunting, 36 OTU

G. Need (Demand/Def.) Total

21.5 avg. daily demand - quail hunting
99 length of Tenn. season
2128.5 A/O
4 avg. length of A/O
8.514 A/H

H. Ultimate Capacity OTU

Have 11,000 acres that could be rabbit hunted.
.02 A/C per acre
220 OTU

I. Ultimate Capacity - Total

Of the 11,000 acres, approximately 8,000 will be flooded 74 of the 99 day season.

a.) 11,000 ac. for 25 da.
.02
220
25 days acreage avail.
5,500 A/O

b.) 3,000 ac. for 74 days
.02
60.00
74
4,440 A/O

J&K Planning Period Capacities

Same as ultimate.

A. Code - 3144

B. Objective - Raccoon Hunting--Tenn. has 110 day season Oct. 15-Feb. 6

C. Unit of Expression - A/H

D. Current Outputs - A/H

414 A/O during 31 day hunt 1970
4 avg. hrs/A.O
1,656 A/H

E. Current RBU Value - 15

Total RBU's = 1,656 x 15 = 24,840 RBU's

F. Need (Demand/Def.) OTU - Based on past hunts we feel the peak demand would be 15 vehicles w/3 hunters per vehicle.

15 x 3 --45 OTU

G. Need (Demand/Def.) Total - We estimate the demand for raccoon hunting will increase 25% during planning period.

13 Present avg. daily A/O demand
+3 planning period increase
16 future avg. daily A/O demand
110 Length Tenn. season
1,760 Total A/O demand
x 4 A/O length
7,040 A/H

H. Ultimate Capacity - OTU - Hatchie has a potential of 9,500 acres of raccoon hunting. Of this, 8,000 acres will normally be flooded approximately ½ the 110 day hunting season.

a.) Areas available 1st half of season

9,500
.02 A/C-ac.
190.00 Ultimate OTU

b.) areas available last ½

1,500
.02
30.00

I. Ultimate Capacity Total

190 OTU capacity 1st ½ season
55 days
10,450 A/O first half

30 OTU last ½ of season
55 days
1,650 A/O last half

10,450 + 1,650 = 12,100 x 4 avg. length = 48,400 A/H

J. Planning Period Capacity - OTU - Same as ultimate, 190 OTU

K. Planning Period Capacity - Total - Same as ultimate, 48,400 A/H

A. Code - 3301

B. Objective - Warmwater Fishing

C. Unit of Expression - A/H

D. Current Outputs - A/H

2,365 A/O for 200 days fishing 1970
3 avg. length of A/O
7,095 A/H

E. RBU Value - 25

Total present RBU's = 7,095 x 25 = 177,375

F. Need (Demand/Def.) OTU

8,784 Total A/O demand
.20% demand in May
1,756.8 Total May demand
35 % demand for 3rd week in May
614.88 Total 3rd week in May demand
.30 % demand on Saturday
184.46 Total Sat. demand
.75 % demand at any one time on Sat.
138 OTU

G. Need (Demand/Def.) Total - We estimate the average per day demand will triple during planning period.

12 present per/day demand avg. A/O
3
36 future per/day demand avg. A/O
244 days (Apr. 1-Dec. 1)only because of no demand during flooding
8,784 Total A/O demand
3 A/O length
26,352 A/H

H. Ultimate Capacity OTU Refuge has 133 acres of potential fishing areas.

133
5 QC/ac.
665 OTU

I. Ultimate Capacity - Total - Of the 133 acres, 70 will be flooded on the average of 121 days (Dec.-March)

a.) 63 acres available 121 da.

5 QC/ac.
315 AO/da
121 days available
38,115 A/O

b.) 133 ac. available 244 da.

5 QC/ac.
665 QC/da.
244 days available
162,260 A/O

162,260
38,115
200,375 AO/yr.
3 av.g length A/O
601,125 A/H

J. Planning Period Capacity OTU - Same as ultimate, 665 OTU

K. Planning Period Capacity Total - Same as ultimate, 601,125 A/H

A. Code - 4001

B. Objective - Wildlife Observation

C. Unit of Expression - A/H

D. Current Outputs - We had 1,164 A/O's in 1970.

1164 A/O's
1.5 avg. hrs./A/O
1,746 A/H

E. RBU Value - 50

F. Need (Demand/Def.) Peak - Figure the OTU demand peak might reach 100

G. Need (Demand/Def.) Total - We estimate with road improvement and letting the opportunity be known the demand will triple during the planning period.

1,746 A/O 1970
3
5,238

H. Ultimate Capacity OTU - Estimate we have a potential for 20 miles of wildlife observation drives. Figure a quality capacity of 20 people/mile would be standard.

I. Ultimate Capacity Total - We figure we could economically build 9 miles of the 20 for year round travel. The remaining 11 miles would be flooded from Dec.-March (121 days).

20 miles available April-Nov. (244 da.)
20 people
400 OTU/day
220 est. days suitable for travel
88,000 A/O
18,000
106,000 A/O
1 A/H
106,000 A/H

9 mi. Dec.-Mar.(121 da.)
20
180 OTU/da.
100 da. suitable for tra
18,000 A/O

J. Planning Period Capacity OTU - Same as ultimate, 400 OTU

K. Planning Period Capacity Total - Same as ultimate, 106,000 A/H

A. Code - 4103

B. Objective - Photography

C. Unit of Expression - A/H

D. Current Outputs - 0

E. RBU Value - 50

F. Need (Demand/Def.) Peak - We estimate that our demand will peak during the time our waterfowl population is around its peak (last of January).

200 A/O
.20 % total for Jan.
40 Total Jan use
175 % of Jan. use on Sat.
30 Total Jan. Sat. demand
.50 % for any one time on Sat.
15 OTU

G. Need (Demand/Def.) Total - The refuge has been open to this type of activity and to date has received very little use. I can't see it ever becoming a main attraction. With this trend in mind, I can't see a demand of over 200 A/O per year during the next 10 years.

200 A/O-yr. x 3 hr. = 600 AH/yr.

H. Ultimate Capacity OTU - The capacity for this activity is somewhat unlimited, but the activity is not too important because the demand is the limiting factor.

11,000 total potential acres
.01 QC/ac.
110 OTU

I. Ultimate Capacity Total

11,000 ac. available May-Nov. (215 da.)
.01 QC/ac.
110 OTU
161 days available
17,710
3 daily turnover
53,130 AO/yr.
3 hr avg. length A/O
159,390 A/H
30,240
189,630 A/H total

3,000 ac. available Dec.-Apr (215)
.01
30 OTU
112 days available
3,360
3 daily turnover
10,080AO/yr.
3 hr. avg. length A/O
30,240 A/H

J. Planning Period Capacity OTU - Same as ultimate, 110 OTU

K. Planning Period Capacity Total - 189,630 A/H

A. Code - 4104

B. Objective - Sightseeing

C. Unit of Expression - A/H

D. Current Outputs - We do not have records of this activity. Estimated to be approximately 2,000 A/H per year.

E. RBU Value - 15

F. Need (Demand/Def.) Peak

Peak would occur between 3:00 & 4:00 PM

10,000 Total
.50 % of total for Sunday
5,000 Total Sunday use
.20 % Nov. Sunday use
1,000 Total Nov. Sunday use
4 Sundays in Nov.
250 Any one Sunday
.50 % at any one time (3:00-4:00)
125 OTU

G. Need (Demand/Def.) Total - Present demand light--primarily because of poor road conditions. With emphasis and development, however, anticipated potential demand of 10,000 A/O per year, with average occasion lasting 1 hr. 10,000 A/H

H. Ultimate Capacity OTU - The bulk of our sightseeing use would occur from vehicles, so we need roads. Estimate a potential of 30 miles of feasible roads for sightseeing.

30 x 20 = 600 OTU

I. Ultimate Capacity Total - 20 miles available only May-Nov. (215 da.), 10 miles available year round (365).

20 miles		10 miles
20 QC/mi	Avg. OTU capacity	20 QC/mi
400	Actual available days	200
274	Activity days	161
109,600	Avg. turnovers/day	32,200
10		10
1,096,000		322,000
322,000		
1,418,000 A/H		

J. Planning Period Capacity OTU - This would be only 2/3 of the total capacity because of 4,500 acres of cut over timber not providing the quality most sightseers would be interested in.

600 ultimate capacity
.67
402 OTU

K. Planning Period Capacity Total - 1,418,000
.67
950,060 A/H

A. Code - 4201

B. Objective - Television Programs - off refuge

C. Unit of Expression - Each Program

D. Current Outputs - 0

E. RBU Value - Estimated to be about average with the standard RBU 1,000 for local TV,

F. Need (Demand/Def.) Peak - 1 program at a time.

G. Need (Demand/Def.) Total - There are 5 TV stations within a 60 mile radius of the Refuge. I can conceive a demand of two programs per year for each station-- 5 x 2 = 10 programs/yr.

H. Ultimate Capacity OTU - Estimated to be 1 program/day

I. Ultimate Capacity Total - Theoretically could provide 1 program per day for 365 days a year--or 365 programs.

J. Planning Period Capacity OTU - Same as ultimate, 1 program

K. Planning Period Total Capacity - Same as ultimate, 365 programs.

A. Code - 4202

B. Objectives - Radio Programs

C. Unit of Expression - Each Program

D. Current Outputs - Had two short programs in 1970.

E. RBU Value - Same as system average, 500

1970 total--1,000 RBU

F. Need (Demand/Def.) Peak - 1 per day

G. Need (Demand-Def.) Total - There are 34 stations within a 60 mile radius of the refuge. I can conceive possibly ½ of them wanting a program once a year.

34 ÷ 2 = 17 programs/yr.

H. Ultimate Capacity OTU - 1 per day

I. Ultimate Capacity Total - 365 programs

J. Planning Period Capacity OTU - 1 per day

K. Planning Period Capacity Total - 365 programs

A. Code - 4203

B. Objective - Newspaper Articles

C. Unit of Expression - Each article

D. Current Outputs - Had 1 article in 1970

E. RBU Value - 1,000

1970 total--1,000 RBU

F. Need (Demand/Def.) OTU - 1 per day

G. Need (Demand/Def.) Total - Can conceive a demand of 1 article per week -- 52

H. Ultimate Capacity OTU - 1 per day

I. Ultimate Capacity Total - 1 per day for 365 days = 365

J. Planning Period Capacity OTU - 1 per day

K. Planning Period Capacity Total - 365

A. Code - 4204

B. Objective - Other Putlished Articles

C. Unit of Expression - Each article

D. Current Outputs - 0

E. RBU Value - Primary demand would be from "Tennessee Conservationist" magazine - 3,000 RBU

F. Need (Demand/Def.) Peak - 1 at a time

G. Need (Demand/Def.) Total - Possibly 2 per year

H. Ultimate Capacity OTU - 1 at a time

I. Ultimate Capacity Total - Could have 1 per month 12

J. Planning Period Capacity OTU - 1 at a time

K. Planning Period Capacity Total - 12

A. Code - 4205

B. Objective - Other Off Refuge Programs - Non-mission oriented and non-interpretative appearances, talks, movies, etc.

C. Unit of Expression - Each program

D. Current Outputs - 0

E. RBU Value - 50

F. Need (Demand/Def.) Peak - It is felt that demand could be established for this type thing if we made it available, especially to sportsmen organizations. I feel the demand however, would be fairly local, probably not further than Jackson (35 miles). Estimate 5 clubs within a 35-mile radius.

Demand peak at any one time would probably never be over 1

G. Need (Demand/Def.) Total - Estimate total demand could be two programs for each of the 5 clubs per year. Total demand 10

H. Ultimate Capacity OTU - 1 at any one time.

I. Ultimate Capacity Total - Could concerivably provide one program per day, 5 days a week for a total of 260 programs

J. Planning Period Capacity OTU - 1

K. Planning Period Capacity Total - 260

A. Code - 5001

B. Objective - Camping

C. Unit of Expression - A/H

D. Current Outputs - 18 A/O in 1970 with average length of A/O being 24 hrs. Presently only group camping permitted on refuge.

24 x 18 = 432 A/H

E. RBU Value - 1

F. Need (Demand/Def.) Peak - Figure our peak demand would occur on the Independence Day weekend. Estimate peak could be:

50 units/night x 4, avg. #/unit = 200 OTU

G. Need (Demand/Def.) Total - With the present upward trend in camping we could expect a large demand if the opportunity for camping were available. I would expect a rather large percent of our total demand to be made up of transit visitors using Interstate 40. I feel that we can come up with more accurate demand figures by breaking the year down into seasons.

1. January-March - This would be our period of least demand. We would probably get a few campers that were rabbit or quail hunting on the refuge, however, most of the campers during this period would be people traveling I-40 with trailers and pickup type campers.

Estimate - Average no/weekday night (I consider Sunday night a weekday night because normally Monday would be a workday for most people) 3 units/night (Avg. 3/unit because most of this use is travelers on I-40 and would normally be made up of retired couples.

9/night
64 week days
576 A/O (mostly travelers use
16 avg. length of A/O on weekdays (from 4PM-8AM)
9,216 A/H - total for week nights Jan.-March.

Estimate - Avg. no/weekend night - Consider Friday weekend night because most people would be off on Saturday.

6 units/night (avg. 4/unit because on the weekends we start getting more hunting parties and family campers)
6 units
4
24/night
26 weekend nights
624 A/O

624 A/O
24 Avg. length A/O
14,976 A/H total for weekend nights Jan-Mar.

2. April-August - This would naturally be our period of heaviest use because it is during the peak fishing period and vacation time. Average No/weekday night - could expect the daily demand during this period to be triple that of the winter months.

9 units/night (avg. 4/unit)
4
36 per night
109 weekday nights
3924 A/O
20 Avg. length of A/O. (Figured to be greater than winter weeknights but less than weekends)
78,480 A/H-total weekday nights April-Aug.

Average No/weekend night

18 units/night (avg. 4/unit)
4
72
44 days
3168 A/O
24 Avg. length of occ.
76,032 A/H-weekends, April-August

3. September-December - This would be our second highest period of camping use--demand would be a good blend of hunters-campers & vacation-campers. Figure daily demand would be 2/3 that of the spring and summer months.

Average weekday demand - 6 units/night (avg. 4/unit)

6 units
4 avg.
24
88 days
2112 A/O
20 hr. ea.
42,240 A/H

Average Weekend demand - 12 units/night (avg. 4/unit)

4
48
34 days
1632 A/O
24 hr. ea.
30,168 A/H

TOTAL A/H 260,112

H. Ultimate Capacity OTU - 15 potential feasible sites that can average 5 acres in size.

15 sites
5 Ac. ea.
75 acres
20 Q/C per ac.
1500 OTU

I. Ultimate Capacity Total

10 sites available 214 da. May-Nov.	5 sites available year round
5 ac/ea	5 ac/ea
50 ac.	25 ac.
20 Q/C-ac.	20
1000 OTU	500 OTU
160 act. days available 75% total	274
160,000 AO/yr	137,000 AO/yr.
24 Avg. length occasion	24
3,840,000	3,288,000

TOTAL 7,128,000 A/H

J. Planning Period Capacity OTU - 3 of the potential camp sites are located in tract 10 (Howard Powell tract) and will not be desirable locations because of the cutover condition of the timber.

12 sites
5 avg. acres
60 ac.
20 QC/ac
1200 OTU

K. Planning Period Capacity Total

5 sites year round--same as ultimate, 3,288,000 A/H
7 sites only May-Nov. - 2,688,000
TOTAL 5,976,000 A/H

A. Code - 5101

B. Objective - Picnicking

C. Unit of Expression - A/H

D. Current Outputs - 80 A/H

E. RBU Value 1 Total 1970 RBU's = 80'

F. Need (Demand/Def.) Peak - We feel that the OTU peak will be between 12:00 noon and 1:00 PM on July 4.

12,107 A/O-yr.
.20 % of total demand in July
2621,40 Total July demand
.10 % of July demand for period 12:00-1:00 July 4
262 OTU

G. Need (Demand/Def.) Total - Present use will not serve as a base for figuring future demand because we have not done anything what-so-ever to develop picnicking. Estimate approximately 50% of total demand will come from Haywood County. There are no comprehensive demand figures for our county, however, they are available for Madison County which joins us on the east. I feel that it is safe to assume that the approximate same percentage of population will participate in picnicking in the two counties. In Madison County 22.5% of the population will picnic. Population Haywood County 1980:

19,419
.225
4,369

4,369
3
13,107 AO/yr. for Haywood Co.

I estimate that they will average going 3 times a year.

Also estimate that present facilities in the county can handle 50% of demand from Haywood County, therefore leaving a deficit of 6,554 plus 6554 (50% of total for other than Haywood County) which will be coming for a primary purpose other than picnicking.

Total demand A/H = 13,107

H. Ultimate Capacity OTU - Theoretically we have approximately 10,00 ac. that could be used sometimes during the year for picnicking. However, I estimate approximately 15 sites with an average of 5 acres each can feasibly be developed for picnicking.

15 sites
5 ac/ea
75 total acres
50 QC/ac.
3,750

I. Ultimate Capacity Total -

10 sites available 215 da. May-Nov.
5 ac./ea.
50 total ac.
50 AC/ac.
2500
160 days available, 75% total
400,000 total A/O

5 sites available year round
5 ac/ea.
25 total ac.
50 QC/ac.
1250
274 days available
342,500 total A/O

Total A/O or A/H 742,500

J. Planning Period Capacities - Same as ultimate.

K. Planning Period Capacities Total - Same as ultimate.

A. Code - 5501

B. Objective - Field Trials - Raccoon and Quail

C. Unit of Expression - A/H

D. Current Outputs - 0

E. RBU Value - The wildlife-oriented enjoyment people get from watching hunting dogs work in a natural setting, the big contribution good hunting dogs make to the quality of hunting, and the conservation of wildlife, and the enjoyment hunting-dog oriented people get from observing the refuge's wildlife while at a trial, all suggest the value of people at a field trial is at least equal to that of sightseeing.

RBU rating--15

F. Need (Demand/Def.) Peak - Estimate peak to be approximately 150 at any one day.

G. Need (Demand/Def.) Total - The demand for this output is fairly high in our area primarily because of the interest stirrer up by the Grand Junction National Birddog field trial championship at Grand Junction, Tennessee which is only 50 miles from the Refuge. Anticipated demand cannot be established from past use since this activity has not been offered yet. I feel that we could probably expect a demand of possibly 3 bird dog field trials and 2 coon dog trials.

a. Bird dog trials - 3 trials lasting two 6-hr. days each with 100 people/day

100 people/day
6 days
600
6 hrs.
3,600 A/H

b. Coon dog trails - 2 trials/yr. x 50 people/trial x 6 hrs. = 600 A/H

H. Ultimate Capacity OTU - Bird Dog trials--The refuge has a potential of 2,193 acres of bird dog field trial habitat. This acreage could easily be divided into 2 separate areas and could handle approximately 200 people each for a total of 400 OTU.

Coon Dog trials 9,000 acres divided into 4 trial units could have a trial going in each unit at one time.

4 units x 100 QC/unit = 400 OTU

I. Ultimate Capacity Total

1.) Bird dog trials - Feel that we could have one, two day trial/ week without degrading habitat. Figure bird dog trial season could run from Nov. 1-Feb. 28, or 17 weeks.

17 weeks
2 trials/week
34 trial days
200 QC/da.
6800 A/O
6 avg. length of occasion
40,800 A/H

2.) Coon dog trials - Theoretically, coon trials could be held year round in Tennessee because the law allows hunters to run dogs all year. However, figure demand for this activity would be from Oct. 1 - Nov. 30 (9 weeks). Remaining period undesirable because of flooding, heat, insects, snakes, and understory vegetation. Estimate we could have 2 trials/week, without degrading habitat.

9 weeks
2 trials/week
18 trials
100 QC/trial
1800 A/O
6 hrs. ea.
10,800 A/H
+40,800
51,600 total A/H

J. Planning Period Capacity OTU - Same as ultimate, 400

K. Planning Period Capacity Total - Quail same as ultimate, 40,800 A/H Raccoon total A/H reduced by ½ because half area cutover timber therefore 5,400 not desirable field trial habitat.

TOTAL 46,200 A/H

A. Code - 5701

B. Objective - Bicycling

C. Unit of Expression - A/H

D. Current Outputs - 2 A/H in 1970

E. RBU Value - 1

1970 total RBU's - 2

F. Need (Demand/Def.) Peak - Demand low, however with development and advertisement could expect an estimated average of 10 AO/wk. OTU could peak at around 20 for one Saturday or Sunday in the spring or fall.

G. Need (Demand/Def.) Total

52 weeks
10 AO/wk.
520 AO
2 avg. length of occasion
1,040 A/H

H. Ultimate Capacity OTU - Estimate 35 miles of potential trails

35 mi.
80
2,800 OTU

I. Ultimate Capacity Total

10 mi. available year round
80 quality/cap-mi.
800
274 # days total actualy available
219,200 A/O
2
438,400

25 mi. available May-Nov.
80 QC/mi.
2000
160
320,000
2
640,000
438,400
1,078,400 A/H

J&K Planning Period Capacities - Same as ultimate.

A. Code - 5702

B. Objective - Horseback Riding

C. Unit of Expression - A/H

D. Current Outputs - 12 A/H in 1970

E. RBU Value 1 -- 1970 total RBU's = 12

F. Need (Demand/Def.) Peak - Feel that the demand could be 50 OTU from a large riding club from Memphis.

G. Need (Demand/Def.) Total - Present demand is 3 times that of bicycling. Assume trend will remain same.

520 A/O for bicycling
3
1560 A/O for horseback riding
2 avg. length of occ.
3120 A/H

H. Ultimate Capacity OTU - Estimate same no. of miles of potential trails as bicycling.

35 mi.
20 QC/mi.
700 OTU

I. Ultimate Capacity Total - Same miles of trails as for bicycling.

10 mi. available year round
20 Q/C
200
274 days
54,800
2
109,600 A/H

25 mi. available only May-Nov.
20 Q/C
500
160 days
80,000
2
160,000 A/H

109,600 + 160,000 = 269,600 A/H

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6001

B. Objective - Professional Services Rendered

C. Unit of Expression - A/H

D. Current Outputs - Considering any college group biologically oriented are recipients of professional services if they come to the refuge and are given a tour, program or field trip.

E. RBU Value - 250

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - Within a 60-mile radius there are 18 colleges and universities. Estimate an average class size of 25 would send an average of 2 classes/yr. for a 3-hour study.

18 x 2 x 25 x 3 = 2,700 A/H

Other estimated demand are as follows:

Tenn. Fo.- 2	Landowners - 5
Tenn. Parks - 2	Conferences, field trips,
Tenn G&F - 10	& professional groups - 200
SCS- 2	Other - 9
	TOTAL - 230 A/H

By encouraging and emphasizing this wervice, we expect the demand to double by the end of the planning period.

260 A/H x 3, lenght of A/O = 780 A/H

2,700 A/H students
780 others
3,480 A/H

H. Ultimate Capacity OTU - N/A

I. Ultimate Capacity Total - 120 OTU x 3 hrs. x 240 days = 86,400 A/H

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6101

B. Objective - Published Refuge Oriented Studies by Refuge Personnel

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 500,000

F. Need (Demand/Def.) Peak - N.A.

G. Need (Demand/Def.) Total - Yearly demand would probably never exceed 3 studies.

H. Ultimate Capacity (OTU) Total - N.A.

I. Ultimate Capacity Total - Yearly capacity estimated to be 5 studies.

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6102

B. Objective - Refuge Studies, Refuge Oriented, Published, Non-Refuge Personnel

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 500,000

F. Need (Demand/Def.) Peak - N.A.

G. Need (Demand/Def.) Total - Figure that the major demand in this item will be Master's thesis studies. With the 18 colleges and universities within 60 miles, figure that a demand of 3 studies per year which will be published in recognized literature.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Fairly unlimited, however put at 10

J&K Planning Period Capacity - Same as ultimate.

A. Code - 6111

B. Objective - Unpublished Refuge Oriented Studies by Refuge Personnel

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 50,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - All demand figures estimated to be same as that for published studies (Code 6101).

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Same as published (6101) 5

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6112

B. Objective - Unpublished Refuge Oriented Studies by Non-refuge Personnel

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 100,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - All demand figures are estimated to be twice that of putlished studies. (6102) 6 total

H. Ultimate Capacity OTU - N.A.

I. Ultimate Capacity Total - All capacities are estimated the same as for published (Note 6102) 10 total

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6121

B. Objective - Non-Refuge Oriented Studies--Published

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 100,000'

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - Estimated to be twice that for Refuge Oriented Studies by non-refuge personnel (note 6101).

H. Ultimate Capacity OTU N. A.

I. Ultimate Capacity Total - Estimated to be 20

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6122

B. Objective - Unpublished Non-Refuge Oriented Studies

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 20,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - Estimated as double published (6121) 12

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Estimated to be the same as published (Note 6121) 20

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6131

B. Objective - Other Refuge Scientific & Professional Publications

C. Unit of Expression - Each Study

D. Current Outputs - 0

E. RBU Value - 500,000

F. Need (Demand/Def.) Peak -

G. Need (Demand/Def.) Total - Virtually immeasurable, assumption is that there is always a market for adequately written articles and papers on management or significant objectives.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Refuge programs, management experience of staff, and unusual observations provide a large reservoir of material at refuge and that capability of refuge staff is to prepare a professional paper on this material at the rate of 1/yr.

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6201

B. Objective - Ecological Monitoring - by Refuge Personnel

C. Unit of Expression - Each Program

D. Current Outputs - 0

E. RBU Value - 100,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - 1 program - pesticide monitoring of Hatchie River

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Added potential programs:
   1. Pesticide buildup in Refuge wildlife populations.
   2. Animal population trends.
   3. Silt sedimentation levels of Hatchie River Watershed.

Total 4 programs

J&K Planning Period Capacities - Same as ultimate.

A. Code - 6202

B. Objective - Ecological Monitoring - Non-Refuge Personnel

All information would be the same as 6201.

A. Code - 6301

B. Objective - Banding--by Refuge Personnel

C. Unit of Expression - Each Program

D. Current Outputs - 0

E. RBU Value - 50,000

F. Need (Demand/Def.) OTU - N. A.

G. Need (Demand/Def.) Total - Demand for banding in this area believed limited to a few specific quotas of limited species at certain times of the year. At this time judged to be one preseason program of 500 wood ducks, one post nesting season program of 500 local wood duck ducklings and a preseason program of 200 doves.

Total 3 programs.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Capacity judged to be adequate for banding of any waterfowl species frequenting refuge and any other species using refuge.

Potentials identified:

1. Postseason duck
2. Local hatched ducklings
3. Preseason dove
4. Preseason duck
5. Mist netting other birds

TOTAL 5

J&K Planning Period Capacities - Same as ultimate

A. Code - 6302

B. Objective - Banding - Non-Refuge Personnel

Everything same as for Refuge Banding (6301)

A. Code - 6401

B. Objective - Other Professional Services

C. Unit of Expression - Each Program

D. Current Outputs - 0

E. RBU Value - 100,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - We feel that under this category we have a good potential program of providing a demonstration area of Forest-Wildlife managed lands to persons primarily interested in timber management. To show compatibility of timber and wildlife management.

1'

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Estimated to be 1

J&K Planning Period Capacities - Same as ultimate.

A. Code - 7001

B. Objective - Natural Environments Preserved

C. Unit of Expression - Each Acre

D. D. Current Outputs - 9,567

E. RBU Value - 9,567 x 20 = 101,340

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - 11,056

H. Ultimate Capacity OTU - N. A.

I. Total Capacity - 11,056

J&K Planning Period Capacities - Same as ultimate.

A. Code - 8113

B. Objective - National Unique Species - Monarch Butterfly

C. Unit of Expression - Use days

D. Current Outputs - Have an estimated population of 2,000. Average staying 14 days. 2,000 x 14 = 28,000 U/D

E. RBU Value - 50

1970 - 1,400,000 RBU

F. Need (Demand/Def.)P&K - Figure demand won't change from present use.

2,000

G. Need (Demand/Def.) Total - Same as present use, 28,000 U/D

H. Ultimate Capacity OTU - Unlimited

I. Ultimate Capacity Total - Unlimited

J&K Planning Period Capacity - Same as ultimate

A. Code - 8207

B. Objective - S.R.S. - Herons & Egrets

C. Unit of Expression - Use Days

D. Current Outputs - 2,471 use days

E. RBU Value - .5

Total 1970 RBU's - 1,236

F. Need (Demand/Def.) Peak - Estimated to be approximately 250

G. Need (Demand/Def.) Total - Feel that demand will increase to about 4,000.

H. Ultimate Capacity OTU - At times (when flood waters have dropped in the spring) we have approximately 1,000 acres of good heron & egret habitat available.

1,000 ac. x 2 (est. carrying cap/ac) = 2,000 OTU

I. Ultimate Capacity Total - Estimate yearly average of 200 acres of habitat.

200 Ac.
2 carrying cap/ac.
400
182 Avg. days present
72,800 use days

J&K Planning Period Capacities - Same as ultimate.

A. Code - 8209

B. Objective - S. R. S. Grebes (Pied-billed)

C. Unit of Expression - Use Days

D. Current Outputs - 1,377 use days

E. RBU Value - .1

1970 total RBU's - 138

F. Need (Demand/Def.) Peak - Estimated to be 50

G. Need (Demand/Def.) Total - Figure demand will remain approximately the same as present use. 1,377

H. Ultimate Capacity OTU - Estimated 500 acres of potential habitat.

500 ac. x 10 (estimated carrying cap/ac.) = 5,000 OTU

I. Ultimate Capacity Total

500 ac. x 10 x 270 (days here) = 1,350,000 use days

J&K Planning Period Capacities Same as ultimate.

A. Code - 8212

B. Objective - Terns (black)

C. Unit of Expression - Use days

D. Current Outputs - There were no observations recorded for 1970--however a sighting of approximately 20 was made earlier this year.

E. RBU Value - .1

F. Need (Demand-Def.) Peak - Probably will not exceed 100.

G. Need (Demand-Def.) Total - Estimate an average refuge population of 10 for 180 days = 1,800.

H. Ultimate Capacity OTU - Estimate a feasible potential of 125 acres of tern habitat (insect feeding over open water).

125 ac. x 10 cc/ac. = 1,250 OTU

I. Ultimate Capacity Total- March-Nov.--normal period of use (275 da.)

125 x 10 = 1,250 x 275 = 343,750 U/D

J&K Planning Period Capacities - Same as ultimate.

A. Code - 8216

B. Objective - S.R.S. Shorebirds

C. Unit of Expression - Use Days

D. Current Outputs - 170 use days - 8,930

E. RBU Value-- .1
1970 RBU total = 893

F. Need (Demand/Def.) 1970 - Estimated at approximately 500

G. Need (Demand/Def.) Total - Figure demand will increase to about 10,000 U/D

H. Ultimate Capacity OTU - At times, just as flood waters leave the bottom, we have a tremendous increase in shorebird habitat, however, this is short lived. Estimate a short lived habitat of 700 acres.

700 ac. x 50 cc/ac. = 25,000 OTU

I. Ultimate Capacity Total - Estimate average habitat acreage during use period to be 200 acres.

200 ac. x 50 cc/ac. x 183 use days = 1,830,000 U/D

J&K Planning Period Capacities - Same as ultimate

A. Code - 8231

B. Objective - S. R. S. Other Raptors

C. Unit of Expression - Use Days

D. Current Outputs - 11,322 U/D in 1970.

E. RBU Value - .5

1970 total RBU's = 5,661

F. Need (Demand/Def.) Peak - Estimated to be approximately 250

G. Need (Demand/Def.) Total - Estimated use to increase by 25% due to protection and availability of food on refuge.

$$\begin{array}{r} 11{,}322 \\ .25 \\ \hline 2{,}830.5 \\ 11{,}322 \\ \hline 14{,}152 \end{array}$$

H. Ultimate Capacity OTU - Total refuge acreage is, to some degree, at some time during the year habitat for at least one species under this group.

11,000 x .1 - 1,100 OTU

I. Ultimate Capacity Total - Yearly average acreage estimated to be approximately 7,500 ac.

7,500 ac. x .1 = 750 OTU x 273 days = 204,750 U/D

J&K Planning Period Capacity - Same as ultimate.

A. Code - 8301

B. Objective - Wildlife Diversity

C. Unit of Expression - Each species

D. Current Outputs - Present bird list 200 species.

E. RBU Value - 200,000

F.- K. Demand & Capacities - Estimated to be the same as our present use

A. Code - 8402

B. Objective - Geese Maintenance

C. Unit of Expression - Use Days

D. Current Outputs - 11,018

E. RBU Value - 1

1970 RBU total - 11,018

F. Need (Demand/Def.) Peak - 800

G. Need (Demand/Def.) Total - 22,500 U/D

H. Ultimate Capacity OTU - Estimated to be around 2,000 birds.

I.. Ultimate Capacity Total - Estimated to be approximately 1,500 birds for 120 days or 180,000 U/D

J&K Planning Period Capacities - Same as ultimate.

A. Code - 8403

B. Objective - Duck Maintenance

C. Unit of Expression - Use Days

D. Current Outputs - 1970 total U/D = 833,838

E. RBU Value - 1

1970 RBU total = 833,838

F. Demand OTU - 40,000 - from Waterfowl Guidelines

G. Demand Total - 1,800,000 U/D from Waterfowl Guidelines

H. Ultimate Capacity OTU - 100,000

I. Ultimate Capacity Total - Estimated to be 50,000 birds/120 da. = 6,000,000 U/D

J&K Planning Period Capacities - Same as ultimate.

A. Code 8503

B. Objective - Duck Production (Group I) - Wood ducks

C. Unit of Expression - Number produced

D. Current Outputs - 1970 production-1,663

E. RBU Value - 800

1970 total RBU's = 1,663 x 800 = 1,330,400

F. Need (Demand-Def.) Peak - N. A.

G. Need (Demand-Def.) Total- As many as possible at reasonable cost.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - We feel we could economically develop approximately half the "bottom" (9,000 ÷ 2 = 4,500) acreage into duck production habitat and that we could possibly maintain up to 1,000 nesting boxes.

4,500 acres
.1 production/rearing habitat nesting pair/acre
450 Total nesting pairs
8 Avg. produced/pair
3,600 Total production

J&K Planning Period Capacities - Same as ultimate.

A. Code - 8701

B. Objective - Species Transplanted

C. Unit of Expression - Each Animal

D. Current Outputs - 0

E. RBU Value - 10,000

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - Estimate a demand of waterfowl for zoos 25/yr.

H-K Capacities - Figure we could economically trap 500 ducks per year.

A. Code - 9002

B. Objective - Forest Products, Softwoods

C. Unit of Expression - Each dollar

D. Current Outputs - 0'

E. RBU Value - 10

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - The refuge can sell all merchantable sawtimber it can produce.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Maximumizing for Pine production--total of 2,000 acres (if planted all open land).

2,000 acres
400 est. 400 bd.ft/ac./yr. for growth
800,000 bd/ft/yr
$35/T avg. est. value
$28,000/yr. annually

J. Planning Period Capacity OTU - N. A.

K. Planning Period Capacity Total - We already have approximately 40 acres in pine plantation which will be pulpwood size by FY78. We estimate that by 1978 we can harvest an average of 5 cords/ac. Estimate value of $8.00/cord by then. (No present market)

40 x 5 x 8 = $1,600 total

A. Code - 9003

B. Objective - Forest Products--Hardwoods

C. Unit of Expression - Each Dollar

D. Current Outputs - 0

E. RBU Value - 10

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - The refuge can sell all merchantable timber it can produce.

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - Maximizing for hardwood production, plant all open areas--Ultimate, 10,000 acres hardwood timber

400 bd.ft./yr growth
4,000,000 bd/ft/yr
$35/T-Est. value
$140,000/yr on a sustained basis

J. Planning Period Capacity OTU - N. A.

K. Planning Period Capacity Total - During the planning period we could have 4,500 acres of merchantable hardwood sawtimber. (The cutover Powell Tract would not have much merchantable during the planning period.)

4,500 ac. x 400 bd. ft. x $35 = $63,000/yr. on a sustained basis

A. Code - 9005

B. Objective - Grazing

C. Unit of Expression - Each dollar

D. Current Outputs - 0

E. RBU Value - 10

F. Need (Demand/Def.) Peak - N. A.

G. Need (Demand/Def.) Total - Feel that a demand for approximately 1,000 acres could be established.

1,000 ac. x $10 = $10,000 (est. value/ac)

H. Ultimate Capacity OTU - N. A.

I. Ultimate Capacity Total - We have 2,000 open acres that could be fenced for pasture.

2,000 ac. x $10 = $20,000 per yr.

J&K Planning Period Capacities - Same as ultimate.

RESOLVING CONFLICTS

8301 Wildlife Diversity

No Conflicts — Output 200 RBU 40,000

1201 Interpretive Center

1201-9003 (Forest Products-Hardwood) - Resolved in favor of Interpretive Center--loose 25 acres from Hardwood cutting for a loss of $350/yr from Planning Period Capacity.

Output 150,000 RBU 11,250,000

1101 Self-guiding Auto Route - Output 136,256

1101 (1101 & 1102) (Foot Trails) - Resolved in favor of Auto Route for more RBU's--loose half of total demand for foot trails to 37,500 A/H.

1101-1102 (Conducted Auto Route) - Resolved in favor of self-guiding for more RBU's - Total Conflict. Conducted Auto Route rejected.

1101-9003 (Forest Products-Hdws.) - Resolved in favor of Auto Route for more RBU's--loose $7,637 per year (Hwd. Forest Products) Planning Period Capacity.

Output 136,256 RBU 10,219,000

1002 Conducted Foot Trails - Output 75,000

1002-1101 (Self-guiding Auto Route) - Note 1101 (1001-1002) total demand (75,000) for foot trails has already been reduced by half (37,500) due to Auto Route.

Output 37,500

1002-1001 (Self-guiding Foot Trails) - We are going to sacrifice some RBU's for sake of diversity--35 per cent of total demand for foot trails (conducted) will prefer self-guided if offered.

Output 24,375

1002-9003 (Forest Products-Hdws.) - Resolved in favor of Foot-trails-Hardwood Forest Products P/P capacity reduced by $16,996.

Output 24,375 RBU 2,437,500

1302 Conducted, On-refuge Exhibits/Demonstrations - Output 75,000

1302-1301 (Self-guiding, On-refuge Exhibits/Demonstrations)--Total conflict resolved in favor of Conducted for more RBU's.

Output 75,000

1302-9003 (Forest Products-Hwd.) - Resolved in favor of Exhibit/Demonstrations--more RBU's Hardwood Forest Products p/p capacity reduced by $420.

Output 75,000 RBU 7,500,000

1001 Self-guiding Foot Trails - Output 75,000

1001-1101 (Selfpguiding Auto Route) - Note 1001-(1001 & 1002) above. Lost one half anticipated demand to Auto route.

Output 37,500

1001-1002 (Conducted Foot trails) - Note 1002-1001 above. Lost 65 per cent of anticipated demand to conducted foot trails.

Output 13,125

1001-9003 (Forest Products-Hwd.) - Note 1002-9003 above.

Output 13,125 RBU 984,375

1304 Off-refuge Conducted Exhibits-Demonstrations - Output 89,600

1304-1303 (Off-refuge Self-guiding, E/D) - Total conflict, resolved in favor of more RBU's self-guiding rejected.

Output 89,600 RBU 4,480,000

8503 Duck Production - Group 1

No conflicts Output 3,600 RBU 2,880,000

2001 Environmental Education

No conflicts Output 16,860 RBU 2,529,000

8403 Duck Maintenance - Output 1,800,000

8403-3104 (Quail Hunting) - Resolved in favor of Duck Maintenance. Cannot have quail hunting due to waterfowl disturbance.

Output 1,800,000

8403-3111 (Deer Hunting-gun) - Resolved in favor of Duck Maintenance, except for a 6-day hunt during Tennessee's second season (100 hunters/day).

8403-3132 (Rabbit Hunting) - Resolved in favor of Duck Maintenance cannot have rabbit hunting due to waterfowl disturbance.

Output 1,800,000 RBU 1,800,000

6101 Published Refuge Oriented Studies by Refuge Personnel

No Conflicts Output 3 RBU 1,500,000

6102 Published Refuge Oriented Studies by Non-Refuge Personnel

No Conflicts Output 3 RBU 1,500,000

8113 Monarch Butterfly

No Conflicts Output 28,000 RBU 1,400,000

6001 Professional Services Rendered

No Conflicts Output 3,480 RBU 870,000

3111 Gun-Deer Hunt Output 25,800

3111-8403 (Duck Maintenance) - Note 8403-3111 above, already resolved in favor of Duck Maintenance--except for a short 6-day hunt (100 hunters/day) in December to hold population within carrying capacity of refuge.

Output 4,800 A/H RBU 144,000

3301 Fishing

No Conflicts Output 26,352 RBU 720,000

1401 Other Wildlife Interpretive Programs

No Conflicts — Output 7,402 RBU 555,000

6131 Other Refuge Scientific and Professional Publications

No Conflicts — Output 1 RBU 500,000

3012 Dove Hunting Output 7,280

3012-3131 (Squirrel Hunting) - Note 3131-3012, already resolved inffavor of Squirrel hunting--dove hunt reduced to last two weeks of first September hunt (1,000 acres Hillville)

Output 3,996 RBU 199,800

3112 Deer Hunting-Bow Output 6,240

3112-3144 (Raccoon Hunting) - Shortened bow hunt to 13 days (first two weeks Sept.)--will reduce demand to an estimated 5,000 A/H.

Output 5,000 RBU 250,000

4001 Wildlife Observation

No Conflicts at present rate of demand.

Output 5,238 RBU 261,900

5001 Camping

No Conflict at present level of anticipated demand.

Output 260,112 RBU 260,112

8701 Species Transplanted

No Conflict

Output 25 RBU 250,000

6122 Unpublished, Non-Refuge Oriented Studies

No Conflict — Output 12 RBU 240,000

7001 Natural Environments Preserved

No Conflicts — Output 11,056 RBU 221,120

9003 Forest Products - Hardwoods Output 63,000

9003-1201 (Interpretive Center) - Note 1201-9003 above, already resolved in favor of Interpretive Center.

Output 62,650

9003-1101 (Self-guiding Auto Route) - Note 1101-9003 above, already resolved in favor of Auto Route.

Output 55,013

9003 (1001 & 1002) (Foot trails) - Note 1002-9003 above, already resolved in favor of Foot trails.

Output 38,017

9003-1302 (Conducted on-refuge Exhibit/Demonstration) - Note 1302-9003 above, already resolved in favor of E/D.

Output $37,737 RBU 377,370

6112 Unpublished Refuge Oriented Studies by Non-refuge Personnel

No conflicts Output 6 RBU 600,000

6121 Published Non-refuge Oriented Studies

No Conflicts Output 6 RBU 600,000

3131 Squirrel Hunting - Output 37,465

3131-3102 (Dove Hunt) - Resolved in favor of squirrel hunt. Dove hunt limited to last two weeks of September (1,000 Ac.)

8403-3112-(Duck Maintenance and Deer Hunting-bow) - Loose 92 days from squirrel huntddue to these conflicts. This reduction in the length of our squirrel hunt will result in a decrease in our anticipated demand of 28,613.

Output 8,852 RBU 221,300

4104 Sightseeing

No conflict at present level of anticipated demand.

Output 10,000 RBU 150,000

6111 Unpublished Refuge Oriented Studies-By Refuge Personnel

No Conflicts Output 3 RBU 150,000

6301 Banding--Refuge Personnel

6301-6302 (Banding-Non-refuge Personnel) -Total Conflict. Resolved in favor of Refuge personnel.

Output 3 RBU 150,000

3144 Raccoon Hunting - Output 7,040

3144-8403 (Waterfowl Maintenance) - Resolved in favor of Waterfowl--therefore cut hunt to 31 days (Oct. 15-Nov. 14) thus reducing demand to 2,000 A/H.

Output 2,000 RBU 30,000

6201 Ecological Monitoring-Refuge Personnel

No Conflicts Output 1 RBU 100,000

6202 Ecological Monitoring-Non-refuge Personnel

No Conflicts Output 1 RBU 100,000

6401 Other Professional Services Programs

No Conflicts. Output 1 RBU 100,000

5501 Field Trials Output 4,200

5501-(3144 & 8403) (Raccoon Hunt and Waterfowl Maintenance) Conflicts resolved in favor of hunting and waterfowl maintenance. Completely eliminates coon dog field trials P/P capacity from 10,800 to 0. Elimination of Raccoon day trials cuts anticipated demand to 3,600 A/H.

Output 3,600 RBU 54,000

4203 Newspaper Articles

No Conflict — Output 52 RBU 52,000

4103 Photography

No Conflict — Output 600 RBU 30,000

8402 Goose Maintenance

No Conflict — Output 22,500 RBU 22,500

9002 Forest Products--Softwoods

No Conflict — Output 1,600 RBU 16,000

5101 Picnicking

No conflict at present level of anticipated demand.

Output 13,107 RBU 13,107

4201 TV Programs

No Conflict — Output 10, RBU 10,000

4202 Radio Programs

No Conflict — Output 17 RBU 8,500

8231 Other Reports

No Conflict — Output 14,152 RBU 7,076

5702 Horseback Riding

No conflict at anticipated level of demand.

Output 3,120 RBU 3,120

8207 Herons & Egrets

No Conflicts — Output 4,000 RBU 2,000

8216 Shorebirds

No Conflict — Output 10,000 RBU 1,000

5701 Bicycling

No Conflict at anticipated level of demand.

Output 1,040 RBU 1,040

4205 Other Off Refuge Programs

No Conflict Output 10 RBU 500

8212 Terns

No Conflict Output 1,800 RBU 180

8209 Grebes

No Conflict Output 1,377 RBU 138

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING

Card Number	Action Code	A Code	B Name	C Unit of Exp.	D Current Outputs	E RBU Value	E RBU's (Thous.)	F Need (Demand-Def.) Peak	G Total	Demand Trend	H Ultimat OTU
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)
		61	Wildlife-Wildlands Interpretation								
		610	Wildlife trails-nonmotorized								
			Foot Trails								
1		610-1	Self-Guiding	A/H	0	75	0	360	75,000	1	700
1		610-2	Conducted	A/H	0	100	0	360	75,000	1	480
		611	Wildlife tour routes-motorized								
1		611-1	Self-Guiding	A/H	0	75	0	655	136,000	1	170
1		611-2	Conducted	A/H	0	100	0	655	136,000	1	170
		612-0	Centers, Interpretive	A/H							
1		613-0	Visitor Contact Station	A/H	0	75	0	720	150,000	1	500
		614	Exhibits-Interpretive								
1		614-1	On-refuge, Self-Guiding	A/H	0	75	0	360	75,000	1	480
1		132	On-refuge, Conducted	A/H							
1		133	Off-refuge, Self-Guiding	A/H							
1		134	Off-refuge, Conducted	A/H							
		615	Other Programs								
1		615-0	Other Programs wildlife interpretive	A/H	120	50	6	500	7,400	1	1,000
		62	Education								
1		621-0	Environmental Teachers	A/H	0	250	0	25	600	1	50
1		622-0	Students	A/H	0	150	0	100	16,900	1	150
		623-0	Professional Serv.	A/H	0	250	0		3,500	1	
		63	Wildlife-Wildlands Cons. Rec								
		630	Hunting-Migratory Birds								
			Waterfowl								
1		630-1	Duck	A/H	0	50	0	190	11,200	1	800
1		302	Geese	A/H							
1		303	General Waterfowl (incl. coots)	A/H							
			Other Migratory Game Birds								
1		304	Sandhill Crane (lesser)	A/H							
1		640-5	Dove	A/H	0	50	0	300	7,350	1	582
1		304	Pigeon	A/H							
1		304	Woodcock	A/H							
1		304	Snipe	A/H							
1		304	Rails & Gallinules	A/H							
1		304	Other & General Migratory	A/H							
			Hunting-Resident Game								
			Upland Game Birds								
1		311	Pheasant	A/H							
1		311	Partridge	A/H							
1		311	Grouse	A/H							

A T A S U M M A R Y G U I D E

Prepared FY 73

For FY 73 (1-2)

Refuge Code 0135 4600 (3-8)

Refuge Unit Code 00 (9-10)

I	J	K	L			M	N		O	P	Q
e Capacity	Planning Period	Capacity	Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
Total	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
(55-63)	(17-23)	(24-32)	(33-41)			(42-50)		(51-56)	(57-63)		
960,000	200	250,000	75,000	5,625	13,000	13,000	975	975	13,200	13,000	Visits
351,000	240	150,000	75,000	7,500	24,000	24,000	100	2,400	240	24,000	"
365,500	90	194,000	136,000	10,200	136,000	136,000	75	10,200	90	136,000	"
182,800	90	96,800	96,800	9680	0	0	100	0	0	0	0
825,000	500	1,825,000	150,000	11,250	150,000	150,000	75	11,250	500	300,000	"
1,008,000	480	1,008,000	75,000	5,625	75,000	75,000	75	5,625	360	150,000	"
13,000	1,000	13,000	7,400	370	2,400	7,400	50	370	500	150	Programs
15,000	50	15,000	600	150	600	600	250	150	25	95	Teachers
40,000	150	40,000	16,900	2,535	16,900	16,900	150	2,535	100	2,800	Students
86,400		86,400	3,500	875	3,500	3,500	250	875		1,130	Recipients
57,600	0	0	0		0						
34,920	582	34,920	7,350	368	4,000	4,000	50	200	300	2,000	Hunters

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING D

Card Number	Action Code	A Code	B Name	C Unit of Exp.	D Current Outputs: Outputs	E Current Outputs: RBU Value	E Current Outputs: RBU's (Thous.)	F Need (Demand-Def.): Peak	G Need (Demand-Def.): Total	Demand Trend	H Ultimate: OTU	
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)	
1		~~377~~	Quail	A/H	0	25	0	36	7,740	1	36	
1		631-1 ~~377~~	Other & General Upland Birds	A/H								
			Big Game									
1		631-2 ~~372~~	Deer-Gun	A/H	0	30	0	400	25,800	1	220	
1		631-3 ~~373~~	Deer-Bow	A/H	0	30	0	100	6,200	1	220	
1		314	Turkey	A/H								
1		314	Elk	A/H								
1		314	Moose	A/H								
1		314	Antelope	A/H								
1		314	Caribou	A/H								
1		314	Grizzly Bear	A/H								
1		314	Black Bear	A/H								
1		314	Mountain Sheep	A/H								
1		314	Mountain Goat	A/H								
1		314	Buffalo	A/H								
1		314	Musk ox	A/H								
1		314	Marine Mammals - sport	A/H								
1		314	Marine Mammals - food	A/H								
1		314	Other and General	A/H								
			Small Game									
1		631-5 ~~316~~	Squirrel	A/H	9,800	25	245	470	37,500	1	480	14
1		631-5 ~~315~~	Rabbit & Hare	A/H	0	25	0	36	8,514	1	220	3
1		315	Other and General	A/H								
			Other Game									
1		316	Coyote	A/H								
1		316	Bobcat	A/H								
1		316	Fox	A/H								
1		631-6 ~~372~~	Raccoon	A/H	1,200	15	18	50	7,000	1	200	
1		316	Marmot & Groundhog	A/H								
1		316	Other & General Predators	A/H								
			Trapping									
1		320	Trapping	A/H								
			Fishing									
1		632-1 ~~331~~	Warmwater	A/H	7,200	25	180	140	26,400	1	670	
1		332	Coldwater	A/H								
1		333	Saltwater	A/H								
1		334	Clamming, Crabbing, Oystering, etc.	A/H								

T A S U M M A R Y G U I D E

For FY 73 (1-2)

Prepared FY 73

Refuge Code 04354600 (3-8)

Refuge Unit Code 00 (9-10)

I	J	K	L			M	N		O	P	Q
apacity	Planning Period	Capacity	Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
Total	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
55-63)	(17-23)	(24-32)	(33-41)			(42- 50)		(51-56)	(57-63)		
2,960	36	12,960	7,740	194							
6,000	220	36,000	25,800	774	4,800	4,800	30	144	180	600	Hunters
1,000	220	51,000	6,200	186	5,000	5,000	30	150	180	625	"
2,600	480	112,600	37,500	937	15,000	15,000	25	375	365	5,000	Hunters
9,760	220	39,760	8,514	213	0	0	0	0	0	0	0
8,400	200	48,400	7,000	106	2,000	2,000	15	30	145	500	Hunters
01,100	670	601,100	26,400	660	26,400	26,400	25	660	140	8,800	Fishermen

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING D

Card Number	Action Code	A Code	OBJECTIVE Name	C Unit of Exp.	D Current Outputs Outputs	E Current Outputs RBU Value	E RBU's (Thous.)	F Need (Demand-Def.) Peak	G Need (Demand-Def.) Total	Demand Trend	H Ultimate OTU	
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)	
			Other, Shelling, Fruit, Vegetables, etc.									
1		340	Other, Shelling, Fruit, Vegs., etc.	A/H								
			Wildlife-Wildlands Non-Consumptive Rec.									
		634	On Refuge Wildlife Observation									
1		634-1 350	Foot	A/H	120	50	6	20	500	1	400	1
			On Refuge Other									
1		634-2 361	Auto	A/H	1,020	50	51	100	4,400	1	400	1
1		634-3 362	Other Canoeing & Rowboating	A/H	60	50	3	20	300	1	400	1
1		636-0 363	Walking & Hiking	A/H	20	50	1	15	600	1	110	1
			Photography									
1		635 364	Wildlands appreciation Sightseeing	A/H								
1		635-1	Foot	A/H	200	15	3	20	1,000	1	600	1,
1		635-2 365	Auto	A/H	1,700	15	26	125	8,500	1	600	1,
1		635-4	Other & General W-W Recreation Other	A/H	100	15	2	20	500	1	600	1,
		638	Off-Refuge Public Affairs									
1		366 638-1	Television Programs	Each	0	1,000	0	1	10	1	1	
1		367 638-2	Radio Programs	Each	10	500	5	1	17	1	1	
1		368 638-3	Newspaper Articles	Each	3	500	2	1	52	1	1	
1		369 638-4	Magazine articles Other Published Articles	Each	0	2,000	0	1	2	1	1	
1		375	Other Programs	Each								
		64	Non-Wildlife-Wildlands-Oriented Recreation									
1		640-0 400	Camping	A/H	0	0	0	200	260,000	1	1,500	7,1
1		641-0 410	Picnicking	A/H	600	0	0	260	13,000	1	3,750	7
1		420	Swimming	A/H								
1		431	Boating	A/H								
1		432	Water Skiing	A/H								
1		637-0 451	Field Trials	A/H	0	15	0	150	4,200	1	400	51
			Winter Sports									
1		452	Snowmobiling	A/H								
1		453	Ice Skating	A/H								
1		454	Snow Skiing	A/H								
1		455	Other	A/H								
			Other									
1		45C	Bicycling	A/H								
1		457	Horseback Riding	A/H								
1		458	Overland Vehicling	A/H								
1		459	Other	A/H								
		650	Publications & Studies									
1		650-1 501	Refuge-oriented, published By refuge personnel	Each Study	0	500,000	0		3	1		
		502 650-2	By non-refuge personnel	Each Study	0	500,000	0		2	1		10
1			Refuge-oriented, Unpublished									
1		503 650-3	By refuge personnel	Each Study	0	500,000	0		3	1		
1		650-4	By non-refuge personnel	Each Study	0	100,000	0		2	1		

TA SUMMARY GUIDE For FY 79 (1-2) Refuge Code 1354600 (3-8) Refuge Unit Code 00 (9-10)

I	J	K	L			M	N		O	P	Q
Capacity	Planning Period	Planning Capacity	Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
Total	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
(55-63)	(17-23)	(24-32)	(33-41)			(42-50)		(51-56)	(57-63)		
6,000	400	106,000	500	25	500	500	50	25	20	500	visits
06,000	400	106,000	4,400	220	4,400	4,400	50	220	110	4,400	"
06,000	400	106,000	300	15	300	300	50	15	20	300	"
9,630	110	189,630	600	30	600	600	50	30	15	200	"
18,000	402	950,060	1,000	15	1,000	1,000	15	15	20	1,000	"
18,000	402	950,060	8,500	128	8,500	8,500	15	128	125	8,500	"
18,000	402	950,060	500	8	500	~~500~~	~~15~~	~~8~~	~~20~~	~~500~~	"
365	1	365	10	10	10	10	1,000	10	1	10	programs/yr
365	1	365	17	8	17	17	500	8	1	17	
365	1	365	52	26	52	52	500	26	1	1	article/wk
12	1	12	2	4	2	2	2,000	4	1	2	articles/yr
28,000	1,200	5,976,000	260,000	0	260,000	260,000	0	0	200	11,000	campers
42,500	3,750	742,500	13,000	0	13,000	13,000	0	0	260	13,000	picnickers
,600	400	46,200	4,200	63	4,200	4,200	15	63	150	2	2-day trials
1		1	1	500	1	1	500,000	500		1	study/yr.
		10	2	1,000	2	2	500,000	1,000		2	"
1		1	1	100	1	1	100,000	100		1	"
0		10	2	200	2	2	100000	200		2	"

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING D

Card Number	Action Code	A Code	OBJECTIVE Name	C Unit of Exp.	D Current Outputs	E Outputs RBU Value	E RBU's (Thous.)	F Need Demand-Def.) Peak	G Total	Demand Trend	H Ultimate OTU
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)
1		650--5 555	RF Studies/Non-RF Oriented Published	Each Study	0	100,000	0		1	1	
1		650-6 556	Unpublished	Each Study	0	20,000	0		2	1	
1		507	Other RF Scientific & Prof. Pubs. Other RF Scientific & Prof. Pubs.	Each Pub.							
1		655 555/655-1	Cooperative Programs Ecological Monitoring By Refuge Personnel	Each Prog.	0	100,000	0		1	1	
1		655-2 552	By Non-Refuge Personnel	Each Prog.	0	100,000	0		1	1	
1		656 656-1 561	Banding By Refuge Personnel	Each Prog.	0	50,000	0		3	1	
1		656-2 562	By Non-Refuge Personnel	Each Prog.	0	50,000	0		3	1	
1		657-0 570	Other Cooperative Programs Other Coop. Progs.	Each Prog.	0	100,000	0		1	1	
1		66 660-0 C00	Environmental Preservation Natural Environments Preserved Natural Environments Preserved	No. Acres	10,400	20	208		11,056	1	
1		611	Natural Areas Threatened Comm. Research N/A	No. Areas							
1		611		No. Areas							
1		611		No. Areas							
1		611		No. Areas							
1		611		No. Areas							
1		612	Other Research Natural Areas	No. Areas							
1		612		No. Areas							
1		612		No. Areas							
1		612		No. Areas							
1		612		No. Areas							
1		613	Public Use Natural Areas	No. Areas							
1		613		No. Areas							
1		613		No. Areas							
1		613		No. Areas							
1		613		No. Areas							
1		613		No. Areas							
1		620	Wilderness Areas Wilderness Areas	No. Areas							
1		630	NWRS Type Sanctuaries NWRS Type Sanctuaries	No. Areas							
1		640	Scientific Sites Esthetic	No. Areas							
1		640	Historic	N No. Areas							
1		640	Geologic	No. Areas							

: A SUMMARY GUIDE For FY 79 (1-2) Prepared FY 73 Refuge Code 04354600 (3-8) Refuge Unit Code 00 (9-10)

I	J	K	L			M	N		O	P	Q
pacity	Planning Period Capacity		Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
otal	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
5-63)	(17-23)	(24-32)	(33-41)			(42- 50)		(51-56)	(57-63)		
20		20	1	100	1	1	100,000	100		1	Study/yr.
20		20	2	40	2	2	20,000	40		2	Studies/y
4		4	1	100	1	1	100,000	100		1	Programs
4		4	1	100	1	1	100,000	100		1	"
5		5	3	150	3	3	50,000	150		3	"
5		5	3	150							
1		1	1	100	1	1	100,000	100		1	"
11,056		11,056	11,056	221	11,056	11,056	20	221		11,056	Total Refuge/ac

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING DA

Card Number	Action Code	A Code	OBJECTIVE Name	C Unit of Exp.	D Current Outputs Outputs	E Current Outputs RBU Value	E Current Outputs RBU's (Thous.)	F Need(Demand-Def.) Peak	G Need(Demand-Def.) Total	Demand Trend	H Ultimate OTU	C
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)	(
1		640	Archeologic	No. Areas								
1		640	Other	No. Areas								
			Wildlife									
			Threatened Species									
			Endangered									
1		700	Mammals	U/D								
1		700	Birds	U/D								
1		700	Reptiles & Amphibians	U/D								
1		700	Fishes	U/D								
			Rare									
1		701	Mammals	U/D								
1		701	Birds	U/D								
1		701	Reptiles & Amphibians	U/D								
1		701	Fishes	U/D								
			Peripheral									
1		701	Mammals	U/D								
1		701	Birds	U/D								
1		701	Reptiles & Amphibians	U/D								
1		701	Fishes	U/D								
		670-4	Status Undertermined									
1		701	Mammals	U/D								
1		670-4 xxxx	Am. Osprey Birds	U/D	14	10	1	4	60	1	100	9,
1		701	Reptiles & Amphibians	U/D								
1		701	Fishes	U/D								
			National Unique Species									
1		710	Desert Bighorn	U/D								
1		710	Kodiak Bear	U/D								
1		710	Bison	U/D								
1		710	Longhorn	U/D								
1		710	Musk ox	U/D								
1		710	Sea Otter	U/D								
1		710	Feral Burro	U/D								
1		710	Wild Horse	U/D								
1		710	Trumpeter Swan	U/D								
1		710	Greater Snow Goose	U/D								
1		710	Sea Turtles	U/D								

A SUMMARY GUIDE

For FY ~~73~~ 79 (1-2)

Prepared FY 73

Refuge Code 04354600 (3-8)

Refuge Unit Code 00 (9-10)

	J	K	L			M	N		O	P	Q
…acity	Planning Period	Capacity	Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
…tal	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
…-63)	(17-23)	(24-32)	(33-41)			(42- 50)		(51-56)	(57-63)		
…125	100	9,125	60	1	60	60	10	1	4	2	birds for a 1 mo. ped.

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING DA

Card Number	Action Code	A Code	OBJECTIVE Name	C Unit of Exp.	D Current Outputs: Outputs	E Current Outputs: RBU Value	E Current Outputs: RBU's (Thous.)	F Need (Demand-Def.): Peak	G Need (Demand-Def.): Total	Demand Trend	H Ultimate: OTU
(11)	(12)	(13-16)			(17-25)		(26-31)	(32-38)	(39-47)		(48-54)
1		671	Special Recognition Species								
1		671-1 720	Marsh & Water Birds	U/D	8,600	0.5	4	300	15,000	1	17,000
1			Marsh & Water Birds	U/D							
1				U/D							
1				U/D							
1				U/D							
1				U/D							
1				U/D							
1				U/D							
1				U/D							
1		671-1 728	Shorebirds, Gulls, Terns, etc. Shorebirds, Gulls, Terns, etc	U/D	15,800	0.5	8	600	20,000	1	36,000
1				U/D							
1				U/D							
1		671-1	Doves and Pigeons	U/D	114,900	0.5	57	2,000	200,000	1	10,000
1				U/D							
1				U/D							
1				U/D							
1				U/D							
1			Raptorial Birds								
1		720	Eagles (other than S. Bald)	U/D							
1		671-1 720	Other R[illegible] than eagles	U/D	45,900	1.0	46	500	50,000	1	1,100
1		672-0 730	Wildlife Diversity	Each Spec.	200	200,000	40,000		200	1	
1			Waterfowl Maintenance								
1		740	Swans	U/D							
1		673-2 [illegible]	Geese	U/D	2,200	1	2	800	22,500	1	2,000
1		673-3 [illegible]	Ducks	U/D	578,600	1	579	40,000	1,800,000	1	1,100,000
1			Waterfowl Production								
1		801	Swans	Prod.							
1		802	Geese	Prod.							
1		680-3 [illegible]	Ducks - Group 1	Prod.	1,400	800	1,120		3,000		
1		803	Ducks - Group 2	Prod.							
1		680-3 [illegible]	Ducks - Group 3	Prod.	800	200	160		1,000		
1			Big Game (Selected Refuges)								
1		750	Big Game	Ea. An.							
1		681-0	Species Transplanted								
1		[illegible]	Species Transplanted	Ea. An.	0	10,000	0		25	1	
1		682-0	Specimen Donated								
1		820	Specimen Donated	Ea. An.	0	2,000	0		10	1	

T A S U M M A R Y G U I D E

For FY 79 (1-2)

Prepared FY 73

Refuge Code 04354600 (3-8)

Refuge Unit Code 00 (9-10)

I	J	K	L		MATRIX	M	N		O	P	Q
apacity	Planning Period	Capacity	Maximized Output		OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
Total	OTU	Total	Outputs	RBU's (Thous.)	outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
55-63)	(17-23)	(24-32)	(33-41)			(42- 50)		(51-56)	(57-63)		
500,000	7,000	1,500,000	15,000	8	15,000	15,000	0.5	8	300	40	Avg. pop.
,174,000	36,000	2,174,000	20,000	10	20,000	20,000	0.5	10	600	55	"
365,000	10,000	365,000	200,000	100	200,000	200,000	0.5	100	2,000	550	"
204,750	1,100	204,750	50,000	50	50,000	50,000	1,0	50	500	137	"
+		+	200	40,000	200	200	200,000	40,000		200	Present bird list
80,000	2,000	180,000	22,500	22	22,500	22,500	1	22	800	375	Avg. winter pop.
000,000	000,000	6,000,000	1,800,000	1800	1,800,000	1,800,000	1	1,800	40,000	18,000	"
3,000		3,000	3,000	2,400	3,000	3,000	800	2,400		3,000	Production per year
1,000		1,000	1,000	200	1,000	1,000	200	200		1,000	"
500		500	25	250	25	25	10,000	250		25	per year
10		10	10	20	10	10	2,000	20		10	"

Refuge Name HATCHIE NWR

Refuge Unit Name

PLANNING DAT

Card Number	Action Code	A Code	B Name	C Unit of Exp.	D Current Outputs: Outputs	E Current Outputs: RBU Value	E Current Outputs: RBU's (Thous.)	F Need (Demand-Def.): Peak	G Need (Demand-Def.): Total	Demand Trend	H Ultimate Ca: OTU	
(11)	(12)	(13-16)	OBJECTIVE		(17-25)		(26-31)	(32-38)	(39-47)		(48-54)	(
1		60 901	Economic Benefits Depredations Prevented Croplands	$								
1		902	Feedlots	$								
1		903	Livestock	$								
1		904	Public Nuisance	$								
1		905	Other	$								
			NWR Fund Receipts									
1		910	Gas & Oil	$								
1		692-0 ~~930~~	Forest Products	$	100	0	0		+	1		1
1												
1		930	Haying	$								
1		693-1 ~~932~~	Grazing	$	0	10	0		10,000	1		
1		950	Furbearers	$								
1		960	Surplus Animals	$								
1		970	Concessions	$								
1		980	Other NWR Fund Receipts	$								
			TOTALS				42,733					

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For FY ~~73~~ 79 (1-2)

Refuge Code ~~01354600~~ (3-8)

Refuge Unit Code 00 (9-10)

I	J	K	L			M	N		O	P	Q
	Planning Period	Capacity	Maximized Output		MATRIX OBJECTIVE	ADJUSTED OBJECTIVES			OBJECTIVES IN OTHER FORMS		
otal	OTU	Total	Outputs	RBU's (Thous.)	Outputs	Outputs	RBU Value	RBU's (Thous.)	OTU Capacity or Peak	Number	Forms
5-63)	(17-23)	(24-32)	(33-41)			(42-50)		(51-56)	(57-63)		
	[redacted]								[redacted]		
3,000		64,600	64,600	0	40,000	40,000	0	0		200 1,078,200	Cords bd.ft.
0,000		20,000	10,000	0	0	0	10	0			
[redacted]				105,422				83,963			

GPO 930-292