

Bureau of Sport Fisheries and Wildlife
Division of Fishery Services

Annual Project Report, 1978
Fishery Management Program

St. Vincent National Wildlife Refuge
(Management Area)

Franklin County, Florida
(Location - County and State)

By

Ron Ulrich

Fishery Management Biologist

1. Description of Area: The refuge is located on a 12,358 acre coastal barrier island in the Gulf of Mexico. Some 14 miles of shoreline are open to surf fishing. Freshwater fishing for largemouth bass, bluegill and redear sunfish occurs on the island in a series of 6 ponds and a stream
2. Year Fishery Management Began 1969
3. Total of Lakes, Ponds, Reservoirs on Management Area: No. 6 Acres 259
4. Total of Lakes, Ponds, Reservoirs Under Management: No. 6 Acres 259
5. Number of New Lakes, Ponds, Reservoirs Developed Since Last Report (To be included in Nos. 3 & 4) No. 0 Miles Acres
6. Total Number of Streams on Management Area: No. 1 Miles Unknown Acres Unknown
7. Total Number of Streams Managed: No. 1 Miles Unknown Acres Unknown
8. Dates Visited: October 4, 11, 12, 13, 16, 17 18, 1978
9. Total Man-days Expended per Management Area: 14 (Field only)
10. Total Man-days Fishing This Year: Unknown Last Year: Unknown
11. Is Public Fishing Permitted? Yes
12. Persons Contacted (Names & Titles): Martin Perry-Refuge Manager, Jim Kelly - Biological Technician.

MANAGEMENT RECORD

BODY OF WATER

STOCKING RECORD

Name of Lake, Pond or Stream	Acres/ Miles	Species Managed	Species	Number	Average Length (In.)
Lake 5	34 Acres	LMB, BLG RES		NONE	
Lake 4	35 Acres	"			
Lake 3	34 Acres	"			
Lake 2	24 Acres	"			
Lake 1	28 Acres	"			
Oyster Pond	104 Acres	"			
Outlet Creek	Unknown	"			

*Connects all five lakes listed above. Stream flows from Lake 5 to Lake 1 with discharge to Apalachicola Bay.

CHEMICALS USED IN BIOLOGICAL CONTROL

Name of Lake, Pond or Stream	Chemical	Target	Pounds Active Ingredients	Surface Acres or Miles	Acre-feet Treated
		NONE	REPORTED		

SUMMARY AND RECOMMENDATIONS

Lake 5

Summary:

Lake 5 was not sampled since access with our electrofishing boat was impossible due to an extensive growth of cattails in the lake. The lake may be too shallow to consider managing for sport fishing.

Recommendations:

1. Continue to allow fishing under present rules and regulations.
2. Control cattails by introducing salt water, and or apply 2, 4-D follow-manufactures directions, and or burn foliage and or remove vegetation by mechanical means.

Lake 4

Summary:

In mid October Lake 4 was found to be only about 3 feet deep with the entire perimeter of the lake surrounded by cattails. Of the 5 freshwater lakes on the refuge, only Lakes 4 and 3 are presently fished to any extent since cattails and other aquatic weeds have infested the remaining lakes to the point where angling is now extremely difficult to impossible.

Chemical characteristics of the lake were determined on two occasions during October (See Water Chemistry Data in Appendix).

The lake water was tea colored which generally indicates the presence of tannic acid. Specific conductance measurements indicate the lake has a moderate ionic salt content in comparison with other freshwater lakes. Conductance measurements of the lake bottom, which consisted of soft muck, were 2 to 3 times higher than lake water readings. The higher ionic salt concentration in the bottom mud may reflect occasional intrusion of salt water into the lake from the Gulf during hurricane periods. Blue crabs, saltwater shrimp and mullet were also observed during the survey suggesting the occurrence of salt water into the lake. Other chemical constituents were measured and the resulting data indicates the lake water was of a satisfactory quality for producing bass and sunfish.

The fish population of the lake was sampled by electrofishing with a boat shocker. Largemouth bass, hand-painted bluegill, redear sunfish,

Lake 4 (Continued)

warmouth, spotted gar, bowfin and lake chubsucker were captured (see Catch Data in Appendix). The catch by number, consisted of 74% sunfish, 8% largemouth bass and 18% trash fish.

Age analysis of scale samples taken from the bass captured indicates that at least six year classes were present in the lake including young-of-the-year (see Bass Year Class Data in Appendix). Since the lake has not been stocked annually, these bass were the result of natural reproduction. A one year old bass captured from the lake was only 109mm long. This individual was probably stunted for some unknown reason since two other young of-the-year bass from the same lake were 102 and 147mm long.

A length-frequency graph of bluegill, redear sunfish and largemouth bass captured from Lake 4 by electrofishing may be found in the Appendix. The graph shows that 78% of the bluegill captured were 3.0 to 5.9 inches long while 12% were 6.0 to 7.9 inches. No bluegill 8 inches or greater were collected. While only a small number of redear were captured, a few individuals exceeded 8 inches. Bass distribution was fairly good with 22% of those captured exceeding 12 inches. No bass greater than 15 inches in length were taken.

Proportional stock density (PSD) values for Lake 4 bluegill and bass were calculated using a method described by Dr. R. O. Anderson of the Missouri Cooperative Fishery Research Unit. The resulting PSD values were plotted on an attached graph (see Appendix). These values are basically an estimate of the percentage of fish in a given population that are considered to be of a quality size to the angler. According to Dr. Anderson's findings, quality sustained fishing for bass and sunfish exists when 40 to 60% of the bass of stock size (8 inches and over) are 12 inches or longer. I have modified this somewhat by lowering the 40% figure to 30%. The shaded area of the graph indicates a balanced fish community. Based solely on the fish taken by electrofishing during mid October, the graph shows that the bass-bluegill population of Lake 4 was not in balance since only 13% of the bluegill stock (3 inches and over) were over 6 inches long. To achieve a state of balance, the PSD value for bluegill would have to shift to the right and exceed 20% as indicated by the graph.

Recommendations:

1. Continue to allow fishing under present rules and regulations.
2. Control cattails that are continuing to take up more and more open water of the lake by introducing salt water and or apply 2, 4 - D following manufactures directions, and or burn foliage and or remove vegetation by mechanical means.

Lake 3

Summary:

Lake 3 is a shallow (3-4 feet) body of freshwater which contains sufficient open water to allow angling. However, cattails have also invaded a con-

Lake 3 (Continued)

considerable portion of this lake as they have in Lake 4.

Chemical characteristics of Lake 3 were determined on two consecutive days during October (see Water Chemistry Data in Appendix). Since the source of water for Lake 3 comes from Lake 4 and the lakes are physically separated only by a narrow roadway, the water chemistry of Lake 3 was found to be quite similar to that of Lake 4 with one exception. The bottom muds (muck) in Lake 3 contained considerably higher ionic salt concentrations (0.5 to 1.5 ppt salinity) than did the bottom muds in Lake 4. It was also discovered during sampling that when the bottom muds of the lake are stirred into suspension as a result of wind action the ionic salt concentration of the water will also increase accordingly.

The fish population of the lake was sampled by electrofishing with a boat shocker. Largemouth bass, hand-painted bluegill, redear sunfish, warmouth, spotted gar, bowfin, lake chubsucker, mullet and gizzard shad were captured (see Catch Data in Appendix). The catch consisted principally of sunfish followed by trash fish and largemouth bass. A few small bass (+ 100mm) were captured indicating that natural reproduction successfully occurred earlier in the year.

A length-frequency graph of bluegill, redear sunfish and largemouth bass captured from Lake 3 may be found in the Appendix. The graph shows that 57% of the bluegill captured were 3.0 to 5.9 inches long, 9% were 6.0 - 7.9 inches, and 2% were 8 inches or greater. Redear appear to run larger than bluegill in the lake with 34% of the redear collected exceeding 6 inches. Eight percent of the bass captured were of a quality size (12.0 inches and over).

A graph depicting proportional stock density (PSD) data for Lake 3 may be found in the Appendix. Based solely on fish taken by electrofishing during mid October, the graph indicates that the fish community was out of balance since too few bass and bluegill were of a quality size (greater than 12 and 6 inches respectively). In contrast to the bluegill, 48% of the redear stock exceeded 6 inches.

Recommendation:

1. Continue to allow fishing under present rules and regulations.
2. Control cattails that are continuing to take up more and more open water of lake by introducing salt water from the Gulf into the lake or spray foliage of the cattails with Dalapon at a rate of 15 - 20 pounds per surface acre when water temperature exceeds 65⁰ F.

Lake 2

Summary:

A survey was made of Lake 2 during mid October. The depth of the pond was

Lake 2 (Continued)

checked with a depth sounder and found to range from only 2 to 3 feet. The water was clear and tea brown in color. Cattails were also completely encroaching the pond. The pond bottom consisted of muck (containing hydrogen sulfide gas) with large patches of submergent weeds consisting mostly of musk grass (Chara) and what appeared to be sago pondweed (Ruppia maritima).

Chemical characteristics of the lake water (see Water Chemistry Data in Appendix) were as expected quite similar to Lakes 4 and 3, and of suitable quality for bass and bluegill production. Specific electrical conductance 1.5 feet down into the muck bottom of the lake was 3 times greater than was surface water conductance suggesting salt water intrusion into the pond from the Gulf during past hurricanes.

The fish population of Lake 2 was sampled by electrofishing with a boat shocker. Laremouth bass, bluegill, redear sunfish, warmouth, bowfin, lake clubsucker and spotted gar were collected (see Catch Data in Appendix). The catch was comprised of 64% sunfish, 14% bass and 22% trash fish by number.

Age analysis of scale samples taken from small bass indicates that reproduction was successful during the current year (see Bass Year Class Data in Appendix).

Poor length-frequency distribution (see graph in Appendix) was exhibited by both bluegill and bass inhabiting the lake. No bluegill greater than 5.9 inches were captured suggesting that the population is likely over abundant relative to their food supply. On the other hand, a few redear greater than 6 inches were found in the lake indicating that their food supply is probably adequate.

A proportional stock density (PSD) graph shown in the Appendix indicates that the sport fish community inhabiting the lake was not balanced at the time sampling was performed. An over abundance of submerged aquatic weeds in the lake is suspected as being a principal cause of the lakes stunted bluegill population.

Recommendations:

1. Continue to allow fishing under present rules and regulations.
2. Control cattails by introducing salt water and or apply 2, 4 - D following manufactures directions, and or burn foliage and or remove vegetation by mechanical means.
3. Control sago pondweed by applying Diquat at a rate of 5.4 ppm injecting herbicide below surface of water when temperature exceeds 65°F. Do not use if water is muddy.

Lake 1

Summary:

No chemical sampling or electrofishing was attempted in Lake 1 during October due to a heavy growth of submerged aquatic weeds which were found

Lake 1(Continued)

to be nearly choking the pond. Less than 10% of the lake had visible open water which would greatly restrict angling. What appeared to be sago pondweed was the dominant form.

Recommendations:

1. Control sago pondweed by applying Diquat at a rate of 5.4 pmm injecting herbicide below surface of water when temperature exceeds 65°F. Do not use if water is muddy.

Outlet Creek

Summary:

Outlet Creek connects all five freshwater lakes on the island. The creek flows from Lake 5 to Lake 1 and discharges into Apalachicola Bay. Two small concrete dams, constructed downstream from Lake 1, prevent the intrusion of salt water from the bay into the freshwater lake system.

Outlet Creek was sampled during October in the reach between Lake 3 and Lake 2, and in a second reach between Lake 1 and the Old Homestead bridge.

As our electrofishing boat moved along through the creek gas bubbles of hydrogen sulfide (odor very strong) were released from the organic muck on the bottom. Apparently, the additional pressure caused by the boat on the substrate was sufficient to drive out some of this toxic gas which is likely present at or above the saturation point. Complete water chemistry data for the creek may be found in the Appendix section.

The creek appeared to offer better habitat for bass than did any of the lakes due to the presence of trees and brush in certain places along the course of the stream.

Catch Data for both stream reaches sampled are listed in the appendix section. Since both reaches were similiar in regard to their fish compositions, length-frequency and proportional stock density (PSD) data were combined (see Appendix).

The resulting data indicated good size structure existed in both the bluegill and redear sunfish populations. However, too few quality sized bass (12 inches and greater) were captured in the creek to bring the fish community into the balanced area as shown by the PSD graph.

Recommendations:

1. Continue to allow fishing under present rules and regulations.

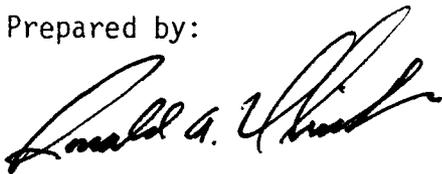
GENERAL RECOMMENDATIONS

Fishermen use and creel data is needed to properly manage the sport fishery resource on St. Vincent National Wildlife Refuge.

Reportedly, excellent catches of large bass, bluegill and redear sunfish were taken by anglers during the spring of 1979 following warming of the freshwater lakes on the refuge. Prior to this, a creel census form with instructions was prepared and 100 copies were submitted to the refuge manager to obtain catch data (see form with accompanying memo in Appendix). As far as I am aware, there is no sampling tool available to the fishery manager better than fishermen, since their catches are the only real test of the quality of the sport fishery.

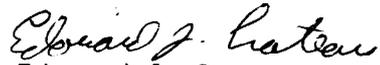
It is therefore recommended that a concentrated effort be made to interview as many anglers on the refuge as possible utilizing the creel forms. Completed forms should be submitted on a monthly basis to this office for data compilation.

Prepared by:



Ronald A. Ulrich
Fishery Management Biologist
July 5, 1979

Approved by:



Edouard J. Crateau
Project Leader
July 12, 1979

Distribution:

St. Vincent NWR - FWS - 2
Florida Game and Fish Commission, DeFuniak Springs, FL - FL.G&F - 1
Central Office - FWS -1
Regional Office - FWS -1
Area Office - FWS -1
Fishery Resources, Panama City, FL. - FWS -3

Enclosures: 7 - 4"X5" color prints of refuge waters taken from air on
March 20, 1979 by R. Ulrich.

Circular "Weed Control in Lakes and Farm Ponds".
Announcement of Compounds Registered for Fishery Uses.
Catail, Wisconsin Dept. of Natural Resources Bulletin.

APPENDIX

U.S. FISH & WILDLIFE SERVICE
 Fishery Resources
 Panama City, Florida

CC: St. Vincent Is. NWR, Apalachicola, F
 Jacksonville AO

WATER CHEMISTRY DATA

Water: Lake No. 1 Location: _____ Management Area: St. Vincent NWR
 Station No: _____ Township: _____ Range: _____ Section: _____ County: Erzklin State: FL

Date: 10/17/78 Time: _____ Remarks: ~~Electrofishing not attempted due to heavy growth of submerged~~

~~aquatic weeds which are nearly choking lake (10% of lake has visible open water). Potamogetan-dominant woods and~~
~~should be controlled using registered herbicide~~

Date	Time	Depth (M)	Temp. (°C.)	Water Cond. (mhos/cm)	pH Units	D.O. (mg/l)	Secchi Disk	Total Hard. (mg/l)	Water Color
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(No sampling performed)

FILE

U. S. FISH & WILDLIFE SERVICE
 Fishery Resources
 Panama City, Florida

St. Vincent Is., Fl.

FILE

CATCH DATA

Water: Lake No. 4 Location: Along edge Management Area: St. Vincent Is., NWR
 Station No: Township: Range: Section: County: Franklin State: Fl.
 Date: 10/13/78 Personnel: R. Ulrich, E. Crateau and J. Kelly (NWR) Gear: Boat shocker (0.5 hrs., DC, 4A with
 fluctuating output). Boat shocking fish (Acted as an electrode).

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No./hr)
Largemouth bass	9	8%	2,188	16%	243	12-475	102-325	18
Bluegill	75	64%	2,271	17%	30	0.2-152	22-193	150
Redear sunfish	9	8%	815	6%	90	0.2-225	21-230	18
Spotted gar	13	11%	3,119	23%	240	34-770	240-579	26
Bowfin	4	3%	2,840	21%	710	535-1,085	380-485	8
Lake chubsucker	5	4%	1,865	14%	373	140-675	208-342	10
Warmouth	2	2%	1,911	1%	96	77-114	156-174	4
Total:	117	100%	13,289	100%		-	-	234

Length-Frequency Distribution (%) (No.) (IMB Scale sample Nos. 1-9)

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Largemouth bass					3	-	4	2		
Bluegill	1	2	-	10	32	6				
Redear sunfish	1	2	1	-	1	1	3			

Saltwater shrimp and blue crabs seen in lake. Bluegills-handpainted variety (Photos taken). Size distribution

U. S. FISH & WILDLIFE SERVICE
Fishery Resources
Panama City, Florida

St. Vincent Is.,

FILE

CATCH DATA

Water: Lake No. 3 Location: _____ Management Area: St. Vincent Is. NWR
Station No: _____ Township: _____ Range: _____ Section: _____ County: Franklin State: FL
Date: 10/12/78 Personnel: R. Ulrich, L. Ulrich, J. Keeley (NWR) Gear: Boat shocker (1.5 hours, AC, 4A Output)

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No./Hr.)
Largemouth bass	9	7%	6116	5%	71	15-240	110-260	6.0
Mullet	8	6%	7,485	56%	935.4	203 - 575	105-1,740	5.0
Spotted gar	6	5%	1,180	9%	197	338 - 458	130 - 325	4.0
Lake chubsucker	11	9%	349	3%	31	89 - 270	11-125	7.0
Gizzard shad	1	< 1%	465	4%	465	370	0-465	0.7
Bowfin	3	2%	1,240	9%	413	328 - 400	325-575	2.0
Bluegill	70	56%	1,332	10%	19	0.2 - 130	22-205	46.7
Redear sunfish	14	11%	654	5%	46	0.3 - 140	27-202	9.3
Wamouth=Redear Hybrid	1	<1%	19	<1%	19	19	0-105	0.6
Wamouth	2	2%	53	<1%	26	22 - 31	102-117	1.3
Total:	125	100%	13,423	100%	2,222	-	-	83%

(No.)

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Largemouth bass			6	11	5	1	3			
Bluegill	5	15			17	5	1			
Redear sunfish		7	2	1	6	4	1			
Wamouth					2					

Remarks: One 200mm eel also caught. Size distribution (%) of interxiliate and adult sunfish: 76-150mm=78%, >150mm=22%.
201-300mm=100%, 301-375mm=0%, >375=0%.

U. S. FISH & WILDLIFE SERVICE
 Fisheries Resources
 Panama City, Florida

CC: AO - Jacksonville, Fl.
 St. Vincent Is. Fl.

FILE

CATCH DATA

Water: Lake No. 3 Location: _____ Management Area: St. Vincent Is. NWR
 Station No: _____ Township: _____ Range: _____ Section: _____ County: Franklin State: Fl.
 Date: 10/11/78 Personnel: R. Ulrich, L. Ulrich, P. Moon, J. Kelly Gear: Boat shocker (0.5 hrs., DC, 4-6A WITH I

~~handling output.~~ *handling output.*

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No.)
Redear sunfish	19	24%	1,358	14%	71	0.2 - 170	22 - 185	38
Bluegill	27	34%	1,390	14%	51	0.3 - 100	25 - 152	54
Warrmouth	3	4%	310	3%	103	80 - 135	125 - 158	5
Lake chubsucker	10	13%	2,450	24%	245	45 - 555	65 - 345	20
Largemouth bass	4	5%	1,845	8%	218	80 - 445	100 - 315	8
Spotted gar	13	17%	2,400	23%	184	110 - 295	330 - 446	26
Mullett	3	4%	1,505	15%	501	275 - 890	274 - 410	6
Total:	79	100%	10,288	100%	-	-	-	158

Length-Frequency Distribution

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Redear sunfish	2	5	-	-	5	7				
Bluegill	1	7	2	5	11	1				
Largemouth bass	-	-	-	1	-	1	1	1		
Warrmouth					2	1				

U. S. FISH & WILDLIFE SERVICE
Fishes Resources
Panama City, Florida

CC: AO - J'ville
St. Vincent Is., Fl.

FILE

CATCH DATA

Water: Lake #2 Location: _____ Management Area: St. Vincent Is. NWR
Station No: _____ Township: _____ Range: _____ Section: _____ County: Franklin State: FL.
Date: 10/16/78 Personnel: R. Ulrich, A. Rogers, D. Strickland, J. Keller Gear: Boat Shocker (1.0 Hours)

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No./ft)
Largemouth bass	10	14%	1,120	23%	112	10 - 450	95-322	10
Bluegill	36	52%	240	5%	7	0.3 - 59	27-147	36
Redear sunfish	10	14%	383	8%	38	1.6 - 99	47 - 178	10
Bowfin	4	6%	1,910	40%	478	200 - 930	280 - 489	4
Lake Chubsucker	10	14%	906	FILE	91	6 - 440	76 - 305	10
Spotted gar	2	3%	220	5%	110	80 - 140	299-361	2
Warmouth	1	1%	8	<1%	8	8	99	1
Total:	73	100%	4,787	100%	-	-	-	73

Length-Frequency Distribution No. (LMB Scale samples No. 10 - 12)

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Bluegill		24	4	3	5					
Redear Sunfish		1	-	2	4	3				
Warmouth				1						
Largemouth bass				3	3	-	3	1		

Remarks: Size Distribution (%) of intermediate and adult sunfish: 76 - 150 mm = 83%, >150 mm = 17%

U. S. FISH & WILDLIFE SERVICE
Fishery Resources
Panama City, Florida

CC: Area Office - J'vi
St. Vincent Is. NWR
Apalachicola,

FILE

CATCH DATA

Water: Outlet Creek Location: Between Bridge & Lake No. Management Area: St. Vincent Is. NWR
Station No: _____ Township: _____ Range: _____ Section: _____ County: Franklin State: Fl.
Date: 10/17/78 Personnel: R. Ulrich, A. Rogers, J. Kelly (NWR) Gear: Boat shocker (DC 200V, 4A Output for 0.5 hours)

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No./hr)
Largemouth bass	12	11%	3,110	23%	259	45 - 950	146-395	24
Bluegill	47	44%	1,024	8%	22	0.5- 140	35-190	94
Redear Sunfish	23	22%	658	5%	29	0.3 - 85	33-178	46
Warmouth	2	2%	120	1%	60	20 -100	108-165	4
Spotted gar	10	9%	2,650	20%	265	25 -690	360-568	20
Lake Chubsucker	8	7%	1,520	11%	190	90 -275	185-261	16
Bowfin	1	1%	620	5%	620	620	405	2
Mullet	3	3%	3,635	27%	1,212	1,065 - 1,480	448-495	6
Total:	106	100%	13,337	100%	-	-	-	212

(No.)

Length-Frequency Distribution (x): (LMB Scale Samples Nos. 13 - 15)

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Bluegill	-	13	7	10	14	3				
Redear Sunfish		1	3	6	9	4				
Warmouth					1	1				
Largemouth Bass					1	-	9	1	1	

Remarks: Size Distribution (%) of Intermediate and Adult Sunfish: 76 - 150 mm = 83%

CATCH DATA

Water: Outlet Creek Location: Between Lake No. 2 and No. 3 Management Area: St. Vincent Is. NWR
 Station No: _____ Township: _____ Range: _____ Section: _____ County: Franklin State: Fl.
 Date: 10/18/78 Personnel: R. Ulrich and J. Kelly (NWR) Gear: Boat Shocker (DC, 200 V., 4A output for 1.0 hrs.)

Species	Number Caught	% Composition By Number	Total Weight (gm)	% Composition By Weight	Average Weight (gm)	Weight Range (gm)	Length Range (mm)	Frequency (No./Hr.)
Largemouth bass	18	7%	2,979	14%	166	16-525	113-334	18
Bluegill	159	62%	4,134	19%	26	0.2-155	22-196	159
Redear sunfish	40	16%	2,961	13%	74	1.3-165	49-208	40
Warmouth	8	4%	375	2%	42	31-80	110-160	9
Spotted gar	20	8%	6,815	31%	341	55-1,435	274-725	20
Lake chubsucker	7	3%	1,900	9%	271	3-380	62-283	7
Howlin	6	2%	2,825	13%	471	125-735	265-455	6
	258	100%	21,989	100%				259

Length-Frequency Distribution (%) No. LMB (Scale sample Nos. 16 - 20)

Species	0-25mm	26-50mm	51-75mm	76-100mm	101-150mm	151-200mm	201-300mm	301-375mm	376-450mm	>450mm
Bluegill	3	56	12	11	10	16				
Redear sunfish		1	1	5	12	19	1			
Warmouth					7	1				
Largemouth bass					5	4	6	3		

Remarks: Size distribution (%) of intermediate and adult sunfish: 76-150mm=55% >150mm=45%
 bass: 201-300mm=67%, 301-375mm=33%, >375mm=0%.

1978 YEAR CLASS LARGEMOUTH BASS

<u>SCALE SAMPLE NO.</u>	<u>WATER</u>	<u>LENGTH(MM)</u>	<u>WEIGHT(GM)</u>
7	Lake 4	102	12
8	Lake 4	147	39
11	Lake 2	100	11
12	Lake 2	140	45
14	Outlet Creek	146	45
16	Outlet Creek	146	44
17	Outlet Creek	130	30
18	Outlet Creek	130	30

1977 YEAR CLASS LARGEMOUTH BASS

9	Lake 4	109	17
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1976 YEAR CLASS LARGEMOUTH BASS

6	Lake 4	246	210
20	Outlet Creek	248	180

1975 YEAR CLASS LARGEMOUTH BASS

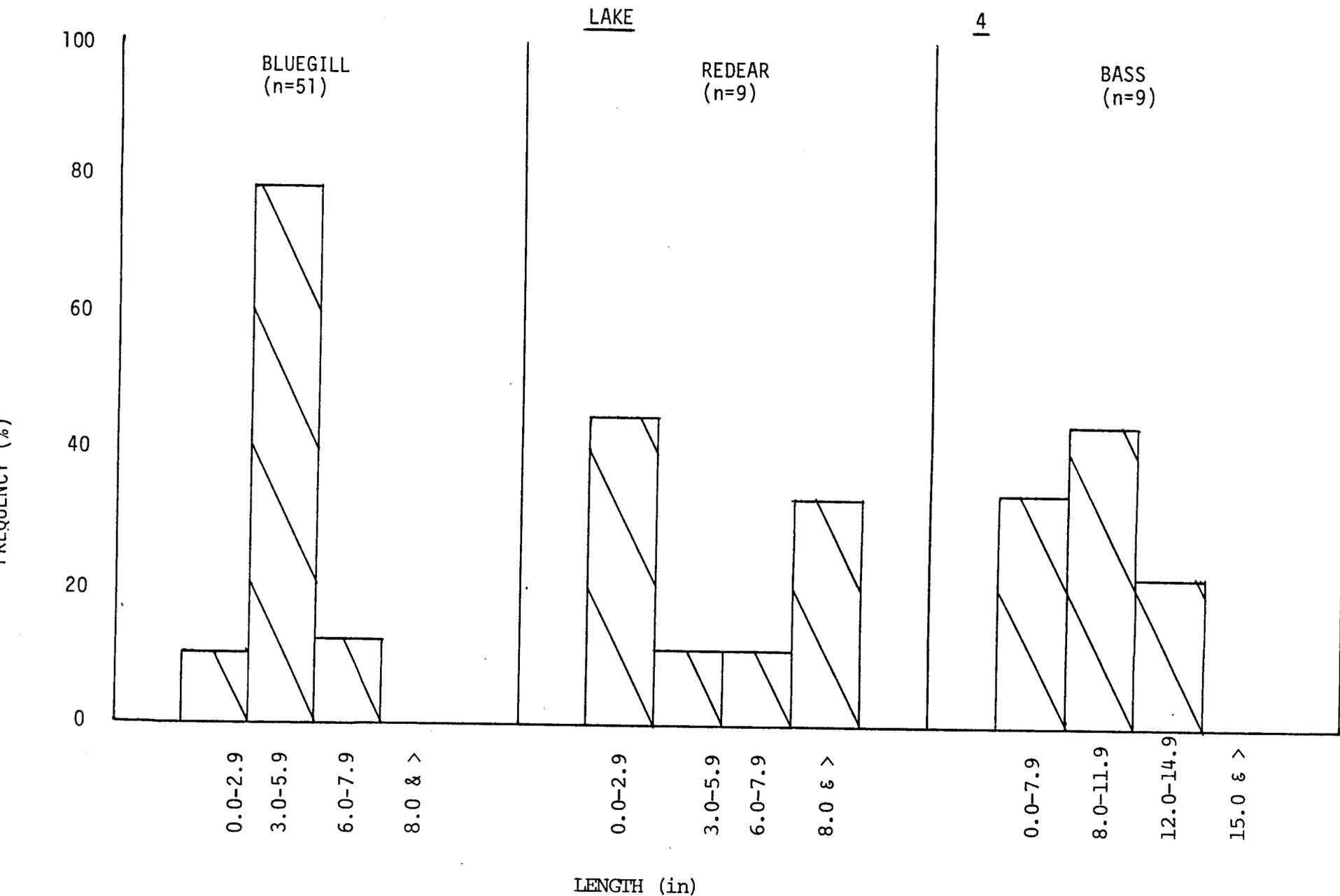
4	Lake 4	325	475
5	Lake 4	281	310

1974 YEAR CLASS LARGEMOUTH BASS

1	Lake 4	300	365
3	Lake 4	295	385
10	Lake 2	322	450
13	Outlet Creek	341	625
15	Outlet Creek	395	950
19	Outlet Creek	334	525

1973 YEAR CLASS LARGEMOUTH BASS

2	Lake 4	310	375
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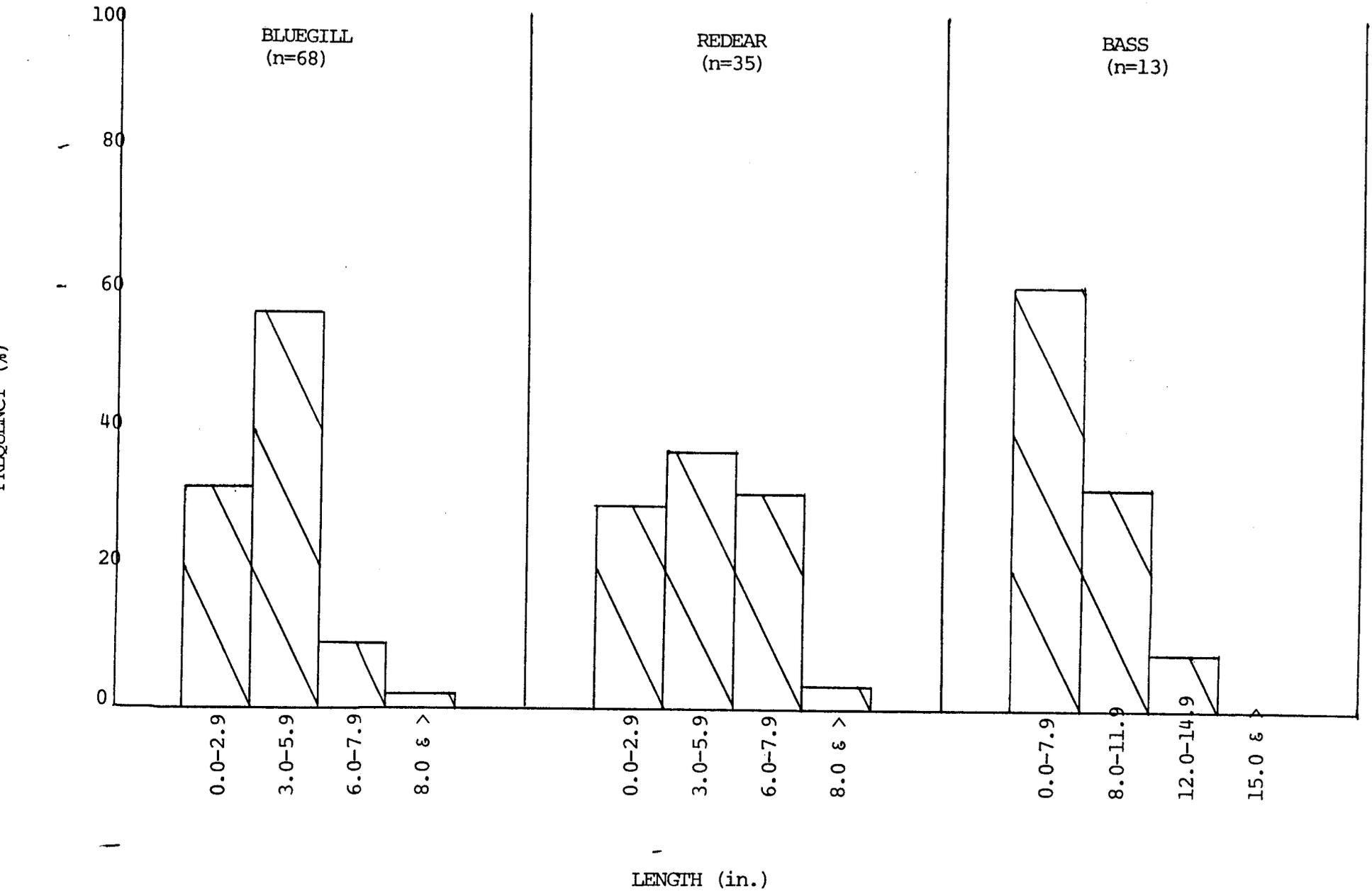


Length-frequency distribution of bluegill, redear sunfish and largemouth bass captured from Lake 4 by electrofishing on Oct 13, 1978.

St. Vincent National Wildlife Refuge, Florida

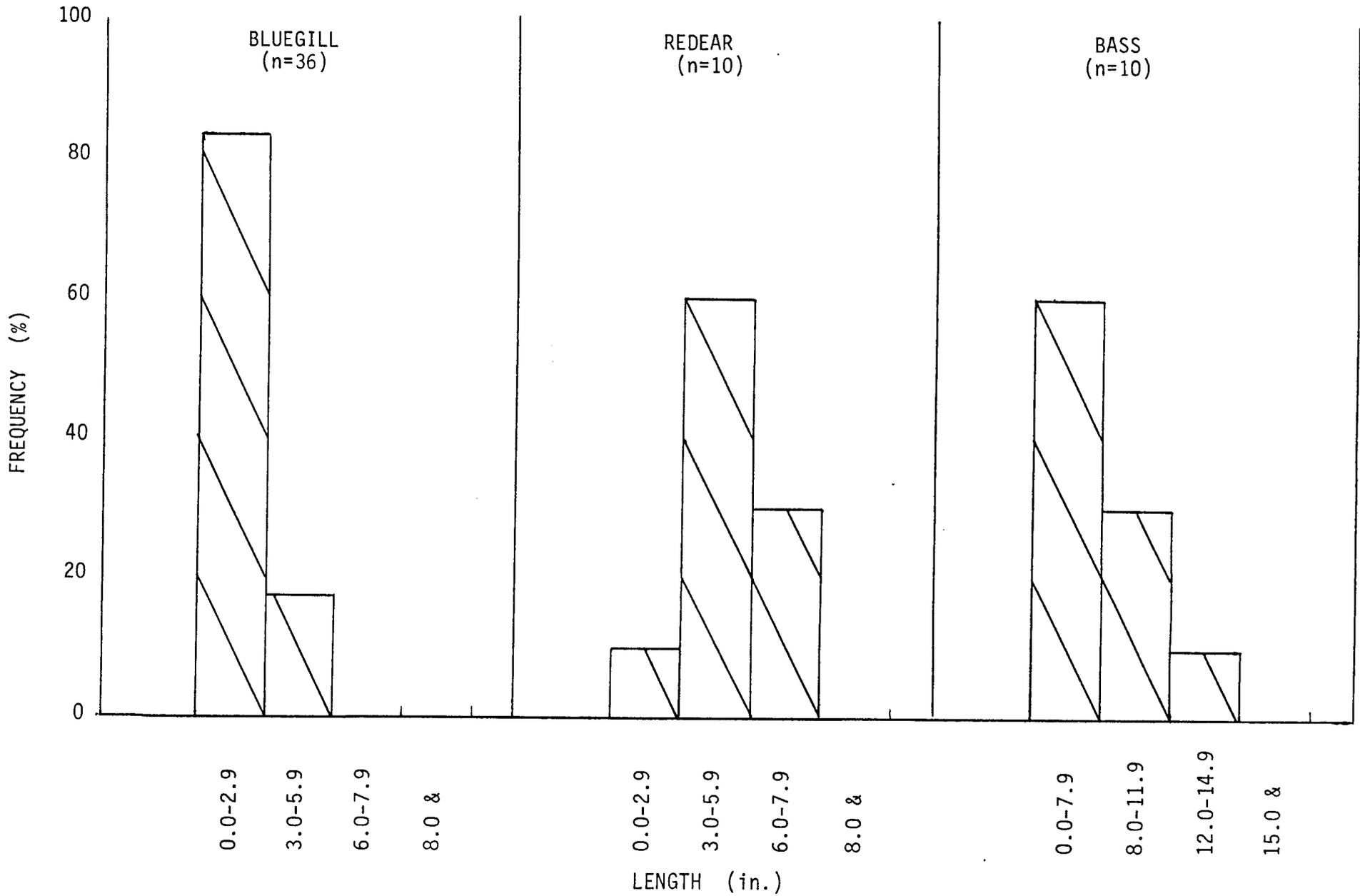
LAKE

3

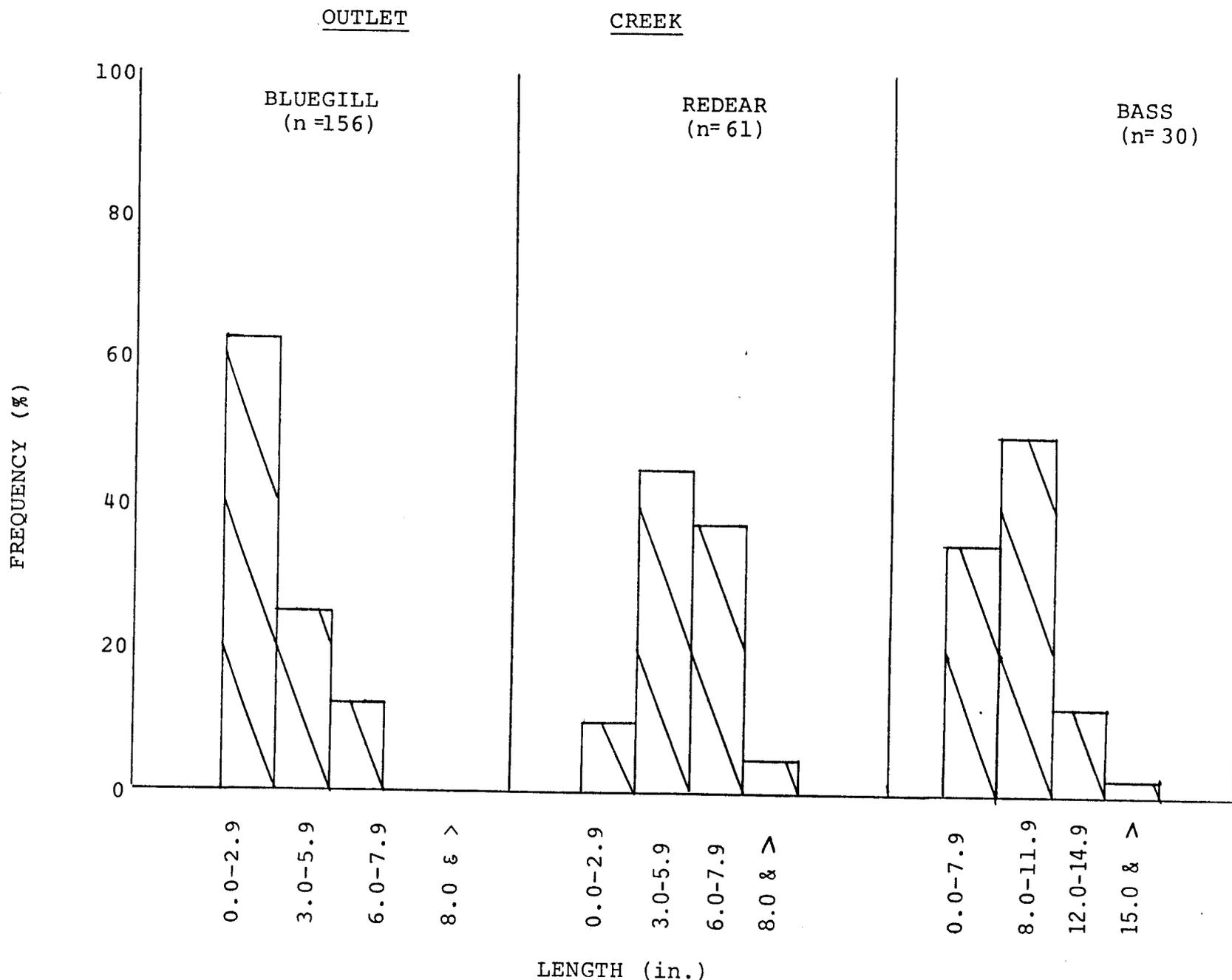


Length-frequency distribution of bluegill, redear sunfish and largemouth bass captured from Lake 3 by electrofishing on Oct 11 and 12, 1978.

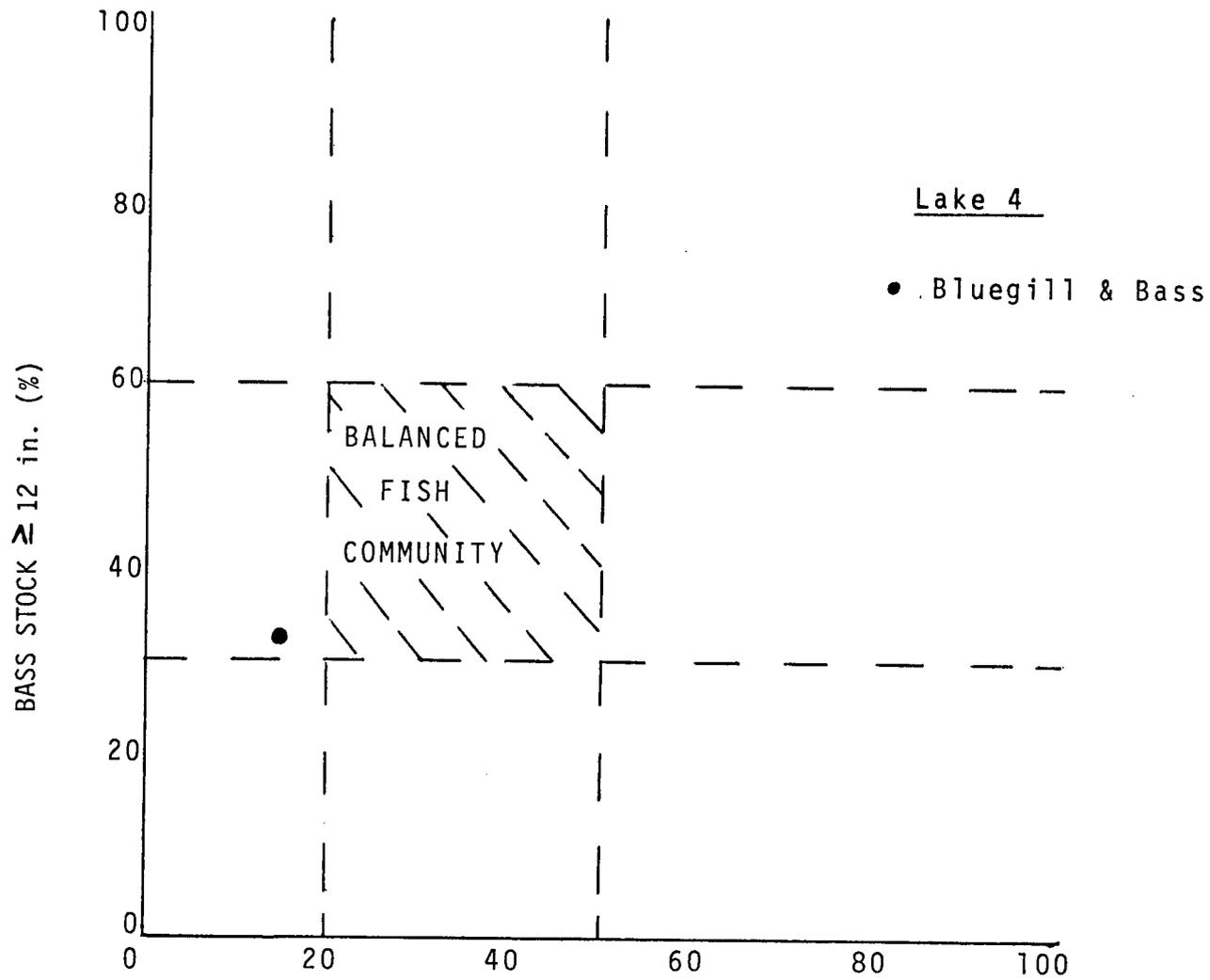
LAKE 2



Length-frequency distribution of bluegill, redear sunfish and largemouth bass captured from Lake 2 by electrofishing on Oct. 16, 1978. St. Vincent National Wildlife Refuge, Florida

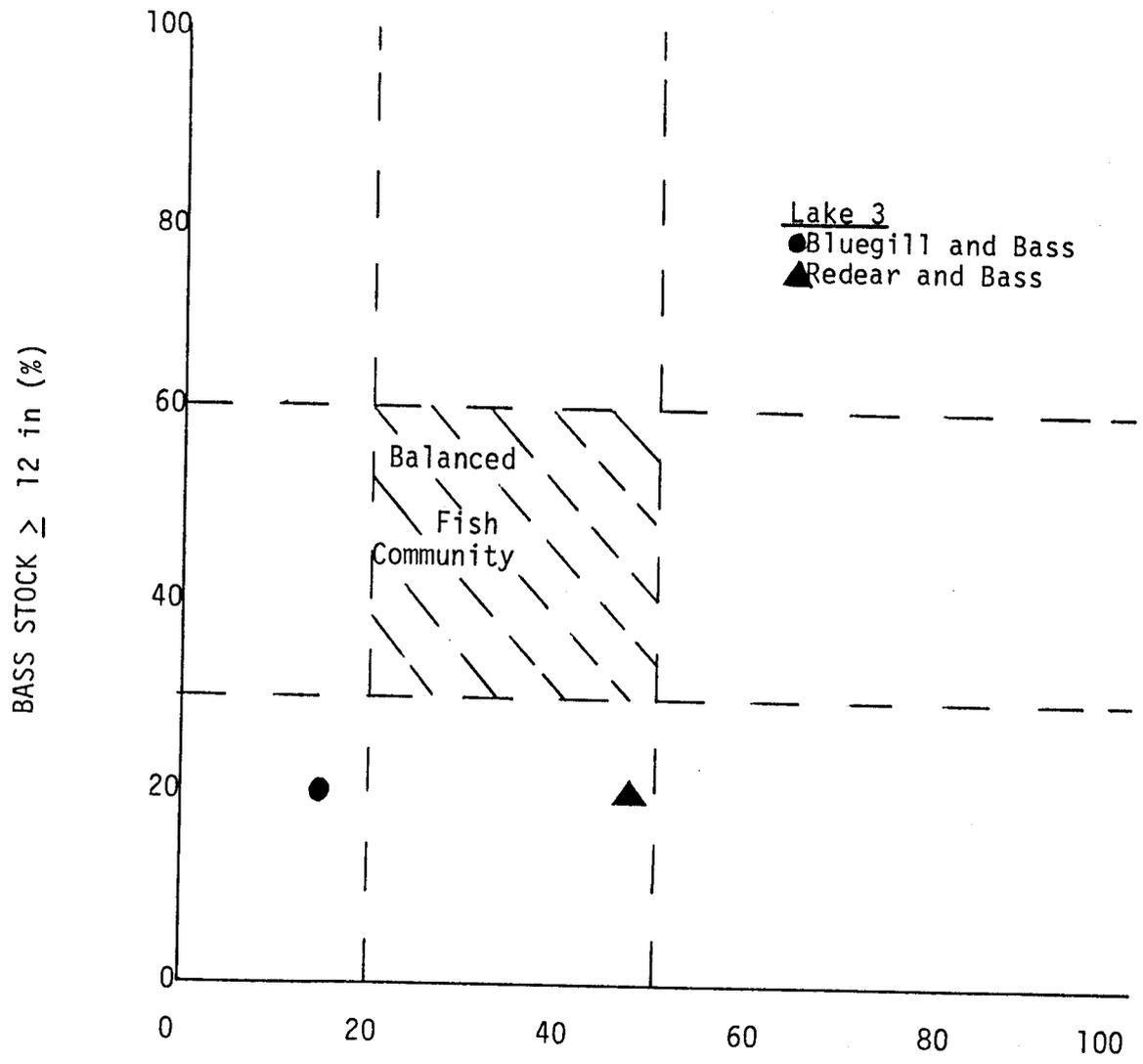


Length-frequency distribution of bluegill, redear sunfish and largemouth bass captured from Outlet Creek by electrofishing on Oct 17 and 18, 1978.
St. Vincent National Wildlife Refuge, Florida

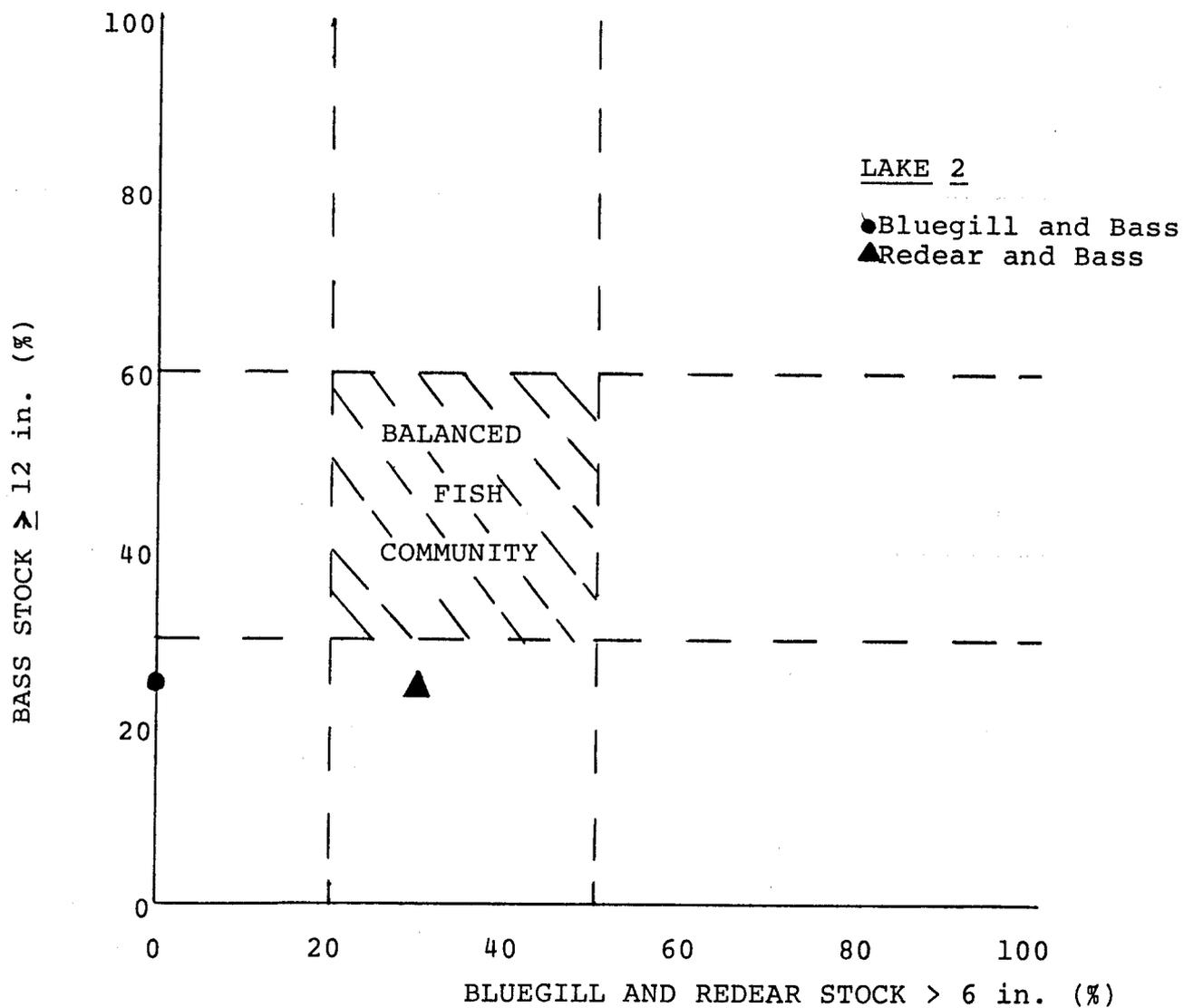


BLUEGILL STOCK \geq 6 in. (%)

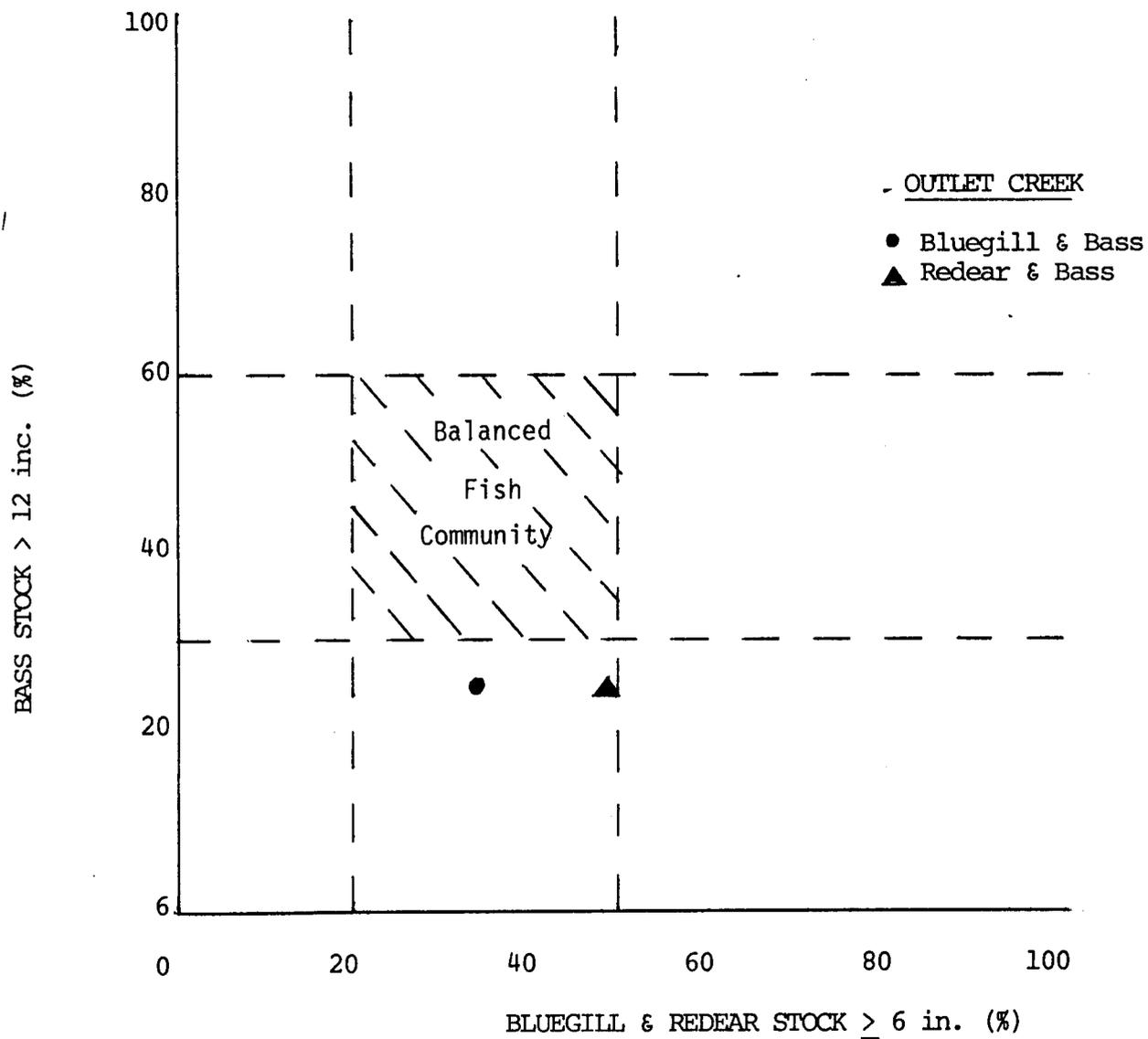
Proportional Stock Densities of Largemouth Bass and Bluegill captured from Lake 4 by Electrofishing on Oct 13, 1978. St. Vincent National Wildlife Refuge, Florida.



Proportional Stock Densities of Largemouth Bass, Bluegill and Redear Sunfish captured from Lake 3 by electrofishing on Oct 11 and 12, 1978. St. Vincent National Wildlife Refuge, Florida



Proportional Stock Densities of Largemouth Bass, Bluegill and Redear Sunfish captured from Lake 2 by electrofishing on Oct 16, 1978. St. Vincent National Wildlife Refuge, Florida



Proportional Stock Densities of Largemouth Bass, Bluegill and Redear Sunfish Captured from Outlet Creek by Electrofishing on Oct 17 & 18, 1978.

St. Vincent National Wildlife Refuge, Florida

memorandum

FILE

DATE: March 8, 1979

REPLY TO
ATTN OF: Fishery Management Biologist, Fishery
Resources, Panama City, Florida 32405

SUBJECT: Creel Census - St. Vincent NWR, Florida

TO: Refuge Manager, St. Vincent NWR, Florida

Relative to our recent telephone conversation, I am enclosing 100 creel census forms to get you started off. I hope the form will work out satisfactorily for you and your staff.

I have added a few comments regarding use of the form. While it is preferable to check anglers when they have terminated fishing, those that are still engaged in fishing should not be passed by since incomplete trips will not affect the overall results of the census.

Anglers will be asked to recall and estimate the lengths of fish released. Consequently, lengths to the nearest inch will be all one could expect to obtain in this section.

Fish REMOVED, of course, refers to fish kept or harvested. When recording lengths in the fish REMOVED section, be sure to list the lengths in the appropriate column for the species found directly above in the fish RETURNED section (did this to save space).

Hopefully, information obtained from the census should give us a better idea of angler use and the overall quality of fishing on the refuge. Creel data will also be of particular interest to me in comparing it with the data we obtained by electrofishing last fall.

Thank you for your interest in obtaining this badly needed creel data. Give me a call should you have any questions or problems with the form and keep in touch.



Ronald A. Ulrich
Fishery Management Biologist

Enc. Creel Census Forms (100)
CC: Jacksonville Area Office, Wildlife and Fisheries (With form)



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CREEL CENSUS
 ST. VINCENT NATIONAL WILDLIFE REFUGE
 FLORIDA

structions: Please interview anglers whenever encountered on the refuge, preferably when they have terminated fishing. A form should be filled out for each angler even if no fish were caught. Record all lengths and hours fished to nearest 0.1. Under the "Other Kinds" column, please list the species involved if identification can be made.

Water fished: _____ Date fished _____

Hours fished: Day _____ Night _____ Total _____

Angler fished primarily for (check one): Largemouth bass ____, Sunfish ____, Channel catfish ____, Crappie ____, Saltwater fish ____, Anything ____.

Angler rates the overall quality of fishing today as (Check one): Good ____, Fair ____, Poor ____.

Check here if no fish were caught ____.

Record total length of each fish RETURNED to water:

Largemouth Bass	Bluegill	Redear Sunfish	Other Sunfish	Crappie	Channel Catfish	Other Kinds

Record total length of each fish REMOVED from water:

Remarks: _____

Signature and Title of Interviewer: _____