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10-12 March, 1992**

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*Virginia Institute of Marine Science*

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**Potomac River White Perch, *Morone americana*,  
Gill Net Study**

**10-12 March, 1992**

**Potomac River Fisheries Commission  
and the  
Virginia Institute of Marine Science**

**Marine Resources Report 92-3**  
Prepared for the Commission  
by  
Herbert M. Austin  
Virginia Institute  
of  
Marine Science  
College of William and Mary

**8 May, 1992**

## Potomac River White Perch

### Gill Net Study

Potomac River Fisheries Commission

and the

Virginia Institute of Marine Science

### History

The Executive Secretary, Mr. Kirby Carpenter, of the Potomac River Fisheries Commission was approached prior to the 7 February 1992 regular meeting of the Commission by several people wishing to have small mesh gill net fishery for white perch (Morone americana) placed on the agenda for the meeting. In response, Mr. Carpenter and staff prepared a historical white perch landings summary for the Commissioners. Basically, this review showed that about 60% of the white perch landings taken between 1976 and 1982 were taken by gill net prior to the implementation of the striped bass (Morone saxatilis) interstate management regulations. The pound net caught the bulk of the remaining fish, and showed a downward trend during the period 1976 to 1991.

At the 7 February 1992 meeting, Mr. William Rice, of the Charles County Waterman's Association, proposed to the Commission that an experimental white perch gill net fishery be initiated to see if white perch could be taken without violating the striped bass management regulations.

The Commission authorized an experimental spring white perch gill net fishery during 9-28 March, 1992, three days a week, using the gear detailed below; all catch data were to be provided to the Commission for analyses, and an observer would be allowed aboard during the fishery (Appendix I). The Executive Director requested that the Virginia Institute of Marine Science provide the observer and data analysis of the fishery.

### Methods

Each fisherman set 2 six hundred-foot 3 1/2" mesh gill nets of monofilament or multifilament twine (#69 or #104). Sets were made between 10 and 12 March, 1992 (Table 1). Location of sets is shown in Figure 1. Nets were fished in a normal manner as for commercial operations. All fish were measured and either retained or released. In addition, rockfish or striped bass were noted as alive or dead when released (Table 1 & 2).

Data were tabulated and provided to the Virginia Institute of Marine Science (VIMS) through the Potomac River Fisheries Commission (PRFC). Data were entered into the VIMS PRIME computer to generate graphics of length frequencies of selected species, and the relationship between perch and striped bass catches.

## Results

Catch, species and size composition for all fish taken during 10-12 March, 1992 are presented in Table 1. The study was discontinued after this date because of the large by-catch of striped bass. Figures 2-10 are length frequencies of the more abundant species.

Figure 11 shows the relationship between white perch and striped bass catches. Statistically, there is no relationship. Overall, the survival rate of striped bass was 59% (Table 4). Some fish recorded as "dead" in the mid-river (Cedar Pt) catches may have been fish that died in the previous day's fishing. The actual percentage of twice-caught dead fish could not be determined. But, taking them into account could change the overall percentages slightly to over a 60:40 alive:dead ratio.

## Discussion and Conclusions

A gill net fishery for white perch, using 3 1/2" mesh, in the Potomac River during spring will take a substantial striped bass by-catch. This by-catch will range from five or six striped bass for three or four white perch to a wide range of from 80 striped bass for 10 white perch to 20 striped bass to 45 white perch (Figure 11). Speir (1987) found that drift gill net by catch of striped bass was 46% which is within the range found here. There are insufficient data to provide an "equation" that will allow a prediction of how many striped bass will be caught for each white perch. Of any spring (cold water) striped bass by-catch, approximately 60% can be released alive when nets are fished for 24 hours. Speir (1985) found attended March gill net striped bass by catch mortalities on the order of 16-24%; and suggested that this rate was lower than for unattended nets. It may be that the higher mortality rates (40% compared to 16-24%) observed here are because the nets were unattended for at least 24 hours during this study.

There are up- and down-river differences. At the up-river stations white perch were smaller as they ranged six to 10 inches with most in the 10-12 inch range. At both the mid-river and down-river stations the perch were 8-12 inches, most 10-12 inches. The up-river stations also yielded striped bass in the 6-12 inch and 18-24 inch ranges, and none in the 12-18 inch range. Mid-river stations yielded most striped bass in the 12-24 inch range, most 12-16 inches; and the down-river stations, bass in the 12-16 inch range.

### Acknowledgements

The author wants to acknowledge Captains Davis, Owens, Boarman and Burch for their care in data collection. Captain Owens and his crew were most helpful and courteous to me while I got in their way.

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Table 3 Species and size composition of gill net catch, "Upper-River", Maryland Point Observatory (MD side), 10-12 March, 1992.

Table 4 Survival of striped bass, *M. saxatilis*, by-catch taken in white perch, *M. americana* gill net fishery, 10-12 March, 1992, Potomac River.

Table 1

"Lower River"  
 Yellow Bank-Swan Point, MD

Species and Size Composition, 600 ft x 9 ft multifilament Anchored Net, 3 1/2" mesh.  
 Twine Size: Yellow Bank, #69; Swan Point, 104. Dates: 10-12 March, 1992.  
 Captains: J. Burch and B. Boarman

Species	Size Range (Total Length in Inches)													
	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30
herring, <u>Alosa</u>														65
white perch, <u>Morone americana</u>				2		17	36							
striped bass, <u>M. saxatilis</u> (ALIVE)					1	1	53	9		1	1			1
striped bass, <u>M. saxatilis</u> (DEAD)						1	15	1						

Table 2

"Mid-River"

Pope's Creek - Upper Cedar (VA Side)

Species and Size Composition, 600 ft x 6 ft monofilament Anchored Net, 3 1/2" mesh. Twine Size: #69.

Water depth: 10-12 ft., Dates: 10-12 March, 1992.

Captain: W. M. Owens

Species	Size Range (Total Length in Inches)													
	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30
herring, <u>Alosa</u>					3	4			3					
menhaden, <u>Brevoortia tyrannus</u>	5	1		1										
gizzard shad, <u>Dorosoma cepedianum</u>						28	54	10						
catfish, Ictaluridae					2	4								
white perch, <u>Morone americana</u>		37		42										
striped bass, <u>M. saxatilis</u> (ALIVE)				1	33	21	18	19	7	9	4			
striped bass, <u>M. saxatilis</u> (DEAD)					36	34	23	13	5	8				



Table 3

"Upper River"  
Maryland Point Observatory (MD Side)

Species and Size Composition, 600' x 8' monofilament Anchored Net, 3 1/2" mesh. Twine Size: #104.  
Water depth: 5-9 ft., Dates: 10-12 March, 1992.  
Captain: Donald C. Davis

Species	Size Range (Total Length in Inches)													
	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30
herring, <u>Alosa</u>				2	3									
shad, <u>Alosa sapidissima</u>								3(buck)		1(roe)				
gizzard shad, <u>Dorosoma cepedianum</u>						**34 Bu unmeasured**								
catfish, <u>Ictaluridae</u>										1		1		
black bass, <u>Micropterus</u>							1							
white perch, <u>Morone americana</u>		16	29											
striped bass, <u>M. saxatilis</u> (ALIVE)	1				6			4	1	5				2
striped bass, <u>M. saxatilis</u> (DEAD)	1				3					3				

Table 4

Survival of Striped Bass, Morone saxatilis by-catch taken  
in 3 1/2" gill nets, 10-12 March, 1992, Potomac River.

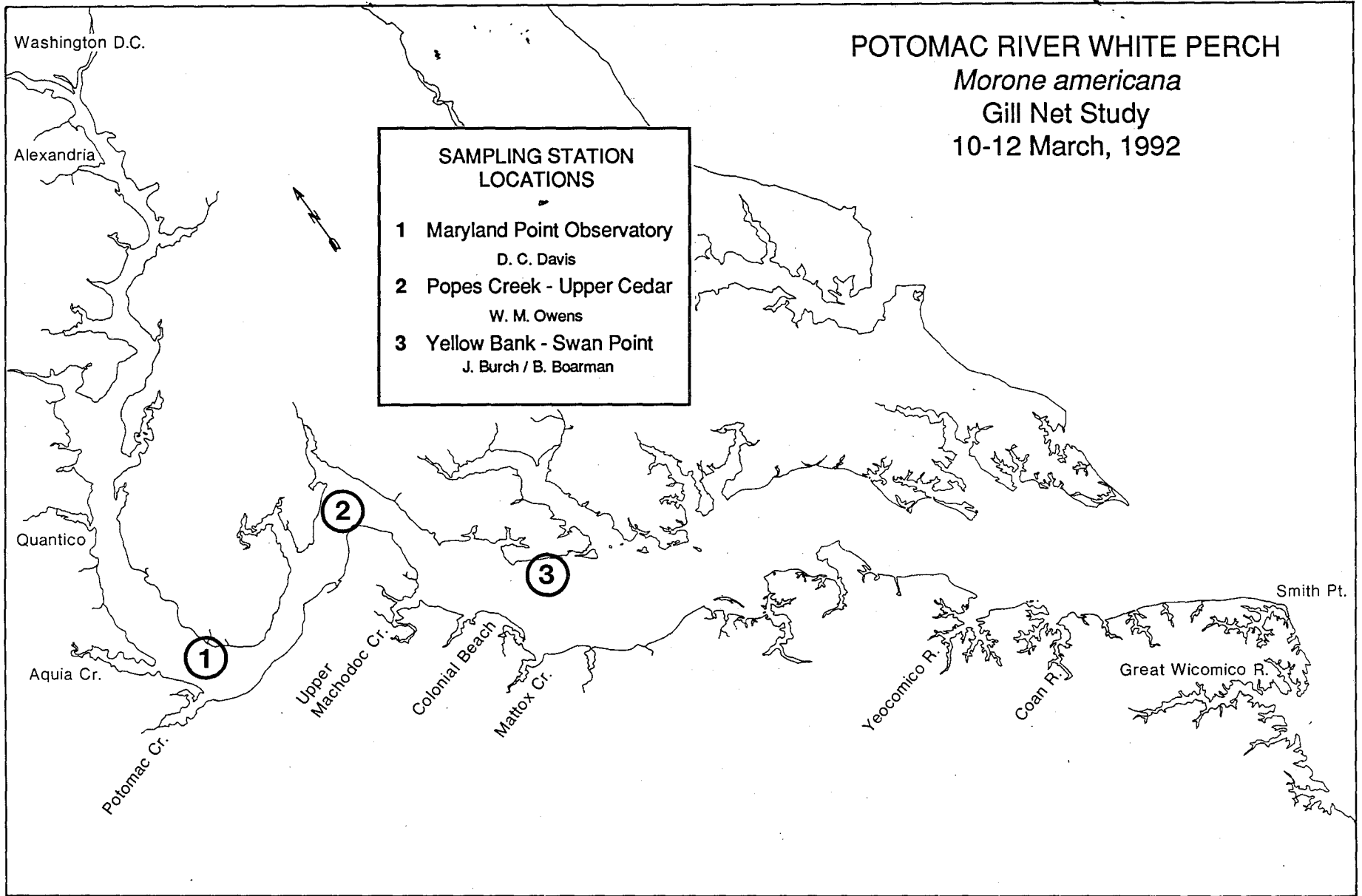
	Total	Alive	Dead
"Upper River" Maryland Point Observatory (MD Side)	26	19 (73%)	7 (27%)
"Mid-River" Pope's creek - Upper Cedar (VA Side)	231	112 (48%)	119 (52%)
"Lower River" Yellow Bank - Swan Point (MD Side)	84	67 (80%)	17 (20%)
Totals	341	198 (59%)	143 (41%)

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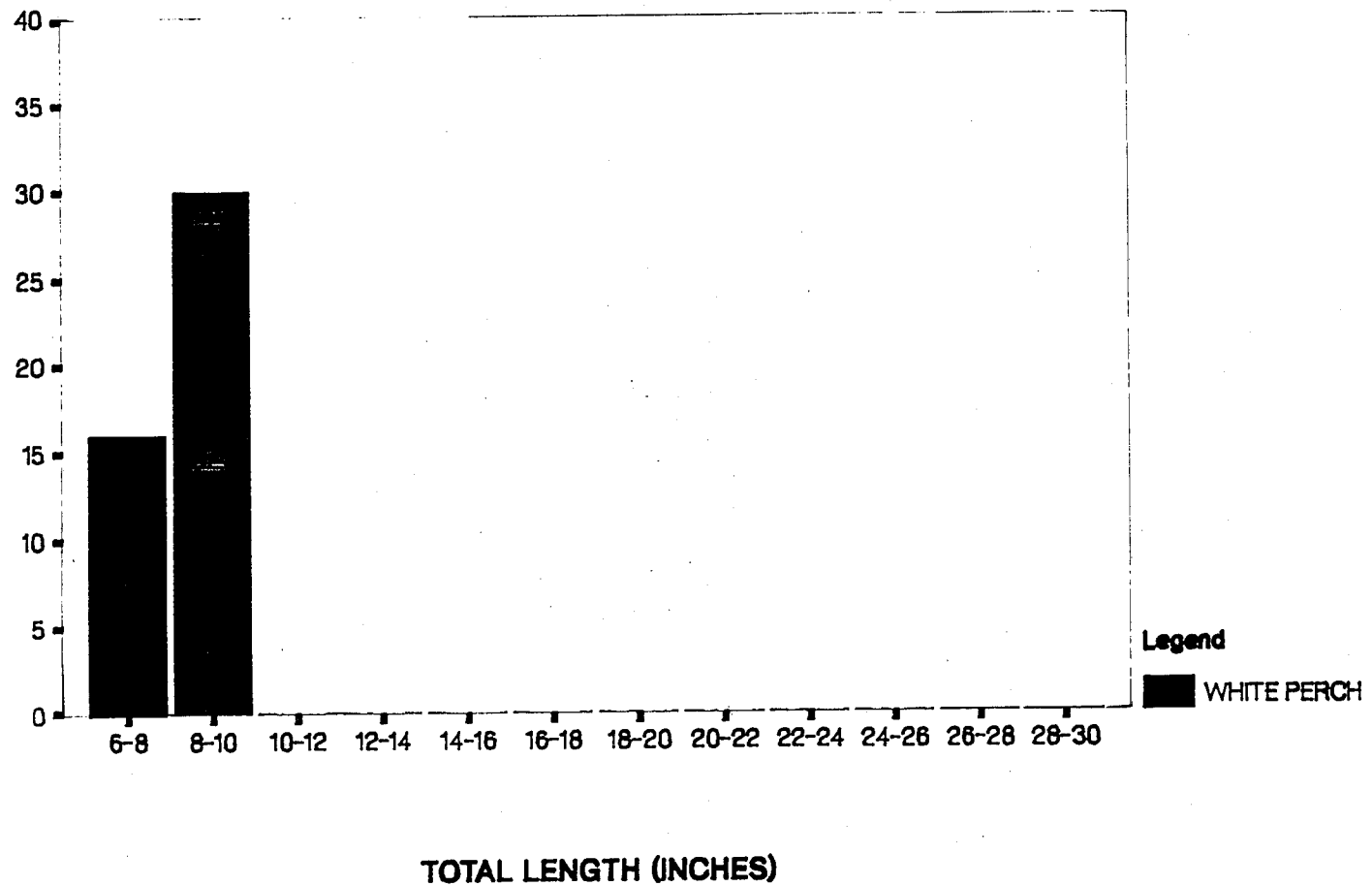
**POTOMAC RIVER WHITE PERCH**  
*Morone americana*  
Gill Net Study  
10-12 March, 1992

- SAMPLING STATION LOCATIONS**
- 1 Maryland Point Observatory**  
D. C. Davis
  - 2 Popes Creek - Upper Cedar**  
W. M. Owens
  - 3 Yellow Bank - Swan Point**  
J. Burch / B. Boarman



# POTOMAC RIVER WHITE PERCH GILL NET STUDY

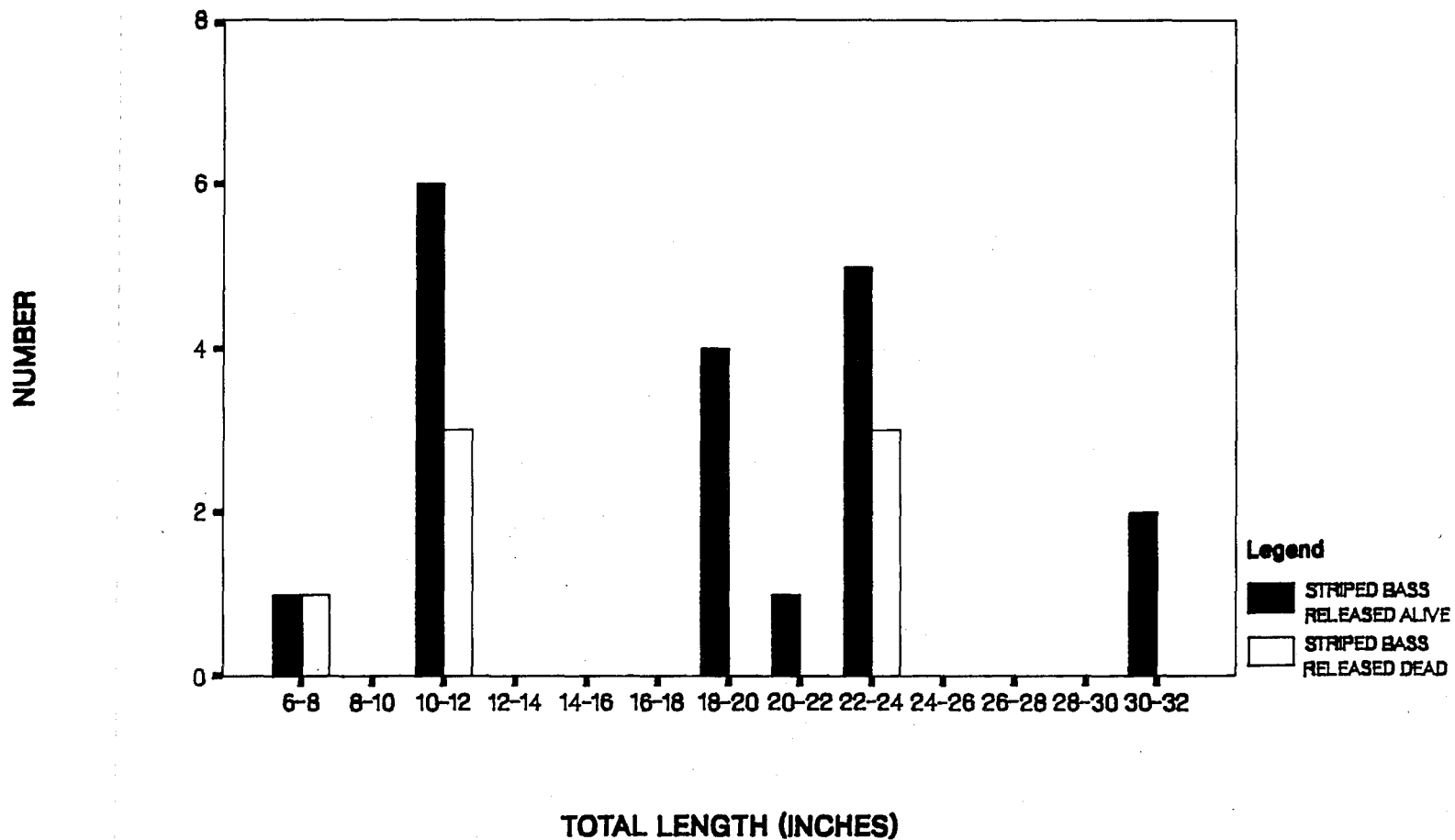
BELOW MARYLAND PT OBSERVATORY (MD SIDE)



10-12 MARCH, 1992  
D. C. DAVIS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

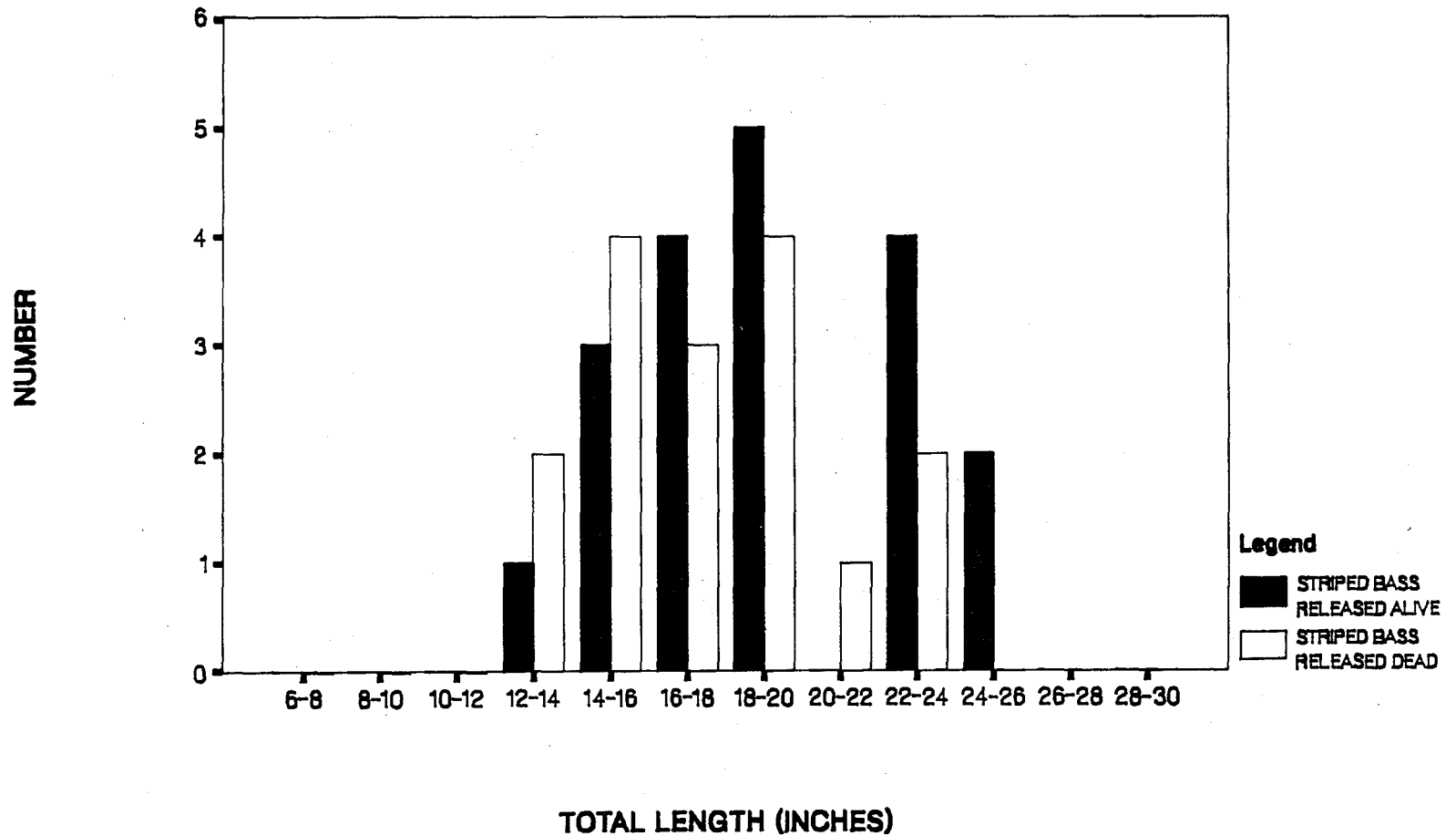
BELOW MARYLAND PT OBSERVATORY (MD SIDE)



10-12 MARCH, 1992  
D. C. DAVIS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

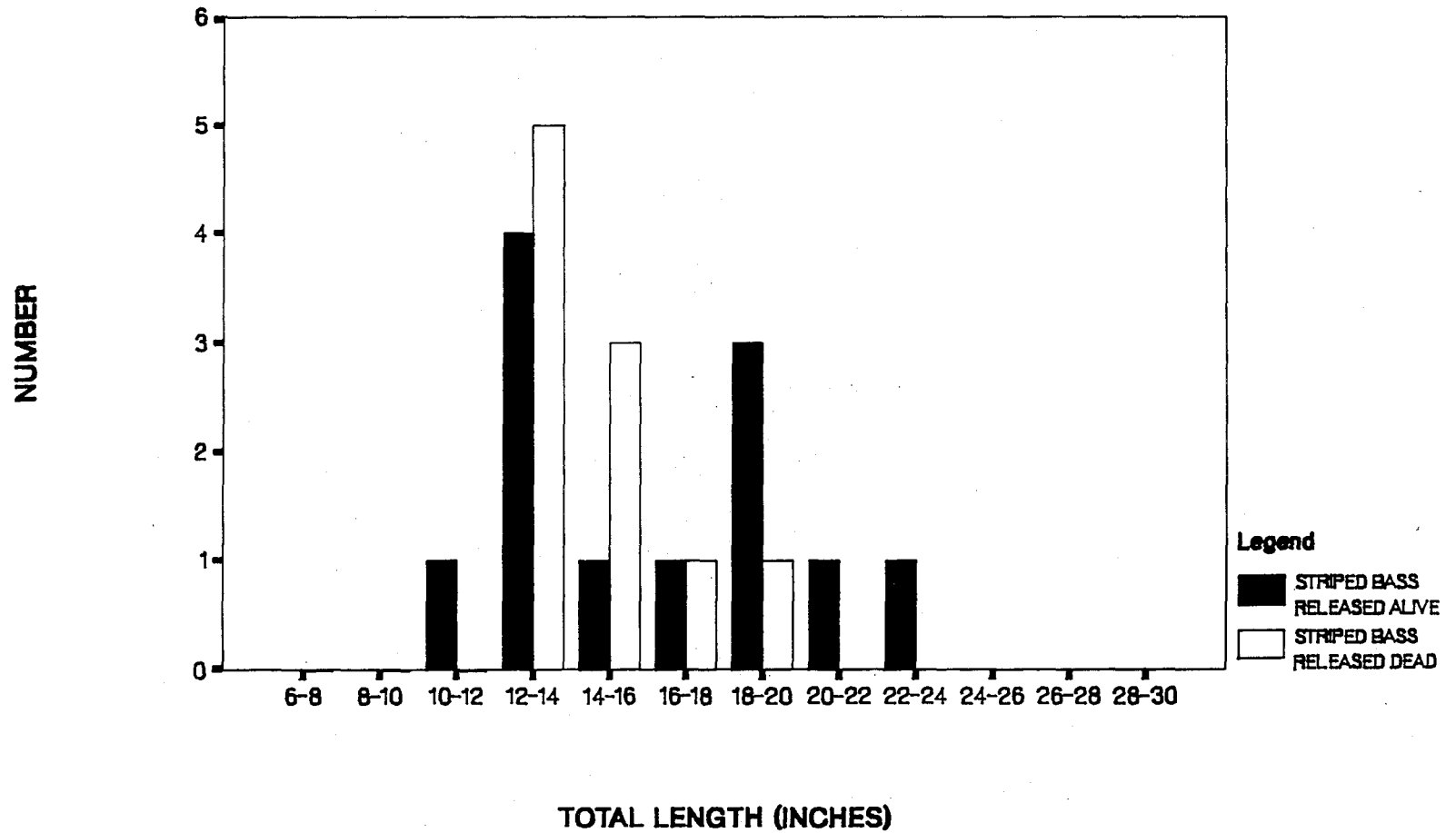
POPES CREEK, MD (VA SIDE)



10 MARCH, 1992  
W. M. OWENS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

POPE'S CREEK, MD (VA SIDE)

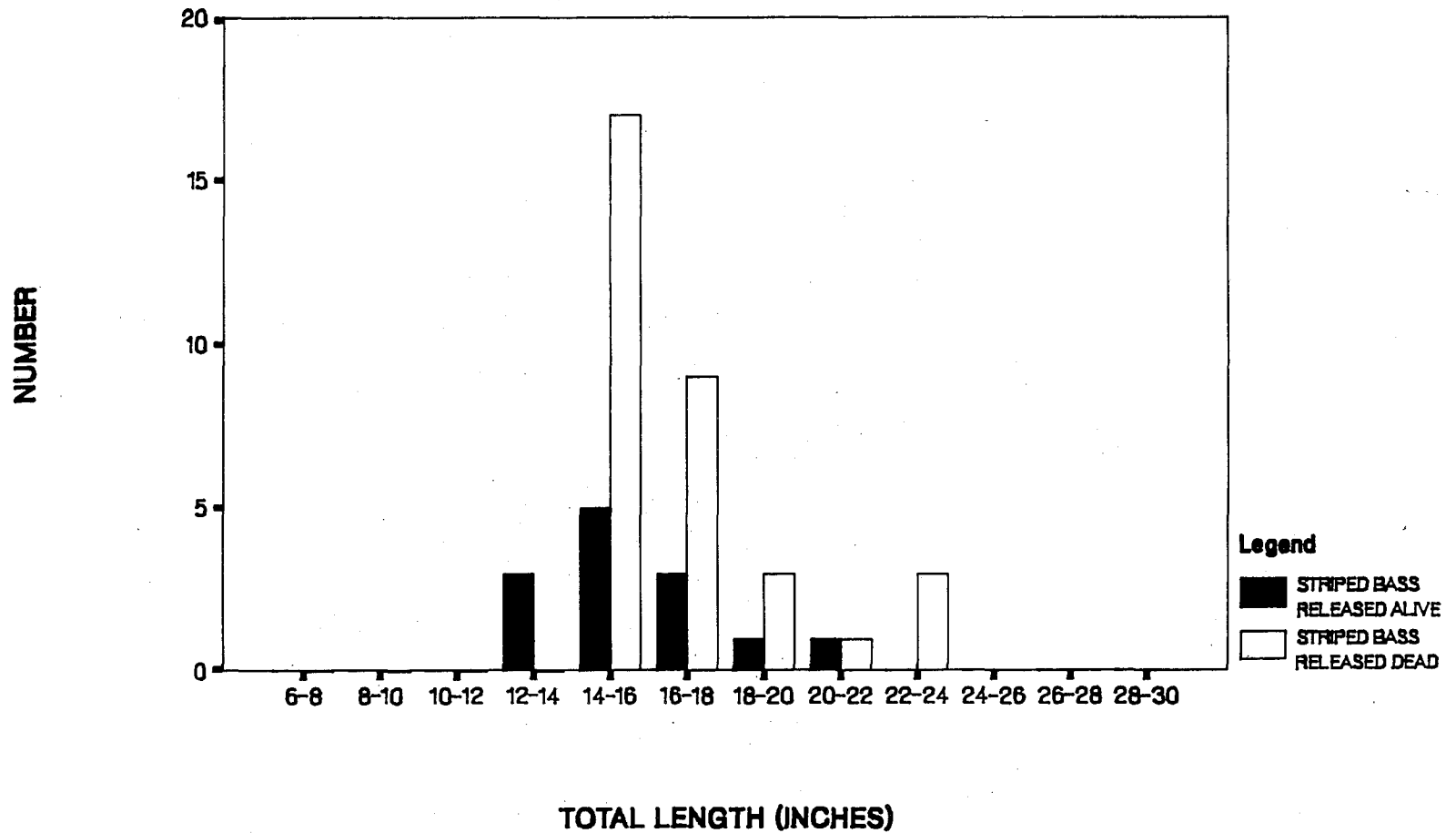


11 MARCH, 1992  
W. M. OWENS



# POTOMAC RIVER WHITE PERCH GILL NET STUDY

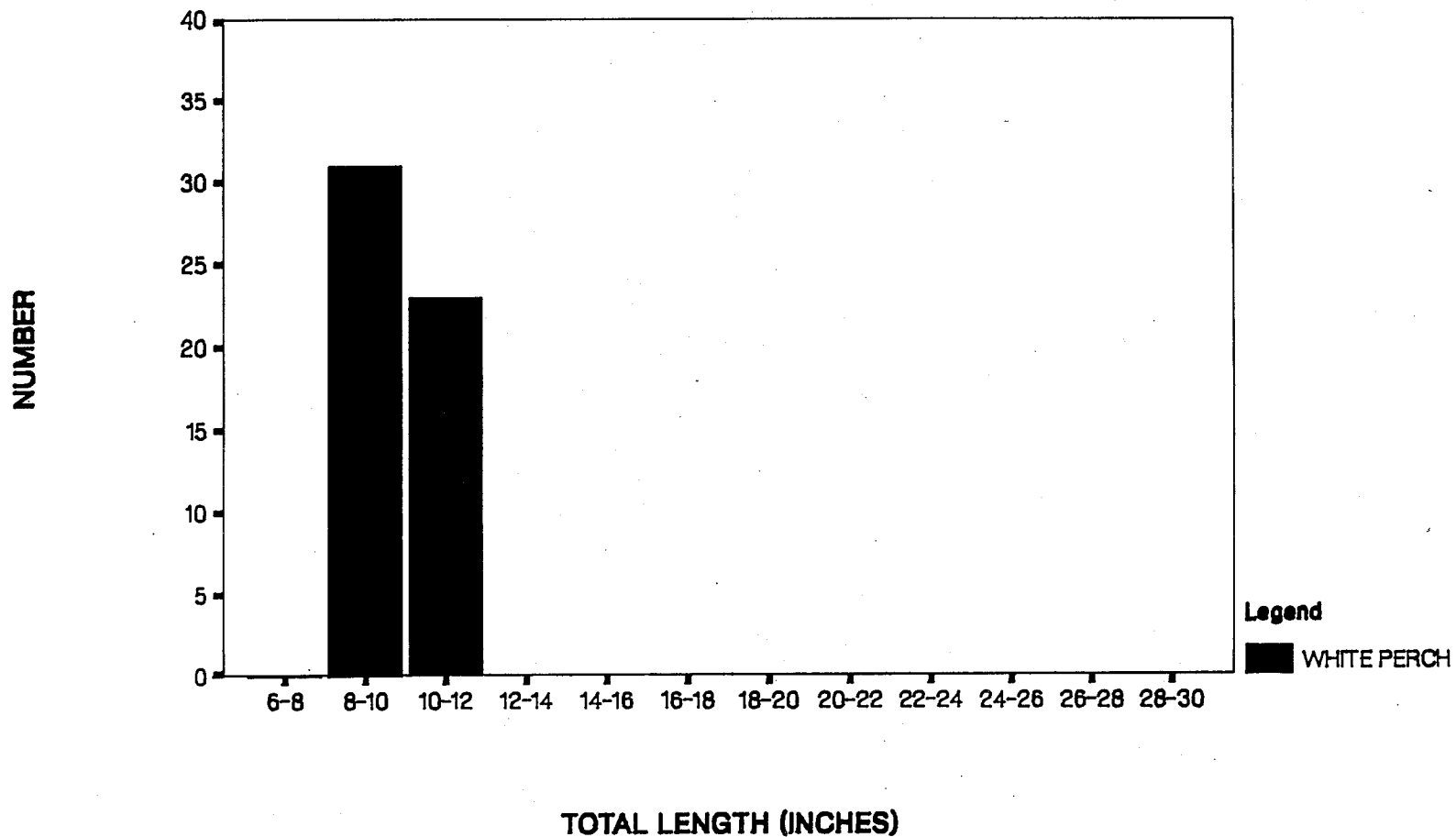
ABOVE UPPER CEDAR (VA SIDE)



12 MARCH, 1992  
W. M. OWENS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

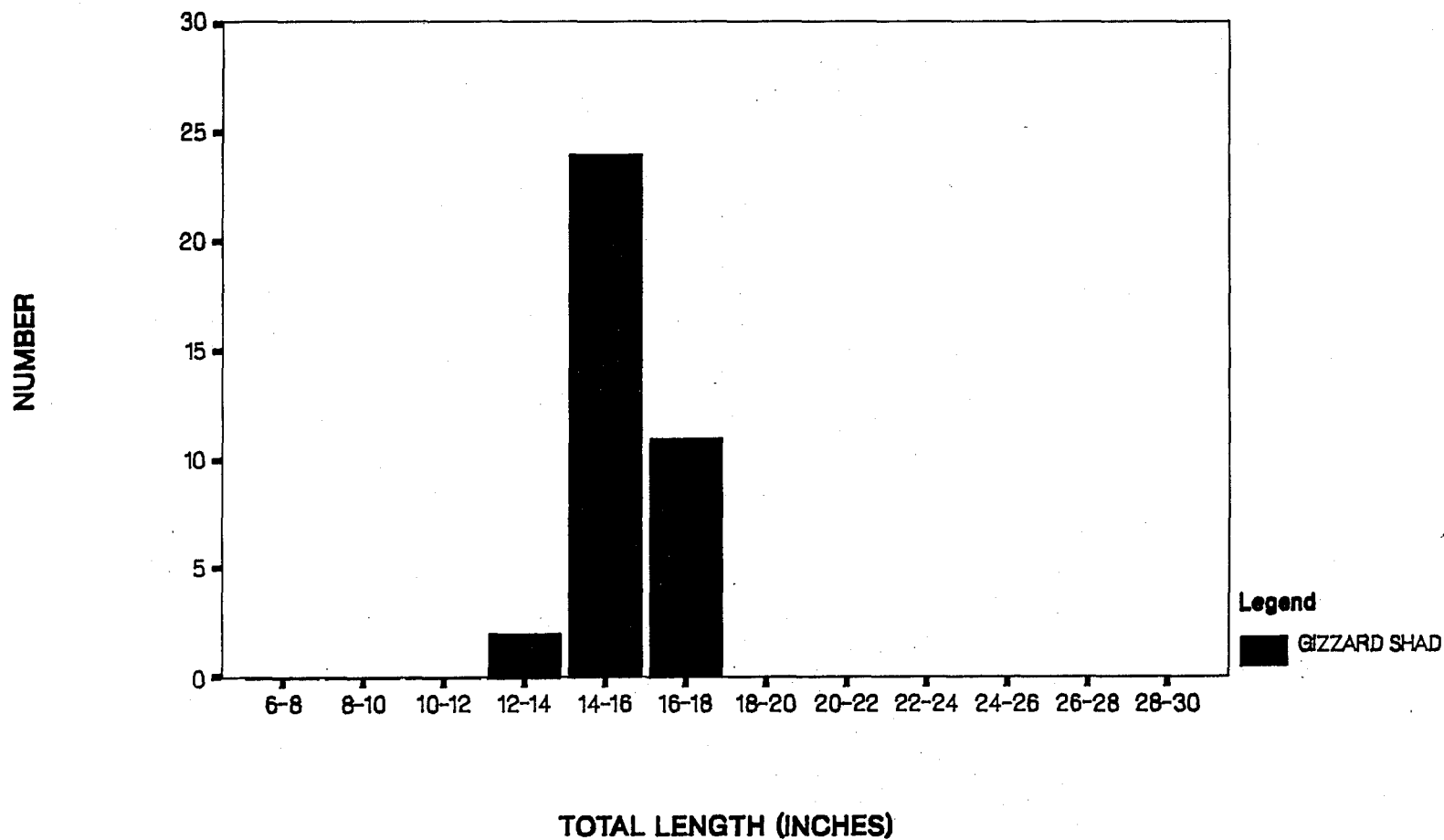
POPE'S CREEK - UPPER CEDAR (VA SIDE)



10-12 MARCH, 1992  
W. M. OWENS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

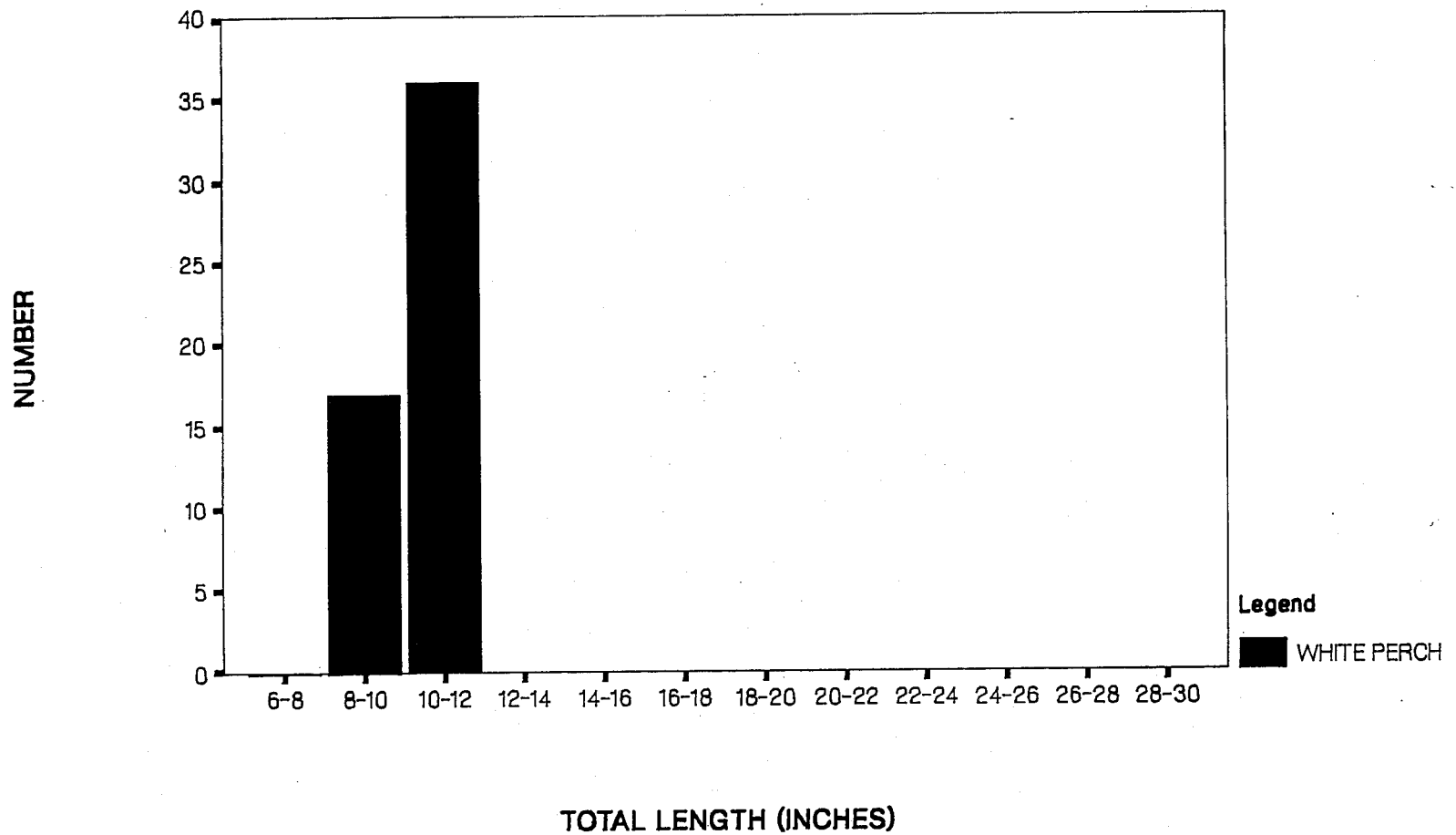
POPE'S CREEK - UPPER CEDAR (VA SIDE)



10-12 MARCH, 1992  
W. M. OWENS

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

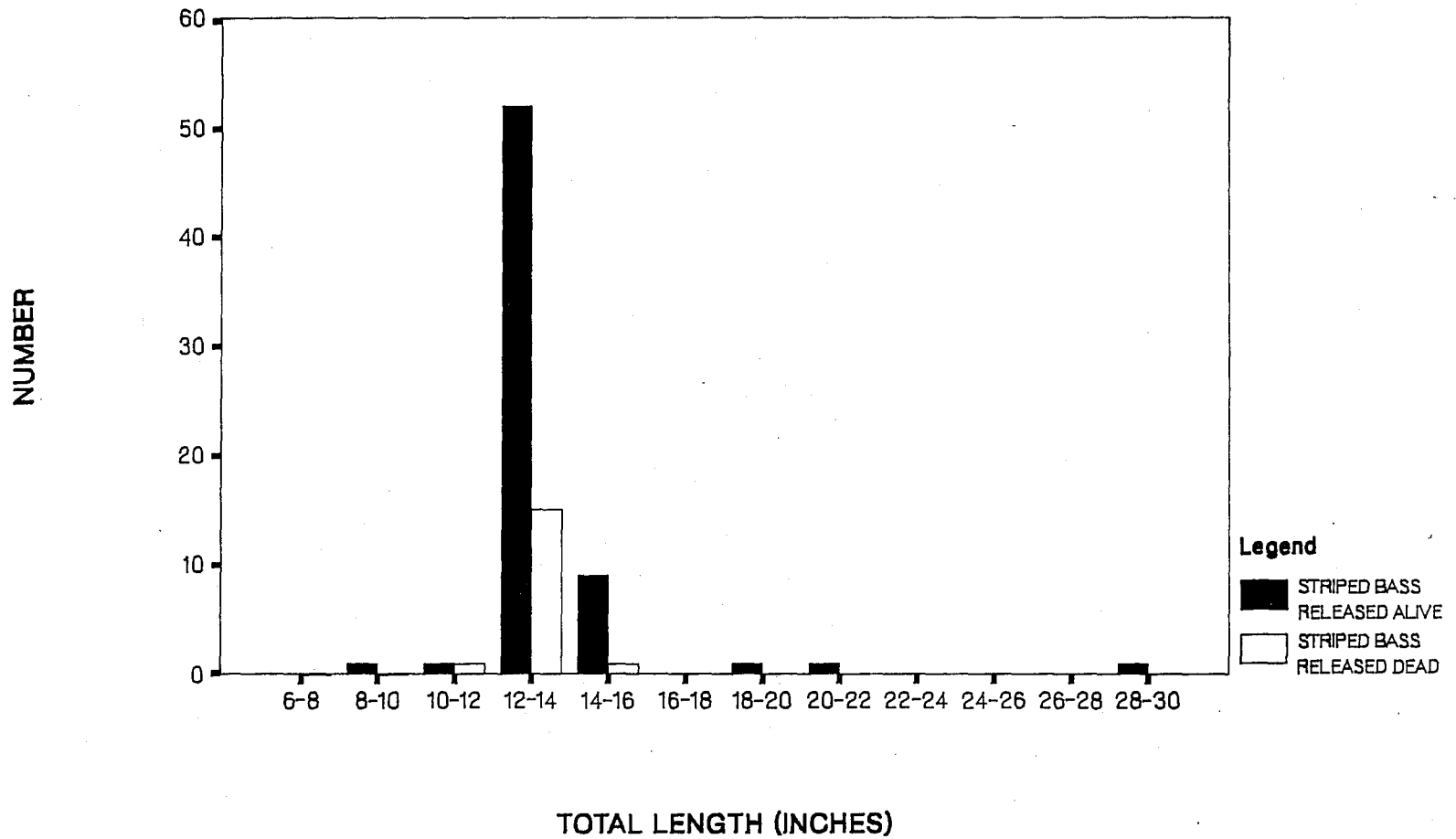
YELLOW BANK - SWAN POINT (MD SIDE)



10-12 MARCH, 1992  
J. BURCH & B. BOARMAN

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

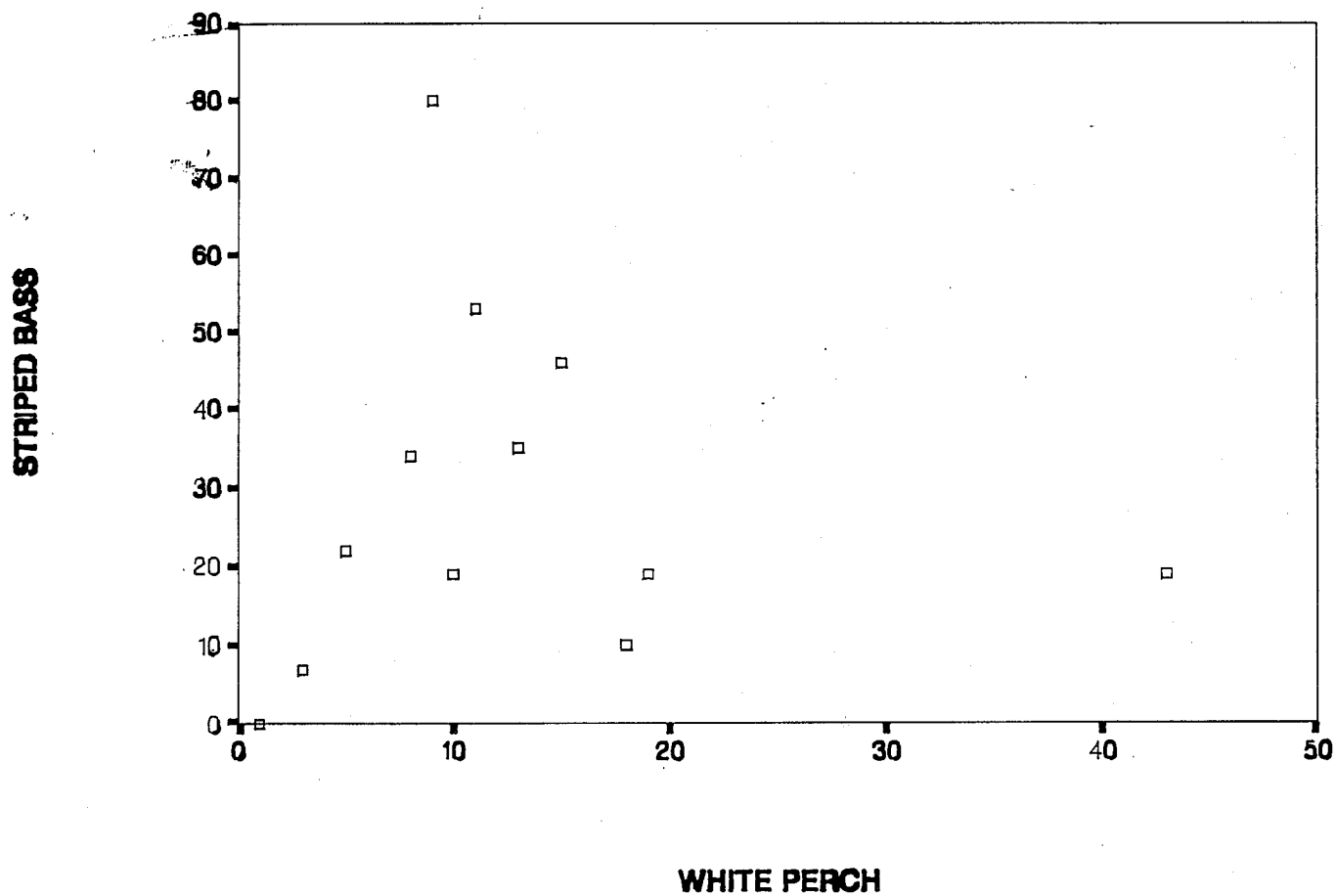
YELLOW BANK - SWAN POINT (MD SIDE)



10-12 MARCH, 1992  
J. BURCH & B. BOARMAN

# POTOMAC RIVER WHITE PERCH GILL NET STUDY

## STRIPED BASS CATCH WITH WHITE PERCH



10-12 MARCH 1992

### Literature Cited

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