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Status of American Shad Stocks
in Virginia

by

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Status of American Shad Stocks in Virginia

Reported landings of American shad in Chesapeake Bay have declined from 16.7 million lb in 1896 to 1.04 million lb in 1979. During the period 1940-1970 reported landings remained steady at approximately 4.0 million lb. However, since 1970, reported landings have declined to the present levels.

Several factors are directly or indirectly associated with this more recent decline. While it is true that stocks of American shad are down, there has been a corresponding decline in effort directed toward this species. Stake gill nets, by far the most productive gear for shad, are no longer being set exclusively for shad. The cost of the set gear has risen but ex-vessel prices for shad have not kept pace. The same is true for pound nets; they are expensive to set both in terms of money and labor. Productive stands for "summer fish" are not generally productive for shad; therefore, price and declining stocks do not warrant a "shad set."

In recent years (1976-1980) severe weather conditions have been a contributing factor to the declining fishery. Ice destroyed all pound net and stake gill net stands which necessitated replacement before fishing could commence. This, coupled with rapidly rising water temperatures, and an associated drop in price in mid-April, served to shorten the already brief fishing season.

An additional contributing factor recently was debris in the water, possibly caused by the extremely low temperatures. Stake gill netters were forced to successively hang up approximately 50% of their nets to dry and be cleaned of debris.

A more realistic approach to the true status of stocks is catch-per-unit-of-effort (CPUE) coupled with landings and a knowledge of the fishery.

The VIMS estimate of CPUE (Table 1) shows that while overall stocks are down, stake gill net CPUE in the York River has increased in recent years. Other river systems fluctuated yearly but exhibited stability compared to late 1960's-early 1970's (Figs. 1-3). The Potomac River seems to be the exception. However, it is the system for which we have the least amount of data concerning the fishery for shad. The Potomac gill net fishery has redirected its efforts from American shad to striped bass and, in doing so, from stake gill net to anchor gill net with a tendency toward mesh sizes that favor the capture of striped bass (shad mesh: 4 7/8-5 1/4"; small striped bass, 3 1/4-3 1/2"; large striped bass, 6-10").

In summary, while it is true that stocks are down at this time, they do not seem to be at critical levels. Levels of abundance are lowest in the Potomac and Rappahannock rivers. However, the fishery for American shad in these rivers has become self regulating. Since it is no longer profitable to fish for shad, effort is presently redirected toward other species.

There is presently no immediate need of additional or emergency regulations in Virginia, but the fishery does require close attention through a comprehensive monitoring program. Such a program is currently being conducted by VIMS in the James, York and Rappahannock rivers, but lacks needed coverage in the Potomac River. Present monetary constraints preclude further expansion in this river.

More detailed analysis of the shad fishery in Virginia is presented in annual reports (e.g. AFC 8-1 to 8-3 and AFC 9-1 to 9-3).

Table 1. Yearly catch-per-unit-of-effort for American shad and river herring 1975-1979 in lb by species for stake gill net and pound net. Stake gill net effort in feet. Pound net effort in number of nets.

	Stake Gill Net				Pound Net					
	Year	Effort (ft)	American Shad		Effort	American Shad				
			♂ (lb/ft)	♀ (lb/ft)		♂ (lbs)	♀ (lbs)			
James River	1975	84,751	1.8	5.9	[(a)]			
	1976	67,139	1.3	16.9						
	1977	88,202	0.3	4.6						
	1978	92,303	2.8	13.7						
	1979	122,070	0.3	4.8						
York River	1975	72,526	0.3	3.0	[(a)]			
	1976	70,289	0.2	2.0						
	1977	63,405	0.1	4.8				10	1,960	710
	1978	52,342	1.3	7.3				12	3,064	2,414
	1979	45,827	1.1	8.9				12	1,010	1,878
Rappahannock River	1975	95,056	<0.1	0.5	30	92	132			
	1976	106,683	<0.1	0.3	25	73	121			
	1977	44,603	<0.1	1.1	45	143	62			
	1978	44,885	0.5	2.2	42	110	99			
	1979	44,281	<0.1	1.1	37	121	92			
Potomac River	1975	251,158	<0.1	0.3	23	328	95			
	1976	258,720	<0.1	0.2	32	458	183			
	1977	246,119	<0.1	0.2	51	163	105			
	1978	186,480	<0.1	0.1	45	90	81			
	1979	(a)			55	46	26			

(a) Data not available

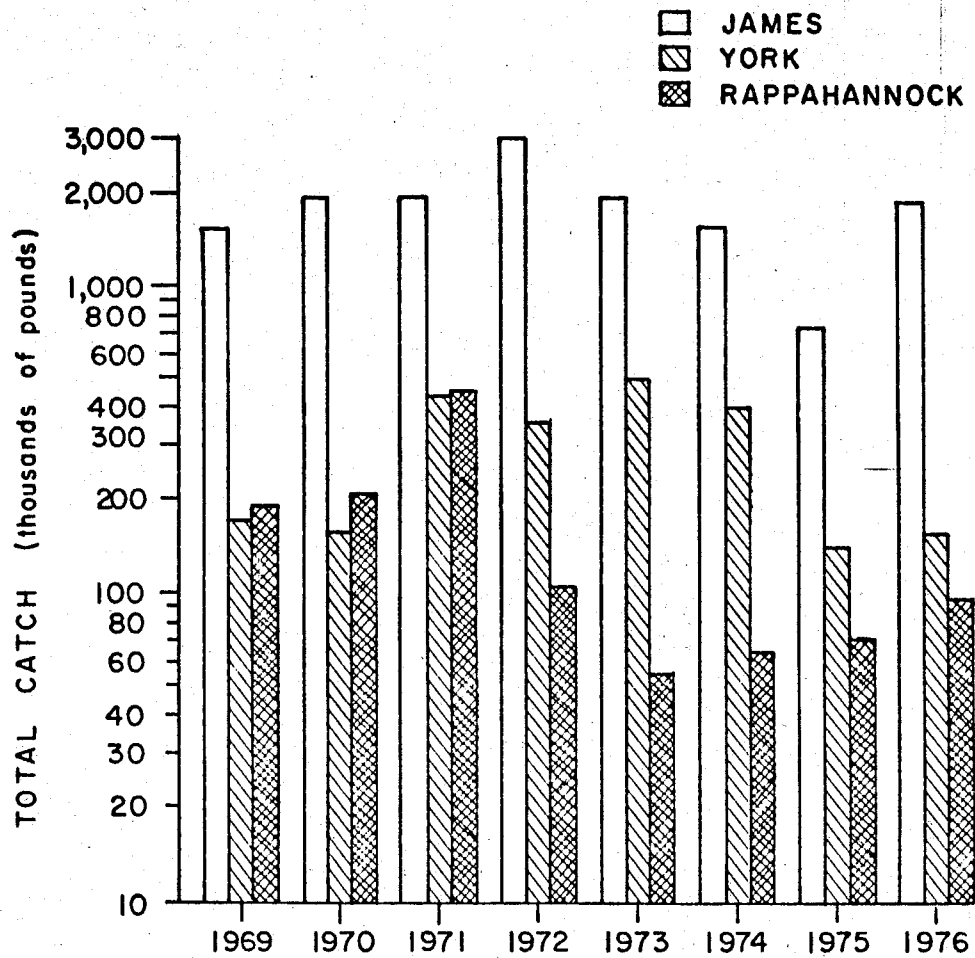


Figure 1. Estimated total catch of American shad by stake gill nets by river by year.

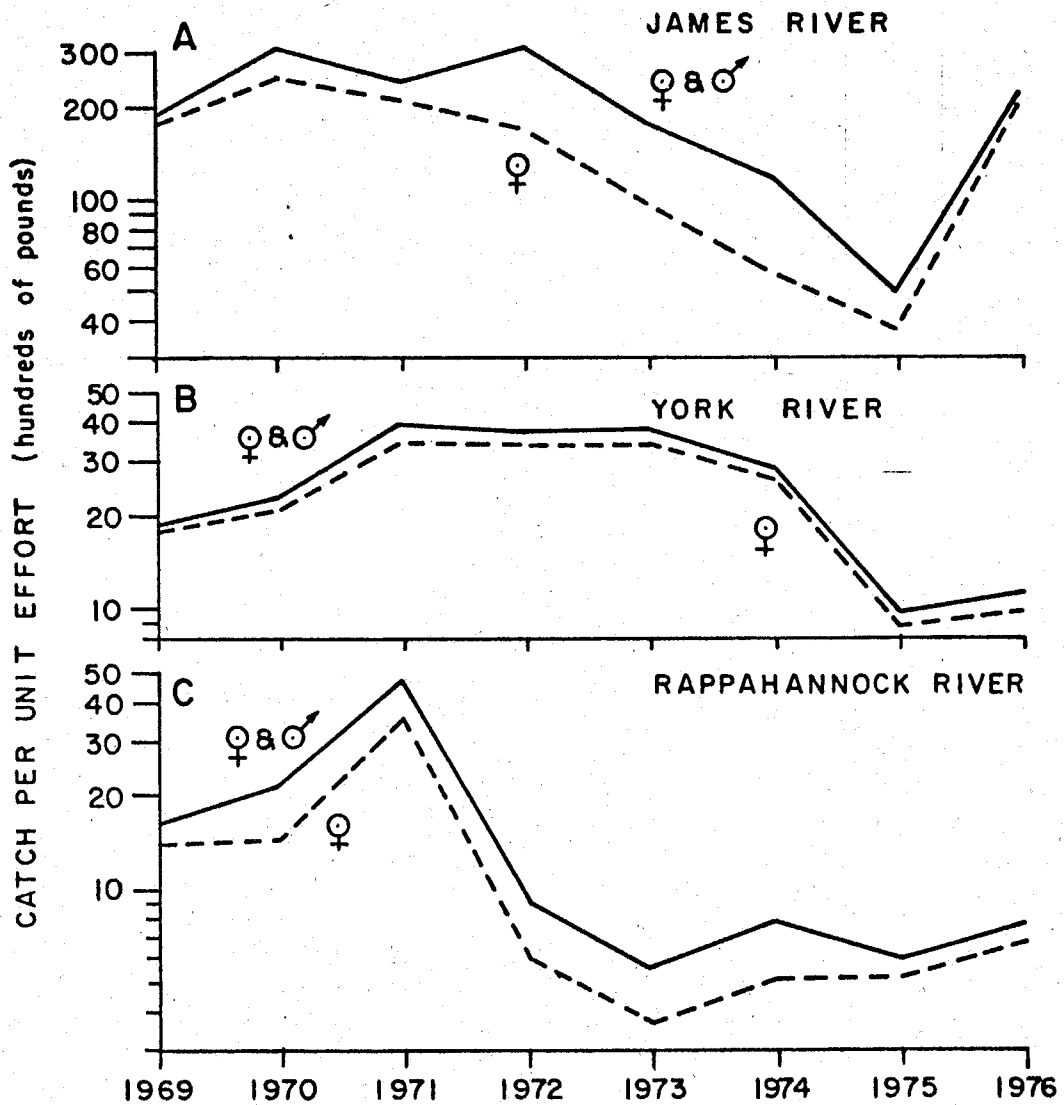


Figure 2. Estimated c/f of American shad female and sexes combined by year for the James (A), York (B) and Rappahannock (C) rivers.

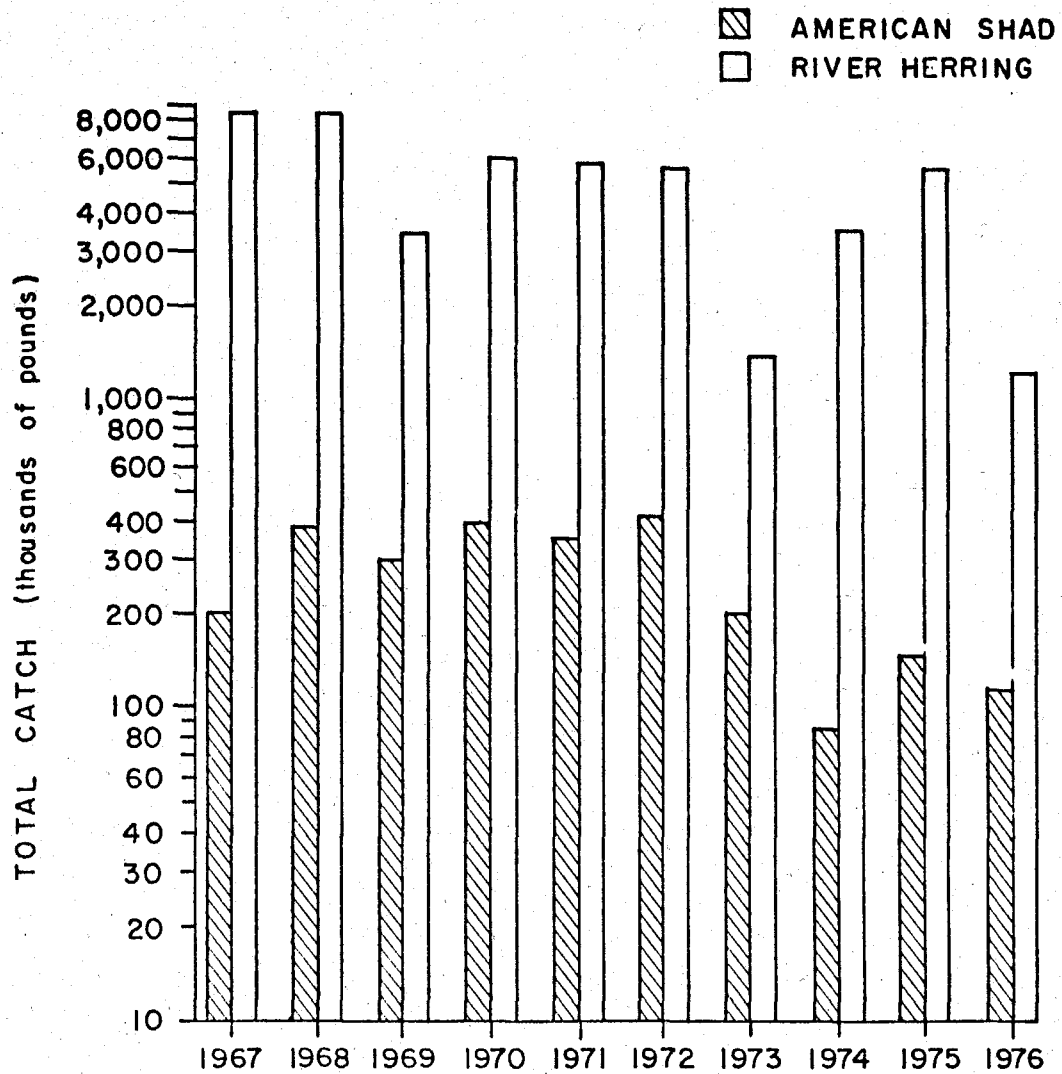


Figure 3. Total catch of American shad and river herring in lb. in the Potomac River by year (gill net and pound net combined).