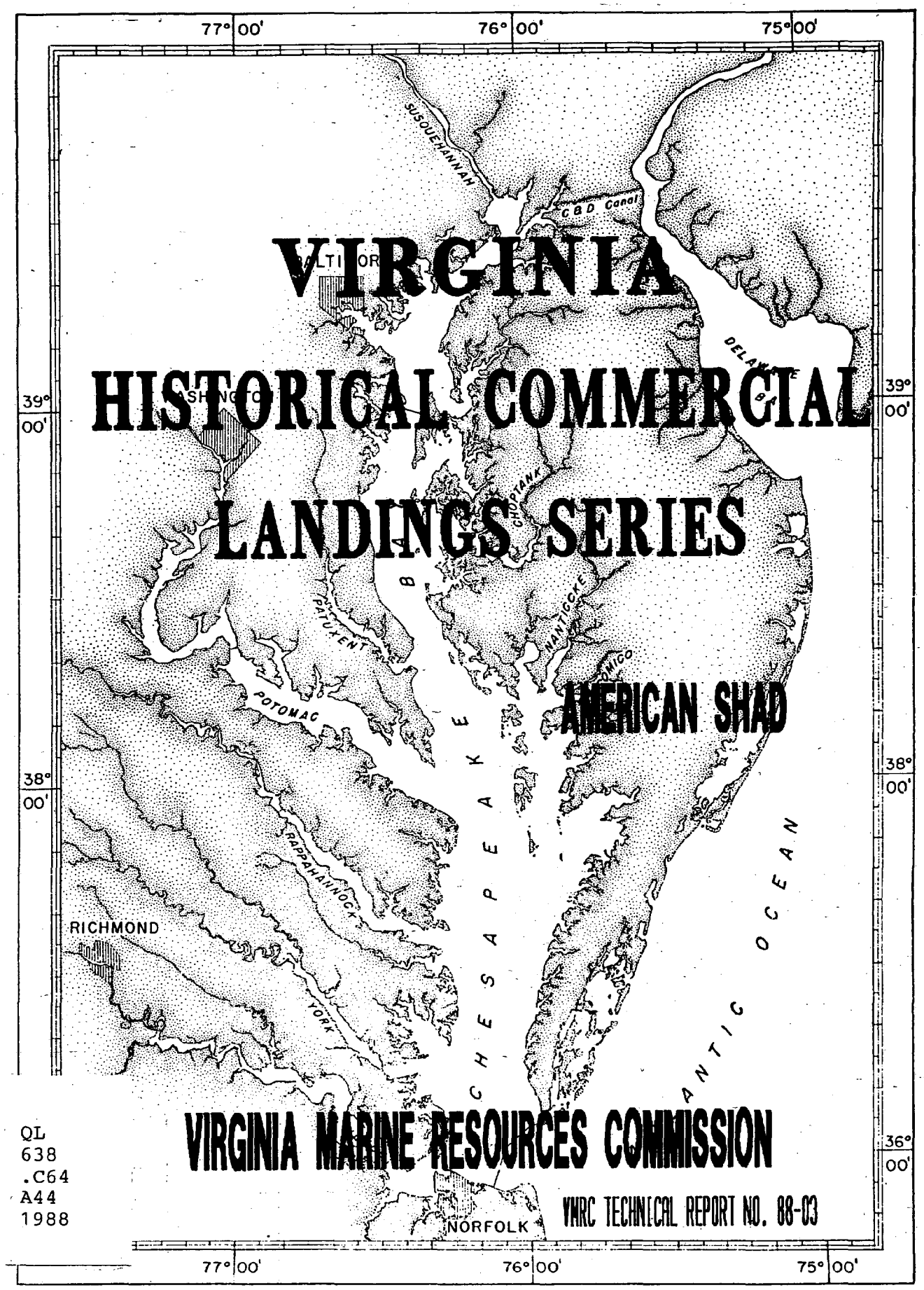

VIRGINIA HISTORICAL COMMERCIAL LANDINGS SERIES

AMERICAN SHAD

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1988

VIRGINIA MARINE RESOURCES COMMISSION

VMRC TECHNICAL REPORT NO. 88-03

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VIRGINIA HISTORICAL COMMERCIAL LANDINGS SERIES

AMERICAN SHAD

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

By

Virginia Marine Resources Commission

Virginia Marine Resources Commission
Fisheries Management Division
Plans and Statistics Department
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American shad has ranked as a top twenty species in landings and value for the past 48 years. The ranking of shad has fluctuated greatly and has even reached the top five (1968, 1970). In recent years, shad has ranked between 10 and 20 compared to all species landed in Virginia.

For over half of the past 48 years, Virginia has supplied greater than 75 percent of the American shad landings for the Chesapeake Region. Also, Virginia has historically supplied 75 percent of the dockside value. The highest regional percentage was reached in 1981, when Virginia supplied 99 percent of the landings and dockside value. The only year Virginia supplied less than 50 percent was in 1961.

Historically Virginia has supplied 43 percent or less of the total United States American shad landings. In 1941 Virginia supplied 56 percent of the landings, but only 14 to 16 percent during the last three years. Shad value also peaked in 1941, with Virginia supplying 67 percent; however, the value has been less than 15 percent in the last three years.

From 1940-1987, the peak in landings occured in 1945 at 5,299,600 pounds and 971,600 dollars (Table 1). Yearly landings averaged well over three million pounds from 1940-50. Since then, there has been a steady decline in pounds landed, and landings averaged less than one million pounds from 1981-87. This represents an actual decrease of 82 percent from the 1940-50 average. The value has also undergone a steady decline and is 68 percent of the 1940-50 average.

Table 2 presents landings by month for Virginia, 1973-1987. For the past 15 years, over 88 percent of the landings have occurred during March and April. In all individual water areas surrounding Virginia, at least 82 percent of the American shad landings have occured from February to May. These four months are responsible for more than 90 percent of many areas' total landings (Tables 13-20).

From 1974 to 1980, staked gill nets have accounted for the highest percentage of landings by gear type. Pound nets and drift gill nets have alternated as the second highest percentage. From 1981 to 1987, the highest percentage by gear type has alternated between staked gill nets and drift gill nets (Table 3).

The Atlantic Ocean had the greatest landings by water area during the last four years. Over the last 15 years, other areas that have shown high landings have been the York River, James River, and the Chesapeake Bay (Table 4).

Note: 1987 landings are preliminary.
Potomac River landings are collected in cooperation with the Potomac River Fisheries Commission.

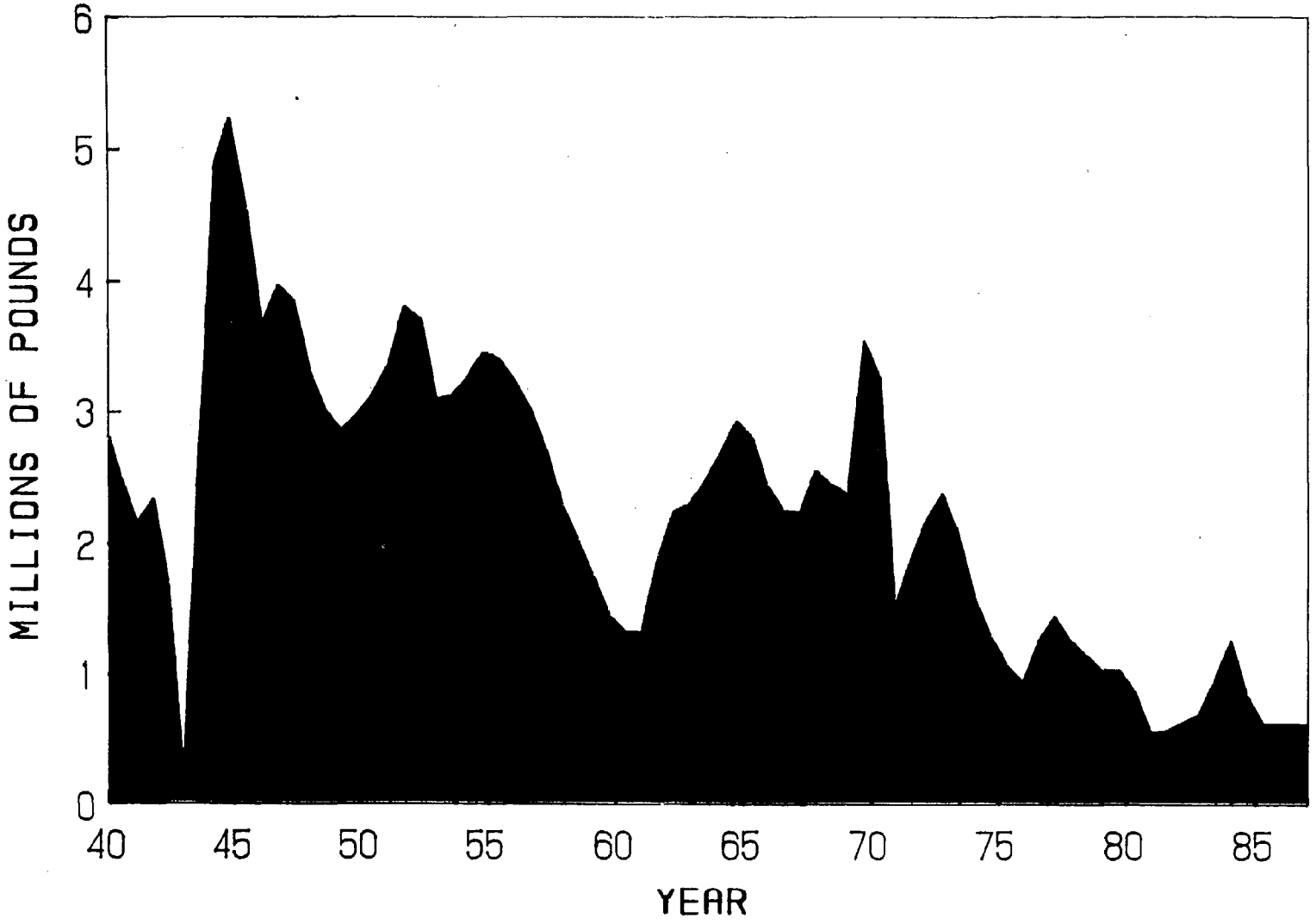

Figure 1. Historical commercial American shad landings for Virginia, 1940-1987. Source: 1940-1972, NMFS; 1973-1987, VMRC.

Table 1. Historical American shad landings for Virginia, 1940 - 1987.
NA - Data not available.

Year	Pounds	Value	Year	Pounds	Value
1940	2,810,800	316,979	1964	2,651,000	326,000
1941	2,125,300	197,869	1965	2,955,000	307,000
1942	2,429,700	216,968	1966	2,431,000	219,000
1943	NA	NA	1967	2,138,000	181,000
1944	4,665,200	553,950	1968	2,550,000	161,000
1945	5,299,600	971,600	1969	2,248,000	166,000
1946	3,599,200	630,441	1970	4,112,000	315,000
1947	4,085,500	717,584	1971	1,520,000	135,000
1948	3,205,900	532,816	1972	2,057,000	225,000
1949	2,800,300	416,885	1973	2,435,698	366,187
1950	3,031,500	499,423	1974	1,568,196	230,118
1951	3,294,400	580,787	1975	1,136,635	308,406
1952	4,007,400	609,070	1976	895,788	284,101
1953	3,054,000	523,000	1977	1,469,032	498,100
1954	3,169,000	586,000	1978	1,235,041	211,509
1955	3,500,000	595,000	1979	994,095	234,841
1956	3,191,000	451,000	1980	973,875	352,955
1957	2,918,000	486,000	1981	499,119	140,608
1958	2,254,000	405,000	1982	585,354	180,028
1959	1,774,000	307,000	1983	672,922	294,387
1960	1,349,000	234,000	1984	1,269,736	423,715
1961	1,329,000	222,000	1985	632,984	215,910
1962	2,220,000	312,000	1986	573,115	157,356
1963	2,312,000	347,000	1987	632,871	232,143

Source: 1940-1972, NMFS; 1973-1987, VMRC.

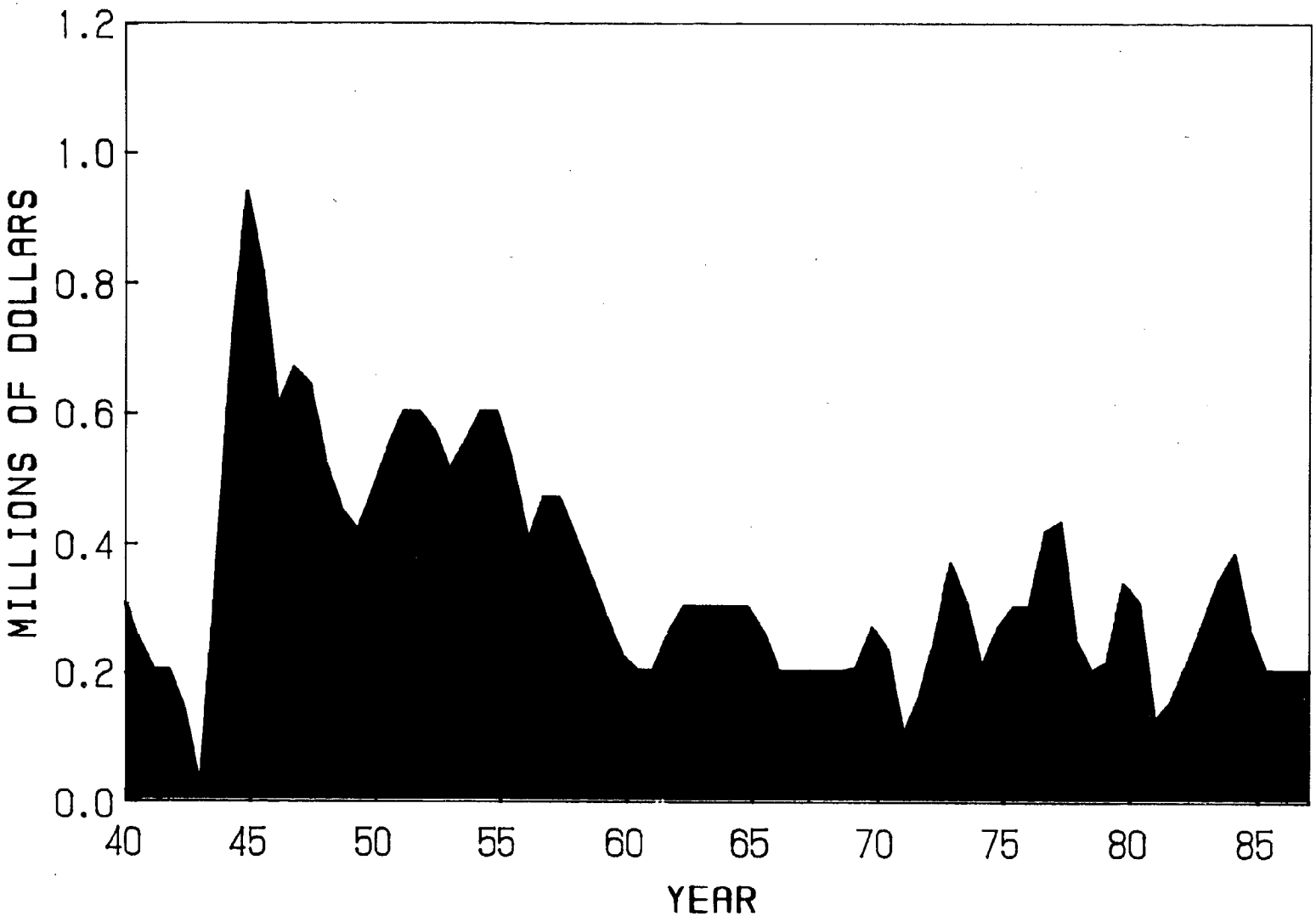

Figure 2. Historical commercial value of American shad landings for Virginia, 1940-1987. Source: 1940-1972, NMFS; 1973-1987, VMRC.

Table 2. Historical American shad landings (in pounds only) by month for Virginia, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	1,154 (<1)	11,414 (<1)	655,718 (27)	1,647,006 (68)	102,915 (4)	1,365 (<1)	0	3 (<1)	890 (<1)	2,554 (<1)	9,659 (<1)	3,020 (<1)	2,435,698
1974	4,177 (<1)	15,121 (1)	673,963 (43)	786,713 (50)	84,338 (5)	3,884 (<1)	0	0	0	0	0	0	1,568,196
1975	1,177 (<1)	36,211 (3)	463,930 (41)	580,128 (51)	52,346 (5)	2,228 (<1)	0	0	0	0	0	615 (<1)	1,136,635
1976	912 (<1)	65,568 (7)	534,225 (60)	251,570 (28)	36,918 (4)	2,382 (<1)	3,962 (<1)	0	240 (<1)	0	0	11 (<1)	895,788
1977	180 (<1)	106 (<1)	475,813 (32)	929,913 (63)	56,556 (4)	4,946 (<1)	47 (<1)	1,000 (<1)	0	0	166 (<1)	305 (<1)	1,469,032
1978	0	0	430,708 (35)	758,068 (61)	40,340 (3)	5,066 (<1)	4 (<1)	0	0	0	155 (<1)	700 (<1)	1,235,041
1979	922 (<1)	88 (<1)	573,789 (58)	390,067 (39)	23,607 (2)	1,434 (<1)	0	0	4,000 (<1)	0	59 (<1)	129 (<1)	994,095
1980	156 (<1)	4,402 (<1)	484,504 (50)	465,288 (48)	17,290 (2)	1,651 (<1)	11 (<1)	376 (<1)	4 (<1)	0	174 (<1)	19 (<1)	973,875
1981	0	4,865 (1)	258,595 (52)	227,307 (46)	7,769 (2)	569 (<1)	14 (<1)	0	0	0	0	0	499,119
1982	0	4,583 (1)	293,785 (50)	272,549 (47)	13,795 (2)	597 (<1)	0	0	0	0	32 (<1)	13 (<1)	585,354
1983	6 (<1)	1,025 (<1)	340,693 (50)	320,168 (48)	10,237 (2)	753 (<1)	0	0	0	6 (<1)	3 (<1)	31 (<1)	672,922
1984	0	73,689 (6)	588,637 (46)	576,622 (45)	27,643 (2)	2,117 (<1)	0	54 (<1)	0	0	974 (<1)	0	1,269,736
1985	26 (<1)	31,240 (5)	380,576 (60)	219,690 (35)	1,412 (<1)	12 (<1)	0	0	0	0	0	28 (<1)	632,984
1986	0	6,514 (1)	447,089 (78)	116,875 (20)	2,455 (<1)	69 (<1)	0	0	0	0	13 (<1)	100 (<1)	573,115
1987	16 (<1)	872 (<1)	427,200 (68)	202,787 (32)	1,877 (<1)	119 (<1)	0	0	0	0	0	0	632,871

Source: VMRC.

Table 3. Historical American shad landings (in pounds only) by gear type for Virginia, 1973-1987. Percentage of total yearly landings contributed by that gear type is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	95,568 (4)	0	541,568 (22)	704,110 (29)	1,088,648 (45)	2,120 (<1)	3,684 (<1)	2,435,698
1974	34,553 (2)	150 (<1)	518,972 (33)	816,919 (52)	197,571 (13)	0	31 (<1)	1,568,196
1975	21,847 (2)	0	188,207 (17)	663,957 (58)	255,775 (22)	0	6,849 (1)	1,136,635
1976	895 (<1)	0	270,709 (30)	545,808 (61)	78,250 (9)	0	126 (<1)	895,788
1977	2,083 (<1)	0	119,117 (8)	709,838 (48)	637,994 (44)	0	0	1,469,032
1978	4,168 (<1)	0	257,860 (20)	796,734 (64)	176,279 (14)	0	0	1,235,041
1979	26,337 (3)	45 (<1)	68,745 (7)	686,055 (69)	212,913 (21)	0	0	994,095
1980	2,420 (<1)	1,367 (<1)	95,130 (10)	494,094 (51)	380,783 (39)	0	81 (<1)	973,875
1981	10 (<1)	3 (<1)	67,828 (14)	30,241 (6)	401,037 (80)	0	0	499,119
1982	289 (<1)	21,396 (4)	44,265 (8)	229,657 (39)	289,314 (49)	0	433 (<1)	585,354
1983	0	3 (<1)	40,125 (6)	450,113 (67)	182,681 (27)	0	0	672,922
1984	0	13,887 (1)	70,124 (6)	549,060 (43)	636,665 (50)	0	0	1,269,736
1985	3,308 (<1)	22,508 (4)	39,661 (6)	235,673 (37)	331,834 (53)	0	0	632,984
1986	950 (<1)	3,382 (1)	29,372 (5)	412,102 (72)	127,309 (22)	0	0	573,115
1987	607 (<1)	1,194 (<1)	14,993 (2)	483,575 (76)	132,502 (21)	0	0	632,871

Source: VMRC.

Table 4. Historical American shad landings by water area for Virginia, 1973-1987. Percentage of total yearly landings is presented in parentheses. NA - Data not available.

	Atlantic Ocean		Seaside Eastern Shore		Chesapeake Bay		James River		York River		Rappahannock River		* Potomac River		Other Bay Tributaries		Total	
Year	lbs	value	lbs	value	lbs	value	lbs	value	lbs	value	lbs	value	lbs	value	lbs	value	lbs	value
1973	1,202 (<1)	170 (<1)	130,395 (5)	20,180 (6)	535,148 (22)	84,185 (23)	1,375,450 (56)	198,106 (54)	297,152 (12)	46,782 (12)	67,384 (3)	10,672 (3)	NA	NA	28,967 (1)	6,092 (2)	2,435,698	366,187
1974	46,878 (3)	4,326 (2)	40,763 (3)	4,620 (2)	566,324 (36)	79,510 (35)	636,299 (41)	102,280 (44)	152,367 (10)	22,726 (10)	121,210 (7)	15,567 (7)	NA	NA	4,355 (<1)	1,089 (<1)	1,568,196	230,118
1975	40,799 (4)	6,634 (2)	57,012 (5)	14,675 (5)	231,268 (19)	55,716 (18)	521,962 (46)	149,007 (48)	191,576 (17)	55,501 (18)	75,883 (7)	21,976 (7)	NA	NA	18,135 (2)	4,897 (2)	1,136,635	308,406
1976	196,649 (22)	33,942 (12)	5,204 (1)	826 (<1)	205,335 (23)	55,438 (21)	244,675 (27)	115,045 (40)	133,383 (15)	43,528 (15)	28,753 (3)	11,373 (4)	64,248 (7)	20,108 (7)	17,541 (2)	3,841 (1)	895,788	284,101
1977	59,252 (4)	8,737 (2)	0	0	61,181 (4)	13,031 (3)	303,658 (21)	93,360 (19)	919,277 (63)	341,324 (68)	49,566 (3)	19,854 (4)	31,082 (2)	9,323 (2)	45,036 (3)	12,471 (2)	1,469,032	498,100
1978	13,161 (1)	1,917 (1)	0	0	177,096 (14)	26,036 (13)	513,237 (42)	81,487 (38)	429,953 (35)	80,341 (38)	37,796 (3)	7,823 (4)	34,783 (3)	6,603 (3)	29,015 (2)	7,302 (3)	1,235,041	211,509
1979	74,462 (7)	9,283 (4)	672 (<1)	763 (<1)	120,396 (12)	23,445 (10)	355,700 (36)	78,539 (33)	410,861 (41)	112,825 (48)	17,104 (2)	5,590 (2)	12,306 (1)	3,696 (2)	2,594 (<1)	700 (<1)	994,095	234,841
1980	69,483 (7)	28,714 (8)	26,431 (3)	3,243 (1)	190,986 (20)	68,295 (19)	265,988 (27)	93,513 (27)	395,426 (41)	151,861 (43)	11,149 (1)	3,612 (1)	11,570 (1)	2,550 (1)	2,892 (<1)	1,167 (<1)	973,895	352,955
1981	224,467 (45)	58,117 (41)	51,212 (10)	11,041 (8)	56,088 (12)	16,190 (12)	31,685 (6)	9,874 (7)	126,194 (25)	41,931 (30)	4,288 (1)	1,353 (1)	3,857 (1)	1,717 (1)	1,348 (<1)	385 (<1)	499,119	140,608
1982	79,192 (14)	22,691 (13)	197,803 (34)	37,677 (21)	12,760 (2)	3,235 (2)	101,271 (17)	40,106 (22)	186,515 (32)	74,114 (41)	739 (<1)	308 (<1)	1,600 (<1)	454 (<1)	5,474 (1)	1,443 (1)	585,354	180,028
1983	206,175 (31)	68,089 (21)	3,522 (1)	701 (1)	34,265 (5)	15,436 (5)	189,628 (28)	87,449 (30)	231,820 (34)	124,327 (42)	4,846 (1)	2,490 (1)	2,628 (<1)	914 (<1)	58 (<1)	31 (<1)	672,922	294,387
1984	508,291 (40)	151,339 (36)	141,106 (11)	15,904 (4)	101,944 (8)	38,985 (9)	240,389 (19)	100,780 (24)	278,099 (22)	115,399 (27)	1,405 (<1)	608 (<1)	3,302 (<1)	621 (<1)	200 (<1)	79 (<1)	1,269,736	423,715
1985	278,157 (44)	64,408 (30)	54,000 (8)	16,200 (8)	57,597 (9)	20,335 (9)	28,637 (4)	12,918 (6)	213,988 (34)	101,842 (47)	0	0	235 (<1)	77 (<1)	370 (<1)	130 (<1)	632,984	215,910
1986	266,321 (46)	66,124 (42)	89,267 (16)	9,548 (6)	77,151 (13)	20,680 (13)	1,450 (<1)	635 (<1)	127,406 (22)	55,178 (35)	0	0	261 (<1)	67 (<1)	11,259 (2)	5,124 (3)	573,115	157,356
1987	307,227 (49)	95,603 (42)	88,607 (14)	23,794 (10)	97,088 (15)	37,379 (16)	3,970 (1)	1,965 (1)	128,077 (20)	70,285 (30)	0	0	573 (<1)	152 (<1)	7,379 (1)	2,965 (1)	632,871	232,143

Source: * Potomac River Fisheries Commission; VMRC.

Table 5. Historical American shad landings (in pounds only) by gear type for the Atlantic Ocean, 1973-1987. Percentage of total yearly landings contributed by that gear type for the Atlantic Ocean is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	0	0	0	0	1,202 (100)	0	0	1,202
1974	1,146 (2)	150 (<1)	0	0	45,582 (98)	0	0	46,878
1975	1,052 (3)	0	0	403 (1)	39,344 (96)	0	0	40,799
1976	485 (<1)	0	0	131,414 (67)	64,750 (33)	0	0	196,649
1977	846 (1)	0	0	33,060 (56)	25,326 (43)	0	0	59,232
1978	1,168 (9)	0	0	0	11,993 (91)	0	0	13,161
1979	50 (<1)	45 (<1)	0	0	74,367 (100)	0	0	74,462
1980	1,845 (3)	1,367 (2)	0	0	66,271 (95)	0	0	69,483
1981	0	3 (<1)	0	0	224,464 (100)	0	0	224,467
1982	0	21,396 (27)	0	7,790 (10)	50,006 (63)	0	0	79,192
1983	0	3 (<1)	9,248 (4)	80,895 (40)	116,029 (56)	0	0	206,175
1984	0	13,887 (3)	0	89,928 (18)	399,476 (79)	0	0	503,291
1985	3,308 (1)	22,508 (8)	0	55,186 (20)	197,155 (71)	0	0	278,157
1986	950 (<1)	3,382 (1)	0	183,768 (69)	78,221 (30)	0	0	266,321
1987	0	1,194 (<1)	0	215,947 (70)	90,086 (30)	0	0	307,227

Source: VMRC.

Table 6. Historical American shad landings (in pounds only) by gear type for Seaside Eastern Shore, 1973-1987. Percentage of total yearly landings contributed by that gear type for Seaside Eastern Shore is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	0	0	36,047 (27)	79,373 (61)	14,975 (12)	0	0	130,395
1974	0	0	18,523 (45)	21,563 (53)	677 (2)	0	0	40,763
1975	0	0	10,113 (18)	42,154 (74)	4,745 (8)	0	0	57,012
1976	0	0	0	300 (6)	4,904 (94)	0	0	5,204
1977	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0
1979	0	0	0	0	672 (100)	0	0	672
1980	0	0	0	0	26,431 (100)	0	0	26,431
1981	0	0	0	0	51,212 (100)	0	0	51,212
1982	0	0	0	0	197,803 (100)	0	0	197,803
1983	0	0	0	0	3,522 (100)	0	0	3,522
1984	0	0	0	0	141,106 (100)	0	0	141,106
1985	0	0	0	0	54,000 (100)	0	0	54,000
1986	0	0	0	71,000 (80)	18,267 (20)	0	0	89,267
1987	607 (1)	0	0	88,000 (99)	0	0	0	88,607

Source: VMRC.

Table 7. Historical American shad landings (in pounds only) by gear type for the Chesapeake Bay, 1973-1987. Percentage of total yearly landings contributed by that gear type for the Chesapeake Bay is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	21 (<1)	0	434,858 (81)	5,507 (1)	92,642 (17)	2,120 (<1)	0	535,148
1974	4,392 (1)	0	442,016 (78)	11,467 (2)	108,449 (19)	0	0	566,324
1975	4,081 (2)	0	151,126 (65)	31,416 (14)	44,645 (19)	0	0	231,268
1976	368 (<1)	0	170,083 (83)	34,884 (17)	0	0	0	205,335
1977	241 (<1)	0	54,352 (89)	6,105 (10)	483 (1)	0	0	61,181
1978	0	0	107,111 (61)	26,617 (15)	43,368 (24)	0	0	177,096
1979	2,107 (2)	0	55,661 (46)	1,440 (1)	61,188 (51)	0	0	120,396
1980	517 (<1)	0	33,203 (17)	0	157,185 (82)	0	81 (<1)	190,986
1981	5 (<1)	0	33,429 (60)	0	22,654 (40)	0	0	56,088
1982	22 (<1)	0	10,739 (84)	748 (6)	1,251 (10)	0	0	12,760
1983	0	0	22,465 (66)	0	11,780 (34)	0	0	34,245
1984	0	0	65,915 (65)	0	36,029 (35)	0	0	101,944
1985	0	0	38,327 (67)	0	19,270 (33)	0	0	57,597
1986	0	0	23,772 (31)	31,666 (41)	21,713 (28)	0	0	77,151
1987	0	0	7,311 (8)	85,950 (88)	3,777 (4)	0	0	97,038

Source: VMRC.

Table 8. Historical American shad landings (in pounds only) by gear type for the James River, 1973-1987. Percentage of total yearly landings contributed by that gear type for the James River is presented in parentheses. * - Denotes closure of fishery due to Kepone.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	94,547 (7)	0	0	595,552 (43)	681,667 (50)	0	3,684 (<1)	1,375,450
1974	29,015 (4)	0	0	570,600 (90)	36,653 (6)	0	31 (<1)	636,299
1975	3,665 (<1)	0	0	444,658 (85)	70,655 (14)	0	2,984 (<1)	521,962
1976	*	*	*	244,675 (100)	*	*	*	244,675
1977	0	0	0	297,158 (98)	6,500 (2)	0	0	303,658
1978	0	0	0	471,467 (92)	41,770 (8)	0	0	513,237
1979	21,521 (6)	0	0	334,179 (94)	0	0	0	355,700
1980	0	0	0	186,938 (70)	79,000 (30)	0	0	265,938
1981	0	0	0	11,638 (37)	20,047 (63)	0	0	31,685
1982	0	0	0	93,365 (92)	7,906 (8)	0	0	101,271
1983	0	0	0	189,628 (100)	0	0	0	189,628
1984	0	0	0	197,239 (82)	43,150 (18)	0	0	240,389
1985	0	0	0	28,637 (100)	0	0	0	28,637
1986	0	0	0	1,450 (100)	0	0	0	1,450
1987	0	0	0	3,548 (89)	422 (11)	0	0	3,970

Source: VMRC.

Table 9. Historical American shad landings (in pounds only) by gear type for the York River, 1973-1987. Percentage of total yearly landings contributed by that gear type for the York River is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	0	0	23,711 (8)	277 (<1)	273,164 (92)	0	0	297,152
1974	0	0	3,054 (2)	147,563 (97)	1,750 (1)	0	0	152,367
1975	0	0	429 (<1)	96,247 (50)	94,900 (50)	0	0	191,576
1976	0	0	61,118 (46)	72,265 (54)	0	0	0	133,383
1977	0	0	1,200 (<1)	319,509 (35)	598,568 (65)	0	0	919,277
1978	3,000 (1)	0	90,173 (21)	277,274 (64)	59,506 (14)	0	0	429,953
1979	2,659 (1)	0	2,114 (<1)	334,760 (82)	71,328 (17)	0	0	410,861
1980	58 (<1)	0	58,316 (15)	296,205 (75)	40,847 (10)	0	0	395,426
1981	5 (<1)	0	30,105 (24)	13,736 (11)	82,348 (65)	0	0	126,194
1982	267 (<1)	0	28,320 (15)	126,294 (68)	31,634 (17)	0	0	186,515
1983	0	0	5,052 (2)	175,486 (76)	51,282 (22)	0	0	231,820
1984	0	0	1,083 (<1)	260,189 (94)	16,827 (6)	0	0	278,099
1985	0	0	1,099 (<1)	151,850 (71)	61,039 (29)	0	0	213,988
1986	0	0	3,002 (2)	124,218 (98)	186 (<1)	0	0	127,406
1987	0	0	4,556 (4)	90,130 (70)	33,391 (26)	0	0	128,077

Source: VMRC.

Table 10. Historical American shad landings (in pounds only) by gear type for the Rappahannock River, 1973-1987. Percentage of total yearly landings contributed by that gear type for the Rappahannock River is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	0	0	37,485 (56)	4,901 (7)	24,998 (37)	0	0	67,384
1974	0	0	55,379 (46)	65,371 (54)	460 (<1)	0	0	121,210
1975	9,122 (12)	0	26,101 (34)	39,167 (53)	416 (<1)	0	1,077 (1)	75,883
1976	0	0	6,904 (24)	21,761 (76)	0	0	88 (<1)	28,753
1977	0	0	14,124 (28)	35,442 (72)	0	0	0	49,566
1978	0	0	31,449 (83)	6,177 (15)	170 (<1)	0	0	37,796
1979	0	0	4,893 (29)	12,211 (71)	0	0	0	17,104
1980	0	0	1,570 (14)	9,579 (86)	0	0	0	11,149
1981	0	0	1,593 (37)	2,691 (63)	4 (<1)	0	0	4,288
1982	0	0	711 (96)	14 (2)	14 (2)	0	0	739
1983	0	0	2,097 (43)	2,749 (57)	0	0	0	4,846
1984	0	0	774 (55)	614 (44)	17 (1)	0	0	1,405
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0

Source: VMRC.

Table 11. Historical American shad landings (in pounds only) by gear type for the Potomac River, 1973-1987. Percentage of total yearly landings contributed by that gear type for the Potomac River is presented in parentheses. NA - Data not available

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	NA	NA	NA	NA	NA	NA	NA	NA
1974	NA	NA	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA	NA	NA
1976	0	0	21,391 (34)	34,227 (53)	8,592 (13)	0	38 (<1)	64,248
1977	2 (<1)	0	13,791 (44)	11,181 (36)	6,108 (20)	0	0	31,082
1978	0	0	7,288 (21)	8,528 (24)	18,967 (55)	0	0	34,783
1979	0	0	3,781 (31)	3,465 (28)	5,060 (41)	0	0	12,306
1980	0	0	2,031 (17)	1,372 (12)	8,167 (71)	0	0	11,570
1981	0	0	1,641 (43)	2,176 (57)	20 (<1)	0	0	3,837
1982	0	0	893 (56)	707 (44)	0	0	0	1,600
1983	0	0	1,205 (46)	1,355 (52)	68 (2)	0	0	2,628
1984	0	0	2,162 (66)	1,090 (33)	50 (1)	0	0	3,302
1985	0	0	235 (100)	0	0	0	0	235
1986	0	0	261 (100)	0	0	0	0	261
1987	0	0	573 (100)	0	0	0	0	573

Source: Potomac River Fisheries Commission; VMRC.

Table 12. Historical American shad landings (in pounds only) by gear type for unclassified Bay tributaries, 1973-1987. Percentage of total yearly landings contributed by that gear type for unclassified Bay tributaries is presented in parentheses.

Year	Haul Seine	Otter Trawl	Pound Net	Staked Gill Net	Drift Gill Net	Hand Line	Other	Total
1973	1,000 (3)	0	9,467 (33)	18,500 (64)	0	0	0	28,967
1974	0	0	0	355 (8)	4,000 (92)	0	0	4,355
1975	3,927 (22)	0	438 (2)	9,912 (55)	1,070 (6)	0	2,788 (15)	18,135
1976	42 (<1)	0	11,213 (64)	6,282 (36)	4 (<1)	0	0	17,541
1977	994 (2)	0	35,650 (79)	7,383 (17)	1,009 (2)	0	0	45,036
1978	0	0	21,839 (75)	6,671 (23)	505 (2)	0	0	29,015
1979	0	0	2,296 (88)	0	298 (12)	0	0	2,594
1980	0	0	10 (<1)	0	2,882 (100)	0	0	2,892
1981	0	0	1,060 (79)	0	288 (21)	0	0	1,348
1982	0	0	3,602 (66)	739 (13)	700 (13)	0	433 (8)	5,474
1983	0	0	58 (100)	0	0	0	0	58
1984	0	0	190 (95)	0	10 (5)	0	0	200
1985	0	0	0	0	370 (100)	0	0	370
1986	0	0	2,337 (21)	0	8,922 (79)	0	0	11,259
1987	0	0	2,553 (35)	0	4,826 (65)	0	0	7,379

Source: VMRC.

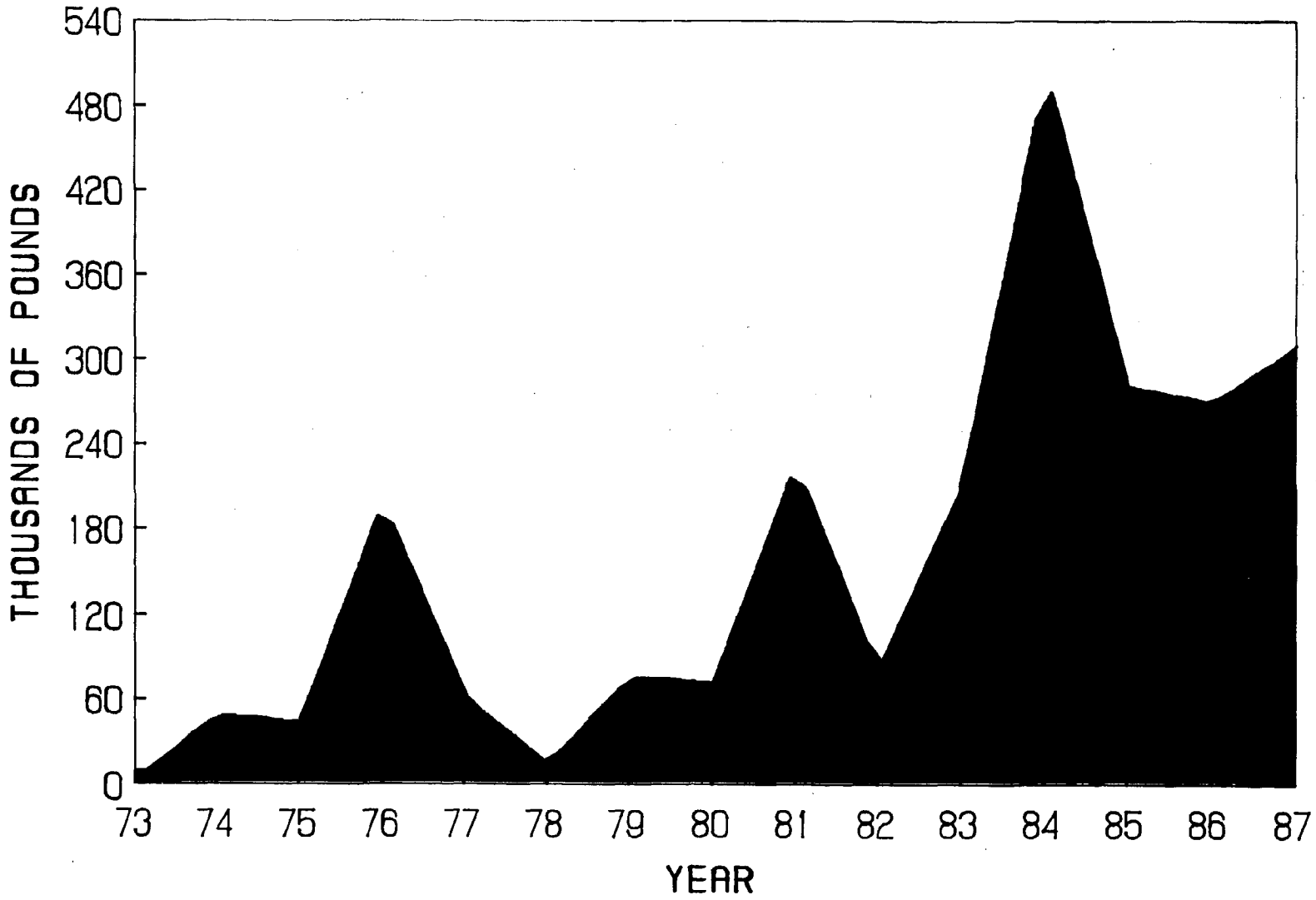

Figure 3. Historical commercial American shad landings for the Atlantic Ocean, 1973-1987. Source: VMRC.

Table 13. Historical American shad landings (in pounds only) by month for the Atlantic Ocean, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	0	0	500 (42)	0	0	0	0	0	0	0	0	702 (58)	1,202
1974	2,780 (6)	3,191 (7)	34,272 (73)	6,635 (14)	0	0	0	0	0	0	0	0	46,878
1975	749 (2)	18,030 (44)	12,454 (31)	8,975 (22)	0	0	0	0	0	0	0	591 (1)	40,799
1976	827 (<1)	56,146 (29)	139,676 (71)	0	0	0	0	0	0	0	0	0	196,649
1977	0	0	25,099 (42)	33,484 (56)	251 (<1)	0	0	0	0	0	166 (<1)	232 (<1)	59,232
1978	0	0	3,504 (27)	8,865 (67)	58 (<1)	0	0	0	0	0	49 (<1)	685 (5)	13,161
1979	0	0	2,673 (4)	71,616 (96)	100 (<1)	0	0	0	0	0	19 (<1)	54 (<1)	74,462
1980	0	300 (<1)	42,743 (62)	26,141 (38)	106 (<1)	0	0	0	0	0	174 (<1)	19 (<1)	69,483
1981	0	173 (<1)	102,456 (46)	121,819 (54)	19 (<1)	0	0	0	0	0	0	0	224,467
1982	0	4,249 (5)	46,586 (59)	28,346 (36)	11 (<1)	0	0	0	0	0	0	0	79,192
1983	0	0	148,336 (72)	57,805 (28)	0	0	0	0	0	0	3 (<1)	31 (<1)	206,175
1984	0	60,763 (12)	288,859 (57)	152,130 (31)	0	1,539 (<1)	0	0	0	0	0	0	503,291
1985	0	25,998 (9)	159,001 (57)	93,140 (34)	0	0	0	0	0	0	0	18 (<1)	278,157
1986	0	3,895 (2)	247,113 (93)	15,201 (5)	14 (<1)	0	0	0	0	0	0	98 (<1)	266,321
1987	16 (<1)	872 (<1)	230,517 (75)	75,788 (25)	34 (<1)	0	0	0	0	0	0	0	307,227

Source: VMRC.

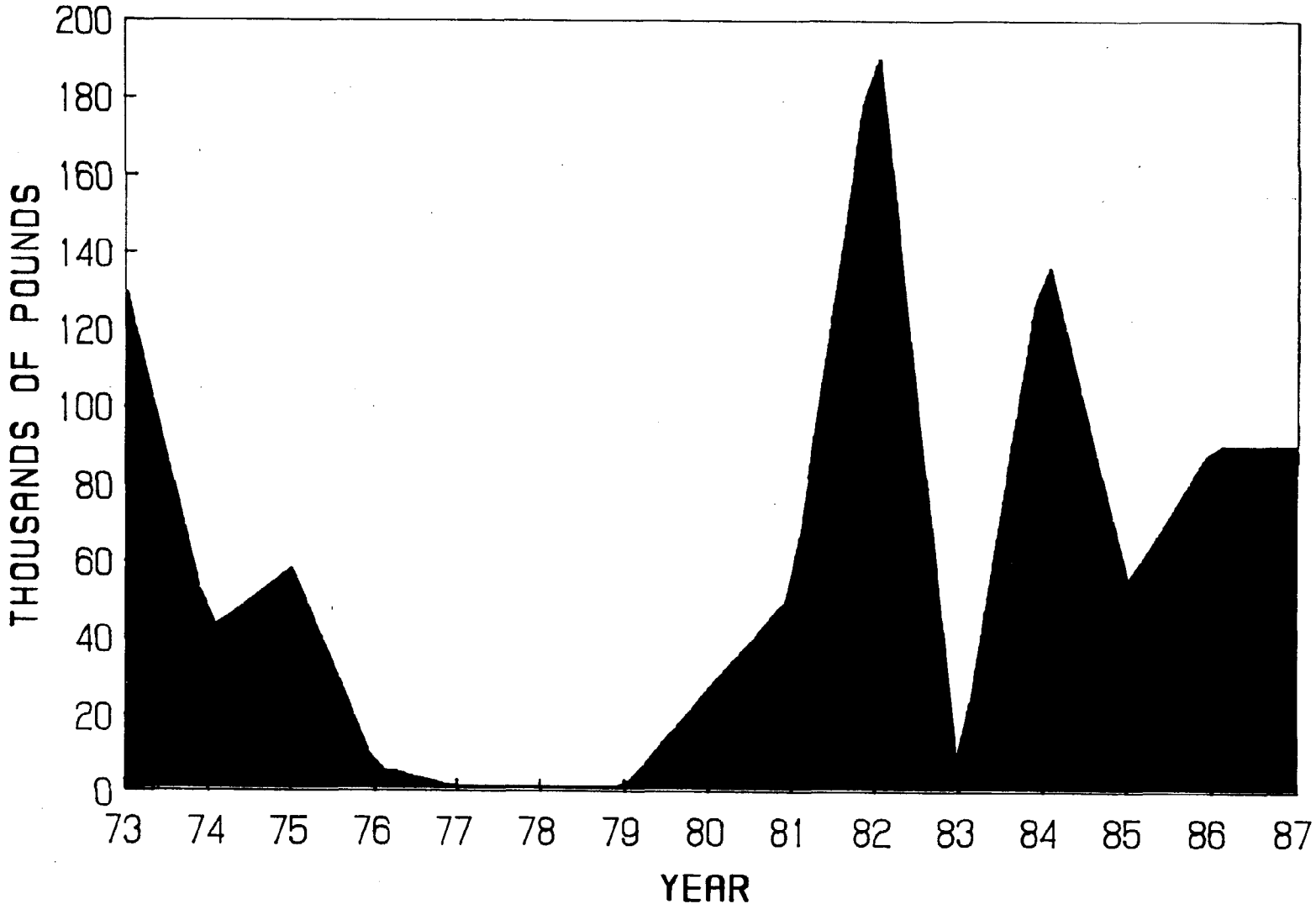

Figure 4. Historical commercial American shad landings for Seaside Eastern Shore, 1973-1987. Source: VMRC.

Table 14. Historical American shad landings (in pounds only) by month for Seaside Eastern Shore, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	1,087 (1)	269 (<1)	6,932 (5)	94,685 (73)	26,479 (20)	732 (1)	0	0	0	0	211 (<1)	0	130,395
1974	3 (<1)	34 (<1)	4,294 (10)	27,255 (67)	7,413 (18)	1,764 (4)	0	0	0	0	0	0	40,763
1975	0	426 (1)	8,964 (16)	33,691 (59)	13,128 (23)	803 (1)	0	0	0	0	0	0	57,012
1976	0	0	0	4,904 (94)	300 (6)	0	0	0	0	0	0	0	5,204
1977	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	599 (89)	0	0	0	0	0	0	0	19 (3)	54 (8)	672
1980	0	102 (<1)	16,040 (61)	10,255 (39)	34 (<1)	0	0	0	0	0	0	0	26,431
1981	0	0	51,212 (100)	0	0	0	0	0	0	0	0	0	51,212
1982	0	0	81,457 (41)	116,301 (59)	0	0	0	0	0	0	32 (<1)	13 (<1)	197,803
1983	0	58 (2)	981 (28)	2,329 (66)	154 (4)	0	0	0	0	0	0	0	3,522
1984	0	6,050 (4)	53,005 (38)	81,758 (58)	239 (<1)	0	0	54 (<1)	0	0	0	0	141,106
1985	0	4,000 (7)	50,000 (93)	0	0	0	0	0	0	0	0	0	54,000
1986	0	0	71,000 (80)	18,267 (20)	0	0	0	0	0	0	0	0	89,267
1987	0	0	10,607 (12)	78,000 (88)	0	0	0	0	0	0	0	0	88,607

Source: VMRC.

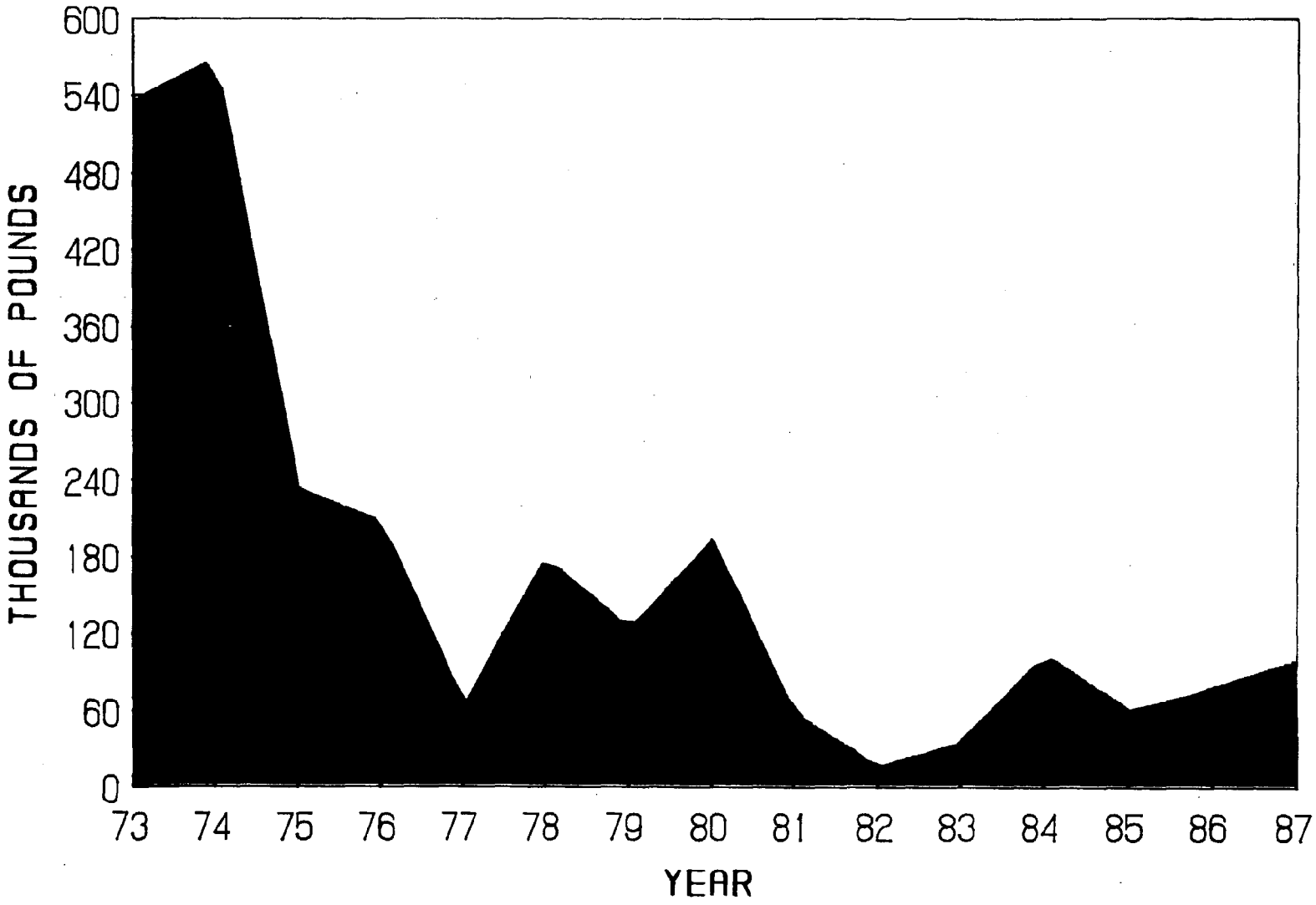

Figure 5. Historical commercial American shad landings for the Chesapeake Bay, 1973-1987. Source: VMRC.

Table 15. Historical American shad landings (in pounds only) by month for the Chesapeake Bay, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	0	85 (<1)	132,133 (25)	349,566 (65)	52,054 (10)	424 (<1)	0	3 (<1)	0	174 (<1)	600 (<1)	109 (<1)	535,148
1974	1,394 (<1)	5,415 (1)	202,132 (36)	300,333 (53)	55,230 (10)	1,820 (<1)	0	0	0	0	0	0	566,324
1975	329 (<1)	5,012 (2)	114,462 (50)	97,898 (42)	12,197 (5)	1,370 (1)	0	0	0	0	0	0	231,268
1976	32 (<1)	3,616 (2)	99,744 (49)	68,465 (33)	27,644 (13)	1,930 (1)	3,904 (2)	0	0	0	0	0	205,335
1977	0	0	15,616 (26)	23,424 (37)	17,710 (29)	3,384 (6)	47 (<1)	1,000 (2)	0	0	0	0	61,181
1978	0	0	31,054 (18)	139,618 (79)	3,785 (2)	2,635 (1)	4 (<1)	0	0	0	0	0	177,096
1979	0	0	77,215 (64)	24,248 (20)	14,747 (12)	172 (<1)	0	0	4,000 (3)	0	11 (<1)	3 (<1)	120,396
1980	0	25 (<1)	109,102 (57)	73,083 (38)	8,122 (4)	263 (<1)	11 (<1)	376 (<1)	4 (<1)	0	0	0	190,986
1981	0	2,830 (5)	19,019 (34)	32,937 (59)	1,256 (2)	32 (<1)	14 (<1)	0	0	0	0	0	56,088
1982	0	0	1,273 (10)	8,127 (64)	2,917 (23)	443 (3)	0	0	0	0	0	0	12,760
1983	0	0	23,073 (68)	7,684 (22)	3,205 (9)	283 (1)	0	0	0	0	0	0	34,245
1984	0	0	47,786 (47)	40,560 (40)	13,366 (13)	232 (<1)	0	0	0	0	0	0	101,944
1985	0	0	19,091 (33)	37,562 (65)	922 (2)	12 (<1)	0	0	0	0	0	10 (<1)	57,597
1986	0	1,858 (2)	26,294 (34)	48,134 (62)	783 (1)	67 (<1)	0	0	0	0	13 (<1)	2 (<1)	77,151
1987	0	0	84,307 (87)	11,640 (12)	1,074 (1)	17 (<1)	0	0	0	0	0	0	97,038

Source: VMRC.

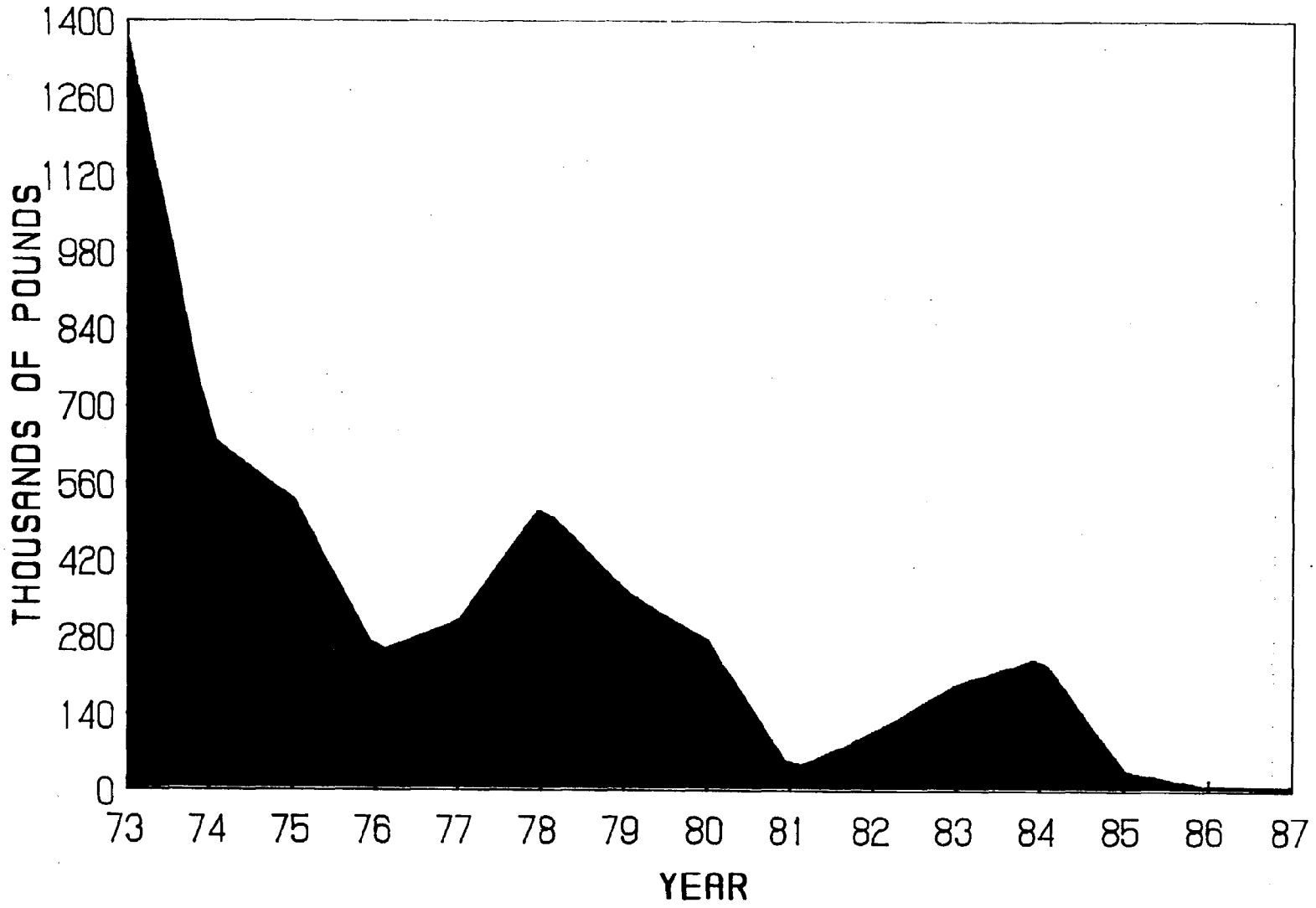

Figure 6. Historical commercial American shad landings for the James River, 1973-1987. Source: VMRC.

Table 16. Historical American shad landings (in pounds only) by month for the James River, 1973-1987. Percentage of total yearly landings is presented in parentheses. * - Denotes closure of fishery due to Kepone.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	0	0	351,932 (26)	1,019,834 (74)	3,684 (<1)	0	0	0	0	0	0	0	1,375,450
1974	0	700 (<1)	315,614 (50)	316,407 (50)	3,578 (<1)	0	0	0	0	0	0	0	636,299
1975	0	5,728 (1)	229,223 (44)	285,344 (55)	1,667 (<1)	0	0	0	0	0	0	*	521,962
1976	*	1,512 (1)	157,452 (64)	85,711 (35)	*	*	*	*	*	*	*	*	244,675
1977	*	0	53,675 (18)	248,152 (82)	1,831 (<1)	0	0	0	0	0	0	0	303,658
1978	0	0	192,752 (38)	316,054 (62)	4,431 (<1)	0	0	0	0	0	0	0	513,237
1979	0	0	197,009 (56)	157,228 (44)	1,463 (<1)	0	0	0	0	0	0	0	355,700
1980	0	857 (<1)	128,657 (49)	136,424 (51)	0	0	0	0	0	0	0	0	265,938
1981	0	866 (3)	16,189 (51)	14,630 (46)	0	0	0	0	0	0	0	0	31,685
1982	0	70 (<1)	74,161 (73)	27,040 (27)	0	0	0	0	0	0	0	0	101,271
1983	0	0	36,056 (19)	151,405 (80)	2,167 (1)	0	0	0	0	0	0	0	189,628
1984	0	1,440 (1)	82,985 (34)	143,217 (60)	12,747 (5)	0	0	0	0	0	0	0	240,389
1985	0	0	10,610 (37)	18,027 (63)	0	0	0	0	0	0	0	0	28,637
1986	0	0	0	1,450 (100)	0	0	0	0	0	0	0	0	1,450
1987	0	0	3,548 (89)	422 (11)	0	0	0	0	0	0	0	0	3,970

Source: VMRC.

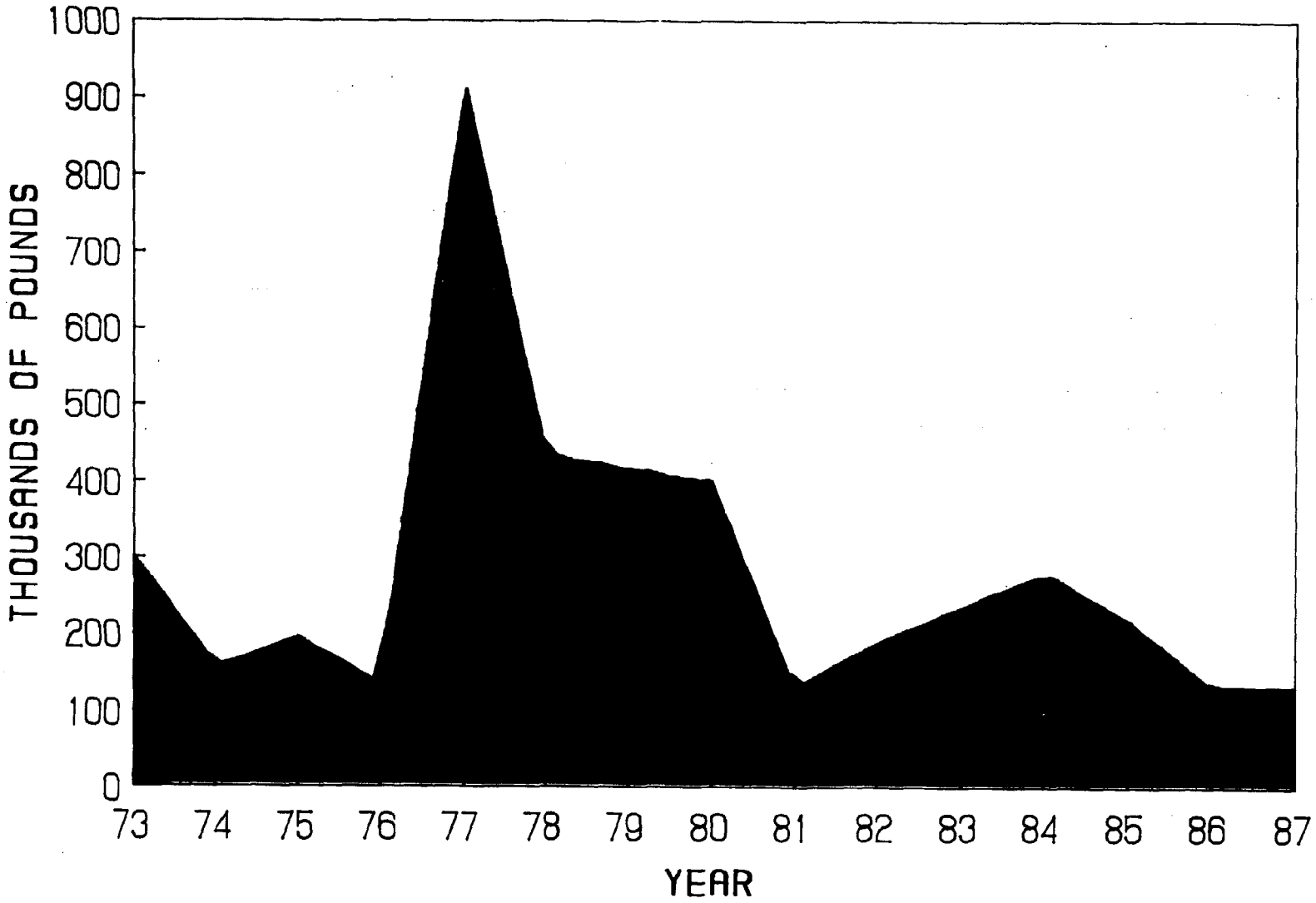

Figure 7. Historical commercial American shad landings for the York River, 1973-1987. Source: VMRC.

Table 17. Historical American shad landings (in pounds only) by month for the York River, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	67 (<1)	11,026 (4)	131,475 (44)	138,690 (47)	15,396 (5)	68 (<1)	0	0	0	0	0	430 (<1)	297,152
1974	0	585 (<1)	68,588 (45)	74,005 (49)	9,189 (6)	0	0	0	0	0	0	0	152,367
1975	11 (<1)	5,039 (3)	74,830 (39)	89,694 (47)	21,978 (11)	0	0	0	0	0	0	24 (<1)	191,576
1976	53 (<1)	3,165 (2)	92,904 (70)	37,254 (28)	0	0	0	0	0	0	0	7 (<1)	133,383
1977	0	0	331,668 (36)	564,788 (61)	22,748 (3)	0	0	0	0	0	0	73 (<1)	919,277
1978	0	0	166,893 (39)	257,238 (60)	5,667 (1)	140 (<1)	0	0	0	0	0	15 (<1)	429,953
1979	922 (<1)	88 (<1)	288,487 (70)	121,346 (30)	0	0	0	0	0	0	0	18 (<1)	410,861
1980	153 (<1)	3,108 (1)	182,538 (46)	205,077 (52)	3,400 (1)	1,150 (<1)	0	0	0	0	0	0	395,426
1981	0	990 (1)	66,886 (53)	52,692 (42)	5,576 (4)	50 (<1)	0	0	0	0	0	0	126,194
1982	0	264 (<1)	87,438 (47)	88,936 (48)	9,827 (5)	50 (<1)	0	0	0	0	0	0	186,515
1983	6 (<1)	967 (<1)	130,499 (56)	96,853 (42)	3,495 (2)	0	0	0	0	0	0	0	231,820
1984	0	5,386 (2)	115,658 (42)	157,024 (56)	27 (<1)	4 (<1)	0	0	0	0	0	0	278,099
1985	26 (<1)	1,242 (1)	141,874 (66)	70,470 (33)	376 (<1)	0	0	0	0	0	0	0	213,988
1986	0	515 (<1)	93,302 (73)	32,739 (26)	850 (1)	0	0	0	0	0	0	0	127,406
1987	0	0	95,312 (75)	32,318 (25)	447 (<1)	0	0	0	0	0	0	0	128,077

Source: VMRC.

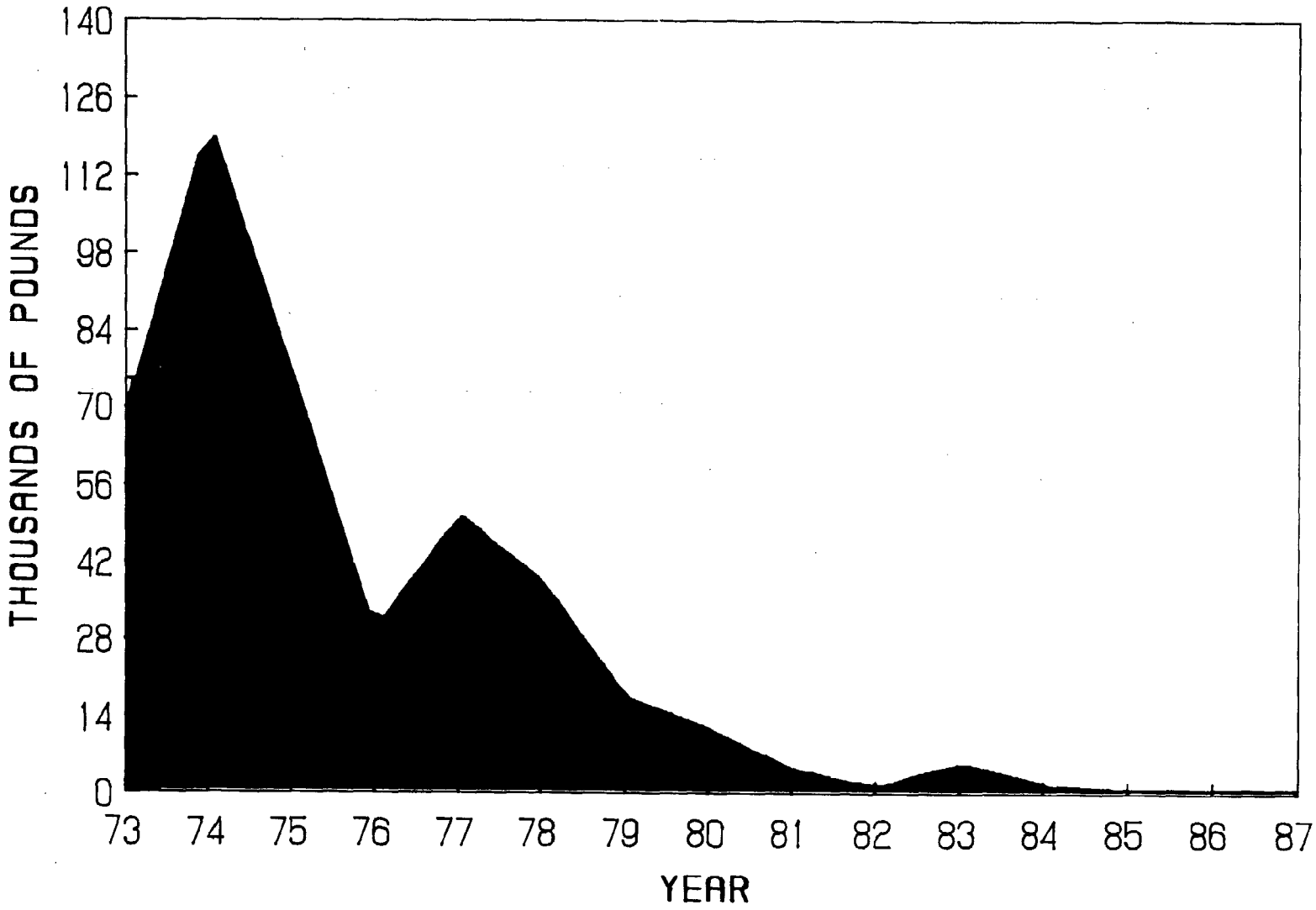

Figure 8. Historical commercial American shad landings for the Rappahannock River, 1973-1987. Source: VMRC.

Table 18. Historical American shad landings (in pounds only) by month for the Rappahannock River, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	0	18 (<1)	16,114 (24)	35,731 (53)	5,134 (8)	44 (<1)	0	0	340 (<1)	1,340 (2)	8,395 (12)	268 (<1)	67,384
1974	0	5,196 (5)	45,063 (37)	62,078 (51)	8,573 (7)	300 (<1)	0	0	0	0	0	0	121,210
1975	88 (<1)	1,755 (2)	22,767 (30)	48,512 (64)	2,706 (4)	55 (<1)	0	0	0	0	0	0	75,883
1976	0	335 (1)	16,527 (57)	10,100 (35)	1,487 (5)	10 (<1)	50 (<1)	0	240 (1)	0	0	4 (<1)	28,753
1977	180 (<1)	104 (<1)	21,851 (44)	22,301 (45)	5,122 (10)	8 (<1)	0	0	0	0	0	0	49,566
1978	0	0	12,380 (33)	18,934 (50)	6,078 (16)	304 (1)	0	0	0	0	100 (<1)	0	37,796
1979	0	0	6,470 (38)	9,833 (57)	683 (4)	117 (1)	0	0	0	0	1 (<1)	0	17,104
1980	0	10 (<1)	2,735 (24)	7,529 (68)	875 (8)	0	0	0	0	0	0	0	11,149
1981	0	4 (<1)	672 (16)	3,413 (80)	199 (4)	0	0	0	0	0	0	0	4,288
1982	0	0	30 (4)	564 (76)	145 (20)	0	0	0	0	0	0	0	739
1983	0	0	1,409 (29)	3,001 (62)	436 (9)	0	0	0	0	0	0	0	4,846
1984	0	0	153 (11)	814 (58)	438 (31)	0	0	0	0	0	0	0	1,405
1985	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: VMRC.

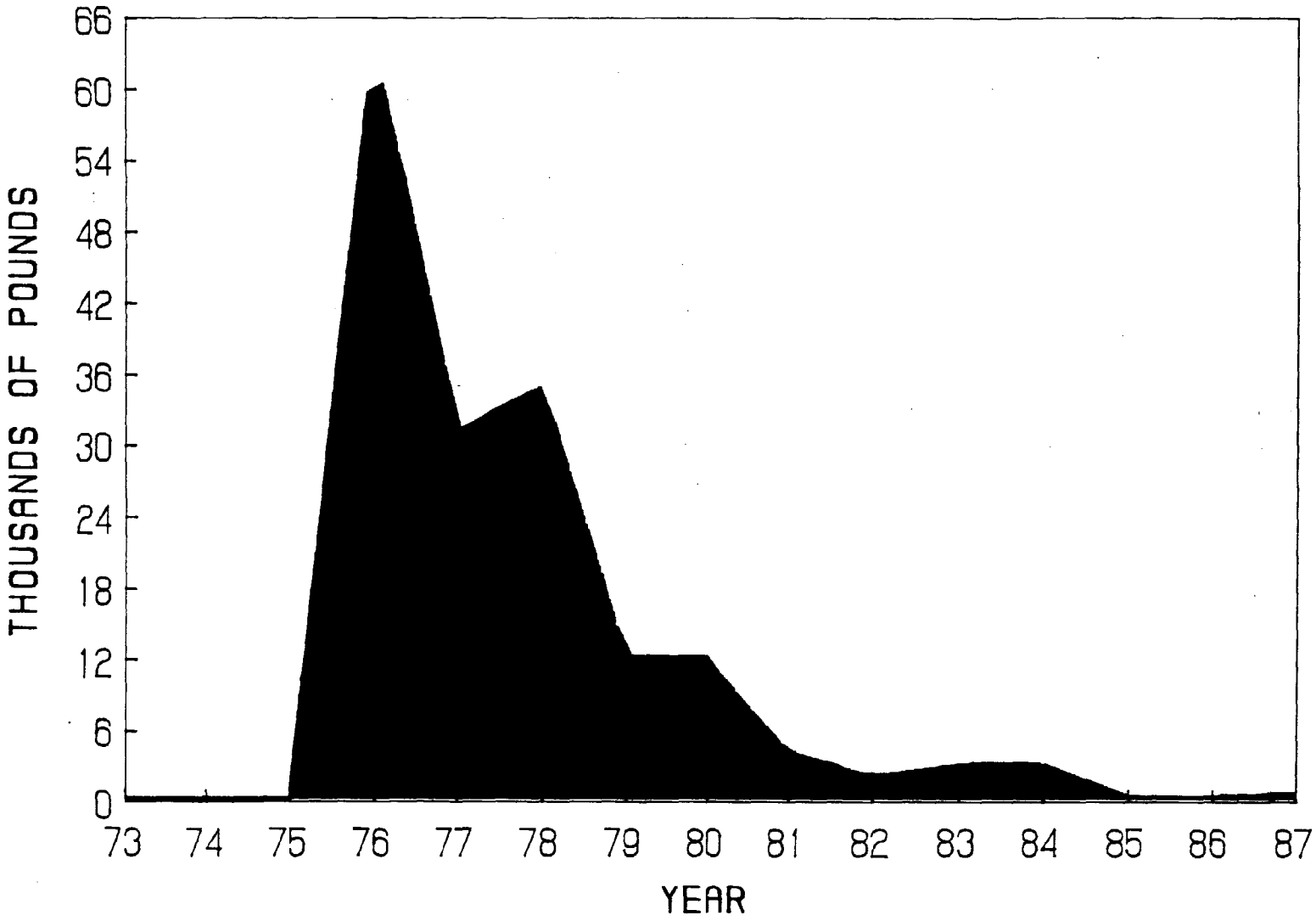

Figure 9. Historical commercial American shad landings for the Potomac River, 1973-1987. Source: Potomac River Fisheries Commission; VMRC.

Table 19. Historical American shad landings (in pounds only) by month for the Potomac River, 1973-1987. Percentage of total yearly landings is presented in parentheses. NA - Data not available.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1974	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1976	0	237 (<1)	13,122 (20)	43,030 (67)	7,409 (12)	442 (1)	8 (<1)	0	0	0	0	0	64,248
1977	0	0	1,820 (6)	19,218 (62)	8,490 (27)	1,554 (5)	0	0	0	0	0	0	31,082
1978	0	0	51 (<1)	16,940 (49)	15,807 (45)	1,979 (6)	0	0	0	0	6 (<1)	0	34,783
1979	0	0	936 (7)	4,167 (34)	6,614 (54)	580 (5)	0	0	0	0	9 (<1)	0	12,306
1980	3 (<1)	0	123 (1)	6,453 (56)	4,753 (41)	238 (2)	0	0	0	0	0	0	11,570
1981	0	2 (<1)	1,873 (49)	766 (20)	709 (18)	487 (13)	0	0	0	0	0	0	3,837
1982	0	0	138 (9)	510 (32)	848 (53)	104 (6)	0	0	0	0	0	0	1,600
1983	0	0	281 (11)	1,091 (41)	780 (30)	470 (18)	0	0	0	6 (<1)	0	0	2,628
1984	0	50 (2)	116 (4)	1,063 (32)	763 (23)	336 (10)	0	0	0	0	974 (29)	0	3,302
1985	0	0	0	121 (52)	114 (48)	0	0	0	0	0	0	0	235
1986	0	0	21 (8)	158 (60)	80 (31)	2 (1)	0	0	0	0	0	0	261
1987	0	0	36 (6)	114 (20)	321 (56)	102 (18)	0	0	0	0	0	0	573

Source: Potomac River Fisheries Commission; VMRC.

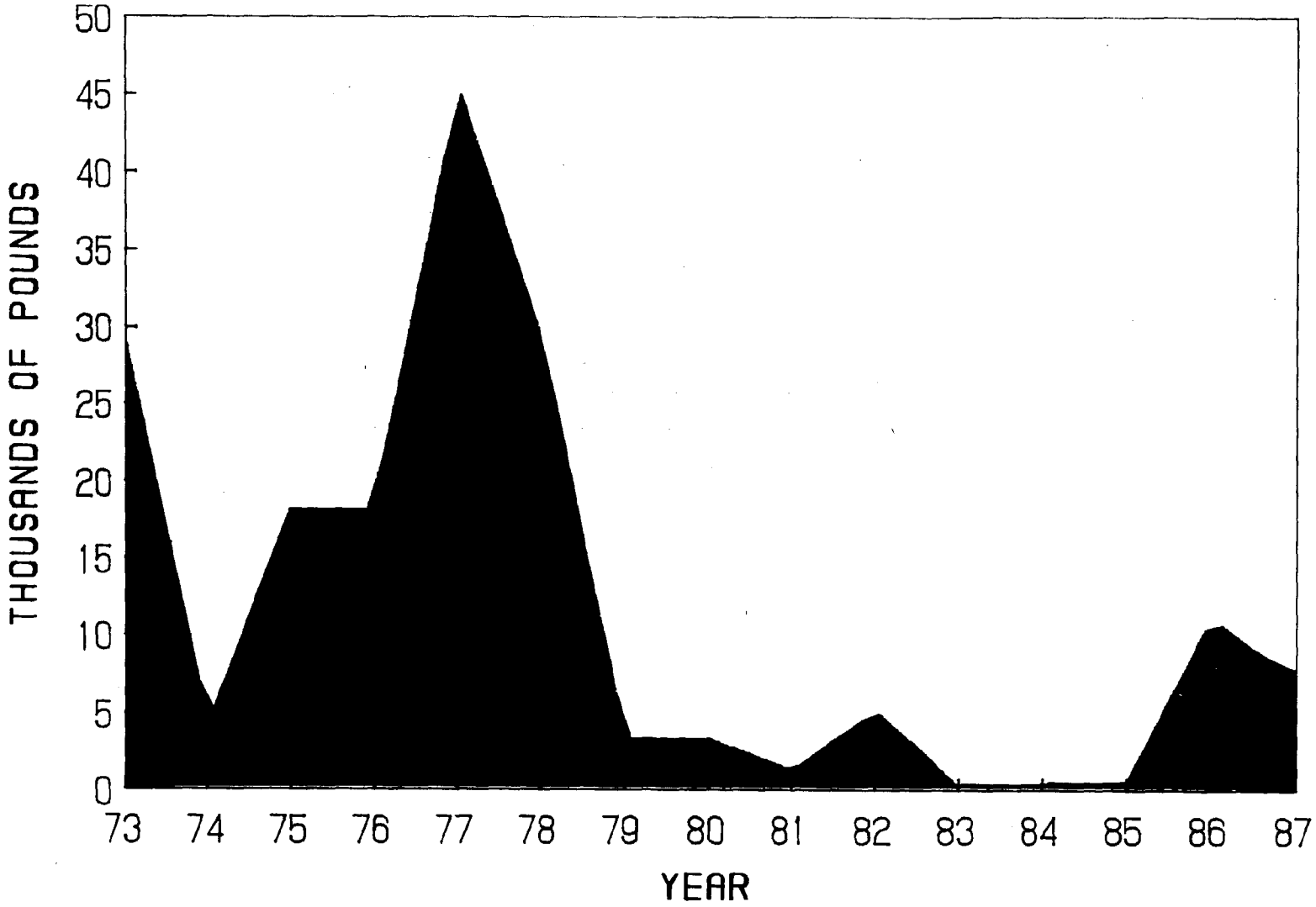

Figure 10. Historical commercial American shad landings for unclassified Bay tributaries, 1973-1987. Source: VMRC.

Table 20. Historical American shad landings (in pounds only) by month for unclassified Bay tributaries, 1973-1987. Percentage of total yearly landings is presented in parentheses.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1973	0	16 (<1)	16,632 (57)	8,500 (29)	168 (1)	97 (<1)	0	0	550 (2)	1,040 (4)	453 (2)	1,511 (5)	28,967
1974	0	0	4,000 (92)	0	355 (8)	0	0	0	0	0	0	0	4,355
1975	0	221 (1)	1,230 (7)	16,014 (88)	670 (4)	0	0	0	0	0	0	0	18,135
1976	0	557 (3)	14,800 (85)	2,106 (12)	78 (<1)	0	0	0	0	0	0	0	17,541
1977	0	2 (<1)	26,084 (58)	18,546 (41)	404 (1)	0	0	0	0	0	0	0	45,036
1978	0	0	24,074 (83)	419 (1)	4,514 (16)	8 (<1)	0	0	0	0	0	0	29,015
1979	0	0	400 (15)	1,629 (63)	0	565 (22)	0	0	0	0	0	0	2,594
1980	0	0	2,566 (89)	326 (11)	0	0	0	0	0	0	0	0	2,892
1981	0	0	288 (21)	1,050 (78)	10 (1)	0	0	0	0	0	0	0	1,348
1982	0	0	2,702 (49)	2,725 (50)	47 (1)	0	0	0	0	0	0	0	5,474
1983	0	0	58 (100)	0	0	0	0	0	0	0	0	0	58
1984	0	0	75 (38)	56 (28)	63 (31)	6 (3)	0	0	0	0	0	0	200
1985	0	0	0	370 (100)	0	0	0	0	0	0	0	0	370
1986	0	246 (2)	9,359 (83)	926 (8)	728 (7)	0	0	0	0	0	0	0	11,259
1987	0	0	2,873 (39)	4,505 (61)	1 (<1)	0	0	0	0	0	0	0	7,379

Source: VMRC.

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