THE MARINE LABORATORY
University of Miami

54-9

Supplement to Interim Report of January, 1954
March, 1954

FISH CATCH STATISTICS IN RELATION TO WATER RELEASE FROM THE ST. LUCIE CANAL

to

U. S. Army Corps of Engineers

Contract DA-08-123-ENG-1376

Coral Gables
Florida

ML-6791

F. G. Walton Smith Director

SUMMARY

A study of commercial fish landing statistics does not indicate any serious reduction in commercial activity due to the discharge of water through the St. Lucie Canal. It is believed, however, that the sports fishing business, insofar as inshore and estuarine species are concerned is quite seriously harmed, although no permanent damage way be done to the fish stocks themselves by the freshwater influx. The effects of sediment cannot be fully appraised without a detailed investigation.

This report embodies statistics for the total amount of fish landed in Martin County by month for the last few years.

Monthly fish production landings have been collected only since September, 1950 and such data are unavailable prior to that date. The landings are compiled from reports collected from the commercial wholesale fish dealers. These reports give the number of pounds of the individual species landed during each month. The smallest unit of area into which these reports are subdivided is the county.

Statistics of the yearly totals prior to 1950 were based upon yearly estimates of the commercial catch given by the wholesale fish dealers to the Florida State Board of Conservation.

Surveys have been made by the United States Fish and Wildlife Service of the number of fishermen., vessels, boats and gear used. Reports on these surveys are given by county.

The statistics have certain limitations for the present purpose. For example, not all fish reported as landed in a certain county are actually caught in waters of that county. Secondly, some landings are unreported. This error is thought to be small and is compensated in the landing curve by the error being relatively equal in all areas, so that a direct comparison between landings of various counties is usually valid. Since these and other errors in the landings are common to all counties it is believed that the trends shown by the landing curves may be depended upon in their general form.

In order to assess the effect on commercial fish production of the influx of fresh water from Lake Okeechobee the landings are examined. There are always marked fluctuations in fish catches in an area due to seasonal abundance of the fish and to short-term changes in temperature, and winds. Markets for fish also affect fishing effort and therefore, landings. Thus, declines in landings, per se, cannot be taken as evidence of bad effects of water outflow. A valid method of judging effects of the openings of the locks would be to compare the landings in the county affected by the lake outflow, with adjacent counties, whose fishing is unaffected by this factor, and with the whole east coast of Florida. After the release of water from Lake Okeechobee, if landings consistently declined in Martin County (including St. Lucie Inlet) while they increase in the rest of the east coast counties, or in the adjacent counties, it might be justified to say that the fresh water had a bad effect on commercial fishing. The accompanying graphs do not support this idea. In practically every case (whether dealing with total fish landings, or landings by species or whether yearly or monthly) Martin County landings rose or fell when those in other counties did likewise.

It should be pointed out, however, that the effect of the fresh water should be most noticeable in 1953, when the locks were open for the longest period. At the present time complete landing figures for the second half of 1953 are unavailable. Preliminary calculations suggest that there

may actually be a noticeable difference in the trend of Martin County landings compared with those of other counties.

It may be said, however, from the available evidence that the fresh water outflow from Lake Okeechobee has not significantly affected commercial fish catches in Martin County.

Evidence concerning the effects of the fresh water on sport fishing is contrary to this, however. Figures on the amount of fish caught by sportsmen are not available. Information obtained through interviews and direct observation points strongly in one direction: namely, that sport fishing has undoubtedly been harmed.

Two types of consideration are involved in this problem and they should be carefully distinguished in order to avoid confused thinking. The first approach involves a definition of "harm" to the fishing in terms of reduction of fish stocks - the destruction of fish. Under this concept, the lake outflow has not "harmed" sport fishing, since the fish are probably not killed, but are merely pushed out of the areas where they had lived. The other concept - and a more valid one here - is that "harm" to the sport fishery occurs if fish are harder to catch. This is unquestionably the case in the St. Lucie Inlet. When the fresh water from the lake invades the inlet, fish which live in salt or brackish water leave the area. They are not killed, but neither can they be caught, and to the angler they are gone. It is of no interest to him that there is an abundance of fish ten miles away, which he can, perhaps, catch next month. He needs the fish here and now. It has been stated previously that the effect on sport fishing of the outflow from the lake was "temporary". In the sense explained here, this is undoubtedly true, but the statement is not meant to under estimate the seriousness of the effect.

Permanent effects upon angling may be caused by the accumulation of sediment. Unfortunately, no statistics of the sportsman's catch are available and a fair appraisal of the long term effects cannot be made without detailed investigation.

Martin County Commercial Fishery Value 1945 and 1950

Year	Total Fish Production Pounds	Dollars
1945	4,879,700[1]	$ 242,048
1950	1,271,200[2]	$ 154,375

Note:
[1] 2,007,700 lb. of this production was shark valued at $32,000.
[2] 18,800 lb. of this production was menhaden valued at $185.

Source:

Fishery Statistics of the United States, Statistical Digest No. 18 for 1945 and No. 27 for 1950, Fish and Wildlife Service Department of the Interior.

Commercial Fishery Gear Survey[1]
1950 thru 1952

St. Lucie County

	1950	1951	1952
Fishermen:			
Regular	241	174	83
Casual	44	85	150
Total	285	259	233
Vessels and Boats:			
Motor	109	55	61
Other	132	61	51
Total	241	106	88
Apparatus:			
Haul Seines, Common	8	3	
Length yards	2400	750	
Gill Nets, Anchor	3		
Square yards	2600		
Gill Nets, Run Around	119	67	31
Square Yards	192600	21810	69700
Trammel Nets		2	
Square Yards		4000	
Lines			
Hand	109	104	160
Troll	124	63	56
Cast Nets	2	17	
Otter Trawl, Shrimp	4		
Yards At Mouth	88		
Pots			
Crab		50	100
Crawfish			
Spears		4	

[1]Source - U.S. Fish and Wildlife Service

Commercial Fishery Gear Survey[1]
1950 thru 1952

Martin County

	1950	1951	1952
Fishermen:			
Regular	113	102	99
Casual	74	99	115
Total	187	217	371
Vessels and Boats:			
Motor	63	48	47
Other	71	103	172
Total	134	208	219
Apparatus:			
Haul Seines, Common	13	5	6
Length yards	3900	1520	1370
Gill Nets, Anchor	4	12	
Square yards	3200	9650	
Gill Nets, Drift	8		24
Square Yards	9450		24900
Gill Nets, Run Around	34	25	74
Square Yards	81850	51300	136000
Trammel Nets	4	5	6
Square Yards	7500	13350	10225
Lines			
Hand	57	130	275
Troll	82	110	20
Cast Nets		4	6
Otter Trawl, Shrimp			
Yards At Mouth			
Pots			
Crab		100	150
Crawfish			
Spears		4	

[1]Source - U.S. Fish and Wildlife Service

Commercial Fishery Gear Survey[1]
1950 thru 1952

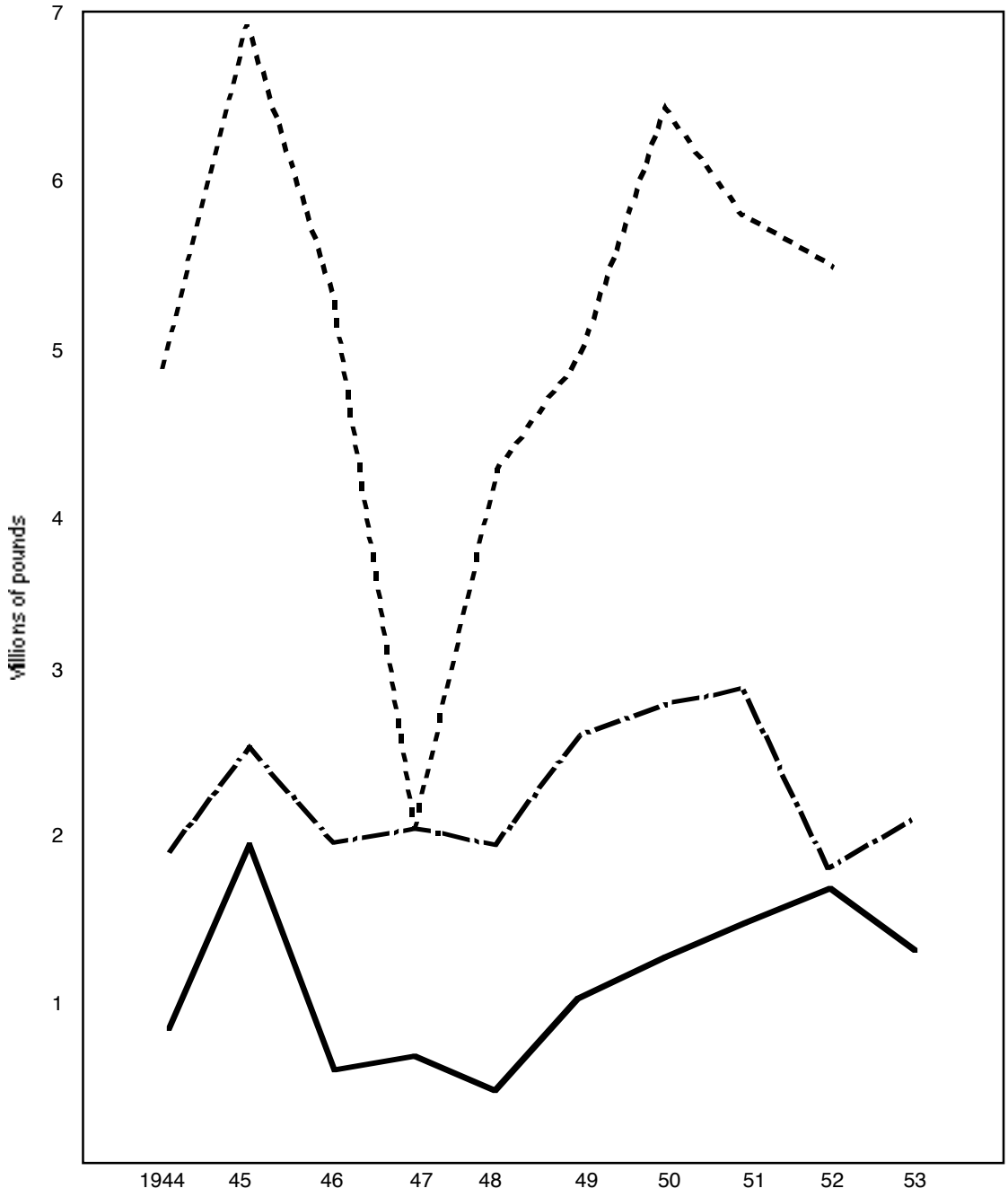
Palm Beach County

	1950	1951	1952
Fishermen:			
Regular	308	235	240
Casual	159	43	250
Total	467	278	490
Vessels and Boats:			
Motor	212	138	137
Other	14	33	138
Total	226	171	275
Apparatus:			
Haul Seines, Common		6	7
Length yards		2500	4450
Gill Nets, Anchor			
Square yards			
Gill Nets, Drift			
Square Yards			
Gill Nets, Run Around	51	80	64
Square Yards	123150	186440	144700
Trammel Nets		10	10
Square Yards		9000	9000
Lines			
Hand	124	108	316
Troll	528	200	306
Cast Nets	26	5	22
Otter Trawl, Shrimp	1		
Yards At Mouth	12		
Pots			
Crab			
Crawfish		2772	100
Spears		9	

[1]Source - U.S. Fish and Wildlife Service

TOTAL FOOD FISH PRODUCTION

Martin, Palm Beach and St. Lucie Counties

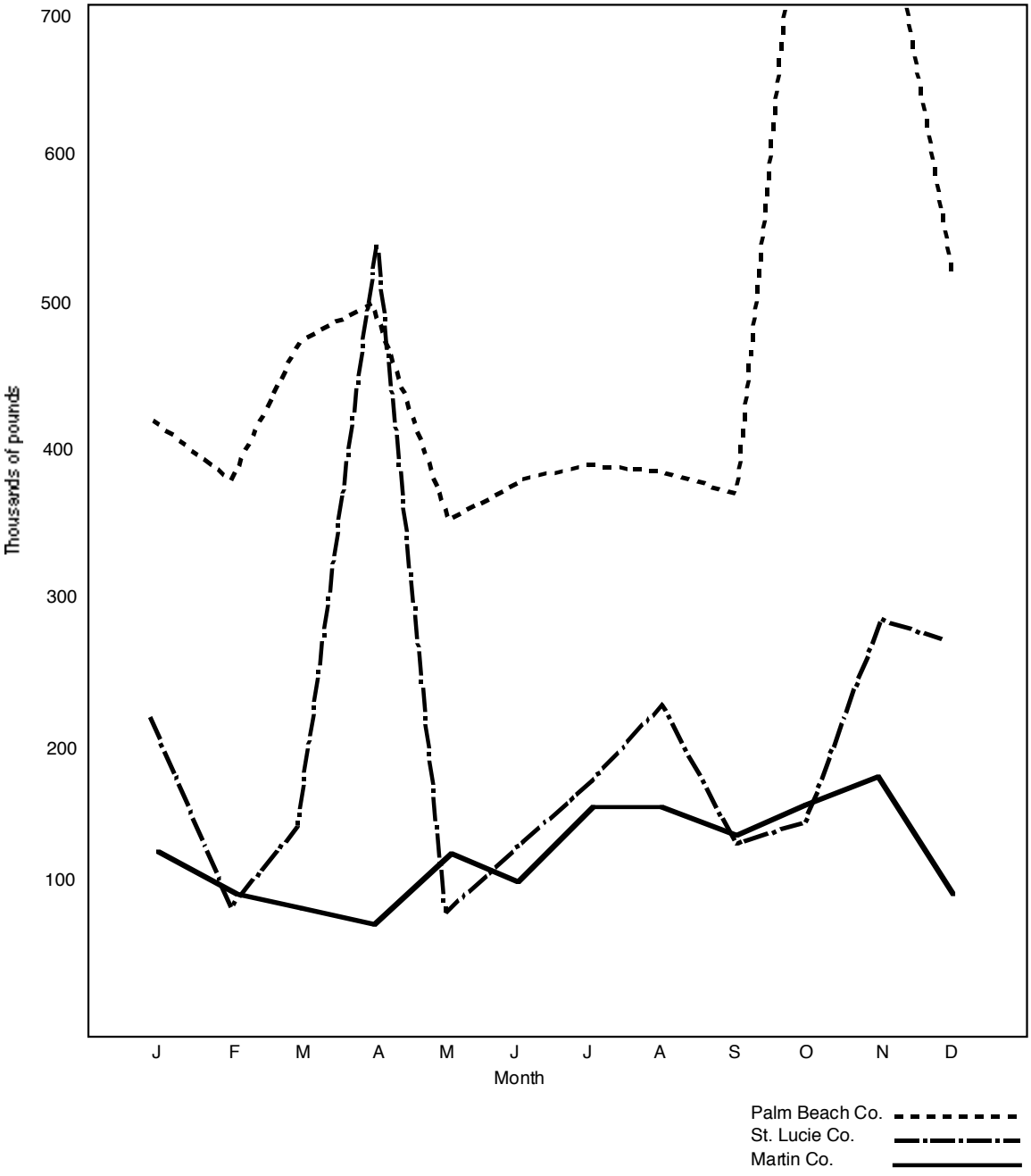


* Statistics for St. Lucie & Martin Co. - 1953 preliminary data
*Statistics for Palm Beach Co. - 1953 incomplete

Palm Beach Co.
St. Lucie Co.
Martin Co.

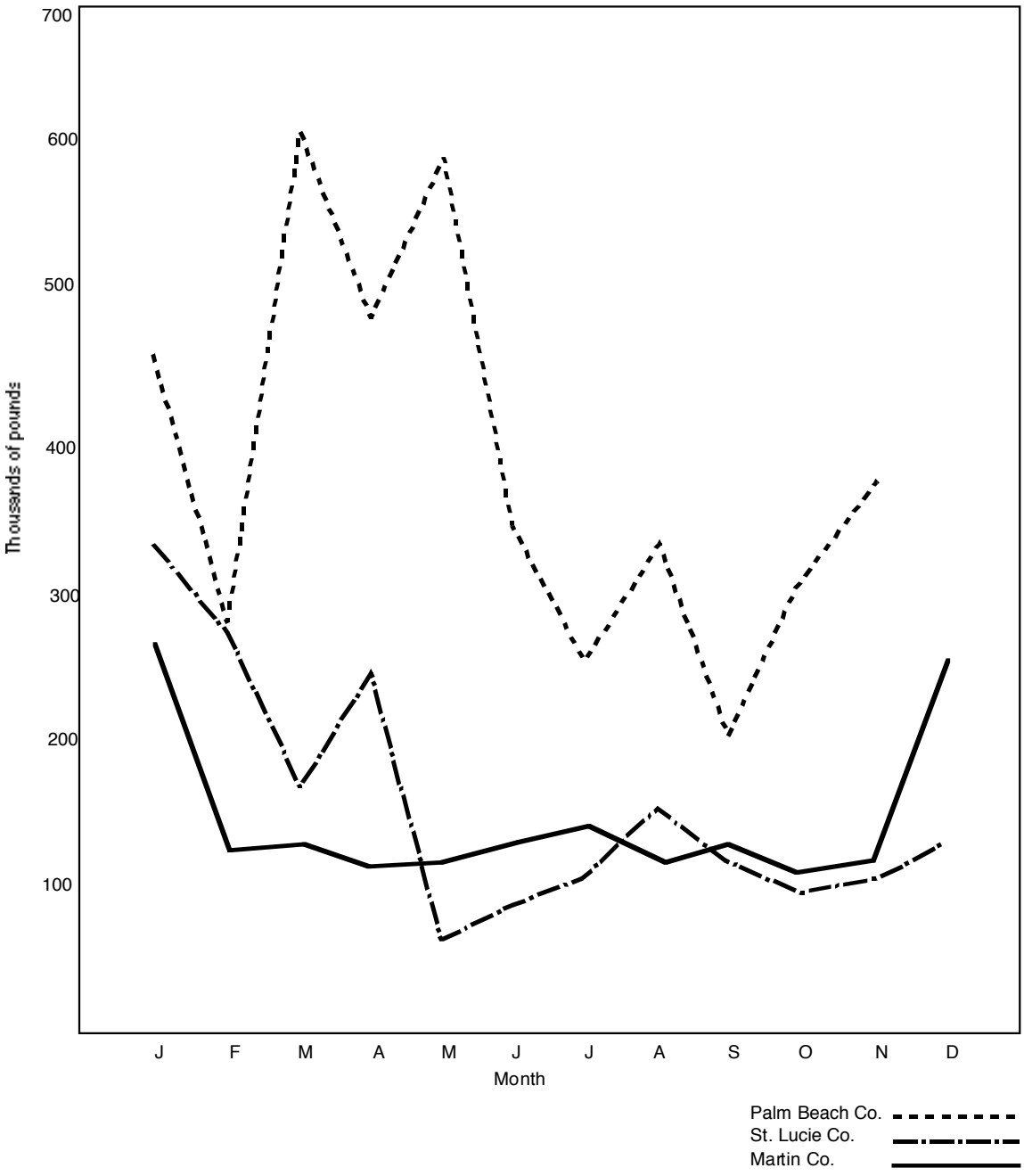
TOTAL FOOD FISH PRODUCTION 1951

Martin, Palm Beach and St. Lucie Counties



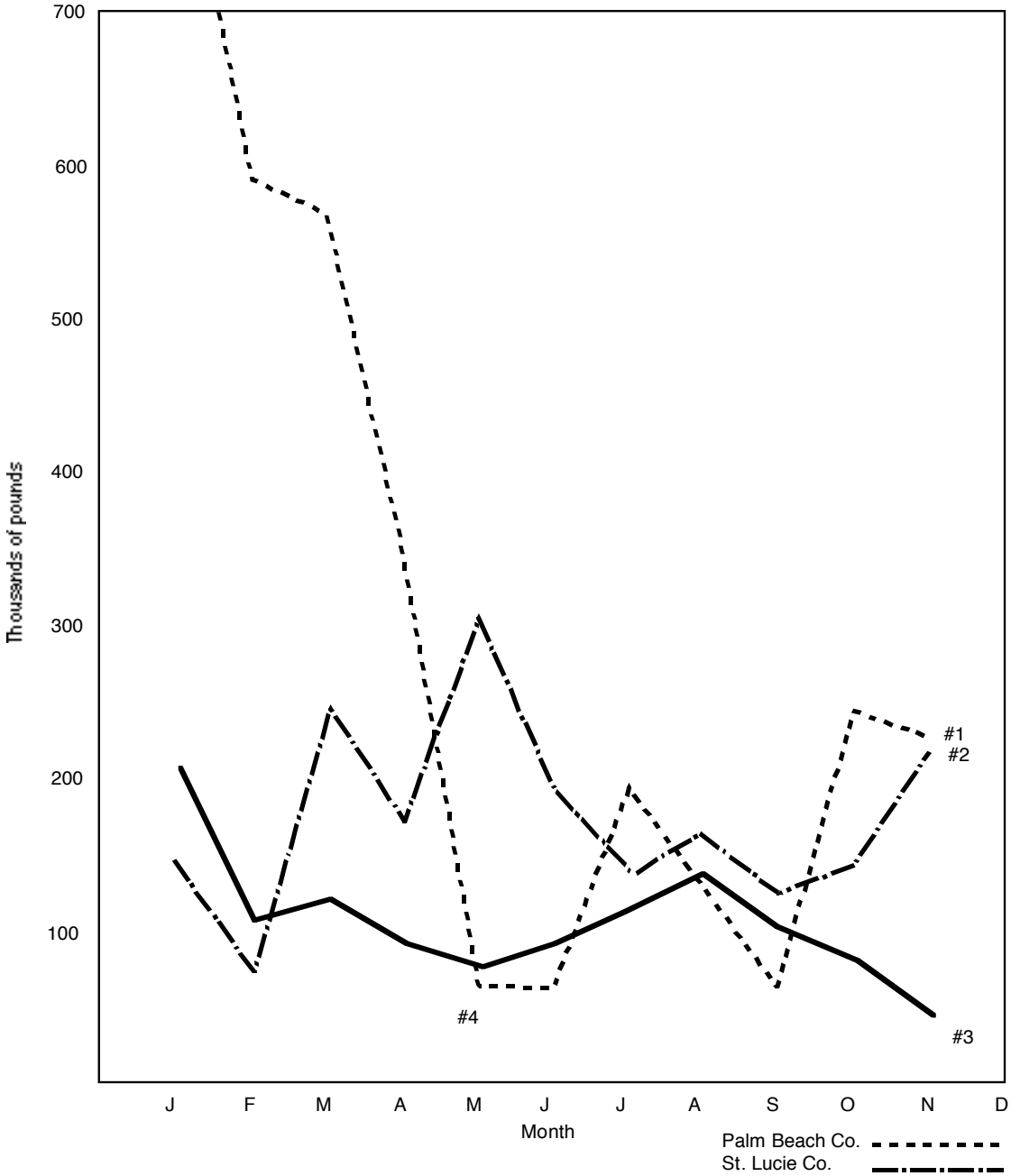
TOTAL FOOD FISH PRODUCTION 1952

Martin, Palm Beach and St. Lucie Counties



TOTAL FOOD FISH PRODUCTION 1953

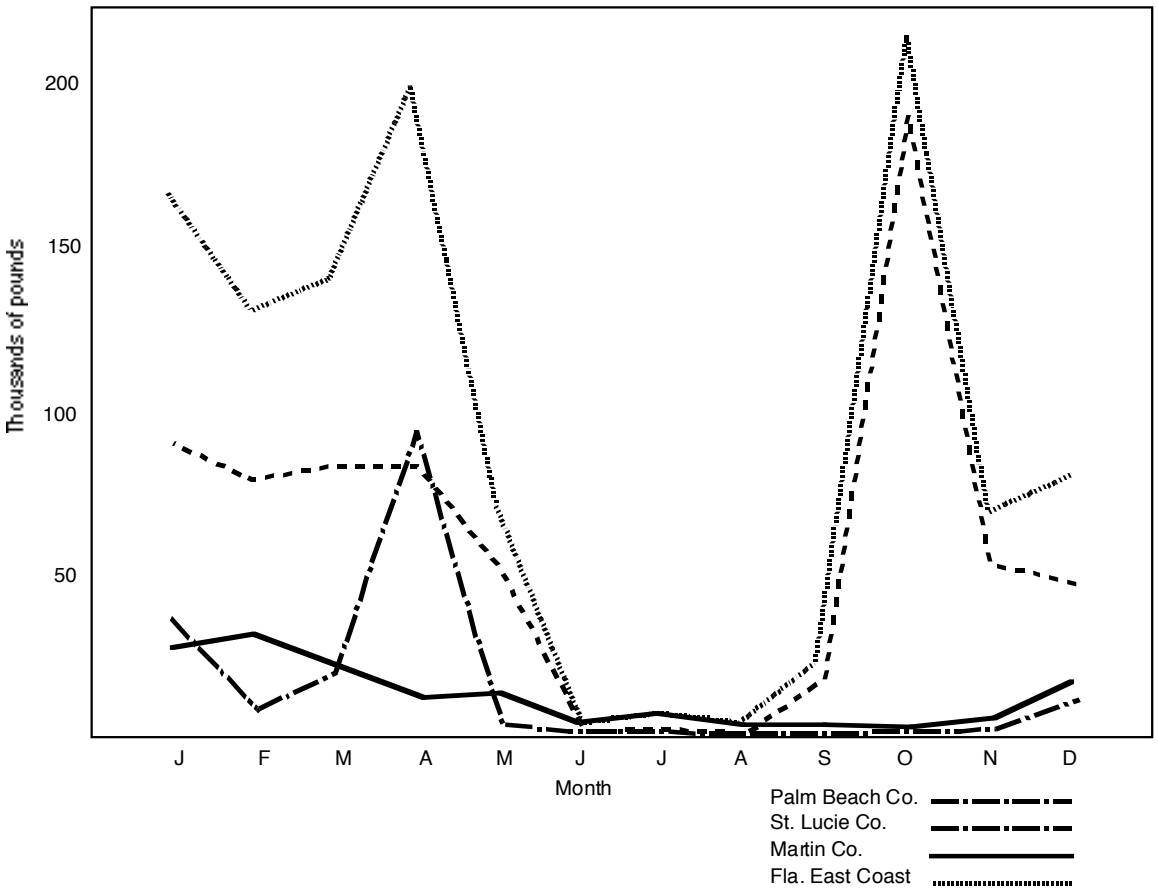
Martin, Palm Beach and St. Lucie Counties



#1 Incomplete statistics for Aug. thru Dec.
#2 Incomplete statistics for Sept. thru Dec.
#3 Incomplete statistics for Nov. and Dec.
#4 Revision of Dealers Report beginning in May is largely responsible for sharp drop

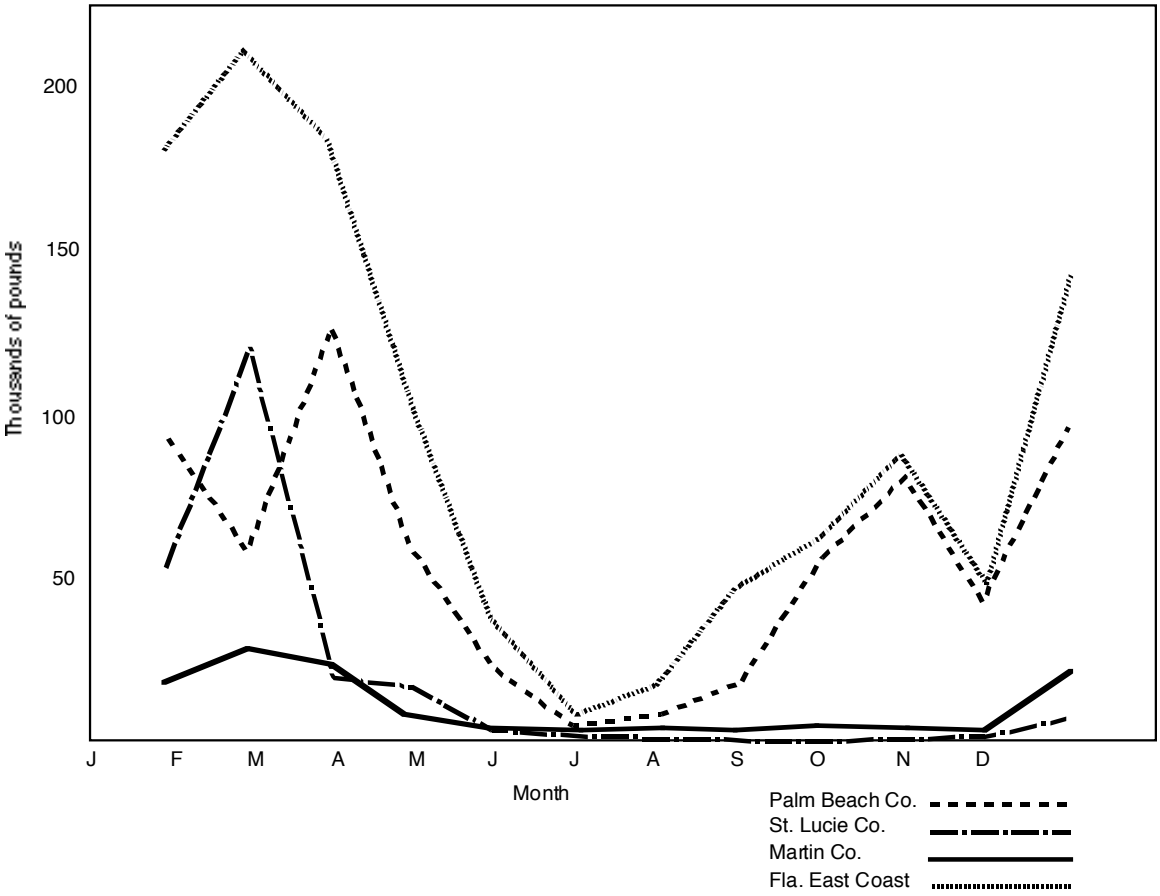
BLUEFISH PRODUCTION 1951

Martin, Palm Beach and St. Lucie Counties and Florida East Coast



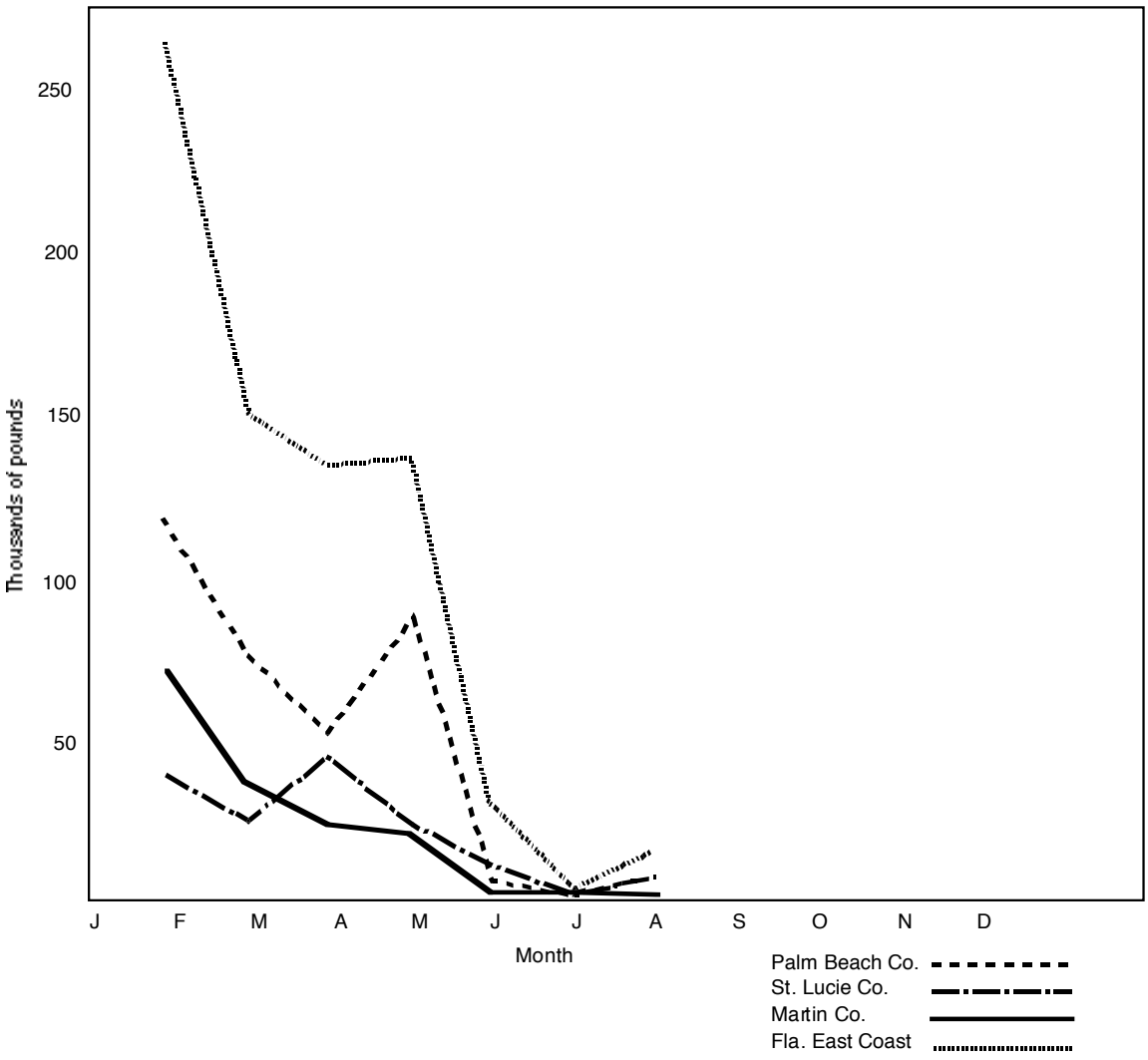
BLUEFISH PRODUCTION 1952

Martin, Palm Beach and St. Lucie Counties and Florida East Coast



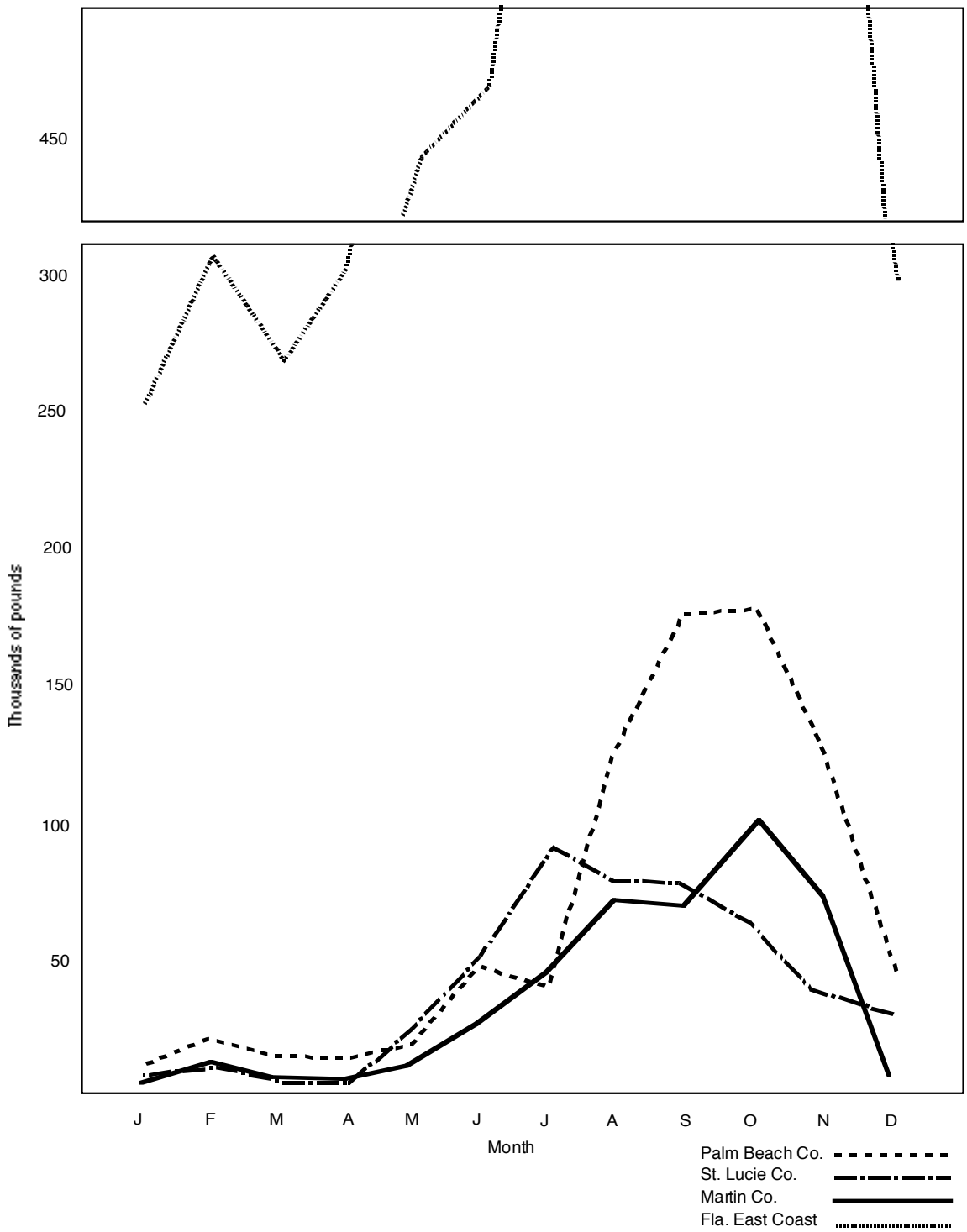
BLUEFISH PRODUCTION 1953

Martin, Palm Beach and St. Lucie Counties and Florida East Coast
(Statistics incomplete)



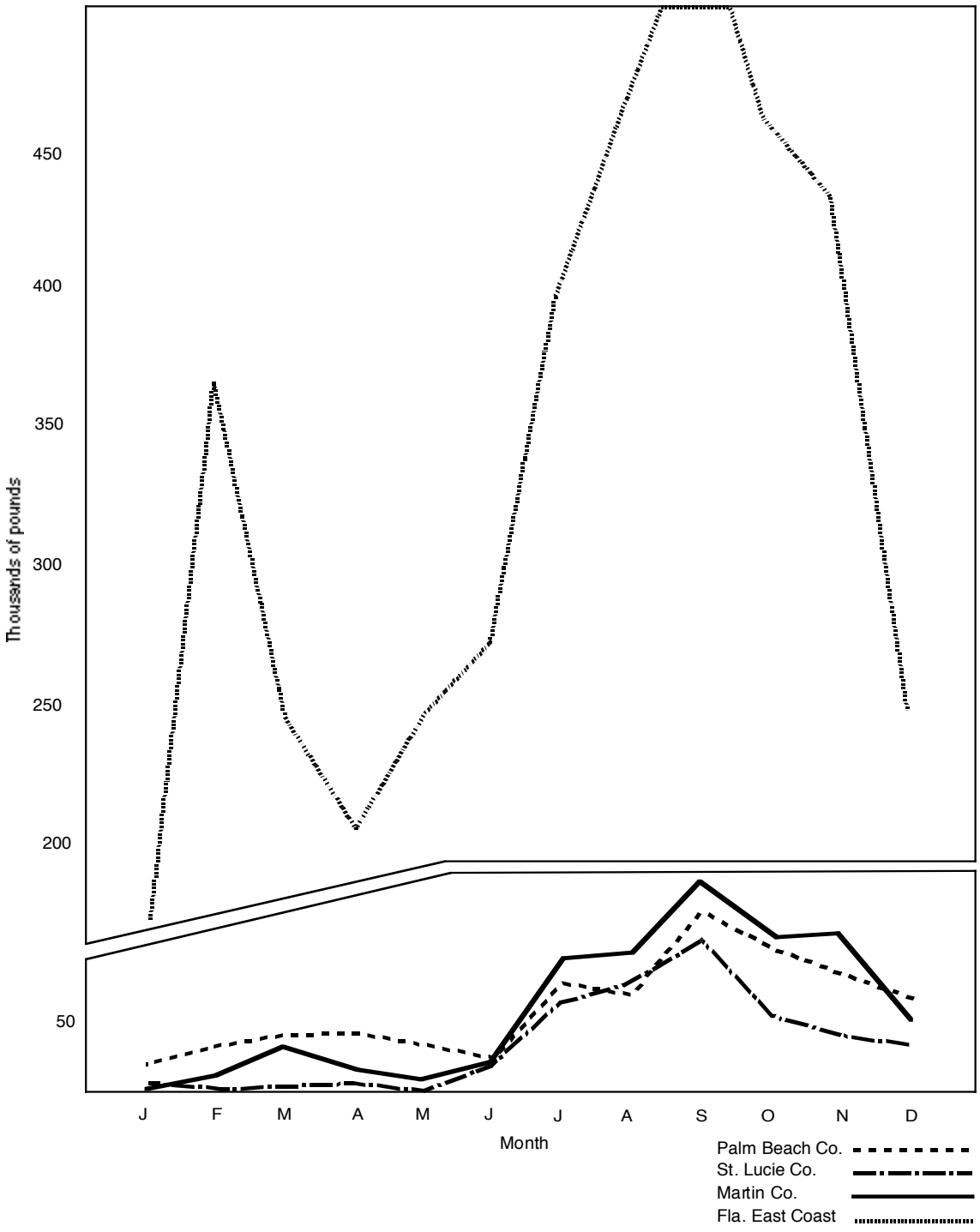
BLACK MULLET PRODUCTION 1951

Martin, Palm Beach and St. Lucie Counties and Florida East Coast



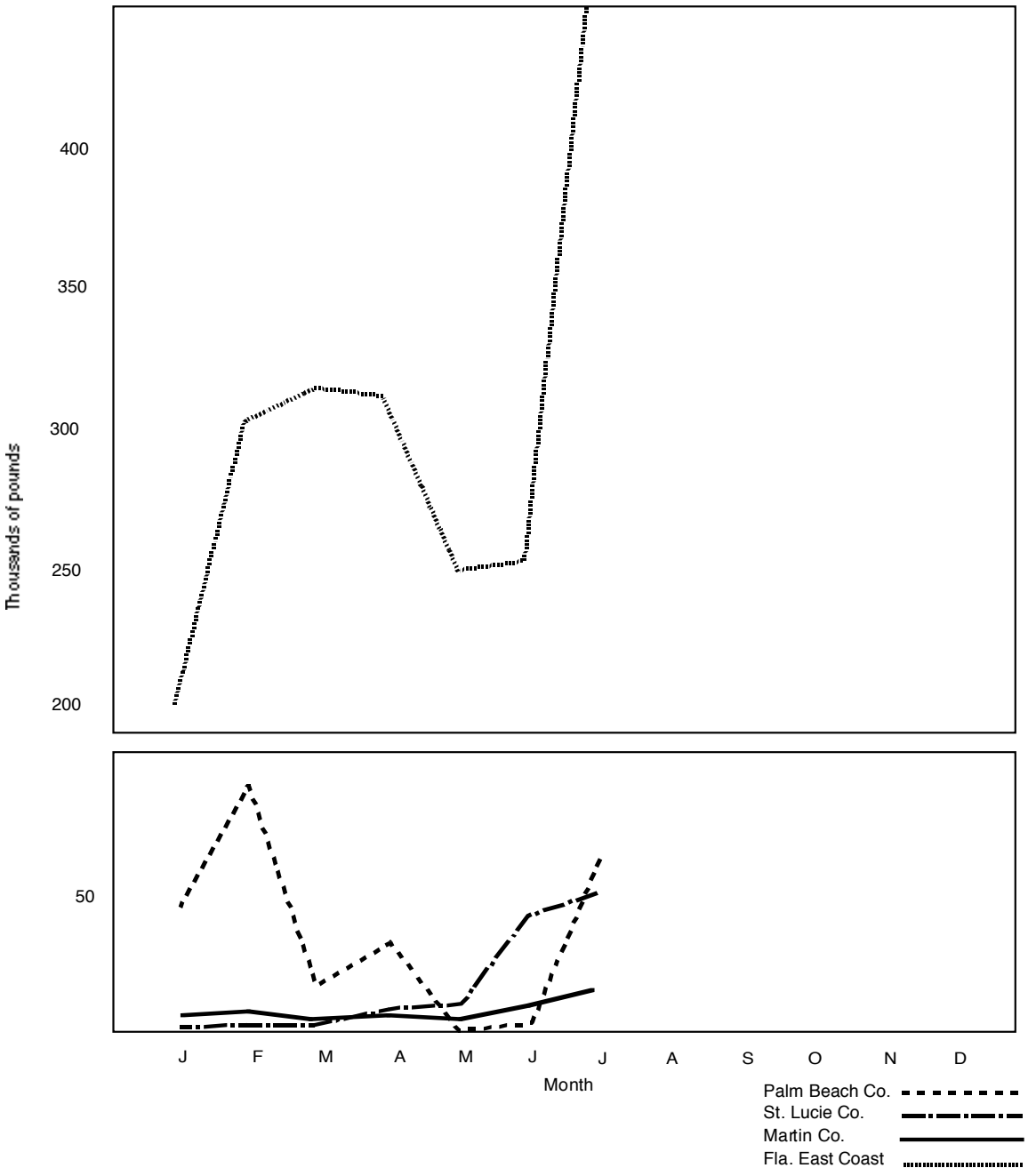
BLACK MULLET PRODUCTION 1952

Martin, Palm Beach and St. Lucie Counties and Florida East Coast



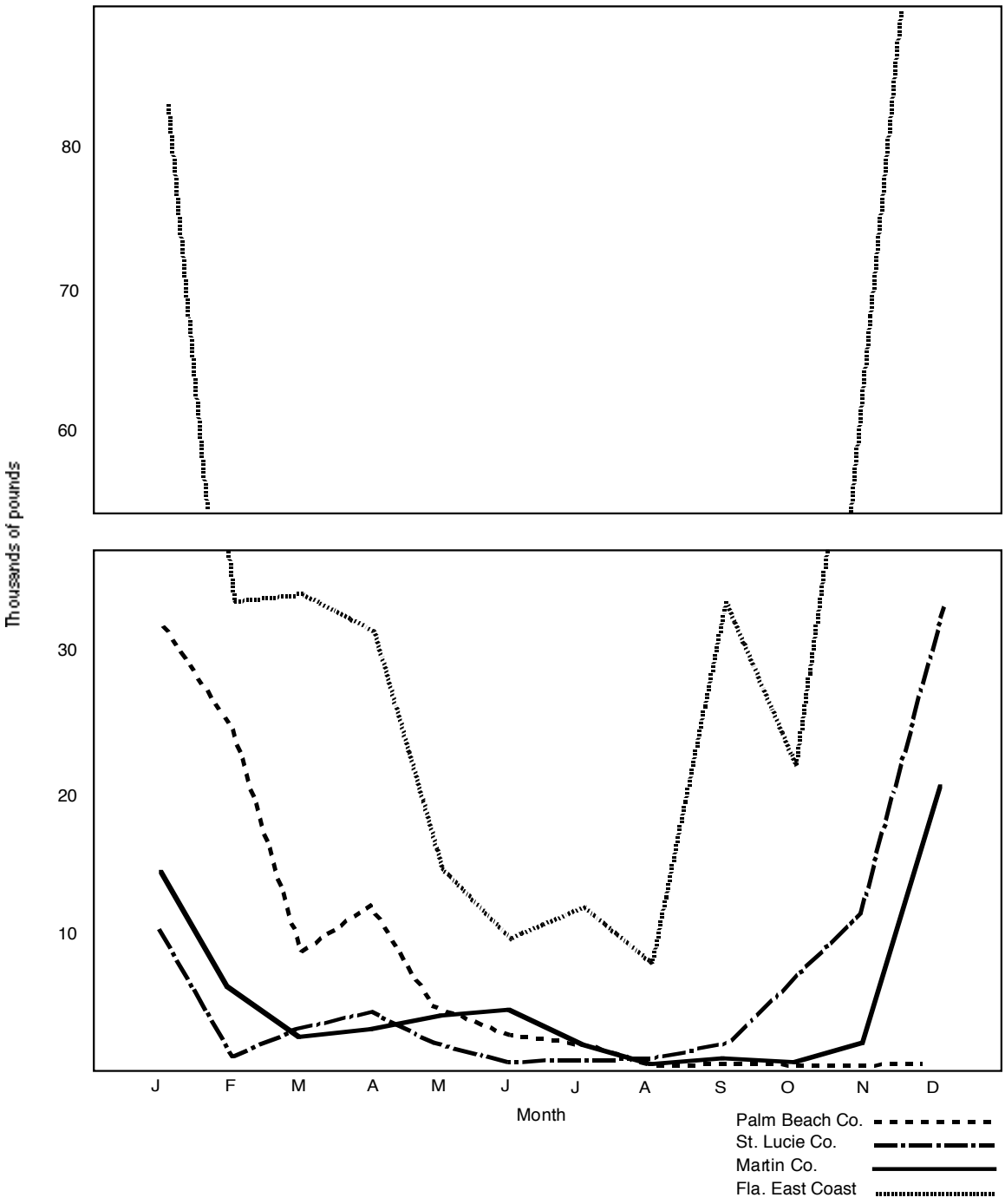
BLACK MULLET PRODUCTION 1953

Martin, Palm Beach and St. Lucie Counties and Florida East Coast
(Statistics incomplete)



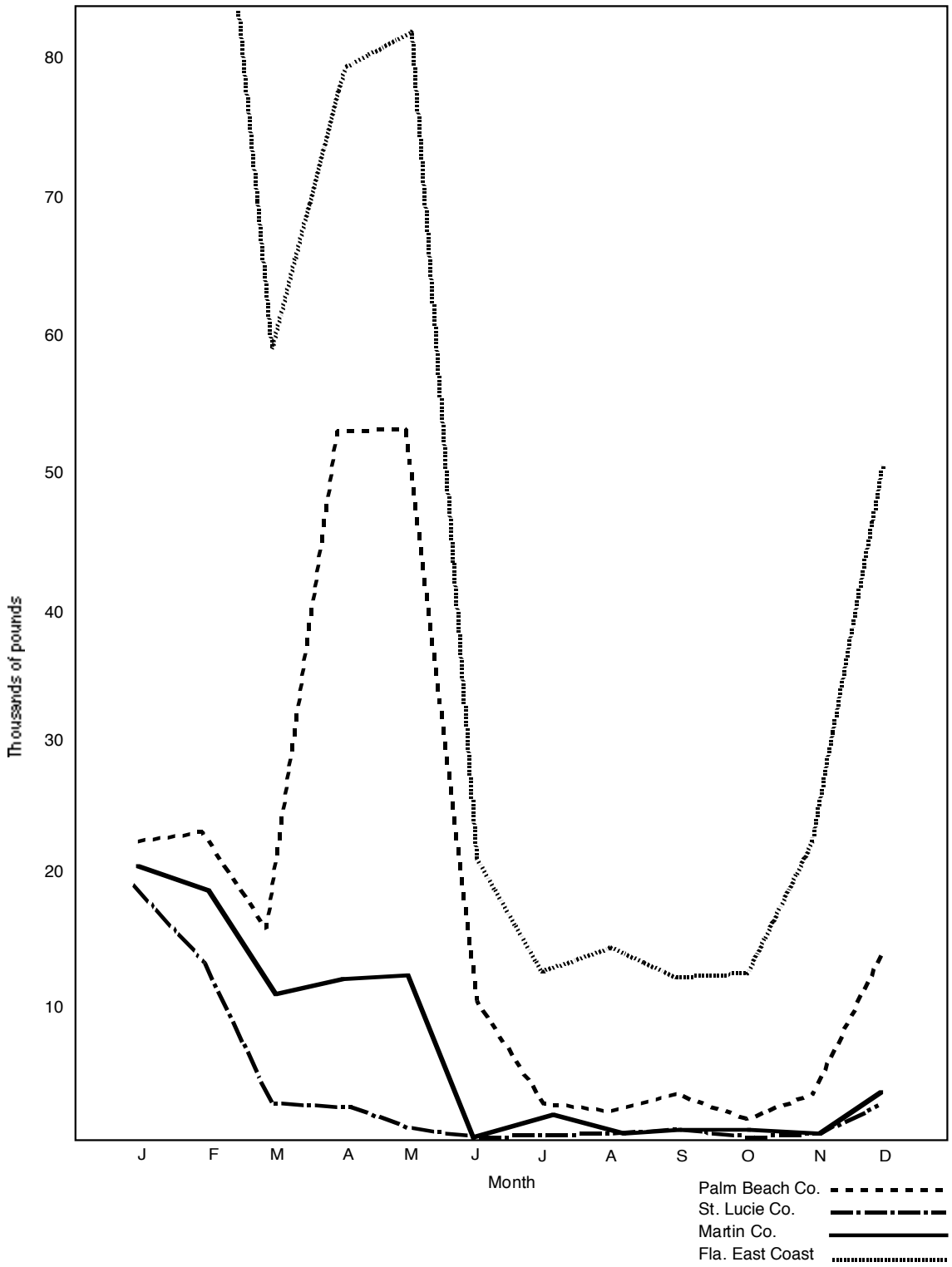
POMPANO PRODUCTION 1951

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



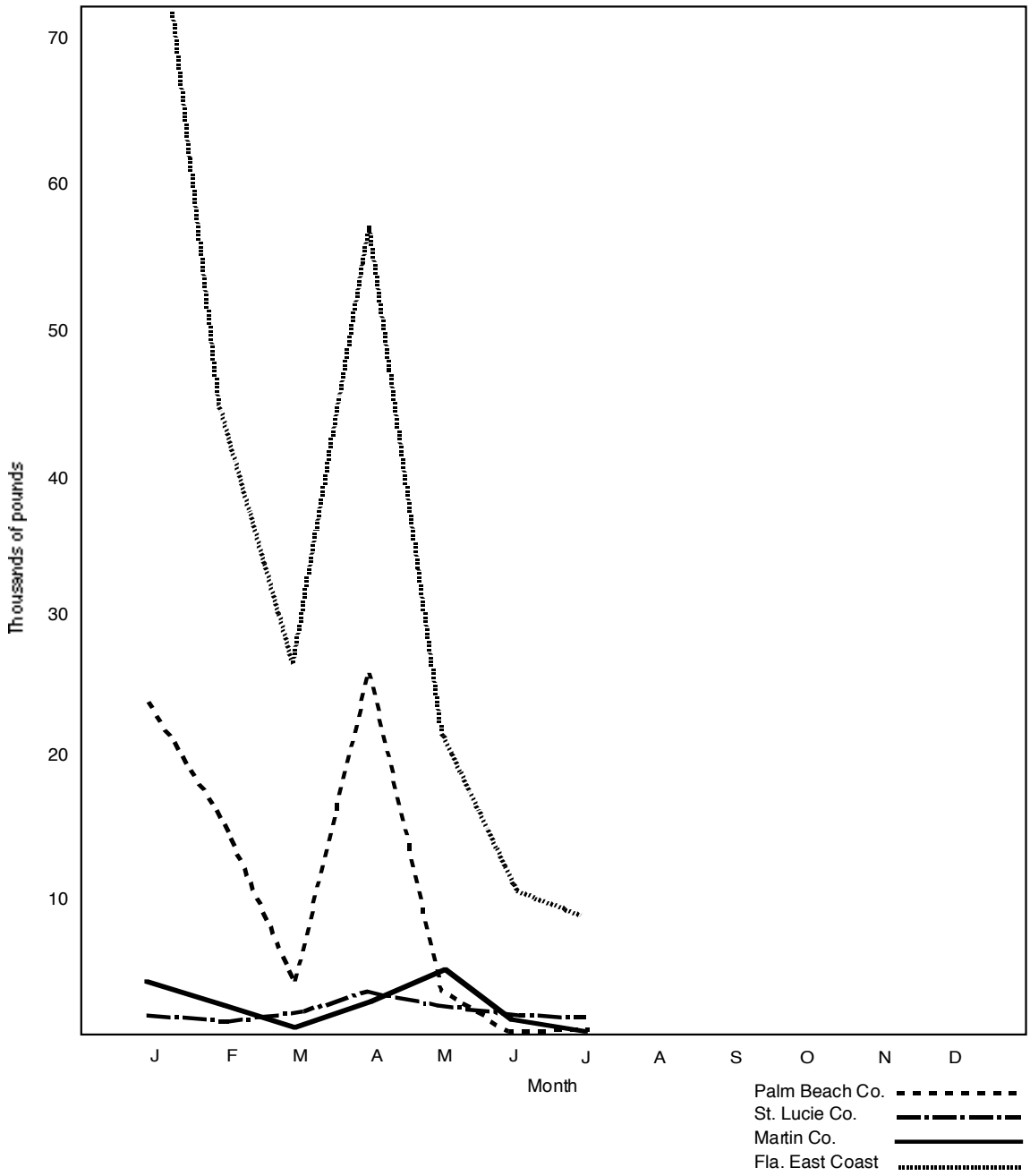
POMPANO PRODUCTION 1952

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



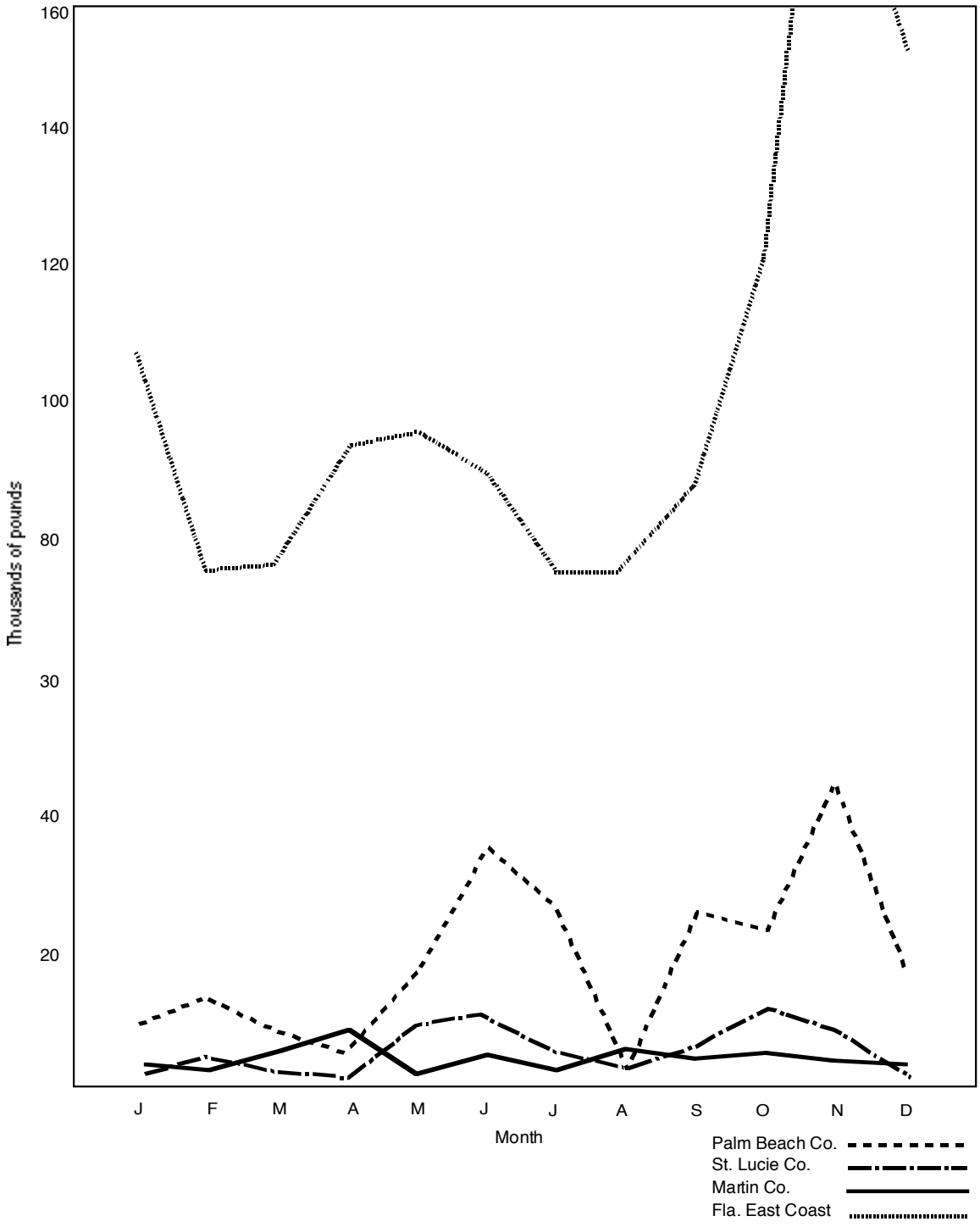
POMPANO PRODUCTION 1953

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



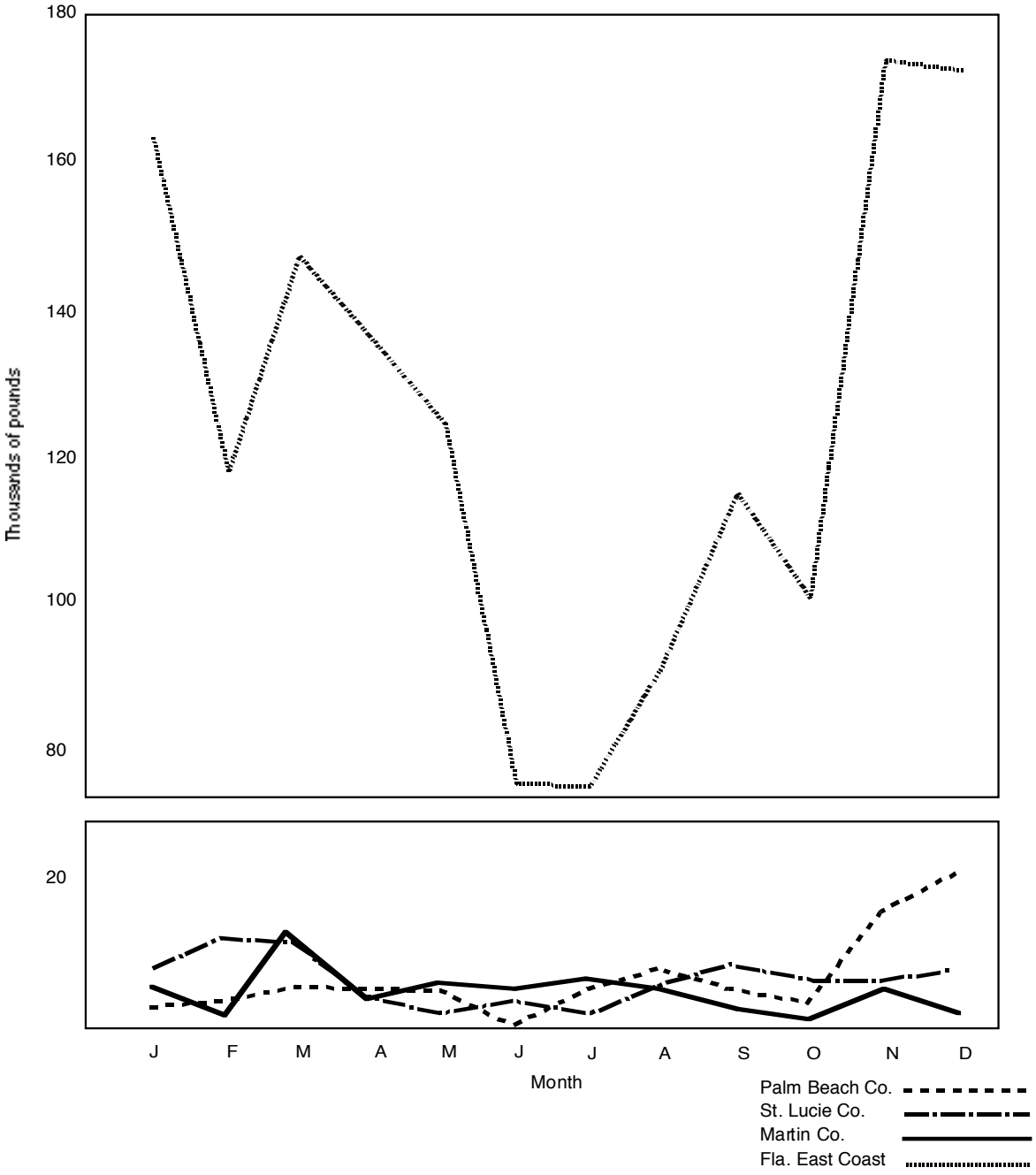
SPOTTED SEA TROUT PRODUCTION 1951

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



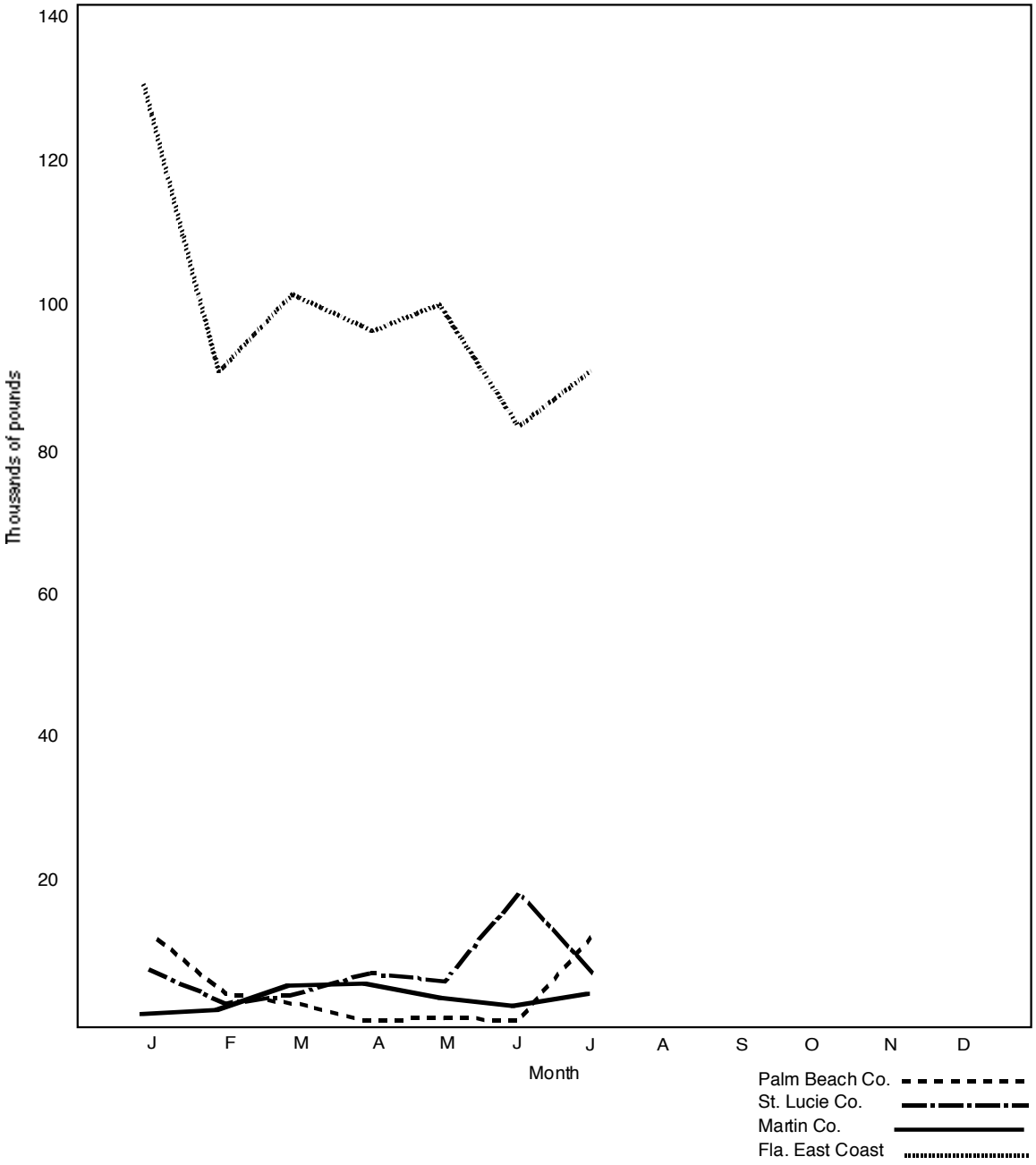
SPOTTED SEA TROUT PRODUCTION 1952

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



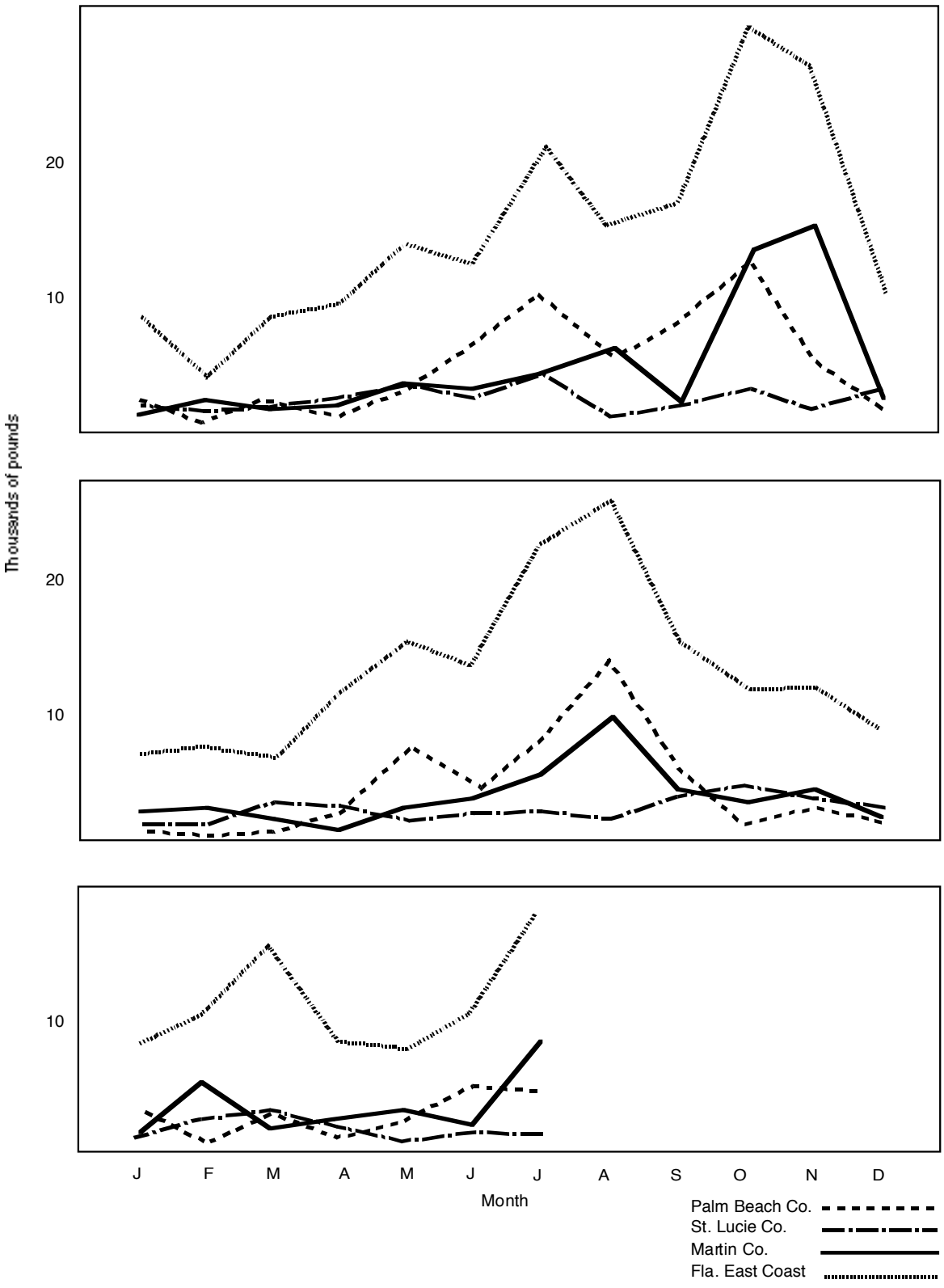
SPOTTED SEA TROUT PRODUCTION 1953

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



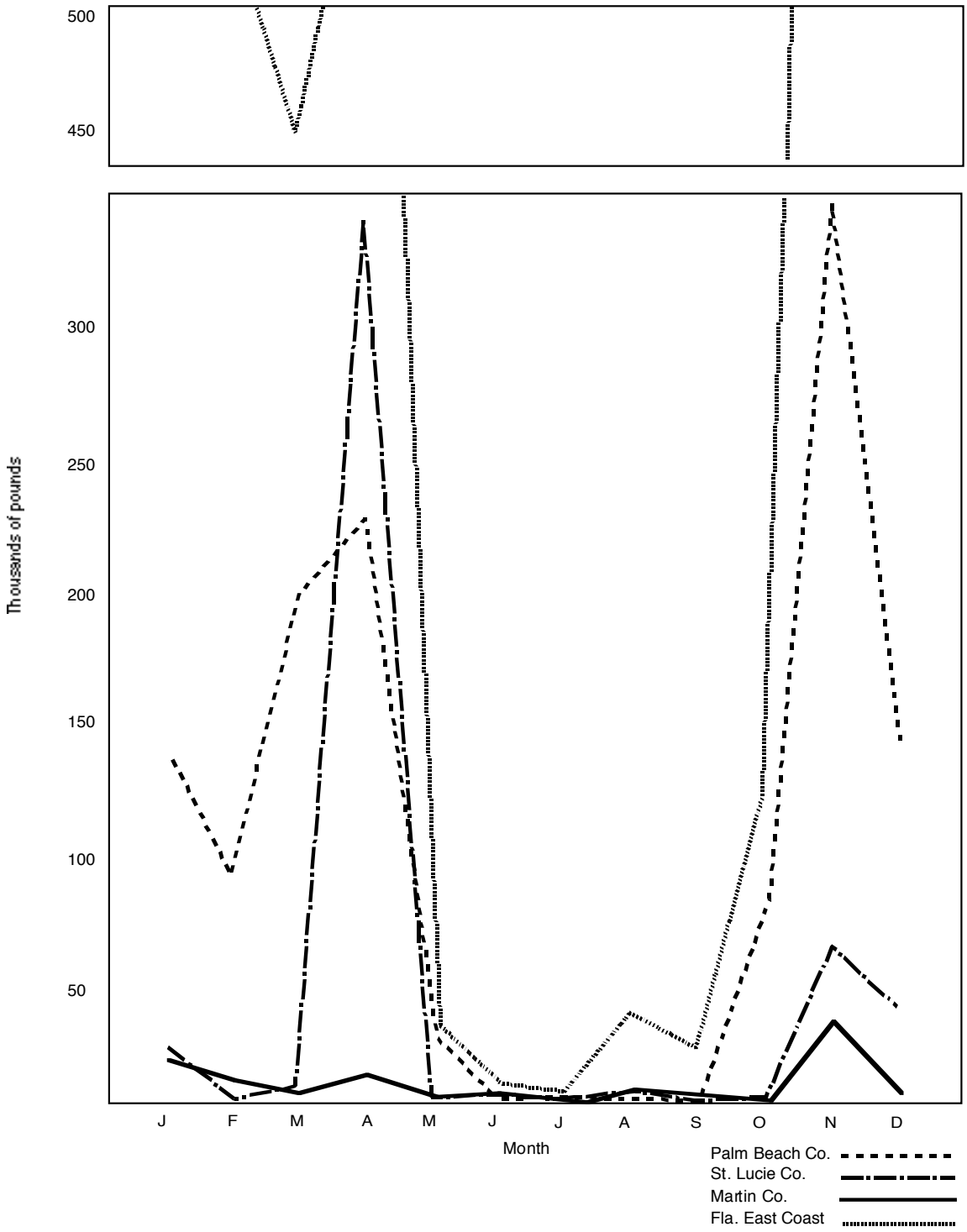
SNOOK PRODUCTION 1951, 1952, 1953

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



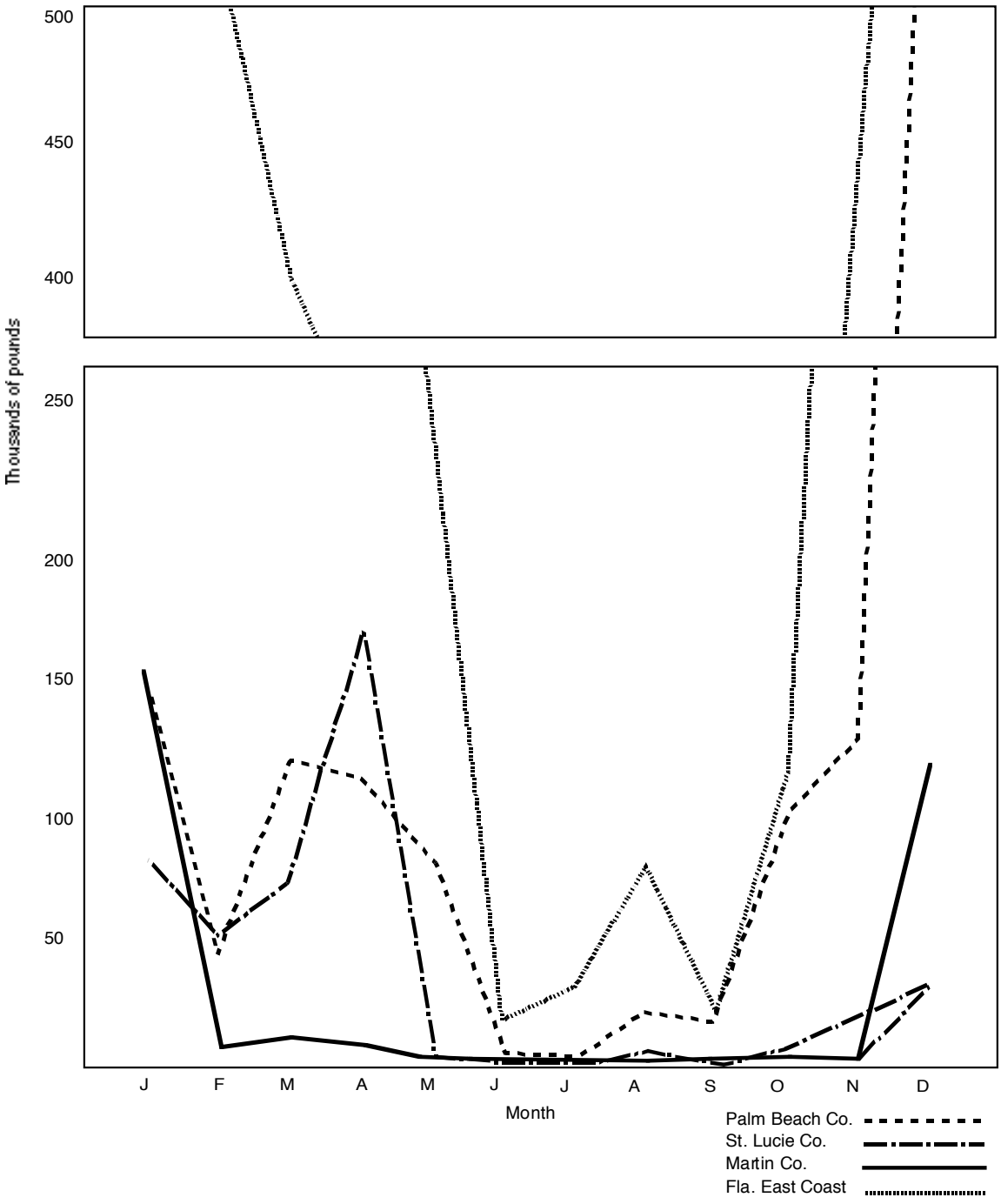
SPANISH MACKEREL PRODUCTION 1951

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



SPANISH MACKEREL PRODUCTION 1952

Florida East Coast and Martin, Palm Beach and St. Lucie Counties



SPANISH MACKEREL PRODUCTION 1953

Florida East Coast and Martin, Palm Beach and St. Lucie Counties