

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Division of Fish, Game and Wildlife  
Marine Fisheries Administration  
Bureau of Marine Fisheries

Use of Artificial Reefs by  
Commercial Fish and Lobster Potters, 1995

Period of Study: April - November, 1995

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## OBJECTIVE

The objective of this survey was to estimate the use of New Jersey's artificial reefs by commercial fish and lobster potters. This is a follow-up to a similar survey conducted in 1991 (Figley, 1992).

## METHODS

A list of commercial potters was assembled from state license sales and federal permit holders. Each week, during April to November, five fishermen were selected randomly from the list and contacted by telephone. During the year, a total of 40 different fishermen were contacted for a combined 160 interviews. Fisherman were asked how many fish and lobster pots they had set, the location of pots, the number of pots most recently checked and the pot soak time. The data were coded and analyzed by computer. Estimates of the entire pot fishery's activities were extrapolated by expanding data obtained from the interviewed fishermen to cover the entire New Jersey pot fishing fleet.

## RESULTS

### Participation

In 1995, the National Marine Fisheries Service estimated that 42 lobster and sea bass potters operated out of New Jersey ports (Walt Makowski; personal communication). The county breakdown was as follows: Monmouth, 17; Ocean, 6; Atlantic, 6; and Cape May, 13. During 1995, the Division issued 145 licenses for lobster, sea bass and conch traps set in the ocean within the state territorial limit of 3 miles from shore. With the wide disparity of reported pot fishermen between the two sources, it was decided to use an intermediate value of 98 boats as reported in the 1991 survey as the fleet size of New Jersey's lobster / sea bass pot fishery. Thus, 98 boats became the multiplier for estimating total fleet pot fishing effort.

### Effort

The majority of New Jersey's commercial pot fishing is conducted from the northern inlets of Sandy Hook, Shark River and Manasquan (67 percent of fishery), probably due to the greater amount of natural hard substrate habitat and shipwrecks off the northern coast (Table I). These northern fishermen primarily target lobster, while those from the south Jersey port of Cape May are more directed toward sea bass. Absecon and Cape May inlets accounted for 17 and 10 percent of the year's potting activity, respectively.

The percentage of fishermen that were actively fishing at the time they were contacted was 70 percent (112 of 160 interviews). Of those fishing, 13 percent (14 of 112) had pots set on artificial reefs (Table 2). Of those fishing, the average number of pots set was 611 (Table 3). Lobster traps made up 82 percent of the total, while fish traps comprised 18 percent. The overall average number of pots set on artificial reefs was 22 per fishermen, only 3.6 percent of the total pots sets. Considering only fishermen that set a portion of their traps on artificial reefs, the average number of pots set on reefs was 169 per fishermen.

An estimated mean of 41,915 fish and lobster pots were set and fishing in the ocean off New Jersey each day during April - December, 1995. This estimate was calculated by multiplying the number of commercial potters (98) by the percentage fishing when interviewed (70 percent) by the mean number of pots set (611). Total pot fishing effort amounted to an estimated 10,143,333 pot-days during April - November. Of the total, an estimated 1,509 pots were set on artificial reefs. Posting effort on artificial reefs amounted to 365,160 pots-days. Fisherman reported setting pots on four of New Jersey's 14 artificial reef sites (Table 4). In addition to Shark River, Sea Girt, Axel Carlson and Cape May, we know from observations at sea that pots were also been set on the Sandy Hook, Garden State South, Little Egg, Atlantic City, Ocean City, and Deepwater reefs, although our sample of fishermen did not use these sites.

## DISCUSSION

The survey considers only the time period of April to November, 1995. Four winter months were omitted, which undoubtedly led to an underestimate of total annual potting effort, although fishing effort in the winter is reduced. In addition, some fishermen refused to cooperate and did not offer any information. It is unknown if this group of fishermen differed from our sample of 40 cooperative fishermen and thus, it cannot be concluded whether or not survey refusals biased the collected information.

The limited statistics collected in the 1995 survey as compared to those generated in 1991 (Table 5) show a 37 percent decline in fishing effort over 1991, with less fishermen setting fewer pots. While the reason for this decline in effort is unknown, it corresponds to a similar decline in the recreational rod and reel, wreck / reef fishery for the same time period (Figley 1996). While the percentage of pots set on artificial reefs apparently increased between 1991 and 1995, the actual numbers of pots set and the total pot-days of fishing effort declined.

## REFERENCES

- Figley, W. 1992. Use of Artificial Reefs by Commercial Fish and Lobster Potters, 1991. NJ Division of Fish, Game and Wildlife. 9pp.
- Figley, W. 1996. Survey of New Jersey's Recreational Wreck/Reef Fisheries, 1995. NJ Division of Fish, Game and Wildlife. Wallop-Breaux Project F-15-R-37. \_pp.

Table 1. Commercial potting effort (percentage of survey interviews) by inlet of departure, 1995.

Inlet Of Departure	Interviews	
	Number	Percentage
Sandy Hook	30	26.8
Shark River	24	21.4
Manasquan	21	18.8
Barnegat	0	0.0
Little Egg	0	0.0
Absecon	19	17.0
Great Egg	0	0.0
Townsend's	7	6.3
Hereford	0	0.0
Cape May	11	9.8
Total	112	100.1

Table 2. Percentage of commercial potters fishing by month, 1995.

Month	Number of Potters Interviewed	Percentage Fishing	Percentage on State Reefs of Those Fishing
Jan	NS	NS	NS
Feb	NS	NS	NS
Mar	NS	NS	NS
Apr	10	90	22
May	25	64	6
Jun	20	65	8
Jul	15	87	23
Aug	25	80	15
Sep	20	80	6
Oct	25	68	18
Nov	20	40	0
Dec	NS	NS	NS
Season Total	160	72	12

NS = No Survey

Table 3. Fishing effort ( number of pots set ) of commercial potters fishing at the time of interview, 1995.

Location	Mean Number of Pots Set		
	Fish	Lobster	Total
All	109	502	611
Reef Only (subset of all)	3	19	22
Percentage on Reef	2.8	3.8	3.6

Table 4. Estimated numbers and effort of fish and lobster pots set on artificial reefs during April - November, 1995.

Reef Site	Percentage of Total Pots Set on Reefs	Number of Pots	Effort: Number of Pot - Days
Sandy Hook	-	-	-
Shark River	8.2	124	29,943
Sea Girt	60.1	907	219,461
Axel Carlson	6.6	100	24,101
Barnegat Light	-	-	-
Garden State North	-	-	-
Garden State South	-	-	-
Little Egg	-	-	-
Atlantic City	-	-	-
Great Egg	-	-	-
Ocean City	-	-	-
Wildwood	-	-	-
Deepwater	-	-	-
Cape May	25.1	379	91,655
Total	100.0	1,509	365,160

Table 5. A comparison of New Jersey commercial potting statistics between 1991 and 1995.

Statistic	1991	1995
Number of pot fisherman	98	98
Percentage fishing	83	70
Mean number of pots set	736	611
Total pots set	59,506	41,915
Total annual pot-days	16,066,620	10,143,333
Total pots set on reef	1,779	1,509
Total pot-days on reefs	481,998	365,160
Percentage of effort on reefs	3.0	3.6