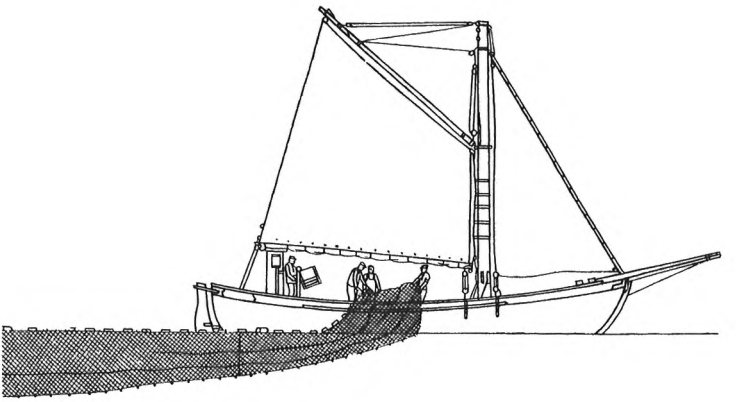
1974

Floating Fish Traps

Floating Fish Traps



A publication of
Sea Grant/Maine Department of Marine Resources

The text and illustrations of this publication were prepared from field work done by the agents of the Marine Extension Service of the Maine Department of Marine Resources during the summer of 1974 on Penobscot Bay, Maine. The publication of this information for the fishing industry is made possible through funds partially provided by Sea Grant.

HISTORY

Little has been recorded about the early days of the floating fish trap but there is evidence that the trap originated in Rhode Island around 1800. From Rhode Island it was soon introduced to the southern part of Cape Cod and Cape Ann as well as to the Maine coast.

Primarily designed for catching mackerel, the trap will also take such species as herring, butterfish, squid, pollock, menhaden, bluebacks and bluefish.

In principle, the floating trap is somewhat similar to the pound net and the Maine herring weir. However, there are notable differences in makeup and use.

The pound net is used in areas where poles can be set in the bottom. The poles support and hold the netting. Anchor lines are attached to the poles. This type of net usually has no bottom.

The herring weir has been traditionally built of wooden stakes and ribbons to which brush, usually small white birch, has been attached. In recent years most remaining weirs use twine in place of the top brush. These herring weirs were usually built in sheltered coves relatively close to shore.

The floating fish trap, the outgrowth of the above types, was designed for fishing in more exposed areas. It is a complete floating unit and in contrast to the others, it can withstand considerable assaults from the open sea. The floating trap also has a twine bottom which eliminates the necessity of a purse seine. Fish can be taken out by simply underrunning the gear.

There are many other advantages of the floating trap:

— trap-caught fish are usually in better condition and should bring a better market price.
— fish can be held until feed is worked out, such as in the case of herring, thereby improving quality.
— fish not wanted can be released.
— fish can be held for days if necessary.
— fewer hours of labor are involved in the operation compared to many other methods of fishing.

WHERE TO SET THE TRAP

Over the years, partly by observation and partly by trial and error, certain areas have been found which seem to give the best fishing results. These areas are almost always where an eddy exists caused by a hook in the shoreline. High concentrations of planktonic animals tend to saturate these areas which partially explains why one site will take fish and another will not.

In spring and early summer, fish such as mackerel tend to strike the east sides of bays and rivers when working in from the sea. The reverse holds true in the fall. Because of this knowledge, it is sometimes profitable to move a floating trap several times during a fishing season. Prevailing winds are also an important consideration. Fish sometimes feed back against a wind or tide which is carrying planktonic feed.

FLOATING TRAP USE IN MAINE

Nearly all floating fish traps in Maine are set from the Pemaquid area west.

The traps are practically unheard of in the eastern portion of the coast. Fish are trapped in this area by stop seining, purse seining and weirs. An occasional gill net is set.

Anticipating a shortage of lobster bait within the next few years, the Department of Marine Resources experimented with a standard 70' x 90' floating fish trap in several areas of Penobscot Bay during the summer and fall of 1974.

For most of this period, two marine extension agents set, tended and hauled the trap using the department's 43' powerboat, an 18' dory and a 16' flat bottom skiff powered with an 18 h.p. engine.

The powerboat was utilized with its hydraulic hoisting gear and for towing the dory with twine to the trap sites. The dory was used to transport the twine and ground gear and for taking fish out. The small skiff was used as a workhorse setting anchors, underrunning fouled lines, etc.

The trap was fished in a traditional manner. It was tended daily and moved five times in the six month period.

In the summer of 1974 there was a heavy run of bluefish which probably accounted for the small schools of mackerel that came into Penobscot Bay. There are generally two heavy runs of mackerel, one in June and another in October. Neither of these runs happened.

FISH TAKEN

Briefly, the following fish and their characteristics in the trap were noted:

MACKEREL — They trap very well and are easily seen as they swim on the surface feeding and breaking water. There was a considerable size mixture of mackerel taken from "tholepins" to "number ones."

HERRING — Only a few bushels were taken and these were of small size. The herring trapped mostly at night and are easily spooked. They hang deep in the twine but their presence can be determined by seeing "flashes" deep in the pound of the trap.

KYACKS — or Bluebacks. There appeared to be resident populations of this fish and when first setting the trap, the catch would be upwards of 50 bushels. Each successive day there would be less and less bluebacks leaving one to wonder if they were not all caught up in that area. They catch very well, will stay in the trap, and were readily accepted by the lobstermen as bait.

MENHADEN — Or pogies. Very difficult to hold in the twine. When the tide ran a corkline or buoy under, the pogies were soon to follow. They would swim right out of water over a corkline just barely submerged.

SQUID — They were taken about every location. They trap well, hold well and were in demand for trawl bait.

BLUEFISH — They went into the trap after other fish but rarely stayed in the trap for more than a few minutes. They do gill in the 5½" heartpieces and leader.

DOGFISH — It was anticipated that dogfish would be a problem. But none were taken in the trap. Several, however, were taken from the leader. The leader, by the way, should be underrun every day and cleared of gilled fish, especially around the mouth of the trap where they tend to spook the other fish.

TIDE PROBLEM

The particular problem of working the trap in Penobscot Bay was the tides. The standard 150 pound corner anchors were not enough to hold the trap in shape which is essential for it to operate correctly. Additional ground gear was needed and in a couple of the areas, the inside corners of the trap were secured to the shoreline. In areas of normal tides, however, the suggested anchors should be sufficient.

As mentioned, the trap was tended by two persons. For a commercial operation, this is not enough manpower. When drying up the twine, for instance, it was virtually impossible to keep fish from working back through skips in the twine. A drying-up method was devised and is shown in an enclosed illustration.

It is recommended that at least three men be used on the trap or two men and a power twine hauler.

After about ten days, the trap became quite foul and had to be taken from the water and salted down in the dory. The movement of the trap to another site was the time used for salting.

CONCLUSION

There is no reason the floating fish trap cannot be utilized anywhere on the coast if tended properly and sufficient ground gear used according to the tidal flow of a particular area. In very strong tides, the trap would not function properly because such strong tides would close the mouth of the trap. If fish are present, the trap will catch them making it an ideal devise for catching and holding lobster bait.

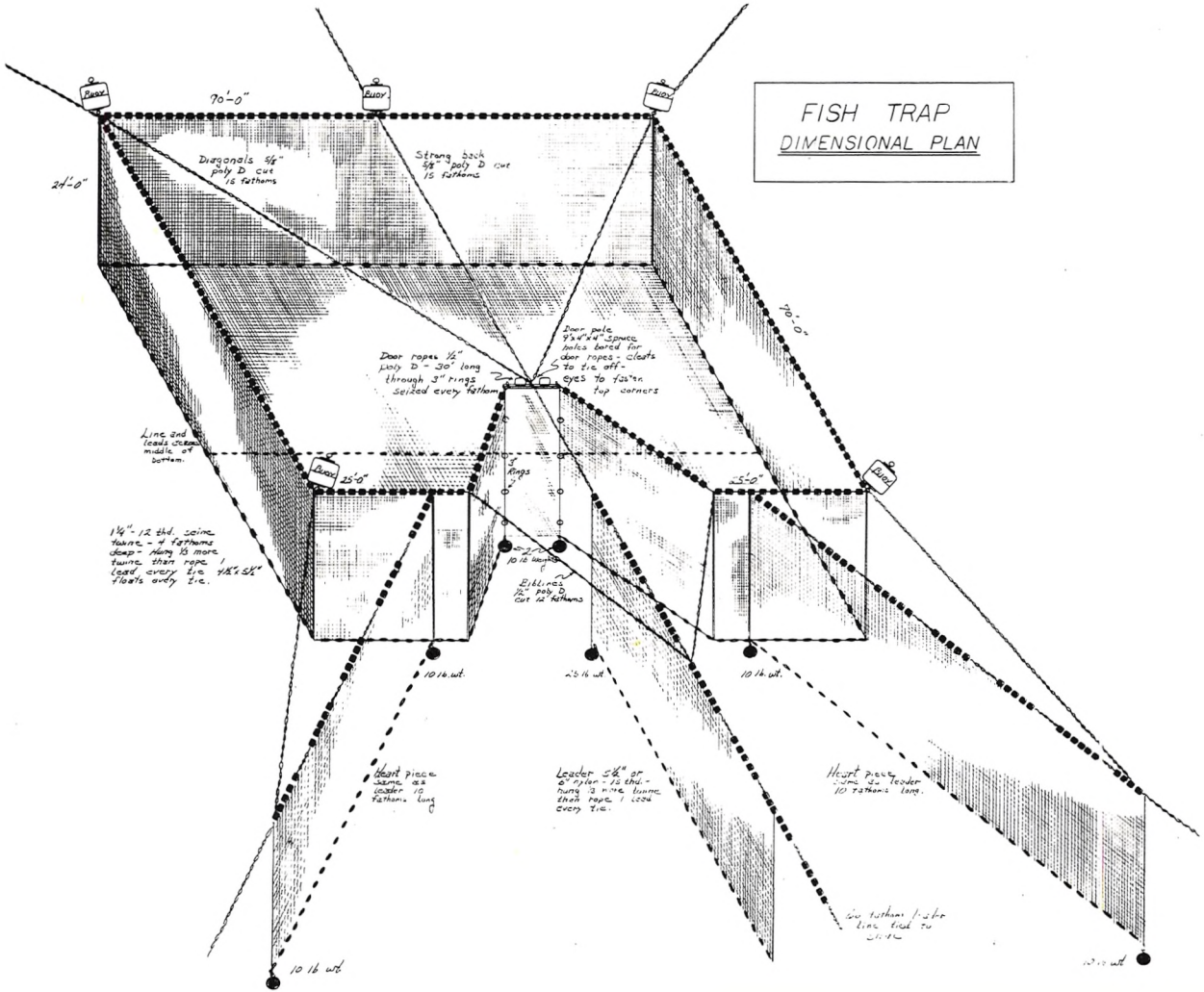
MATERIAL LIST AND COST

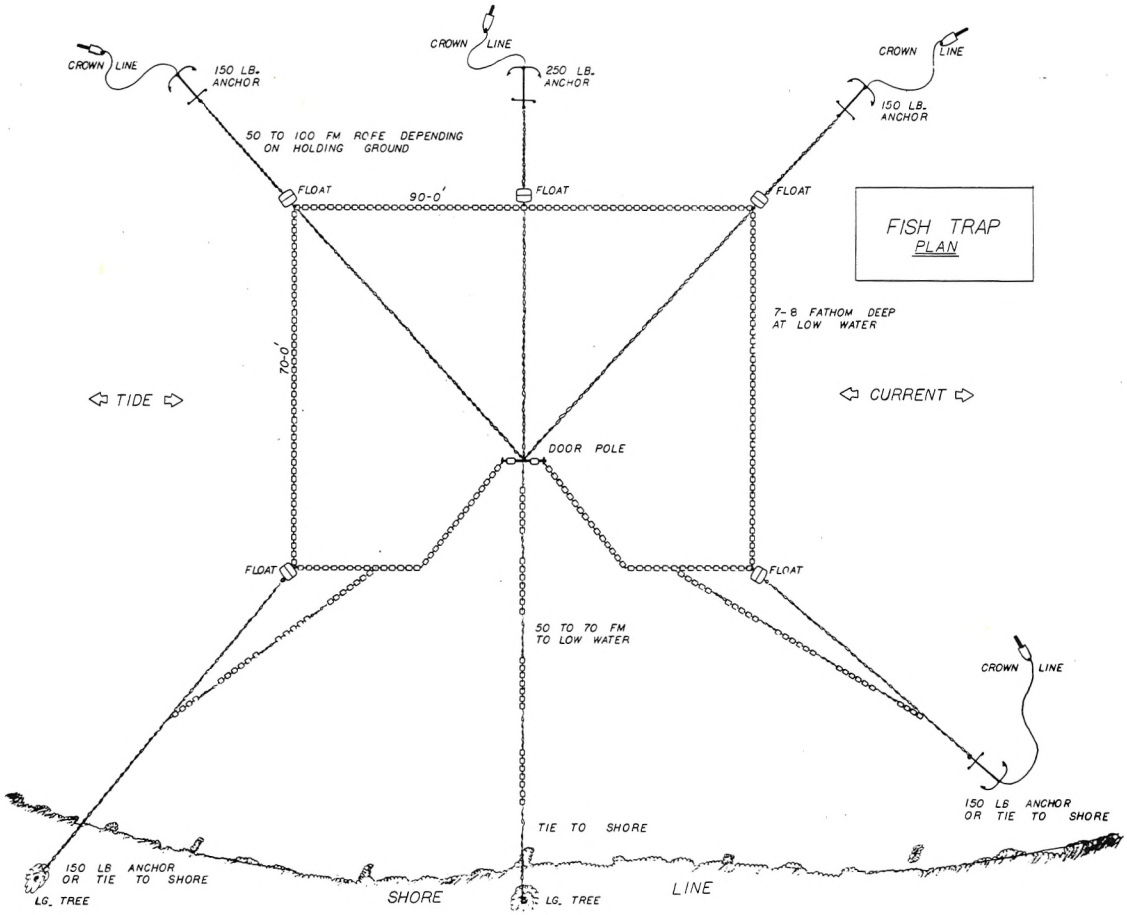
The prices quoted here were in effect in 1974 and are to be used as a guideline only, not as true actual cost if purchased today.

TRAP	70' x 90' of 1¼" mesh, 12-thread nylon seine twine from Coastal Net, Warren, Maine.	$1,800
LEADER	Two 20-fathom pieces, 5½" or 6" twine, 15-30 thread, four fathoms deep, six floats bunched at each fathom, one lead every tie, twine hung 1/3 more twine than rope.	1,000
HEART PIECES	Two 10-fathom pieces, 5½" or 6" twine, 15-30 thread, four fathoms deep, hung like leader.	500
ROPE	Six coils 5/8" polydacron.	1,000
ANCHORS	Four 150-pound kedge anchors, one 200-pound kedge anchor	1,000
MISCELLANEOUS	Buoys, pot warp, hardware, etc.	700
	TOTAL	$6,000

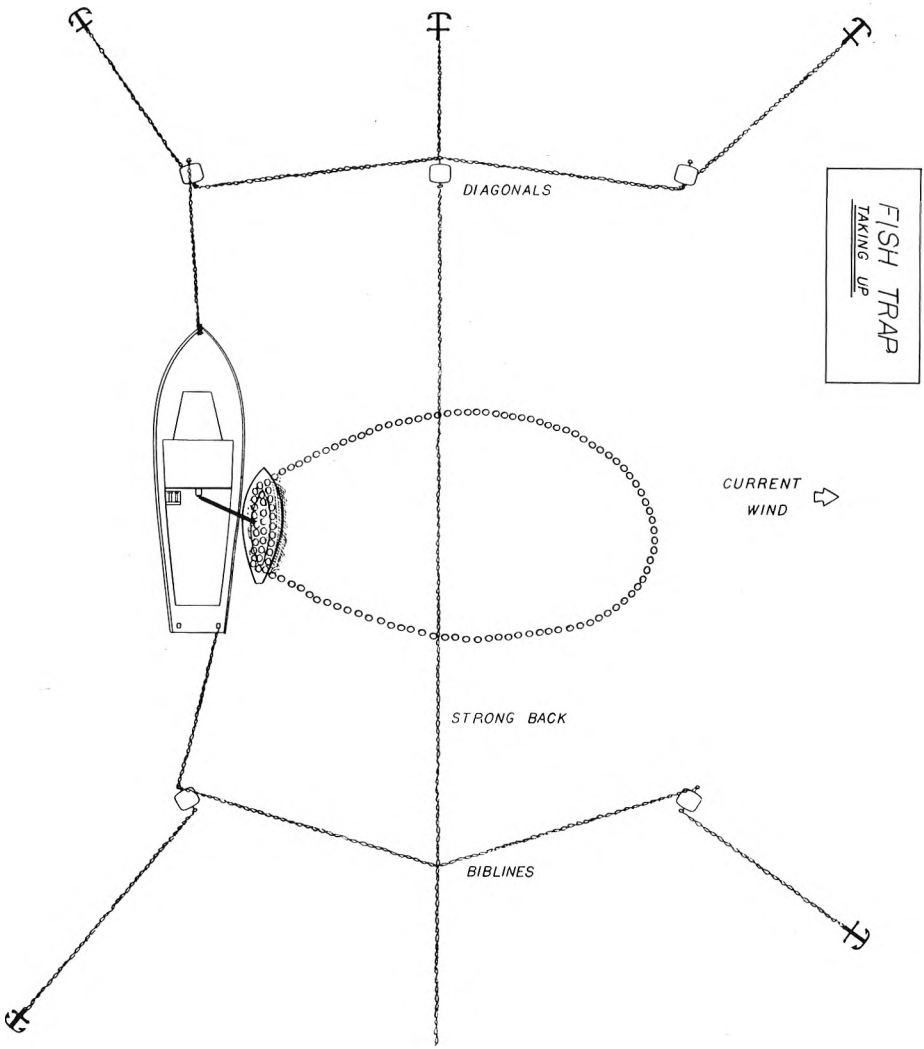
Note 1: Not included in this cost is a power net hauler which is recommended for a commercial fish trap operation. A net hauler is manufactured by Maine Technical Industries, Inc. of Rockport, Maine and sold for $1,250 in 1974.

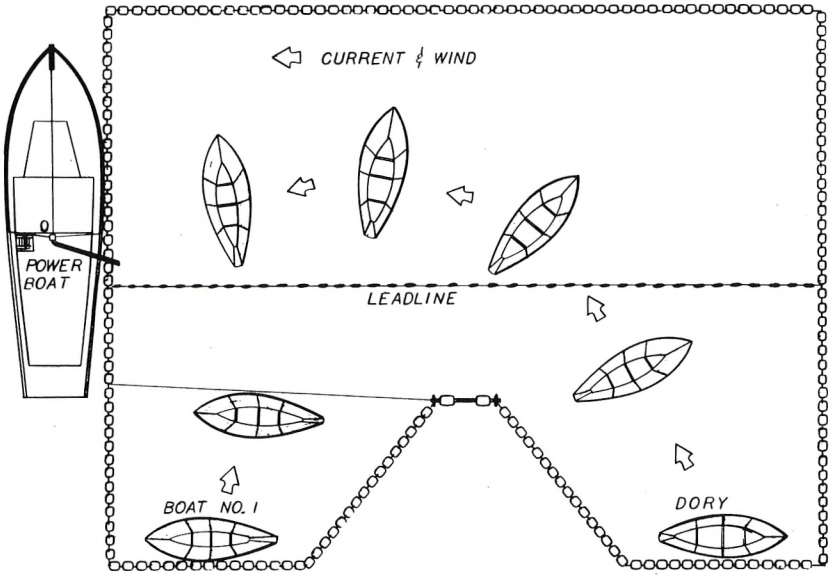
Note 2: It is assumed that a fish trap operator would have a powerboat which is necessary for twine handling. Also a dory for storing and transporting the twine and taking fish out.


FISH TRAP
DIMENSIONAL PLAN
Buoy
70'-0"
Diagonals 5/8" poly D cut 15 fathoms
Strong back 5/8" poly D cut 15 fathoms
24'-0"
Door rope ½" poly D - 30' long through 3" rings seized every fathom
Door pole 3"x4"x14' Spruce poles bored for door ropes - cleats to tie off - eyes to fasten top corners
Line and leads sewed middle of bottom.
25'-0"
3" Rings
1¼" - 12 thd. seine twine - 4 fathoms deep - hang 1½ more twine than rope. 1 lead every tie. 4½"x5½" floats every tie.
10 lb. weights
Bridles ½" poly D cut 12 fathoms
10 lb. wt.
Heart piece same as leader 10 fathoms long
Leader 5/8" or 6" nylon - 12 thd. - hang 3 mesh twine than rope 1 lead every tie.
Heart piece same as leader 10 fathoms long.
two fathoms 1/4 line tied to


CROWN LINE
150 LB. ANCHOR
CROWN LINE
250 LB. ANCHOR
CROWN LINE
150 LB. ANCHOR
50 TO 100 FM ROPE DEPENDING ON HOLDING GROUND
FLOAT
90-0'
FLOAT
FLOAT
FISH TRAP
PLAN
7-8 FATHOM DEEP AT LOW WATER
70-0'
TIDE
CURRENT
DOOR POLE
FLOAT
FLOAT
50 TO 70 FM TO LOW WATER
CROWN LINE
150 LB ANCHOR OR TIE TO SHORE
TIE TO SHORE
150 LB ANCHOR OR TIE TO SHORE
LG. TREE
SHORE LINE
LG. TREE

SETTING OUT
THE TRAP
TOW BOAT
DORY
TIDE
CURRENT
WIND


FISH TRAP
TAKING UP
DIAGONALS
CURRENT
WIND
STRONG BACK
BIBLINES



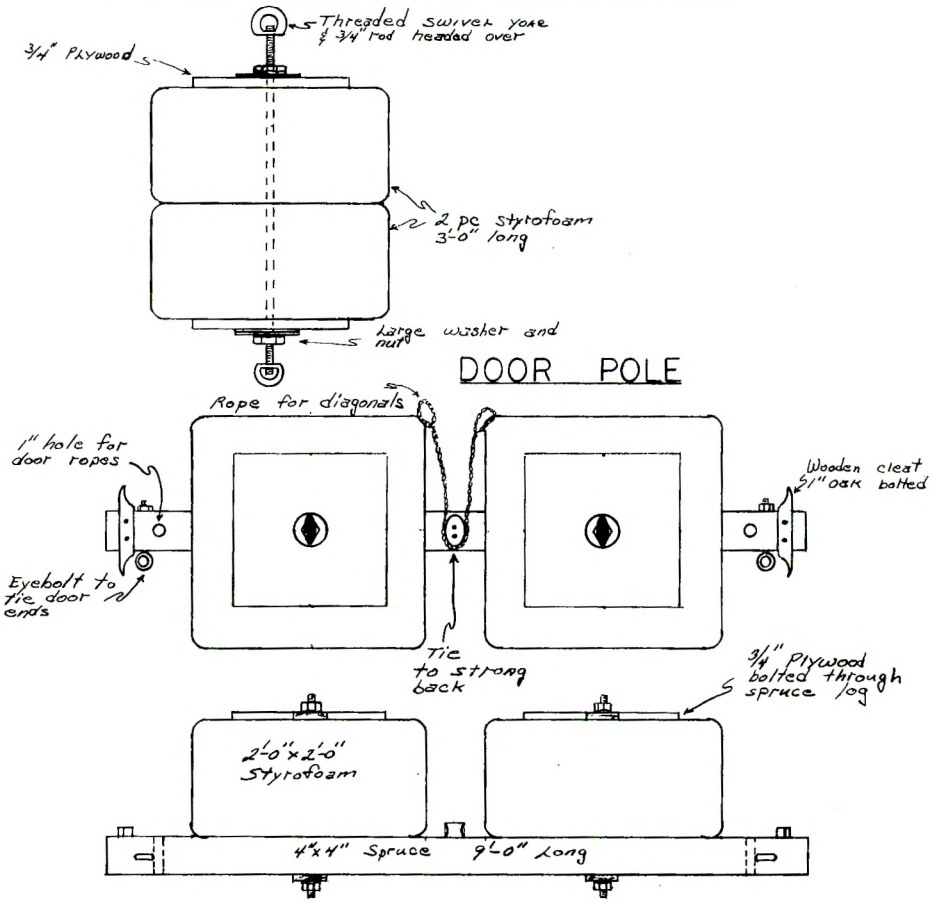
UNDERRUNNING TRAP WITH 1 OR 2 MEN

1. SECURE POWER BOAT TO DOWN CURRENT SIDE OF TRAP NEAREST BACK OF TRAP — CLOSE DOOR —
2. START UNDERRUNNING WING NEAREST POWER BOAT WITH BOAT NO. 1. DRY UP TO CORNER OF DOOR AND LEADLINE RUNNING ACROSS MIDDLE OF TRAP AND TIE SECURELY.
3. PICK UP DORY AND START DRYING UP OTHER WING TO OTHER CORNER OF DOOR AND MIDDLE LEADLINE.
4. HOLD END BY DOOR AND WORK TWINE ACROSS CORNER.
5. WHEN DORY IS PARALLEL TO POWER BOAT CONTINUE UNDERRUNNING REST OF TRAP.

FISH TRAP

BUOY DETAIL

CORNERS AND STRONG BACK BUOY




MAINE
DIRIGO
MAINE
MARINE RESOURCES