

Aquaculture & Fishery Biology

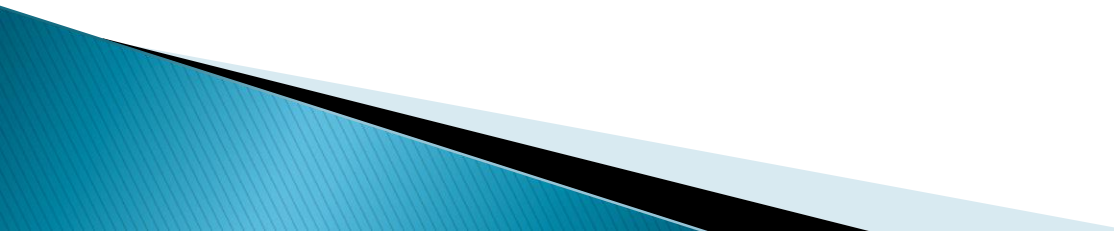
- ▶ VI Sem B.Sc. Zoology – Elective Paper

Swapana Johny
Asst. Professor
Dept of Zoology

FISHING CRAFTS & GEARS



FISHING CRAFTS

- ▶ CRAFTS ARE VESSELS USED FOR FISHING.
 - ▶ INDIGENOUS & MODERN MECHANISED
 - ▶ TRADITIONAL OR INDIGENOUS – CATAMARAN, PLANK BUILT CANOES, MASULA BOAT, DUG-OUT CANOES
 - ▶ MODERN MECHANISED – BUILT-UP BOATS WITH MOTORS FOR PROPULSION
- 

CATAMARAN



MASULA BOAT



DUG OUT CANOES



BUILT UP CANOES

VALLAM



MACHWA



FISHING BOAT



FISHING FLEET



FISHING BOAT



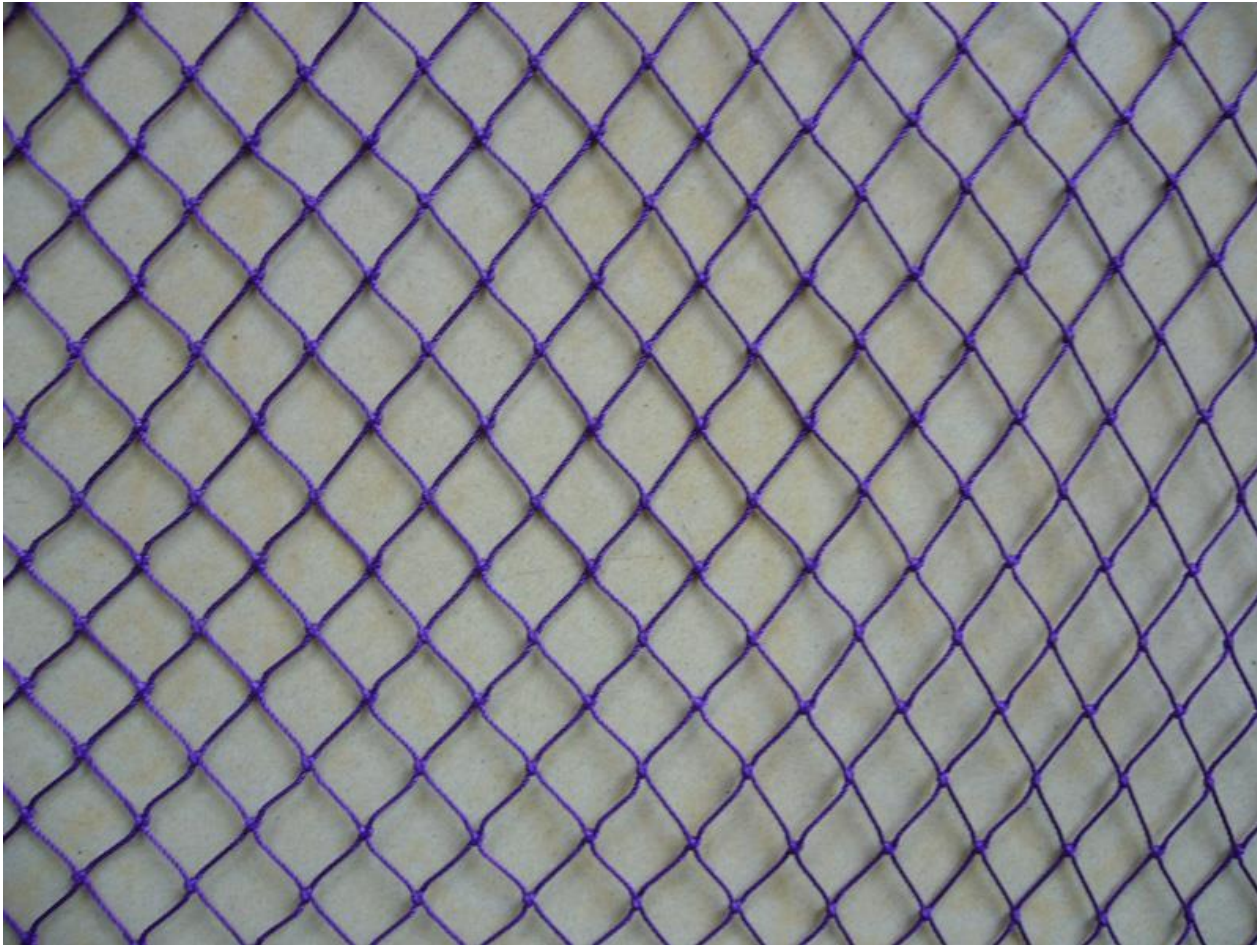
FISHING GEARS

- VARIOUS DEVICES USED FOR FISHING – GEARS
- FISH CAPTURE MECHANISMS – GILLING, FILTERING, TRAPPING, HOOK & SPEARING & PUMPING
- TYPE 1. PASSIVE FISHING GEAR – GILL NETS, TRAPS, HOOK & LINES
- TYPE 2. ACTIVE FISHING GEAR – SEINE NETS, TRAWL NETS, ETC

FISHING NETS

- A PIECE OF WEBBING IN WHICH THE TWINES ARE INTERSECTED INTO REGULAR MESHES
- MADE OF NATURAL PRODUCTS – COTTON, SILK, FLAX, FALX-HEMP
- SYNTHETIC MATERIALS – NYLON, KAPRON,ETC
- DISTANCE BETWEEN TWO POINTS OF INTERSECTION – MESH SIZE
- MESH SIZE FIXED ACCORDING TO SPECIES FISHED

FISHING NETS



GILL NET

- ❑ RECTANGULAR STATIC GEAR, SPREAD VERTICALLY ACROSS A WATER BODY IN THE FORM OF A WALL.
- ❑ LEFT OVERNIGHT AND HAULED IN THE MORNING
- ❑ FLOATS ON UPPER SIDE AND SINKERS ON LOWER SIDE – KEEPS THEM IN POSITION
- ❑ SELVAGE – STRENGTHENED BY LACING THROUGH NET WEBBING ROWS OF HEAVIER TWINES
- ❑ TWO TYPES – SIMPLE AND TRAMMEL

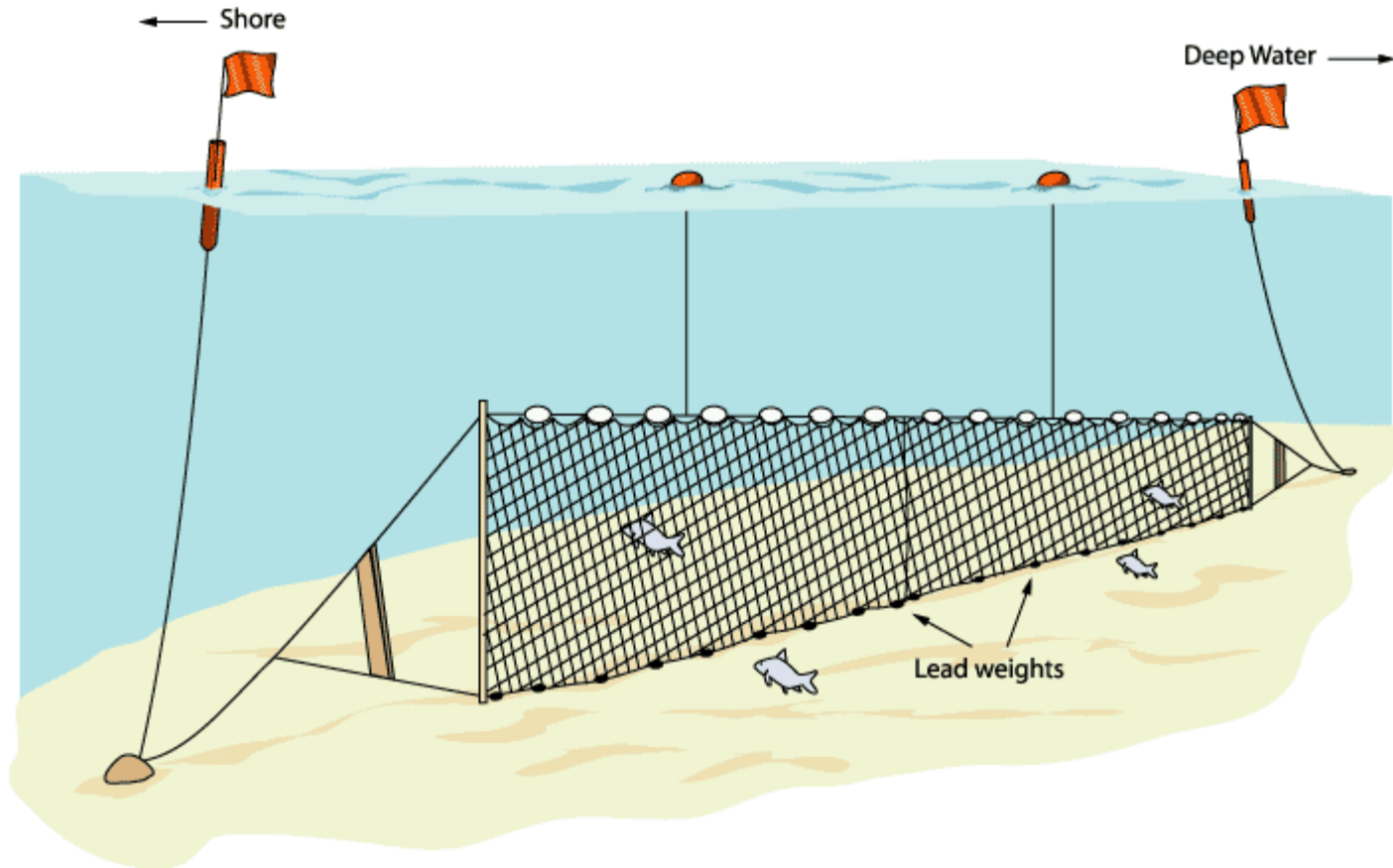
GILL NET

- SIMPLE GILL NET KEPT IN PATH OF FISH MOVEMENT
- FISH TRIES TO SWIM THROUGH IT - ONLY HEAD PASSES - GILL COVER GETS HOOKED WHILE TRYING TO COME OUT – GILLED
- MESH SIZE VARIED ACCORDING TO THE SIZE OF FISH CAUGHT
- EFFECTIVE IN RIVERS TO GILL MIGRATORY FISHES

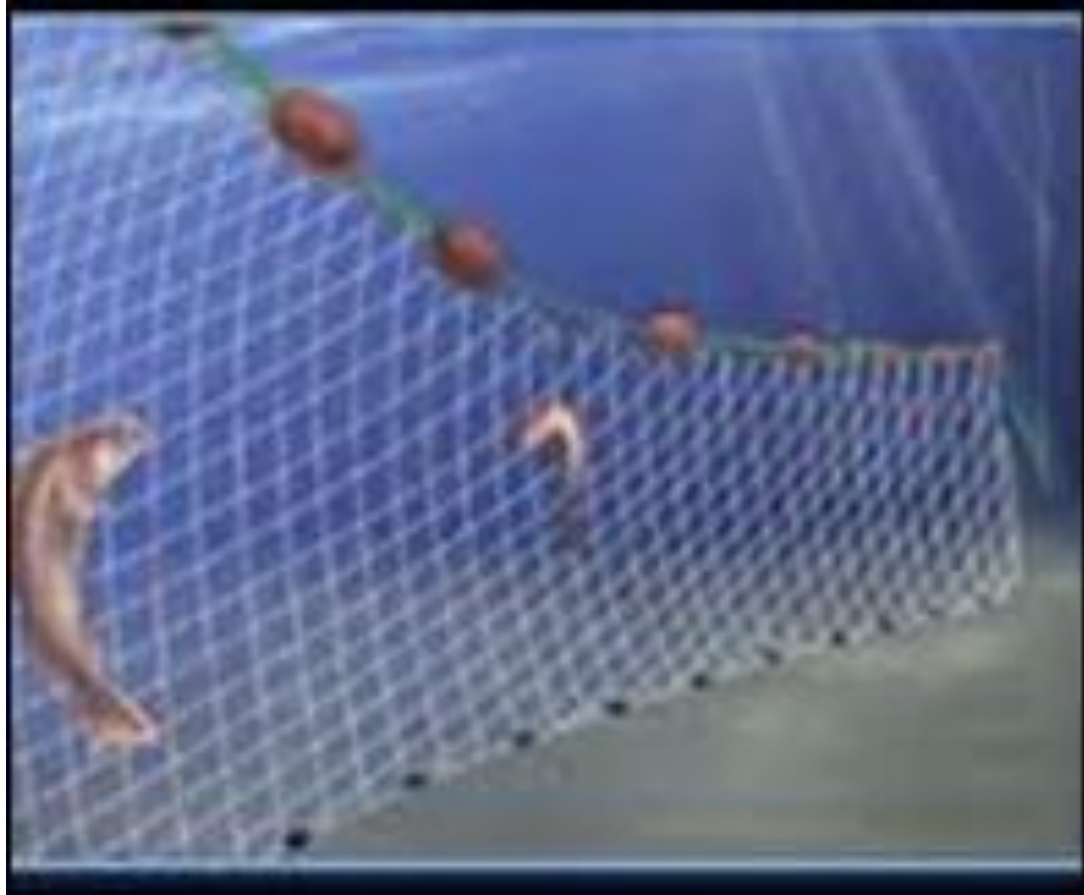
GILL NET

- FLOATING GILL NET (DRIFT NET) & FIXED GILL NET
- IN KERALA GILL NETS USED ARE CHALA VALA, NETHOLI VALA, CHOORA VALA
- SUCCESS – COLOUR NET- INVISIBLE UNDER WATER- DARK COLOUR WATER IS LIMP(CLEAR)
- TURBID WATER – DULL OR LIGHT COLOURS USED
- NYLON NETS USED

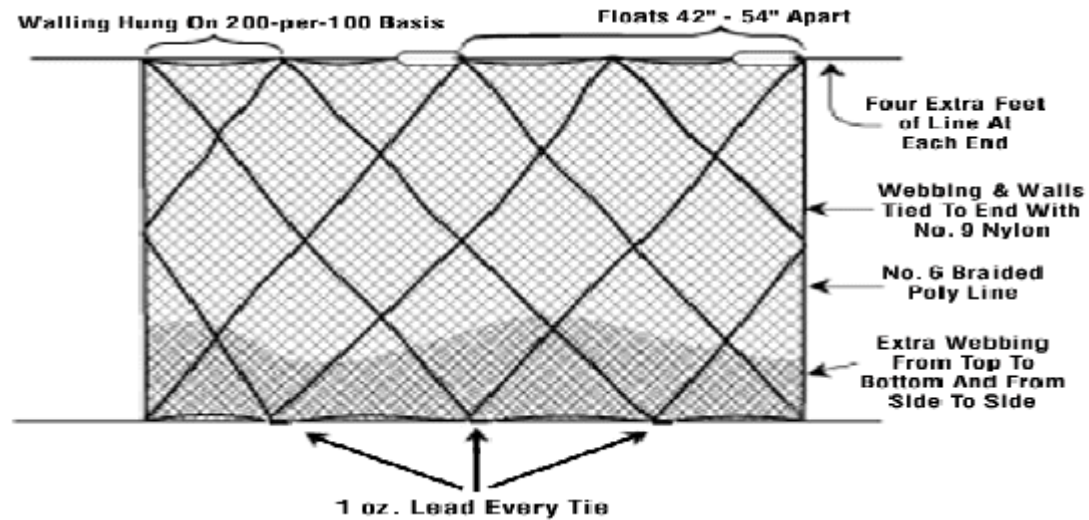
GILL NET



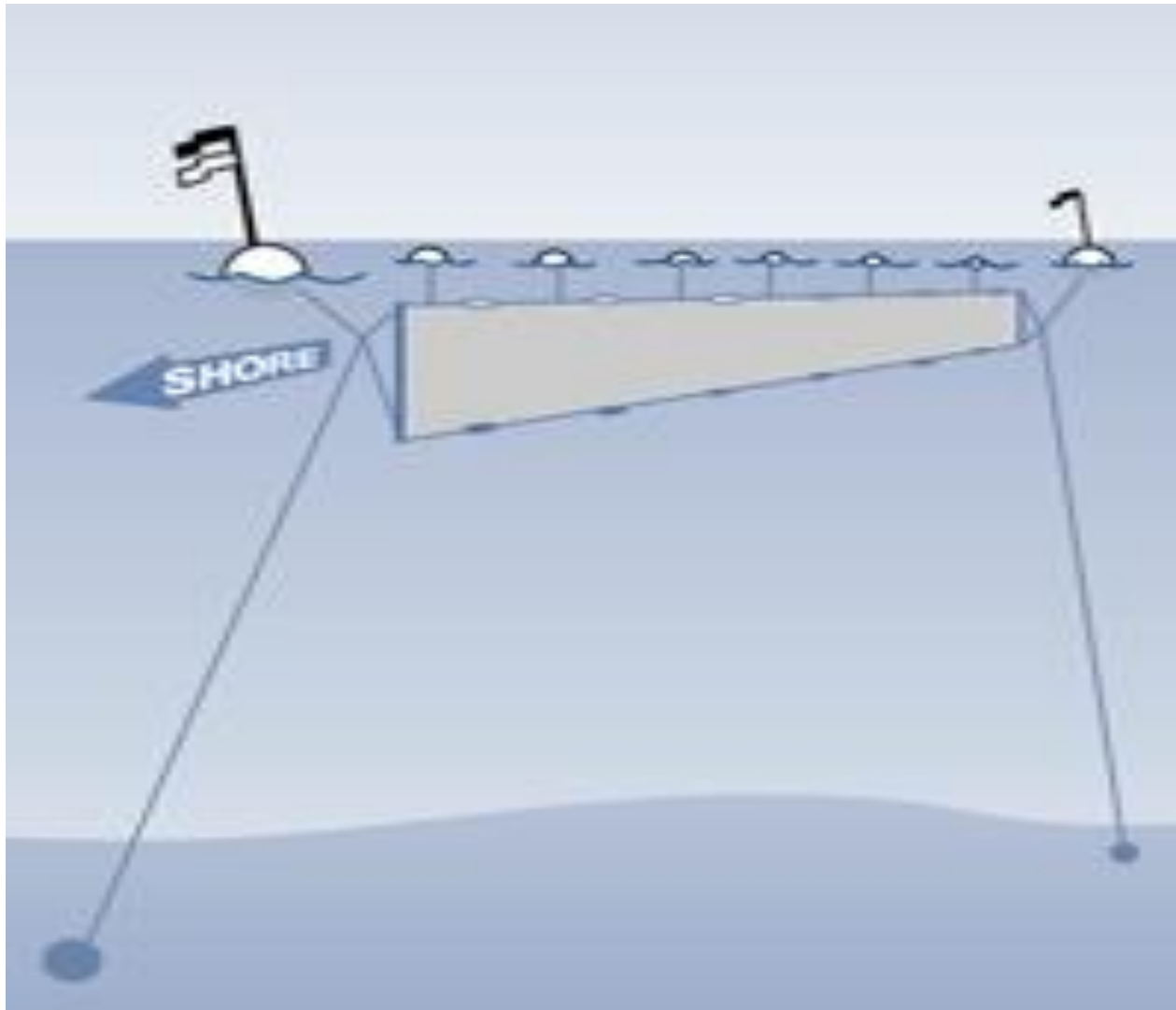
GILL NET



TRAMMEL NETS



FLOATING GILL NET



TRAWL NETS

- LOCAL NAMES – KOLLI VALA, MADI VALA, THATTU VALA, THANGU VALA, PAITHU VALA, SULTAN VALA
- COMMONLY USED LARGE NETS THROUGHOUT THE WORLD
- CATCH BOTTOM DWELLING AND MID WATER FISHES
- BOTTOM TRAWLING AND MID WATER TRAWLING
- BEAM TRAWL & OTTER TRAWL

TRAWLING OPERATION



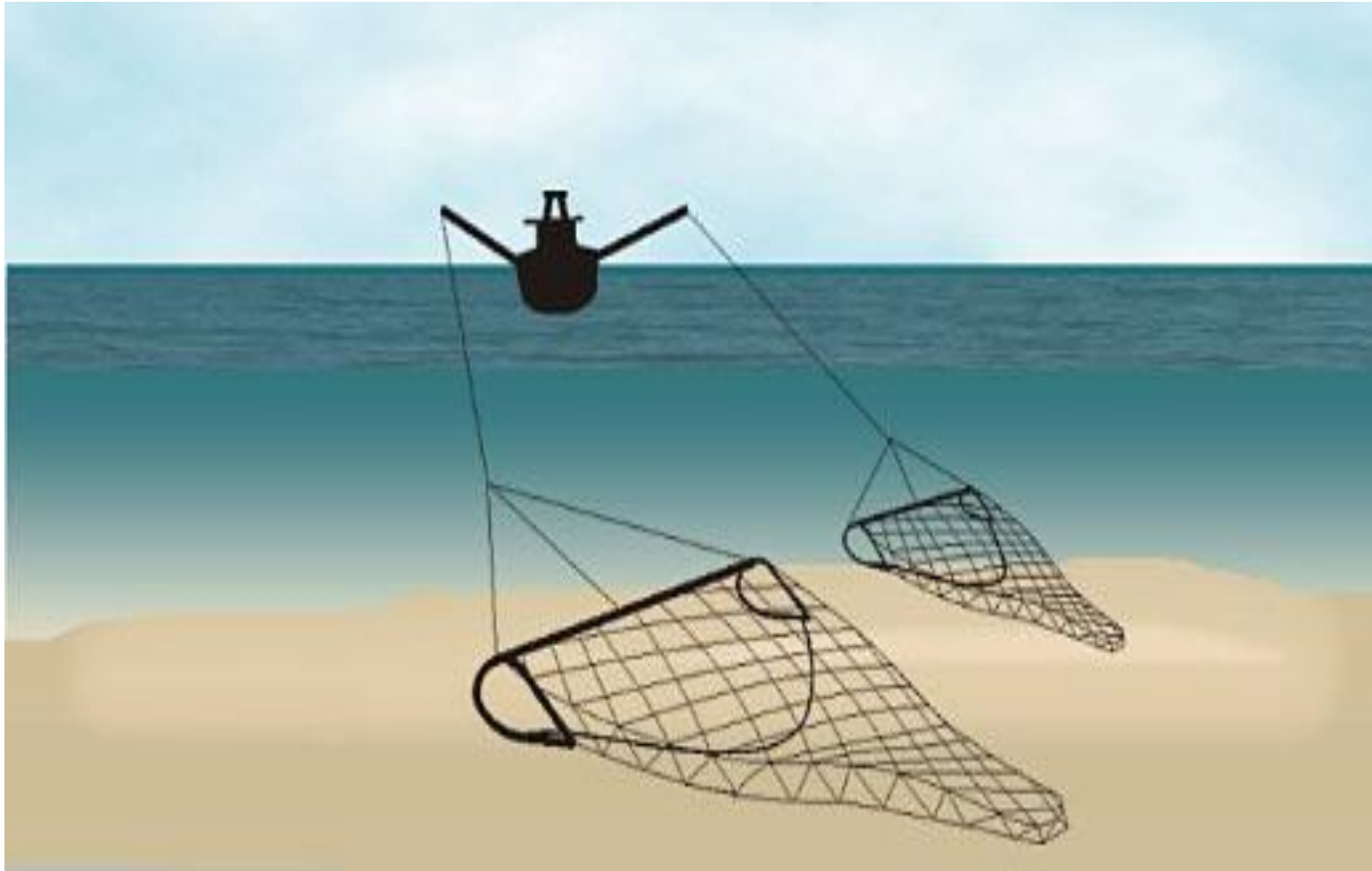
BEAM TRAWL

- ❑ SIMPLEST TRAWL NET
- ❑ LARGE CONICAL BAG OF NET, MOUTH HELD OPEN BY A HORIZONTAL BEAM OF 25-30 FEET LONG
- ❑ BEAM CONNECTED TO 'D' SHAPED RUNNER ON BOTH SIDES
BEAM KEPT 3M FROM THE FLOOR
- ❑ NET CONNECTED TO BEAM AND RUNNERS
- ❑ LOWER EDGE FREE STENGTHENED BY ROPES

BEAM TRAWL

- NET DRAGGED THROUGH SEA BED, MOUTH KEPT OPEN BY BEAM WHILE LOWER EDGE WITH FOOT ROPE DRAGS THROUGH BOTTOM
- STIRS THE BOTTOM DWELLING FISHES
- DIRECTING THEM TOWARDS THE BAG

BEAM TRAWL



BEAM TRAWL



OTTER TRAWL

- ❑ TIED TO MECHANISED VESSEL BY TWO LONG LINES – TOWING LINES
- ❑ BEAM REPLACED BY ROPES – FREE OPENING OF NETS VERTICALLY AND HORIZONTALLY
- ❑ TOP ROPE - HEAD ROPE WITH FLOATS
- ❑ BOTTOM ROPE WITH SINKERS
- ❑ FOOT ROPE WITH BOBINS AND CONNECTED FISHING LINES – PREVENTS WEAR TEAR OF NET DURING DRAGGING

OTTER TRAWL

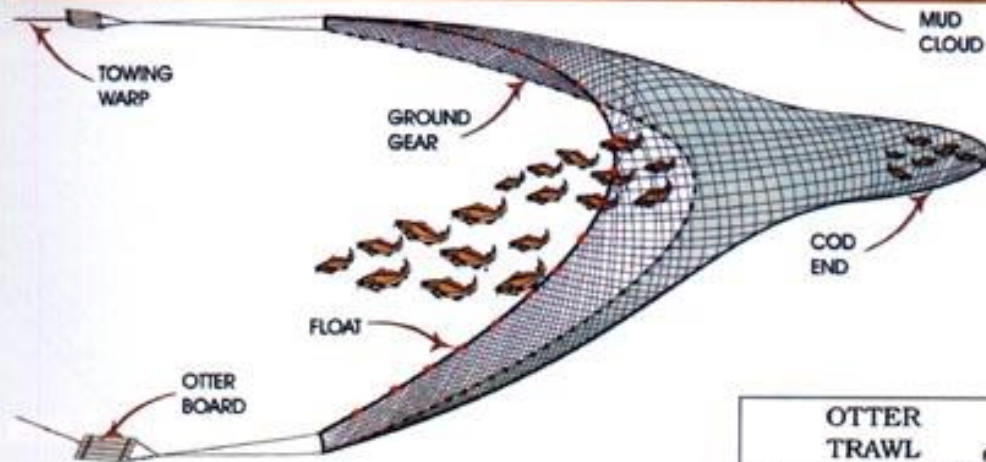
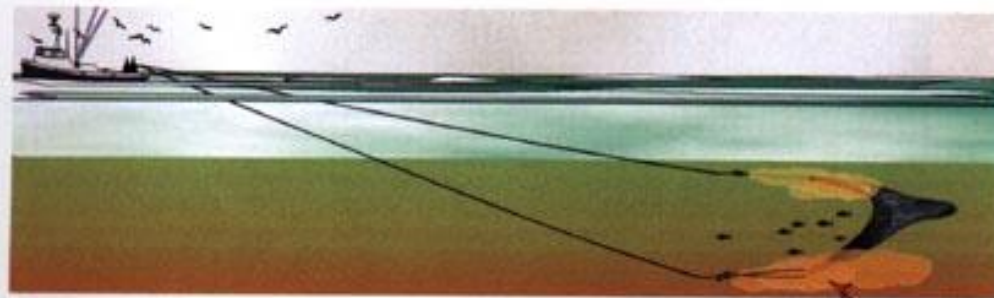
- MESH SIZE DECREASES FROM MOUTH TO COD END
- TWO RECTANGULAR WOODEN BOARDS – OTTER BOARDS ATTACHED TO LATERAL SIDES
- SIDE ANGLES PRODUCED TO EXPANDED NET WEBBINGS – WINGS
- TOW LINE – WARP

OTTER TRAWL

- SLOPING PLATFORM BETWEEN BODY OF NET AND STERN END OF SHIP
- TRAWL NETS WITH OUT OTTER BOARDS OPERATED BY TWO BOATS - BULL TRAWLING

OTTER TRAWL

**SMOLOWITZ
FIGURE 3
(page 49)
A bottom
trawl.
Drawing
by Robin
Amaral.**



**OTTER
TRAWL**
©
drawn by Robin Amaral

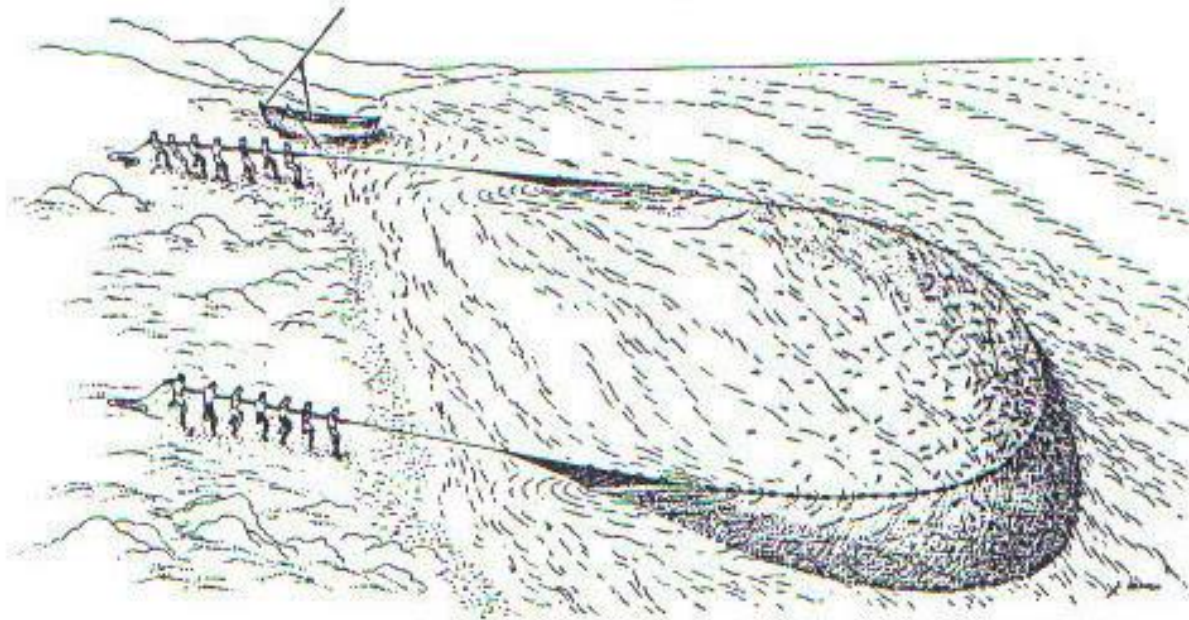
SEINE NETS

- LARGEST NETS USED
- PRINCIPLE USED – SURROUND A SHOAL OF FISH USING A WALL OF NET AND THEN TO FILTER – LEAD FISH TO A BAG AT THE CENTRE OF NET

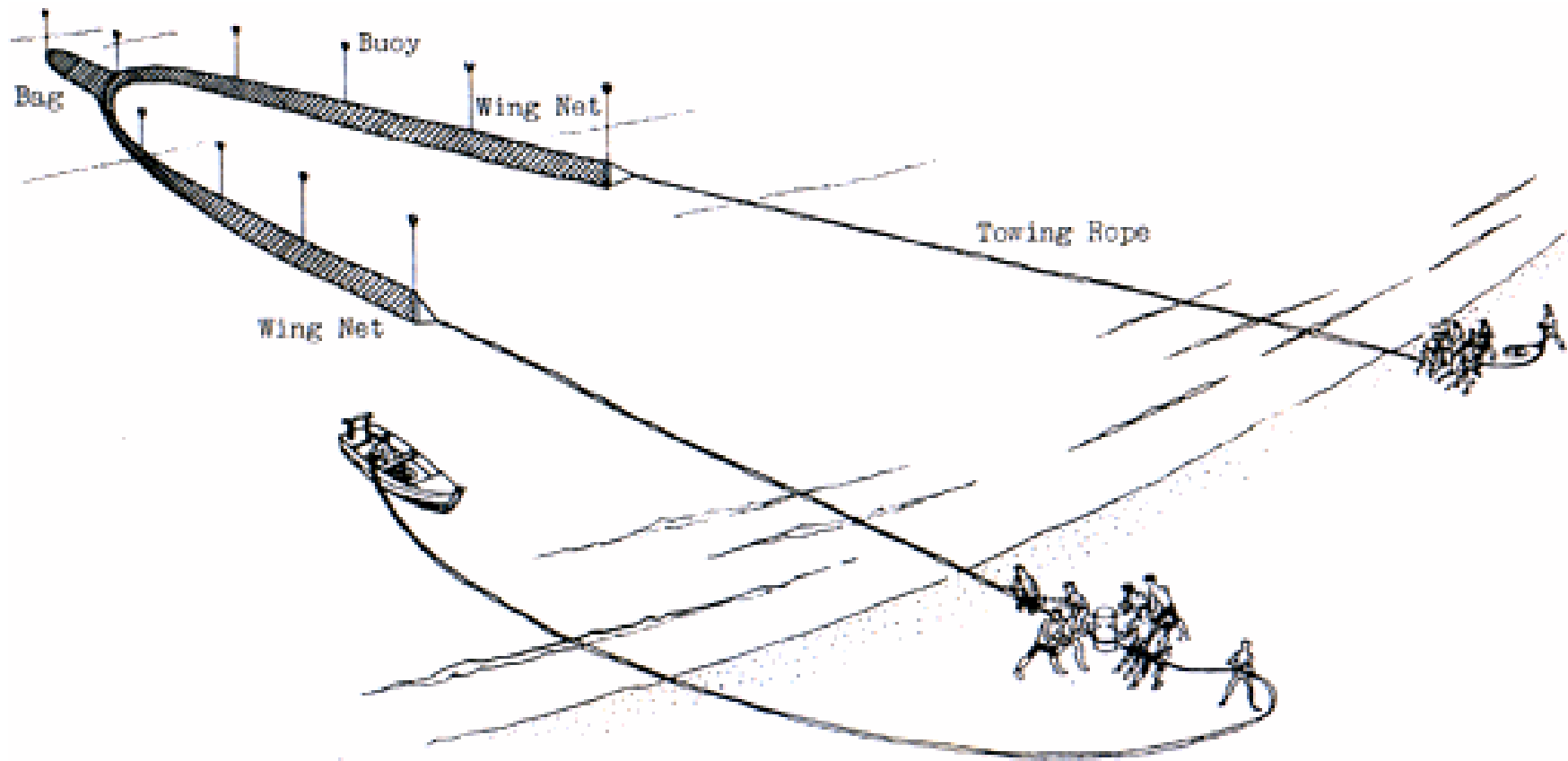
BEACH SEINE

- ❑ BEACH SEINE /SHORE SEINE OPERATED IN SHALLOW WATERS FROM SHORE
- ❑ LOWER EDGE WITH WEIGHTS AND UPPER EDGE WITH FLOATS
- ❑ ONE END FIXED ON SHORE OTHER END TAKEN TO SEA BY BOAT
- ❑ NET PULLED IN SEMICIRCLE FROM SHORE
- ❑ HAULING BY GROUP OF MEN

BEACH SEINE



BEACH SEINE



DRAG SEINE

- DRAG SEINE OR DANISH SEINE IS USED FOR FISHING IN DEEPER WATERS
- FLOAT ALWAYS REMAIN INSIDE WATER NEVER ON SURFACE
- WINGS ARE SMALL – WRAPS ALSO SEEN

PURSE SEINE

- ❑ MOST EFFICIENT GEAR TO CATCH PELAGIC FISHES
- ❑ NET IS 450M LONG AND 40-45 M DEEP WEIGHS 1.25 TO 1.5 TONNES
- ❑ LOADED IN LARGE BOAT WITH HIGH POWER ENGINES
- ❑ SKIFF (SMALLBOAT) TAKEN ALONG WITH AMIN BOAT

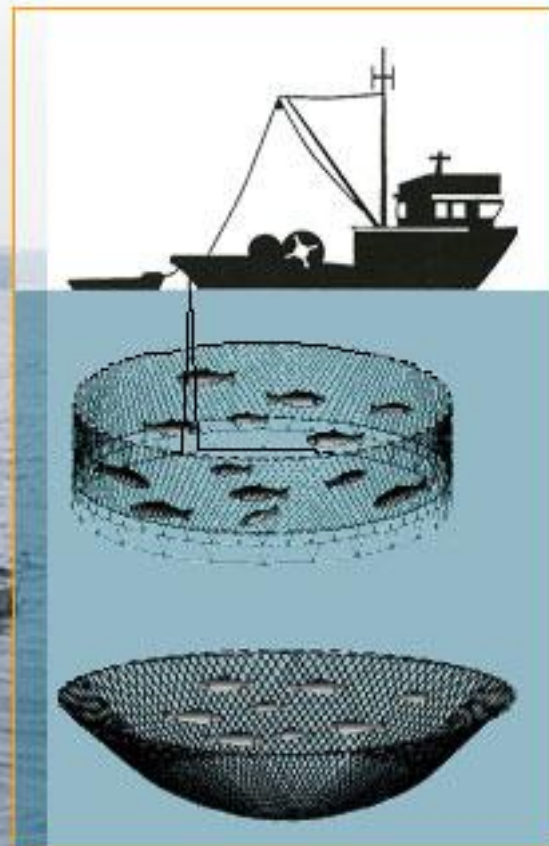
PURSE SEINE

- ❑ FLOAT ON UPPER LINE AND LEAD LINE ON BOTTOM
- ❑ NEVER TOUCHES BOTTOM
- ❑ PURSE IS A STRONG CABLE RUNNING THROUGH SERIES OF RINGS NEAR LEAD LINE
- ❑ FISH PREVENTED FROM ESCAPING BY PULLING THE PURSE LINE DURING HAULING - PURSE SEINE
- ❑ NO BAG AT END PART
- ❑ CENTRAL PORTION HAS THICKEST TWINES

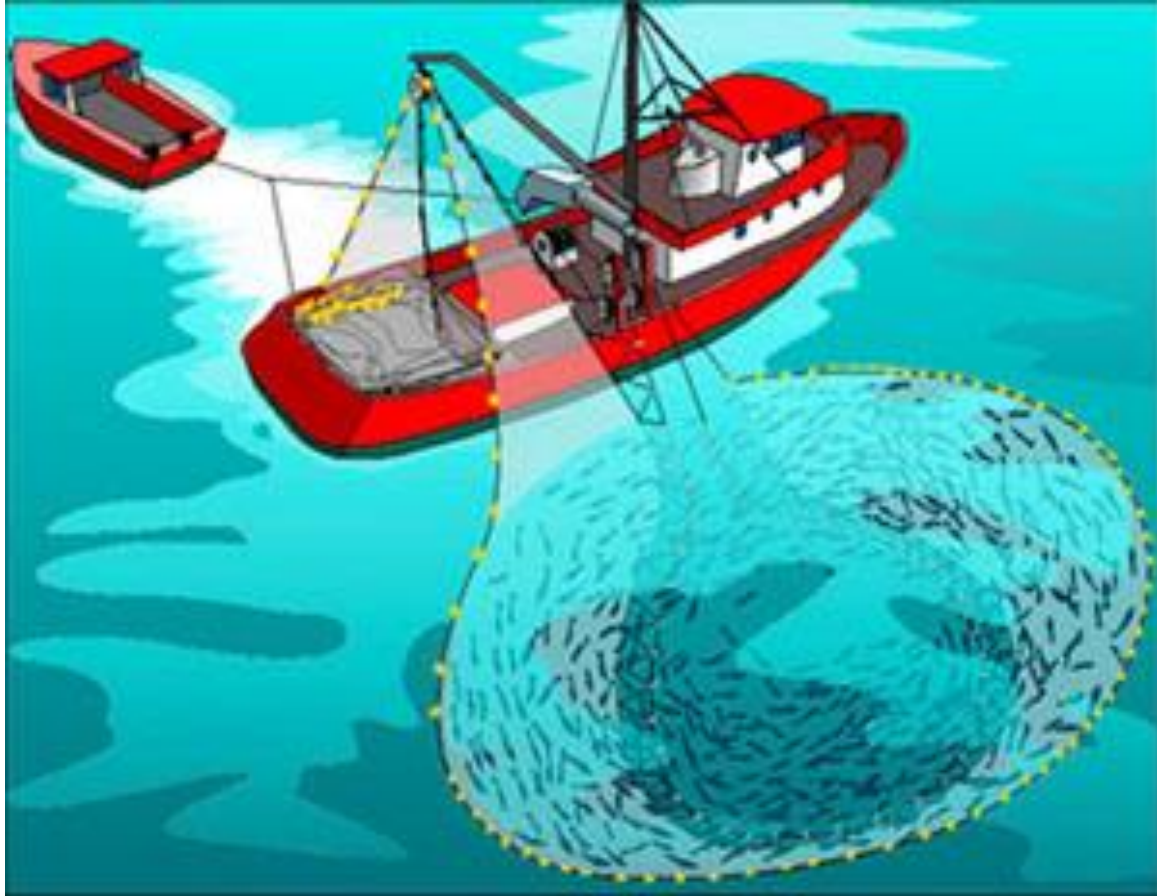
PURSE SEINE – OPERATION

- OPERATION COMPLETED IN 40-60 MINUTES
- SUCCESS RATE DEPEND ON
 1. DETECTION OF SHOAL
 2. SPEED OF VESSEL – SHOAL SPEED
 3. LEAD LINE SINKING TIME
 4. HEIGHT OF HAULING BEFORE PURSING
 5. STRENGTH OF TWINE
 6. MESH SIZE NOT TO GILL FISHES
 7. NATURE OF PURSE SEINE

PURSE SEINE



PURSE SEINE



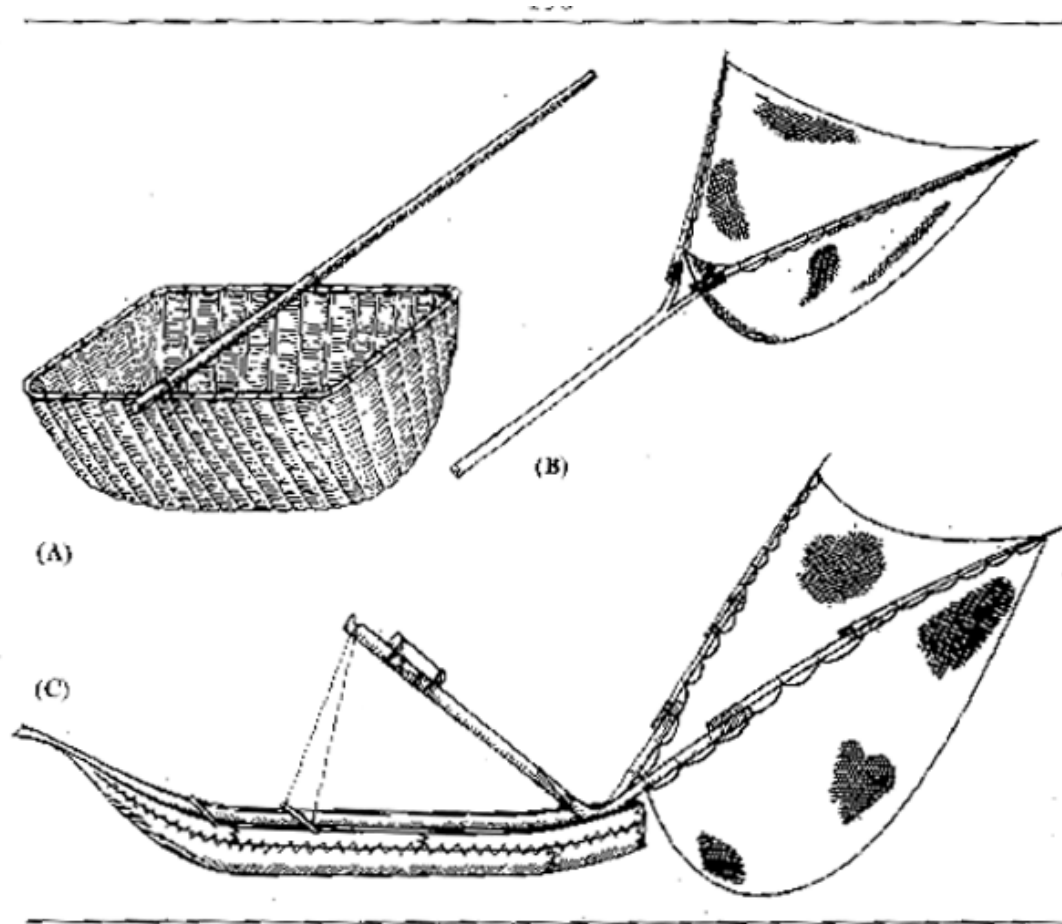
CAST NET



CAST NET



DIP NET



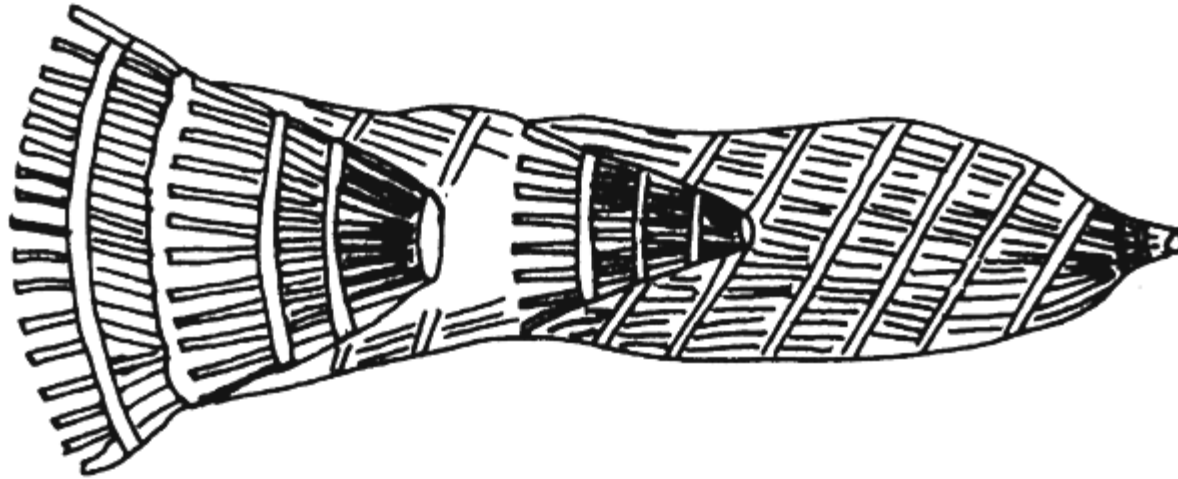
CHINESE DIP NET



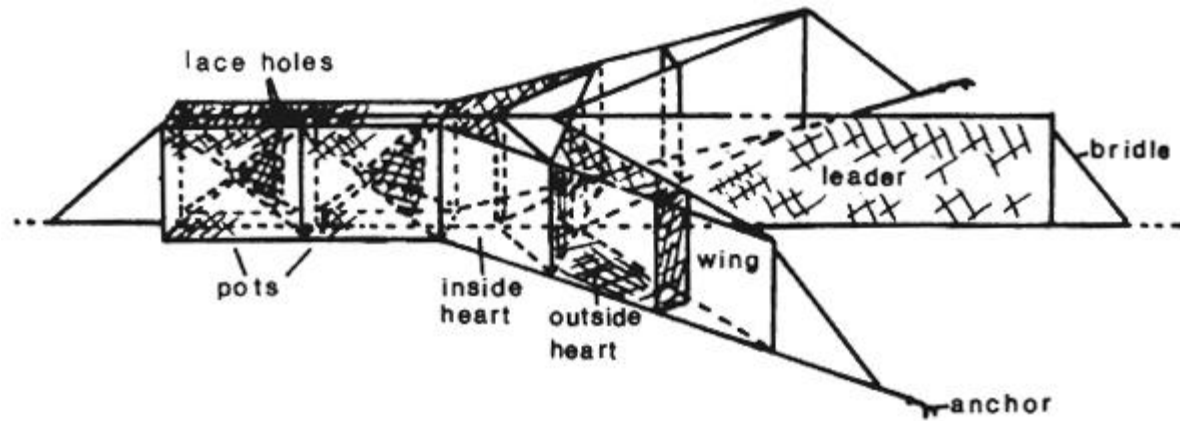
CHINESE DIP NET



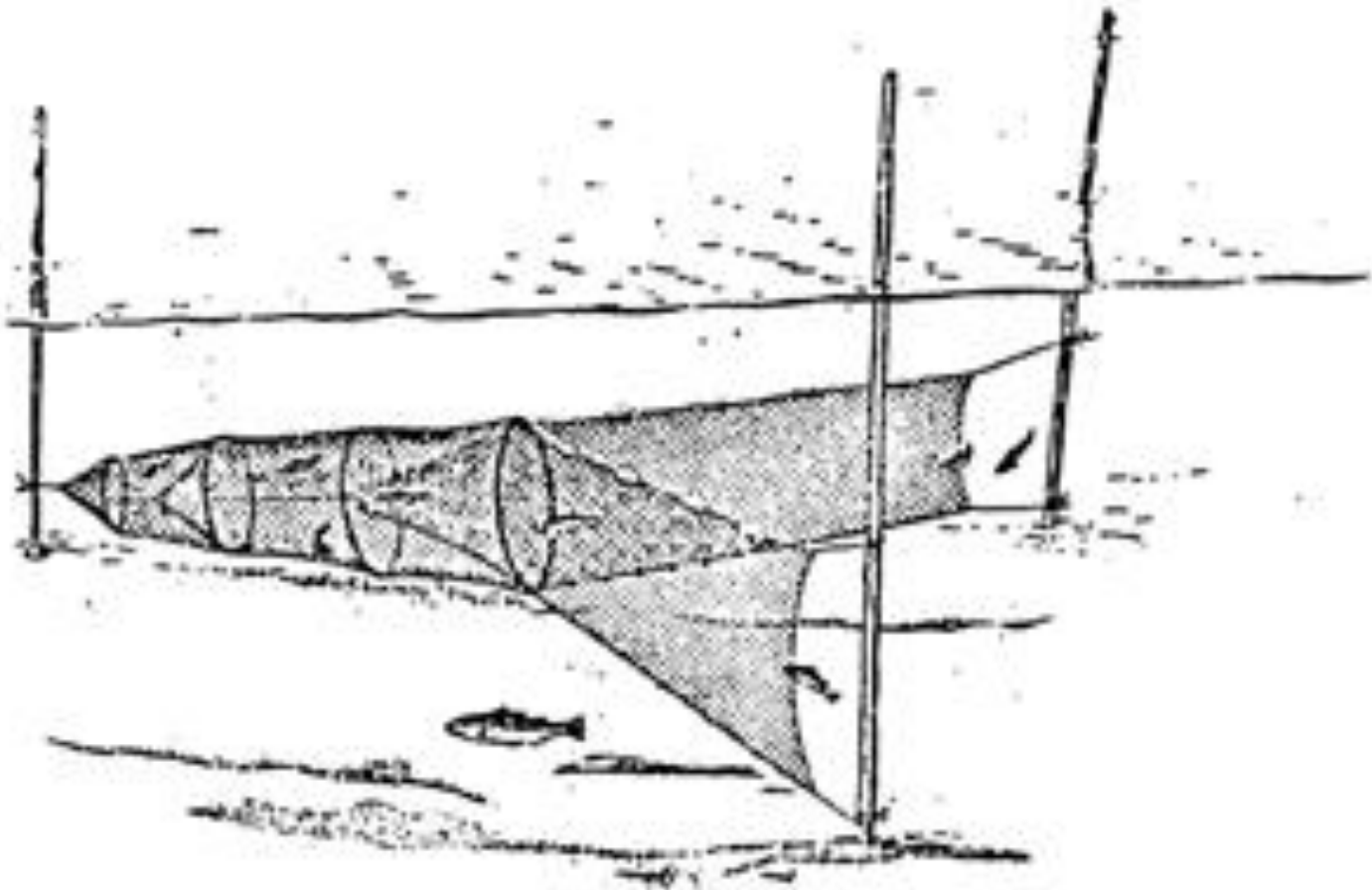
TRAP NETS – BASKET TRAP



POUND NET



FYKE NET



HOOK & LINES



HOOK



HARPOONING



HARPOON



HARPOONING



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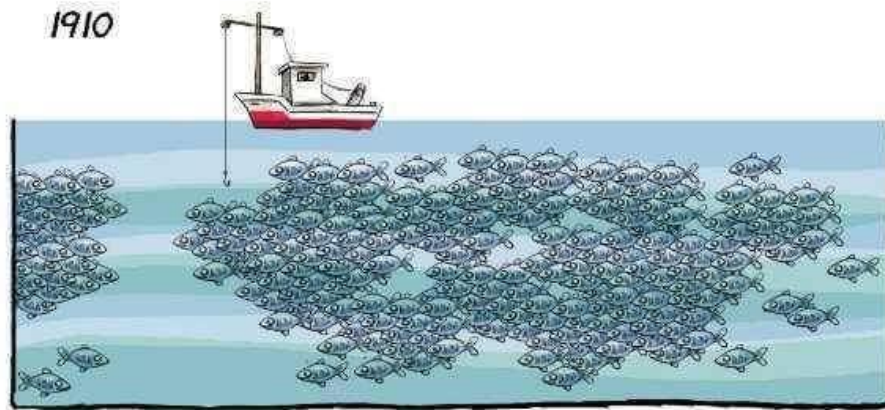
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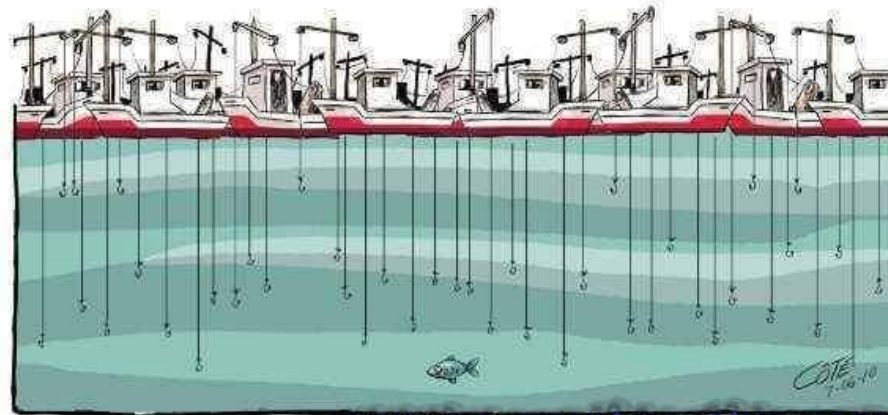


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