

Marine Reserves

Marine Protected Areas

No-Take Zones

Closed Areas

Open Access fishing leads to smaller size fish

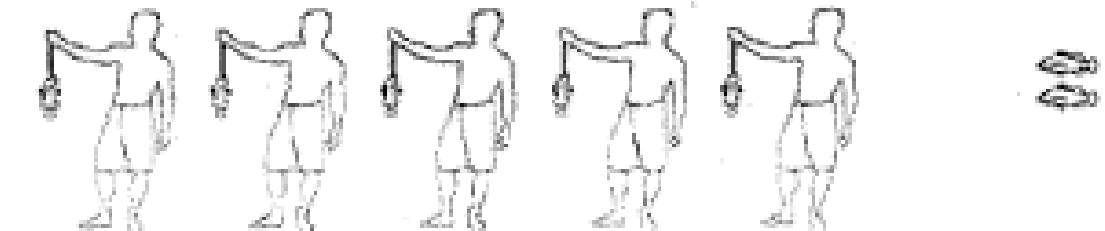
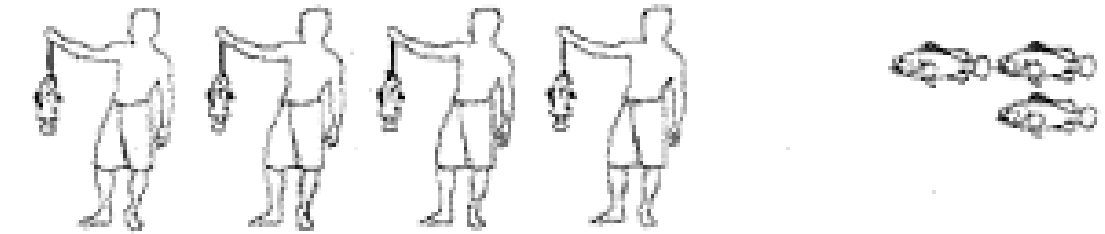
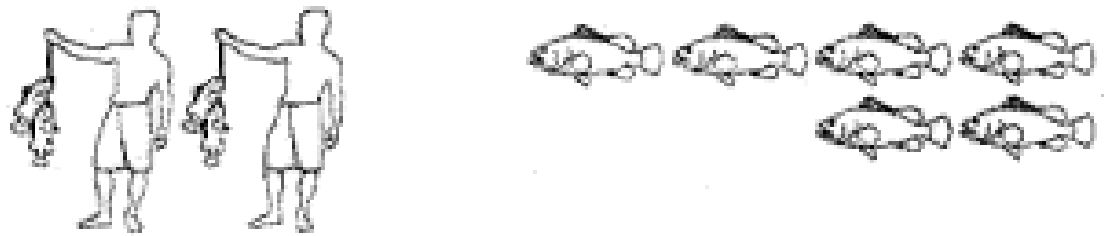
Permanent closed areas leads to:

- bigger size fish
- more abundant fish
- greater egg production

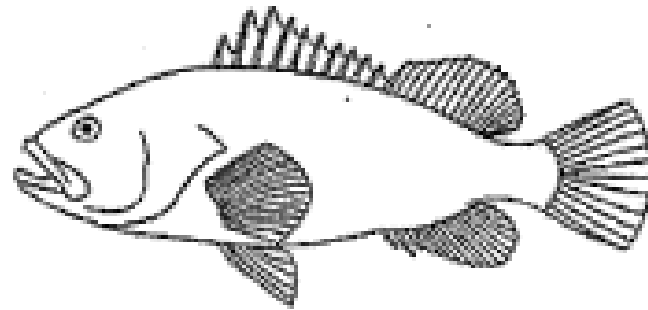
Presentation on Marine Reserves

- No-take zones or closed areas
- Best if permanent rather than temporary
- How do they work?
 - Protect habitat or critical life stages - spawning grounds (grouper aggregations)
 - Bigger fish produce more eggs than smaller fish of same weight
 - spillover effect - crowding causes fish to leave area and be caught by fishers
 - reserve effect - bigger more abundant fishes
 - recruitment effect - more larval export

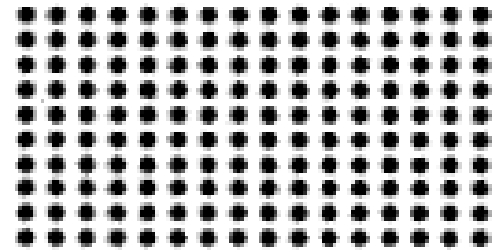
Relationship
between Number
of Fishers
(effort) and Size
and Abundance
of Fish (catch)



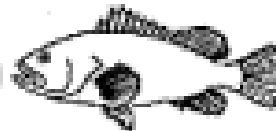
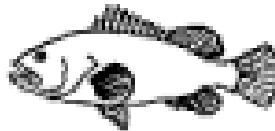
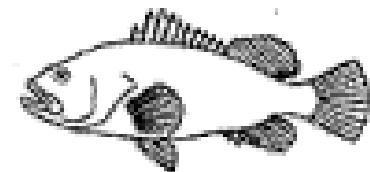
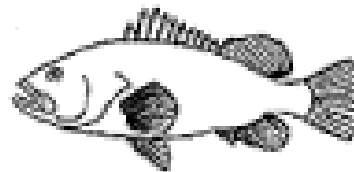
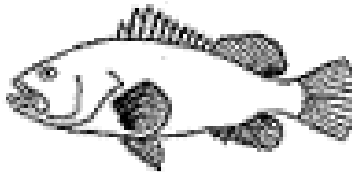
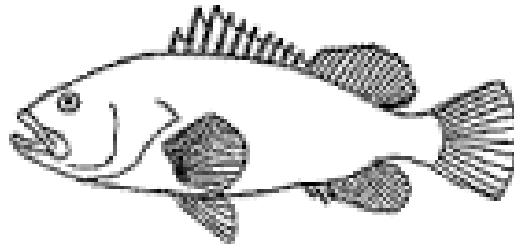
Relationship between Fish Size and Egg Production



One large fish = many eggs



Many small fish = few eggs



Immature fish (not of breeding age) = no eggs



Presentation on Marine Reserves

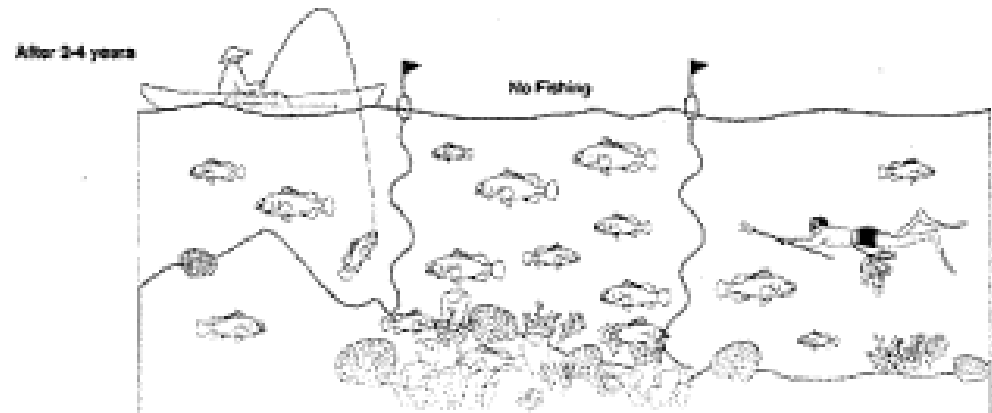
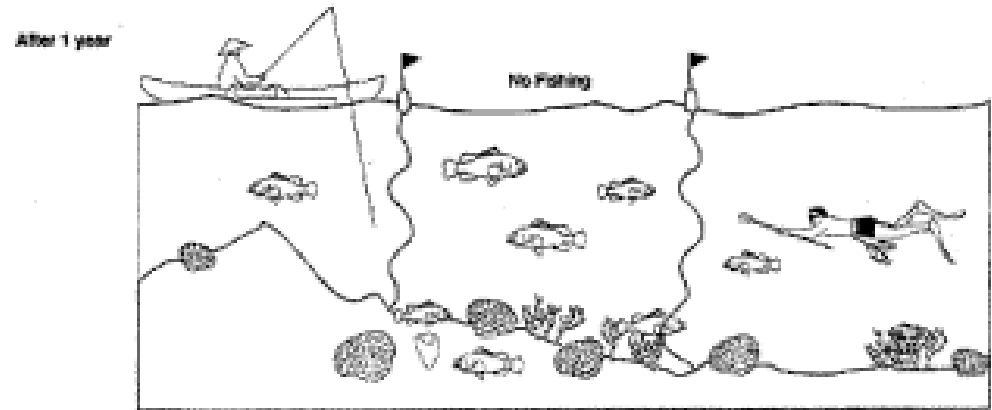
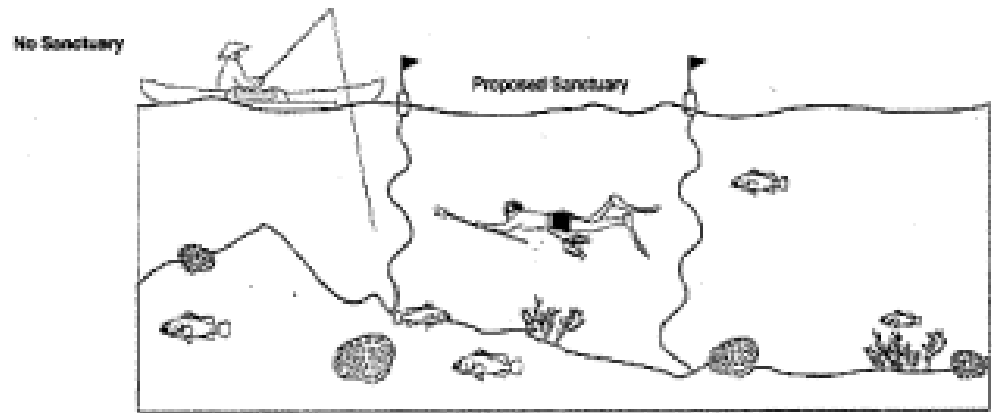
- Can be any size - big or small - best if not so big
-long distance to get to fishing area (but for species with large range bigger is better)
- Can be any shape - lots of perimeter is best
- Use physical geographic features for boundaries
- points, river mouth, hill, islands - so easy to know if inside or outside
- Not the best fishing zone or only a small part of it
- Select location that makes it easier to enforce

Presentation on Marine Reserves

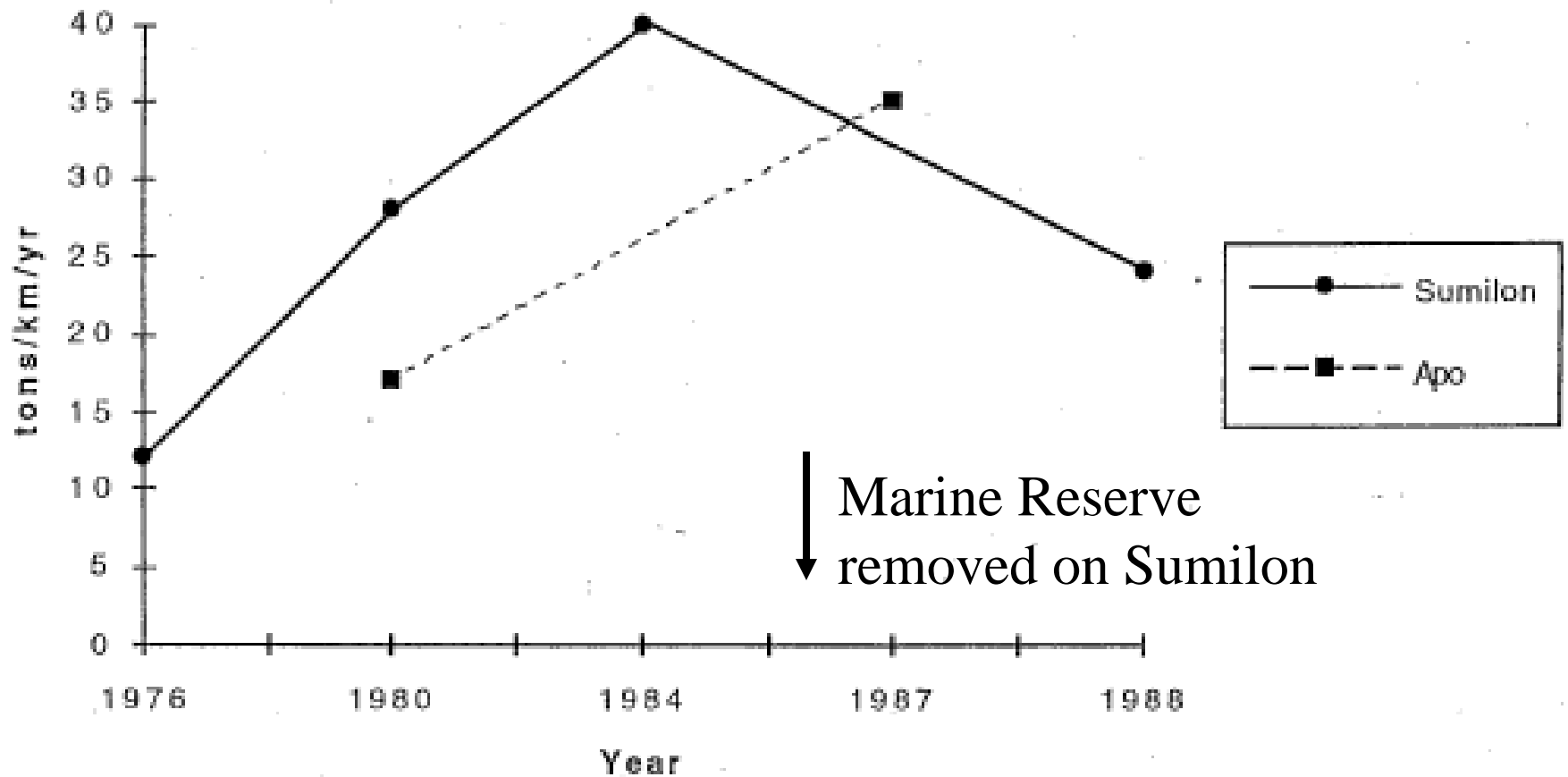
- Critical spawning locations or habitats, or critical life stages area
- High level of bio-diversity
- Representative of habitats and ecosystems in the region
- 20 % of area for fisheries management
- Source Reefs/Areas and Sink Reefs/Areas
- Not affected by external threats (e.g pollution)

What happens when
a Marine Reserve is
put in place?

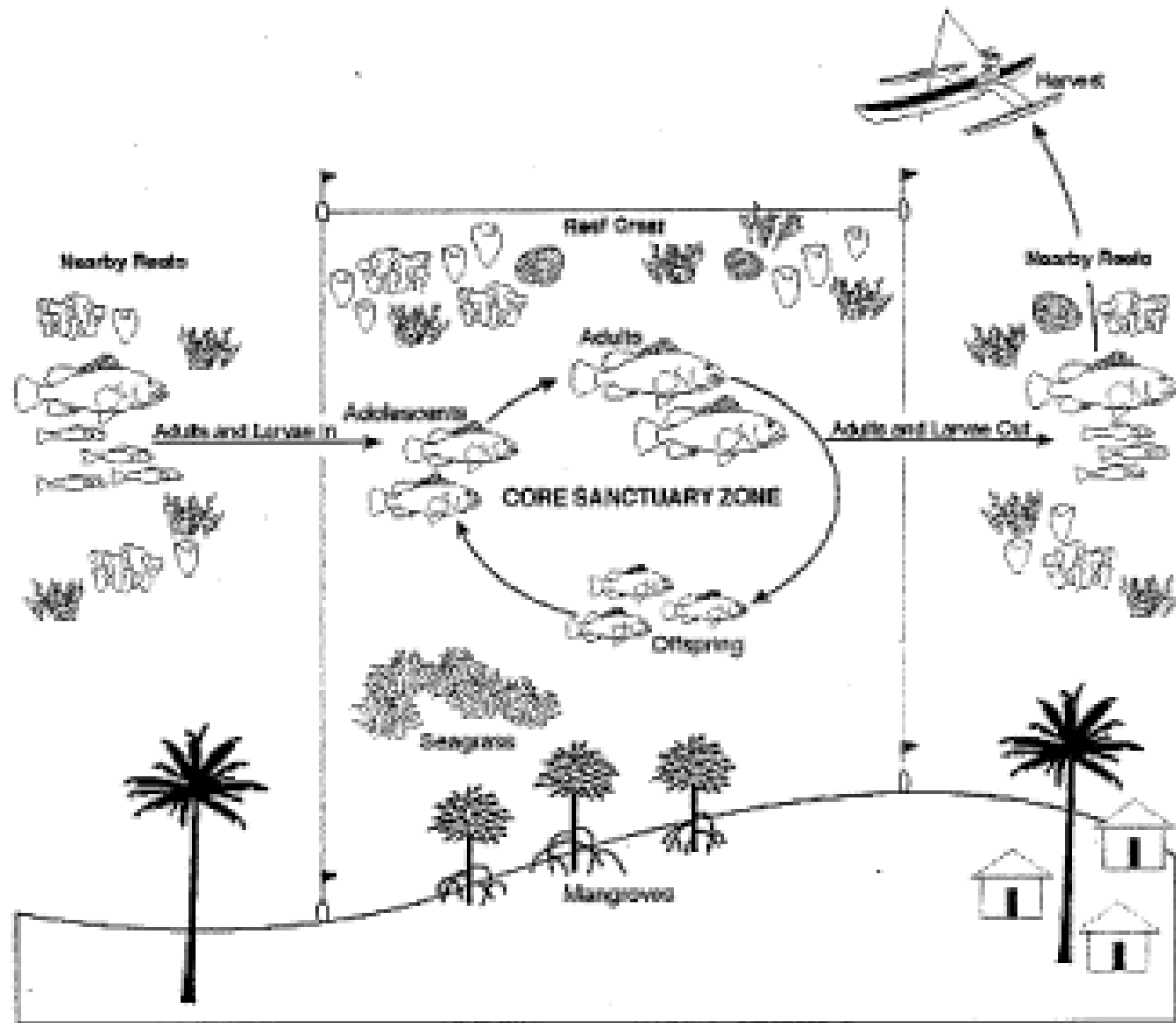
Changes over time



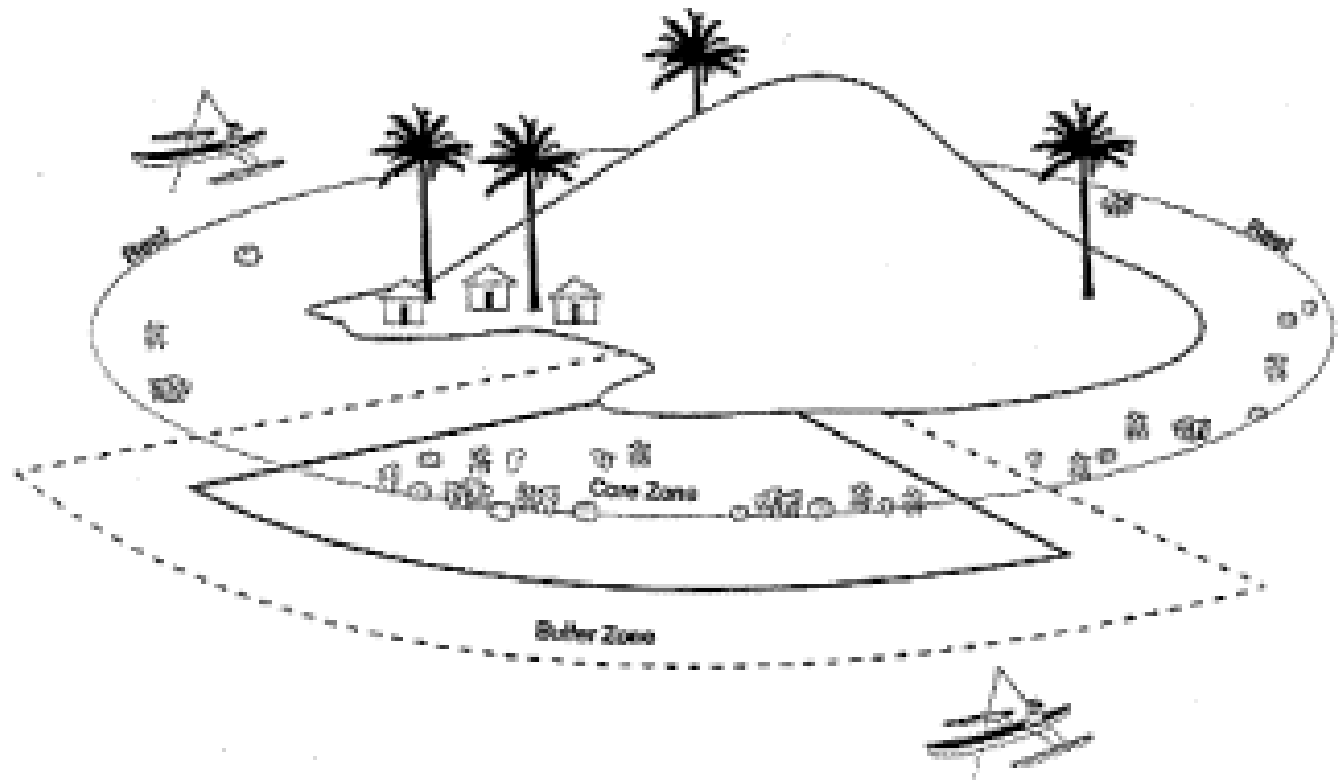
Change in Fish Catches on Philippine Marine Reserves



Source and Sink Reefs



Typical Sanctuary as part of a small island



Marine Reserve
as part of a
larger coastal
management
system

