



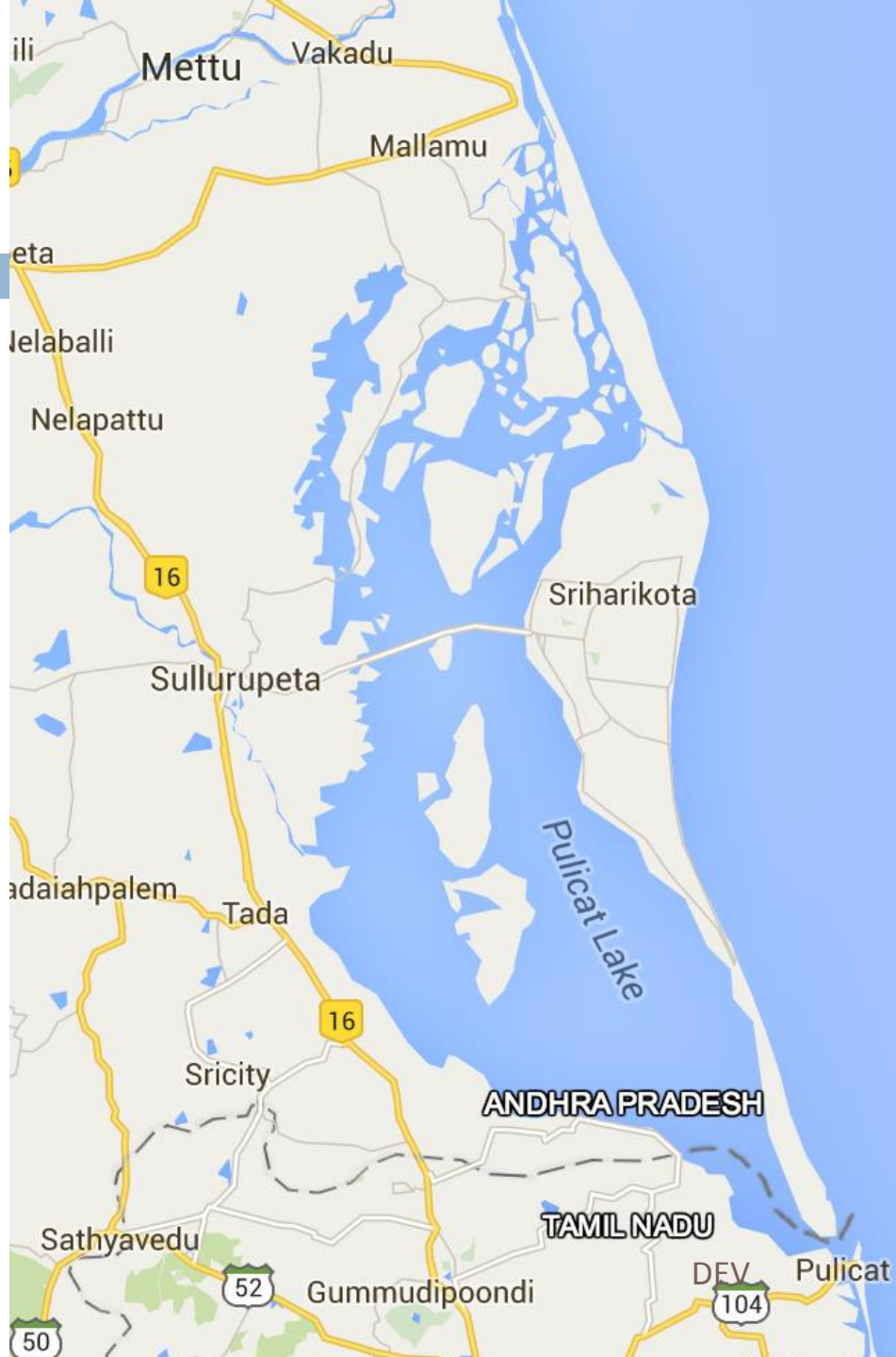
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Session 22

PULICAT LAKE

Pulicat Lake

- It is the second largest brackishwater lagoon in India. It is located along the south-east coast of India between Andhra Pradesh and Tamil Nadu. Earlier, it had a water spread area of 461 km² with an average depth of about 1.5 m, but now it has shrunk to 350 km² with a depth of less than about one metre, chiefly due to siltation of the lagoon.
- Major portion of the lake is situated in the Nellore district of Andhra Pradesh and the rest in Thiruvallur district of Tamilnadu, where it is connected to the Bay of Bengal by a narrow mouth near the Pulicat village. The drainage area of the lake is 4,400 km² (more than 77,700 ha) and is highly productive giving an annual yield of about 1100 tonnes.



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- There are three monsoonal rivulets that flow into the lagoon viz. Swarnamukhi, Kalangi and Arni. The Buckingham canal (East Coast Canal) flows through the Pulicat Lake at its southern end, near the Pulicat town.
- In addition to several mud-flats (some in the form of uninhabited islands), there are large islands viz. Sriharikota, Venaadu and Irukkam.

Fish and Fishery

- Penaeid prawns constitute a major fishery in Pulicat Lake. Since prawns are highly priced and exported, the whole fishing pressure is on prawns in this lake.
- There are 12 species of penaeid prawns which include *F. indicus* (white prawn), *P. monodon* (tiger prawn), *P. semisulcatus* (green prawn), *P. canaliculatus* (striped prawn), *P. japonicus* (kuruma prawn), *P. latisulcatus*, *P. merguensis* (banana prawn), *Metapenaeus monoceros* (speckled prawn), *M. dobsoni*, *M. affinis*, *M. brevicornis* (yellow prawn) and *M. burkenroadi*.
- Of the two exportable prawn species, *Penaeus indicus* is plenty in this lake which serves as an ideal nursery for this species. However, *P. monodon* is declining in numbers.^{DEV}

- It has a rich diversity of 29 species of crabs from marine, brackishwater, freshwater and terrestrial. Of these, the crabs, *Scylla serrata*, *S. tranquebarica* and *Portunus pelagicus* are highly abundant occurring all over the lake throughout the year. Indeed, Pulicat Lake is the largest producer of mud crabs among the various brackishwater bodies in India. Usually, non-padu fishermen are engaged in crab fishing in this lake.
- The **edible oyster (*Crassostrea madrasensis*) which is a keystone species** here, is the most extensively distributed bivalve in this lake. In addition to this oyster, mud clam, *Meretrix casta* and blood clam, *Anadora granosa* are also common in this lake. The pearl oyster, *Pinctada vulgaris* occurs sparingly.



Edible oyster (*Crassostrea madrasensis*)

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- A total of 168 species of finfishes have been recorded from this lake which include 1 shark species, 3 ray species, 164 species of teleosts (15 - Clupeiformes, 9 - Cypriniformes, 4 - Anguilliformes, 5 - Beloniformes, 1 - Syngnathiformes, 3 - Cyprinodontiformes, 8 - Mugiliformes, 1 - Polynemiformes, 95 - Perciformes, 1 - Mastacembeliformes and 15 - Tetraodontiformes).
- In fact, Pulicat lake is ideally suited for this edible oyster. The Pulicat lake fishery mainly consists of mullets, perches, clupeids, catfishes, prawns and crabs. Prawns and crabs constitute more than 50% of the catch, mullets (18-22%), perches (7.5 – 13%) and clupeids (6-10%). Perches form the valuable component of the fishery due to good taste and flavour. Most common species of perches are *Sillago sihama*, *Gerrus* spp. *Chrysophys* spp. *Lates calcarifer*, *Siganus* spp., *Etroplus* spp., *Therapon jarbua*, *Lutjanus* spp. and *Leiognathus* spp. The southern sector of this lake is more productive than the northern part.

Padu fishing system

- System of fishing followed in Pulicat Lake is called 'Padu system' in which fishermen from one village operate nets in anyone of the '**Padus**' (**fishing grounds**) or in all the padus simultaneously during the day allotted to them.
- The days are so arranged that each village gets the opportunity to fish in the areas specified for at least 2 days in a week by rotation. 'Padus' are fishing areas varying in **depth from 1 to 3 m**.

Fishing gears used

- In addition to hand picking, encircling stake net and cast net are used for prawn fishing.
- Long lines and scoop nets are used for crab fishing.
- The fishing gears like bag net, drag net, shore seine, hook and line are commonly employed for fishing.

Conservation and management

- Fish catch from Pulicat Lake is dependent on the ingress of fish and prawn seed from the sea. However, the sand bar formed at the mouth adversely affects recruitment.
- Further, in a nursery like Pulicat Lake, growing juveniles need to migrate but fishermen in the northern regions of the lake, lay fine meshed stake nets, right across the width of the lake, and retain such nets continuously for days together which result in the catch of prawns of all sizes, not allowing the juveniles to migrate and grow.

- In addition, coolant water from North Chennai Thermal Power Station, aqua farms, salt pans, growing fishermen population in this region, hand picking juvenile prawns by the tribal women and non-fishermen lured by the lucrative prawn export trade affect both the habitat and species diversity and abundance.
- This unethical and unscientific method of prawn fishing and anthropogenic activities that harm the lake fishery need to be monitored and controlled.