

## **BRIEF DOCUMENT OF KATTAMPALLY- VALAPATTANAM-KUPPAM**

**State / Union Territory:** Kerala

**Name and address of person(s) compiling this information:**

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**Section 1: Identification, Location and Jurisdiction**

- 1.1 Name of the Wetland (Alternative names, including in local language should be given in parenthesis after official name)

**Kattampally - Valapattanam - Kuppam wetland complex**

- 1.2 Name of the Village(s), Tehsil (s), Municipal area (s)

**Villages :** Azhikode, Cherukunnu, Chirakkal, Elayavur, Ezhome, Kannapuram, Madai, Matool, Munderi, Narath, Pappinisseri, Valapattanam, Valiyannur, Chelery, Kolacheri, Maniyur, Morazha, Pariyaram, Pattuvam and Talipparambu

**Taluks :** Kannur and Taliparamba

**Panchayats :** Azhikode, Cherukunnu, Chirakkal, Ezhome, Kannapuram, Madai, Matool, Munderi, Narath, Pappinisseri, Chirakkal, Kuttiyathur, Kolacheri, Maniyur, Pariyaram, Pattuvam, Kannadiparamba and Talipparambu

**Municipalities :** Taliparamba Municipality

**Corporation :** Kannur Corporation

- 1.3 Name of the District(s) in which wetland complex is located

**Kannur**

- 1.4 Geographical coordinates (Latitude and Longitude, to degree, minutes and second)

Latitude: From **11°53'13.673"N** to **12°3'9.994"N**

Longitude: From **75°15'35.777"E** to **75°26'46.177"E**

- 1.5 Name of the Department / Agency which has jurisdiction over the wetland / wetlands complex

: The Local Self Governments, Irrigation Department, Kerala Coastal Zone Management Authority and State and Wetland Authority Kerala

**Section 2: Site Characteristics**

2.1 Area of wetland : **5061.71 Ha**

2.2 Wetland type (Please tick appropriate categories and sub-categories)

Category	Subcategory
<input type="checkbox"/> Natural (Inland)	<input type="checkbox"/> Permanent lakes <input type="checkbox"/> Seasonal/ intermittent lakes <input type="checkbox"/> Permanent streams/ creeks <input type="checkbox"/> Seasonal/ intermittent streams/ creeks <input type="checkbox"/> Oxbow <input type="checkbox"/> River floodplain <input type="checkbox"/> Permanent freshwater marshes <input type="checkbox"/> Seasonal/ intermittent freshwater marshes <input type="checkbox"/> Shrub-dominated wetlands <input type="checkbox"/> Tree-dominated wetlands <input type="checkbox"/> Geothermal wetlands <input type="checkbox"/> Karst and other subterranean hydrological systems
<input checked="" type="checkbox"/> Natural (Coastal)	<input type="checkbox"/> Coastal lagoon <input checked="" type="checkbox"/> Estuary <input checked="" type="checkbox"/> Intertidal mud, sand or salt flats <input checked="" type="checkbox"/> Mangroves <input type="checkbox"/> Coral reefs
<input type="checkbox"/> Human-made	<input type="checkbox"/> Aquaculture pond <input type="checkbox"/> Tank <input type="checkbox"/> Saltpan <input type="checkbox"/> Dam / Reservoir

2.3 Depth (m) : No data available

2.4 Elevation (above mean sea level) : 0 to 1420 m (Including Zone of Influence)

2.5 Water regimes

a) Main source of water (tick all applicable)

Rainfall                       Groundwater                       Catchment runoff     Direct /  
indirect inflow from river                       others, please specify \_\_\_\_\_

b) Water permanence

Mostly permanent                       Mostly intermittent

c) Destination of water from wetland

Feeds groundwater     To downstream catchment     To river                       To sea

d) Water pH

Acid (< 5.5)                       Circumneutral (5.5 – 7.4)                       Alkaline (> 7.4)                       Not known

e) Water salinity

Fresh (< 0.5 g/l)                       Brackish (0.5 – 30 g/l)                       Euhaline (30- 40 g/l)                       Hypersaline (>40g/l)                       Not known

f) Nutrient in water

Eutrophic                       Mesotrophic                       Oligotrophic                       Not known

## 2.6 Climatic setting

a) Annual Rainfall /Snowfall(mm): 3438

b) Temperature (°C): Minimum: 25.0, Maximum: 34.3

c) Humidity (%): Minimum: 77, Maximum: 88

2.7 Area of zone of influence (in ha) : 178564.45

2.8 Major land use within zone of influence (provide as approximate % of catchment area)

Forests : 15.62

Plantation : 1.85

Agriculture : 41.06

Settlements (Rural & Urban) : 38.87

Water Boady : 2.55

Industrial : 0.05

2.9 Map of wetland complex and zone of influence: (To be enclosed as Annex I and II to this proposal)

### Section 3: Biodiversity

#### 3.1 Notable plant species present in wetland

**Macrophytes:** *Urena lobata*, *Phyllanthus amarus*, *Ixora coccinea*, *Hyptis suaveolens*, *Hygrophila ringens*, *Fimbristylis ferruginea*, *Cyperus castaneus*, *Pandanus candelabrum*, *Pandanus odorifer*, *Derris trifoliata*, *Wedelia trilobata*, *Crinum viviparum*, *Cerbera odollam*, *Fuirena umbellata*, *Corchorus olitorius*, *Hyptis suaveolens*, *Ammania baccifera*

**Mangroves:** *Avicennia officinalis*, *Rhizophora mucronata*, *Rhizophora apiculata*, *Aegiceras corniculatum*, *Sonneratia caseolaris*, *Excoecaria agallocha*, *Bruguiera cylindrica*, *Kandelia candel*, *Lumnitzera racemosa*, *Acanthus ilicifolius*, *Acrostichum aureum*.

**Hydrophytes:** *Nymphaea nouchali*, *Eichhornia crassipes*, *Marsilea sp*, *Nelumbo sp*, *Ceratopteris thalictroides*, *Urticularia aurea*, *Nymphaea sp*, *Hygrophila ringens* .

#### 3.2 Notable animal species present in wetland

**Fishes:** *Hyporhamphus xanthopterus*, *Anguilla bengalensis*, *Anguilla bicolor*, *Etroplus suratensis*, *Pseudetroplus maculatus*, *Hyporhamphus Xanthopterus*, *Puntis machecola*, *Mystus armatus*, *Elops machnata*, *Megalops cyprinoides*, *Anguilla bengalensis*, *Lycodontis tile*, *Thyrsoidea macrura*, *Lamnostoma orientalis*, *Congresox talabonoides*, *Muraenesox bagio*, *nematalosa nasus*, *Ethirva fluvialis*, *Stolephorus indicus*, *Chanos chanos*, *Puntius vittatus*, *Rasbora daniconius*, *Horabagrus brachysoma*, *Mystus cavasius*, *Mystus vittatus*, *Arius arius*, *Liza microlepis*, *Liza parsia*, *mugil siphilis*, *Rhinomugil corsula*, *Horaichthys setnai*, *Strongylura strongylura*, *Xenentodon cancella*, *Hyporhamphus limbatus*, *Aplocheilus blockii*, *Ophisternon bengalense*, *Platycephalus cantori*, *Lates calcarifer*, *Ambassis commersoni*, *Ambassis nalua*, *Parambassis dayl*, *Epinephelus tauvina*, *Sillago sihama*, *Alepes para*, *Carangoides praeustus*, *Gazza minuta*, *Lutjanus argentimaculatus*, *Gerres abbreviatus*, *Eleutheronema tetradactylum*, *Polydactylus sextarius*, *Daysciaena albida*, *Johnius belangerii*, *Protonibea diacanthus*, *Nandua nadius*, *Etroplus maculatus*, *Terapon jarbua*, *Glossogobius giuris*, *Butis butis*, *Eleotris fusca*, *Taenioides anguillaris*, *Trypauchen vagina*, *Scatophagus argus*, *pseudosphromenus cupanus*, *Cynoglossus macrostomus*, *Euryglossus orientalis*, *Chelonodon fluviatilis*, *Thryssa mystax* and *Lutjanus johnii*.

**Shrimps:** *Penaeus indicus*, *Penaeus monodon*, *Penaeus semisulcatus*, *Metapenaeus monoceros*, *Metapenaeus dobsoni*, *Metapenaeus affinis*, *Macrobrachium rosenbergii*, *Macrobrachium scabriculum*, *Macrobrachium idella*.

**Crabs:** *Charybdis lucifera*, *Portunus pelagicus*, *Scylla serrata*, *Scylla tranquebarica*, *Metopograpsus messor*, *Clistocoeloma merguiens*, *Parasesarma plicatum*, *Varuna litterata*, *Uca virans excise*, *Uca inversa inversa*, *Ocypode sp*, *Dotilla sp*, *Neosarmatium smithi*, *Neosarmatium malabaricum*.

**Molluscs:** *Meretrix meretrix*, *Paphia malabarica*, *Neritina violacea*, *Littorina scabra*, *Cerithidea cingulata*, *Telescopium telescopium*, *Thiara tuberculata*, *Onchidium verruculatum*, *Crassostrea madrasensis*, *Saccostrea cucullata*, *Meretrix meretrix*, *Paphia malabarica*.

**Frogs:** *Minervarya sahyadris*, Skipper Frog, Indian Pond Frog,

**Reptiles:** Indian Black Turtle, Indian Flap Shell Turtle, Indian Pond Terrapin, Common Sand Boa, Skink, Monitor Lizard.

**Mammals:** Smooth-coated Otter

**Birds:** *Dendrocygna javanica*, *Tadorna ferruginea*, *Nettapus coromandelianus*, *Spatula querquedula*, *Spatula clypeata*, *Mareca Penelope*, *Anas poecilorhyncha*, *Anas acuta*, *Anas crecca*, *Aythya nyroca*, *Aythya fuligula*, *Pavo cristatus*, *Galloperdix spadicea*, *Tachybaptus ruficollis*, *Columba livia*, *Streptopelia tranquebarica*, *Streptopelia chinensis*, *Chalcophaps indica*, *Treron affinis*, *Treron phoenicopterus*, *Entopus sinensis*, *Phaeniciphaeus viridirostris*, *Clamator jacobinus*, *Eudynamys scolopaceus*, *Cacomantis sonneratii*, *Cacomantis passerines*, *Hierococcyx varius*, *Cuculus canorus*, *Hirundapus giganteus*, *Aerodramus unicolor*, *Apus melba*, *Apus affinis*, *Cypsiurus balasiensis*, *Lewinia striata*, *Gallinula chloropus*, *Fulica atra*, *Porphyrio poliocephalus*, *Amaurornis phoenicurus*, *Zapornia fusca*, *Himantopus himantopus*, *Pluvialis squatarola*, *Pluvialis fulva*, *Vanellus malabaricus*, *Vanellus indicus*, *Charadrius mongolus*, *Charadrius leschenaultia*, *Charadrius alexandrinus*, *Charadrius dubius*, *Rostratula benghalensis*, *Hydrophasianus chirurgus*, *Metopidius indicus*, *Numenius phaeopus*, *Limosa limosa*, *Calidris pugnax*, *Calidris ferruginea*, *Calidris temminckii*, *Calidris subminuta*, *Calidris minuta*, *Gallinago gallinago*, *Gallinago stenura*, *Actitis hypoleucos*, *Tringa ochropus*, *Tringa nebularia*, *Tringa stagnatilis*, *Tringa glareola*, *Tringa tetanus*, *Chlidonias hybrida*, *Sterna hirundo*, *Sterna aurantia*, *Anastomus oscitans*, *Ciconia episcopus*, *Mycteria leucocephala*, *Anhinga melanogaster*, *Microcarbo niger*, *Phalacrocorax fuscicollis*, *Ixobrychus cinnamomeus*, *Ixobrychus flavicollis*, *Ardea cinerea*, *Ardea purpurea*, *Ardea alba*, *Ardea intermedia*, *Sgretta garzetta*, *Egretta gularis*, *Bubulcus ibis*, *Ardeola grayii*, *Butorides striata*, *Nycticorax nycticorax*, *Plegadis falcinellus*, *Threskiornis melanocephalus*, *Pandion haliaetus*, *Elanus caeruleus*, *Pernis ptilorhynchus*, *Spilornis cheela*, *Nisaetus cirrhatu*, *Clanga hastata*, *Clanga clanga*, *Hieraaetus pennatus*, *Aquila nipalensis*, *Aquila heliaca*, *Circus aeruginosus*, *Circus pygargus*, *Accipiter trilineatus*, *Accipiter badius*, *Accipiter nisus*, *Milvus migrans*, *Haliaeetus indus*, *Haliaeetus leucogaster*, *Otus bakkamoena*, *Glaucidium radiatum*, *Upupa epops*, *Alcedo atthis*, *Pelargopsis capensis*, *Halcyon smyrnensis*, *Ceryle rudis*, *Merops orientalis*, *Merops philippinus*, *Coracias garrulous*, *Coracias benghalensis*, *Psilopogon haemacephalus*, *Psilopogon viridis*, *Jynx torquilla*, *Yungipicus nanus*, *Chrysocolaptes guttacratus*, *Micropternus brachyurus*, *Dinopium benghalense*, *Falco amurensis*, *Falco severus*, *Falco peregrinus*, *Psittacula krameri*, *Psittacula cyanocephala*, *Loriculus vernalis*, *Pericrocotus cinnamomeus*, *Pericrocotus flammeus*, *Lalage melanoptera*, *Oriolus kundoo*, *Oriolus chinensis*, *Oriolus xanthornus*, *Artamus fuscus*, *Tephrodornis pondicerianus*, *Aegithina tiphia*, *Dicrurus macrocercus*, *Dicrurus leucophaeus*, *Dicrurus aeneus*, *Dicrurus paradiseus*, *Hypothymis azurea*, *Terpsiphona paradise*, *Lanius cristatus*, *Hypothymis azurea*, *Terpsiphona paradise*, *Lanius cristatus*, *Lanius vittatus*, *Lanius schach*, *Dendrocitta vagabunda*, *Corvus splendens*, *Corvus macrorhynchos*, *Mirafra affinis*, *Calandrella dukhunensis*, *Alauda gulgula*, *Galerisa malabarica*, *Orthotomus sutorius*, *Prinia hodgsonii*, *Prinia socialis*, *Prinia inornata*, *Cisticola juncidis*, *Iduna caligata*, *Pellorneum ruficeps*, *Turdoides striata*, *Turdoides affinis*, *Pastor roseus*, *Sturnia pagodarum*, *Sturnia malabarica*, *Sturnia blythii*, *Acridotheres tritis*, *Geokichla citrina*, *Turdus simillimus*, *Muscicapa dauurica*, *Muscicapa muttui*, *Copsychus fulicatus*,

*Copsychus saularis*, *Cyornis tickelliae*, *Myophonus horsfieldii*, *Ficedula albicilla*, *Saxicola maurus*, *Saxicola caprata*, *Oenanthe isabellina*, *Dicaeum erythrorhynchos*, *Dicaeum concolor*, *Leptocoma zeylonica*, *Cinnyris asiaticus*, *Cinnyris lotenius*, *Chloropsis jerdoni*, *Chloropsis aurifrons*, *Ploceus manyar*, *Ploceus phillippinus*, *Lonchura striata*, *Lonchura punctulata*, *Lonchura Malacca*, *Passer domesticus*, *Gymnoris xanthocollis*, *Motacilla cinerea*, *Motacilla flava*, *Motacilla maderaspatensis*, *Motacilla alba*, *Anthus richardi*, *Anthus rufulus*, *Anthus godlewski*, *Anthus trivialis*, *Emberiza melanocephala*, *Emberiza bruniceps*, *Emberiza buchanani*, *Sarkidiornis melanotos*, *Ixobrychus sinensis*, *Ciconia ciconia*, *Zapornia pusilla*, *Ralina eurizonoides*, *Chroicocephalus genei*, *Ketupa zeylonensis*, *Ninox scutulata*, *Athene brama*

**Dragon flies:** *Aciagrion occidentale*, *Agriocnemis pygmaea*, *Ceriagrion cerinorubellum*, *Ceriagrion coromandelianum*, *Ischnura aurora*, *Pseudagrion microcephalum*, *Mortonagrion varralli*, *Brachythemis contaminata*, *Crocothemis servilia*, *Diplacodes trivialis*, *Neurothemis tullia*, *neurothemis fulvia*, *Orthetrum chrysis*, *Orthetrum sabina*, *Pantala flavescens*, *Rhyothemis variegata*, *Tholymis tillarga*, *Tramea limbata*, *Trithemis pallidinervis*, *Trithemis aurora*, *Urothemis signata*, *Ictinogomphus rapax*, *Anax guttatus*, *Gynacantha dravida* etc.

**Butterflies:** *Pachliopta aristolochiae*, *Pachliopta hector*, *Papilio polytes*, *Papilio polymnestor*, *Graphium sarpendon*, *Catopsilia pomona*, *Catopsilia pyranthe*, *Eurema hecabe*, *Leptosia nina*, *Cepora nerissa*, *Delias eucharis*, *Melanitis leda*, *Elymnias hypermnestra*, *Mycalesis perseus*, *Orsotriaena medus*, *Acraea violae*, *Neptis hylas*, *Euthalia aconthea*, *Ariadne merione*, *Junonia almana*, *Junonia atlites*, *Hypolimnas misippus*, *Tirumala limniace*, *Danaus chrysippus*, *Euploea core*, *Lampides boeticus*, *Jamides celeno*, *Curetis thetis*, *Hasora badra*, *Suastus gremius*, *Gangara thyrus*, *Telicota ancilla*, *Pelopidas mathias*

### 3.3 Species of conservation significance (rare, endangered, threatened, endemic species)

#### **Fishes:**

*Anguilla bengalensis*, *Anguilla bicolor* (NT)

*Hyporhamphus xanthopterus* (VU)

#### **Frogs:**

*Minervarya sahyadris* (EN)

#### **Reptiles:**

*Lissemys punctata* (VU)

*Eryx conicus* (NT)

#### **Mammals:**

*Lutrogale perspicillata* (VU)

#### **Birds:**

*Aquila nipalensis* (EN).

*Schoenicola striatus*, *Clanga clanga*, *Clanga hastata*, *Aquila heliaca*, *Schoenicola striatus* (VU).

*Mycteria leucocephala*, *Threskiornis melanocephalus*, *Sterna aurantia*, *Calidris ferruginea*, *Anhinga melanogaster*, *Limosa limosa*, *Ciconia episcopus* (NT)

### 3.4 Major plant invasive alien species

*Eichhornia crassipes*, *Mariscus javanicus*, *Wedelia trilobata*

3.5 Major animal invasive alien species  
No data available

#### Section 4: Ecosystem services

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (up to 50 words for each category)
Source of drinking water for people living and around	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-
Source of water for agriculture	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-
Fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Majority of the people depend on fishing as their livelihood. Kaippad fields had rich stocks of fish and fishing is the main occupation of many people. Farmers used to catch fish, crab, prawn etc. from Kaippad fields. Traditional methods of fishing using net, Chemeen Thappal (literally means searching for prawns with hands), using rod etc. are followed in Kattampally wetland area. Some common species in the area include <i>Scylla serrata</i> , <i>Chanos chanos</i> , <i>Puntius vittatus</i> , <i>Hyporhamphus limbatus</i> , <i>Aplocheilus blockii</i> , <i>Ambassis commersoni</i> , <i>Epinephelus tauvina</i> , <i>Macrobrachium rosenbergii</i>
Cultivation of aquatic food plants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	People are involved in Kaipad farming
For buffalo wallowing and use of domesticated animals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Farmers have livestock in their household
Medicinal plants	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Medicinal Plants like <i>Hygrophilla schulli</i> (The plant is used in traditional medicine to cure rheumatic arthritis, kidney infections, jaundice, oedema, gout and as an aphrodisiac), <i>Bacopa monnieri</i> (It is used for a variety of purposes, including improving memory, reducing anxiety, and treating epilepsy, it may boost brain function and alleviate anxiety and stress, among other benefits) etc were observed in the wetland
Buffering communities from extreme events as floods and storms	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not assessed quantitatively

Importance	Relevant for the site (please tick yes or no)	If Yes, Details (up to 50 words for each category)
Groundwater recharge	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not assessed quantitatively
Water purification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not assessed quantitatively
Acts as a sink for sediments	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Not assessed quantitatively
Has significant cultural and religious values	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Valapattanam is a major centre for timber trade and other expensive wood. Apart from its wood and wood-based industries, Valapattanam is known for mangrove forests, and has a fishing harbour.
Is a site for recreation and tourism	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8% of people depend on tourism as a livelihood activity. However, many people come there for recreation from the district as well as from far places. Munderi Kadavu bird sanctuary is an ornithologist's paradise. The Kerala government's first kayaking training centre is all set to be inaugurated for adventure seekers and tourists at Kattampally in Kannur. The kayaking academy of international standards is being set up under the aegis of the District Tourism Promotion Council (DTPC).
Supports noteworthy plants species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Even though it is a small land area, it supports a large variety of flora and fauna. The vegetation includes herbs, shrubs, trees and some common species in the wetland area include - <i>Acanthus ilicifolius</i> , <i>Urena lobata</i> , <i>Phyllanthus amarus</i> , <i>Ixora coccinea</i> , <i>Hyptis suaveolens</i> , <i>Avicennia officinalis</i> , <i>Rhizophora mucronata</i> (as mentioned in Section 3.1).
Supports noteworthy animal species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Being a designated Important Bird Area (IBA) by the Indian Bird Conservation Network (IBCN) and Birdlife International, some major birds identified in the wetland include - <i>Phalacrocorax niger</i> , <i>Egretta garzetta</i> , <i>Anastomus oscitans</i> , <i>Dendrocygna javanica</i> , <i>Elanuscaeruleus</i> , <i>Pandion haliaetus</i> , <i>Falco peregrinus</i> , <i>Gallirallus striatus albiventer</i> , <i>Hydrophasianus chirurgus</i> , <i>Pluvialis fulva</i> , <i>Gallinago stenura</i> (as mentioned in Section 3.2).



Importance	Relevant for the site (please tick yes or no)	If Yes, Details (up to 50 words for each category)
Site of high congregation of migratory water birds	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Kattampally-Valapattanam-Kuppam wetland complex area is estimated to have a bird population of over 18,000 birds, nearly 80 per cent of which are migratory birds. Munderi Kadavu, a region in Kattampally is home to nearly 200 species of birds, including 60 species of migratory birds.
Supports life cycle of fish or amphibians	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Support life cycles of amphibians like Common Indian Toad, Skipper Frog, Indian Pond Frog and various fish species like <i>Thryssa mystax</i> , <i>Lutjanus argentimaculatus</i> and <i>Lutjanus johnii</i> were recorded in Kattampally wetland.
Mining	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	-
Any other, please list		

#### Section 5: Pre-Existing Rights and Privileges

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
Community Fishing (without any lease or permission from government department)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	The Kaippad has rich stocks of fish and fishing is the main occupation of many people. Farmers used to catch fish, crab, prawn etc. from Kaippad. Traditional methods of fishing using net, Chemeen Thappal, using rod etc are followed in this wetland complex area. Common species in the area include <i>Scylla serrata</i> , <i>Chanos chanos</i> , <i>Puntius vittatus</i> , <i>Hyporhamphus limbatus</i> , <i>Aplocheilus blockii</i> , <i>Ambassis commersoni</i> , <i>Epinephelus tauvina</i> , <i>Macrobrachium rosenbergii</i> .
Fishing under lease from government department	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	-

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
Harvest of plants (without any lease or permission from government department)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Some medicinal plants are extracted for informal trade.
Harvest of plants under lease from government department	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	-
Agriculture or horticulture within wetland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	-
Grazing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Not assessed quantitatively
Religious practices	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Temples in this wetland complex area are a good venue for many art form expressions. It also promotes certain best rituals and art forms of ancient tradition. 'Theyyam' is one of the very popular ritual and art forms in Kattampally.
Withdrawal of water for domestic use	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Not assessed quantitatively
Withdrawal of water for agriculture or fisheries	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not assessed	The special shrimp cultivation system in the Kaipad area was called 'Chemmeen Kettu'. The shrimp is cultivated in 'chira' (bund), which is made up of wetland soil.
Bathing or wallowing of domestic animals	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Not assessed quantitatively
Plying of boats	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not assessed	Country boats are plying in the wetland used for Kaipad cultivation and fishing. KTDC offers boating service here, other private boat services aimed to

Nature of right and privilege	Relevant for the site (please tick yes or no)	Does this negatively impact the wetland's ecological health?	Brief description (upto 50 words for each category)
			encourage tourism are also operating in the wetland premises.
Any other, please list here	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not assessed	-

### Section 6: Present and Potential Threats

Threat	Degree	Present or Potential	Additional information, if any
Changes in water inflow and outflow	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	No information
Pollution	<input type="checkbox"/> High <input type="checkbox"/> Medium <input checked="" type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Wastes dumped into the water body, is polluting it which further reaches to the other aquatic ecosystems.
Unsustainable harvest of biological resources	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Deploying of stake nets during the tidal incursion. Stake net (with small mesh size) fishing practised near the Kattampally regulator cum bridge is the main cause behind this.
Mining	<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input type="checkbox"/> Potential	-
River bank erosion	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Sand mined area deepened quickly and shore cannot sustain in the situation, the earth on the banks of river fails to carry the pressure from earth lying behind the cliff and falls in to the river and filled in the trench
Encroachment	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	This wetland complex is facing the threat of large-scale reclamation for developmental works. The reclamation activities will destroy the habitat that has already been disturbed by fragmentation of the wetland.
Spread of invasive species	<input type="checkbox"/> High <input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Invasive alien species include <i>Eichhornia crassipes</i> , <i>Mariscus javanicus</i> , <i>Wedelia trilobata</i>

Threat	Degree	Present or Potential	Additional information, if any
	<input checked="" type="checkbox"/> Low		
Reduction in faunal diversity	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input checked="" type="checkbox"/> Present <input type="checkbox"/> Potential	Unscientific construction and anthropogenic activities have impacted the population of the fauna.
Reduction of migratory birds	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Present <input checked="" type="checkbox"/> Potential	Reduction of migratory birds is mainly due to the unscientific activities like dumping of waste and which cause serious problems to the mudflat habitat. This affects the feeding habits of the migratory birds.

### Section 7: Activities Proposed to be prohibited (other than those listed in Rule 4(2) of Wetlands Rules)

Activity	Prohibited within wetlands or zone of influence	Details of specific area wherein activity is prohibited	Name of department / agency responsible for monitoring	Additional information, if any
Stake net fishing (mesh size and timing of deploying stake net)	<input checked="" type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	Whole area especially near the regulator bridge	Fisheries Department, SWAK, Wetland Management Unit (WMU), LSGs	The WMU and the fisheries department

### Section 8: Activities Proposed to be regulated

Activity	Place a tick mark if relevant	Regulation within wetlands or zone of influence	Level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation	Additional information, if any
Withdrawal of water / impoundment/diversion or any other hydrological intervention	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	Within the wetland	SWAK, Wetland Management Unit (WMU), LSGs, and KCZMA in CRZ areas	Prior permission required from SWAK, Wetland Management Unit, LSGs, and KCZMA in CRZ areas

Activity	Place a tick mark if relevant	Regulation within wetlands or zone of influence	Level of regulation (in terms of people, restricted area or any other)	Name of department / agency responsible for regulation	Additional information, if any
Discharge of treated sewage/ effluent / wastewater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	Within the wetland	SWAK, Wetland Management Unit, LSGs, KCZMA in CRZ areas and Kerala State Pollution Control Board.	Prior permission required from SWAK, Wetland Management Unit, LSGs, and KCZMA in CRZ areas
Aquaculture, agriculture and horticulture activities within the wetland boundaries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	Within the wetland	SWAK, Wetland Management Unit, LSGs, District Collector, Fisheries Department, Department of Aquaculture	Prior permission required from SWAK, Wetland Management Unit, LSGs, and KCZMA in CRZ areas
Any other, please list	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence			

### Section 9: Activities Proposed to be permitted

Activity	Place a tick mark if relevant	Within wetlands or zone of influence	Additional information, if any
	<input type="checkbox"/>	<input type="checkbox"/> Wetland / Wetlands complex boundary <input type="checkbox"/> Zone of influence	

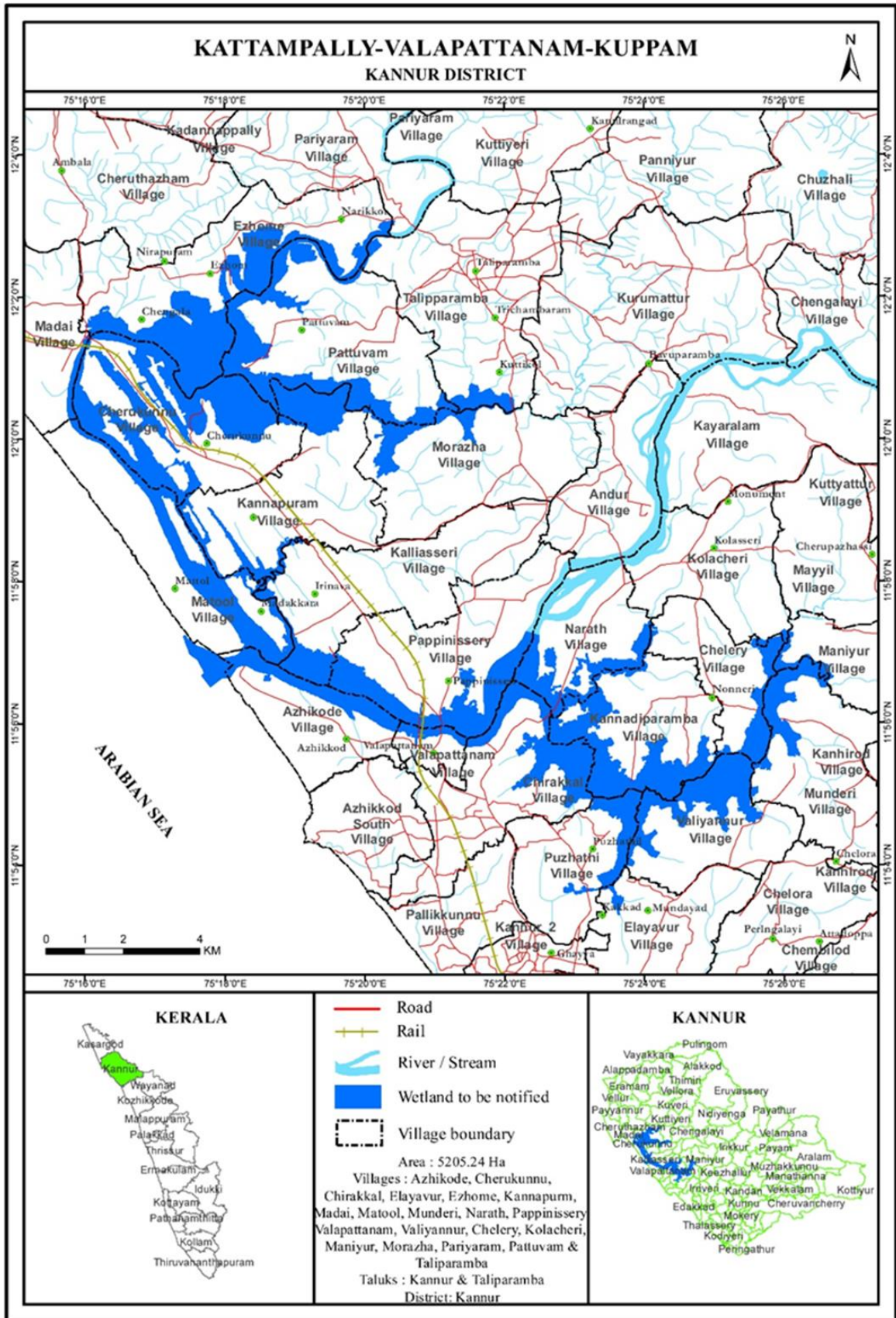
### **Section 10: Listing of Available Scientific Resources Used**

1. CWRDM. 2017. Management Action Plan for Kattampally Coastal Wetland, Kannur district, Kerala. Centre for Water Resources Development and Management, Kozhikode.
2. KSBB. Impact of flood/landslides on Biodiversity – Community Perspectives. Kerala State Biodiversity Board, Thiruvananthapuram.
3. Roshnath R. 2020. Fauna of Kattampally. State Wetland Authority Kerala and Malabar Awareness and Rescue Centre for Wildlife
4. KSBB. 2018. A Concise Report on Biodiversity Loss due to 2018 Flood in Kerala. Kerala State Biodiversity Board Editors Dr. S.C. Joshi IFS (Rtd.) Dr. V. Balakrishnan Dr. N. Preetha (Impact assessment conducted by Kerala State Biodiversity Board).

### **CHECKLIST**

- Responsible agency has been clearly identified and details of contact person included
- Wetland/ wetlands complex boundary has been delineated using GIS and firmed up by adequate ground truthing
- Wetland/ wetlands complex map has been provided at required scale
- Zone of influence has been delineated and included in wetland map or a separate map
- Wetland zone of influence is sufficient to manage all activities
- Site's importance have been listed, and for major categories, justification is provided
- Site's biodiversity values are listed, and for major categories, justification is provided
- List of pre-existing rights and privileges is provided
- Consistency or inconsistency of pre-existing rights and privileges is indicated to be best of available knowledge
- Threats to site are listed, and for major categories details are provided
- Activities prohibited, beyond those already listed in Rule 4(2) have been mentioned
- List of activities to be regulated within wetlands and zone of influence is provided
- List of activities to be permitted is provided

Annexure I



**Annexure II :**

