WATER QUALITY OF CHILIKA LAGOON WITH RESPECT TO CPCB PRESCRIBED THRESHOLDS DURING 2024 (JANUARY- DECEMBER)

ST. No.	Coordinates# (Latitude Longitude)	No. of observations				Annual average (min-max range) [Water quality criteria for Class SW- II (FC ≤ 100 MPN / 100 ml; pH: 6.5-8.5; DO ≥ 4 mg/L; BOD ≤ 3 mg/L; Turbidity ≤ 30 NTU]. For FC, the total number of samples having > 200 MPN/100 ml should not exceed by more than 20 % of the samples collected during the year.				No. of violations from designated criteria value (%)				Whether all parameters complied with Class-SW-II based on the annual average?	Parameter(s) whose annual average value deviated from the criteria value*
		FC	pH	DO	BOD	FC**	pH	DO	BOD	FC	pH	DO	BOD		
1	19.51333 85.11025	12	12	12	12	5 (3 - 7)	8.3 (8.2–8.49)	7.22 (5.14–9.2)	2.3 (0.26–4.35)	0 (0)	0 (0)	0 (0)	5 (42)	Yes	-
2	19.50794 85.15303	12	12	12	12	82 (3 - 240)	8.5 (8.04–8.86)	7.89 (5.48–10.93)	2.09 (0.3–4.14)	1 (8)	5 (42)	0 (0)	2 (17)	Yes	-
3	19.55558 85.19965	12	12	12	12	405 (3 - 2400)	8.38 (7.84–8.76)	8.29 (6.3–10.91)	2.52 (0.77–4.26)	1 (8)	3 (25)	0 (0)	3 (25)	No	FC
4	19.55369 85.15193	12	12	12	12	275 (1 - 2400)	8.24 (7.88–8.51)	7.31 (5.52–9.9)	1.62 (0.15–3.19)	1 (8)	1 (8)	0 (0)	1 (8)	No	FC
5	19.60424 85.15421	12	12	12	12	37 (4 - 210)	8.23 (7.95–8.41)	7.35 (5.22–8.61)	2.5 (0.79–4.58)	1 (8)	0 (0)	0 (0)	3 (25)	Yes	-
6	19.60371 85.19908	12	12	12	12	662 (3 - 2400)	8.22 (7.33–8.55)	7.75 (5.26–10.57)	2.29 (0.28–4.28)	2 (17)	1 (8)	0 (0)	4 (33)	No	FC
7	19.65008 85.18282	12	12	12	12	232 (4 - 460)	8.19 (7.89–8.4)	7.53 (5.65–8.8)	1.51 (0.12–3.3)	1 (8)	0 (0)	0 (0)	2 (17)	No	FC
8	19.65165 85.23096	12	12	12	12	156 (3 - 460)	8.07 (7.27–8.82)	7.23 (5.32–9.59)	2.29 (0.89–4.46)	1 (8)	1 (8)	0 (0)	3 (25)	No	FC
9	19.65397 85.29123	12	12	12	12	18 (4 - 43)	8.59 (8.1–9.35)	7.5 (2.88–10.63)	2.14 (0.95–4.15)	0 (0)	6 (50)	1 (8)	4 (33)	No	pH
10	19.65705 85.43688	12	12	12	12	12 (1 - 43)	8.39 (7.97–8.82)	8.85 (6.56–11.28)	2.16 (0.02–4.35)	0 (0)	4 (33)	0 (0)	4 (33)	Yes	-
11	19.66586 85.48453	12	12	12	12	273 (1 - 2400)	8.15 (7.69–8.55)	7.66 (5.61–9.51)	2.35 (0.26–3.92)	1 (8)	1 (8)	0 (0)	5 (42)	No	FC
12	19.69782 85.56811	12	12	12	12	366 (3 - 2400)	8.22 (8.1–8.37)	7.39 (5.32–9.83)	2.49 (0.14–4.59)	2 (17)	0 (0)	0 (0)	5 (42)	No	FC
13	19.69899 85.3876	12	12	12	12	7 (1 - 20)	8.38 (8.06–8.78)	7.43 (4.85–9.94)	2.09 (0.13–3.86)	0 (0)	1 (8)	0 (0)	5 (42)	Yes	-
14	19.70184 85.34203	12	12	12	12	237 (1 - 1100)	8.75 (7.9–9.28)	8.79 (3.37–12.72)	2.02 (0.01–3.94)	1 (8)	8 (67)	1 (8)	2 (17)	No	FC, pH
15	19.69662 85.28625	12	12	12	12	29 (4 - 75)	8.28 (8.21–8.42)	7.88 (4.89–9.81)	2.42 (0.23–3.75)	0 (0)	0 (0)	0 (0)	5 (42)	Yes	-
16	19.6975 85.2472	12	12	12	12	37 (4 - 93)	8.1 (7.67–8.33)	7.34 (4.39–9.77)	2.47 (0.29–4.24)	0 (0)	0 (0)	0 (0)	5 (42)	Yes	-
17	19.70402 85.20507	12	12	12	12	363 (1 - 2400)	8.27 (7.99–8.53)	7.36 (6.24–8.98)	1.94 (0.55–3.87)	3 (25)	1 (8)	0 (0)	2 (17)	No	FC
18	19.74532 85.24752	12	12	12	12	778 (9 - 2400)	8.1 (7.36–8.37)	7.15 (5.5–9.65)	2.14 (0.14–5.63)	5 (42)	0 (0)	0 (0)	2 (17)	No	FC

19	19.74601 85.29353	12	12	12	12	14 (1 - 39)	8.54 (7.88–9.24)	7.48 (4.85–10.51)	2.64 (0.75–5.01)	0 (0)	5 (42)	0 (0)	5 (42)	No	pH
20	19.74545 85.3408	12	12	12	12	17 (7 - 43)	8.3 (8.04–8.72)	7.94 (5.59–9.67)	2.64 (0.2–5.27)	0 (0)	2 (17)	0 (0)	6 (50)	Yes	-
21	19.74505 85.38813	12	12	12	12	485 (4 - 2400)	8.44 (7.95–9.18)	9.37 (6.74–13.96)	2.84 (0.14–7.84)	1 (8)	5 (42)	0 (0)	5 (42)	No	FC
22	19.74491 85.437	12	12	12	12	493 (4 - 2400)	8.46 (7.83–9.03)	9.97 (8.74–12.32)	2.73 (0.57–6.16)	1 (8)	4 (33)	0 (0)	6 (50)	No	FC
23	19.74507 85.48333	12	12	12	12	6 (1 - 23)	8.43 (8.03–9.27)	8.8 (7.27–9.67)	1.7 (0.04–3.86)	0 (0)	4 (33)	0 (0)	2 (17)	Yes	-
24	19.79253 85.53078	12	12	12	12	5 (1 - 9)	8.82 (7.92–9.46)	10.51 (7.68–13.98)	2.36 (0.23–4.39)	0 (0)	9 (75)	0 (0)	3 (25)	No	pH
25	19.79251 85.48278	12	12	12	12	56 (4 - 240)	8.64 (7.86–9.43)	9.95 (7.38–12.88)	2.18 (0.94–4.01)	1 (8)	9 (75)	0 (0)	2 (17)	No	pH
26	19.79173 85.43612	12	12	12	12	225 (9 - 1100)	8.66 (7.68–9.49)	7.7 (3.45–9.88)	1.24 (0.16–2.57)	1 (8)	8 (67)	1 (8)	0 (0)	No	FC, pH
27	19.79118 85.3865	12	12	12	12	114 (4 - 460)	8.64 (8.05–9.19)	8.44 (3.61–11.81)	2.39 (0.13–4.4)	1 (8)	7 (58)	1 (8)	2 (17)	No	FC, pH
28	19.79184 85.34067	12	12	12	12	447 (4 - 1100)	8.77 (8.05–9.52)	7.86 (4.61–11.14)	2.13 (0.01–4.24)	2 (17)	8 (67)	0 (0)	4 (33)	No	FC, pH
29	19.78481 85.30343	12	12	12	12	12 (3 - 28)	8.44 (7.42–9.1)	6.79 (4–10.36)	2.04 (0.32–3.2)	0 (0)	5 (42)	0 (0)	2 (17)	Yes	-
30	19.8365 85.39275	12	12	12	12	20 (1 - 93)	8.07 (7.41–8.77)	7.44 (5–9.86)	2.07 (0.4–4.08)	0 (0)	1 (8)	0 (0)	3 (25)	Yes	-
31	19.83919 85.43549	12	12	12	12	23 (1 - 120)	8.02 (7.66–8.71)	7.27 (5.42–9.45)	1.69 (0.05–3.25)	1 (8)	1 (8)	0 (0)	3 (25)	Yes	-
32	19.83923 85.4842	12	12	12	12	118 (1 - 460)	8.01 (7.22–8.98)	7.86 (2.01–11.38)	2.23 (0.78–3.81)	3 (25)	1 (8)	1 (8)	3 (25)	No	FC
33	19.83941 85.52924	12	11	11	11	3 (3 - 4)	8.98 (7.74–9.74)	11.59 (6.7–18.56)	3.47 (0.67–7.43)	0 (0)	9 (82)	0 (0)	7 (64)	No	pH, BOD
Water quality criteria for Class SW- II Waters (For Bathing, Contact Water Sports and Commercial Fishing) (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2001)						**100 or less**	**6.5-8.5**	**4.0 or more**	**3.0 or less**					**For bathing, Contact Water Sports and commercial Fishing**	

 # Chilika map showing sampling location coordinates attached to the datasheet (Fig.1)

*** For Fecal coliforms, total numbers of samples collected between January-December from Chilika were 396. According to CPCB guideline, 20% samples of this would be equal to 79. In our survey, total number of samples which have >200 MPN/100ml over the year was 30. Hence the number did not exceed the CPCB permissible limit.*

**NB: The detailed possible reasons for deviation have been provided below:-*

FC: Fecal coliforms in Chilika are mostly due to anthropogenic factors (e.g., open defecation, sewage discharge from peripheral villages, non-point sources), and wildlife.
pH-The deviation in pH could be due to the high rate of photosynthesis by plankton/macrophytes/seagrases that are quite abundant in Chilika.
BOD-Higher biological oxygen demand is sometimes due to macrophyte decomposition especially during summer months when salinity is rising.
Turbidity- Higher turbidity is due to sediment churning caused by waves and strong winds, especially in areas where benthic vegetation is absent.

WATER QUALITY OF NALABANA WITH RESPECT TO CPCB PRESCRIBED THRESHOLDS DURING 2024 (JANUARY- DECEMBER)

ST. No.	Coordinates[#] (Latitude Longitude)	No. of observations				Annual average (min-max range) [Water quality criteria for Class SW- II (FC ≤ 100 MPN / 100 ml; pH: 6.5-8.5; DO ≥ 4 mg/L; BOD ≤ 3 mg/L; Turbidity ≤ 30 NTU]. For FC, the total number of samples having > 200 MPN/100 ml should not exceed by more than 20 % of the samples collected during the year.				No. of violations from designated criteria value (%)				Whether all parameters complied with Class-SW-II based on the annual average?	Parameter(s) whose annual average value deviated from the criteria value*
		FC	pH	DO	BOD	FC**	pH	DO	BOD	FC	pH	DO	BOD		
NB 1	19.70475 85.30519	12	12	12	12	278 (3 - 1100)	8.36 (8.09–9.01)	8.16 (3.25–13.49)	2.5 (0.39–4.69)	5 (42)	2 (17)	2 (17)	5 (42)	No	FC
NB 2	19.68928 85.2935	12	12	12	12	345 (1 - 1100)	8.28 (7.98–8.79)	5.55 (3–7.74)	2.31 (1.16–4.42)	5 (42)	1 (8)	2 (17)	2 (17)	No	FC
NB 3	19.70628 85.31808	12	12	12	12	228 (3 - 1100)	8.46 (8.15–8.99)	7.45 (2.88–12.29)	2.11 (0.13–4.51)	2 (17)	4 (33)	1 (8)	3 (25)	No	FC
NB 4	19.68592 85.31814	12	12	12	12	57 (1 - 210)	8.54 (7.99–9.12)	7.69 (3.13–10.73)	2.26 (0.82–3.74)	1 (8)	6 (50)	1 (8)	2 (17)	No	pH
NB 5	19.68592 85.30922	12	12	12	12	370 (3 - 1100)	8.3 (7.39–8.85)	5.39 (2.07–9.25)	1.82 (0.54–3.42)	4 (33)	3 (25)	2 (17)	2 (17)	No	FC
NB 6	19.70762 85.30303	12	7	7	7	32 (7 - 64)	8.37 (8.12–8.57)	7.35 (3.43–9.02)	1.61 (0.73–2.88)	0 (0)	1 (14)	1 (14)	0 (0)	Yes	-
Water quality criteria for Class SW- II Waters (For Bathing, Contact Water Sports and Commercial Fishing) (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2001)						**100 or less**	**6.5-8.5**	**4.0 or more**	**3.0 or less**					**For bathing, Contact Water Sports and commercial Fishing**	

 # Nalabana Island map showing sampling location coordinates attached to the datasheet (Fig2)

*** For Fecal coliforms, total numbers of samples collected between January-December from Nalabana were 72. According to CPCB guideline, 20% samples of this would be equal to 14. In our survey, total number of samples which have >200 MPN/100ml over the year was 14. Hence the number did not exceed the CPCB permissible limit.*

**NB: The detailed reasons for deviation have been provided below*

FC: Fecal coliforms in Chilika are mostly due to anthropogenic factors (e.g., open defecation, sewage discharge from peripheral villages, non-point sources) and wildlife.
pH-The deviation in pH could be due to the high rate of photosynthesis by plankton/macrophytes/seagrass that are quite abundant in Chilika.

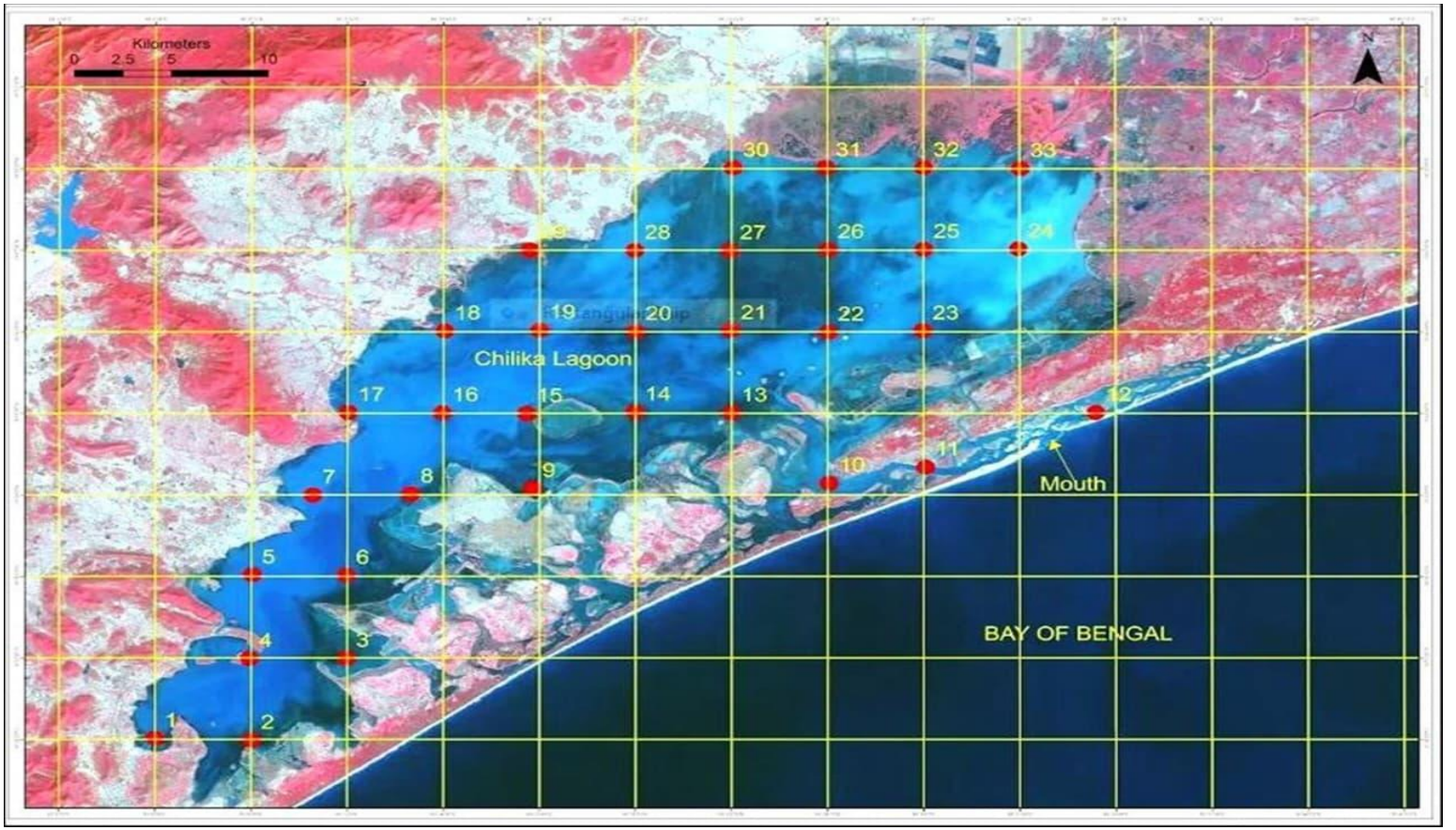

Fig 1: Locations of monitoring stations (33 nos.) in Chilika Lagoon which are monitored for water quality on monthly basis.

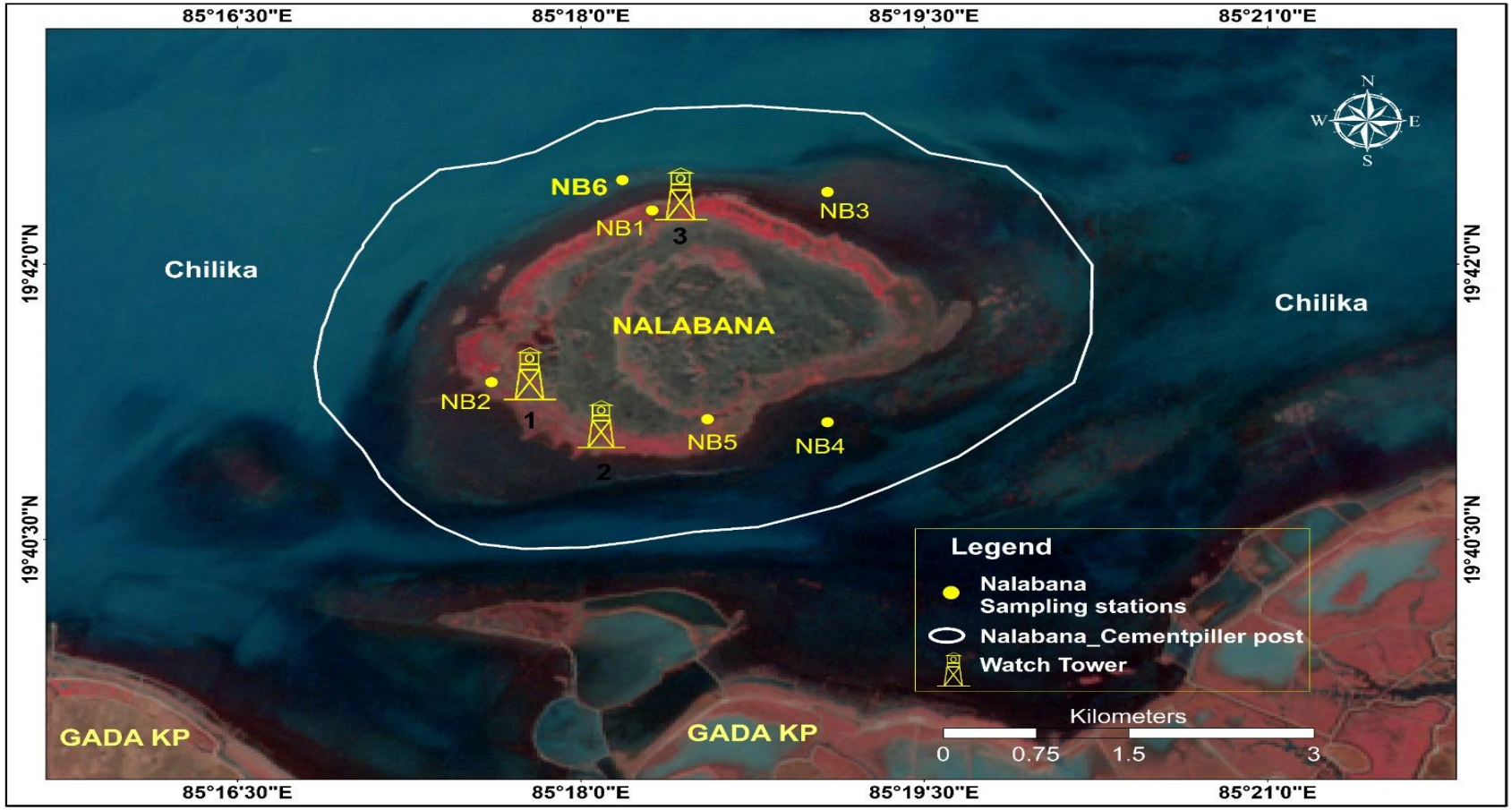

Fig 2: Locations of monitoring stations in Nalabana (6 nos.) which are monitored for water quality on monthly basis.