WATER QUALITY OF CHILIKA LAGOON WITH RESPECT TO CPCB PRESCRIBED THRESHOLDS DURING 2025 (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	Turbidity	FC**	pH	DO	BOD	Turbidity	FC	pH	DO	BOD	Turbidity		
1	19.51333 85.11025	12	12	12	12	11	8 (1 - 20)	8.42 (8–8.82)	6.94 (5.55–8.49)	2.42 (0.3–5.01)	5.43 (0–35.4)	0 (0)	3 (25)	0 (0)	3 (25)	1 (9)	Yes	-
2	19.50794 85.15303	12	12	12	12	11	34 (3 - 150)	8.66 (8.22–9.44)	6.94 (3.94–9.53)	1.65 (0.07–3.63)	1.06 (0–4.5)	1 (8)	6 (50)	1 (8)	3 (25)	0 (0)	No	pH
3	19.55558 85.19965	12	12	12	12	11	8 (1 – 21)	8.63 (8.15–9.21)	7.06 (5.42–9.53)	2.16 (0.09–5.12)	2.25 (0–13.7)	0 (0)	7 (58)	0 (0)	3 (25)	0 (0)	No	pH
4	19.55369 85.15193	12	12	12	12	11	10 (3 – 28)	8.32 (8.1–8.51)	6.98 (5.77–7.96)	1.47 (0.08–4.48)	10.73 (0–71.9)	0 (0)	1 (8)	0 (0)	2 (17)	1 (9)	Yes	-
5	19.60424 85.15421	12	12	12	12	12	22 (1 – 75)	8.33 (8.1–8.68)	7.14 (5.79–8.09)	1.42 (0.18–3.55)	7.22 (0–52.6)	0 (0)	1 (8)	0 (0)	2 (17)	1 (8)	Yes	-
6	19.60371 85.19908	12	12	12	12	12	485 (3 – 2400)	8.39 (8.19–8.6)	7.43 (5.52–9)	2.34 (0.26–4.56)	12.03 (0–102.3)	1 (8)	3 (25)	0 (0)	4 (33)	1 (8)	No	FC
7	19.65008 85.18282	12	12	12	12	12	344 (3 – 2400)	8.34 (8.13–8.62)	7.33 (5.36–9.35)	1.74 (0.02–4.22)	8.02 (0–70.2)	2 (17)	2 (17)	0 (0)	2 (17)	1 (8)	No	FC
8	19.65165 85.23096	12	12	12	12	12	493 (3 – 2400)	8.29 (7.68–8.99)	6.91 (4.61–9.51)	2.49 (0.69–5.08)	4.49 (0–24.8)	1 (8)	5 (42)	0 (0)	5 (42)	0 (0)	No	FC
9	19.65397 85.29123	12	12	12	12	12	412 (1 – 2400)	8.87 (8.22–9.49)	6.92 (4.16–10.16)	2.36 (0.16–5.07)	4 (0–14.1)	2 (17)	10 (83)	0 (0)	3 (25)	0 (0)	No	FC, pH
10	19.65705 85.43688	12	12	12	12	12	86 (3 – 240)	8.34 (7.54–9.05)	8.49 (6.36–14.04)	2.81 (1.22–3.93)	19.88 (8.2–35.8)	3 (25)	5 (42)	0 (0)	6 (50)	2 (17)	Yes	-
11	19.66586 85.48453	12	12	12	12	12	803 (3 – 2400)	8.17 (8.02–8.57)	6.7 (5.02–8.07)	1.39 (0.08–2.59)	26.17 (4.6–78.4)	2 (17)	1 (8)	0 (0)	0 (0)	4 (33)	No	FC
12	19.69782 85.56811	11	11	11	11	11	529 (20 – 2400)	8.27 (8.1–8.59)	7.2 (6.42–8.11)	1.9 (0.14–3.72)	10.62 (0–48.5)	3 (27)	1 (9)	0 (0)	1 (9)	1 (9)	No	FC
13	19.69899 85.3876	12	12	12	12	12	1443 (4 – 2400)	8.59 (8.15–9.33)	7.36 (4.73–10.87)	2.01 (0.04–3.54)	7.93 (0–32.1)	3 (25)	5 (42)	0 (0)	3 (25)	1 (8)	No	FC, pH
14	19.70184 85.34203	12	12	12	12	12	191 (3 – 1100)	8.72 (8.08–9.56)	7.36 (4.63–9.96)	1.8 (0.6–4.75)	15.79 (0–103)	1 (8)	8 (67)	0 (0)	1 (8)	1 (8)	No	FC, pH
15	19.69662 85.28625	12	12	12	12	12	501 (4 – 2400)	8.32 (8.13–8.48)	7.22 (4.92–10.38)	1.96 (0.01–4.3)	36.08 (0–214)	4 (33)	0 (0)	0 (0)	2 (17)	2 (17)	No	FC, Turbidity
16	19.6975 85.2472	12	12	12	12	12	112 (3 – 460)	8.25 (7.81–8.85)	7.35 (4.79–11.77)	2.67 (0.5–5.24)	30.84 (0.3–156.2)	2 (17)	1 (8)	0 (0)	5 (42)	2 (17)	No	FC, Turbidity
17	19.70402 85.20507	12	12	12	12	11	2400 (2400 – 2400)	8.15 (6.56–8.6)	7.14 (5.77–8.59)	1.94 (0.45–4.24)	26.11 (0–212)	1 (8)	1 (8)	0 (0)	2 (17)	1 (9)	No	FC

18	19.74532 85.24752	12	12	12	12	12	486 (1 – 2400)	8.61 (7.94–9.38)	7.31 (5.2–8.7)	1.7 (0.14–3.4)	28.43 (0–187.8)	1 (8)	7 (58)	0 (0)	2 (17)	2 (17)	No	FC, pH
19	19.74601 85.29353	12	12	12	12	12	720 (3 – 2400)	8.68 (8.13–9.52)	7.28 (5.22–9.22)	1.59 (0.04–3.3)	2.21 (0–10.3)	2 (17)	6 (50)	0 (0)	1 (8)	0 (0)	No	FC, pH
20	19.74545 85.3408	12	12	12	12	11	417 (1 – 2400)	8.18 (7.64–8.43)	7.11 (5.85–8.86)	2.06 (0.57–4.46)	28.17 (0–130.4)	3 (25)	0 (0)	0 (0)	2 (17)	2 (18)	No	FC
21	19.74505 85.38813	12	12	12	12	11	643 (3 – 2400)	8.66 (7.75–9.99)	8.39 (5.42–11.6)	2.5 (0.13–5)	25.42 (0–151.5)	3 (25)	6 (50)	0 (0)	4 (33)	3 (27)	No	FC, pH
22	19.74491 85.437	12	12	12	12	12	100 (1 – 460)	8.47 (7.85–9.24)	8.87 (6.2–11.83)	2.72 (0.67–5.94)	61.43 (0–181.1)	2 (17)	6 (50)	0 (0)	6 (50)	8 (67)	No	Turbidity
23	19.74507 85.48333	12	12	12	12	12	483 (4 – 2400)	8.36 (7.87–8.72)	8.54 (6.56–10.34)	2.51 (0.69–4.49)	69.63 (0–143.5)	1 (8)	5 (42)	0 (0)	4 (33)	8 (67)	No	FC, Turbidity
24	19.79253 85.53078	12	12	12	12	12	970 (7 – 2400)	8.8 (7.95–9.82)	9.73 (5.34–18.35)	3.33 (1.47–4.41)	17.48 (0–52)	2 (17)	7 (58)	0 (0)	8 (67)	3 (25)	No	FC, pH, BOD
25	19.79251 85.48278	12	12	12	12	12	192 (1 – 1100)	8.53 (7.48–9.28)	9.13 (6.66–14.1)	2.97 (1.6–6.08)	33.93 (1.7–79)	2 (17)	7 (58)	0 (0)	3 (25)	6 (50)	No	FC, pH, Turbidity
26	19.79173 85.43612	12	12	12	12	12	67 (4 – 240)	8.6 (7.9–9.26)	7.78 (5.77–9.79)	2.02 (0.31–4.32)	55.04 (9.1–112.8)	1 (8)	7 (58)	0 (0)	2 (17)	9 (75)	No	pH, Turbidity
27	19.79118 85.3865	12	12	12	12	12	57 (1 – 210)	8.77 (7.82–9.66)	8.02 (4.33–10.89)	2.12 (0.21–3.43)	10.43 (0–24.7)	2 (17)	8 (67)	0 (0)	2 (17)	0 (0)	No	pH
28	19.79184 85.34067	12	12	12	12	12	450 (4 – 2400)	8.9 (8.48–9.32)	6.88 (3.43–8.78)	1.39 (0.07–2.9)	1.48 (0–7.9)	3 (25)	11 (92)	1 (8)	0 (0)	0 (0)	No	FC, pH
29	19.78481 85.30343	12	12	12	12	12	49 (1 – 150)	8.85 (8.32–9.3)	7 (5.1–10.02)	1.96 (0.39–3.34)	3.97 (0–15.2)	2 (17)	10 (83)	0 (0)	2 (17)	0 (0)	No	pH
30	19.8365 85.39275	12	12	12	12	12	48 (20 – 150)	8.64 (7.88–9.79)	7.63 (5.65–10.81)	2.29 (0.07–3.83)	16.16 (0–88.3)	1 (8)	5 (42)	0 (0)	4 (33)	1 (8)	No	pH
31	19.83919 85.43549	12	12	12	12	12	353 (1 – 2400)	8.31 (7.85–8.89)	7.89 (5.77–11.22)	2.38 (0.67–5.02)	20.93 (2.8–62.4)	1 (8)	2 (17)	0 (0)	3 (25)	2 (17)	No	FC
32	19.83923 85.4842	12	12	12	12	11	387 (7 – 2400)	8.4 (7.54–9.5)	8.26 (4.22–13.19)	1.85 (0.95–5.41)	14.07 (0–80.3)	2 (17)	5 (42)	0 (0)	1 (8)	2 (18)	No	FC
33	19.83941 85.52924	12	12	12	12	12	529 (7 – 2400)	8.83 (7.6–10.1)	10.24 (3.8–19.41)	2.78 (0.35–5.44)	11.97 (0–49.4)	3 (25)	7 (58)	1 (8)	6 (50)	2 (17)	No	FC, pH
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**	**30 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 395. 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 48. 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/seagrasess 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 2025 (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	Turbidity	FC**	pH	DO	BOD	Turbidity	FC	pH	DO	BOD	Turbidity		
NB 1	19.70475 85.30519	12	12	12	12	12	840 (1 – 2400)	8.34 (7.72-8.8)	7.25 (3.41–11.01)	3.12 (1.35–6)	34.08 (0–138)	2 (17)	5 (42)	1 (8)	6 (50)	4 (33)	No	FC, BOD, Turbidity
NB 2	19.68928 85.2935	12	12	12	12	12	480 (1 – 2400)	8.24 (7.6-8.61)	5.27 (2.23–9.86)	2.22 (0.96–6.42)	6.49 (0–14.3)	4 (33)	2 (17)	2 (17)	2 (17)	0 (0)	No	FC
NB 3	19.70628 85.31808	12	12	12	12	12	68 (4 – 210)	8.58 (8.11-9.12)	7.95 (3.69–13.17)	2.2 (0.12–5.86)	28.46 (0–273)	1 (8)	8 (67)	1 (8)	4 (33)	1 (8)	No	pH
NB 4	19.68592 85.31814	12	12	12	12	12	73 (3 – 460)	8.92 (8.32-9.37)	7.23 (4.39–9.35)	2.05 (0.52–4.87)	6.46 (0–40.5)	1 (8)	10 (83)	0 (0)	2 (17)	1 (8)	No	pH
NB 5	19.68592 85.30922	12	12	12	12	12	124 (7 – 460)	8.32 (7.53-8.79)	5.42 (2.19–8.61)	2.43 (0.92–5.03)	4.47 (0–11.7)	2 (17)	5 (42)	2 (17)	4 (33)	0 (0)	No	FC
NB 6	19.70762 85.30303	7	7	7	7	7	115 (3 – 460)	8.46 (7.5-8.94)	8.17 (5.16–13.23)	2.38 (0.18–5.57)	10.53 (0–33.1)	1 (14)	5 (71)	0 (0)	3 (43)	1 (14)	No	FC
Water quality criteria for Class SW- II Waters (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**	**30 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 67. According to CPCB guideline, 20% samples of this would be equal to 13. In our survey, total number of samples which have >200 MPN/100ml over the year was 8. 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.

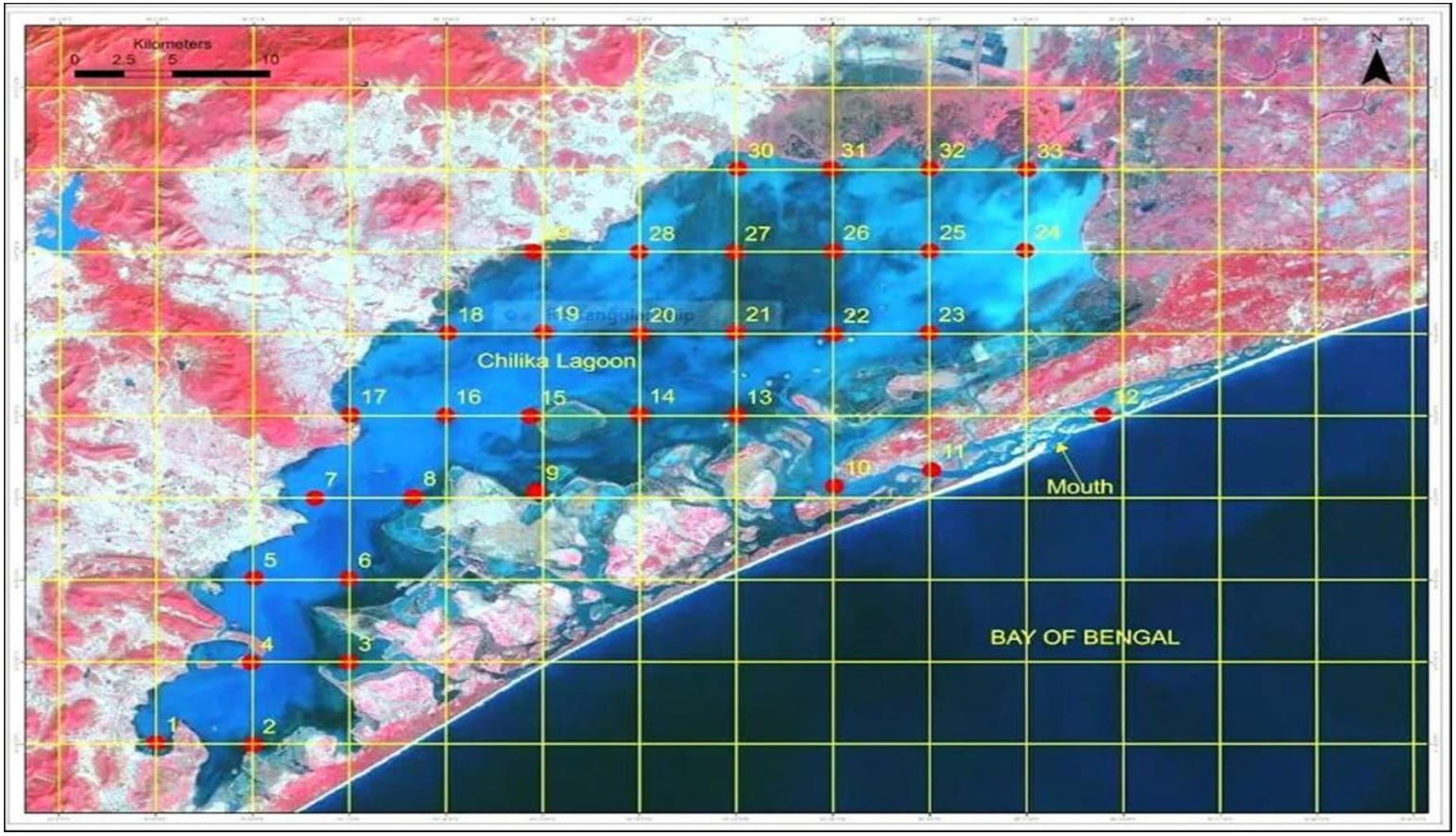

Fig 1: Locations of monitoring stations (33 nos.) in Chilika Lagoon and Nalabana (6 nos.) which are monitored on monthly basis for water quality.

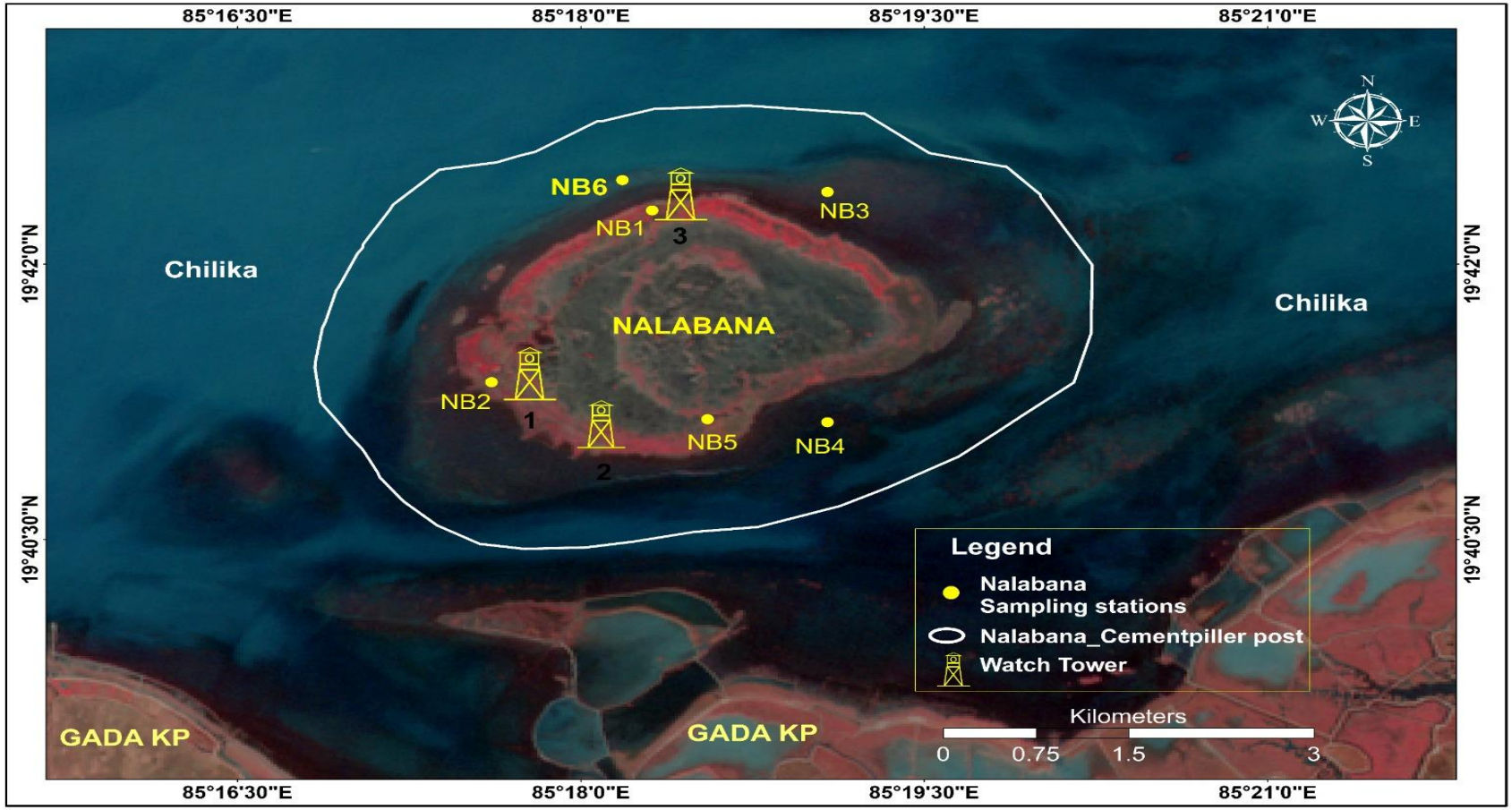

Fig 2: Locations of monitoring stations in Nalabana (6 nos.) which are monitored on monthly basis for water quality.