

NATURE SCIENCE INTERNSHIP PROGRAMME

VAGDEVI VILAS SCHOOL, VARTHUR



Teacher Co-ordinators: Venkat Reddy and Bhavisha Wala

TEAM TERRESTRIAL

Keerthana
Ritika
Ramya
Thilak
Chirag

TEAM AQUATIC

Samidha
Harshitha
Varshitha
Charan
Narean

O₂ PRODUCED BY SELECTED TREE

- ✘ Campus of Vagdevi Vilas School, Varthur is selected for study of terrestrial biodiversity.
- ✘ Oxygen produce by plant -
ml of oxygen/hr = $106 \text{ cm}^2 \times 1.2 = 127.2 \text{ ml}$
 $127.2 \times 12 \text{ hrs} = 1526.4 \text{ ml of oxygen/day}$
- ✘ Total leaves on tree ~ 30,000, therefore $30,000 \times 1526.4 = \underline{\underline{4,579,200 \text{ ml of O}_2/\text{D}}}$



INSECTS

- ✘ 22 species of butterflies are noted till date in the selected area
- ✘ Some other insects include-
Honeybees, Dragonflies, Golden back ants, Beetles, Spiders, Wasps



BIRDS AND SMALL ANIMALS

- ✘ 18 species of birds have been recorded in the selected area.
- ✘ Other small animals seen: skink, squirrel, snake, lizard, calotes, rats etc.

- ✘ Greater Coucal
- ✘ Spotted Dove
- ✘ White Throated Kingfisher
- ✘ Black Drongo
- ✘ Common Myna
- ✘ House Crow
- ✘ Jungle Crow
- ✘ Purple Rumped Sunbird
- ✘ Small Green Bee Eater
- ✘ Red Whiskered Bulbul
- ✘ Black Kite
- ✘ Golden Oriole
- ✘ Rose Ringed Parakeet
- ✘ White Browed Wagtail
- ✘ Swift



OBSERVATIONS



Wasp paralyzing a caterpillar



Beetle eggs



Nest on Singapore Cherry tree



Moth emerged out of its pupa



An injured Kite



Snake feasting on fish at lake

AQUATIC STUDY AREA



LAKE WATER ANALYSIS

- ✗ Water was collected from 3 inlets and one outlet

parameter	outlet	inlet 1	inlet 2	inlet 3
water temperature (°C)	28	28	29	27
pH	8.8	8.5	8.3	8.4
Total Solids (TS) (mg/L)	2.6	2	3	2.2
Total Dissolved Solids (TDS) (mg/L)	2	1.6	2.4	1.4
Total Suspended Solids (TSS) (mg/L)	0.6	0.4	0.6	0.8
Dissolved Oxygen (DO)	0.26	0.3	0.14	0.24
Alkalinity (mg/L)	148	160	420	172
Calcium hardness (mg/L)	27.25	24.05	54.51	25.65
Phosphorous (mg/L)	0.5	0.5	1	0.1
Nitrates (mg/L)	45	10	10	10

PLANKTONS AND AQUATIC PLANTS

- ✘ Lake water showed presence of algae and planktons like – Ulothrix, Nitzschia and some Diatoms
- ✘ Aquatic plants at the lake – *Alternanthera* sp., *Pistia* sp., *Ludwigia* sp. and *Cyperus* sp.
- ✘ Some grass species is growing at the margin of the lake



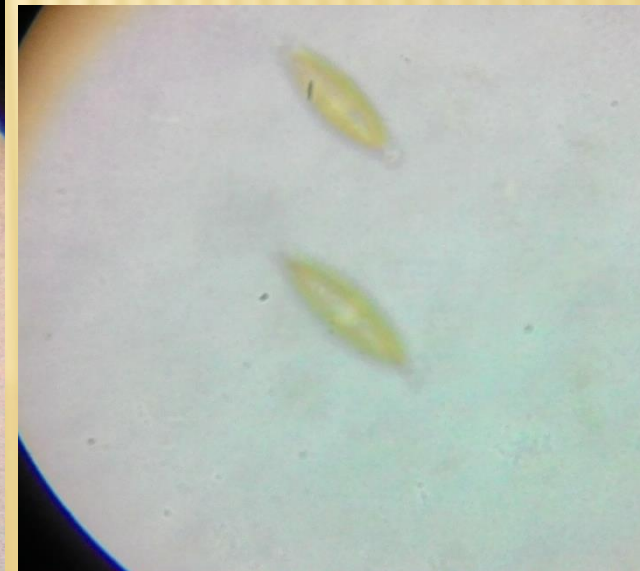
ULOTHRIX



NITZSCHIA



DIATOMS



BIRDS AT MUNNEKOLALA LAKE

- ✘ 14 species of birds were identified at the lake
- ✘ Little Egret, Red Wattleed Lapwing, Painted Stork, Pond Heron, Spotted Dove, Pelican, Common Coot, Hen, Black Cormorant, White-breasted Kingfisher, Pied Kingfisher, Rose-ringed Parakeet, Brahminy Kite, Grey Heron



FOOD MILE



- ✘ Most of the vegetables are from Sidhapura and are transported to nearby places within radius of 10km.
- ✘ Sidhapura to Varthur is about 4.5kms.
- ✘ HAL market to Varthur is about 14 kms.
- ✘ Anekal market to Varthur is about 31.8kms.



VEGETABLE - FOOD MILE

SI No.	Name of Vegetable	Cost/Kg (Rs.)	Kind of transport	Transported from	Kg of CO ₂
1	Spinach	120	Small truck	Sidhapura	0.135
2	Tomato	40	Small truck	Sidhapura	0.052
3	Brinjal	38	Lorry	HAL market	0.143
4	CarrotNati	63	Small truck	AnekaL	0.54
5	Drumstick	140	Lorry	HAL market	0.529
6	Radish	33	Lorry	Anekal	0.282
7	Ladies finger	50	Lorry	HAL market	0.189
8	Cauliflower	55	Lorry	HAL market	0.207
9	Cabbage	30	Small truck	Sidhapura	0.033
10	Broccoli	130	Lorry	Anekal	1.116

GROCERY - FOOD MILE

Sl No.	Name of Grocery	Cost/Kg (Rs.)	Place of import	Import Kilometers	Kind of transport	Kg of CO ₂
1	Rice	50	Punjab	2536	Lorry	34.24
2	Ragi	45	Mysore	171	Lorry	2.08
3	Groundnut	85	Gujarat	1672	Truck	38.37
4	Pearl millet	26	MP	1420	Truck	9.97
5	Milk	39	Tumkur	92	Tempo	0.97
6	Green gram	130	Rajasthan	2099	Lorry	73.67
7	Maize	165	Kodagu	264	Truck	11.76
8	Mustard Oil	176/L	Rajasthan	2099	Truck	99.74
9	Barley	46	UP	2026	Lorry	25.16
10	Coriander	118	AP	484	Tempo	15.42
11	Paddy	60	Kolar	58	Truck	0.94
12	Jowar	40	Gadag	411	Lorry	4.44

SOIL ANALYSIS



Parameter	Sample 1		Sample 2	
	1.1	1.2	2.1	2.2
Colour	reddish black	reddish black	reddish orange	reddish orange
Texture	moist, sticky, fine	moist, sticky, fine	loose, coarse	loose, coarse
pH	7	7	6.5	6.5



FUTURE STUDIES

- ✘ Total Hardness and Magnesium Hardness of lake water
- ✘ Fabric lifecycle
- ✘ Carbon Footprint
- ✘ Regular observations of study area
- ✘ Report writing

NSIP CADETS ON A MISSION



THANK YOU

