Interim Project Report

Underr DST-NCSTC WaSH Programme.

PROJECT TITLE: Watershed Mapping of the Ulhas river in areas of challenging natural landform.

WASH FELLOW NAME: Milan S Jain (jainmilan1996@gmail.com)

SUPERVISOR: VINIT WAGHE.

ULHAS RIVER

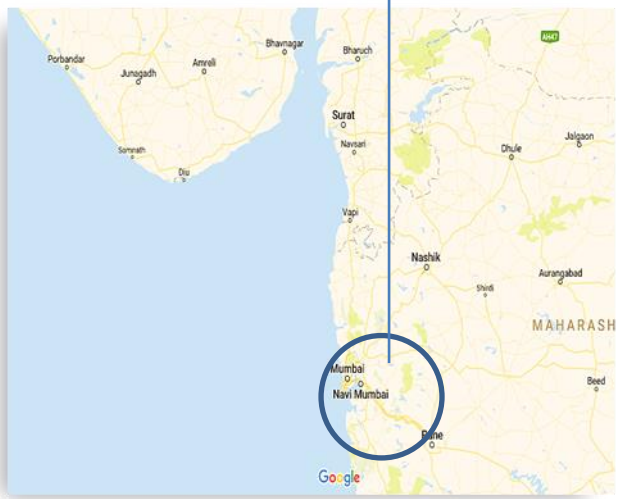
PROJECT START DATE: 01ST MARCH,2017

PROJECT SITE:

Ulhas River originates at Budhemal Lake near Rajmachi Fort, 8216.55 meters above the sea level, traverses through Sahyadrian ranges of hilly tracks of Western Ghats and meets the Arabian Sea at Vasai Fort in Thane District.

The Ulhas drains an area of **4,637 sq. km** which lies completely in Maharashtra.

The total length of this West flowing river from its origin to its outfall in to the Arabian Sea is **122 km**. From its origin, it flows westward through Raigad and Thane districts of Maharashtra, along Kulgaon-Badlapur, north to Ulhasnagar (to which it gives its name) and on to Kalyan.

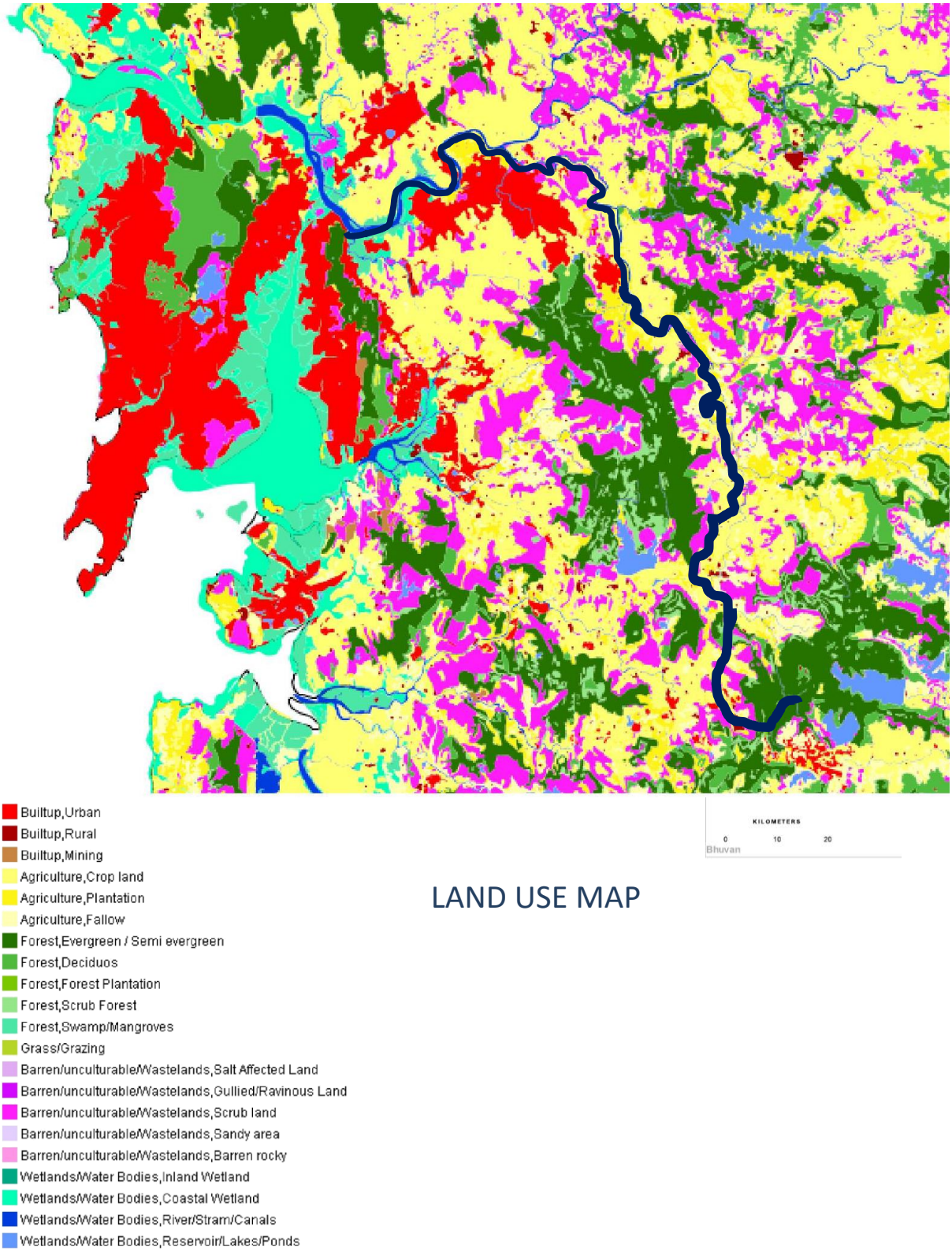


The tributaries of Ulhas river are: Waldhuni, Pej, Barvi, Bhivapuri, Murbari, Kalu, Bhasta, Poshir, Shilar.

The Ulhas River is used to supply drinking water to the cities of Badlapur and Navi Mumbai, Kalyan Dombivali.

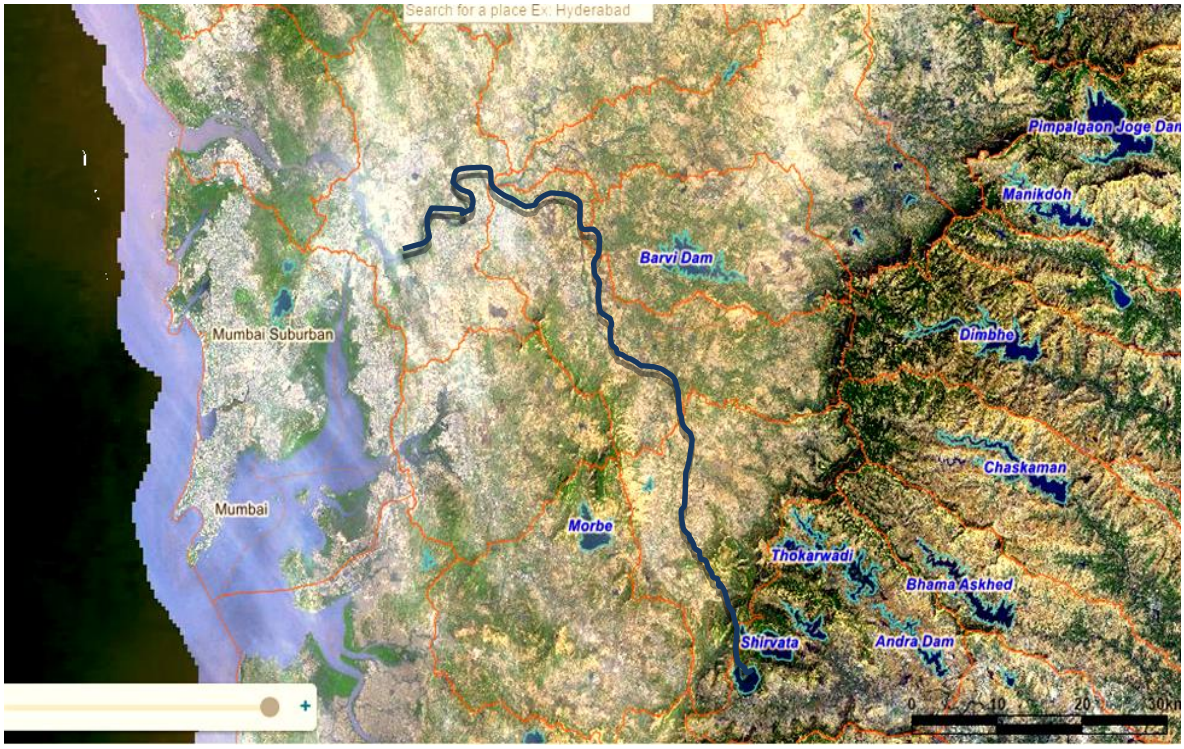
The river was also a source of livelihood to many river dependent communities particularly fisherfolks, who fish in the fresh and the estuarine waters of the river.

The river has turned into a nallah, full of filth and dirt. The once perennial river now dries post monsoon and is only carrying sewage and chemical effluents. The river is now lifeless in most of its reach.

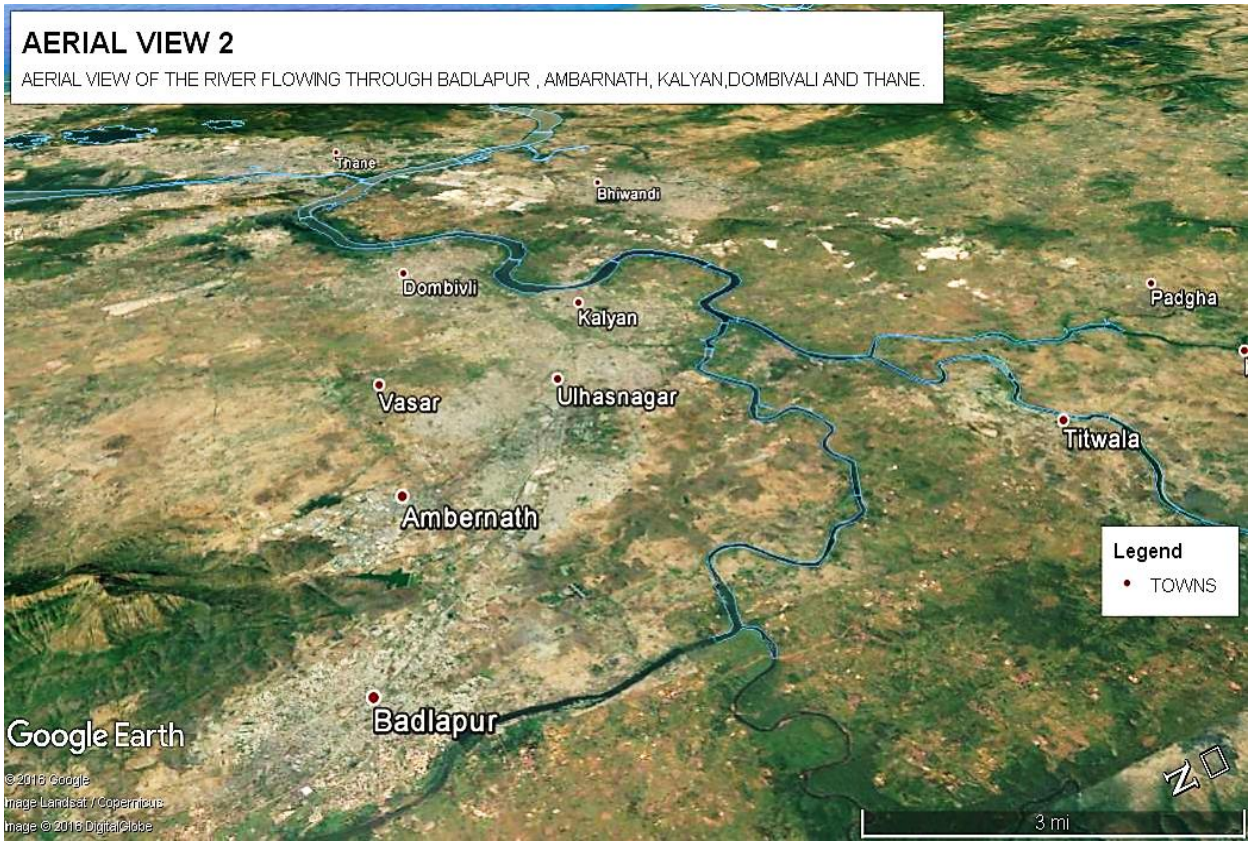

Builtup,Urban
Builtup,Rural
Builtup,Mining
Agriculture,Crop land
Agriculture,Plantation
Agriculture,Fallow
Forest,Evergreen / Semi evergreen
Forest,Deciduos
Forest,Forest Plantation
Forest,Scrub Forest
Forest,Swamp/Mangroves
Grass/Grazing
Barren/unculturable/Wastelands,Salt Affected Land
Barren/unculturable/Wastelands,Gullied/Ravinous Land
Barren/unculturable/Wastelands,Scrub land
Barren/unculturable/Wastelands,Sandy area
Barren/unculturable/Wastelands,Barren rocky
Wetlands/Water Bodies,Inland Wetland
Wetlands/Water Bodies,Coastal Wetland
Wetlands/Water Bodies,River/Stram/Canals
Wetlands/Water Bodies,Reservoir/Lakes/Ponds
KILOMETERS
0
10
20
Bhuvan

LAND USE MAP

WATERSHED MAPPING OF THE ULHAS RIVER IN AREAS OF CHALLENGING NATURAL LANDFORM



WATERSHED MAP OF ENTIRE ULHAS RIVER. (source -bhuvan maps)



PROJECT SUMMARY:

Ulhas is the only large river that falls completely within the MMR region which still has large undeveloped zones along the river basin. Research will **investigate** into various **factors** which **affect watershed of the river**. Since a river is influenced by the entire watershed region that it flows through, it is very important to map this watershed region and document the same with observations and suggestive measures.

Because, the activities that occur alongside have significant impacts on the lower regions that they drain into. The research **proposes to identify** and **study** certain stretches along Ulhas river valley and study about the type of construction technology carried out on these challenging watershed areas and analyze the impacts.

PROJECT TIMELINE: MARCH 2017 TO MAY 2017.

WORK /ACTIVITIES CARRIED OUT SO FAR:

Shortlisting of areas to be physically surveyed.

Site visits to BADLAPUR, KALYAN AND AMBERNATH.

Photo documentation.

Mapping.

OBJECTIVES:

Preliminary survey of unique natural landform.

Checking for overlaps and gaps in documentation of these in DP.

To create a watershed map acknowledging the flow of Ulhas river.

To create a comparative analysis of the development plan and on site conditions.

To develop an understanding among the local residents about the heritage and importance of Ulhas river and to curb the negative functionality of river.

To understand the disturbances occurred in the natural flow of river, due to large scale urbanization and industrialization.

METHODOLOGY:

Collection of secondary data from sources like satellite images, DP documents etc.

Field visit to shortlisted areas of contention.

Survey of kind of development in these area and construction technology employed to build in challenging watershed areas.

Online surveys through Google satellite images.

Local interactions on site.

Obtaining and studying development plan maps.

Analysis through conducted surveys.

FUTURE DIRECTIONS:

It will help in further research on effective management of a river edge.

This will help in contributing to a safer, healthier and ecologically balanced environment.

The project research can be used to setup guidelines for urban planning and monitoring of such landforms.

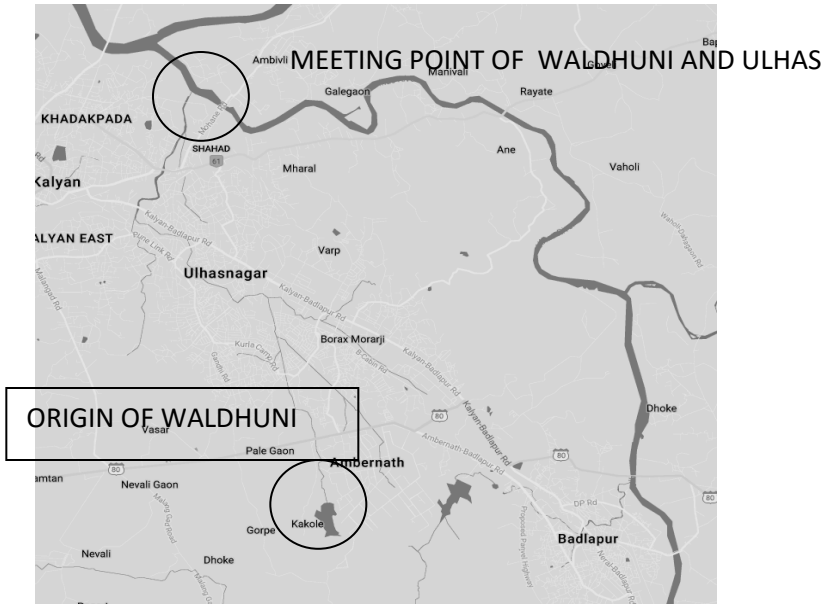
WORK TO BE DONE: Secondary Data Collection , Field Visits , 3D Terrain Mapping , slope analysis.

OBSERVATIONS:

The main problem starts at Badlapur, Ambernath and Kalyan, where industries dump waste into the Waldhuni river, which connects with the Ulhas.

Near Kalyan, it starts to resemble a sewer.

The people around this region have no idea that, this was once a river. Due to this absence of knowledge, people further pollute it assuming it to be a Nala.



Case 01 AMBARNATH:

Ambernath is a part of the Mumbai Metropolitan Region. It comes under the Thane district of Maharashtra. Ambernath is the site of an old temple (Shiva Temple) dedicated to Lord Shiva, which is **the most important built heritage.** The temple is on the bank of Vadavan (Waldhuni) river**,** which was supposed to be a river of sacred and holy water. But, the present scenario is nothing like above.

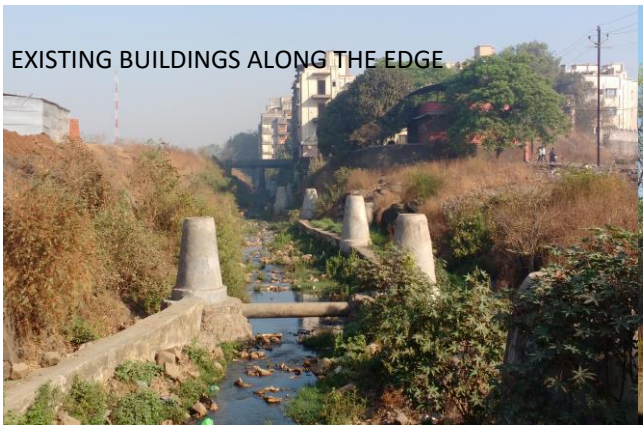
Due to the development of houses and G+4 buildings on the river bank, the natural state of the river is largely affected.

Waldhuni, a tributary of Ulhas river, originates at Kakola hills (800m altitude), Kakola Lake near Ambernath and unites with Ulhas River near Kalyan. Its total length is 31. 8km.Waldhuni along with its tributaries run over a length of 9.5 kminAmbernath town. It enters Ulhasnagar Municipal Corporation through Ambernath Municipal area and runs over length of 6.5 kms and finally into the Kalyan creek

. It flows through thickly populated area of Ambernath, Ulhasnagar and Vithalwadi and is severely polluted due to domestic and industrial sewage.

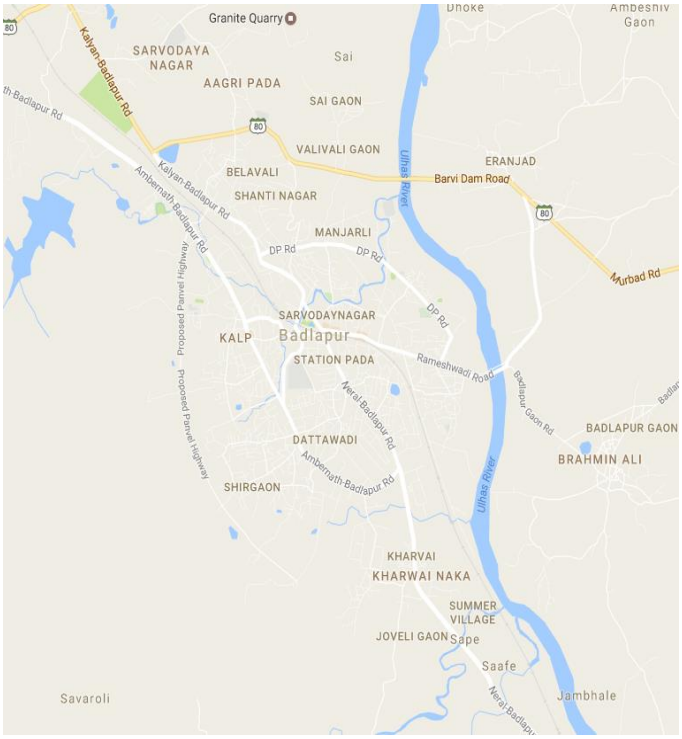
The river banks are thickly populated and there are encroachments around the river.

Effluents from industries and residential area have been released in the river itself at several points that pollute the river water heavily. The appearance of river is like that of a gutter carrying liquid and solid waste.



According to the Development Plan of Ambernath municipal council 1996-2016, the Waldhuni tributary has been demarcated as a 'NALA.'

Case 02: BADLAPUR:



Badlapur is a city in Thane district, Maharashtra state, India. It is a part of the Mumbai Metropolitan Region**.** Due to population growth in nearby cities, people working in Mumbai have been moving to Badlapur for a number of socioeconomic reasons, including close proximity to Mumbai via rail.

Badlapur was recognized as a town in 1971, as a municipal town in Ulhasnagar tehsil.

The Ulhas River flows between Badlapur and Kulgaon. Floods frequently occur due to Badlapur geographical location near this mountain runoff. Badlapur and Kulgaon are connected by two bridges over the river. The city is virtually divided into two areas, "East" and "West", by the railway.

The presence of a crematory in the vicinity of the river stretch leads to a lot of "*nirmalya"* garland waste dumped into the river. The road which is one of edge of the river lets heavy duty vehicles inside the river periphery. Hence the river water, is used in cleaning these vehicles and also the same water is filled up in water tankers and stolen for the purpose of construction activities.

Also, it is used by locals for common domestic activities, further deteriorating its quality.

SATELLITE IMAGE SHOWING TRUCKS STEALING WATER FROM THE RIVER

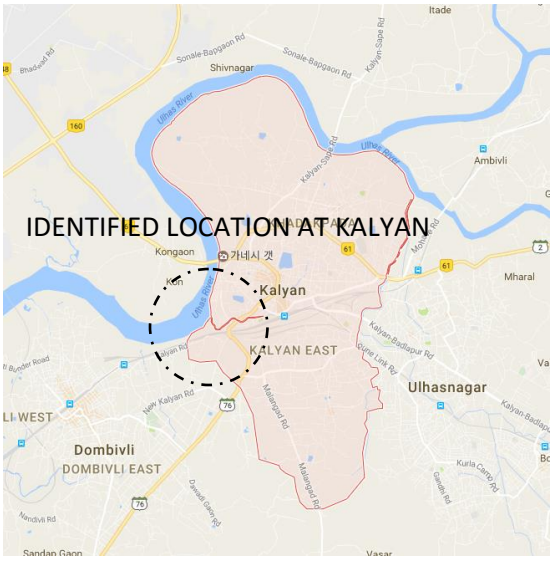
ON SITE OBSERVATION

DOMESTIC ACTIVITES FURTHER INCREASE POLLUTION OF RIVER

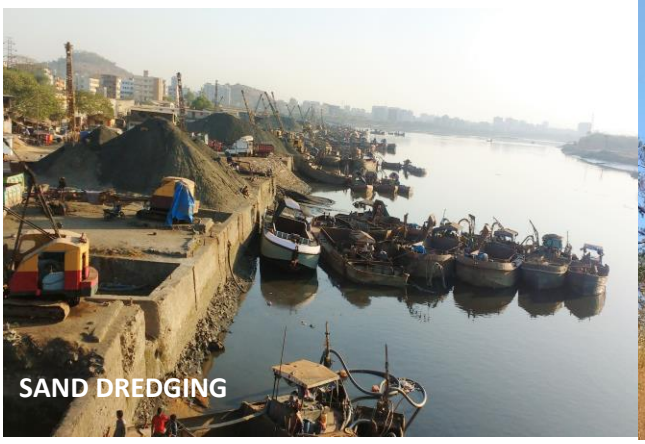
Case 03 KALYAN:

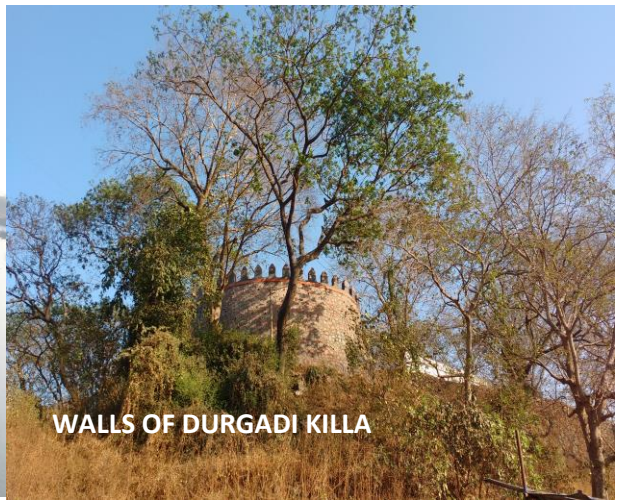
A city located in the Thane district of Maharashtra state in Konkan division. This city is part of Mumbai Metropolitan Region managed by MMRDA. It had an estimated population of 506,098 at the 2011 Census. Ulhasnagar is a municipal town and the headquarters of the Tahsil bearing the same name. It is a railway station on the Mumbai-Pune route of the Central Railway.

"Kalyan has fallen prey to haphazard unauthorized development due to delays in implementation of infrastructure development.



It is a heavily populated zone. Majorly used for residential and industrial purpose. We identified a diverse spot, near Durgadi killa. (Retibandar) which is Sand dredging is one of the major illegal activity happening in this zone. This leads to loss of fertile soil and imbalance in the aquatic ecology. further, Existence of dumping yard, alongside the river edge might lead to chances of seepage of toxic waste in the river soil, which may prove to be largely hazardous. To the north of durgadikilla lies ganeshghat, which is use for cultural and recreational purposes. This place is largely used during ganeshchaturthi for immersion of ganesh idols.





CITATIONS:

http://www.academia.edu/23154346/Conservation_of_Ulhas_and_Waldhuni_Rivers_in_Ulhasnagar

RACHANA SANSAD INSTITUTE OF URBAN AND REGIONAL PLANNING

Conservation of Ulhas andWaldhuni Rivers in Ulhasnagar

Landscape Term Paper Sem-2

BY GANESH BAPAT, RUCHIRA PATKAR, PALLAVI VERMA, AMIT DAS.

http://www.academia.edu/4299360/EFFECT_OF_POLLUTION_ON_MUDSKIPPAR_FISHERY_OF_ULHAS_RIVER_ESTUARY_WITH_A_SPECIAL_REFERENCE_TO_THE_BIOLOGY_OF_BOLEOPTHALMUS_DUSSUMIERI_CUV._and_VAL._A_MINOR_PROJECT_IN_BIOLOGICAL_STUDIES.

http://india-wris.nrsc.gov.in/wrpinfo/index.php?title=Ulhas (maps)

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