

MEASURES TO CLEAN OUR RIVERS

- Increase the capacity and efficiency of sewage disposal works.
- Check the flow of industrial toxins into the river.
- Construct sullage treatment plants for waste disposal.
- Make pollution control equipment and other related sophisticated gadgets available at a subsidized rate.
- Take legal action, impose fines and punishments whenever and wherever necessary.



WATER CONSERVATION

Water shortage has now become a reality for us today. Insufficient rainfall has compelled the Irrigation Department to cut down our water supply. In such a situation, it is very important to harvest rain from our roofs, and recycle as much water in our homes as possible. This way we will be less dependent on the PMC and PCMC too!

1. I can monitor and control substances going into my drain.
2. I can replace harsh chemicals like phenyl, strong detergents, chemical pesticides and fertilizers used in my house with mild, environment friendly alternatives.
3. I can use dry clean-up methods instead of using hoses and wet mops.
4. I can contribute my labour in dredging the riverbed and cleaning the riverside.
5. For Ganesh Chaturthi, I shall bring home a 'Shadu' idol instead of a Plaster of Paris idol and donate it instead of immersing it in the river.
6. I can surely motivate at least five others to follow these tips.
7. I can ensure that my residential colony partly or completely treats its wastewater before sending it to the drainage line by installing a small, inexpensive treatment plant in my colony.
8. Saving precious rainwater is very important. My friends and I can harvest rainwater and use it sustainably, to reduce the burden on the river.

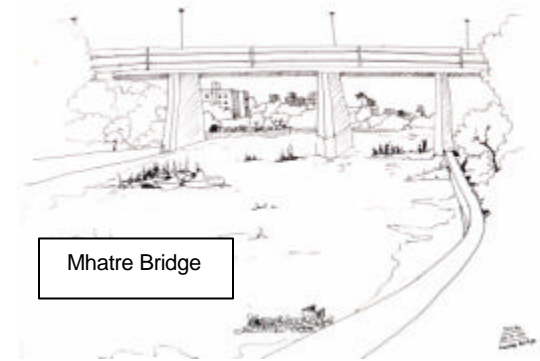
WHEN THE RIVER STARTS SPEAKING

INTRODUCTION

Pune, the cultural capital of Maharashtra, the Oxford of the East and the sister city of Bremen was once better known as Punyapur or Punyanagari, which reflects on the purifying power of its rivers.

Pune is the only city in our country with three rivers flowing through it and merging here.

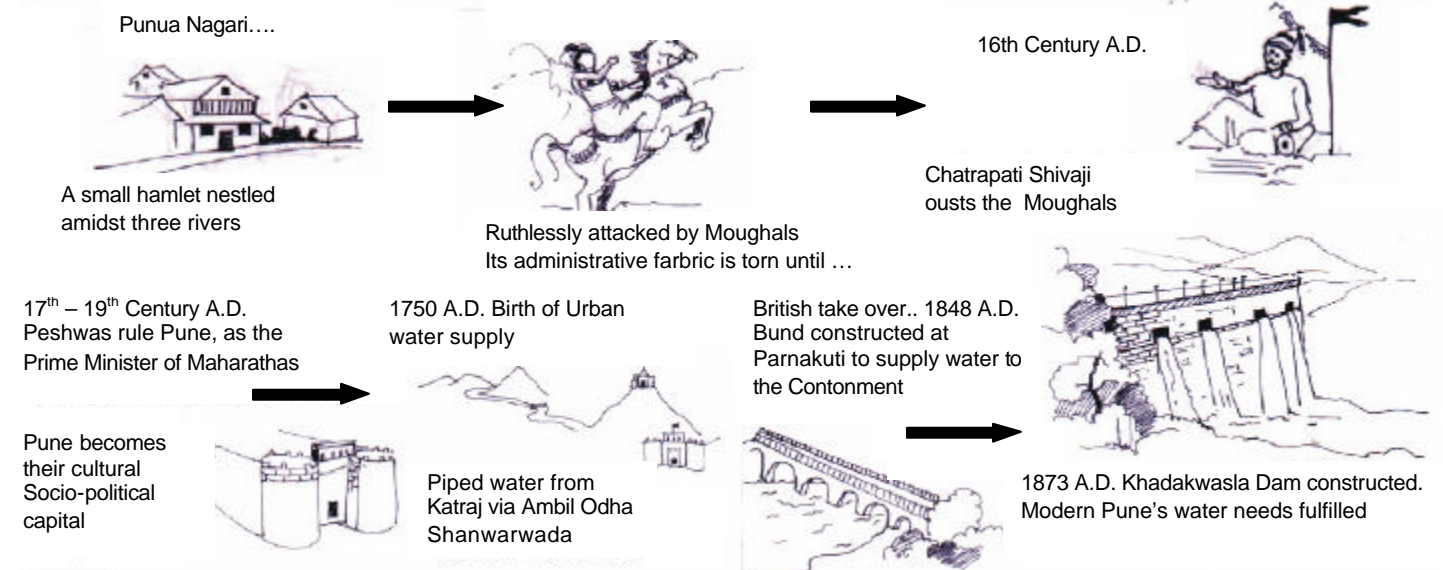
The river Mula emerges at Deoghar, 70 km West of Pune, and meets Pavana at Dapodi. Then, it joins the Mutha at Sangam and together they flow as the Mula- Mutha to Bhima along with Indrayani and Ghod rivers. Later Bhima merges into Krishna and falls into the Bay of Bengal. There are three large dams on the Mutha, namely Panshet, Varasgaon and Khadakwasla, and one across Mula at Mulshi. Besides these, there are many bunds on the river, like the bund at Parnakuti, better known as Bund Garden.



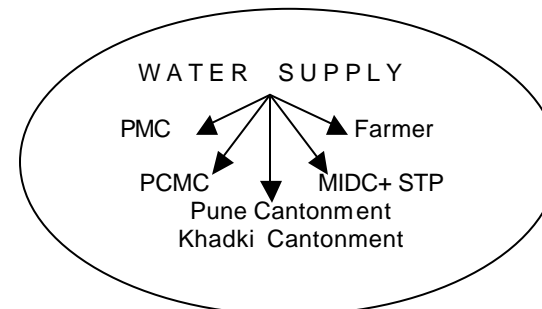
The pride of Pune City lies in having the largest number of bridges over its rivers in India. These bunds, dams and bridges regulate and slow down the flow of water in the rivers of Pune. Since the 1961-Panshet dam burst and the consequent flood, some parts of Mutha have been channelized.

Pune also harbours a few lakes including Pashan lake, Katraj lakes, Lakaki Lake and the privately owned TELCO lakes.

HISTORY OF PUNE



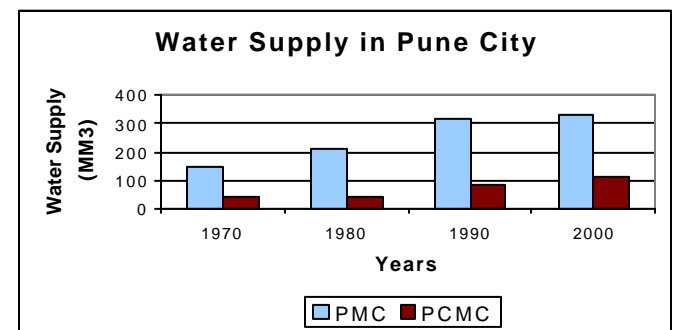
QUENCHING THIRST



MIDC of Pimpri-Chinchwad and Bhosari, The Science and Technology Park :

Water sanctioned: 54.7 Million cubic meters (MM³)
Water supplied: 37.3MM³
From Pavana and Khadakwasla reservoirs.

The following graph depicts the trend of water supply to the Municipal Corporations.



RANWA
(Research and Action in Natural Wealth Administration)
C-26/1, Ketan Heights, near Karve Statue, Kothrud, Pune, 411 029.
E-Mail: ranwa@yahoo.com Webpage: www.ranwa.org

RANWA is a small, decade old NGO registered as a Public Charitable Trust at Pune. Its objectives include environmental research, education and activism.

RANWA means wilderness in vernacular! Its objectives include nature Environmental research, education and activism everywhere, primarily through college students.

RANWA membership is informal & open to all. Just volunteer to help with its nature programs often & you become a member!

RANWA activities include week-end nature education trails around city hills, gardens & lakes, as well as talks and programs for both general nature lovers and students. These highlight beauty and variety of plants, birds and butterflies as well as ways to study & conserve them, beginning from your home garden! **Research projects** document plants, animals as well as destructive and constructive human activities especially in western Maharashtra. **Actions promote** plantation of local plants species as well as support environmental campaigns.

ILLUSTRATIONS: Smita Sahasrabudhe

TEXT: Archana Waran

MOTHER NATURE'S BOUNTY

As Mula and her sisters Mutha and Pavana weave through Pune on their way to meet mighty Bhima, they provide refuge to many life forms.

The habitat types change at every stage during the course of the rivers through the city.

Biologists have recorded 108 species of fish, 102 flowering plant species, 130 bird species in and around the river. The river banks had groves of Babul (*Acacia nilotica*), Karanj (*Pongamia pinnata*) and Shindi (*Phoenix sylvestris*) wild date palms - in the past. The river bed is an excellent foraging ground for snakes. Their food- rodents and frogs are aplenty.

STORING ADAM'S ALE

Pune City receives water from four major reservoirs. Pimpri-Chinchwad receives water from reservoir, "Pawana"



KHADAKWASLA

LOCATION: Haveli Taluka
 LENGTH: 1939m
 HEIGHT: 31.79m
 STRUCTURE: Composite
 STORAGE CAPACITY: 374 MM³
 YEAR OF CONSTRUCTION: 1869
Water Supply through 111km long Mutha right bank canal

PANSHET - Tananji Sagar Reservoir

LOCATION: Velhe Taluka
 LENGTH: 765m
 HEIGHT: 58.83m
 STRUCTURE: Composite
 STORAGE CAPACITY: 303 MM³
 YEAR OF CONSTRUCTION: 1960
Broke & flooded Pune in 1961.



WARASGAON- Veer Baji Pasalkar Reservoir

LOCATION: Velhe Taluka
 LENGTH: 780m
 HEIGHT: 63.4m
 STRUCTURE: Masonry
 STORAGE CAPACITY: 374 MM³
 YEAR OF CONSTRUCTION: 1993

TEMGHAR

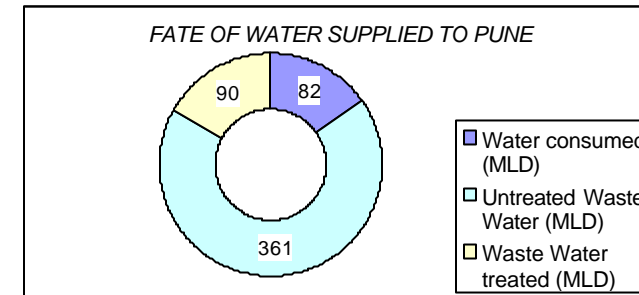
LOCATION: Haveli Taluka
Dam is under construction

Each year **Panshet** and **Warasgaon** dams together generate 8 megawatts of hydel power.

POLLUTION

Except on the day of *Ganapati Visarjan*, no water from Khadakwasla has flown into Mutha for the past five years!!!

This doughnut represents the usage of 533 MLD (Million Liters per day) of water in Pune.



Effluent from thousands of industries in MIDC Pimpri, Chinchwad and along Pune – Nagar Road, Pune – Solapur Road and Pune – Satara Road must treat and recycle their effluent within their premises, or treat and let it flow into the *nallas*.

Legally only certain concentrations of industrial effluents are allowed for dumping in the rivers. Unfortunately, this is not the ground truth. Neither the MIDC nor the pollution control board (MPCB) are willing to divulge the information about the volume of untreated and partly treated effluents released into the rivers each day. **Are they suffering from a guilty conscience?**

*"Only when the last fish is caught,
 The last buffalo killed,
 The last river, polluted,
 And the last tree felled,
 Only then will mankind realize
 That he cannot eat money"*
 - Cree Indian Saying

WHO IS RESPONSIBLE ?

- 10,50,000 Puneites live in slums, with no sanitation facility and use open drains as toilets.
- Inadequate sewage treatment facilities.
- Dams, bridges and bunds slow the course of the river leading to siltation and growth of water hyacinth.
- Factories: Questionable treatment of effluents
- Households : Harsh soaps and bleaches: increasing utility trend.



EFFECTS OF WATER POLLUTION

- Last year (2002) Dengue fever caused unrest in PCMC.
- The drinking water of many societies in Pune is contaminated with germs from their own sewage, and causes diarrhoea repeatedly.
- Sewage pollution has made ground water a vector of diarrhoea and also other problems in Pune's slums like Kasturba Gandhi, Warje, Bhimnagar, Kondhwe Dhavade, Rahulnagar, Uttamnagar etc. Due to this thousands of children and grown-ups suffer each day.
- There were two malaria outbreaks in Pune in 1995 and 1997, which together struck almost the entire city.
- The sewage workers in Pune are exposed to highly corrosive H₂S gas, which is a silent killer.

Even wildlife is not spared !

- 5 frog species, 18 fish species are now locally extinct. 30 fishes have become rare. There was only one fish species found at Khadki, probably because of inorganic salts and heavy metals from the industrial area.
- Many aquatic molluscs that were common in early 1960's are now either rare or locally extinct. Less polluted waters contain higher aquatic diversity.
- Eutrophication is promoting water hyacinth and *Ipomea* (Besharam) menace.

The last five decades have shown that pollution increases in geometric progression. So must the efforts for pollution eradication.

WHY SAVE THE RIVER?

- It is our moral responsibility to protect our Nature's precious gift to us.
- If a river is clean upstream, it ensures the health of the ecosystem downstream.
- We cannot ignore the fact that people downstream are compelled to drink our sewage! The Ujjani reservoir, which has no catchment of its own, relies on the Mula- Mutha to feed it. And it provides water to cities including Pandharpur and Solapur.
- A clean river is good business sense. It will provide healthier food, cause lesser health risk. It is a gold mine for tourism opportunities.
- A stitch in time saves nine. It is not yet too late to save our river system from collapse.