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Mutha river bank lost over 200 plant species in last 66 years: Study

By [Gayatri Vajpeyee](#)

Feb 23, 2024 07:16 AM IST

Cricket

The ever-increasing urbanisation has been identified as a major driver affecting biodiversity. Urbanisation not only alters the city's landscape and waterscape but also is responsible for environmental degradation, says researcher

In a survey of the plant diversity along the 22 kilometre stretch of Mutha river bank between Khadakwasla and Bund Garden, environment researchers found 243 plant species. However, in a similar survey that was carried out in the year 1958, at least 400 plant species were recorded on the 12 km river stretch between Vitthalwadi to Yerawada.



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A maximum number of species was recorded at Vitthalwadi (100 species) followed by Khadakwasla (93 species). The lowest species richness was recorded at Sambhaji Udyan's backside area (60 species) which is a highly disturbed area with poor microhabitat diversity. (HT File Photo)

In December last week, a research paper was published about the latest survey on plant biodiversity on the Mutha river bank, the study also highlighted a significant decrease in marshy land due to the channelization of the river which ultimately affected the plant biodiversity in the area.

A study was conducted by Uma Kalamkar, a member of Maharashtra Vruksha Samvardhini; late Dilip K Kulkarni was a taxonomist with BAIF Development Research Foundation and Ankur Patwardhan, head of department of biodiversity, Abasaheb Garware College, Pune and member of Research and Action in Natural Wealth Administration.

The research paper based on this study was published in December 2023 in the prestigious Journal of Ecological Society.

A maximum number of species was recorded at Vitthalwadi (100 species) followed by Khadakwasla (93 species). The lowest species richness was recorded at Sambhaji Udyan's backside area (60 species) which is a highly disturbed area with poor microhabitat diversity.

Kalamkar said, "The ever-increasing urbanisation has been identified as a major driver affecting biodiversity. Urbanisation not only alters the city's landscape and waterscape but also is responsible for environmental degradation."

"Microhabitat loss, fragmentation and degradation, habitat transformation and shrinkage, dumping of garbage, and sewage pollution are common indicators of this urban environmental degradation. Pune city has witnessed several changes concerning in the recent past. This includes constructions in the flood plain, channelisation of rivers, dumping of debris, and discharge of untreated sewage, which severely affected the natural river water flow and destroyed or altered microhabitats to a large extent. Thus, an attempt was made to compare the changes between floristic diversity before urbanization and now," he said.

Researchers came across eight endemic species including *Sse* (endemic to Peninsular India), *radermachera xylocarp* (endemic to eastern and western ghats), *eriocaulon dalzellii* (endemic to western ghats), *ficus arnottiana var courtallensis* (endemic to Peninsular India), *syzygium salicifolium* (endemic to western ghats), *Madhuca longifolia var. latifolia* (endemic to India), *tinospra cordifolia var congesta* (endemic to Central India).

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in 1730, eminent botanist V.P. Vartak carried out a study of plant diversity in the stretch between Vitthalwadi and Yerawada. He recorded 400 plant species.

“Comparison with this study revealed the disappearance of many plant species belonging to families like najadaceae, molluginaceae, campanulaceae, gentianaceae, nyctaginaceae, chenopodiaceae, orchidaceae, and amaryllidaceae. Some of the species which showed rare occurrence previously were seen very commonly during this study. This includes invasive species like eichornia crassipes (jalparni), parthenium hysteophorus (congress), amaranthus spinosus, pistia stratiotes, commelina hasskarlii, alternanthera sessilis, alternanthera philoxeroides, lantana camara, ipomoea carnea, leucaena leucocephala (subabhul) etc.,” said Kalamkar.

Suggestions to enhance the plant diversity at Mutha river

*Providing protection and minimizing human interference to control activities like tree cutting, garbage dumping, and construction debris dumping.

*Ecological planning of the riverfront to facilitate natural regeneration and maintain microhabitat diversity.

*Establishment of sewage treatment plants along the river stretch.

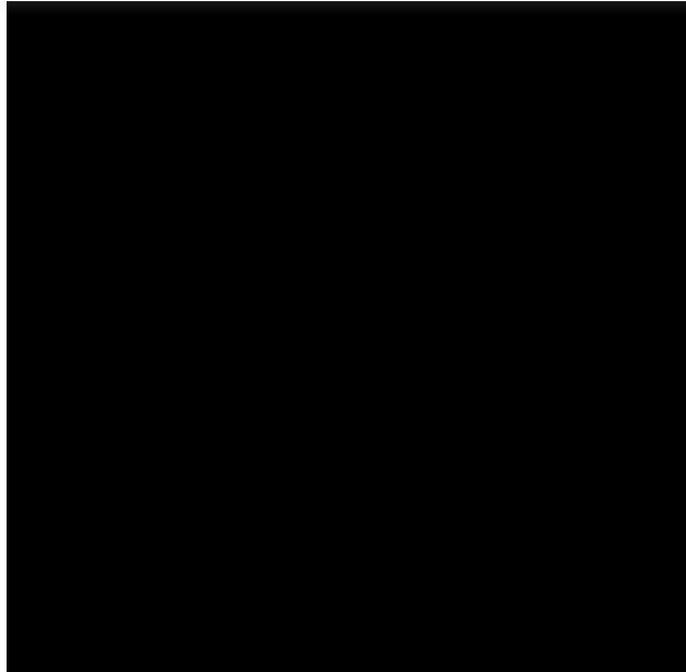
*Avoiding the use of cement materials as it destroys riparian microhabitats. The most sustainable approach may be to establish vegetation like native trees, grasses, and wetland plant species so that bank stabilization happens naturally.

*Removing cement walls and developing buffer strips consisting of grassland, wetland scrub, or native trees will be beneficial. [OPEN APP](#)

* Protecting upstream forest cover will help conserve vegetation in the downstream areas. E.g. some natural vegetation patches still exist in Khadakwasla and Nanded City area.

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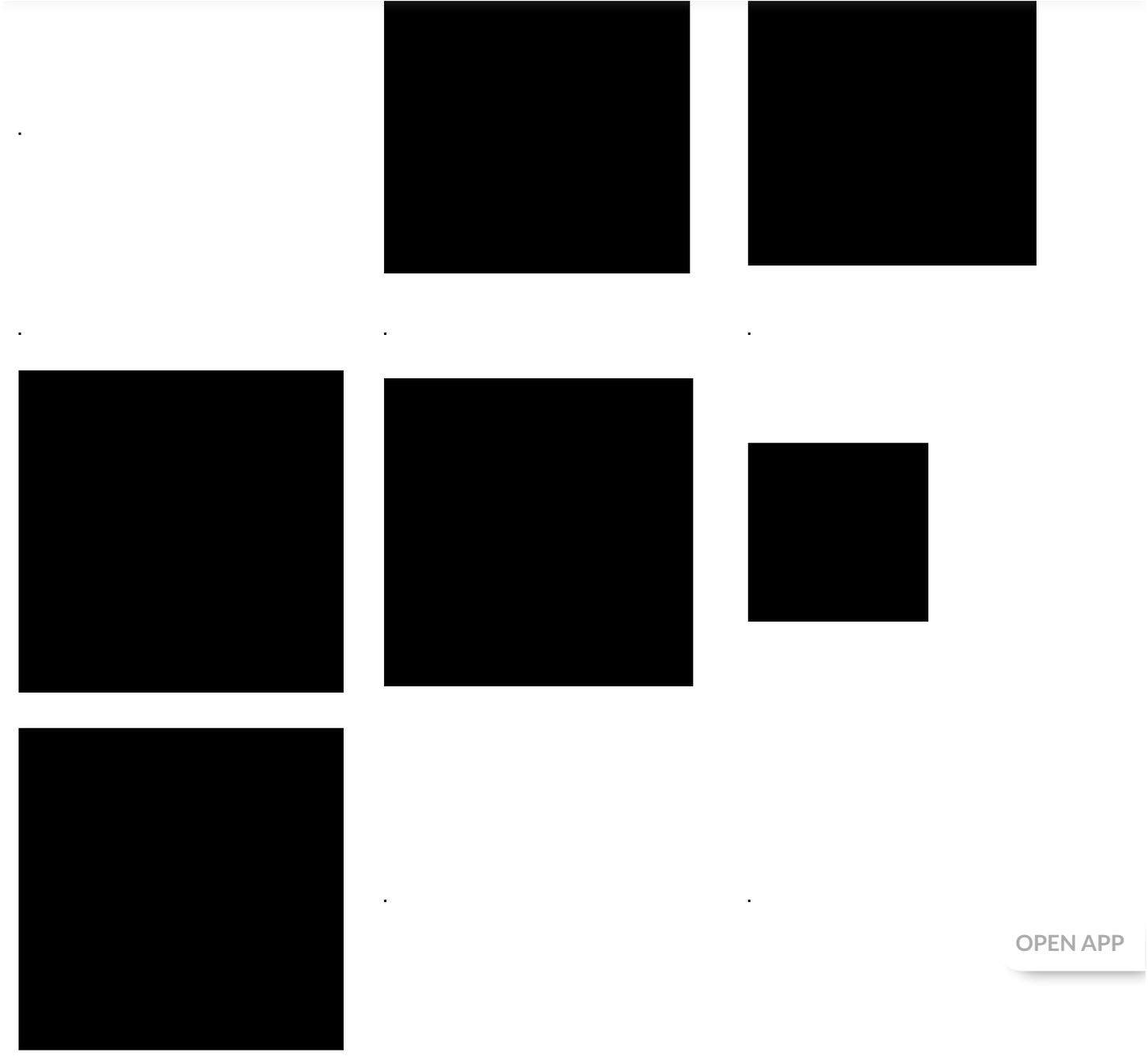
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