



## UNEP Study Sounds Alarm About the Disappearance of the Mesopotamian Marshlands

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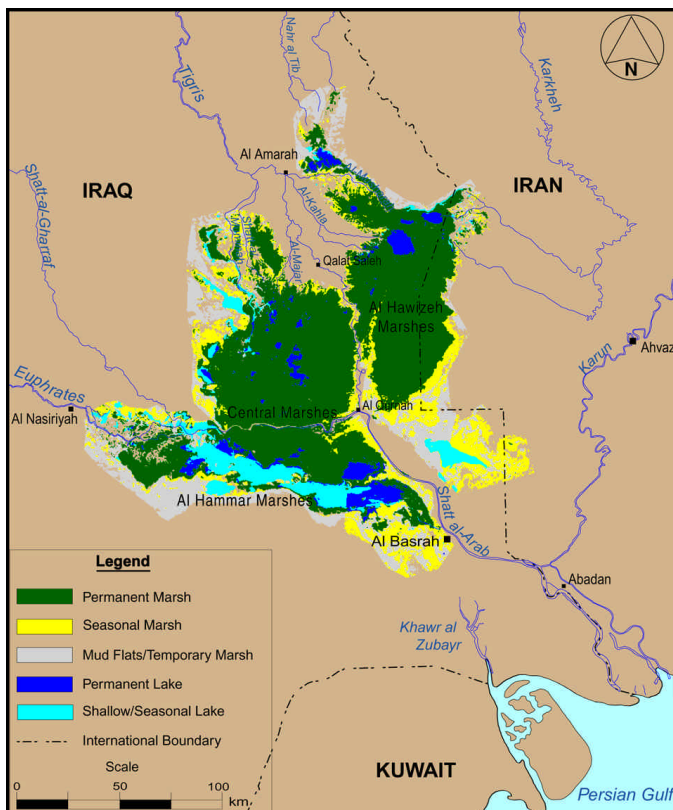
Drawing on historical and fresh satellite imagery, a new UNEP study shows that the Mesopotamian marshlands of the Tigris-Euphrates delta - the largest wetland in the Middle East and one of the most outstanding freshwater ecosystems in the world - has nearly vanished. The report, due to be released in Summer 2001, is another wake-up call on the accelerating pace of human-driven environmental change at the turn of the twentieth century. Specifically, it highlights the mounting threats facing wetlands, one of the most valuable habitats on Earth, with important implications on the looming global freshwater crisis.

Despite intermittent reports in past years warning against the imminent decline of the Mesopotamian marshlands, there has been little immediate action to avoid such a fate. Iraq's difficult situation in the past decade has limited access to and hindered monitoring of events in the marshlands. As a result, this major ecological disaster, broadly comparable in extent and rapidity to the drying of the Aral Sea and the deforestation of large tracts of Amazonia, has gone virtually unreported.

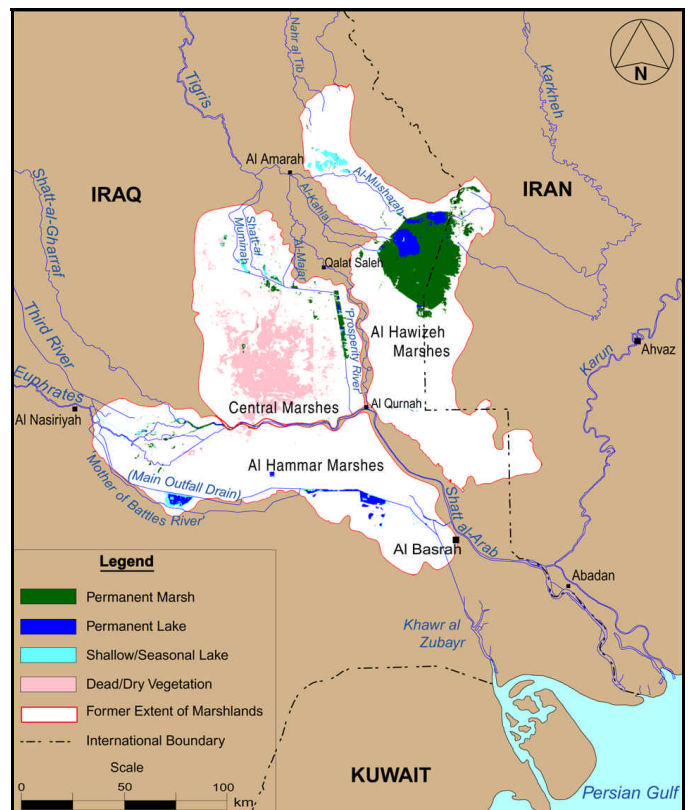
Backed with hard satellite evidence, the UNEP study graphically documents the stunning scale and speed at which the wetlands have disappeared, confirming the most pessimistic scenarios. It concludes that over 85% of the marshlands had disappeared by May 2000, with devastating impacts on wildlife and unique human communities that have lived there for millennia.

Comprising an integral part of the Tigris-Euphrates river system, the marshlands are located at the confluence of the two rivers in southern Iraq, and partially extend into Iran. The report shows that the desiccation of these vast wetland resources, originally covering between 15,000-20,000 square kilometres, is attributable to two main causes: upstream dams and drainage schemes.

The Tigris and the Euphrates are amongst the most intensively dammed rivers in the world. In the past 40 years, the two rivers have been fragmented by the construction of more than 30 large dams, whose storage capacity is several times greater than the



**The Mesopotamian marshlands in 1973-76**



**The Mesopotamian marshlands in 2000**

Hard facts: Analysis of Landsat satellite imagery reveal a sweeping ~ 85% decline of marshland area. With most of the marshland now barren, only a small section of the Al Hawizeh marsh straddling the Iran-Iraq border remains, but which is itself rapidly shrinking due to upstream water projects.

An aerial view of the Mesopotamian marshlands in 1976, when it was largely intact. The Marsh Arabs, who have dwelled in this rare water world for millennia, have fled the collapse of their habitat and are now a refugee population.



Photo: Nik Wheeler

volume of both rivers. By turning off the tap, dams have substantially reduced the water available for downstream ecosystems and eliminated the floodwaters that nourished the marshlands.

The immediate cause of marshland dewatering, however, has been the massive drainage works implemented in southern Iraq in the early 1990s, following the second Gulf War. Although some of these engineering works were meant to deal with chronic salinisation in the inter-fluvial region, historically Mesopotamia's main environmental problem, they were expanded into a full-fledged scheme to drain the marshlands.

Recent satellite images provide hard evidence that the once extensive marshlands have dried-up and regressed into desert, with vast stretches covered by crusts of salt. Furthermore, satellite imagery shows only a limited area of the marshlands having been reclaimed for agricultural purposes.

A small northern fringe of the Al-Hawizeh marsh, straddling the Iran-Iraq border (known as Hawr Al-Azim in Iran), is all that remains of the marshlands. Yet even this last vestige is rapidly dwindling as its water supply is impounded by new dams and diverted for irrigation purposes.

The collapse of Marsh Arab society, a distinct indigenous people that has inhabited the marshlands for millennia, confers a vivid human dimension to this environmental disaster. Around one-fifth of the estimated half-million Marsh Arabs are now living in refugee camps in Iran, while the rest are internally displaced within Iraq. A 5,000-year-old culture, heir to the ancient Sumerians and Babylonians, is in serious jeopardy of coming to an abrupt end.

The impact of marshland desiccation on its teeming wildlife has been equally devastating, with significant implications to global biodiversity from Siberia to southern Africa. A key site for migratory bird species, the marshlands' disappearance has placed an estimated 40 species of waterfowl at risk and caused serious reductions in their numbers. Mammals and fish that existed only in the marshlands are now considered extinct. Coastal fisheries in the northern Persian Gulf, dependent on the marshlands for nursery and spawning grounds, have also experienced a sharp decline.

Despite this tragic human and environmental catastrophe, UNEP believes that there is hope. Bold measures need to be taken by the custodians of this natural treasure for the conservation of the remaining transboundary Al Hawizeh/Al Azim marshes before it is too late. UNEP also calls on Iraq and other riparian countries, and international donors to give the Mesopotamian marshlands a new lease on life by re-evaluating the role of water engineering works and modifying them where necessary, with a long-term view to reinstating managed flooding.

Finally, UNEP proposes an integrated river basin approach involving the three main riparian countries (Iraq, Syria and Turkey as well as Iran for the Tigris tributaries) to manage decreasing water resources sustainably and reverse negative environmental trends in the region. To continue in present ways would spell the wholesale ecological demise of lower Mesopotamia, and ultimately undermine the foundation of life for future generations. UNEP therefore urges riparian countries to re-initiate dialogue and adopt an international agreement on sharing the waters of the Tigris and Euphrates for the benefit of people and nature, and to ensure an adequate water supply to the marshes. To help stimulate and better advise this process, UNEP in collaboration with regional organisations is carrying out a comprehensive scientific assessment of the Tigris-Euphrates basin, which should provide the scientific underpinnings for the improved management of the twin rivers.