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CIA/IB - - - - 94-10020 - - - -

1 SEP 1994

# The Destruction of Iraq's Southern Marshes

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IA 94-10020  
NESA 94-10021  
RTT 94-10054  
August 1994

APPROVED FOR RELEASE  
DATE: APR 2001

# *The Destruction Iraq's Southern Marshes*

For more than a millennium the wetlands near the confluence of the Tigris and Euphrates Rivers have supported a unique way of life for permanent marsh dwellers and provided shelter for Bedouins, slaves, malcontents, and opponents of the central authorities in Baghdad. Because this watery ecosystem was accessible only by small boats, armies from ancient times to the present have been unable to effectively pursue the insurgents who have sought refuge here. In the spring of 1991, a post-Gulf war Shia uprising engulfed much of southern Iraq and, after Baghdad regained control of the major cities, the insurgents were forced to retreat to safehavens in the Al 'Amarah and Hawr al Hammar Marshes. The Baghdad regime's strategy for dealing with this marsh-based insurgency focused on large-scale water diversion projects to dry the southern wetlands.

To dry the Al 'Amarah Marsh, Baghdad constructed an east-west dam and canal across its northern side to cut off the Tigris River distributaries, the marsh's principal source of water. The diverted water is carried south by a 2-km-wide canal to the Euphrates River near the head of the Shatt al Arab. The Euphrates River, the primary source of water for the Hawr al Hammar Marsh, was dammed east of An Nasiriyah and west of Al Qurnah, leaving only a dry stream bed through the area that had been covered by the Hawr al Hammar Marsh. A major tributary of the Euphrates is being diverted into a depression west of the Hawr al Hammar Marsh, creating a large lake. The remaining Euphrates river water is carried by a canal system from the dam east of An Nasiriyah, south of the Hawr al Hammar Marsh into the Shatt al Basrah Canal which empties into the Persian Gulf. By late 1993 most surface water had evaporated from the Hawr al Hammar and Al 'Amarah Marshes.

## **Environmental Impact of Marsh Drying**

The marshes of southeastern Iraq had provided a wetland habitat that sustained numerous species of wildlife. The marshes were a vital staging area for birds migrating

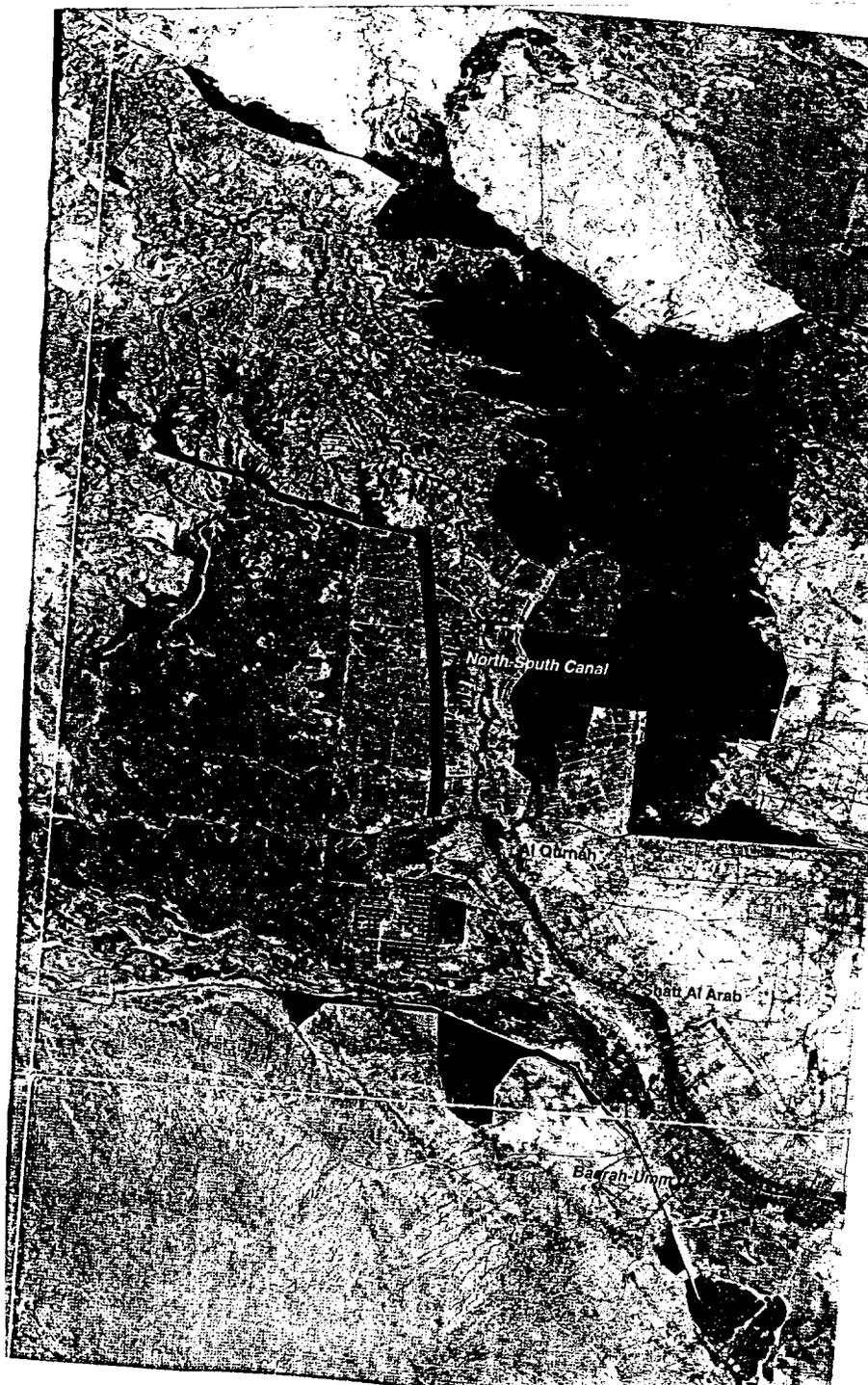
from Asia to Africa, and was home for a vast number of ibises, egrets, herons, waders, storks, pelicans, and eagles. A wide range of fish species could be found in this watery ecosystem, and some of the migratory species were probably an important source of income to Persian Gulf fishermen. The drying of the marshes is preventing the interaction of water, soils, and vegetation that sustained this habitat. Desertification has undoubtedly caused the death of many animals and could lead to the extinction of species unique to the area.

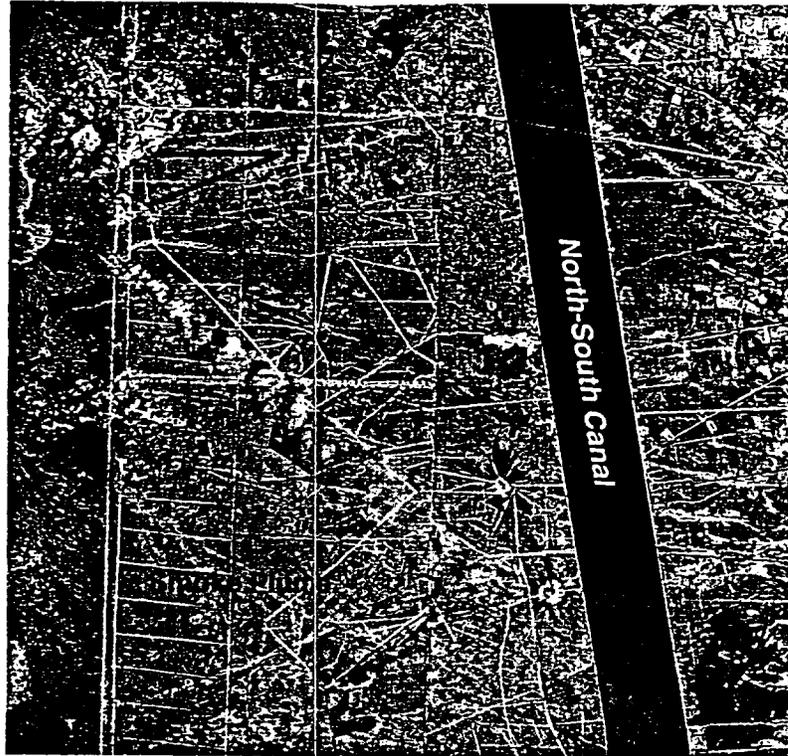
By late 1993, the Iraqi marsh-drying program had caused the evaporation of most surface water from the Hawr al Hammar and Al 'Amarah Marshes. The immediate effects of the loss of surface water was the widespread destruction of indigenous vegetation that required year-round standing water. Some native plants may remain, either in a dormant state or subsisting on the meager rainfall that occurs during the wet season. An assortment of wetland wildlife species relocated or died, and various fish populations—upon which the local marsh inhabitants depended for protein—disappeared. As the surface water evaporated, salt accumulations formed a crust on the bed in some areas of the former marsh. These deposits, particularly in the Hawr al Hammar Marsh, will increase the salinity of the soil, and decrease its fertility, making it unsuitable for agriculture.

The Iraqi regime's water diversion projects will also affect the regional environment—for example, the loss of the marshes' absorption capacity will probably increase flooding between April and June, after the spring runoff has entered the Tigris and Euphrates river systems. Agricultural runoff into the Persian Gulf will also increase—as the river water entered the marshes, its velocity slowed, allowing the marshes to filter sediment and chemicals from the water before it entered the Gulf. Sediments once deposited in the marsh, will be deposited in the Iraqi diversion canals and the Shatt al Arab.

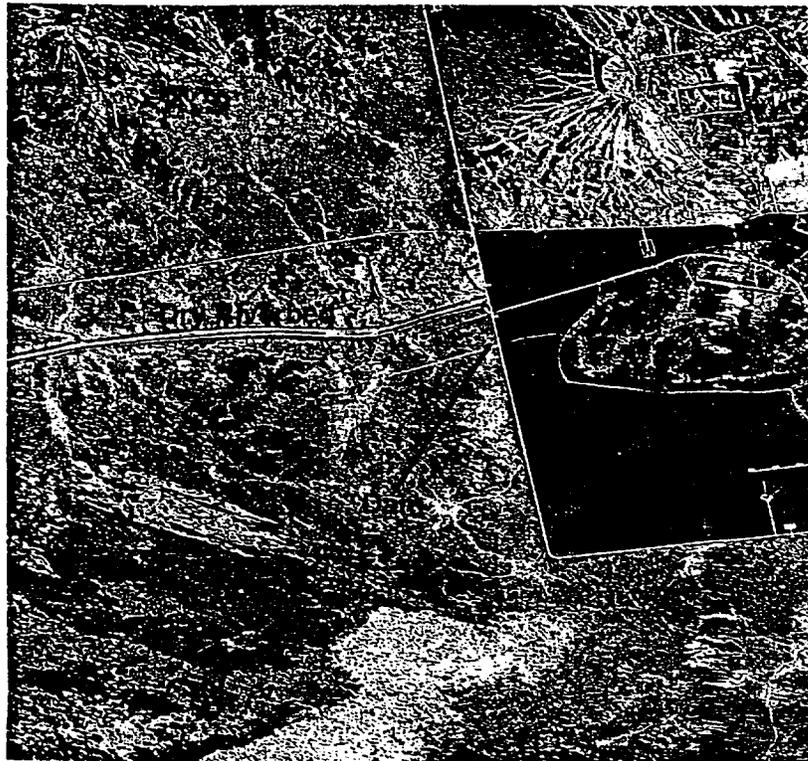


Tigris River

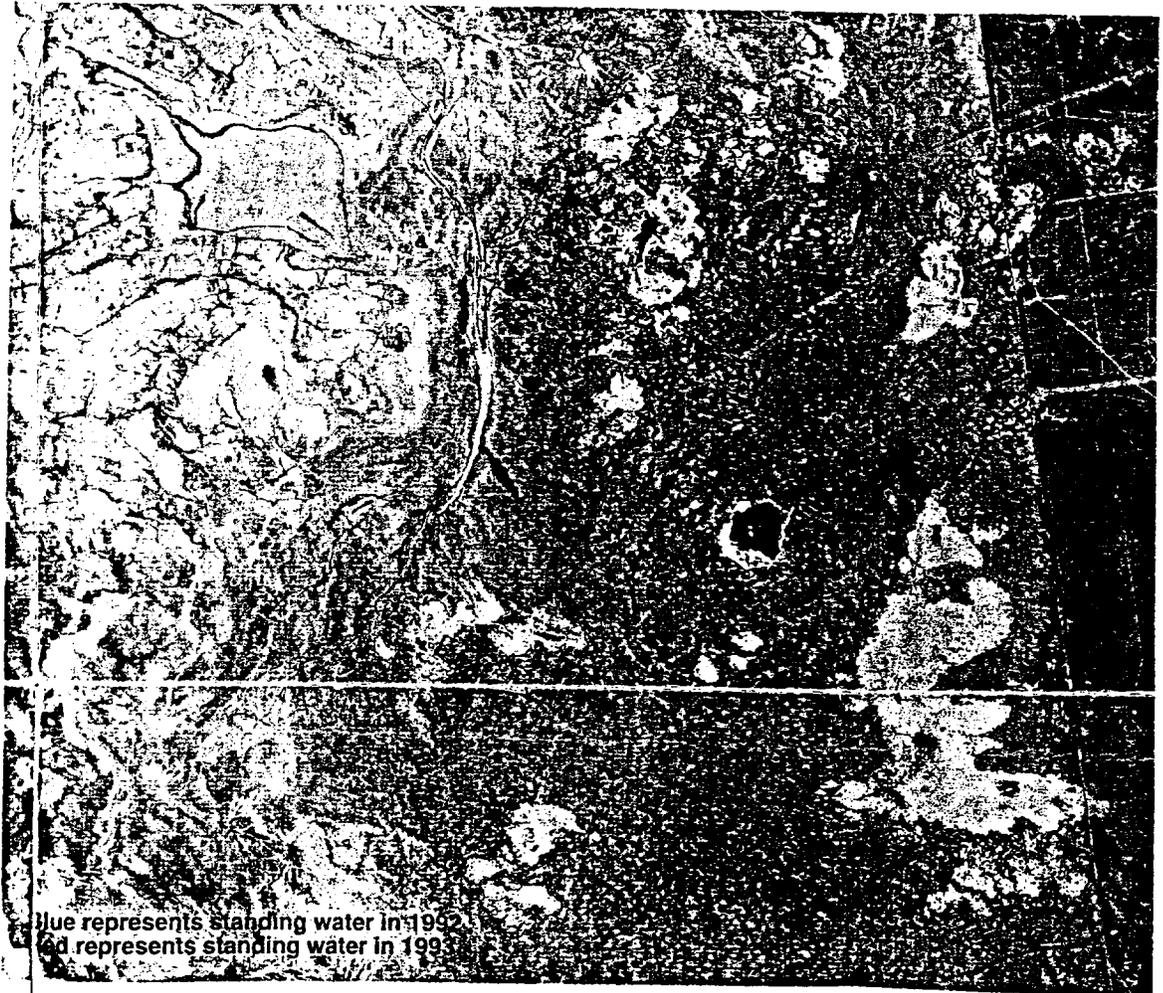




*As the marsh waters started to evaporate, the Iraqi military began a campaign to burn the remaining vegetation. LANDSAT and weather satellite imagery of the marshes from the summer of 1993 through spring 1994 consistently showed large fires, some with smoke plumes stretching over 35 km. Baghdad continues to follow this scorched-earth policy. Systematic burning of the remaining vegetation by the Iraqi army is contributing to the desertification of the marsh area as well as destroying the dwellings of the few remaining inhabitants. The dry and denuded areas remaining provide no sustenance or protection for the insurgents and allow the Iraqi military increased accessibility and unobstructed fields of view and fire.*



*The dam west of Al Qurnah prevents water carried south by the North-South Canal from flowing into the dry Euphrates riverbed and reflooding part of the former marsh area.*



*LANDSAT pictures show a disaster of epic proportions occurring in these permanent and seasonal wetlands. In the early 1970s the marshes covered 5,200 square km west of the Tigris River, with water levels varying from a few inches to several feet, depending on the season. After the most recent Shia uprising in 1991, the Baghdad regime started constructing a series of canals and dams to prevent water from entering the marshes. By late 1993 less than 10 percent of the former marsh area was covered by water—a direct result of efforts by the Iraqi government to dry the marshland.*



*August 1972*

*The southern marshes as they looked in 1972. For more than a thousand years this roughly 5,200 square km area provided all the necessities of life for Arab marsh dwellers.*



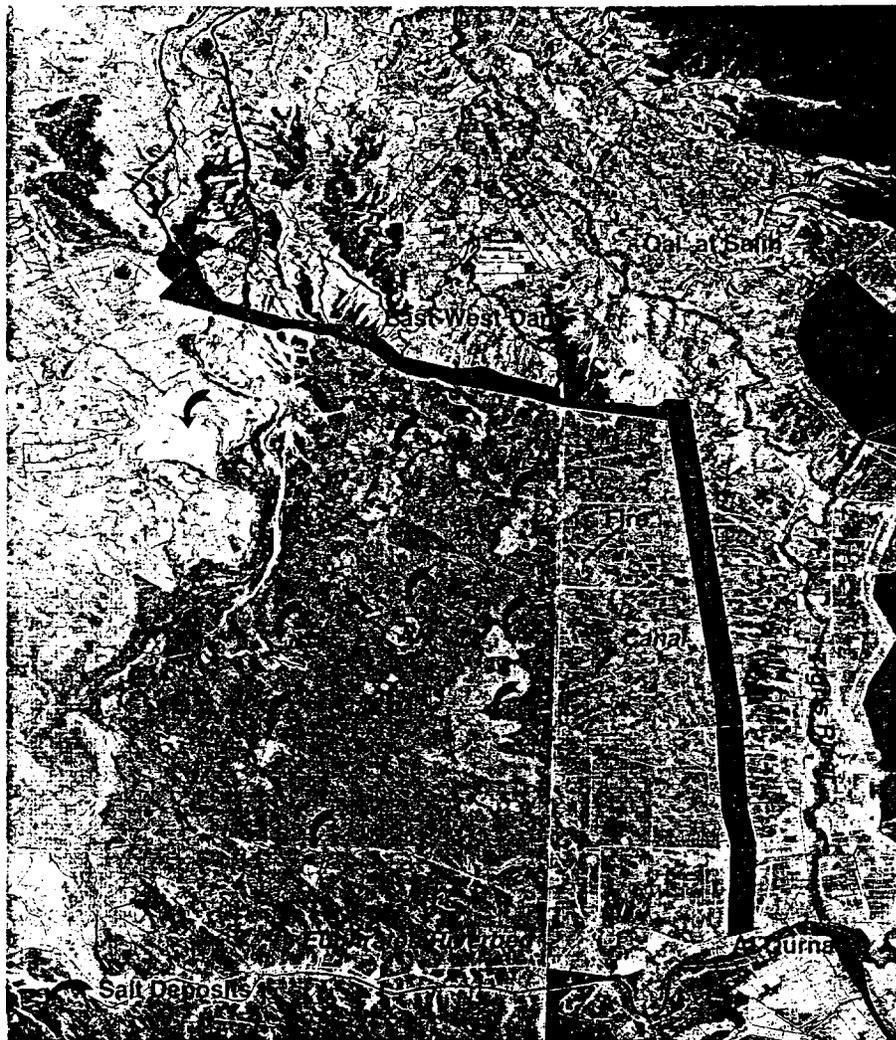
*February 1991*

*During the Iran-Iraq war, the Iraqis constructed causeways, which enabled them to move armored units and supplies more easily along the southern border area. This construction caused drying of the eastern third of the marshlands by 1991. Because this image was taken in winter the vegetation in the western portion of the Al 'Amarah Marsh appears brown.*



*March 1993*

*After the 1991 Shia uprising, the Iraqi government undertook an ambitious effort to dry the southern marshes. With the completion of an east-west dam and a north-south canal the major water supply to the Al 'Amarah Marsh was cut off.*



*September 1993*

*By the fall of 1993 very little standing water remained in the former marsh area. Areas that were once year-round lakes are dry and a layer of dried salts has been deposited on the surface. In large areas of the former marshes (the bright green areas) the normal marsh vegetation, reeds and thistle, was replaced by grasses characteristic of areas with a wet soil. The Euphrates River was dammed east of An Nasiriyah and diverted south around the Hawr al Hammar Marsh, leaving only a dry riverbed between An Nasiriyah and Al Qurnah.*

