

Introduction

Iran has a total land area of 139,319,000 ha, of which 720,000 ha are marine and littoral protected areas. There are 2440 km of coastline on the Persian Gulf and Gulf of Oman, and 720 km of coastline on the Caspian Sea.

Iran is OPEC's second largest oil producer and holds 9% of the world's oil reserves and 15% of its gas reserves. Iran plans extensive development of existing offshore fields. The rush to develop oil and gas resources in the Caspian Sea makes oil pollution in the Caspian a real environmental threat. Major increases in energy consumption over the past 20 years have contributed greatly to pollution levels as Iran's carbon emissions have nearly tripled over the same time period. In addition, Iran's abundance of fossil fuel resources has tended to discourage the incentive to shift to cleaner alternative energy sources for energy needs. The Caspian Sea is the largest inland water body on Earth, has low salinity, and with long isolation from world seas, a unique yet vulnerable marine ecology has developed. Important commercial species include sturgeon, herring, mullet, carp bream, pike-perch and salmon. The most valuable species commercially, Caspian sturgeon, has suffered substantial declines in population due to over-exploitation. The freshwater Caspian seal is an endemic species and has also declined substantially in numbers in recent decades.

The Persian Gulf is rich with good fishing grounds, extensive coral reefs, and abundant pearl oysters, but its ecology has come under pressure from industrialisation, and in particular, repeated petroleum spillages during recent wars. There are also mangroves, seagrass beds, salt marshes and salt pans in the region. Mangrove thickets occupy a total area of 9200 hectares along the southern coasts of Iran

Protected areas include Hara Biosphere Reserve, located in the south of Iran in the Straits of Khuran between Queshm Island and the Persian Gulf. Situated in the Mehran River delta, it hosts the largest *Avicennia* mangrove swamp along the Persian Gulf shoreline and, therefore, represents a center of biodiversity in Iran. The Strait of Khuran is also a Ramsar site, providing habitat to two globally threatened species: a wintering habitat for the pelican *Pelecanus crispus*, and a regular feeding place for the green turtle *Chelonia mydas*.

The Miankaleh Biosphere Reserve is located at the south-eastern part of the Caspian Sea. Major habitats include wetlands, inter-tidal mud with sandy shore, shallow marine waters, forested peat lands, raspberry shrub forests, tamarix forests and agricultural areas.

11 marine mammal species including 3 species of dolphins, 6 species of whales, one species of sea hog, and one species of sea bull have been identified in the waters of the Persian Gulf. Among these the sea bull is among the animals threatened by extinction and is mentioned in the CITES list, and, the pseudo-killer whale, the humpback whale, and the finless sea hog are rare species. All marine mammals of the southern coast of Iran are considered to be endangered species, and the above species are particularly vulnerable. The marine mammals in the Iranian waters are not hunted for human consumption, but they are threatened by pollutants produced by human activities, particularly from oil pollution and pollution due to military activities.

5 species of turtle frequent the waters of the Persian Gulf and the Oman Sea. Two species: the Green Turtle and the Eagle-beaked Turtle, lay their eggs on scattered patches alongside the southern shores of Iran

Habitat for waterfowl on the southern includes creeks, estuaries, marshlands, mangrove growths, and mud flats. The factors affecting these habitats and threatening the survival of waterfowl in the southern coastal areas of Iran include hunting, oil pollution, the expansion of marine farming, tourism and the transformation of environmental conditions or uneven economical development of coastal areas. All the southern coastal marshes that attract and provide habitats for the waterfowl, can be regarded as vulnerable to oil spill events

Regional Seas

Caspian Sea, Persian Gulf and Gulf of Oman.

Past experience

There have not been any major oil spills in the Caspian Sea. In the Persian Gulf, the Gulf War oil spill is regarded as the worst oil spill in history. It caused considerable damage to wildlife in the Persian Gulf especially in areas surrounding Kuwait and Iraq. Other serious spills occurred during the Iran-Iraq war and in 1983 in particular when 38 million gallons of crude were released from the Nowruz Field. More recently 500 tonnes of light crude were released in the Straights of Hormuz in 2005, and in 2007 an area of 800 sq km were contaminated near Bandar Abbas and may have resulted in the death of 79 dolphins.

Response: the role of the authorities

The Regional Organization for Protection of Marine Environment (ROPME) forum was established in Kuwait in 1979 and ratified by seven new member states (Bahrain, Iran, Iraq, Oman, Qatar, Saudi Arabia and the United Arab Emirates). Rapid growth of ROPME and shared coastal and marine environmental issues among littoral States have resulted in joint plans laying the basis for future coastal management and development in the Persian Gulf region.

The Port and Shipping Organization of Iran is the designated national authority responsible for responding to marine oil pollution incidents in the waters around the country. PSO has the power to impose fines on any vessel polluting Iranian ports and coastal waters and to charge the costs of oil spill responses.

The responsibilities of the Department of the Environment (Bureau of Marine Environment) cover among other things the protection of wildlife, environmental reserves, wetlands and natural landscape preservation. The Hunting and Fishing Control Organisation undertakes wild life research and study, protection of wild life habitats, and determination of places for special purposes such as natural parks. A National High Commission on Oceanography was established in 1991, which includes seven committees involving different relevant ministries, organisations and departments. The Iranian National Oceanographic Data Centre under the auspices of Iranian National Centre for Oceanography hold data for the Caspian Sea, Gulf of Oman and Persian Gulf region.

During 2003 Iran developed a National Oil Spill Contingency Plan. This follows the guidelines of the International Maritime Organisation and is based on a tiered structure, with tier 1 being local spills, tier 2, area spills and tier 3 major spills. Tier 1 and 2 spills are to be generally tackled by local port or oil company equipment, but tier 3 spills will almost certainly require cooperation between countries and international agencies. The Port and Shipping Organisation has initiated the development of local contingency plans for individual ports and terminals. The PSO has also participated in the development of the Caspian Regional Plan on cooperation in cases of major spills as well as the Kuwait Action Plan covering the Persian Gulf and Gulf of Oman. Some sensitivity mapping has been undertaken in conjunction with UNDP, Shell and other companies. OSPRI, the 'Oil Spill Preparedness Regional Initiative (Caspian Sea – Black Sea – Central Eurasia)', has been established by a group of oil companies to work cooperatively with governments to promote spill response capability in the region.

Iran has ratified the following conventions:

- Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1973)
- UN Convention to Combat Desertification
- Rio de Janeiro Convention on Biodiversity Preservation
- Basel Convention on the control of Transboundary Movements of Hazardous Wastes and Their Disposal (1992)
- Convention on Oil Pollution Preparedness, Response and Co-ordination (1997)

The Port and Shipping Organisation plans to join MARPOL or International Convention for the Prevention of Pollution from Ships. A Framework Convention for the Protection of the Marine Environment of the Caspian

Sea is currently under preparation.

In spite of the fairly extensive experience of oil spills and cooperation with other countries and with oil companies outlined above, ITOPF reports that surveillance and monitoring of spills in Iranian waters and its impacts on the Iranian Coast have been hard to gauge, as has been the responses of the Iranian authorities.

Oiled wildlife response

Formal guidelines?

Use of dispersants is to be restricted near sensitive coasts but detailed guidelines for protection of wildlife and for treatment of oiled wildlife is not known.

Response objectives and strategy

n.a.

Euthanasia or rehabilitation?

n.a.

Impact assessment

n.a.

Notification and early response

n.a.

Wildlife responders

The Research Institute of Petroleum Industry (RIPI) undertakes research and survey work related to problems of pollution, including methods of controlling oil spills. The National Iranian Tanker Company (NITC) undertakes the training of oil spill task forces.

The NGO sector is becoming increasingly active in Iran, but the extent of likely involvement in the event of an oil spill affecting wildlife is unknown. Organizations include Iran Society of Environmentalists, Green Front of Iran, Iran Ecological Society and the Womens Society against Environmental Pollution.

Institutes that may have specialised expertise include the Persian Gulf Molluscs Research Centre at Bandar Lengeh, the Iranian Fisheries Research Organisation in Tehran, Persian Gulf Research and Studies Center, Persian Gulf University, Boushehr, University of Marine Science and Technology, Khorramshahr, Khuzestan, Department of Environmental Sciences, College of Natural Resources, Zabol University, Zabol, Department of Fisheries, Islamic Azad University, Lahijan, Gilan, and the Department of Fisheries, Faculty of Natural Resources and Marine Sciences, Tarbiat Modares University, Noor, Mazandaran.

Cooperation between stakeholders

n.a.

Permanent facilities

Some oil pollution control facilities have been established in the Anzali and Nowshahr ports on the Caspian Sea. It is not known how much spill response equipment is currently maintained in the Persian Gulf, but the PSO and National Iranian Tanker Company may have significant stocks and further equipment will probably be available in the through other countries cooperating in the Kuwait action Plan. Similarly shared equipment will be available in the case of Caspian Sea spill, though OSPRI and the Caspian Regional Plan.

Current processes

The Department of the Environment, The Ministry of Energy and other sectors have implemented the following

projects: Regional protection of the Caspian sea in the North of Iran in collaboration with all lateral countries; Reception Facilities for balancing water on the oil ships in the Persian Gulf; Study on environmental impacts of Coastal powerplants national wide; Study on pollution due to oil transport in the Persian Gulf. A National Action Plan for Marine Conservation reflecting the priority concerns of the nation still needs to be developed.

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