

Location



Introduction

The Republic of Turkey, located in western Asia and southeastern Europe, is bordered on the north by the Black Sea, on the northeast by Georgia, on the east by Armenia and Iran, on the south by Iraq, Syria and the Mediterranean Sea, on the west by the Sea of Crete, the Aegean Sea and Greece, and on the northwest by Bulgaria. Cyprus lies offshore to the south. Within the country the Bosphorus, or Istanbul, Strait connects the Sea of Marmara with the Black Sea and the Dardanelles Strait (Strait of Gallipoli or Strait of Canakkale) connects the Sea of Marmara with the Aegean and Mediterranean Seas.

In March to May the weather is mild with moderate temperatures, while June to August is hot and dry with cooler nighttime temperatures, and September to November tends to be rainy with moderate temperatures. December to February is sunny and cold with some chilly and wet weather and snow in some areas. Snow is less common along the coasts.

There are complex maritime and territorial disputes between Turkey and Cyprus, particularly over the status of north Cyprus.

Regional Seas and Biogeography

Mediterranean Sea
Sea of Marmara
Black Sea
Sea of Marmara

Large Marine Ecosystems:
Black Sea
Mediterranean Sea.

Habitats

The approximately 7200 km coast of Turkey is varied, with rocky and mountainous areas with few sandy beaches on the Black Sea. Archipelagos, gulfs and bays dot the Sea of Marmara, and sandy beaches, steep cliffs, bays, caves and many offshore islands are found on the Aegean/Mediterranean coast.

- *Seagrass beds* are common in the Aegean Sea and parts of the Mediterranean but rare in the Black Sea.
- *Saltmarshes* are common in the Aegean and the far eastern Mediterranean with few sites in the Black Sea.
- *Kelp beds* may be found in a few spots within the Aegean Sea and the Bosphorus Strait but not in the Black Sea.
- *Tidal flats* dot the Aegean Sea and are common in the far eastern Mediterranean Sea but are not found in the Black Sea.

Biodiversity Hotspots

In this section, acronyms are used for some of the most common types of hotspot: National Park (NP), Marine National Park (MNP), Marine Protected Area (MPA), IBA (Important Bird Area), Important Marine Mammal Area (IMMA), Ramsar Wetland of International Importance (RAMSAR).

→ Ramsar sites

Kizilirmak Delta (also an IBA) on the Black Sea consists of dunes, beaches, shallow lakes, reedbeds and seasonally flooded forest areas. Over 92,000 waterbirds of various species, some of which are globally threatened, winter at the site.

Gediz Delta (also a Wildlife Protection Area, an IBA, and National Cultural and Natural Asset) is an extensive

coastal wetland with bays, salt and freshwater marshes, salt pans, and saline lagoons at the mouth of the Gediz River near Izmir. The site is an important area for breeding, feeding, wintering, and resting site for internationally important numbers of numerous species of waterbirds.

Goksu Delta (also a Wildlife Reserve, Specially Protected Area, and National Cultural and Natural Asset) is a wetland delta with reedbeds, swamps, saline and sand steppes, and marshes along several avian migration routes. It hosts internationally important numbers of wintering ducks and has recorded over 325 avian species, in addition to nesting Green (EN) and Loggerhead (V) Turtles.

Akyatan Lagoon (also a Wildlife Protection Area and National Cultural and Natural Asset) is a coastal lagoon surrounded by brackish marshes, sand beaches and dunes, wet meadows, and freshwater pools. The site supports large numbers of internationally important species of migrating, wintering and breeding birds, as well as nesting Green Turtles (EN).

Yumuralik Lagoons (also a Nature Conservation Site and National Park) is an alluvial delta formed by several rivers in the eastern Mediterranean with sand dunes, saltmarshes and streambeds. Both Green (EN) and Loggerhead (V) Turtles nest here in small numbers, and it is one of the key stopover and wintering sites for migratory birds.

→ **National Parks**

Dilek Peninsula-Büyük Menderes Delta National Park is the most biologically diverse national park in the country with a variety of marine and coastal birds and mammals, including sea turtles, marine mammals, and marine and coastal bird species.

→ **IBAs**

There are quite a few coastal IBAs not listed here individually as the details on these sites are limited. Assessments of these areas may not yet be complete.

Yesilirmak Delta is part of the largest delta on the Turkish Black Sea coast and is important for breeding waterbirds and wintering waterfowl.

Sinop Peninsula is a complex of dune, lake and forest habitat hosting large numbers of wintering Waterfowl.

Bosporus Strait is a major migratory bottleneck with more than 20,000 storks and raptors passing through each spring and autumn.

Kocacay Delta is a complex of coastal lakes, lagoons, marshes and forests on the southern shores of the Sea of Marmara which is an important breeding wintering and resting site for waterbirds

→ **IMMAs**

Cilician Basin is an important area for breeding and calving Mediterranean Monk Seals (EN), particularly between Gazipasa and Tasucu.

Western Black Sea overlaps several MPAs which include migratory routes for key prey species of all three Black Sea cetaceans. It hosts 70% of the Black Sea Harbour Porpoise (EN) population.

Turkish Straits System and Prebosphoric is an important migratory and foraging area for all three Black Sea cetaceans. Significant numbers of these species are present year-round, and the Black Sea Bottlenose Dolphin (E) is resident in the Istanbul Strait.

Central Aegean hosts Mediterranean Monk Seal (EN) breeding, as well as mother pup pairs.

Hellenic Trench is core habitat for the Mediterranean Sperm Whale subpopulation (V) which numbers less than 300 animals, and Cuvier's Beaked Whale (*Ziphius cavirostris*).

→ **National Marine Parks**

Gokceada Marine Park is located in the Aegean Sea on the northeast coast of Gokceada Island. The park hosts Mediterranean Monk Seals (E), cetaceans and coastal and pelagic birds.

At risk Wildlife

In this section, some individual wildlife species are mentioned followed by a letter in parentheses. These are species included in the IUCN Red List of Threatened Species within the top three categories of risk - Vulnerable to extinction (VU), Endangered (EN) or Critically Endangered (CR). A more complete list of IUCN listed species

is found in Appendix 1.

→ **At risk birds**

Three avian migratory flyways: the Mediterranean/Black Sea Flyway, the Central Asian Flyway and the West Asian/East African Flyway pass through Turkey, making it an important area for large numbers of avian species. Of the three bottleneck areas for migrating birds, the Bosphorus which hosts tens of thousands of birds each year is the most important. In addition, the country hosts at least twenty resident species threatened at the global level.

→ **At risk reptiles**

Five species of sea turtle forage in the Mediterranean. Leatherback (V) juveniles regularly forage in the area and Kemp's Ridley (CR) and Olive Ridley (V) are rare visitors. There are twenty-one beaches where Loggerhead(V) and Green Turtle (E) nest on Turkey's coast between May and August. The western beaches are mainly utilised by Loggerheads while Greens are found on eastern beaches. Of these eastern beaches Akyatan, Alata, Dayultepe, Kazanlı, Samandag and Sugoçu account for 88 percent of the nests in the country.

→ **At risk mammals**

Turkey hosts an important population of Mediterranean Monk Seals (E), who utilise caves in the eastern Mediterranean for resting and pupping. In the Sea of Marmara these seals are found along the coasts between Gurecealti and Karbiga, the Marmara Islands, the Kapıdağ Peninsula, some areas between Bandırma and Mudanya and the northwestern coast of the Armutlu Peninsula. In the Aegean Sea, they are found in the Bay of Saroz, the Aegean coasts of the Gelibolu Peninsula, and the area between New Foca and Cap Knidos of the Datca Peninsula. In the Mediterranean they can be found from Cape Knidos of the Datca Peninsula to Kemer, the coast from Arsuz, Iskenderun to the Syrian border. The species has not been recorded in the Black Sea since 1997.

In the Black Sea only three species of marine mammal are found: the Black Sea subspecies of Bottlenose Dolphin (E), the Harbour Porpoise (E), and the Common Dolphin (V). In the Aegean and Mediterranean, nine species of cetacean occur, most of which are migratory and non-breeding. Of these, the Sperm Whale (VU) and Fin Whale (VU) are of special concern.

Past experience with oil spill and potential risks

Turkey has experienced a number of medium to large spills, particularly in the Istanbul strait including *Independenta* (1979), *Jahire Guneri* (1984), *Jambur* (1990), *Nassia* (1994), '*Mystery spill*' (1996), *Volganef* (1999) and *Gotia* (2002), some of which impacted wildlife.

The *Independenta* incident caused 17,000 seabird casualties, the *Nassia* 1,500 and the *Volganef* 3,000. Gulls, ducks and cormorants were the most heavily affected species in each case.

The *Mystery spill* in summer 1996 affected the coasts of Cavus Island (SW Turkey), which holds important monk seal caves. The Underwater Research Society - Mediterranean Seal Research Group (SAD-AFAG), the Friends of Bodrum Society and the Ministry of Environment, Urbanization and Climate Change (MoEUCC, formerly MoE/MoEF) jointly cleaned oil from the sea surface, inside a cave, on the cliffs and on a cobble beach on the island. A regulation on ship navigation was put into force in 2001 to reduce the risk of marine accidents between the mainland and adjacent islands in Ayvalık, Foca and the Bodrum Peninsula.

Turkey has also suffered a number of bunker spills from non-tanker vessels, particularly in the Bosphorus and Dardanelles Straits.

The Turkish Strait System (TSS), which includes the Sea of Marmara and the Bosphorus and Dardanelle Straits, are some of the busiest shipping areas in the world, and also the most difficult to navigate. The *Baku-Tbilisi-Ceyhan (BTC) pipeline* connecting the Caspian Sea with the Mediterranean, travels through a large swath of eastern Turkey, ending at the port of Ceyhan, on Turkey's Mediterranean coast. This pipeline, while reducing tanker traffic in the TSS, increases the potential for spills inland and at the Ceyhan port.

International and Regional Treaties and Agreements

→ **Oil spill and HNS Response**

- CLC Convention 69
- CLC Protocol 76
- CLC Protocol 92
- FUND Protocol 76

- ☒ FUND Protocol 92
- ☒ FUND Protocol 2003
- ☒ LLMC Convention 76
- ☒ LLMC Protocol 96
- ☒ OPRC Convention 90
- ☐ HNS Convention 96
- ☒ HNS PROT 2010
- ☒ OPRC_HNS 2000
- ☒ BUNKERS CONVENTION 01

→ **Marine Biodiversity Protection**

- Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS)
- Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention) and its Protocol on Cooperation in Combating Pollution of the Black Sea Marine Environment by Oil and Other Harmful Substances in Emergency Situations (Emergency Protocol)
- Oil Spill Preparedness Regional Initiative for the Caspian-Black Sea-Central Asia (OSPRI)
- Barcelona Convention for the Protection of the Mediterranean Sea against Pollution
- The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

Oil Spill Response and HNS Spill Response

→ **National Contingency Plan?**

A National Emergency Response Plan was approved in 2011, which established a National Contingency Plan Executive Committee.

This committee composed of the MoEUCC (T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı), the Directorate General of Coastal Safety (Kıyı Emniyeti Genel Müdürlüğü/ DG-CS) under the Ministry of Transport and Infrastructure (T.C. Ulaştırma ve Altyapı Bakanlığı/MoTI) and city governors, was established to coordinate preparedness and response. Tabletop/Full Scale Exercises are scheduled annually and maintenance of the plan is the responsibility of the MoEUCC. The plan also includes guidelines on international cooperation.

The Scientific and Technological Research Council of Turkey (TUBITAK), in cooperation with the Sualtı Araştırmaları Derniği (SAD/Underwater Research Society) developed sensitivity maps to aid in prioritising response and maintains GIS maps of vulnerable marine resources and wildlife habitats, including breeding and migration sites. SAD has also developed an in-depth risk assessment for Candarli Bay, an area considered at high risk due to its location near major shipping routes.

→ **Role of Competent National Authorities**

The DG-CS has ultimate responsibility for incidents at sea, with the MoEUCC undertaking any necessary response measures.

Under the MoEUCC, the Directorate General of Environmental Impact Assessment, Permits and Inspection (DG-EIA and P and I) would be involved in impact assessment and oversight of cleanup. The Directorate General of Environmental Management (DG-EM) and the Directorate General for the Protection of Natural Assets (DG-PNA), which oversees national parks and protected areas, would be involved.

At the district level, the governor of the major town of the region is responsible for spill management, with managers of ports, or in the case of at-sea response the Turkish Navy, taking responsibility as indicated by the plan. Individual facilities are required to have plans in place, as well.

Oiled Wildlife Preparedness and Response

→ **Formal guidelines?**

There are no formal guidelines for oiled wildlife response in Turkey.

For the BTC pipeline, BP, as pipeline operator, has plan which indicates it will work with the MoEUCC to collect and rehabilitate oiled wildlife impacted by a pipeline spill.

→ **Response objectives and strategy**

There are no formal response objectives and strategies, however, in previous spills, various NGOs have been allowed to respond.

→ **Euthanasia or rehabilitation?**

Rehabilitation would be allowed, with euthanasia employed on welfare grounds.

→ **Impact assessment**

As noted above, the DG-EIA-P&I would oversee this aspect of response, with the aid of TUBITAK, Turk Deniz Arastirmalari Vakfi (Turkish Marine Research Foundation/TUDAV), as well as a number of universities, research groups and NGOs who are experienced in marine wildlife monitoring.

SAD's Mediterranean Seal Research Group (AFAG) will be involved in marine mammal post-mortem examinations and Deniz Kaplumbağaları Araştırma Kurtarma ve Rehabilitasyon Merkezi (DEKAMER/The Sea Turtle Research, Rescue and Rehab Centre) will handle marine turtle post-mortems. DenizTemiz Derneği (Turkish Marine Environment Protection Association/ TURMEPA) may be able to assist in this area.

→ **Notification and early response**

There is no formal notification system for oiled wildlife response, however, universities, research groups and NGOs throughout the country who are active in marine issues would likely be notified based on the location and size of the spill.

→ **Wildlife responders**

TSAD-AFAG has experience responding to Mediterranean Monk Seals and cetaceans.

Doga Dernegi (Nature is Us), the country's BirdLife International partner, would be able to assist with rescue and assessment of seabirds.

DEKAMER is involved in sea turtle rescue, rehabilitation and post-release monitoring, as well as research, beach monitoring and nest protection, and would likely oversee any turtle response.

Ekolojik SArastirmalar Dernegi (Ecological Research Society/EKAD) is active in protection and monitoring of sea turtles and may be able to assist with rescue and assessment of these species.

→ **Cooperation between stakeholders**

The organisations, institutions and government agencies named in this document have a good history of cooperation on wildlife conservation and marine and coastal protection.

→ **Permanent facilities**

SAD-AFAG has a turn-key facility for the rehabilitation of monk seals in Foca and equipment for setting up ocean pens for monk seals and small cetaceans. Their monk seal hospital in Foca may be able to accommodate a small number of birds and Eurasian Otters (*Lutra lutra*) as well.

DEKAMER has a full-time sea turtle rehabilitation facility staffed by two veterinarians, four biologists and other technical personnel, which is able to rehabilitate 30 to 50 turtles at a time.

→ **Current processes**

Turkey has regular oil spill response drills and exercises; however, marine wildlife response is not part of this process.

SAD is in the process of trying to develop an oiled wildlife response network.

Documentation and references

ITOPF Country Profile 2018: <https://www.itopf.org/knowledge-resources/countries-territories-regions/turkey>

Sea Alarm Country Wildlife Profile 2012: <https://www.sea-alarm.org/publications/country-wildlife-response-profiles>

REMPEC Country Profile 2021: <https://www.rempec.org/en/knowledge-centre/country-profiles/turkey>

Coastline lengths, Countries of the world: <https://www.citypopulation.de/en/world/bymap/coastlines> Climate: <https://www.worldatlas.com/articles/what-type-of-climate-does-turkey-have.html>

CIA World Factbook 2022: <https://www.cia.gov/the-world-factbook/countries/turkey/#transnational-issues>

Large Marine Ecosystems: <https://www.lmehub.net/#>

RAMSAR Sites: <https://www.ramsar.org/wetland/turkey>

Birdlife International Country Profile: <http://datazone.birdlife.org/country>

Sea Turtle of the Mediterranean: SWOT Report.v 14. 2019: <https://www.seaturtlestatus.org/articles/2019/1/31/sea-turtles-of-the-mediterranean-sea>

IUCN Red List: <https://www.iucnredlist.org/>

Ozturk, B. and Ozturk, A.A. 2002. Marine Mammals in Turkey. Fisheries Science 68(sup1):282-285.

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Appendix 1

→ At risk birds

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Sociable Lapwing / *Vanellus gregarius* / CR / Migratory (Autumn/Spring) / Non-breeding
Slender-billed Curlew / *Numenius tenuirostris* / CR / Migratory (Autumn/Spring) / Non-breeding
White-headed Duck / *Oxyura leucocephala* / EN / Resident and Migratory / Breeding/Nesting (April-July)
Northern Bald Ibis / *Geronticus eremita* / EN / Resident / Breeding/Nesting (Feb-August)
Red-breasted Goose / *Branta ruficollis* / VU / Migratory (Sept-Nov, Mar-May) / Non-breeding
Lesser White-fronted Goose / *Anser erythropus* / VU / Migratory (Aug-Feb) / Non-breeding
Velvet Scoter / *Melanitta fusca* / VU / Migratory (Winter) / Non-breeding (note small relict population breeds inland)
Marbled Teal / *Marmaronetta angustirostris* / VU / Migratory (Aug-Feb) / Non-breeding
Common Pochard / *Aythya ferina* / VU / Migratory (partial) / Breeding/Nesting (spring-autumn)
Horned Grebe / *Podiceps auritus* / VU / Migratory (Autumn/Spring) / Non-breeding
Yelkouan Shearwater / *Puffinus yelkouan* / VU / Migratory (Winter) / Non-breeding
Black-legged Kittiwake / *Rissa tridactyla* / VU / Migratory (Aug-Mar) / Non-breeding
Audouin's Gull / *Larus audouinii* / VU / Migratory (Autumn/Spring) / Non-breeding
Greater Spotted Eagle / *Clanga clanga* / VU / Migratory (Oct-Nov, Feb-March) / Non-breeding
Saker Falcon / *Falco cherrug* / EN / Resident and Migratory / Breeding/nesting (Feb-May)/Migrants present Sept-May)

→ At risk reptiles

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Kemp's Ridley / *Lepidochelys kempii* / CR / Migratory (rare visitor) / Non-nesting
Green Turtle / *Chelonia mydas* / EN / Migratory (Sept-April) / Nesting (May-Aug)
Loggerhead Turtle / *Caretta caretta* / VU / Migratory (Sept-April) / Nesting (May-Aug)
Leatherback / *Dermochelys coriacea* / VU / Migratory (variable) / Non-nesting
Olive Ridley / *Lepidochelys olivacea* / VU / Migratory (variable) / Non-nesting

→ At risk mammals

Common name / Latin name / IUCN Red List Category (CR,EN,VU) / Resident-Migratory (season) / Breeding-Nesting-Pupping (season)

Mediterranean Monk Seal / *Monachus monachus* / EN / Resident / Pupping/weaning (Oct-Nov/Dec-Mar)

Black Sea Harbour Porpoise / *Phocoena phocena ssp relicta* / EN / Migratory (summer) / Breeding/calving (summer)
Black Sea Bottlenose Dolphin / *Tursiops truncatus.ssp ponticus* / EN / Migratory (summer) / Breeding/calving (summer)
Black Sea Common Dolphin / *Delphinus delphis ssp ponticus* / VU / Migratory (summer) / Breeding/calving (summer)
Sperm Whale / *Physeter macrocephalus* / VU / Migratory / Unknown
Fin Whale / *Balaenoptera physalus* / VU / Migratory / Unknown