



The Mediterranean Sea is an area of great economic and cultural heritage. It covers an area of approximately 2.5 million km<sup>2</sup>, stretching some 3,800km from east to west and as much as 900km from north to south. The great physical diversity of the Mediterranean is partly reflected in the great number of smaller seas that it contains, including the Adriatic Sea, Aegean Sea, the Balearic Sea, the Ionian Sea, the Ligurian Sea, and the Tyrrhenian Sea. In all, the Mediterranean is surrounded by 21 countries and territories in 3 geographic regions.

### THE RISK OF OIL SPILLS

With its long history of intensive use, the Mediterranean is subject to degradation from increasing coastal zone development, chronic pollution from agricultural and industrial run-off and illegal discharges at-sea. Examples of some of the general problems include eutrophication, red tides, introduction of foreign species, urbanisation, loss of water clarity, and the failure of traditional fisheries. While accidental oil spills are not among the chief contributors to the deteriorating state of the Sea, they do pose a continued risk of acute pollution. The table below lists the major accidental oil spills in the Mediterranean since 1970. The HAVEN and IRENES SERENADE incidents rank among the ten largest spills recorded world-wide.

### Major tanker spills of over 5,000 tonnes in the Mediterranean since 1970

Vessel Name	Quantity spilled		Country	Year	Cause
	(Tonnes)	(Type)			
HAVEN	140,000	CRUDE	Italy	1991	FIRE & EXPLOSION
IRENES SERENADE	~ 100,000	CRUDE	Greece	1980	FIRE & EXPLOSION
TRADER	37,000	CRUDE	Greece	1972	HULL FAILURE
ELLEN CONWAY	32,000	CRUDE	Algeria	1976	GROUNDING
JUAN ANTONIO LAVALLEJA	30,000	CONDENSATE	Algeria	1980	GROUNDING
THEODOROS V	22,000	CRUDE	Italy	1974	EQUIP. FAILURE
CAVO CAMBANOS	20,000	WHITE PRODUCT	Spain	1981	FIRE & EXPLOSION
MARLENA	15,000	CRUDE	Italy	1970	GROUNDING
AL DAMMAM	16,000	CRUDE	Greece	1977	UNKNOWN
SEA SPIRIT	10,000	FUEL (CARGO)	Gibraltar	1990	COLLISION
AL RAWDATAIN	8,300	CRUDE	Italy	1977	EQUIP. FAILURE
GEROI CHERNOMORYA	8,000	CRUDE	Greece	1992	COLLISION
BELLO	6,500	CRUDE	Italy	1972	FIRE & EXPLOSION
TEXANITA	5,700	WHITE PRODUCT	Libya	1972	COLLISION
OLYMPIC SUN	5,500	FUEL (CARGO)	Tunisia	1971	GROUNDING
MESSINIAKI FRONTIS	5,000	CRUDE	Greece	1979	GROUNDING
VERA BERLINGIERI	5,000	WHITE PRODUCT	Italy	1979	COLLISION

Given its location, natural resources, and high population density, all the activities that are generally associated with oil pollution risk can be found in the Mediterranean. These include the exploration and production of oil and gas, the movement of oil from offshore wells to shore (by ships or sub-sea pipelines), the transportation within and through the region of crude oils, the regional shipment of refined products and residual oils, as well as large-scale commercial and passenger shipping.

Offshore oil and gas reserves are located along Italy's Adriatic coast and in the Greek Aegean Sea, though the most important areas are the Gulf of Gabes off Tunisia and the adjacent Mediterranean shelf off Libya. Oil and gas exploration is also planned or underway off the coasts of Morocco, Turkey and Israel. In terms of spill risk from crude oil tankers, the exportation of onshore production, transit trade, and importation of crude oil in the area must also be taken into consideration. The largest exporters\* of crude oil in the Mediterranean are Libya (1.29 million bbl/d), Algeria (1.15 million bbl/d), Egypt (352,000 bbl/d), and Syria (276,000 bbl/d). The region's major importers of crude oil are France (1.9 million bbl/d), Italy (1.8 million bbl/d), Spain (1.46 million bbl/d), and Turkey (601,000 bbl/d). Important transit countries include Egypt with its Suez Canal and Sumed pipeline, Italy with its Transalpine Pipeline to Austria and Germany, and Turkey with its pipeline network from the East and Turkish Straits to the Black Sea. Other countries which were once used for transit and/or may become transit centres again include Syria, Israel, Lebanon, Albania, and Greece. In most cases, crude oil flows from east to west and south to north across the Mediterranean. One interesting development is the "Janaf" pipeline in Croatia which is being "reversed" to serve as an export outlet for Russian oil. When work is completed and the terminal on the Adriatic begins exporting crude, spill risk patterns will change as laden crude oil tankers will, for the first time, be travelling both north and south in the Adriatic.

Trade in refined and residual products shows a more complex structure. A number of refineries, particularly along the European coasts of the Mediterranean supply the many local ports, but also more distant European ports outside the Mediterranean. Refined products are also shipped into the region from refineries in other parts of Europe. Of course, the shores of all countries located along the major shipping routes, not just those exporting or importing large quantities of oil or refined products, are at some risk from passing tankers.

The principal choke points in the Mediterranean oil trade, the Suez Canal and the Turkish Straits, limit the size of tankers passing through the Mediterranean without intermediate transfer operations. The

largest loaded tankers that can enter the Suez Canal, known in the shipping industry as "Suezmax" tankers, generally have a draft of up to 16 meters, a breadth of 50 to 60 meters, and an oil cargo capacity of 1 million barrels (150,000 tonnes). Larger ships such as VLCCs or ULCCs have drafts over 20m and lengths greater than 350m and must offload part or all of their cargo for shipment through the Sumed pipeline. Suezmax tankers also represent the limit for passing through the slightly deeper but more tortuous route of the Bosphorus in Turkey. This 27-km long passage is currently a limitation in transporting Russian and Caspian oil from the Black Sea to Europe and other world markets. In terms of trade volumes, in excess of 2 million bbl/d is transported into the Mediterranean region by both the Suez Canal/pipeline and the Bosphorus

A review of the causes attributed to all large tanker spills (>700 tonnes) in the Mediterranean since 1960 sheds light onto the most important risks involved in oil tanker operations in this region. Nearly two-thirds of past incidents were the result of collisions (27%) or groundings (38%). Equipment or hull failure (18%) and fire (12%) account for most of the remaining cases.

Key risk areas for collisions in the Mediterranean are the constricted waters of the Dardanelles in the Turkish Straits, the Strait of Messina between Sicily and mainland Italy, and the deep though narrow waters of the Strait of Gibraltar. Each of these locations has a large vessel traffic volume and has experienced tanker incidents in the past. Measures taken to reduce the risk of collisions in these areas include prohibiting anchoring and fishing as well as the control of vessel traffic in dedicated shipping lanes in the case of the Bosphorus and the Strait of Gibraltar. As dangerous as these particularly constricted waters may be, the greatest frequency of tanker incidents in the past has been in and around major ports. Many of the shipping centres with dense maritime traffic that have seen relatively frequent spills are located in southern Greece, northern Italy and southern France. Cross traffic from smaller vessels, particularly fishing boats and ferries is a serious problem in many areas.

\* The import and export statistics are net quantities for each country in 2000

## THE STATE OF PREPAREDNESS

In terms of preparedness for oil spill response, the 21 countries that surround the Mediterranean span a wide spectrum. There are, for example, countries with updated and approved national contingency plans (eg Croatia and Cyprus), countries with draft plans (eg Malta and Turkey), and those with no plans at all (eg Albania and Lebanon).

A number of efforts are being made to reduce the disparity in spill response preparedness between Mediterranean countries. The most important of these are the mutual aid and co-ordination programmes under the auspices of UNEP and the IMO which have arisen under the legal framework of the 1976 Barcelona Convention. This Convention addresses a number of pollution issues and has achieved the support of all states except Yugoslavia. Contracting states created a number of topic-specific "Regional Centres". The Centre devoted to oil spill response, now known as the Regional Marine Pollution Emergency Response Centre for the Mediterranean (REMPEC), was established in 1976 and was the first UN Centre of its kind in the world within the framework of the Regional Seas programme of UNEP. Its main objectives are to facilitate the exchange of information, discuss mutual aid, assist countries in the development of preparedness and response systems, and undertake training on spill response matters, thus strengthening the capacities of coastal states to prevent and respond to marine pollution incidents.

The European Commission also sponsors projects under its "Euro-Mediterranean Partnership" (Euro-Med) programme to help reduce regional disparities in response capabilities. On a sub-regional basis there are also a number of bi- and tri-lateral co-operation agreements in place, for example between France, Monaco and Italy (RAMOGE Agreement); between France and Spain; between France and Italy; between Italy and Greece; and between Cyprus, Egypt and Israel. A subregional agreement on preparedness and response between Algeria, Morocco and Tunisia is being finalized with the assistance of REMPEC and is expected to be signed by the end of 2003, and the preparation of a similar agreement in the north Adriatic (between Croatia, Italy and Slovenia) has recently commenced. Italy, Malta and Tunisia expressed the intention to conclude an agreement on mutual assistance covering the Sicilian and Malta Channels. Not all of these agreements have achieved success. Even between countries with some level of preparatory discussion, it is likely that administrative and legal

barriers (eg customs formalities) would be a problem for transporting equipment and manpower between them on an emergency response timetable.

Within the Mediterranean there are also a small number of private contractors with considerable spill response equipment, manpower and experience. In some cases these operate under contract to the government providing full-time response readiness (eg Italy). In most cases private contractors are used to support government capabilities or are contracted directly by industry (eg oil companies, tanker owners and their insurers). It is not clear, however, to what extent these firms could overcome shipping, customs and other logistical hurdles to provide timely international response.

In terms of Tier 3 stockpiles and mobile response teams, there are two organisations serving the area, the Fast Oil Spill Team (FOST) in Marseilles, France and Oil Spill Response Limited (OSRL) in the United Kingdom. These units maintain recovery and dispersant-spraying equipment on standby to fly to spill locations in the Mediterranean and other parts of the world. They also provide a number of peripheral services such as training, contingency planning and equipment evaluation.

### STATUS OF CONTINGENCY PLANS, TIERED RESOURCES AND CONVENTIONS

More than half of the 21 Mediterranean states have ratified the OPRC convention. These states, listed below, almost all have national contingency plans in place which, for example, identify the competent national authorities. As with all international comparisons, it is important to keep in mind the relative size of the countries. Whereas Italy's coast is over 8,500 km long, Slovenia, for example, has a total coast length of only 47 km to protect.

#### Spill Response Preparedness for OPRC Signatory States

	Competent National Authority	National Plan	Clean-up Resources		Subregional Agreement	MARPOL	OPRC '90	LLMC '76	CLC '69 CLC '92	FUND '92	Inter-vention '69/'73
			Tier 1	Tier 2							
Croatia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	'92	'92	'73
Egypt	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	'92		'73
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	'92	'92	'73
Greece	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	'92	'92	
Israel	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Italy	Yes	Yes	Yes	Yes	Yes	Yes	Yes		'92	'92	'73
Libya	Yes	unknown	Yes	No	Yes		Yes				
Malta	Yes	Draft	Yes	Some	Yes	Yes	Yes		'92	'92	
Monaco	Yes	Yes	Yes	Yes	Yes	Yes	Yes		'92	'92	
Morocco	Yes	Yes	Yes	Yes	Yes	Yes	Yes		'92	'92	'73
Slovenia	Yes	Yes	Yes		Yes	Yes	Yes		'92	'92	'73
Spain	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	'92	'92	'73
Syria	Yes	Draft			Yes	Yes	Yes		'69		'69
Tunisia	Yes	Yes	Yes		Yes	Yes	Yes		'92	'92	'73

Though the countries in the following table have not signed the OPRC Convention, several are active in their spill response preparations. Algeria, Cyprus, and Turkey, for example, have all become Member States to the 1992 Fund Convention. Several of these countries have relatively limited lengths of coastline to protect (eg Bosnia or Yugoslavia).

### Spill Response Preparedness for States that have not signed the OPRC Convention

	Competent National Authority	National Plan	Clean-up Resources		Subregional Agreement	MARPOL	OPRC '90	LLMC '76	CLC '69 CLC '92	FUND '92	Inter-vention '69/'73
			Tier 1	Tier 2							
Albania	Yes	No	No	No	Yes				'69		
Algeria	Yes	Yes	Yes		Yes	Yes			'92	'92	
Bosnia	Yes	No	Yes		Yes						
Cyprus	Yes	Yes	Yes	Some	Yes	Yes			'92	'92	
Lebanon	Yes	No		No	Yes	Yes			'69		'69
Turkey	Yes	draft	Yes		Yes	Yes		Yes	'92	'92	
Yugoslavia		No									'73

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