

Promoting sustainable tourism in the Mediterranean

Environmental health risks associated with tourist establishments

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ENVIRONMENTAL HEALTH RISKS

GLOBAL ENVIRONMENTAL FACTORS

- **Air pollution**
- **Drinking water and sanitation**
- **Bathing beach quality**
- **Sun and heat**
- **Noise pollution**

ENVIRONMENTAL HEALTH RISKS

AIR POLLUTION

❖ **Outdoor Air Pollution**

❖ **Indoor Air Pollution**

- **Sick building syndrome**
- **Respirable particulate matter**
- **Chemical Contaminants from outdoor sources**
- **Biological contaminants**
- **Poorly maintained air conditioning systems**

ENVIRONMENTAL HEALTH RISKS

DRINKING WATER AND SANITATION

❖ Water quality

- Control of water related diseases
- Bottled water

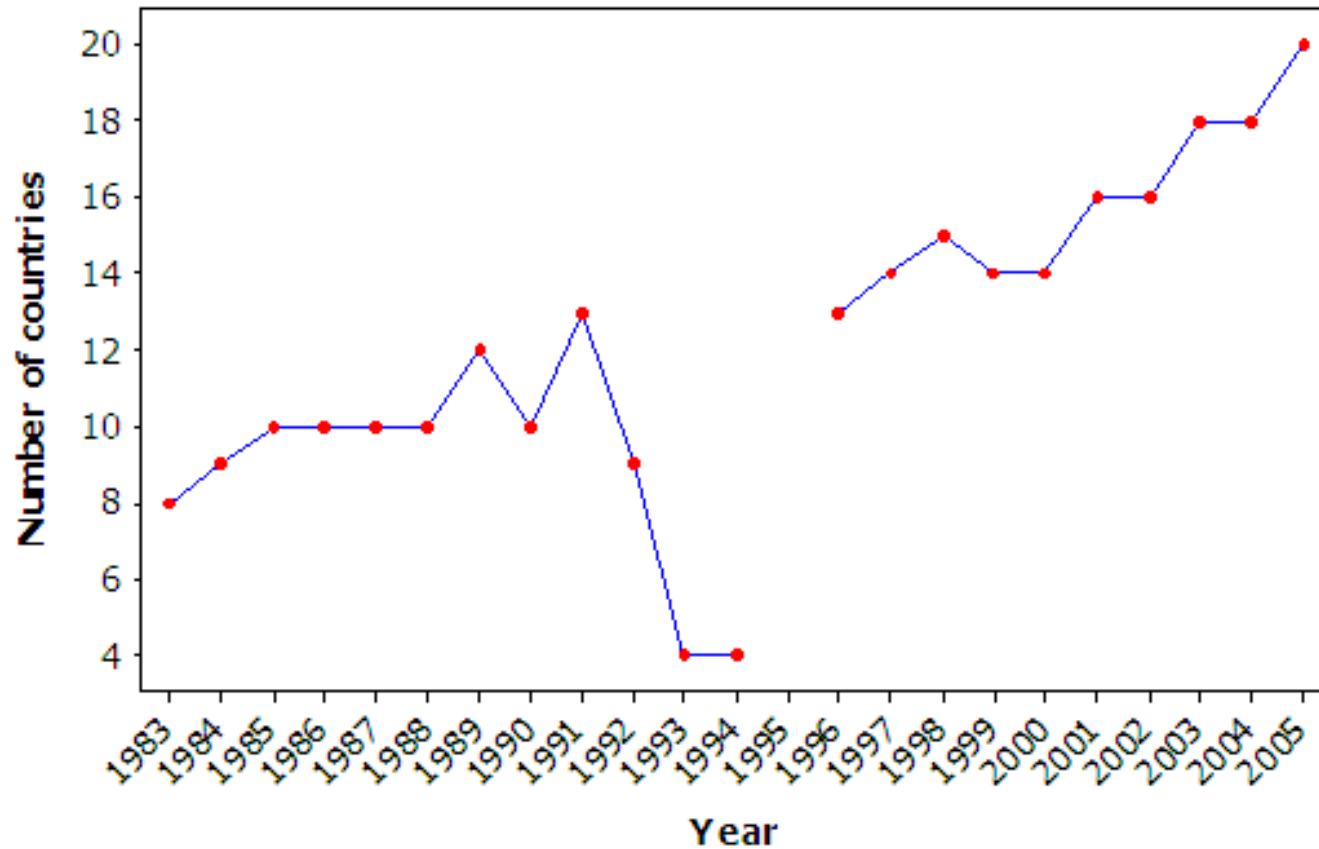
❖ Sewerage and Wastewater Treatment

ENVIRONMENTAL HEALTH RISKS

BATHING BEACH QUALITY

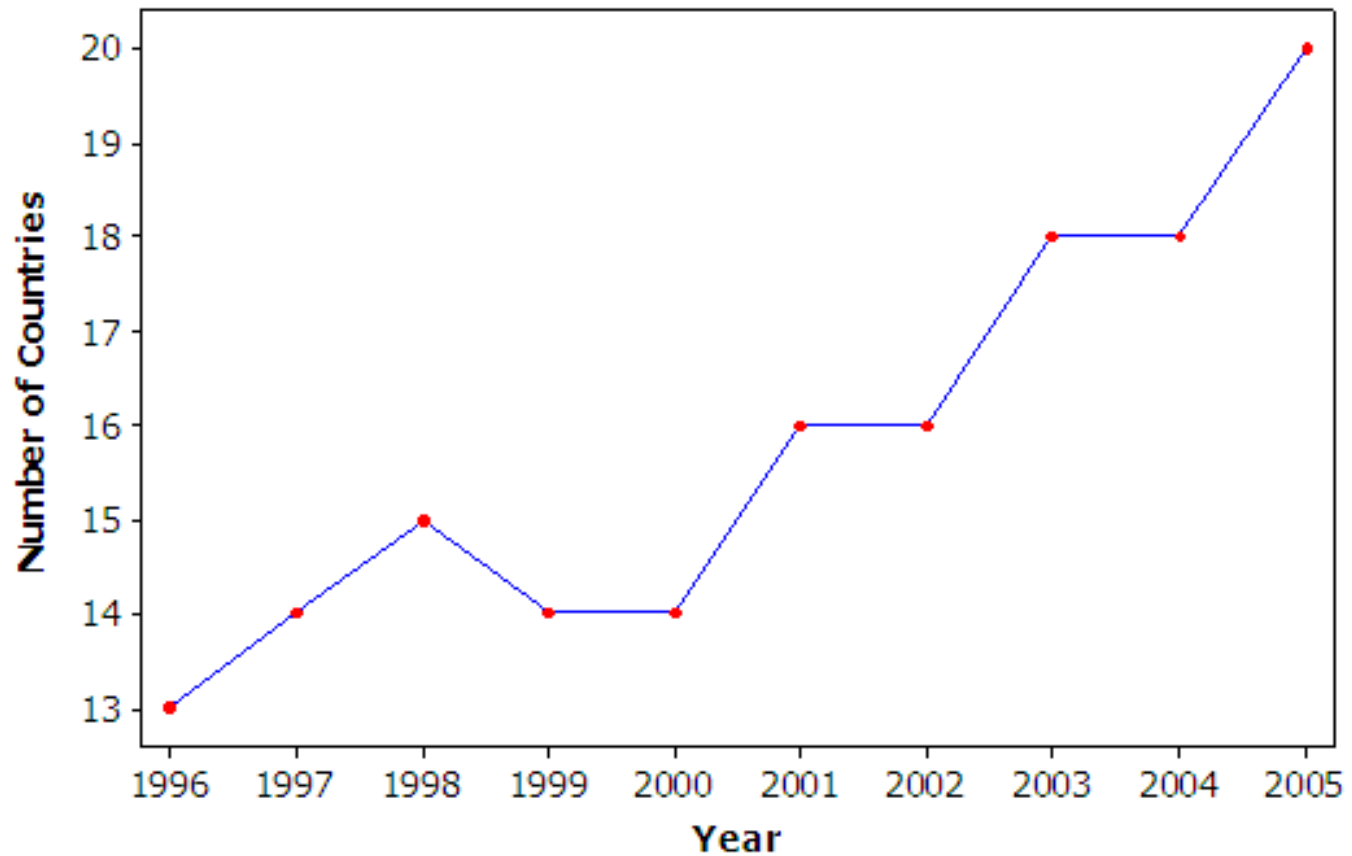
- **Quality of bathing waters**
 - **Bathing waters quality standards**
 - **Health risks associated with bathing**
 - **Monitoring of bathing waters**
- **Quality of beach sand**

State of bathing waters in the Mediterranean



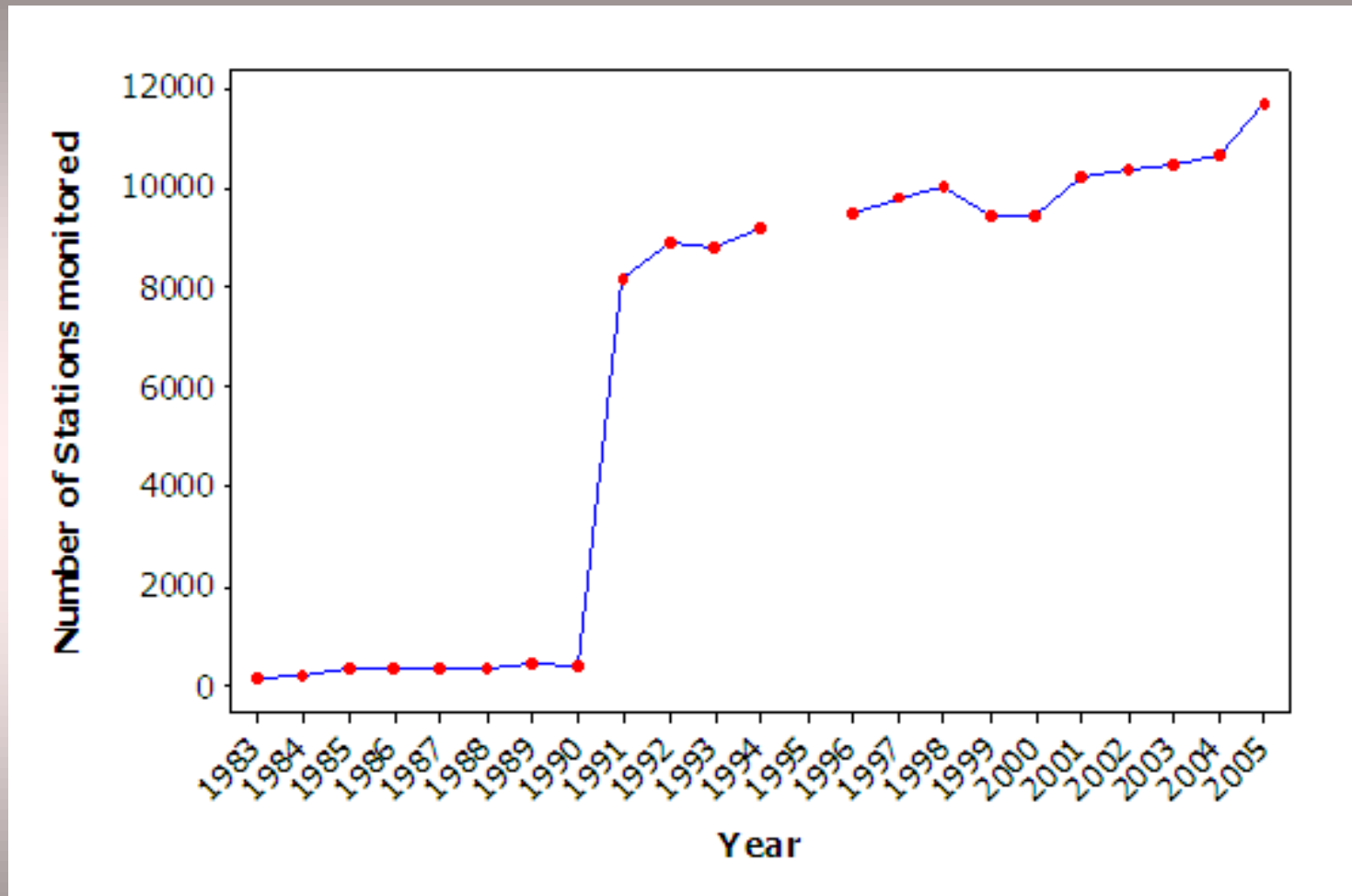
Time series plot of number of countries submitting data (1983 -2005)

State of bathing waters in the Mediterranean



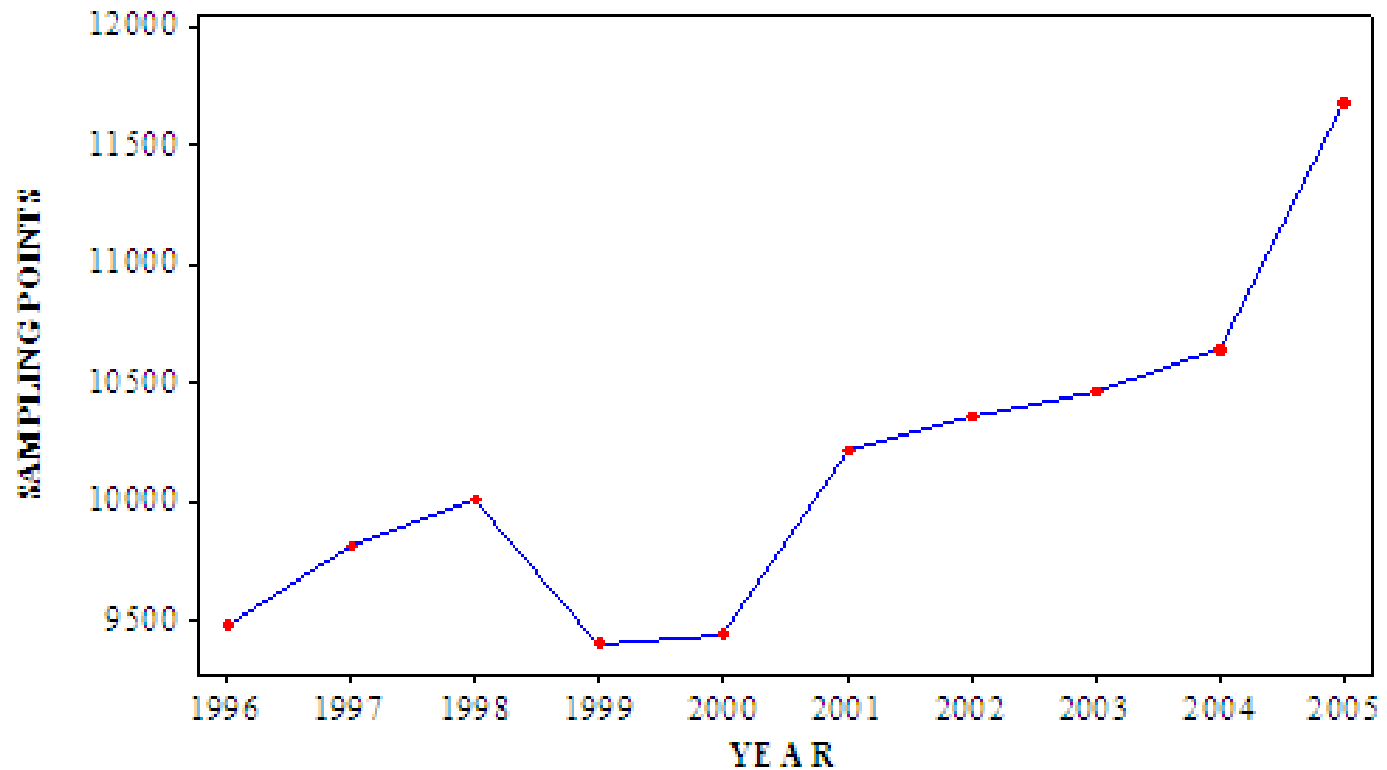
Number of countries submitting data (1996-2005)

State of bathing waters in the Mediterranean



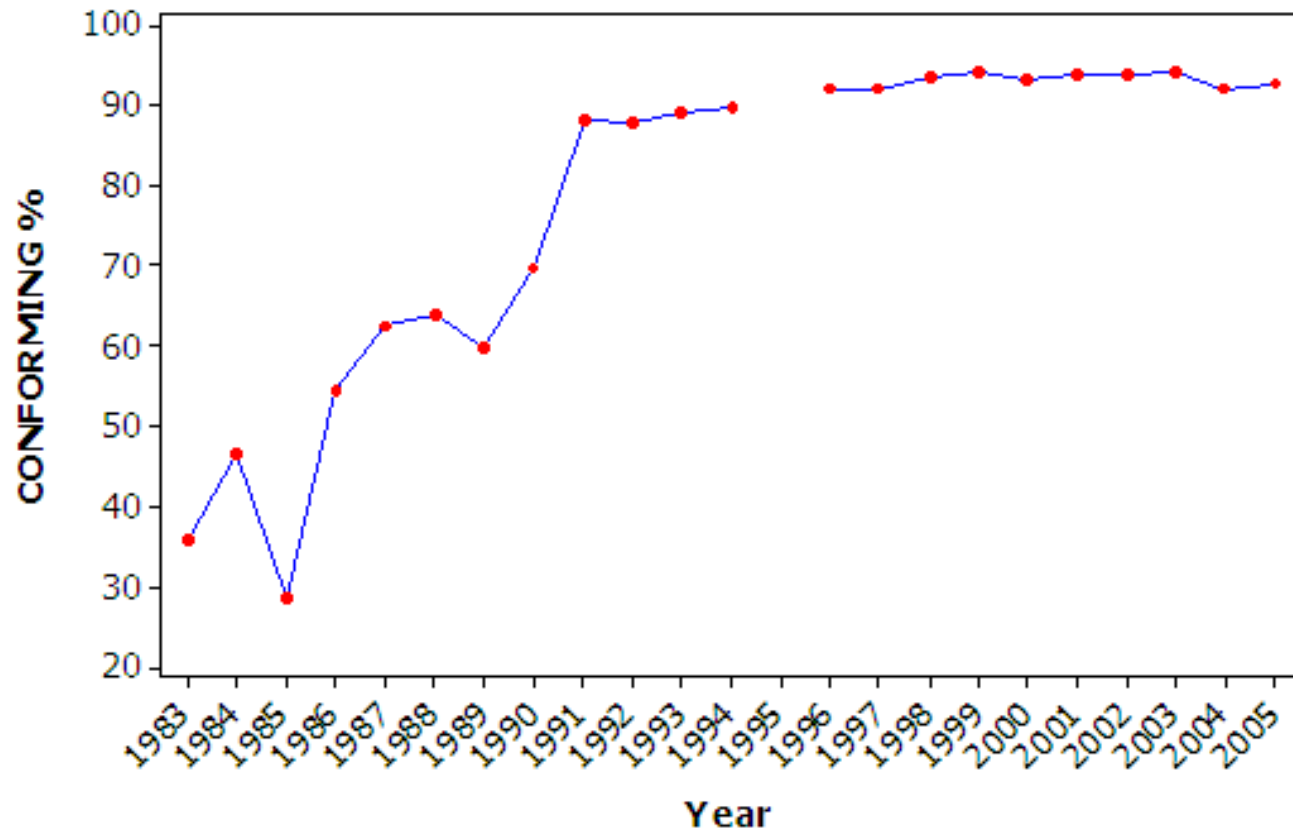
Time series Plot of Number of Stations monitored (1983 – 2005)

State of bathing waters in the Mediterranean



Number of sampling points per year (all countries) (1996-2005)

State of bathing waters in the Mediterranean



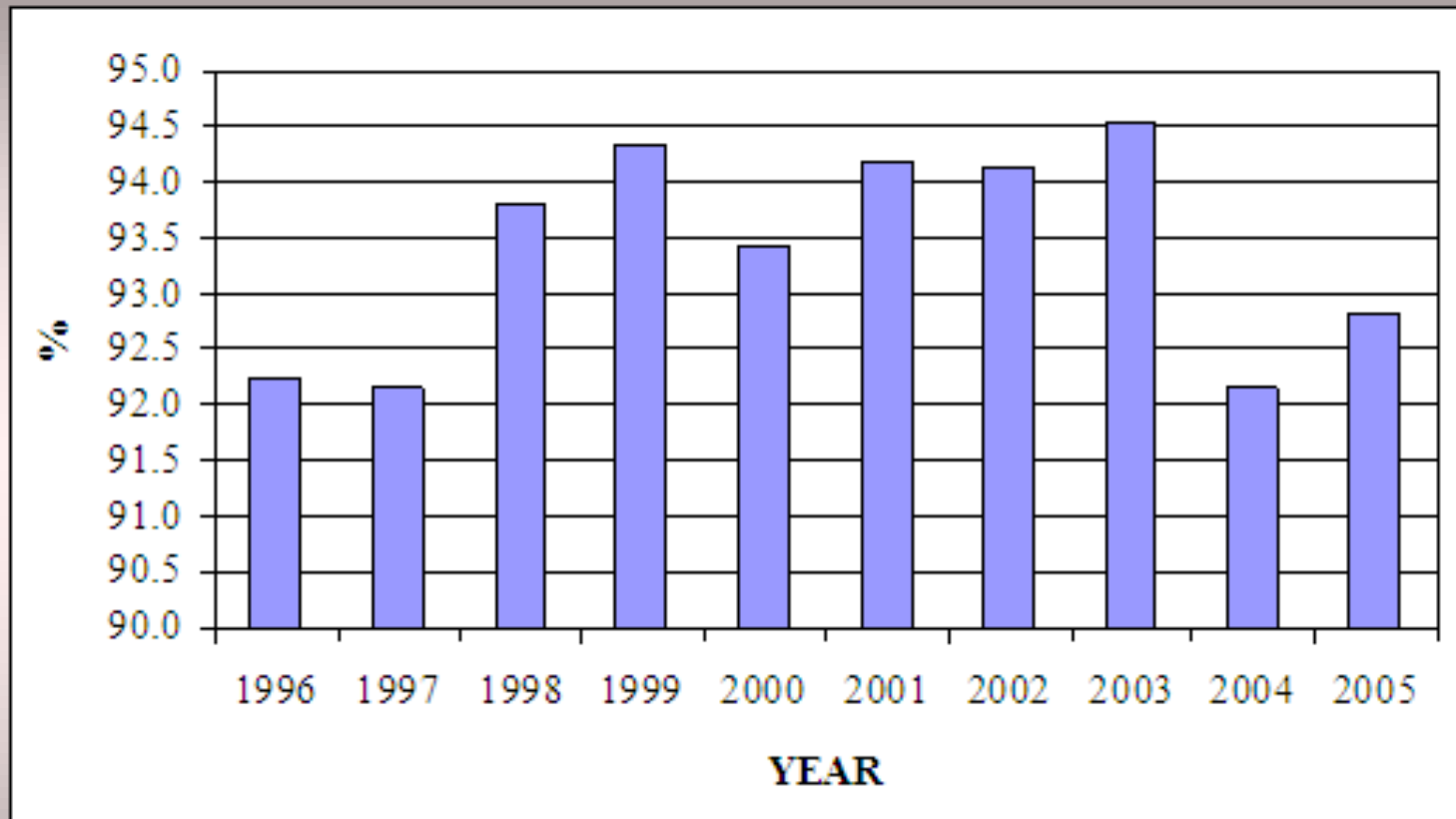
Percentage of bathing beaches conforming per year for all countries participating (1983 – 2005)

State of bathing waters in the Mediterranean

Summary of bathing water monitoring data per year complying and non-complying with the national legislation (1996 – 2005)

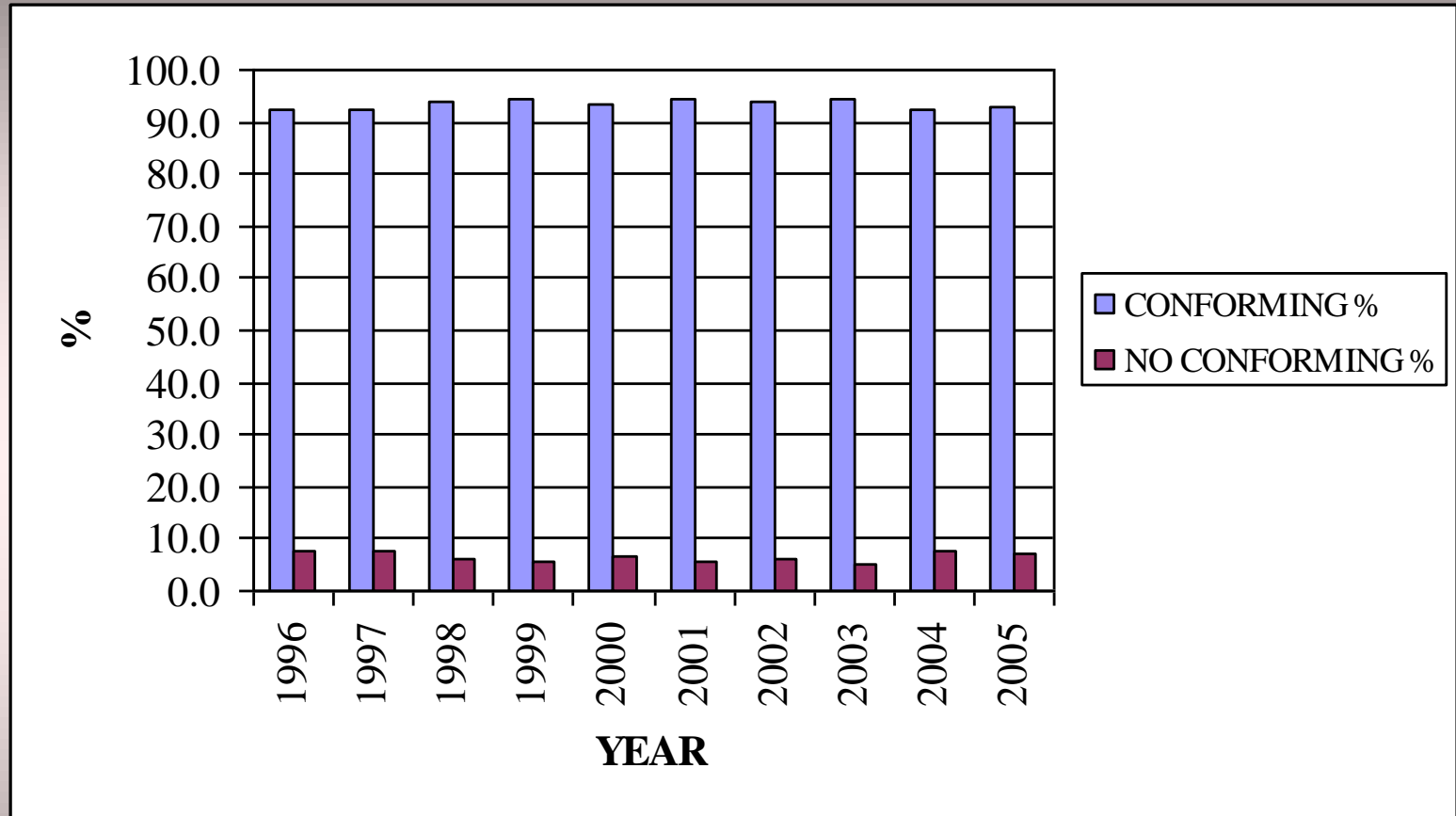
YEAR	Bathing waters CONFORMING	Bathing waters NOT CONFORMING	CONFORMING %	NOT CONFORMING %
1996	8747	734	92.3	7.7
1997	9036	769	92.2	7.8
1998	9390	619	93.8	6.2
1999	8873	534	94.3	5.7
2000	8818	620	93.4	6.6
2001	9617	593	94.2	5.8
2002	9745	608	94.1	5.9
2003	9887	549	94.5	5.3
2004	9803	834	92.2	7.8
2005	10842	839	92.8	7.2

State of bathing waters in the Mediterranean



Percentage of bathing waters complying with national legislation per year (1996 – 2005)

State of bathing waters in the Mediterranean



Percentage of bathing waters complying and not complying with national legislation per year (1996 – 2005)

AGREED AND APPROVED BY THE MEETING CRITERIA AND STANDARDS FOR BATHING WATERS IN MEDITERRANEAN COUNTRIES

Microbial Water Quality Assessment Category (based on Intestinal enterococci (cfu/100 mL))

Category	A	B	C	D
Limit values	<100*	101-200*	185** (1)	>185**
Water quality	Excellent quality	Good quality	Sufficient	Poor quality/ Immediate Action

Minimum sampling frequency: at least one per month and not less than four in a bathing period including an initial one prior to the bathing period.

* 95th percentile intestinal enterococci/100 mL

** 90th percentile intestinal enterococci/100 mL

- Reference method of analysis: ISO 7899-1 based on membrane filtration technique or any other approved technique

- Transitional period 5 years (starting by 1st January 2008)

(1) For single sample immediate action should be carried out once the count for IE exceeds

500 cfu/100mL

ENVIRONMENTAL HEALTH RISKS

SUN AND HEAT

- Excessive exposure to sunshine
- Other adverse health effects of heat and humidity

NOISE POLLUTION

- Night time noise
- Noise in hotels

ENVIRONMENTAL HEALTH RISKS

FOOD SAFETY

- ❖ **Foodborne diseases:**
 - **Salmonellosis**
 - **Noroviruses**
 - **Traveller's diarrhoea**
 - **Typhoid fever**

HOTEL SAFETY STANDARDS

PRINCIPAL COMMUNICABLE DISEASES

❖ Vectorborne diseases:

- Malaria
- Yellow fever

❖ Zoonoses:

- Rabies
- Brucellosis
- Leptospirosis
- Campylobacteriosis

ENVIRONMENTAL HEALTH RISKS

PRINCIPAL COMMUNICABLE DISEASES

❖ Airborne transmitted diseases:

- **Tuberculosis**
- **Meningococcal disease**
- **SARs**
- **Avian Influenza**

❖ Soil transmitted diseases:

- **Ascariasis**
- **Trichuriasis**
- **Polio**