

# COASTWATCH: A GEO-INFORMATION SERVICE FOR EUROPE

## Integrated Coastal Zone Management

An integrated approach towards coastal zone management requires relevant, credible and reliable (geo-)data. However, the legends of geo-information covering coastal zones vary so much between the various European countries that integrated use of the national databases is difficult. The CoastWatch project aims at delivering homogeneous data to support integrated coastal zone management.

Many conflicting interests come together in Europe's coastal zones. The zones house a large part of the population of Europe and form a vital link for transport and trade. These coastal zones also contain some of the most valuable habitats and landscapes and are the favoured destination for leisure. Many conflicting interests cross national boundaries. Accordingly, responses should include international action. The 'Recommendation concerning the implementation of Integrated Coastal Zone Management' is one such international response. Adopted in May 2002, this was the outcome of a 'Demonstration Programme', established in 1996 by the European Commission and Member States to ascertain best practices in addressing coastal issues. The Recommendation recognises that good decisions are based on relevant, credible and reliable information. In particular, it calls for an integrated approach to monitoring sustainable development of the coastal zone. Such an approach would provide information in appropriate and compatible formats relevant to the needs of end users at all levels - European, regional seas, Member States, regions and localities.

### Core Products

Within the framework of its current GMES Service Element programme the European Space Agency (ESA) aims to support the spatial and data capture component of several European policies. CoastWatch is a project funded within this framework and aims to supply information products and services for the development, implementation and enforcement of Integrated Coastal Zone Management. This will be done through the provision of basic data for the development of indicators measuring pressures resulting in land cover and land use change. CoastWatch does not intend to be a one-stop shop for all issues related to integrated coastal zone management, neither will it replace existing systems. It aims rather to be a complement to these and focuses only on the spatial aspect. The core information products are land cover and indicators, delivered as standardised products for the continuous monitoring of land cover and land use change. The source data is derived from high-resolution (Spot satellite) and very high-resolution (Ikonos & QuickBird satellites) imagery, depending on the spatial detail required by the end-user. The CORINE legend is applied, making the products consistent and comparable across the continent. Indicators integrate land-cover data together with knowledge of coastal processes and as such deliver synoptic information to support policy-makers in implementing the Integrated Coastal Zone Management (ICZM) Strategy, as well as in coastal planning. Figure 1 shows, as an example of an indicator, the percentage of strip area protected along the Finnish coast.

### Working Examples

The SAIL partnership was formed to help manage issues affecting the coastlines and communities bordering the Southern North Sea Area. This partnership brings together representatives from the four neighbouring member states having a common interest in this area: Essex and Kent (UK), Nord-Pas de Calais (FR), West Flanders (BE) and Zeeland (NL). CoastWatch provided land cover and derived statistical information for the SAIL area. This information proved the only standardised information available covering the entire area. The European Environment Agency used an indicator on the 'Loss of natural and semi-natural areas' along Europe's coast developed from the LaCoast database. This database contains land-cover information from 1976 and 1990 for twelve European countries. With the availability of CORINE 2000 this indicator will be brought up to date for a larger number of countries. It informs concerning loss of (semi-)natural areas for the one kilometre strip along the coast and the adjacent nine kilometres land inwards. The indicator shows highest loss in the one-kilometre strip. This area is considered the most valuable coastal area due to it having high interaction between water and land, and is subject to the highest pressures. The indicator shows also major differences between several regions across Europe. The indicator will be used in an evaluation report on progress towards ICZM in the European Union, foreseen in 2005.

### ESA and the Future

The future of CoastWatch is closely linked to ESA policy concerning the GMES Service Elements (GSE). ESA aims to develop a selection of the existing GSEs towards an operational and sustainable level. This next stage is upscaling of the existing service infrastructure to map larger areas of Europe within shorter timeframes.