

DG JRC: Providing support to the Common Fisheries Policy

Fish is a natural resource and belongs to our common heritage. Fishing activities must be regulated at international level to allow renewal of stocks and to protect the marine environment. The Common Fisheries Policy is the EU's instrument for managing fisheries: harvesting the right amount of fish, of the right size and in the right way.

The Directorate-General Joint Research Centre (DG JRC) has provided scientific and technical support to the Common Fisheries Policy since 1999. The main aim has been to develop and assess technologies to allow fisheries authorities to monitor compliance with fisheries regulations more effectively.



Improved enforcement

Based on the analysis of satellite images and information technology, DG JRC's work on compliance monitoring has focused on the application of new technologies for the verification of vessel positions, the recording of fishing activity and the identification of fish sold, in terms of species and origin.

A significant achievement has been the demonstration of the feasibility of using satellite remote sensing to complement the existing Vessel Monitoring System (VMS) by checking fishing vessel positions without the need for any on-board cooperation. This prototype Vessel Detection System (VDS) can now provide vessel positions to Fisheries Monitoring Centres in Member States within an hour of a satellite overpass for all European waters. This has been found to be most effective in areas on the edge of the European exclusive economic zone (EEZ), or just outside it, where surveillance with aircraft or patrol vessels is patchy and/or expensive. In 2004, DG JRC helped the Scottish fisheries authorities confirm fishermen's reports that non-EU trawlers were fishing illegally for whiting and haddock inside a protected zone near Rockall.

In 2005 DG JRC confirmed that satellite remote sensing could also detect and characterise cages in the Mediterranean used to hold tuna for fattening before slaughter.

Regulations are being prepared by the European Commission to set in place the requirement for on-board electronic logbooks to record catches and effort. DG JRC has supported this process by coordinating the SHEEL project which involves fisheries authorities, software developers and satellite communications companies to assess the effectiveness of options for communicating the records to shore. Sea trials during 2005 have shown that different software packages with different satellite communications providers are able to provide mutually compatible transmissions. The results indicate how different options for security impinge on the length of the message and on its cost.

DG JRC has also provided the web-interfaced database for the FISHTRACE project, which has collected DNA sequence data on the 200 most commercially important species from eight different regions. More than 2700 specimens have been collected and are being analysed to determine species- or region-specific characteristics. The long-term aim is to help inspectors confronted with the challenge of checking the origin and species of samples found on the market.

Better scientific advice

At the beginning of 2005, DG JRC took over responsibility for the organisation of the Scientific, Technical and Economic Committee for Fisheries (STECF) which consists of about 30 scientists consulted at regular intervals by the European Commission on matters concerned with the conservation and management of living aquatic resources. In addition to the regular STECF members, many other scientists participate in the Committee's subgroups. Some issues arise annually – determining catch limits to protect stocks and their potential impact on fishermen's income. Others arise at short notice. During 2005 the STECF recommended closing the Bay of Biscay anchovy fishery following indications of a



Boundary between Icelandic EEZ and waters administered by North East Atlantic Fisheries Convention Radarsat-1 ScansAR Narrow B / 13 June 2003, 19:36 UTC

Vessels detected on the image are classified according to whether they match with polled VMS signals (red), with interpolated VMS signals (purple) or did not match any VMS signal at all (blue). Calculation indicate that approximately 35% of the vessels were not reporting to NEAFC.

dramatic collapse in the numbers of juvenile fish. DG JRC has been improving the transparency and efficiency with which the scientists of the STECF work together by, for example, bringing a new website and intranet on-line.

During 2005, DG JRC has also been engaged in improving the delivery of fisheries data collected by Member States to the scientists responsible for assessing stocks and providing management advice. There is no central database – each Member State is responsible for maintaining its own data – but aggregated data should be provided to the Commission on request. The first exercise in 2004 was lengthy, error-prone and time-consuming. In order to improve this communication system, DG JRC has been working on new data descriptions and is testing the use of systems based on web-service technologies for directly connecting national databases in an efficient and safe way. After a pilot exercise, in October 2005, the first data – landings of fish from German vessels – were successfully transferred to DG JRC using this methodology.

Underpinning science

DG JRC maintains its links to the scientific community and is engaged in a series of multi-partner collaborative projects. A good example is the DECLIMS project which is led by DG JRC and gathers 24 commercial and academic partners involved in the science of vessel detection and classification through the interpretation of satellite images. By participating in a number of benchmark exercises, the partners have now established the state-of-the-art in vessel detection. During 2005, the consortium was also able to provide input on requirements for maritime monitoring to the European Space Agency. This helped them determine the most appropriate characteristics for observation satellites to be launched in the near future.

Future objectives include the extension of vessel monitoring outside European waters, the integration of fisheries monitoring with other monitoring objectives – maritime security for instance – and development of methods to analyse electronically collected information so as to provide real-time estimates of fishing effort, catch and quota uptake.