ECOLAS Environmental Consultancy & Assistance
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11 SCIENTIFIC RESEARCH VESSELS

11.1 DESCRIPTION

For completeness of users of the BPNS a short description of the use of research vessels will be given. As this activity is, compared to other uses, very small, this chapter should be viewed essentially as supplementary information.

Two vessels are currently used for scientific research: the Belgica and the Zeeleeuw.

The Belgica

The oceanographic research ship RV Belgica A962 belongs to the Belgian State and falls under the responsibility of the Belgian Science Policy. The ship and its scientific equipment are managed by MUMM, which is also responsible for planning and organising scientific campaigns at sea. The Belgian navy provides the crew and takes care of the operational aspects as well as the moorage in Zeebrugge, the Belgica's home port. The vessel was laid down on October 17th 1983 at the BOEL shipyard in Temse, and commissioned on July 5th 1984.

This all-purpose research vessel, which spends around two hundred days a year at sea, both monitors the quality of the marine environment and undertakes numerous expeditions for scientific research.

The Belgica monitors the quality of the North Sea by constantly collecting all sorts of data on the biological, chemical, physical, geological and hydrodynamic processes which take place there. In addition to this, the ship is a floating laboratory for researchers from the universities and scientific institutes of Belgium in their quest for a better understanding of the structure and working of the ecosystem of the North Sea.

In addition the Belgica is also used during incidents at sea. As soon as reports come in of a shipping incident involving a dangerous load or an oil spill, the Belgica change course immediately if necessary and makes its way to the site of the catastrophe. In this case, its task is primarily to examine the impact of the incident on the sea environment by taking regular water samples and measurements.

The Zeeleeuw

The Fleet Division (Waterways and Marine Affairs Administration, Environment and Infrastructure Department of the Ministry of Flanders) and the Flanders Marine Institute (VLIZ) cooperate to organize scientific cruises with the Zeeleeuw in the Belgian coastal waters and the Westerschelde estuary. The Fleet Division owns the Zeeleeuw, bears the operational costs and provides the crew. VLIZ takes care of the cruise schedules and manages the collectively used research equipment and infrastructure.

The vessel Zeeleeuw, formerly the pilot vessel 2, was built in 1977 to serve as a pilot tender to bring pilots to and from Vlissingen to the anchorage area Westhinder. The Authorities of Flanders decided that this vessel would be put into operation for marine scientific research as a platform for sampling campaigns. In 2000 the vessel was updated and renovated into a multifunctional research vessel.

11.2. SUBUSES AND DESCRIPTION

Not applicable

11.3. LEGISLATIVE FRAMEWORK

(updated by Cliquet A.)

Legislation

(Maes and Cliquet 2005)

International legislation and Belgian implementation:

- United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982: Part XIII on schientific research
    - Implementation in Belgium:
        - Law of 18 June 1998 on the approval of the Convention on the Law of the Sea of 10 December 1982 and the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 of 28 July 1994, *BS* 16 September 1999.

National legislation:

- Law of 22 April 1999 on the Belgian exclusive economic zone in the North Sea, *BS* 10 July 1999: art. 40-45 on scientific research in the territorial sea and the exclusive economic zone.

- Law of 20 January 1999 on the protection of the marine environment in the marine areas under Belgian jurisdiction, *BS* 12 March 1999; as amended: art. 8 (scientific research is allowed in marine reserves); art. 10 (exceptions to species protection for scientific research); art. 14 (measures for dead or wounded marine mammals), art. 25 (no environmental permit is required for scientific research).

11.4 EXISTING SITUATION

11.4.1. Spatial delimitation

Both ships operate troughout the whole of the BPNS. No specific delimitations exist on the BPNS for use of both vessels, except those dictated by good seamanship (water depth, collision risk, etc.) and areas forbidden for access with vessels.

The spatial location of the operation of the vessel is registerd automatically (GPS) by the vessels at a high frequency. For the prupose of this project locations were rounded to the nearest 1/10 of a minute or 1/1000 of a degree (Zeeleeuw). The locations were collected for the years 2002 and 2003, and the number of observations per 10 second period (Belgica) or 5 second period (Zeeleeuw) within each grid was counted (Maps I.3.11a-b).

Source

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Reliability margin

The reliability of the data is very high. The 2 above-mentioned institutions are each responsible for one research vessel. They both enjoy international recognition of their competencies and are both recognised as international data management centres.

Future prospects

Spatial location and intensity are depending on the specific research budgets that are funded by regional, national or international programs, and that include ship time. Part of the activity is also dedicated to monitoring and management activities that will normally continue in the future.

11.4.2. Type and intensity

Intensity of use is expressed in two ways. A difference is made between activities at high speed (>1 knot) and activities at low speed (<= 1 knot). Low speed corresponds quite well to sampling activities (trawling, coring, etc.), whereas high speed corresponds to "normal" sailing or sampling at high speed (eg. bathymetry). As described above number of counts for each grid cell (0.1 min or 0.001 degree) were collected for the years 2002 and 2003 (Maps I.3.11a-b).

Source

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Reliability margin

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Future prospects

No specific points to be remarked.

11.5. INTERACTIONS

11.5.1. Suitability for user

The whole of the BPNS is suitable for exploration by research vessels. The only limitation is the draught of the vessel. However, if very shallow areas need to be explored other ships or vessels can be used (eg. rigid inflatable boats).

11.5.2. Impact on other users

No relevant impact on or conflict with other users could be identified. This activity is manageable with all other activities.

11.5.3. Impact on environment

Impact on the environment is basically similar to impact described for shipping, with the additional remark that due to its nature, research vessels are normally designed or adapted to have minimal impact. Sampling has such also has a minor impact.

11.5.4. Impact on socio-economy

The direct impact on socio-economic aspects is very limited. This will be restricted to the jobcreation and their economic consequences for crewmembers.

11.6. REFERENCES

Maes, F. and Cliquet, A., 2005. Codex wetgeving kustzone, Brugge, Vanden Broele, vol. 2.

http://www.mumm.ac.be/EN/Monitoring/Belgica/index.php accessed on May 10 2005

http://www.vliz.be/En/Activ/zeeleeuw.htm accessed on May 10 2005

http://www.mil.be/navycomp/units/index.asp?LAN=en&FILE=unittext&ID=669&PAGE=1&MENU=0
accessed on May 10 2005