German Maritime and Hydrographic Agency
Federal Government’s provider of maritime services
Bundesamt für Seeschifffahrt und Hydrographie (BSH, Federal Maritime and Hydrographic Agency of Germany) is an agency within the remit of the Federal Ministry of Transport, Building and Urban Development and has headquarters in Hamburg and Rostock. With its 840 employees and an annual budget of about € 69 million, the agency is an important provider of maritime services in Germany and covers a wide range of tasks.

**Provider of maritime services**

- Environmental protection in maritime transport (MARPOL, civil liability for oil pollution, Ballast Water Convention, oil spill identification)
- Safety of shipping and maritime security
- Hydrographic surveys, wreck search, nautical information systems
- Services to maritime transport (Flag Certificates, Certificates of Competency for mariners, financial aid to promote shipping)
- Warning services (water level and tide predictions, storm surge warning service, ice service)
- Monitoring of the sea (indicators of climate and environmental changes)
- Maritime geodata centre
- Maritime Spatial Plan for the German Exclusive Economic Zone (EEZ)
- Planning approval for offshore wind farms and pipelines
Forecasts and warnings: The BSH supports shipping, port authorities, and vessel traffic services with its marine forecasts for the North Sea and Baltic Sea coasts. It provides latest updated water level forecasts, storm surge warnings, tidal predictions, and information about sea states, sea surface temperatures, and ice conditions.

Marine monitoring

Climate: Changes in world climate are among the biggest challenges faced by science, politics, and society today. The BSH’s task in that respect is to closely monitor and analyse changes in the marine environment and to make available the results to interested parties. The BSH contributes, for example, to the KLIWAS research programme (impacts of climate change on German waterways and shipping), with a view to developing realistic climate change scenarios for the North Sea, Baltic Sea, and North Atlantic Ocean. The BSH also contributes to MARNET, by operating automated monitoring stations in this marine monitoring network in the North and Baltic Seas, and carries out oceanographic measurements on the FINO 1 research platform. The BSH provides Germany’s contribution to the worldwide ARGO monitoring programme.
Marine environmental monitoring: The BSH monitors and assesses the physical, chemical, and biological status of the North and Baltic Seas. It operates a special laboratory for marine chemistry, where samples of water, suspended particulate matter, and sediment are analysed. Within the framework of the BLMP national monitoring programme, the BSH is responsible for co-ordinating national marine monitoring.

Marine environmental protection

Oceanographic data: The status of the North and Baltic Seas is assessed periodically in national and international reports. The main goal is to identify possible impacts of different ocean uses (e.g. shipping, fisheries, energy generation) on the marine environment. The BSH operates the German Oceanographic Data Centre (DOD) and the Marine Environmental Reporting System (MURSYS), where oceanographic data are archived and made available to users. It also hosts the annual symposium on current problems of the marine environment.

Projects: The BSH participates in national and international projects (e.g. development of an Elbe tidal model) in order to further improve its services.
Maritime spatial planning: Novel ocean uses, which may conflict with other interests, require sustainable planning strategies. The BSH is in charge of spatial planning in Germany’s Exclusive Economic Zone in the North and Baltic Seas.

Approval of offshore structures: The BSH is in charge of granting planning approval for offshore structures to be installed in the EEZ in the North and Baltic Seas and decides on the designation of preferred areas for wind farms, the erection of wind turbines, operation of pipelines, and embedment of submarine cables. The environmental impact assessments required for each project ensure protection of the marine environment. The BSH also contributes to research accompanying the development of offshore wind farms.

CONTIS: The geospatial database CONTIS (Continental Shelf Information System) is an Internet-based information system made available by the BSH; it visualises existing and projected navigation routes, submarine cables, pipelines, wind farms, nature reserves, and prohibited areas.
**Hydrographic surveys and wreck search:** The BSH's vessels routinely survey German sea areas, especially those which are subject to heavy ship traffic and various other uses (cables, pipelines, wind farms), shoal areas, and areas with a highly variable seabed. The survey area of the BSH covers 57,000 km² (or one sixth of German territory).

The main navigation routes in the North Sea and Baltic Sea are surveyed completely, in co-ordination with the other riparian states.

The positions of about 2,500 underwater obstructions are currently known. Every year, the BSH makes about 50 new discoveries (e.g. shipwrecks, containers) and checks the positions of about 150 known obstructions.

**Nautical charts and publications:** The BSH edits and publishes the official German nautical charts and publications for the North and Baltic Seas and, once a week, the German Notices to Mariners. It also issues the official electronic navigational charts for the German sea areas. These publications, among others, are produced by the BSH's own technical graphics division including a printing facility.
**Safety and security at sea:** Qualified mariners are the key to safe shipping. The BSH issues nautical and engineering Certificates of Competency and maintains the national registry of seafarers’ records.

Safety at sea depends primarily on the reliable functioning of shipboard navigational and radiocommunications equipment. Under the “Seeaufgabengesetz” (Federal Maritime Responsibilities Act), the BSH is responsible for ensuring that only approved navigational and radiocommunications equipment is fitted on board German ships.

The BSH’s maritime security tasks include the review and approval of Ship Security Plans and the issue of International Ship Security Certificates. It also co-operates with several organisations committed to ship safety and security.

**Environmental protection in shipping:** The BSH is the German maritime authority which, by implementing international Conventions relating to shipping, helps to protect the marine environment. In that context, it implements international regulations for the prevention of maritime pollution (MARPOL – International Convention for the Prevention of Pollution by Ships), type-approves ballast water treatment systems, and issues Civil Liability Certificates in connection with oil pollution damage.
Law of the flag and tonnage measurement: The BSH keeps the German flag registry, the International Shipping Register for German commercial ships, and is responsible for ship registration under the German flag and cancellation from the register. The BSH issues tonnage certificates as a basis for ships' technical equipment, manning, and ships' insurance.

Geospatial data

Tonnage certificates are also issued to small craft from 15 m length prior to their entry in the register.

Marine data: The BSH's "GeoSeaPortal", for the first time, provides central Internet access to geospatial data covering sea and coastal areas, based on international standards. Users of GeoSeaPortal now have the opportunity to combine hydrographic data with, e.g., physical, chemical, and biological measurement series, which is a fundamentally novel approach. The geodata infrastructure of the BSH will be part of “GDI-DE”, the Federal Government's national geodata base. Via GDI-DE, the BSH data will be accessible to the European initiative “Infrastructure for Spatial Information in Europe” (INSPIRE), where all EU members can contribute their data through a common portal.
**Vessel fleet:** The vessel fleet operated by the BSH consists of two survey vessels and three survey, wreck search, and research vessels. All vessels carry survey launches. The survey equipment used includes state-of-the-art echosounders and sonar equipment, and GPS position receivers. Divers are deployed additionally for close inspections of underwater obstructions.

**International co-operation**

The BSH co-operates not only with national federal and state bodies, but also with more than 20 international organisations. Co-operation is particularly close with the International Hydrographic Organization (IHO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the International Council for the Exploration of the Sea (ICES), the working groups of the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, and of the Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area (HELCOM).

The BSH also hosts the German secretariat of IOC and GOOS (Global Ocean Observing System).