

UNITED STATES OF AMERICA

National Report

To the
Hydrographic Commission on Antarctica (HCA)
12th Meeting – Montevideo, Uruguay
10-12 October 2012

**National Geospatial-Intelligence Agency, NOAA Office of Coast Survey,
and the US Naval Oceanographic Office**

UNITED STATES OF AMERICA

1. United States Hydrographic Offices

1.1 The Office of Coast Survey (OCS) is a line office within the National Ocean Service, part of the National Oceanic and Atmospheric Administration (NOAA). The administrator of NOAA reports to the Secretary of Commerce, a member of the Presidential Cabinet. OCS provides navigation products and services that ensure safe and efficient maritime commerce on America's oceans and coastal waters, and in the Great Lakes. In fulfillment of this mission, OCS is responsible for conducting hydrographic surveys and producing the nation's nautical charts for all US territorial waters and the U.S. Exclusive Economic Zone (EEZ), a combined area of 3.4 million square nautical miles which extends 200 nautical miles offshore from the nation's coastline. The statutory mandate of the NOAA authorizes them to provide nautical charts and related hydrographic information for the safe navigation of maritime commerce as well as to provide basic data for engineering, scientific, and other commercial and industrial activities. The website address is: www.nauticalcharts.noaa.gov.

1.2 The National Geospatial-Intelligence Agency (NGA) is a Department of Defense combat support agency and a member of the US national Intelligence Community (IC). NGA develops imagery and map-based intelligence solutions for U.S. national defense, homeland security and safety of navigation. NGA provides timely, relevant and accurate geospatial intelligence in support of national security objectives and is responsible for producing navigation products outside of US territorial waters. The term "geospatial intelligence" means the exploitation and analysis of imagery and geospatial information to describe, assess and visually depict physical features and geographically referenced activities on the Earth. Geospatial intelligence consists of imagery, imagery intelligence and geospatial (e.g., mapping, charting and geodesy) information. Information collected and processed by NGA is tailored for customer-specific solutions. By giving customers ready access to geospatial intelligence, NGA provides support to civilian and military leaders and contributes to the state of readiness of U.S. military forces. NGA also contributes to humanitarian efforts, such as tracking floods and disaster support, and to peacekeeping. The NGA Maritime Safety Office is tasked with the responsibility to collect and analyze maritime safety information and to produce and provide global access to nautical charts, publications, and custom tailored digital hydrographic and bathymetric safety of navigation data. The website address is: www.nga.mil/maritime.

1.3 The Naval Meteorology and Oceanography Command (NAVMETOCOM) provides Meteorology and Oceanography (METOC), Bathymetry and Hydrography (Bathy/Hydro), Precise Time and Astrometry (PTA), products and services that enable effective decision-making for operational safety, warfighting success by Naval and Joint forces, and Security Cooperation initiatives. The Naval Oceanographic Office (NAVOCEANO) is the primary command for collecting, analyzing and displaying hydrographic information for safety of navigation of Department of Defense (DoD) surface and subsurface vessels. NAVOCEANO's core competencies include hydrography, bathymetry, geophysics, acoustics, physical oceanography, and geospatial intelligence. NAVOCEANO acquires and analyzes global ocean and littoral

data to provide specialized, timely, and operationally relevant products and services for Department of Defense warfighters as well as other civilian, national and international customers. Utilizing space-based, airborne, surface, and subsurface platforms, as well as state-of-the-art computing and modeling techniques, NAVOCEANO synthesizes this data into products and services tailored to the individual warfighter's needs. These products and services support virtually every type of Fleet operation, providing mission-essential environmental information to the warfighter and to U.S. allies. NAVOCEANO is the parent command of the Naval Ice Center and the Fleet Survey Team.

2. Surveys

2.1 The United States is not carrying out any surveying activity within the HCA region.

2.2 Each year, the areas within NOAA's scope of navigation safety responsibilities are reevaluated. NOAA determines which areas are in greatest need of hydrographic surveys and publishes these in the NOAA Hydrographic Survey Priorities (NHSP) document, which can be found at <http://www.nauticalcharts.noaa.gov/hsd/NHSP.htm>. Priorities are assigned based on several factors, including survey vintage, vessel traffic, depth, and customer requests. The current plan includes surveys through the year 2015.

2.3 Although the primary use for NOAA surveys is for chart compilation, they are also available to the general public through the NOAA National Geophysical Data Center (NGDC) which is located in Boulder, Colorado, USA. NGDC serves as the data archive and distribution center for the NOAA Office of Coast Survey (OCS) digital hydrographic data and maintains the NOAA National Ocean Service (NOS) Hydrographic Data Base (NOSHDB) providing survey data for the coastal waters and Exclusive Economic Zone (EEZ) of the United States and its territories. The publicly available survey data held at the NGDC, which includes not only NOAA data but also academic and releasable US Naval Oceanographic Office survey data, can be accessed at <http://www.ngdc.noaa.gov/mgg/bathymetry/relief.html>. The NGDC also operates the IHO Data Center for Digital Bathymetry (IHO DCDB) as a worldwide digital data bank of oceanic soundings on behalf of the IHO and its member states.

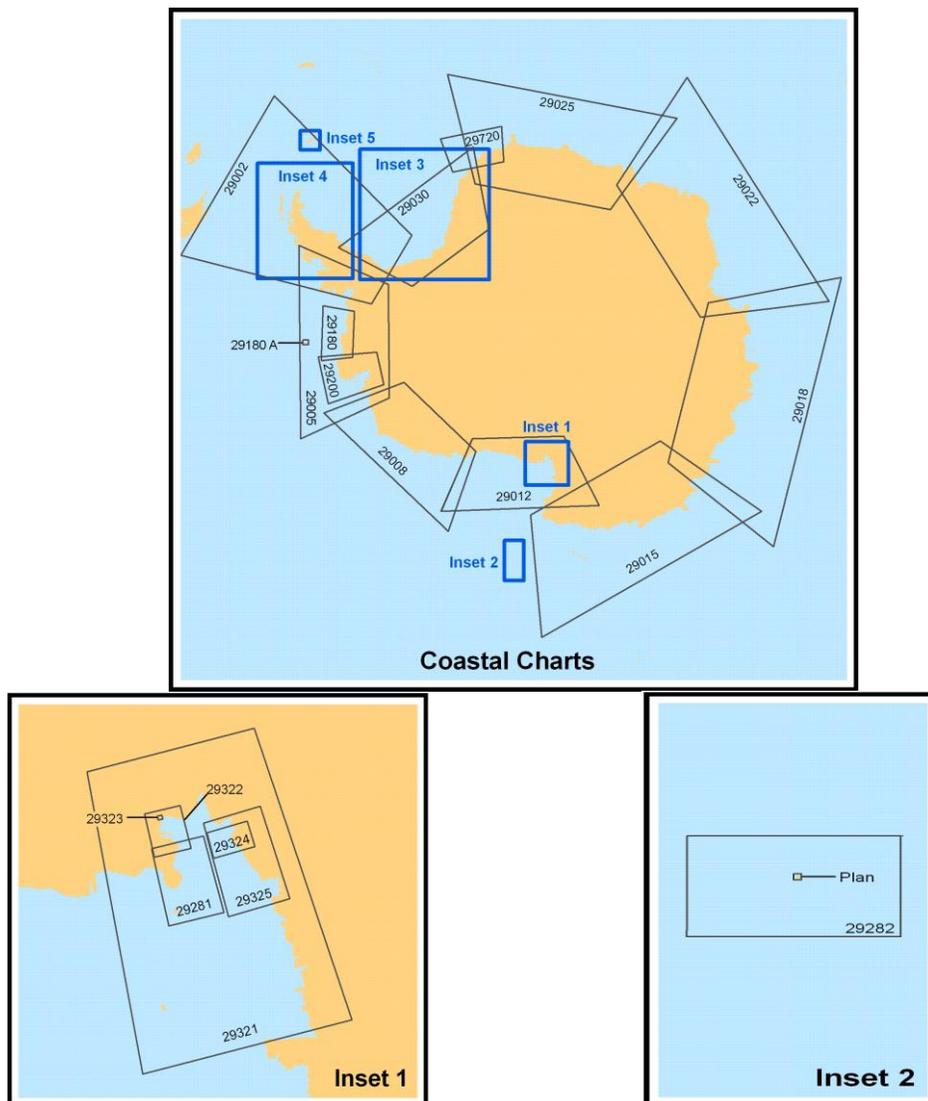
2.4 The Marine Geoscience Data System (MGDS) hosted at the Lamont-Doherty Earth Observatory of the Columbia University in New York City, USA, provides free public access to data collected throughout the global oceans. The data portals available here serve different communities associated with US National Science Foundation (NSF)-funded researchers and other academic organizations by providing direct access to data holdings. There is a specific Antarctic Portal at this site which can be accessed at <http://www.marine-geo.org/portals/antarctic>.

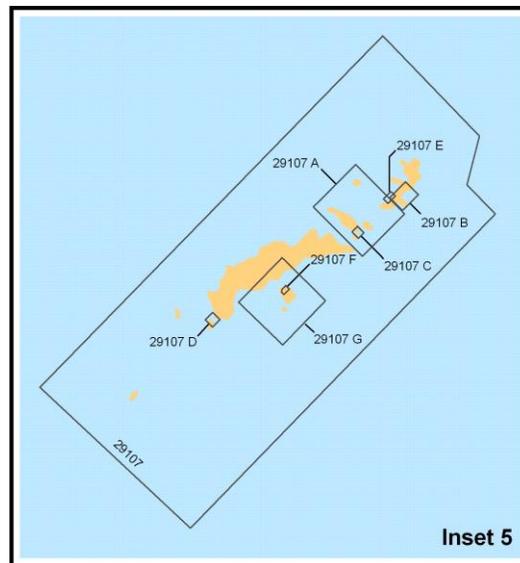
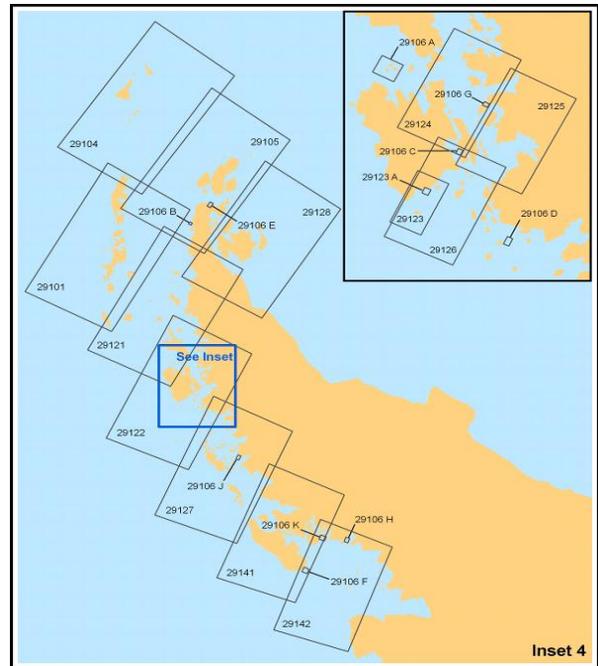
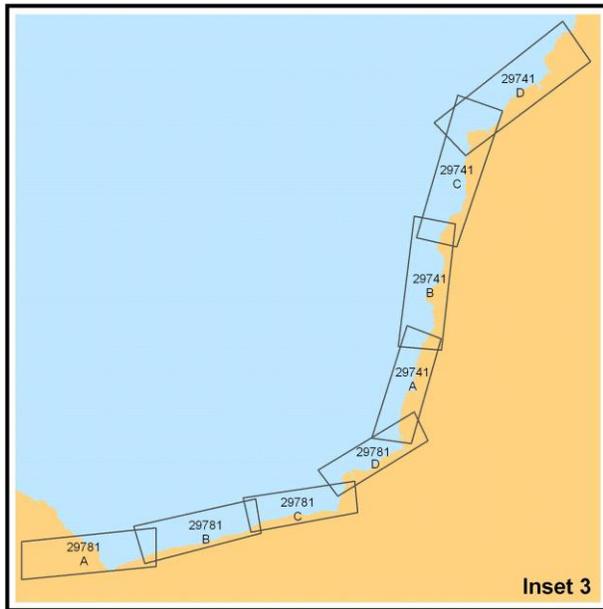
2.5 Within the HCA region, the US/NGA reports that it has acquired and cleaned NGDC and MGDS supplied multibeam data over the INT 9000 chart footprint/Ross Sea area.

This data is of sufficient resolution to support charting, and can be made available to any requesting IHO member state.

3. New Charts & Updates

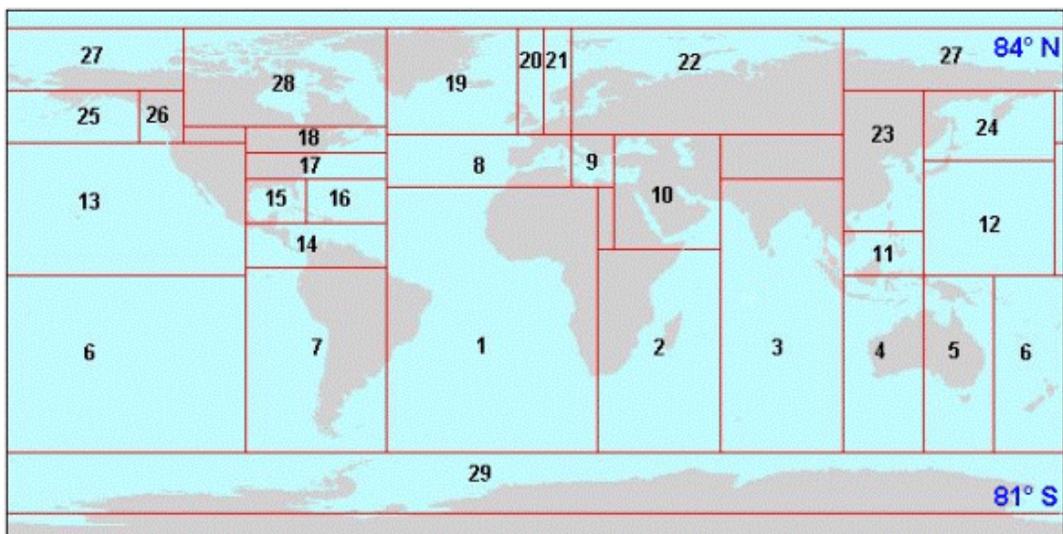
3.1 The US/NGA maintains a portfolio of Coastal, Approach and Harbor scale charts with associated plans and panels within the HCA region. All of these charts are on public distribution and are maintained from any available sources through the US Notice to Mariners. Graphics that portray NGA chart coverage are included below:





3.2 The Digital Nautical Chart (DNC)[®] produced by the US National Geospatial-Intelligence Agency (NGA) is an unclassified, vector-based, digital database containing maritime significant features essential for safe marine navigation. Initial data collection of the database was from an NGA and NOAA portfolio of approximately 5,000 hardcopy standard nautical charts of varying scales and today provides global digital chart coverage for marine navigation between 84° North latitude and 81° South latitude. The DNC[®] database consists of 29 DNC[®] geographic regions and is produced in the NGA standard Vector Product Format (VPF). The DNC[®] contains four library categories based on scale and purpose of the source charts including Harbor, Approach, Coastal

and General charts, from largest to smallest scale, respectively. In addition, there is a single Browse library that acts as an index. Below is a graphic showing the US/NGA DNC® Geographic Regions:



Digital Nautical Chart® Geographic Regions

For DNC®29 (Antarctic) there are 54 total libraries (cells) of data based on and collected from a total of 95 US and foreign hardcopy standard nautical charts with three additional libraries in work which will bring the total to 57. The breakout of DNC® libraries by scale indicates that there are 8 General, 11 Coastal plus an additional library in work, 15 Approach plus 1 additional library in work and 20 Harbor libraries with 1 additional library in work within this region. The DNC® website is at <http://dnc.nga.mil> where graphics and a listing of available coverage can be found. This data is not releasable to the general public.

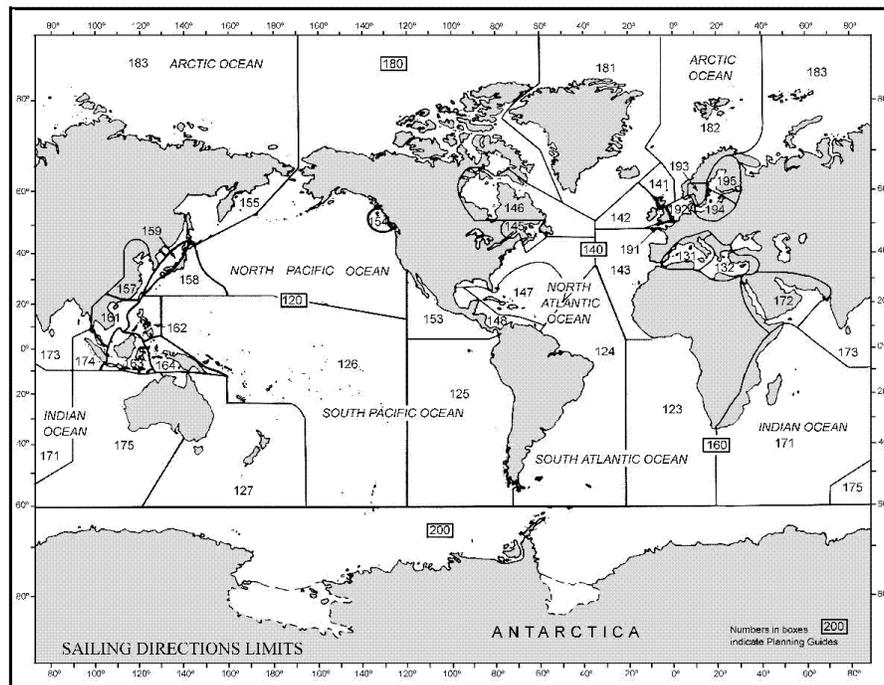
3.3 Within the Antarctic region, the US/NGA was assigned as the producer nation for INT Chart 9105 (1:25K) and INT Chart 9062 (1:200K). INT 9105, (US Chart 29123) is a 1:25K chart of the Approaches to Arthur Harbor with a plan of 1:12.5K of Arthur Harbor. It was completed in December 2011 and is listed as 3rd Edition, December 10, 2011.. The chart used commercial imagery for the shoreline and positioning on WGS-84 datum. Bathymetric data has been obtained from a combination of US Naval Oceanographic Office (NAVO) surveys from 1965, more recent US Government survey data from 1999-2010, data from other member state charts of this area, and more recent random track lines from various vessels. NGA is currently producing a new DNC® libraries of the main body of the chart and the plan. In conjunction with NOAA an ENC cell of this area was produced, US5AN01. INT 9062, (US Chart 29742), Vahsel Bay and Vicinity including Belgrano Station, was completed in February of 2012 and is listed as 1st Edition February 25, 2012. It is of a 1:200K and was made mainly from random track data A new DNC library a is in work at NGA and NOAA is working to produce an ENC cell.

3.4 NGA currently is producing its first ENC cells and may take over maintenance of the Antarctica cells in the future.

3.5 NGA provided commercial imagery upon request to aid another HCA member making a new chart

4. Nautical Publications

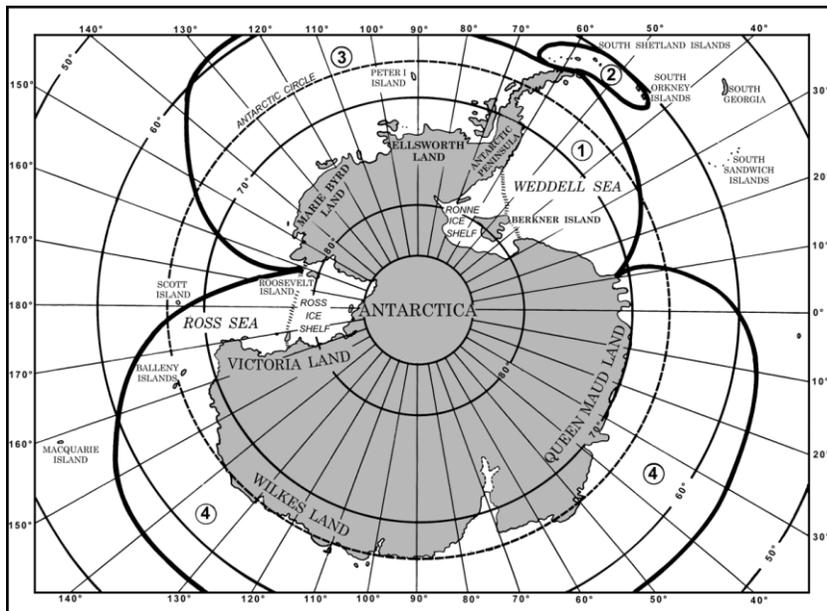
4.1 Sailing Directions are published by the US/NGA in 42 Planning Guide and Enroute volumes as part of a global portfolio of publications. Sailing Directions (Planning Guide) are intended to assist mariners in planning ocean passages and include relevant physical, political, industrial, navigational and regulatory information about the countries adjacent to a particular ocean basin. Sailing Directions (Enroute) are intended to supplement the largest scale charts of the area and include detailed coastal and port approach information. They are subdivided into geographic regions, called sectors, which contain information about the coastal weather, currents, ice, dangers, features and ports. NGA Sailing Directions are updated via a digital update, Publication Data Update (PDU), patch process. All of these publications and their digital patch updates are available to the public and are posted at the NGA Maritime Safety website at www.nga.mil/maritime. A graphic of NGA Sailing Directions global coverage is shown below:



NGA Sailing Directions Limits

4.2 NGA Sailing Directions Pub. 200, (Planning Guide and Enroute) Antarctica, Ninth Edition, 2011, is issued as Part I and Part II, with both Planning Guide and Enroute information combined in one volume. This combination of volumes was initiated due to the rather unique aspect of the Antarctic continent. Part I, Sailing Directions (Planning

Guide) Antarctica includes information concerning physical geography, meteorology, exploration, treaties and legal agreements, regulations, history, and navigation. Part II, Sailing Directions (Enroute) Antarctica is comprised of four sectors and includes basic coastal and navigational information for each. A graphic showing these sectors is shown below:



NGA Sailing Directions Pub 200 Sector Limits

5. MSI

5.1 The promulgation of Maritime Safety Information (MSI) within this region as part of the IHO World-Wide Navigational Warning Service (WWNWS) is outside the responsibility of the United States.

6. C-55

6.1 The United States has not had any survey or charting activities in Antarctica to report.

7. Capacity Building

7.1 The United States is an active participant in the IHO Capacity Building Sub-Committee (CBSC) and directly supports the IHO Maritime Safety Information (MSI) training course. The United States has not been involved in any capacity building activities directly related to the HCA.

8. Oceanographic Activities

8.1 The United States participates on the IOC-IHO Guiding Committee for GEBCO and as mentioned previously in this report hosts the IHO Data Center for Digital Bathymetry at the NOAA National Geophysical Data Center (NGDC).

9. Other Activities

9.1 Nothing further to report.

10. Conclusion

10.1 The United States is committed to being an active member of the IHO HCA. NGA is pleased to have completed both INT Charts 9105 and 9062 and have made one ENC cell available. NGA has publically available chart, nautical publication and bathymetric data (as described within this report) that currently has been made available to other member states for use in this region. We have also upon request provided commercial imagery to other member states.