

**MEDITERRANEAN AND BLACK SEAS  
HYDROGRAPHIC COMMISSION  
XVIII CONFERENCE**

**CONTRIBUTION BY MONTENEGRO**

**INSTITUTE OF HYDROMETEOROLOGY  
AND SEISMOLOGY**



**SECTOR FOR HYDROGRAPHY  
AND OCEANOGRAPHY**

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# CONTENTS

<b>1. HYDROGRAPHIC OFFICE.....</b>	<b>1</b>
<b>2. SURVEYS.....</b>	<b>1</b>
2.1 Coverage of new surveys.....	1
2.2 New technologies and /or equipment.....	1
2.3 Ships.....	1
2.4 Problems encountered.....	2
<b>3. CHARTS.....</b>	<b>3</b>
3.1 ENC's .....	3
3.2 RNC's .....	3
3.3 INT charts.....	3
3.4 National paper charts.....	3
3.5 Other charts.....	4
3.6 Problems encountered.....	4
<b>4. NAUTICAL PUBLICATIONS.....</b>	<b>4</b>
4.1 New publications.....	4
4.2 Updated publications.....	4
4.3 Means of delivery.....	4
4.4 Problems encountered.....	4
<b>5. MARITIME SAFETY INFORMATION (MSI).....</b>	<b>5</b>
<b>6. S-55 - STATUS OF THE SURVEY.....</b>	<b>6</b>
<b>7. CAPACITY BUILDING.....</b>	<b>6</b>
7.1 Training received.....	6
7.2 Training needed.....	7
7.3 Status of bilateral agreements and projects.....	7
<b>8. OCEANOGRAPHIC ACTIVITIES.....</b>	<b>8</b>
8.1 Tide gauge network .....	8
8.2 New equipment.....	9
8.3 Problems encountered.....	9
<b>9. OTHER ACTIVITIES.....</b>	<b>9</b>

## 1. HYDROGRAPHIC OFFICE

Montenegrin Hydrographic Service is organized as a Sector for Hydrography and Oceanography (SHO) within the Institute for Hydrometeorology and Seismology (IHMS). SHO has basic infrastructure (premises and ships), equipment, software and small number of staff necessary for execution of the basic tasks.

## 2. SURVEYS

The last systematic survey of Montenegrin near shore waters was performed in the period from 1951 to 1954. The strong earthquake in 1979 partially changed pattern of the coast-line and topography of the sea bottom, especially within Boka Kotorska bay and in proximity of the coastline.

It is necessary to resurvey complete area of the responsibility in accordance with IHO Standards for Hydrographic Surveys (S-44).

### 2.1 Coverage of new surveys

For the time being SHO is only capable to perform small-scale surveys.

In the period 2010 - 2013 SHO has surveyed almost all important ports, marinas and piers in national waters. Based on these surveys nautical plans were produced.

### 2.2 New technologies and /or equipment

SHO disposes of the following equipment and software:

- SBES: *Navisound 215* and *Simrad EA400*
- GPS receivers: *Leica GS09* and *Trimble Pathfinder ProXRS* (corrections from national GPS network MONTEPOS)
- CTD probes: *Monitor* and *Midas*
- Two permanent tide gauge stations and mobile tide gauge *Tide Master*
- Side Scan Sonar *Edgetech 4125*
- Currentmeter *RDCP 600*
- Hydrographic Software: *HydroPro* and *Hypack 2010*
- GIS software *Geomedia Professional*
- Software for terrain modeling *Surfer 10*

### 2.3 Ships

SHO has one 22.5 m launch (Fig. 1) and one 9.5 m boat (Fig. 2). Ships are purposely built for hydrographic surveys and oceanographic measurements.



*Fig. 1 Hydrographic launch BH-12*

- displacement: 69 t
- length: 22.5 m
- draft: 1.9 m
- speed: 8 / 10.5 knots
- accommodation capacities
  - 8 crew members
  - 4 members of survey team



*Fig. 2 Hydrographic boat ČH-1*

- displacement: 6 t
- length: 9.5 m
- draft: 0.5 m
- accommodation capacities:
  - 2 crew members
  - 2 members of survey team

#### **2.4 Problems encountered**

The lack of trained personnel in the field of hydrography.

### 3. CHARTS

3.1 *ENCs* : None

3.2 *RNCs* : None

3.3 *INT charts* : None

3.4 *National paper charts*

SHO currently does not have capabilities of cartographic production.

In the portfolio SHO has some charts which are inherited from ex State union with Serbia: one general chart in the scale 1:300 000, two coastal charts in the scale 1:100 000 issued in 2002 year. Chart of Boka Kotorska bay in the scale 1:25 000 was issued in 2010. (Fig. 3).

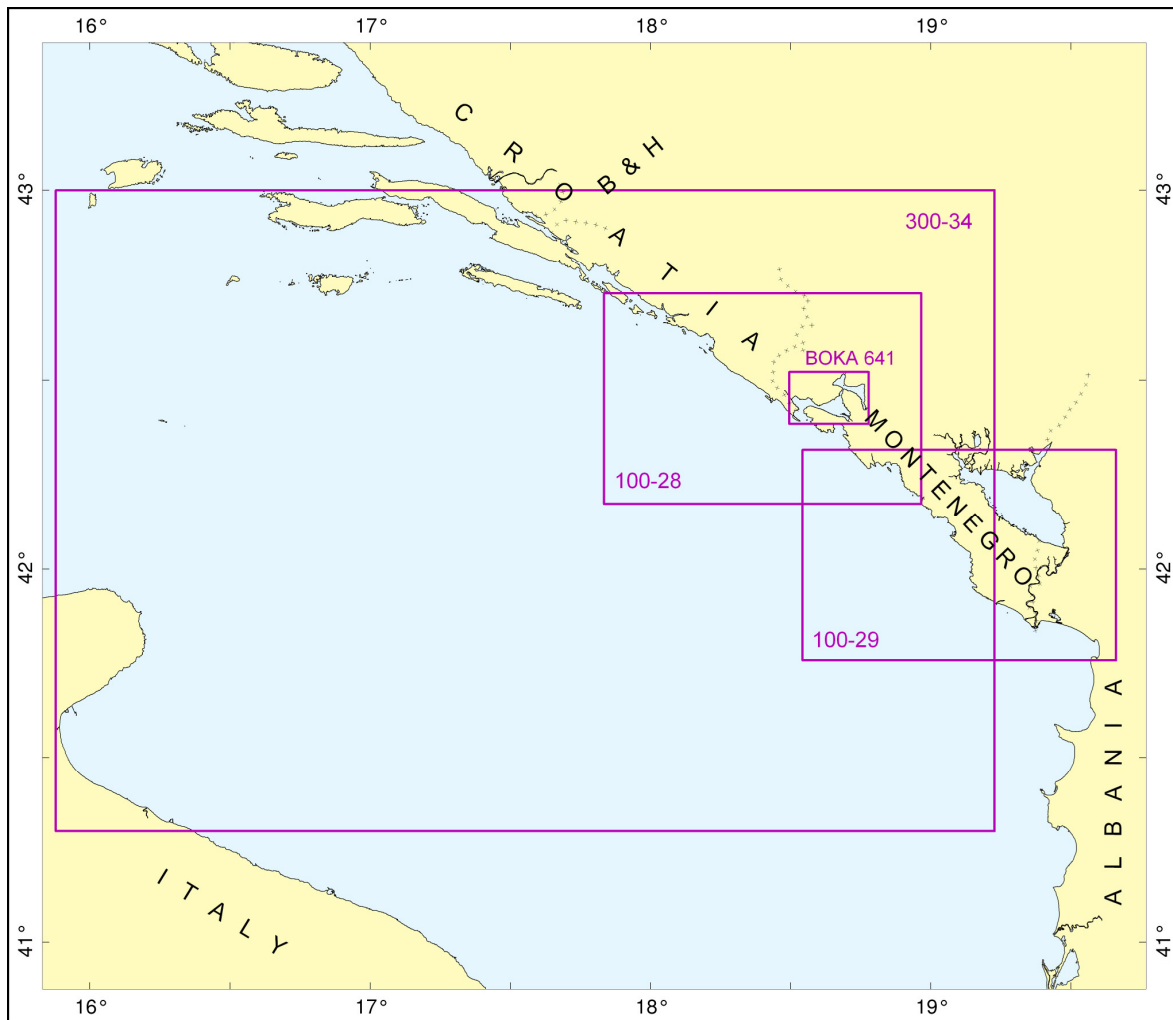


Figure 3 National paper charts

Large format plotter for the production of paper charts using the methodology “Print on demand” has recently been acquired, but appropriate software and digital cartographic data are not available so far.

### 3.5 *Other charts: None*

### 3.6 *Problems encountered*

The lack of trained personnel in the field of marine cartography.

## 4. NAUTICAL PUBLICATIONS

### 4.1 *New publications*

- Notices to Mariners
- Nautical Almanac: 2012, 2013
- Sailing Directions (issued in national language - edition in English language is in preparation)

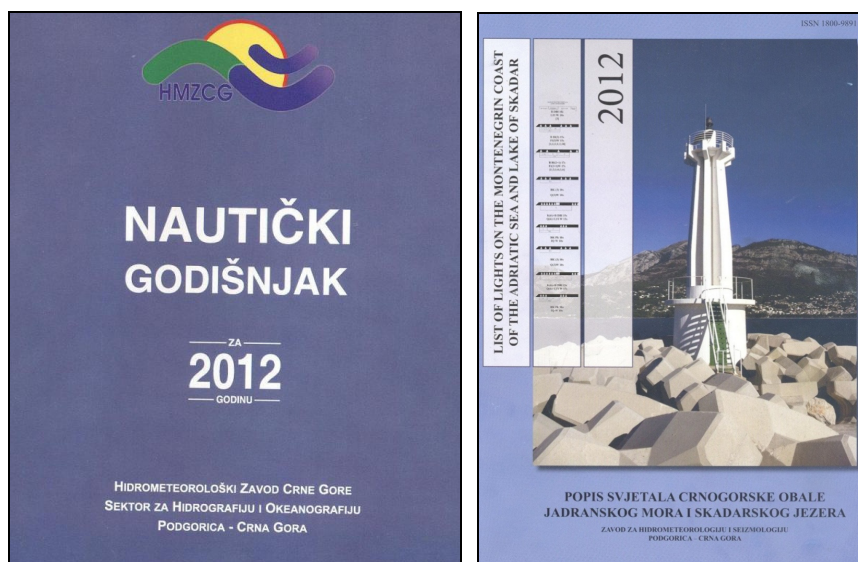


Fig. 4 Nautical publications issued by Montenegrin HS

### 4.2 *Updated publications*

- Lists of Lights: 2012

### 4.3 *Means of delivery*

Publications are delivered in paper form only.

### 4.4 *Problems encountered*

Limited budget, the lack of data and trained personnel.

## 5. MARITIME SAFETY INFORMATION (MSI)

Promulgation of navigational information and the GMDSS implementation is the responsibility of another governmental agency - Maritime safety department of Montenegro

### NAVIGATIONAL INFORMATION

SERVICE	YES	NO	Partial	NOTES
LOCAL WARNINGS	x			
COASTAL WARNINGS	x			
NAVAREA WARNINGS	x			
INFORMATION ON PORTS AND HARBOROUS			x	

### GMDSS IMPLEMENTATION

SERVICE	YES	NO	Partial	NOTES
Master Plan		x		
A1 Area	x			
A2 Area	x			
A3 Area		x		
NAVTEX		x		
SafetyNet		x		

## 6. S-55 - STATUS OF THE HYDROGRAPHIC SURVEY

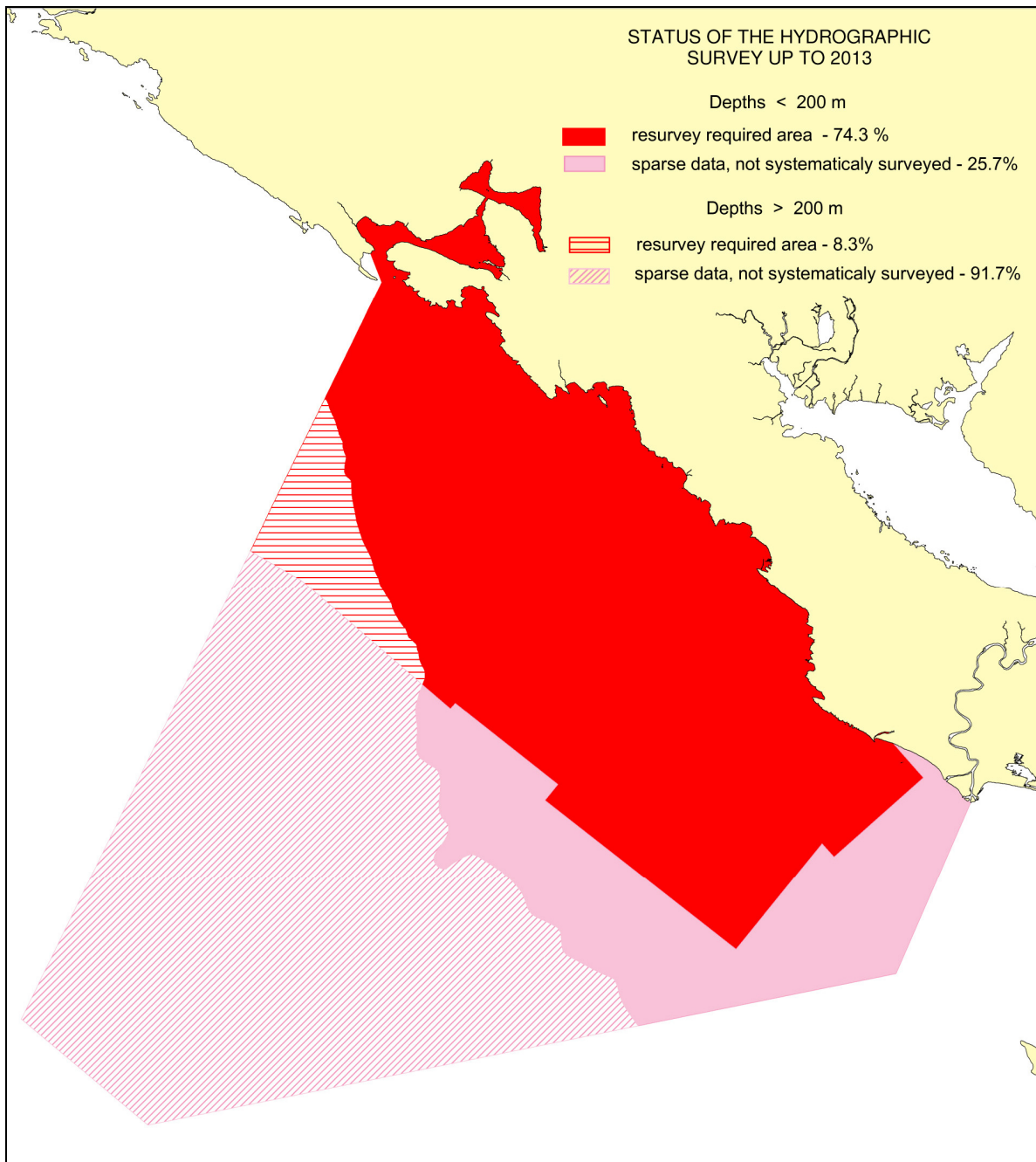


Figure 5 Status of hydrographic survey of Montenegrin waters

## 7. CAPACITY BUILDING

### 7.1 Training received: None

In 2013 we applied for one candidate for the training at the UK Hydrographic Office for B Hydrographic Course, but unfortunately our candidate was not selected.



## **7.2 Training needed**

The main problem in the work of our HS is the lack of trained personnel. For this reason we have a need for all types of training, especially for: Hydrographic courses, Marine cartography courses and ENC courses.

We intend to submit a requests of support to the IHO CBC and we are also interested in organization of the CB Technical visit to our Hydrographic Service.

## **7.3 Status of bilateral agreements and projects**

### **7.3.1 Bilateral agreements**

Arrangement for cooperation between the United Kingdom Hydrographic Office and the Institute of Hydrometeorology and Seismology of Montenegro was concluded in the 2013th year.

### **7.3.2 Bilateral projects**

#### **I. EU/IPA - Cross-Border Programme Montenegro – Croatia: „Joint Promotion and Increased Level of Safety in Nautical Tourism in Dubrovnik – Neretva County and Montenegrin Coast”.**

Main objective of the project was to improve the nautical tourism potential of the Montenegrin coast and Dubrovnik - Neretva County in Croatia through its joint promotion as a unique tourist entity with rich cultural and natural heritage.

Montenegrin partners in the project were the Montenegrin Institute of Hydrometeorology and Seizmology (IHMS) as leading partner, and the National tourist organization of Montenegro as its partner. Croatian partners in the project were the Hydrographic Institute of the Republic of Croatia (HHI) as leading partner, and the University of Dubrovnik as its partner. Associate partners were the Ministry of the Sea, Transport and Infrastructure of the Republic of Croatia, and on the Montenegrin part the Maritime Safety Department of Montenegro, the Harbour Master’s Office Kotor, and the marina Porto Montenegro. The project was launched in January 2011 and successfully completed in December 2012. As a result two ports were surveyed and nautical pans of tree ports were produced in Montenegrin waters.

#### **II. EU / IPA project of component II (CBC), Measure 1.1. Joint Actions for Environment, Nature and Cultural Heritage.**

It is started implementation of a new EU project named Joint Action for Sea Pollution Prevention - "JASPPer". The project aims to contribute to the reduction of transboundary pollution and preservation of the marine ecosystem. It takes place in the waters close to the sea border between Montenegro and Croatia.

Montenegrin partners in the project are: Institute of Hydrometeorology and Seismology (including its SHO) as the leading partner and Institute of Marine Biology. Croatian partners in the project are: Croatian Hydrographic Institute as Functional Lead Partner and Institute for Marine and Coast - University of Dubrovnik. The planned duration of the project is 24 months (from May 2013 to May 2015).

## 8. OCEANOGRAPHIC ACTIVITIES

### 8.1 *GEBCO/IBC's activities: None*

### 8.2 *Tide gauge network*

Two permanent tide gauge stations are in operation in Montenegrin waters: in port of Bar and in port of Kotor (Fig.5).

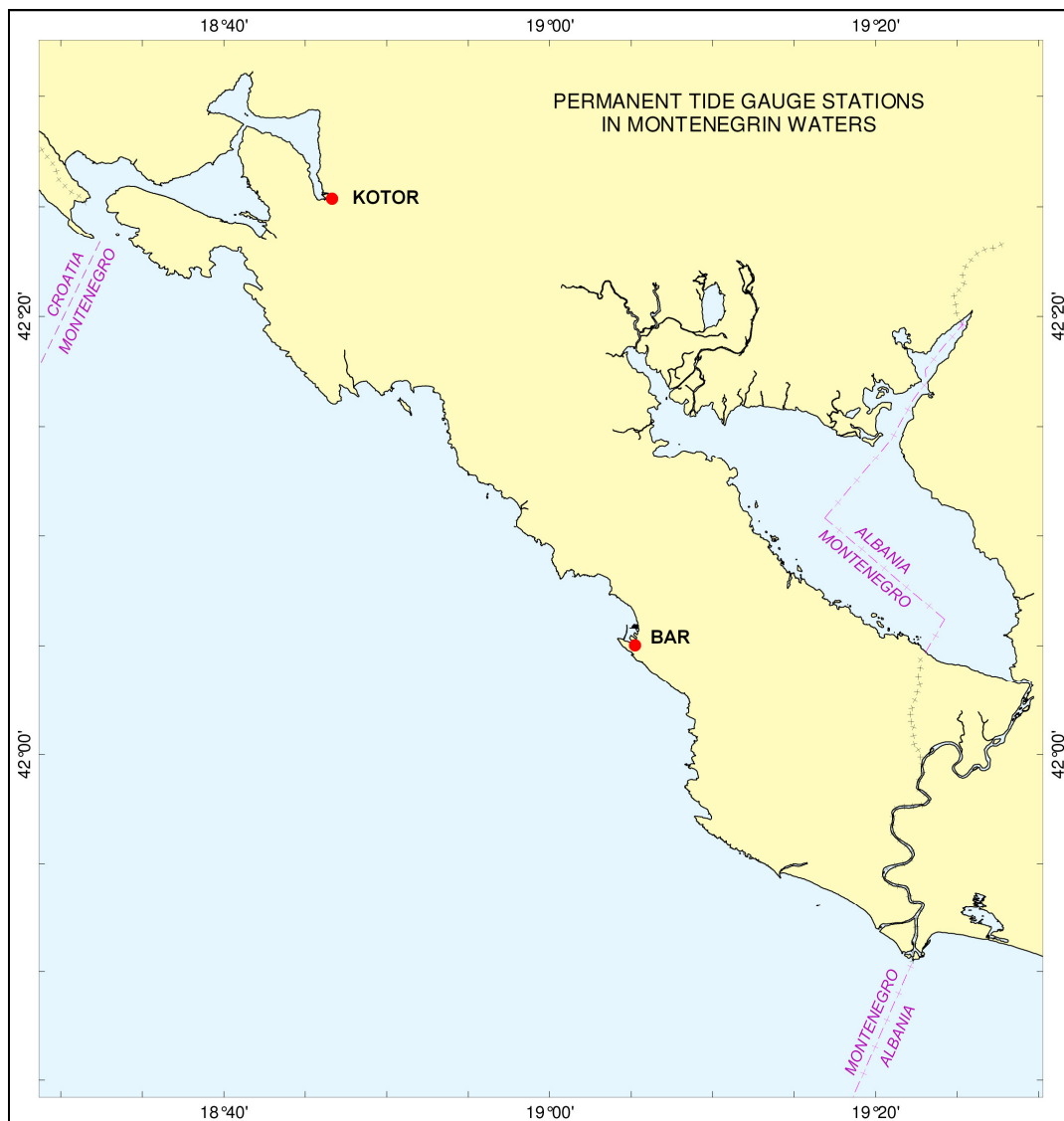


Figure 5 Permanent tide gauge stations in Montenegrin waters

**8.3 *New equipment***

Current meter (RDCP 600).

**8.4 *Problems encountered***

Lack of trained personnel in the field of oceanography.

**9. OTHER ACTIVITIES**

**9.1 *Participation in IHO Working Groups: None***

**9.2 *Meteorological data collection: Yes***

**9.3 *Geospatial studies: None***

**9.4 *Disaster prevention: None***

**9.5 *Environmental protection: None***

**9.6 *Astronomical observations: None***

**9.7 *Magnetic/Gravity surveys: None***

Director  
M.Sc. Luka Mitrović

