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# SOUTH AFRICAN NAVY HYDROGRAPHIC OFFICE



GLOSS National Report for South Africa

2019

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*Hydrographic information driving marine knowledge.*

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1. The South African Navy Hydrographic Office (SANHO) is the responsible authority for the installation and maintenance of the tide gauge network around the South African Coastline. The SANHO is also responsible for the acquisition, processing, archiving and dissemination of sea level data for South Africa. This data is retrieved and processed in accordance with the International Hydrographic Organisation's (IHO) guidelines and standards. SANHO has been recognised at national level with the South African National Cabinet approving the 2018 Hydrographic Bill that will see the SA Navy hydrographer in future known as the National Hydrographer.

2. The SANHO was formed in 1954. Installation of the first of its own float-type gauges followed in 1957 and the operation of certain SA Railways and Harbours gauges seems to have been taken over at about the same time. Over the last 65 years the SANHO has developed the national tide gauge network (TGN) into a modern, sustainable network; from float actuated gauges with mechanical pens and paper traces to electronic acoustic gauges to the radar type gauges and 4G communications.

3. Over the years various issues with power supply within the harbours resulted in a solar panel power system being placed on trial Cape Town (November 2013). The system was initially meant to be a back-up during times of power outages however it was installed and trialed as a power source on its own. The success with this system set-up and zero loss of data over the last 5 years has resulted in all the South African Tide Gauges being moved over to solar power.

4. The South African tide gauge network consists of 10 tide gauge stations along the South African coastline. The SANHO tide gauge network is presented in Figure 1

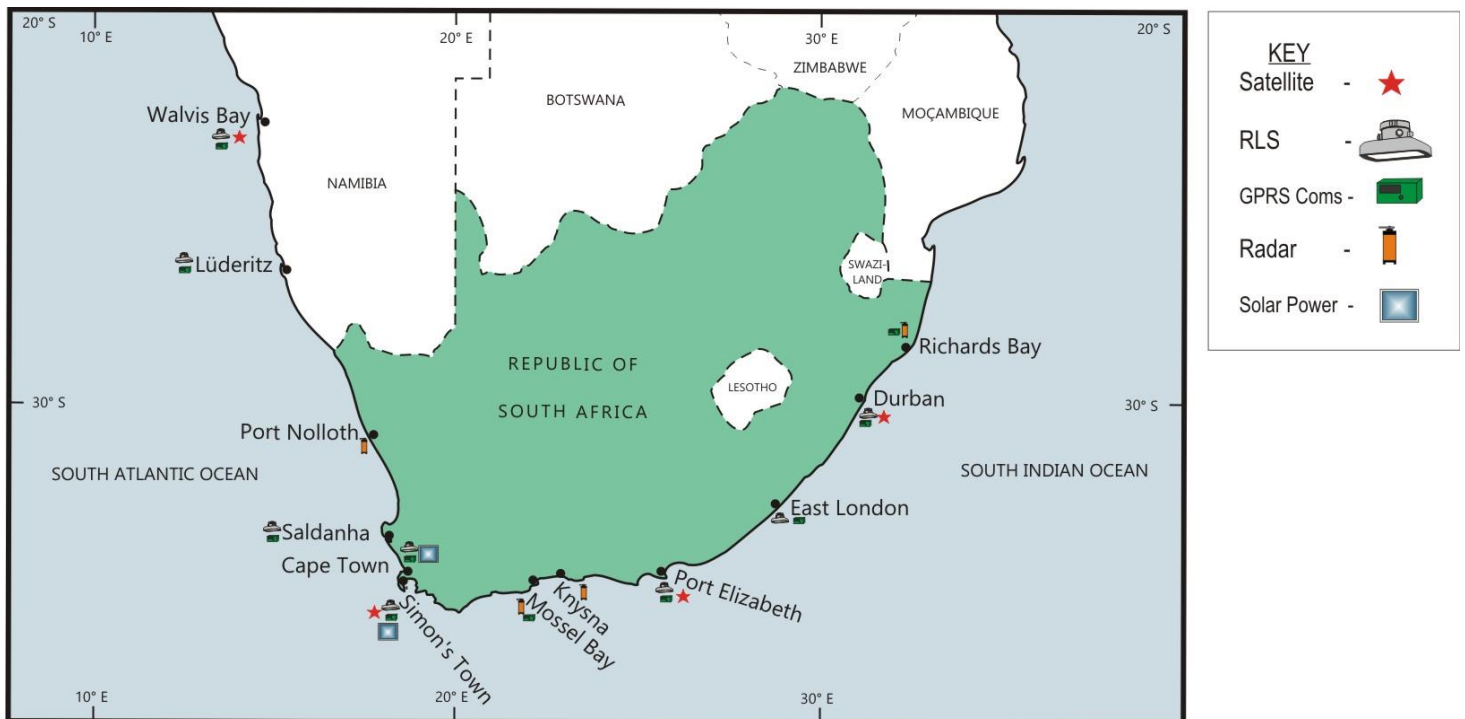


Figure 1: South African Tide Gauge Network

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Table 1: SANHO TGN Station information (NAMPORT – Namibian National Ports Authority, HartRAO - Hartebeesthoek Radio Astronomy Observatory)

GLOSS ID	Station Name	Port ID	Latitude	Longitude	Time Zone	Type of Gauge	Responsibility
314	Walvis Bay	WB	22° 56' 57.78"S	14° 29' 54.63"E	GMT + 2	OTT NetDL, RLS Radar fitted with satellite transmitter	NAMPORT/ SANHO
	Lüderitz	LB	26° 38' 33.91"S	15° 09' 12.89"E	GMT + 2	OTT NetDL, RLS Radar	NAMPORT/ SANHO
	Port Nolloth	PN	29° 15' 25.56"S	16° 52' 01.34"E	GMT + 2	OTT Kalesto Radar	SANHO
	Saldanha Bay	SA	33° 01' 25"S	17°57' 37.21"E	GMT + 2	NetDL, RLS Radar	SANHO
	Cape Town	GB	33° 54' 19.22"S	18° 26' 02.18"E	GMT + 2	NetDL, RLS Radar	SANHO
268	Simon's Town	SB	34° 11' 16.92"S	18° 26' 22.04"E	GMT + 2	NetDL, and Kalesto Radar fitted with satellite transmitter	SANHO
	Mossel Bay	MB	34° 10' 46.27"S	22° 08' 49.74"E	GMT + 2	NetDL Radar	SANHO
	Knysna	KN	34° 02' 58.51"S	23° 02' 44.15"E	GMT + 2	Kalesto Radar	SANHO
76	Port Elizabeth	PE	33° 57' 35.19"S	25° 37' 46.12"E	GMT + 2	NetDL, RLS fitted with satellite transmitter	SANHO
	East London	EL	33° 01' 37.79"S	27° 54' 53.20"E	GMT + 2	NetDL, RLS Radar	SANHO
13	Durban	DU	29° 52' 27.18"S;	31° 03' 02.8"E	GMT + 2	NetDL, RLS fitted with satellite transmitter	SANHO
	Richards Bay	RB	28° 47' 43.86"S	32° 04' 42.15"E	GMT + 2	NetDL, RLS Radar	SANHO
	Marion Island		-46.8667	37.8667		Radar	HartRAO

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5. The Namibian GLOSS Station WB, and LB which is not a GLOSS station, were upgraded in 2018 and are experiencing communication problems with the FTP site. All South African GLOSS stations are operational. Of the remaining non-GLOSS stations in the South African TGN, all except Port Nolloth (PN), are operational. PN was removed to avoid damage to the equipment during construction on the quay and is set to be reinstalled in 2019. PN will be upgraded to the OTT RLS and NetDL (4G communications) as well as the solar supply during reinstallation.

6. The DCP satellite transmitter which connects DU, PE and SB to the Indian Ocean Tsunami Early Warning System appear to be non-operational; the inability to access the EUMETSat website and obsolete equipment possibly being the cause. The HDR's and GPS's require replacement. The HDR's (received and installed in 2006/2007) are obsolete and severely effected by the GPS rollover on 6 April of this year. The replacement units used by OTT are not approved for importation into South Africa as yet. The Yaggi antennae are in need of replacement, they are constructed of aluminium which becomes powdery and "bursts" into shards in the extremely corrosive South African coastal environments. This is particularly problematic in DU.

7. Data from as far back as the 1930's (tide gauge station dependant) is stored in the original trace format as well as digital format at the SANHO. The SANHO's archives are a part of the South African National Archives and has been logged with the South African Historical Society.

8. Due to the implementation for the South African Spatial Data Infrastructure Act, 54 of 2003 and the Hydrographic Bill of 2018's implementation within the SANHO, no data (for which the SANHO is a custodian) may be made available for free download on any website. The any SANHO data required for research or any other use is to be requested directly from the SANHO ([hydrosan@iafrica.com](mailto:hydrosan@iafrica.com)).

9. The SANHO and the Hartebeesthoek Radio Astronomy Observatory (HartRAO) have entered into a collaboration whereby GNSS stations will be installed at each tide gauge station without the TGN in order to monitor land tide.

10. A radar tide gauge, satellite transmitter and GPS system was installed on Marion Island. The contact person for this project is Dr Roelf Botha of the Hartebeesthoek Radio Astronomy Observatory (HartRAO). The data from the Marion Island tide gauge is available on the following website: <http://www.ioc-sealevelmonitoring.org> .

11. Tidal Data from the SANHO network is used to create the navigational publication SAN HO-2 South African Tide Tables and the predictions for the current month are available on the SANHO website ([http://www.sanho.co.za/tides/tide\\_index.htm](http://www.sanho.co.za/tides/tide_index.htm) ).

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