

SCAR/SCAGI Activity Report, June 2019 - July 2020

ITALY

Carlo Baroni

SCAR Composite Gazetteer for Antarctica (June 2019 - July 2020).

The Italian National Commission on Antarctic Research (CSNA) supports SCA-GI initiatives for developing new contribution to Antarctic Research (with particular attention to CGA and Map Catalog).

At the date of 24 July 2020, the number of records (place names) in the CGA is 37.974 (last year 37.893), referring to 20.174 recognized different features (last year: 20078). However, a check of all ID numbers has revealed that 277 numbers do not have any entry, thus the effective number of features is 19.897 (last year: 19.844).

The technical contact for new entries is Mrs Jacqueline Mueller for submitting files to the Australian Antarctic Data Centre (Ursula Harris).

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As the **Gazetteer** is concerned, in the period June 2019 - July 2020 the following actions have been carried out:

- August 2019 – Minor corrections were done for a Polish and a German name. **Laetitia Thérond** submitted a request to insert **four new French names**, place ID numbers 20088-20091 were attributed to these new names.
- October 2019 – **Chris Stephens** submitted a request to insert **20 new NZ names**, place ID numbers 20092 to 20111 were attributed.
- November 2019 – **Adrian Fox** submitted a request to insert **8 new UK names**, place ID numbers 18451, 18455, 17861, 20113, 20117-20121 were attributed (see also April 2020).*)¹

*) Place ID 20112 *Elcheikh Saddle* (AUS), Place ID numbers 20114 to 20116 have no entry following modification of UK duplicate names; 8 UK and 52 NZ names submitted in July 2020 not included

- March 2020 – **Lyubomir Ivanov** submitted a request to insert **48 new Bulgarian names**, place ID numbers 20127 to 20174 were attributed.
- April 2020 – Following notification by Lyubomir Ivanov for three duplicate place names (UK nrs. 20114, 20115 and 20116 and Bulgarian nrs. 18451, 18455 and 17651) the place ID numbers of the three UK names were modified.
- June 2020 – **Jörn Sievers** (GER) asked information about how to fill in the template for updating the German names in the gazetteer. He also announced that there are several new names to be inserted. The two templates (one for integration of “old” names and the other for new names) should arrive soon.
- July 2020 – **Adrian Fox** submitted a request to insert **eight new UK names**. The template has been sent to Ursula Harris on 24 July.
Christ Stephens submitted a request to insert **52 new NZ names**. The template has been sent to Ursula Harris on 24 July.

Activity after the proposal of checking the gazetteer by national representative (3rd June 2019): some representatives started the check and, where necessary, the revision of records. A new field “Named for” was recently created in the gazetteer and that information in some cases was derived from the narrative field.

Boulder Clay gravel runway (Terra Nova Bay, Antarctica)

Gianluca Bianchi Fasani, ENEA (Unità Tecnica Antartide)

Informations from Report - 2019

Italy is realizing the construction of a gravel runway to increase the reliability of its National Antarctic Programme (PNRA) transportation system, allowing greater effectiveness of scientific research and a more reliable multi-year programming. The construction site “Boulder Clay” is located in the Northern Foothills, about 6 km south of the Italian Antarctic Research Station Mario Zucchelli. The site is an ice-free area located on a very gentle slope (5°) with south-eastern exposure.

Several documents have been produced by Italy in the years while the concept of building this new infrastructure was developing (IP 41- ATCM XXXV, IP80 – ATCM XXXVI, IP57 – ATCM XXXVII, WP30 – ATCM XXXVIII). During ATCM XXXIX, Italy presented the Draft Comprehensive Environmental Evaluation for the construction and operation of a gravel runway in the area of Mario Zucchelli Station, Terra Nova Bay, Victoria Land, Antarctica. In ATCM XL, the Final CEE was presented.

The gravel runway project includes the following facilities to be constructed mainly using the material available in the nearby area:

- *a gravel embankment of 2,200 m long and 60 m*

- *an apron (130x134 m)*
- *an helipad (30x30 m)*
- *a service area (70x22 m)*
- *a small taxiway (70 m long, 25 m width) to connect the runway with the apron.*
- *access road from Mario Zucchelli Station*



Fig 1. Overview of the runway site (2020)



Fig 2. Overflight of Boulder Clay on November 2019 (C130-30J of the Italian Air Force)

During the 35th expedition (October 2019 – March 2020) of the Italian National Antarctic Programme (PNRA) work continued on the construction of the Boulder Clay airfield and the related forecourt.

Construction of the flight infrastructure started from the section at 1,350 m and continued until the section at 1,650 m. In this spatial configuration the runway would hypothetically already be operative for landing of an C-130-30J aircraft. In January and February 2020 the landing strip was regularly used for operating with a Basler.

The surface layer of the airborne-surface was positioned creating a "donkey-back" transversal slope of 1%, as suggested by the regulations in force, with two levels that have a profile that is symmetrical with respect to the runway axis. Simultaneously to the creation of the transversal slopes, the problem of water was addressed. In fact, the water largely derives from snow and ice melting on the moraine near the upstream side of the runway.

During the 35th expedition, following a temperature increase during January and the subsequent snow melting, the runway was invaded by a considerable amount of water. In order to prevent the imbibition of the foundation, four submersible pumps were positioned and worked simultaneously. On this occasion, the design idea of creating a guard ditch with an adequate slope was resumed and, in the meantime, a gully overlooking the runway was built

in order to contain the water and prevent it from flowing over the flight surface. This solution has temporarily solved the problem. For the future it is however clear that it will be necessary to construct a larger guard ditch to be positioned upstream from the infrastructure (at least 5 m).

In the vicinity of the 1,480 m and 1,600 m sections, two drains had to be built to allow melt water to pass through the foundation. Further solutions to prevent the problem of surface melt water are being studied and will be realized during the next campaigns.

This infrastructure, the only one of its kind in the Antarctic, will allow an ever greater flexibility for access to and exit from Mario Zucchelli Station (I), thus becoming an important hub for transportation of personnel (scientific and logistic) operating in the Ross Sea area and the Victoria Land region.

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