The Cretaceous Canal de Beagle Plutonic Group (BCPG) is a complex of granitoids exposed along the margins of the Beagle channel, in the Gordon, Londonderry, Hoste and Navarino islands. The BCPG belongs to the Fuegian Batholith, the southernmost segment of the three that compose the Patagonian Batholith.

In order to determine the geometry in depth of the Castores and Santa Rosa plutons, three magnetic, lithologic, and structural data campaigns were carried out between 2008 and 2010 in the area of Navarino and Hoste islands and in the Beagle Channel. Magnetic measurements were acquired with two magnetometers (EG&G Geometrics and a Scintrex Envi Grad). 72 oriented hand-samples were obtained in 13 sites for lithologic, paleomagnetic, magnetic susceptibility and AMS studies.

The intrusive bodies were modeled along the magnetic profile using the Encom ModelVision Pro 7.0 software. The obtained model for Castores Pluton, yielded an ellipsoidal body with a 2 km vertical axis, E-W horizontal axis of 4.4 km and N-S horizontal axis of 8 km. The magnetic modeling of the Santa Rosa Pluton produced an overall oblated body with an average thickness of 1 km. with horizontal axis of 7.1 (E-W) and 4 km.(N-S).

The modeled bodies were combined with a DEM (SRTM30) and a MrSid satellite image (GeoCover Landsat–NASA) in a regional E-W section which shows the topography and outcrops of the Santa Rosa and Castores plutons. The resulting model section provides a schematic 2D picture of the uppermost 2 km of the northern crust of Navarino Island.