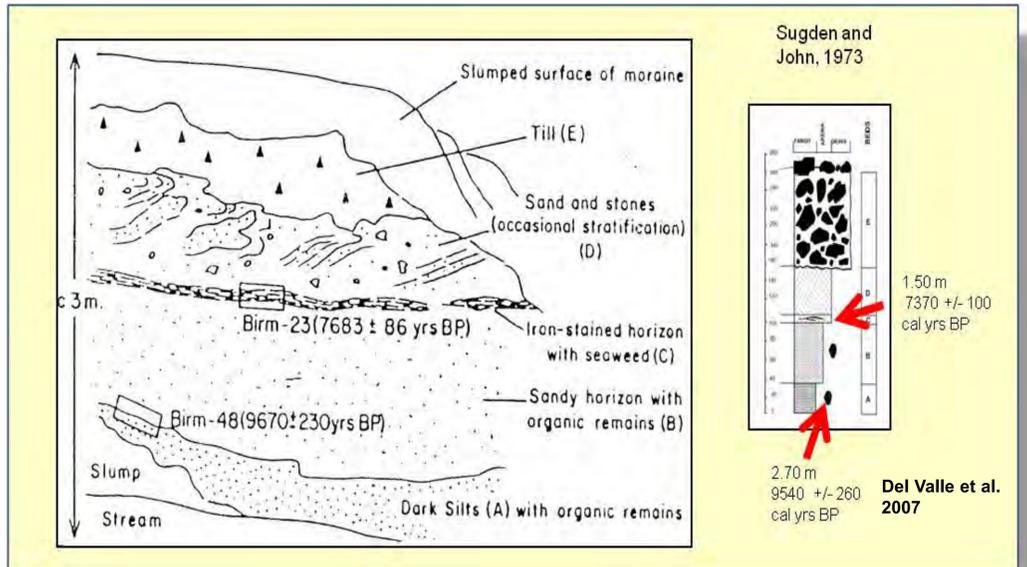
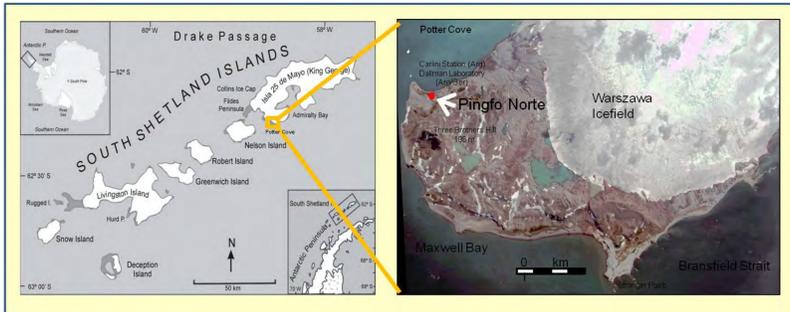
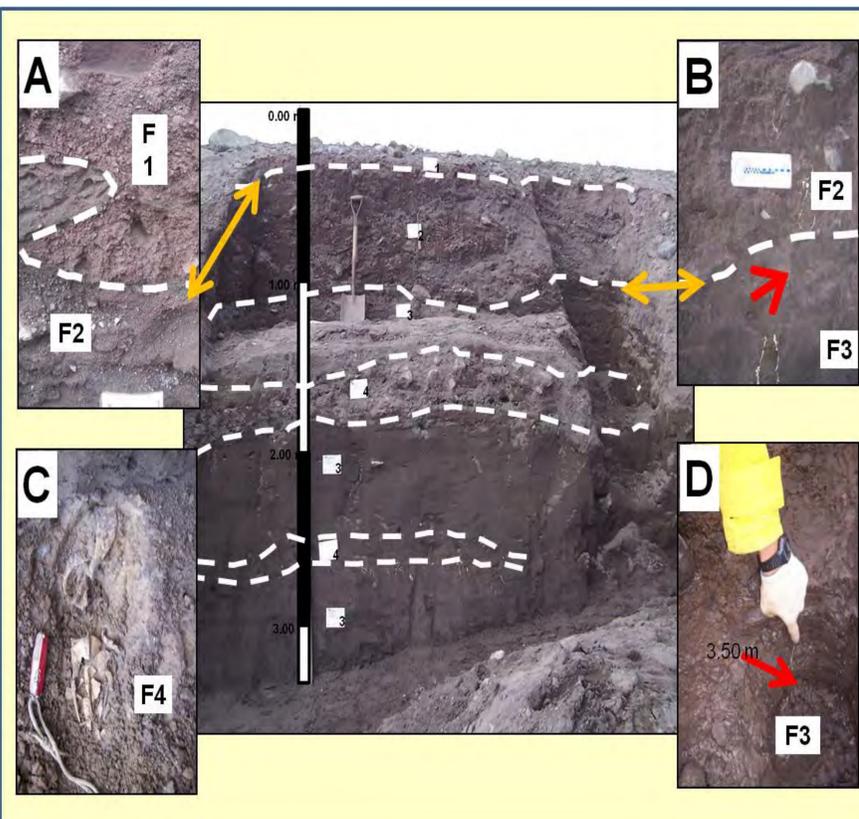


New minimum age of the postglacial transgression in Potter Cove, 25 de Mayo (King George) Island

It is generally accepted that the first Holocene marine transgression that reached the inner fiords of the South Shetland Islands occurred at least by 9540 +/- 235 cal yrs BP. This age is very important, since it provides the minimum on-land obtained age of the end of the last glacial period and start of the Holocene in this Antarctic sector.

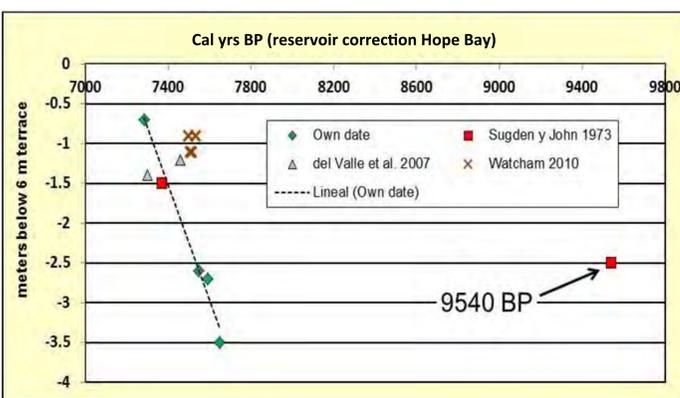


SCALE (m)	LITHOLOGY	STRUCTURES / FOSSILS	BIOTURBATION	SAMPLE	AGE	NOTES
1	MUD SANDGRAVEL	lodgment till		05po2008	7285	F1
1		delta intertidal				F2
1		coast proximal				F3
2		gravitatory flow				F4
2		coast proximal		05 y 13po2011	7550	F3
3		gravitatory flow				F4
3		coast proximal		06po2011	7650	F3



We excavated an almost 4 m deep and 5 m wide section trying to replicate the oldest age obtained by Sugden and John (1973) below the 6 m (a m s l) marine terrace. Despite our and other authors radiocarbon samples comprise marine shells, seaweed and penguins bones, the resulting ages are stratigraphically consistent except for the 9540 yrs BP obtained by Sugden and John (1973).

The huge amount of penguin bones (C), that reaches the lower levels of the section (D), reveals that the penguin colony was located very close to this site and survived until the glacier override the place. Laternula s.p. shells generate escape structures crossing from F3 to F2 (B), indicating a high sedimentation rate. In the whole exposure it is clear how the glacier approached (gravity flows, ice rafted blocks) and finally overrode the marine and deltaic deposits, leaving a lodgment till (A) and deforming the previous facies.



The inconsistency of the 9540 yrs BP age sample is clear. According to the obtained data the sedimentation rate of the muddy to sandy, near shore sediments is of 0.64 cm/year (period c- 7700 to 7200 yrs BP), similar to 0.71 cm/yr measured in the cores PS69/335-1 and -2 in Maxwell Bay in the period 1100 to 200 cal yrs BP, about 446 m below the present sea level (Hass et al. 2010).

According to our new radiocarbon ages, from Pingfo Norte section, the Holocene postglacial marine transgression initiated before 7650 cal yrs BP, reaching the highest, closely located, 14 m amsl marine terrace. The marine sedimentation of Potter Cove was interrupted by a glacier advance that postdated 7285 yrs BP.