

Mating system and evidence of multiple paternity in the Antarctic brooding sea urchin *Abatus agassizii*

Maturana, Claudia S.

Gérard, Karin

Díaz, Angie

David, Bruno

Féral, Jean Pierre

Poulin, Elie

© 2016, Springer-Verlag Berlin Heidelberg. Broadcasting is the predominant spawning behavior among benthic marine invertebrates, mainly associated with planktotrophic and planktonic lecithotrophic development. Broadcasting allows genetic mixing that should contribute to increase the genetic diversity of a female clutch. Conversely, in brooding species characterized by protected development, oocytes are retained and only sperm is released, which is supposed to limit the number of males that contribute to a female clutch. This spermcasting behavior together with egg retention, unusually frequent among Antarctic marine invertebrates, putatively give brooders low dispersal capacities which may reduce genetic mixing and generate genetic and kinship structure at a small spatial scale. Like many other Antarctic marine benthic invertebrates, the irregular sea urchin *Abatus agassizii* is a spermcaster that broods its young. In this study, we assessed the genetic diversity among 66 adults using 6