
La perte de biodiversité dans les écosystèmes dégradés : une clef pour comprendre le passé?

David Kaniewski*^{†1,2}, Nick Marriner³, Rachid Cheddadi⁴, and Christophe Morhange⁵

¹Institut Universitaire de France (IUF) – Ministère de l'Enseignement Supérieur et de la Recherche Scientifique – Maison des Universités, 103 Boulevard Saint-Michel, 75005 Paris, France

²Laboratoire Ecologie Fonctionnelle et Environnement (EcoLab) – CNRS : UMR5245, Observatoire Midi-Pyrénées, PRES Université de Toulouse, Université Paul Sabatier (UPS) - Toulouse III, Institut National Polytechnique de Toulouse - INPT – 118 Route de Narbonne 31062 Toulouse, France

³Université de Besançon – Université de Besançon – 1 Rue Claude Goudimel 25030 Besançon Cedex, France

⁴Institut des Sciences de l'Évolution de Montpellier – Centre de Coopération Internationale en Recherche Agronomique pour le Développement : UMR116-2015, Université de Montpellier, Institut de recherche pour le développement [IRD] : UR226, Centre National de la Recherche Scientifique : UMR5554 – Place E. Bataillon CC 064 34095 Montpellier Cedex 05, France

⁵Centre européen de recherche et d'enseignement de géosciences de l'environnement (CEREGE) – Aix Marseille Université, INSU, Institut de recherche pour le développement [IRD] : UMR161, CNRS : UMR7330 – Europôle Méditerranéen de l'Arbois - Avenue Louis Philibert - BP 80 - 13545 Aix-en-Provence cedex 4, France

Résumé

Coasts are key geographic areas because they lie at the heart of numerous environmental threats, including climatic, human and marine/inundation pressures. Within this context, much attention has been paid to the study of coastal ecosystems and biodiversity which are directly threatened by extreme events (e.g. Diffenbaugh *et al.* 2007), global sea-level rise (e.g. Nicholls & Cazenave 2010), increased human impacts (e.g. Adger *et al.* 2005) and recurrent flooding events (e.g. Hallegate *et al.* 2013; Wahl *et al.* 2015). The sensitivity of coastal vegetation to different stresses is, however, constructive as it can be reversed and used as an effective means to reconstruct the long-term pressures that have shaped modern ecosystems. Are degraded ecosystems and biodiversity loss markers of their own history? Here, we probe this question using long-term ecosystem dynamics and evolution of biodiversity to reconstruct 1- the impact of agricultural practices on the dynamics of coastal vegetation between the Azov Sea and the Black Sea during the last 7000 years; 2- the impact of storm activity in the Mediterranean during the last 4500 years and its influences on human economy, 3- the effect of sea-level rise on seaboard vegetation in Italy during the last 8000 years, and 4- the pressures linked to the construction of the ancient harbor of Pisa, 2000 years ago. All of these case studies underscore different ecosystem pressures, suggesting that the succession of vegetation patterns through time is a key to understanding their history. In a more general manner, while the coastal areas represent only 10% of the earth's total

*Intervenant

[†]Auteur correspondant: david.kaniewski@univ-tlse3.fr

land surface, humanity tends to concentrate along or near coasts. It is thus important to understand the respective role of the different pressures that have gradually or abruptly shaped local ecosystems, and to define effective conservation strategies for the future.

Mots-Clés: Coastal ecosystems, Pressures, History