CORRESPONDENCE

Sustain common species and ecosystem functions through biodiversity offsets: response to Pilgrim *et al.*

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Today's biodiversity crisis concerns both rare species, including species at risk of imminent extinction, and common species (Hoffmann *et al.* 2010; Powell *et al.* 2013). Common species are far from being above threats. On a global scale, Hoffmann *et al.* (2010) showed that change in status of previously Least Concern (LC)/Near Threatened (NT) species explained up to 64% of recent deteriorations in the IUCN red-list index, and that deterioration may be quite drastic (e.g., species moving directly from LC category to Endangered or Critically Endangered categories within a 15-year period). Because common species contribute disproportionally to ecosystem biomass and functions (Gaston & Fuller 2007), there is an urgent need to consider these species in biodiversity offsets.

Surprisingly, in their article about the offsetability of biodiversity impacts, Pilgrim *et al.* (2012) give no or little weight to LC/NT species when assessing "biodiversity conservation concern" (see Table 1, conservation concern is "low" until 10% of the population is impacted by one or several development projects, and "medium" until 95% of the population is impacted). These statements are deceptive if the authors' process aims to reverse the current biodiversity loss induced by development projects. Let us take the example of France, a European country with high anthropogenic pressures on ecosystems but several policy frameworks for the conservation of threatened species and habitats. In 2010, among the 78,500 hectares of agricultural and natural habitats newly impacted by human infrastructure, only 1% had species whose conservation status was worse than LC/NT at national scale (source: Ministry of Ecology). In other words, following the Pilgrim *et al.*'s process, 99% of these areas would not be the object of biodiversity offsets.

Offset measures are required that take into account LC/NT species, as these species support the overall biodiversity. However, since the number of LC/NT species is large and recognizing the need to maintain community properties, it is necessary to move from a species-by-species approach to more integrative approaches (Cadotte *et al.* 2011). Assessing the risk of functional homogenization (Devictor *et al.* 2008), state shifts (Barnosky *et al.* 2012) and other ecological processes (e.g., Lavorel & Garnier 2002) that may be critical for ecosystem sustainability is central if we wish to detect limits in the offsetability of biodiversity impacts. As an example, the proportion of specialist species in a community is a powerful metric to predict the effects of landscape disturbance and fragmentation (Devictor *et al.* 2008) and hence could be used to develop sustainable land use planning (Kiesecker *et al.* 2010). Another perspective is the assessment of connectivity among ecosystems. In France, new obligations to offset the impacts on ecological corridors (called 'Trames vertes et bleues') were incorporated into Environmental Law no 2009–967 of 3 August 2009. These regulatory advances reinforce the need for developing biodiversity metrics at the landscape scale that fully include LC/NT species. In addition to conserving immediately at risk biodiversity, the offsetting of communities composed of LC/NT species may be particularly useful in a rapidly changing world (Bull *et al.* 2013).

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