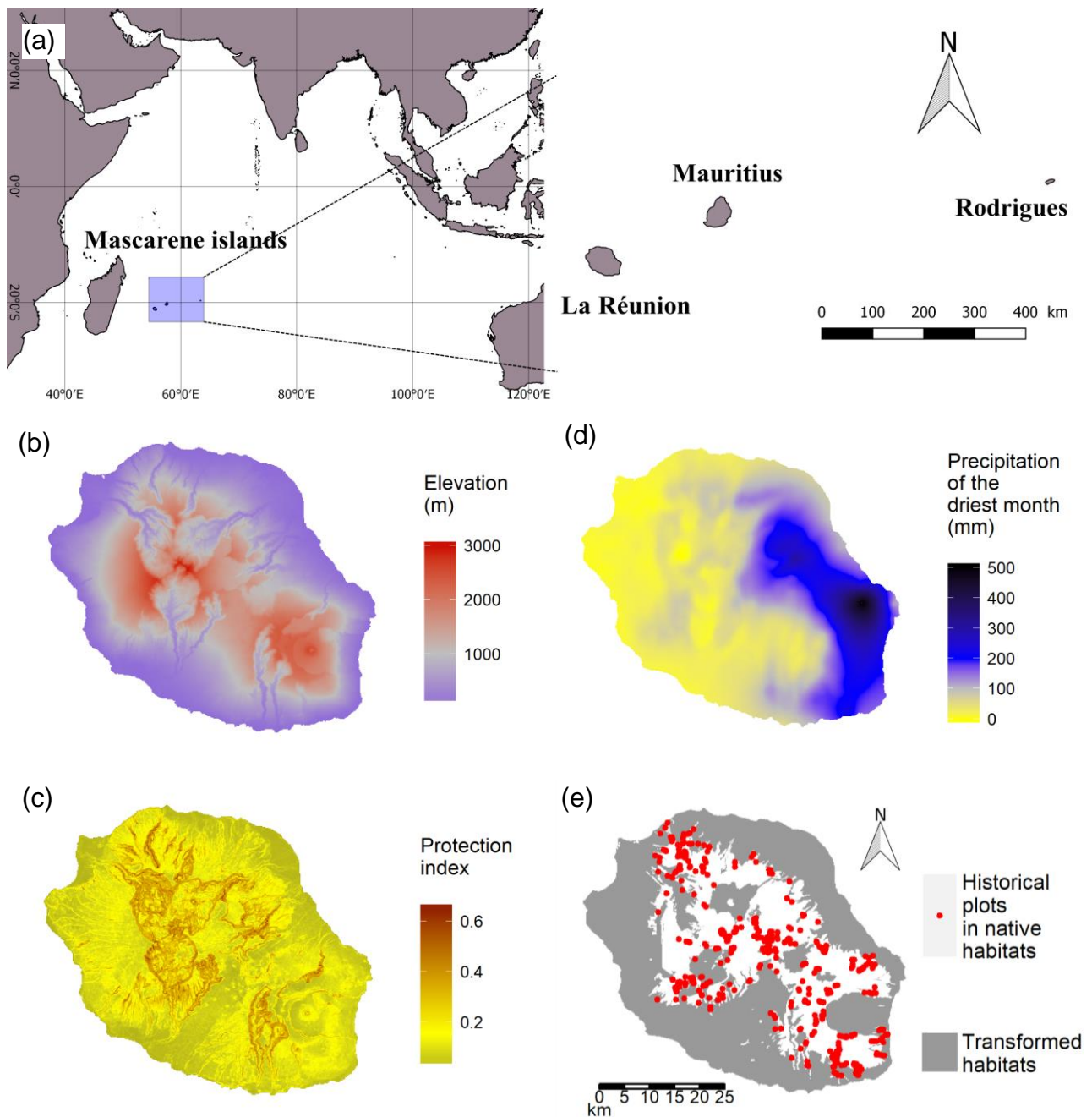


1 **Figures**

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4 **Fig.1. Maps of Réunion island.** a) Réunion is the westernmost and the largest island within
 5 Mascarenes. (b) The island peaks at 3070 m, almost half of its area is above 1000 m. (c)
 6 Protection index highlights the complex topography of Réunion with escarpments reaching 1000 m
 7 high. (d) Precipitation of the driest month (mm) shows the climatic divide between the dry leeward
 8 side in the West and the wet windward side in the East. (e) Since the 17th century, two-thirds of
 9 native habitats have been transformed (mask from Strasberg et al, 2005). The 429 historical plots
 10 selected for analyses are shown in red.

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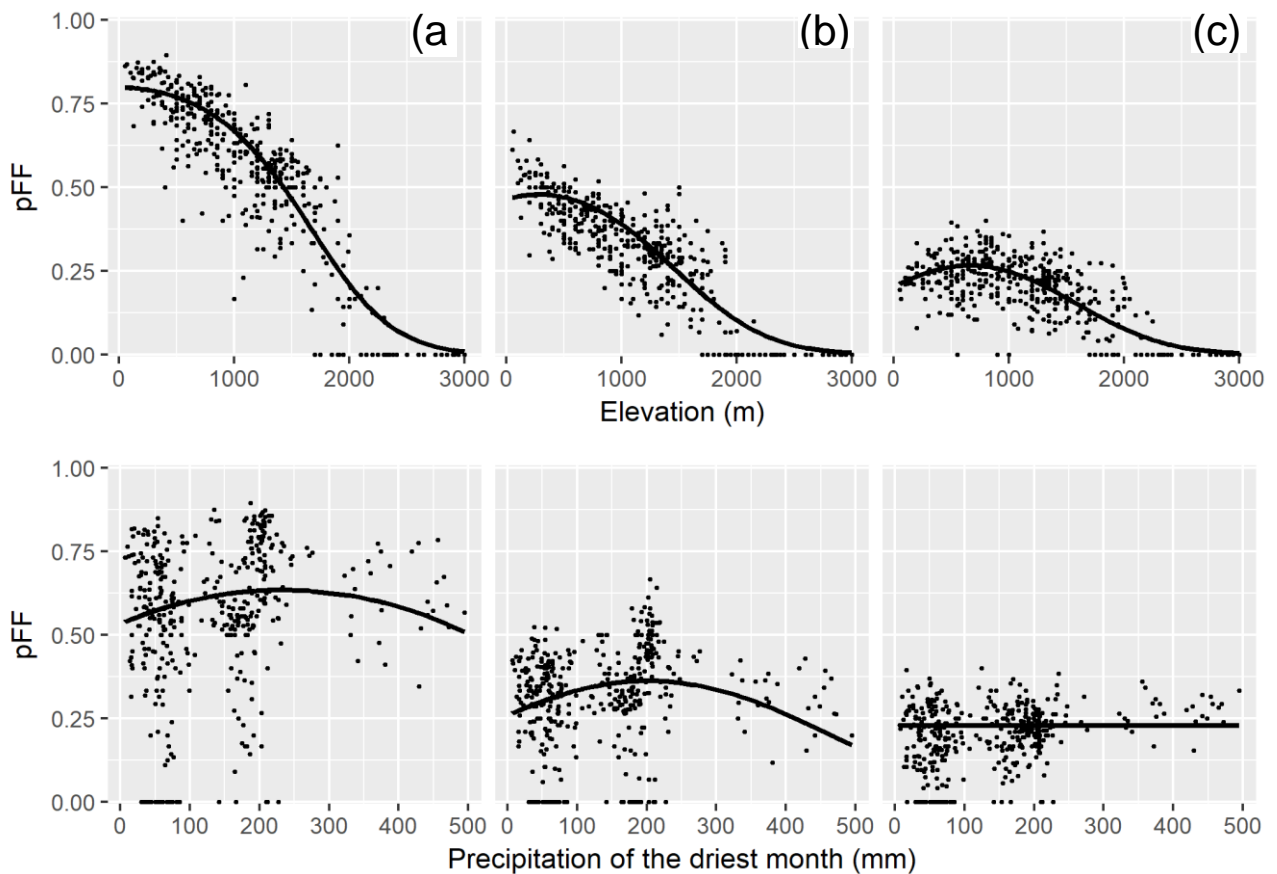


Fig.2. Partial logistic regressions of the fleshy-fruited species proportion with elevation and precipitation of driest month. Columns (a) to (c) are respectively pFF the fleshy-fruited species proportion, pFF_{tree} the fleshy-fruited tree species proportion and pFF_{shr} the fleshy-fruited shrub species proportion. Predicted probabilities as fit by glm with analyses based on binary data are displayed by the black lines.

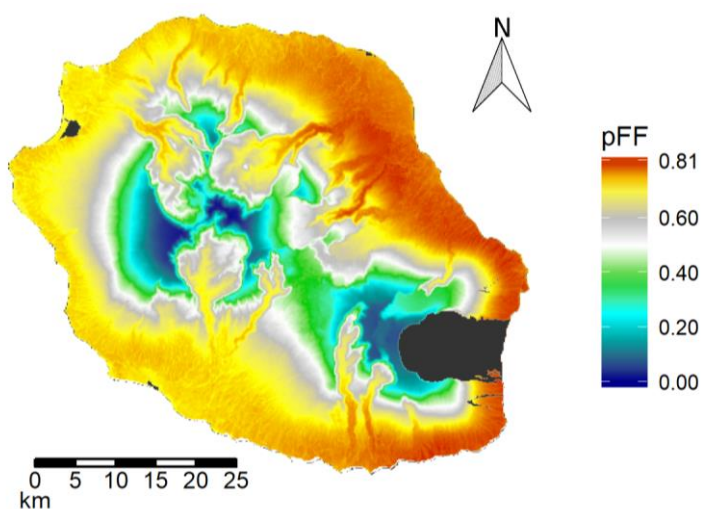


Fig.3. Spatial modeling of the fleshy-fruited species proportion (pFF) by interpolation of ES-GLM coefficients. Fleshy-fruited and dry-fruited species-rich habitats are respectively shown in warm and cool colors. A dark grey mask is applied on recent lava flows and wetlands.

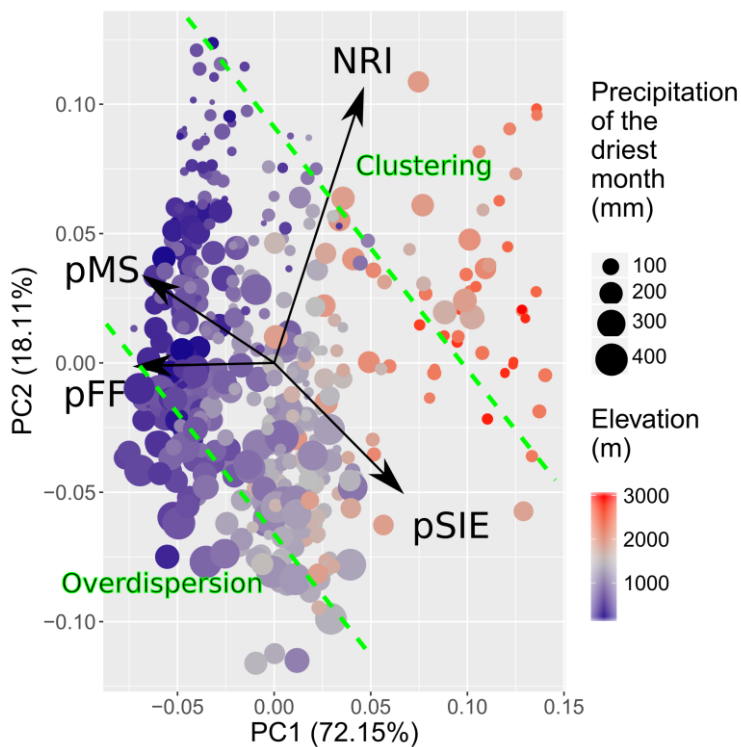


Fig.4. PCA ordination plot showing the association between 429 historical plots and four descriptors of woody species assemblages: (1) standardized net relatedness index (NRI), green dashed lines indicate domains where assemblages are phylogenetically clustered or overdispersed in a significant manner; (2) proportion of single-island endemic species (pSIE); (3) proportion of Mascarenes-shared species (pMS); (4) proportion of fleshy-fruited species (pFF). For each plot, elevation is shown as a color gradient (cool and warm colors respectively for low and high elevations), precipitation of the driest month is shown as a size gradient (small and large disks respectively for low and high precipitation). The proportion of explained variance is given for each component.