Materials and Methods

Study sites

Following the completion of the Balbina Hydroelectric Dam in October 1986, a reservoir area of 443,700 ha was formed, comprising 3,546 variable-sized land-bridge islands ranging from

Data analysis

We analysed all occupancy data in terms of

Fig 4. Proportion of forest vertebrate species predicted to have gone locally extinct as a function of forest patch area modelled for all 3,546 forest islands across the Balbina Hydroelectric Reservoir landscape. Heat color gradient in the scatterplot indicates the degree of local extinctions (increasing from blue to1(islanh)-214m1(pacates)-240.5(the)-2201(tto.9((dam0-219clucribopo)14aining)2219.9(the)-213.1(size)-214d(tt

species once occupied all sites within the archipelago prior to dam construction, we estimate an overall local extinction rate of 42.3% (548 of 1,295 populations) within the 37 islands surveyed. However, this rate increased to 70.3% (87,278 of 124,110 populations) when estimated for all 3,546 islands across the entire BHR landscape. Only islands larger than 475 ha still harbored a reasonably complete vertebrate community ($\geq$80% of species), but this size threshold excludes all but 25 islands (0.7%) within the entire reservoir. We therefore identified the islands retaining the most complete vertebrate assemblages across the whole landscape (Fig 5).

Discussion