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Long-term trends in wild-capture and population dynamics point to an uncertain future for captive elephants

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Maintaining sustainable populations in captivity without supplementation through wild-capture is a major challenge in conservation that zoos and aquaria are working towards. However, the capture of wild animals continues for many purposes where conservation is not the primary focus. Wild-capture hinders long-term conservation goals by reducing remaining wild populations, but the direct and long-term indirect consequences of wild-capture for captive population viability are rarely addressed using longitudinal data. We explored the implications of changes in wild-capture on population dynamics in captivity over 54 years using a multi-generational studbook of working Asian elephants (*Elephas maximus*) from Myanmar, the largest remaining captive elephant population. Here we show that population growth and birth rates declined between 1960 and 2014 with declines in wild-capture. Importantly, wild-caught females had reduced birth rates and a higher mortality risk. However, despite the disadvantages of wild-capture, the population may not be sustainable without it, with immediate declines owing to an unstable age-structure that may last for 50 years. Our results highlight the need to assess the long-term demographic consequences of wild-capture to ensure the sustainability of captive and wild populations as species are increasingly managed and conserved in altered or novel environments.