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The Australian National Rabbit Database: 50 yr of population monitoring of an invasive species

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Abstract. With ongoing introductions into Australia since the 1700s, the European rabbit (*Oryctolagus cuniculus*) has become one of the most widely distributed and abundant vertebrate pests, adversely impacting Australia's biodiversity and agroeconomy. To understand the population and range dynamics of the species and its impacts better, occurrence and abundance data have been collected by researchers and citizens from sites covering a broad spectrum of climatic and environmental conditions in Australia. The lack of a common and accessible repository for these data has, however, limited their use in determining important spatiotemporal drivers of the structure and dynamics of the geographical range of rabbits in Australia. To meet this need, we created the Australian National Rabbit Database, which combines more than 50 yr of historical and contemporary survey data collected from throughout the range of the species in Australia. The survey data, obtained from a suite of complementary monitoring methods, were combined with high-resolution weather, climate, and environmental information, and an assessment of data quality. The database provides records of rabbit occurrence (689,265 records) and abundance (51,241 records, >120 distinct sites) suitable for identifying the spatiotemporal drivers of the rabbit's distribution and for determining spatial patterns of variation in its key life-history traits, including maximum rates of population growth. Because all data are georeferenced and date stamped, they can be coupled with information from other databases and spatial layers to explore the potential effects of rabbit occurrence and abundance on Australia's native wildlife and agricultural production. The Australian National Rabbit Database is an important tool for understanding and managing the European rabbit in its invasive range and its effects on native biodiversity and agricultural production. It also provides a valuable resource for addressing questions related to the biology, success, and impacts of invasive species more generally. No copyright or proprietary restrictions are associated with the use of this data set other than citation of this Data Paper.

Key words: demography; European rabbit; historic climate data; invasive species management; long-term monitoring data; occupancy; Oryctolagus cuniculus; *population abundance; weather.*

The complete data sets corresponding to abstracts published in the Data Papers section in the journal are published electronically as Supporting Information in the online version of this article at http://onlinelibrary.wiley.com/doi/10.1002/ecy.2750/suppinfo

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