

# Rodent communities and historical trends in rodent damage in the Mekong Delta of Vietnam: establishing an ecological basis for effective pest management

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**Abstract.** The Mekong Delta region of Vietnam features a variety of natural and agricultural landscapes that differ in flooding and cropping regimes, and in the nature of the associated pest rodent communities. Areas with regular, extensive floodwater inundation tend to show a predominance of *Rattus argentiventer* over other species. In contrast, areas that experience localised flooding support a broader range of species with less obvious dominance within the community. However, cropping regime is also important, and areas where two or three rice crops are grown each year also tend to show a dominance of *R. argentiventer* over other species. Historical records spanning the last decade show a general increase in rodent damage to crops, especially in those provinces that have seen a recent increase in cropping area or frequency. However, flood-prone provinces in the centre of the delta proper share a more complex history of rat damage that appears to correlate with inter-annual variations in river outflow associated with the El Niño cycle. Our improved understanding of the ecology and history of rodent problems in the Mekong Delta region allows us to frame a number of specific hypotheses that can be tested through studies of spatial and temporal patterning, and through manipulative experiments. Insights gained in this way will provide the necessary ecological foundation for sustainable, non-chemical rodent control under the variable conditions offered by the Mekong Delta.