Determining which biological traits influence differences in extinction risk is vital for understanding the differential diversification of life and for making predictions about species' vulnerability to human impacts. The durations of species in the fossil record are a rich source of information for estimating systematic differences in extinction risk. I analyzed Cenozoic North American fossil mammal durations and their relationship to multiple ecological traits, time of origination, and shared evolutionary history. I find support for generalists having lower extinction risk than specialists as a time-invariant generalization. When these results are compared to risk factors associated with living mammals, I find some incongruities which may indicate that the current biodiversity crisis is akin to the great mass extinctions in Earth's history.