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Lecture Assignment 7

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1. Many researchers have tried to justify the use of logistic regression (i.e., the binomial generalized linear model) as a way of analyzing used-available data (i.e., to fit resource selection functions). What "breakthrough" does Fieberg et al. describe that provides the current conceptual foundation for why we use binomial GLMs to fit resource selection functions with used-available data?

The connection between logistic regression and spatial inhomogeneous Poisson point processes (IPP)—a model for random spatial locations, where the expected density of the locations depends on spatial predictors. Fieberg et al. (2021) describe the findings of Warton and Shephard (2010) that as the number of available points increases towards infinity, the slop parameters in logistic regression and IPP models converge.

1. What happens to the intercept estimate (beta 0 or b0) of a binomial GLM fit to used-available data as the number of available points increases? Why?

The intercept decreases as the number of available points increases. This is because the intercept is roughly proportional to the log difference between the amounts of used and available points.