The rapid spread of wildlife diseases (e.g., chronic wasting disease in cervids) highlights the need for understanding wildlife movement and habitat use. A long history of mathematical research describes probabilistic consequences of animal movement using partial differential equations. Solutions to such PDEs link individual movement data (GPS collar) and population level PDE models through a Maximum Likelihood Estimation framework. With telemetry and landscape data gathered around Monroe Mountain in Southern Utah we parameterize an ecological diffusion model for deer movement that includes the effect of individual habitat preference.