Spatial Capture-Recapture: Highlights from a decade (or so) in review

Spatial capture-recapture (SCR) models have been in use for almost 15 years now and have undergone a number of developments. Built on the foundation of traditional capture-recapture models, SCR models have advanced rapidly since their inception. Initially, SCR models provided a way for researchers to incorporate spatially referenced capture information from trap arrays, allowing for model-based estimates of density (removing the need to calculate effective sampling areas post-hoc). Closed population SCR models were quickly expanded to Cormack-Jolly-Seber and Jolly-Seber approaches to allow estimation of survival and recruitment in a spatially explicit framework. With explicit incorporation of spatial capture information, SCR models have also been developed to further explore how animals use space and select resources. More aspects of movement have been included such as incorporating models of how animals' activity centers move over time and consideration for how animal movement is impacted by landscape connectivity. The timing of SCR model developments has paired well with the advancements of non-invasive data collection methods including camera trapping, genetic sampling, and acoustics. In this talk, I will take you along on a journey with SCR models – from what I view as their start to the latest developments and some thoughts on the future of SCR. We'll stop along the way to explore interesting applications and to discuss trends in SCR models.