

# Occurrence distributions

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Mike Noonan, Chris Fleming

Introduction to Continuous-Time Movement Modeling for Animal Tracking Data

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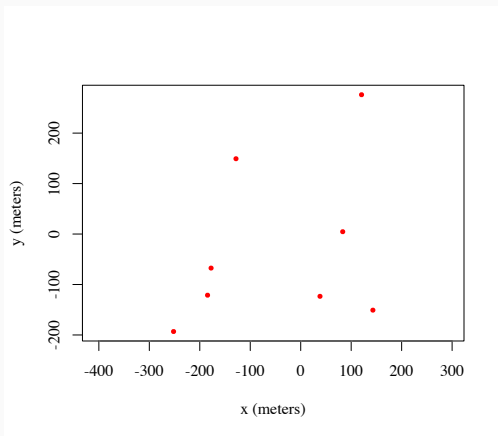
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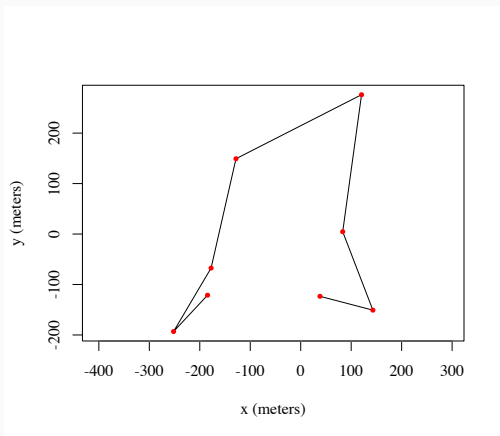
*In other words, range distributions extrapolate space use into the future.*

But what if you want to know where an animal may have been between sampled locations?



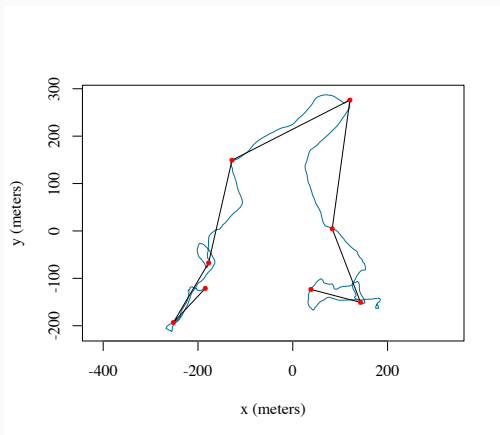
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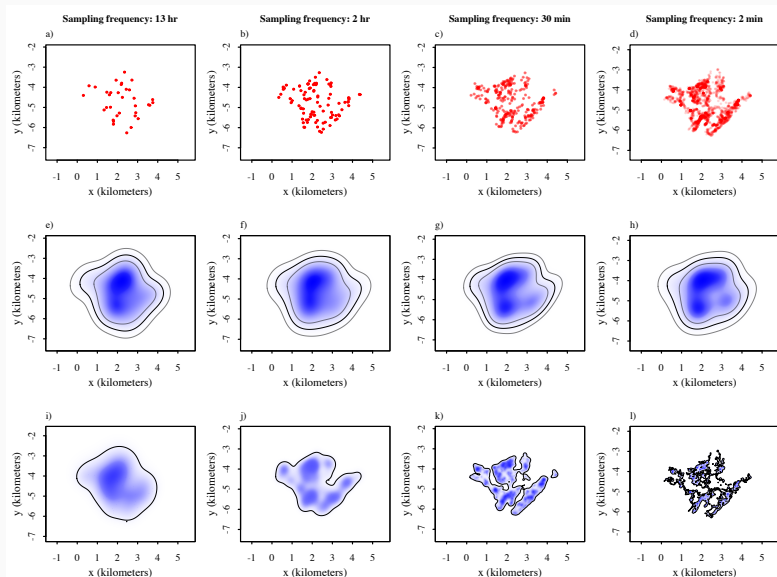
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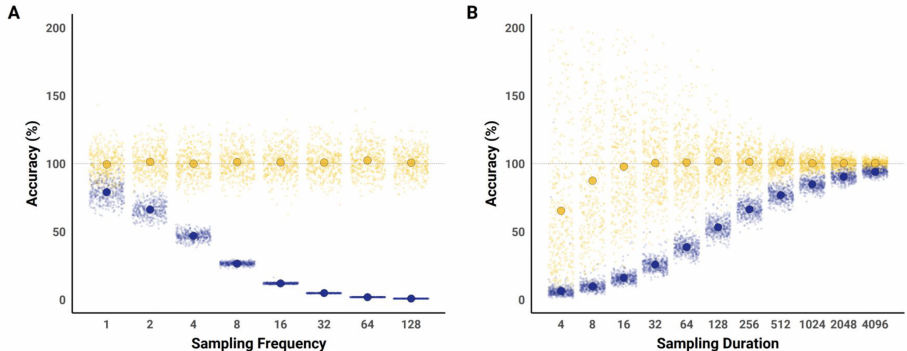
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Two step process:

- Select/fit a movement model that describes an animal's movements.
- Solve for an animal's location at time  $t$ , conditional upon the data and the fitted movement model.



Size of an occurrence estimate is *by definition* a function of sampling interval, while size of a range estimate is not







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- Where did an animal cross a linear feature (e.g., road, railway, seismic line)?
- How likely is it that an animal visited a location of interest?
- When and where did two animals interact?
- Which areas of a landscape contain high priority resources (e.g., migratory corridors/stopovers, foraging sites)?

