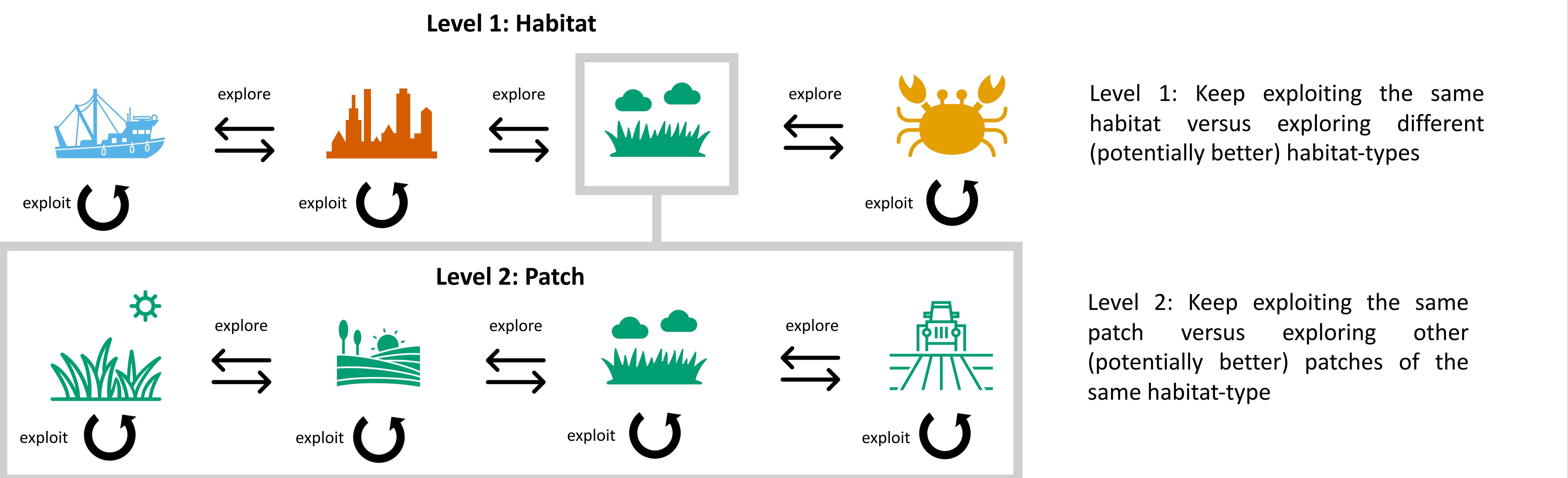


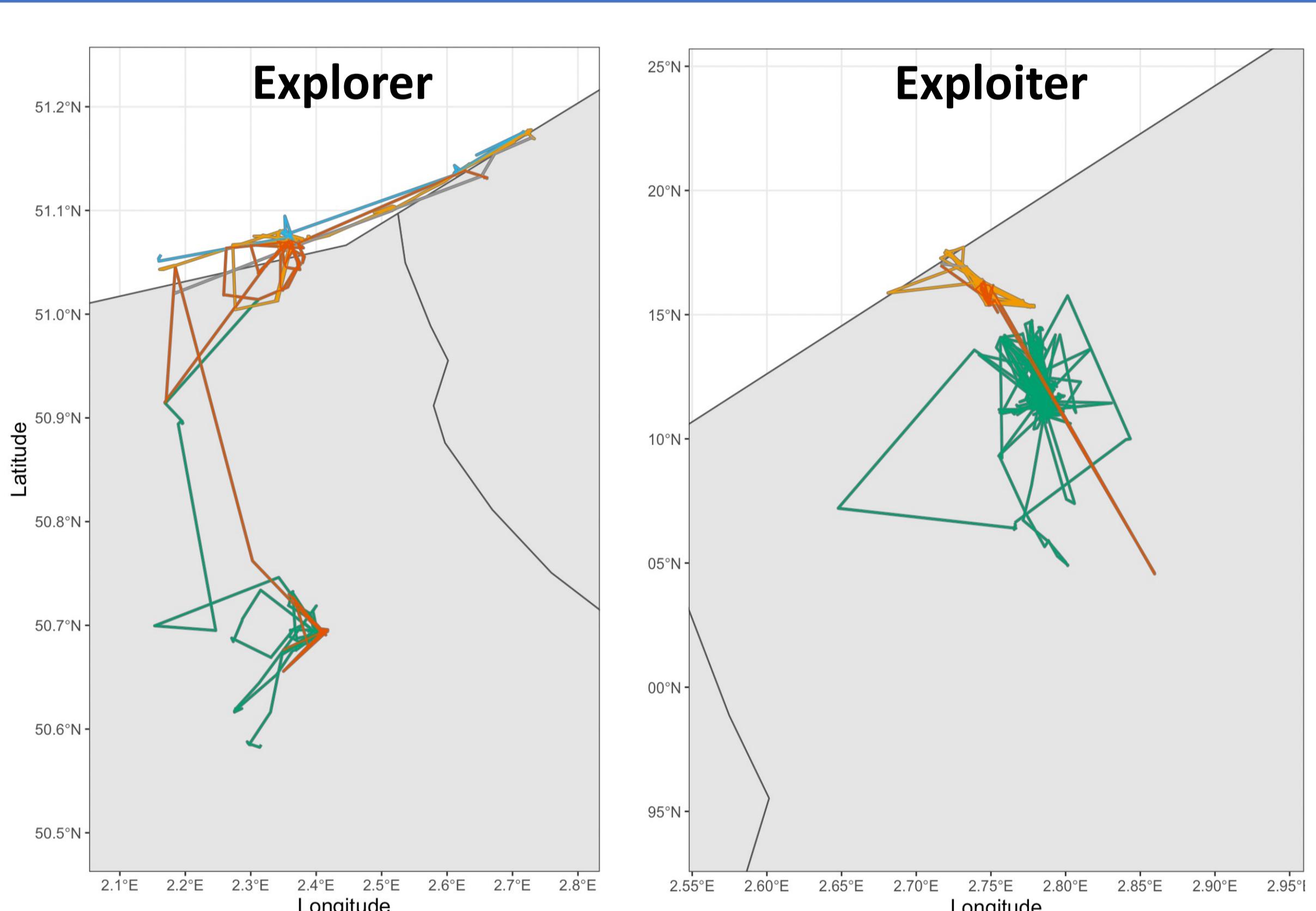
CLASSIFYING BEHAVIOUR OF HERRING GULLS ALONG AN EXPLORE-EXPLOIT AXIS AT DIFFERENT TEMPORAL AND SPATIAL SCALES

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As individuals possess incomplete information about the environment and have a finite time- and energy-budget, there is an inherent **trade-off between gathering information (exploration) and gathering resources (exploitation)**. In literature, this concept is known as the explore-exploit trade-off. However, behaviour considered exploratory at one level may be considered exploitative at another, and vice versa.

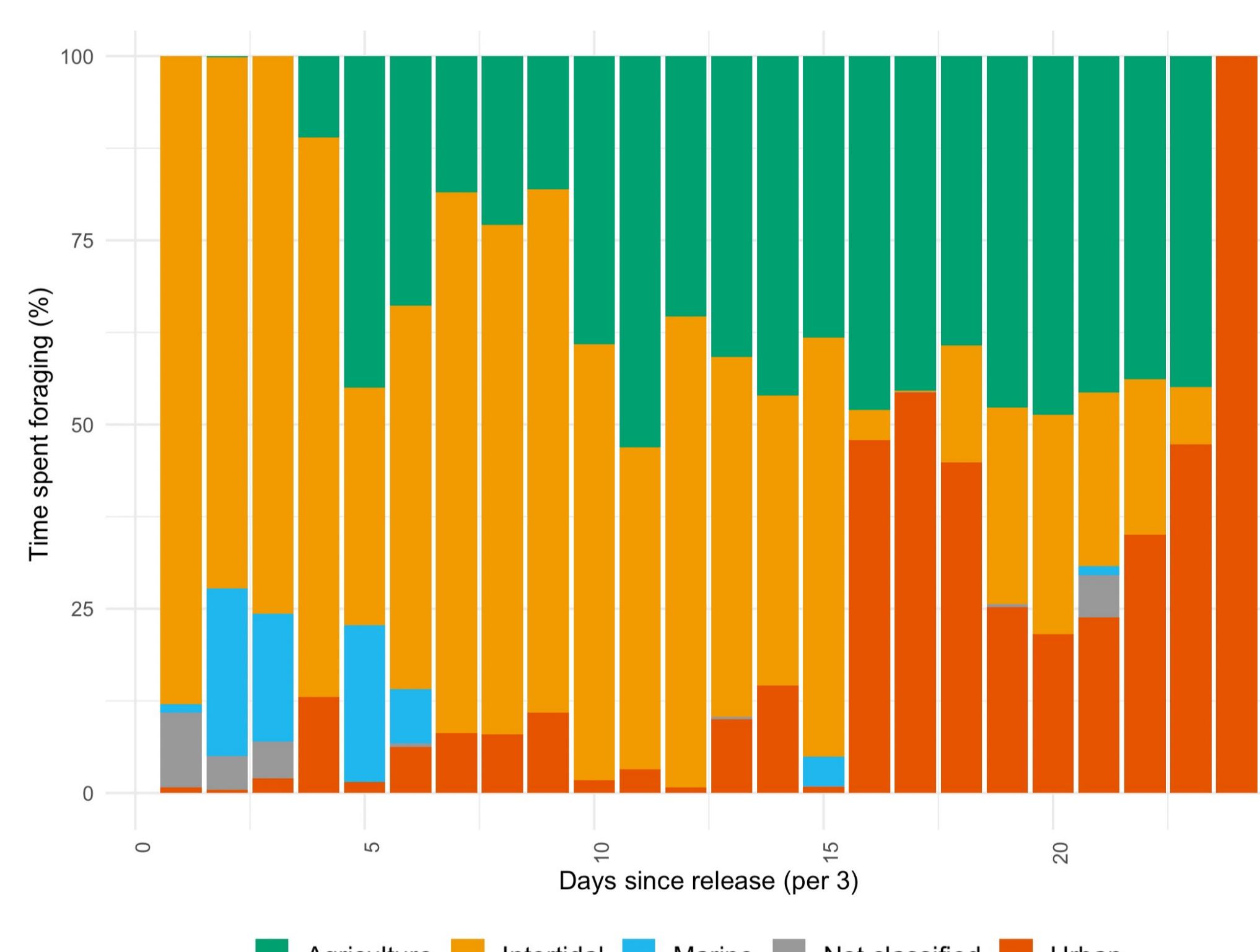


A group of 57 naïve hand-reared Herring Gulls (*Larus argentatus*) were fitted with a GPS tracker and released in a nature reserve located in close proximity (< 1km) to several known foraging sites of different habitat types



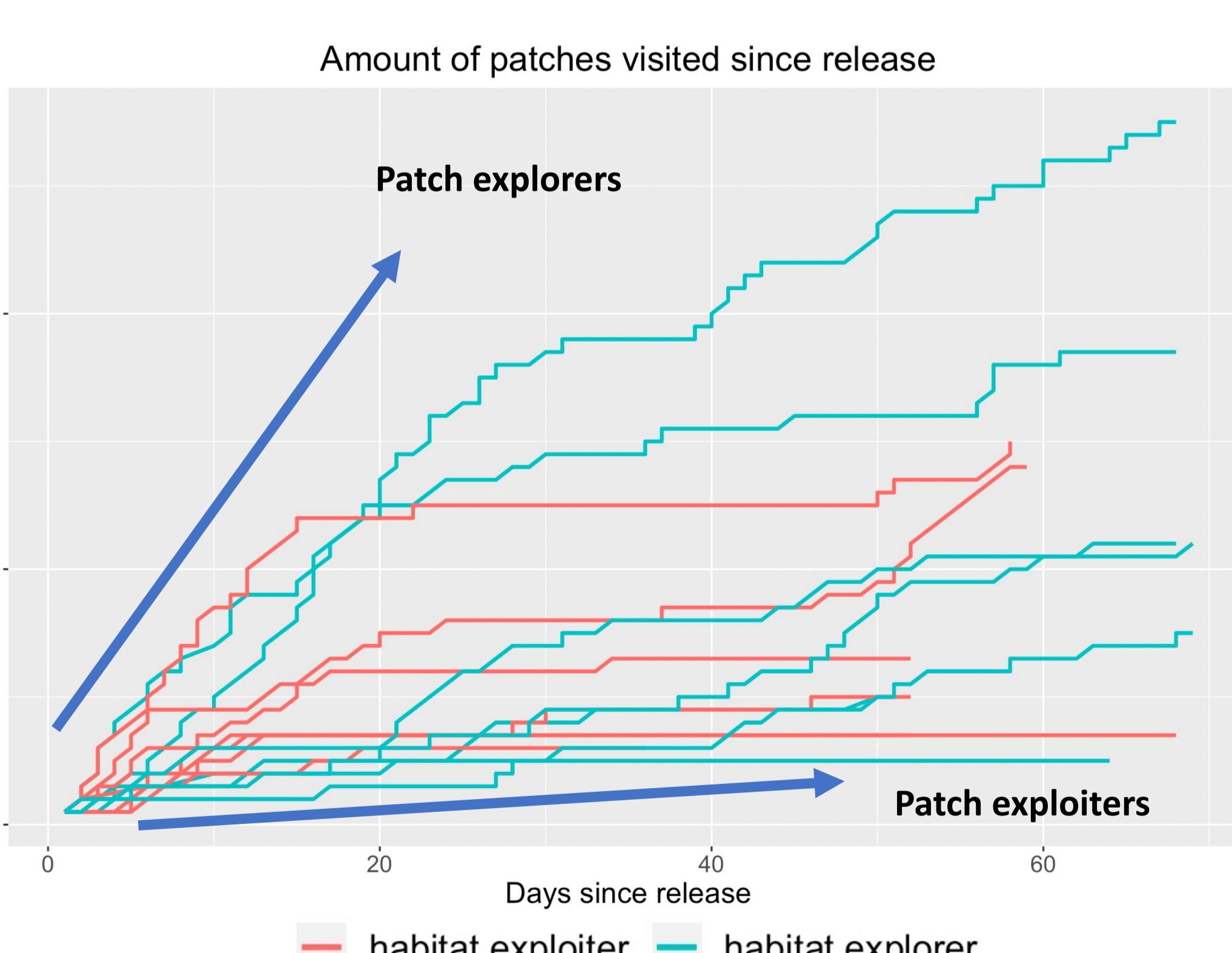
Left: Foraging patterns of two individuals over a 6 week interval, a habitat **explorer** (84% of birds) and a habitat **exploiter** (16% of birds). Both individuals are at opposite ends of the spectrum.

Right: Individual that has no overall habitat preference, but shows signs of **temporal specialisation**.



Left: **Patchy distribution** of foraging fixes during a 7-day interval.

Right: Several birds that are **explorers** at the **habitat** level (blue) appear to be **exploiters** at the patch level (few patches visited). In contrast, **habitat exploiters** (red) appear **consistent** in behaviour at both levels.



TAKE HOME MESSAGE

Take into account the temporal and spatial context when classifying animal behaviour using GPS tracks. Although some individuals show high consistency in exploration-exploitation behaviour at different temporal and spatial scales, this is not always the case.

WHAT'S NEXT?

Develop a conceptual framework for the study of exploration-exploitation behaviour in free-ranging individuals.
Predict exploration-exploitation behaviour of free-ranging naïve gulls based on their cognitive profile obtained in captivity.

