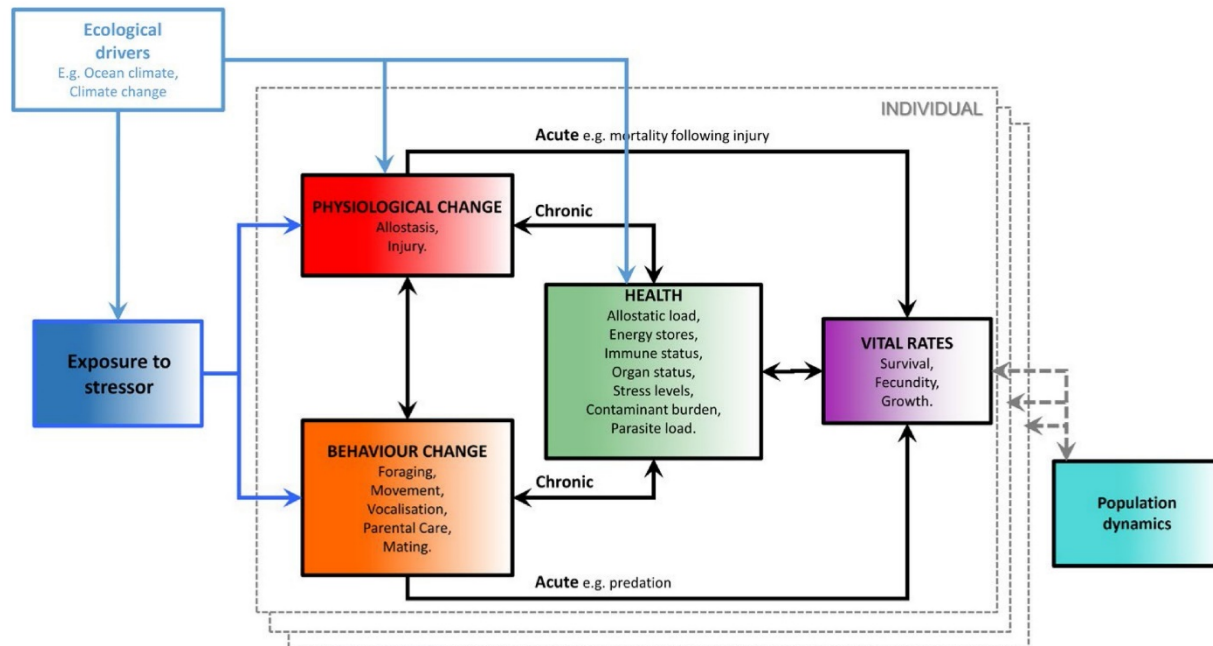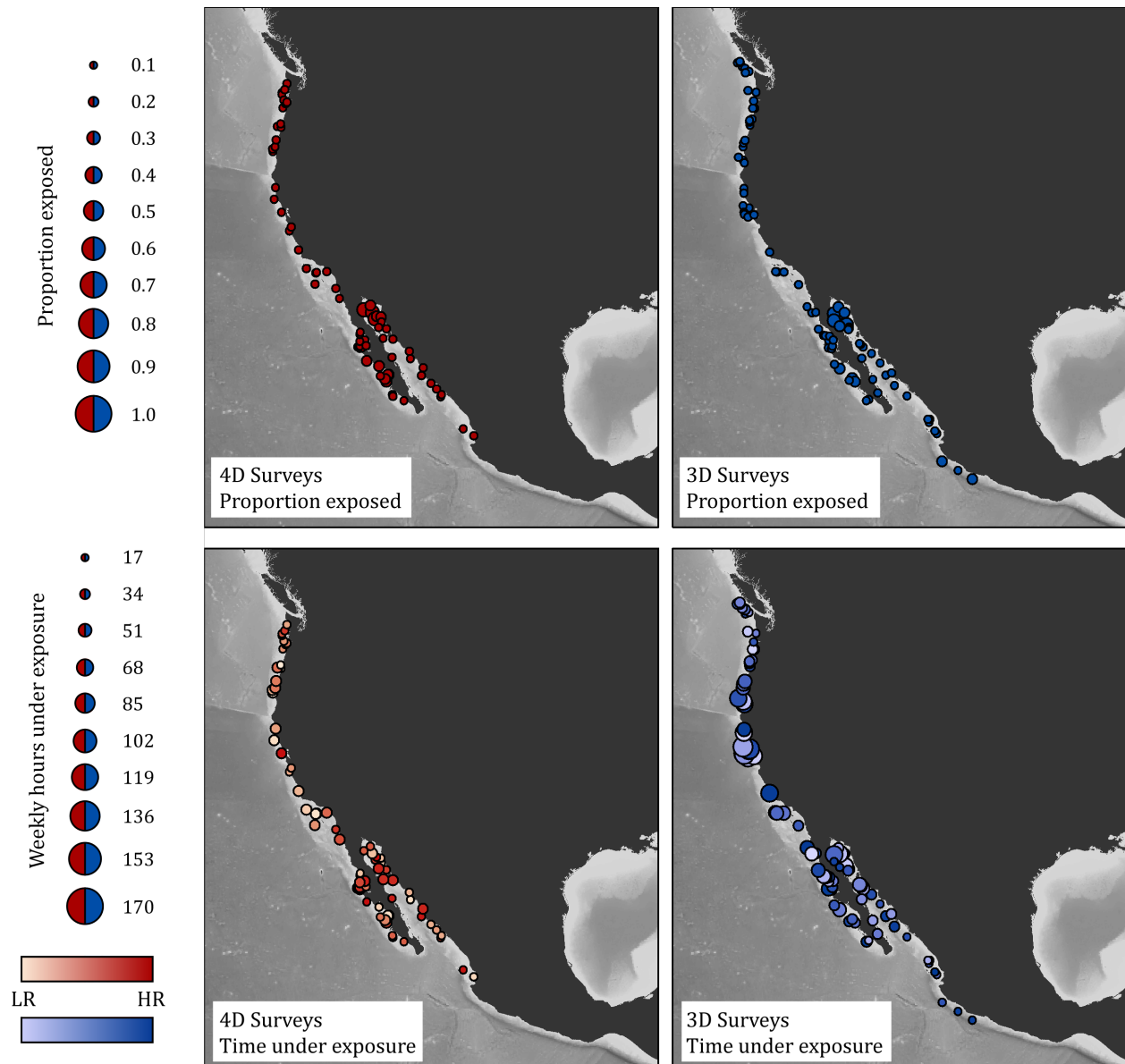Figure S1. The Population Consequence of Multiple Stressors (PCoMS) framework to assess how multiple stressors that affect at the individual level are linked to changes in population dynamics.
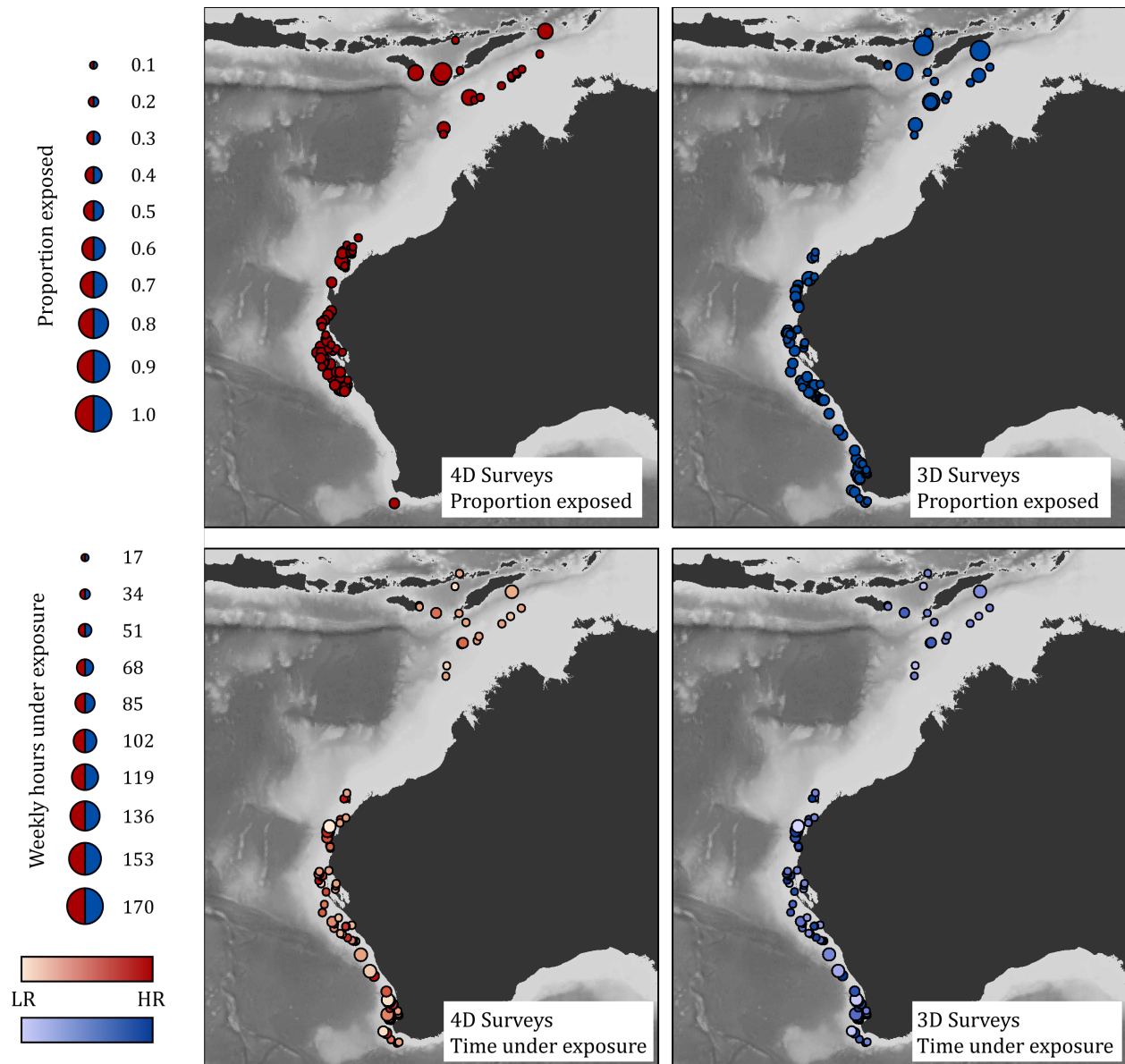

Figures S2. Spatial variability on impacts for each population (n = 8) under a simulated mid-range radius of exposure (50 km). For each figure, the red represents 4D surveys (smallest) and blue represents 3D surveys (largest). The two upper panels show the proportion of the populations exposed, illustrated as the size of the circles. The two lower panels show the time under exposure. The size of the circles of the lower panels corresponds to total time under exposure, whereas the tone of the colors indicate proportion of time exposed under HR behavior (darker shades indicated higher proportion of HR behavior under exposure)
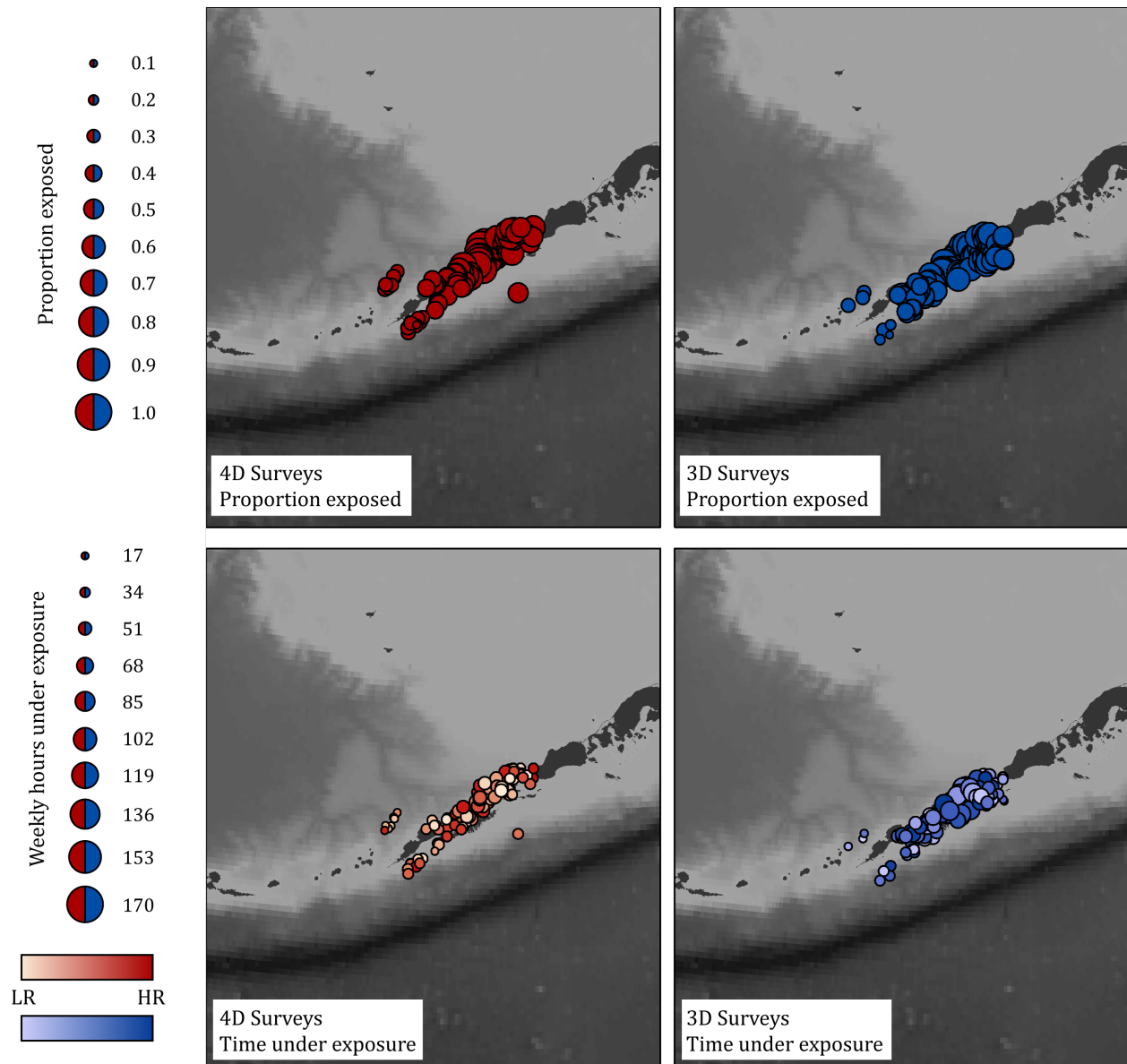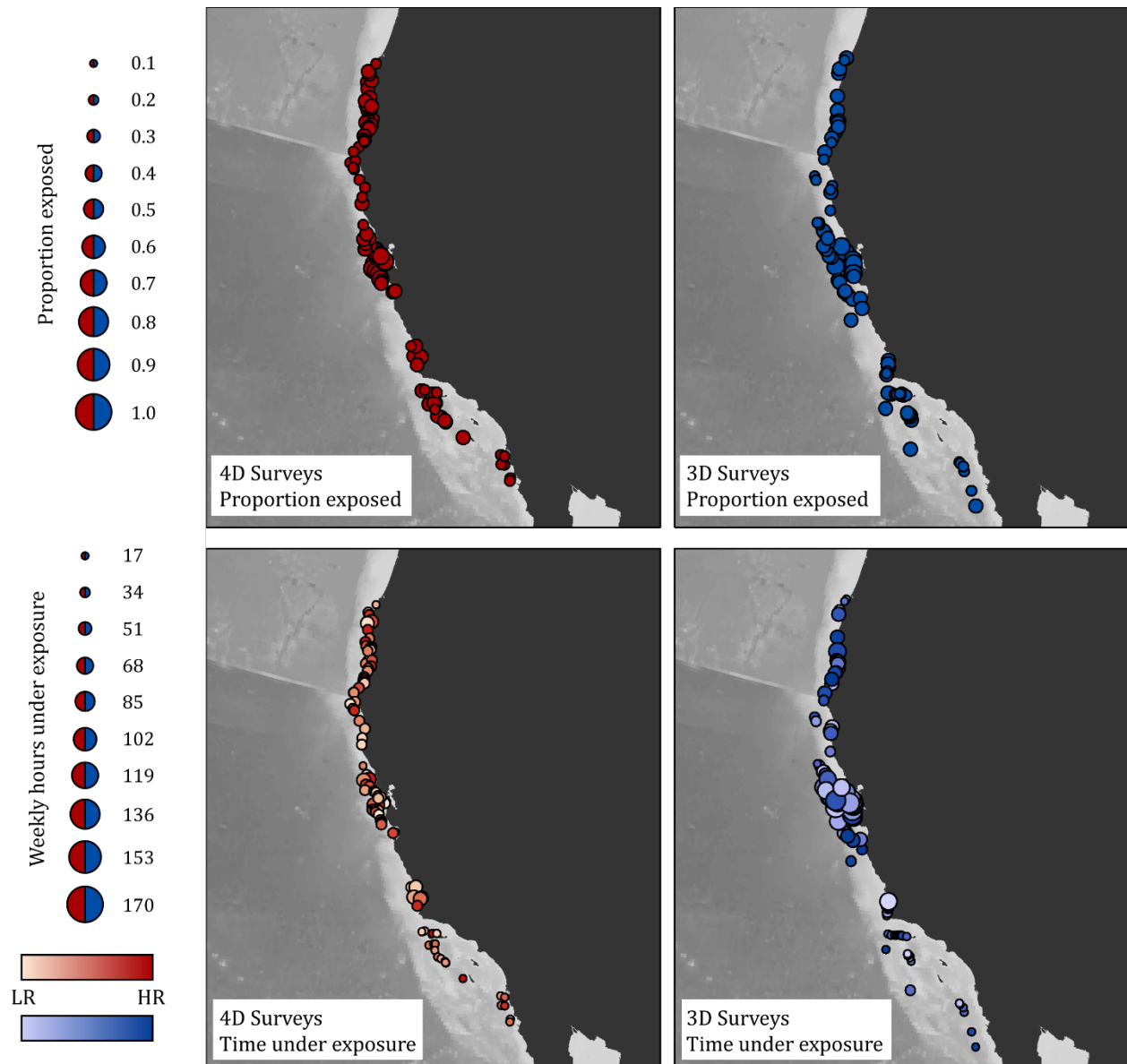
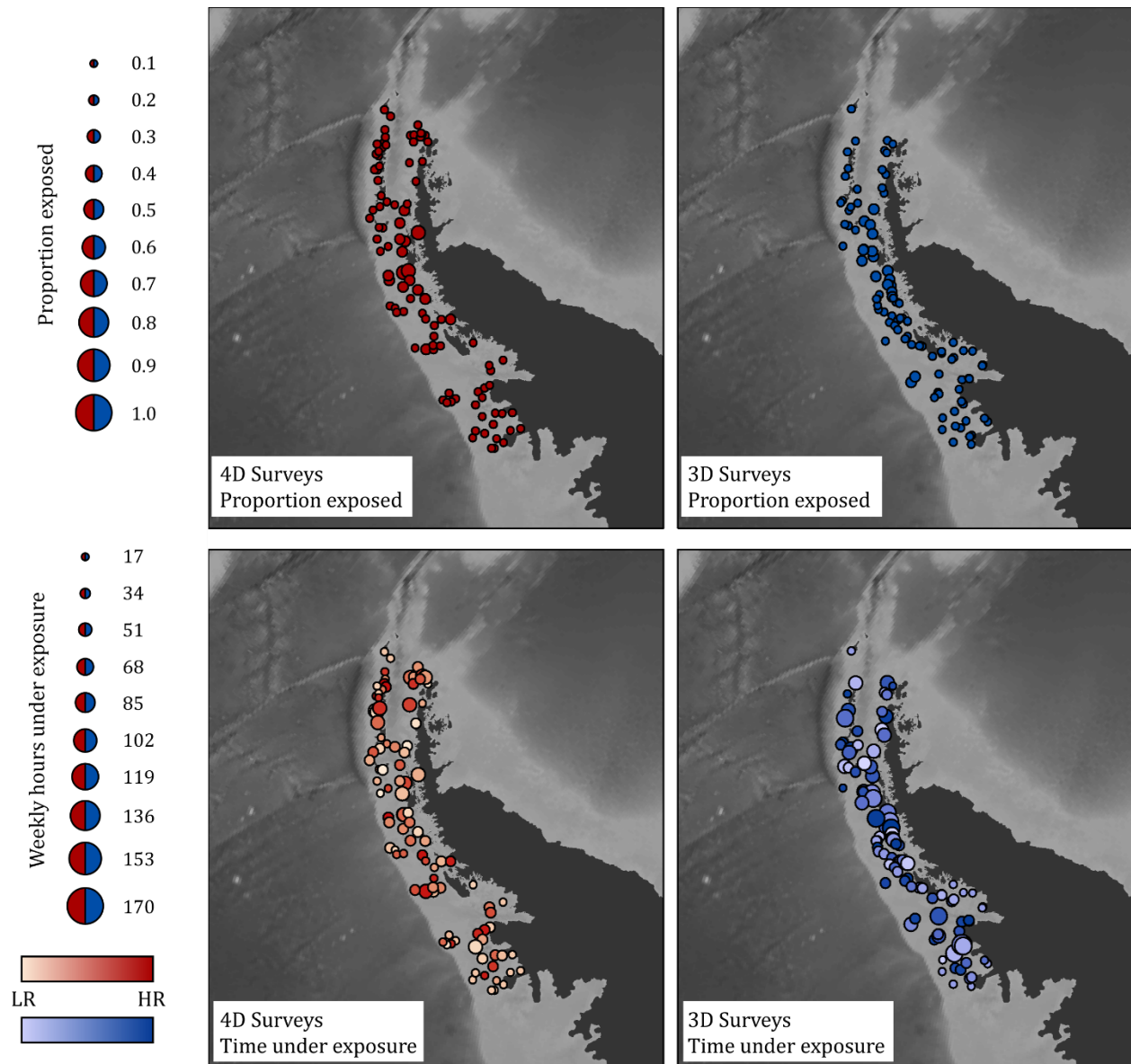Blue whales - California Current

Blue whales – Western Australia
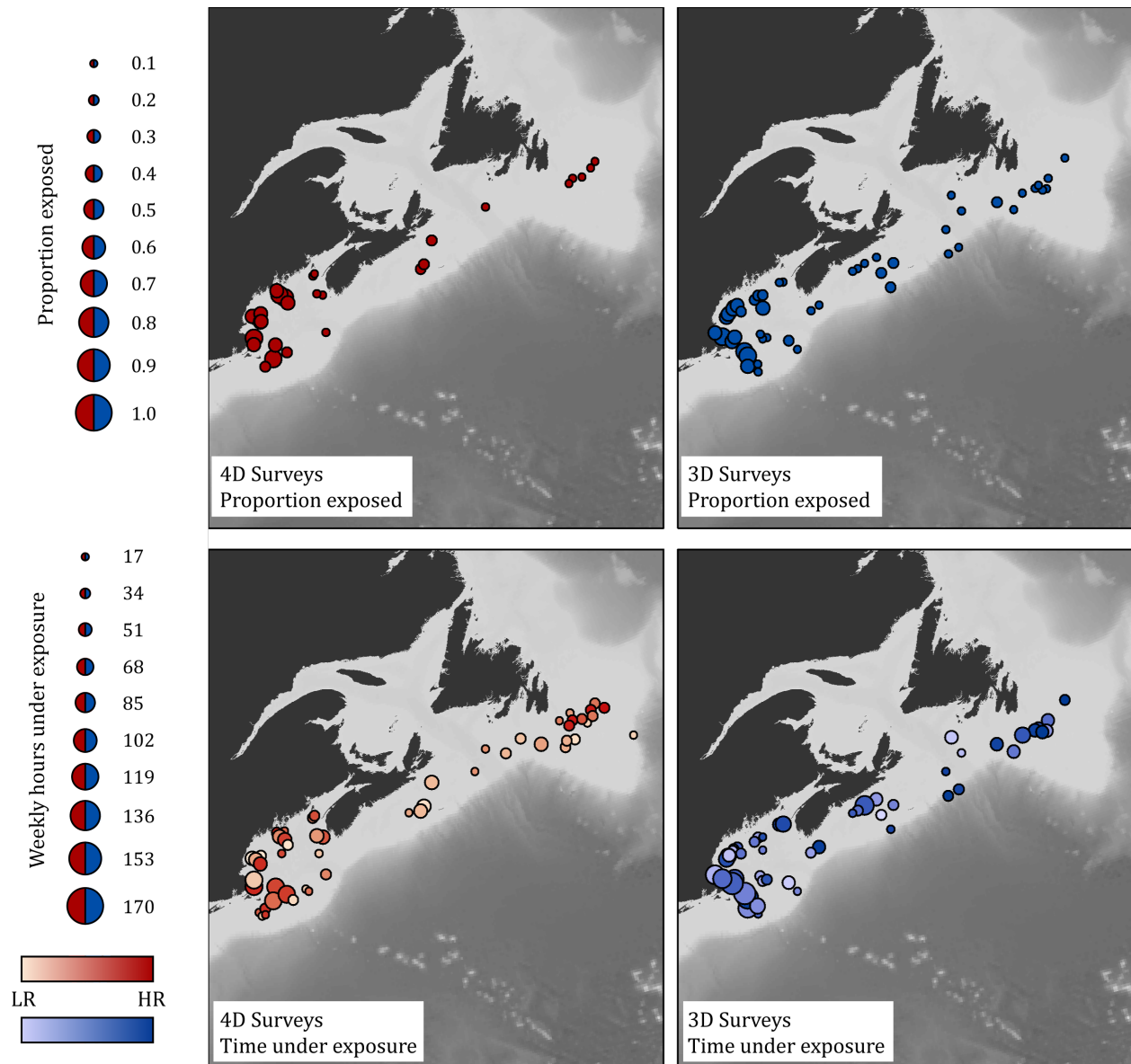
Humpback whales – Bering Sea

Humpback whales – California Current
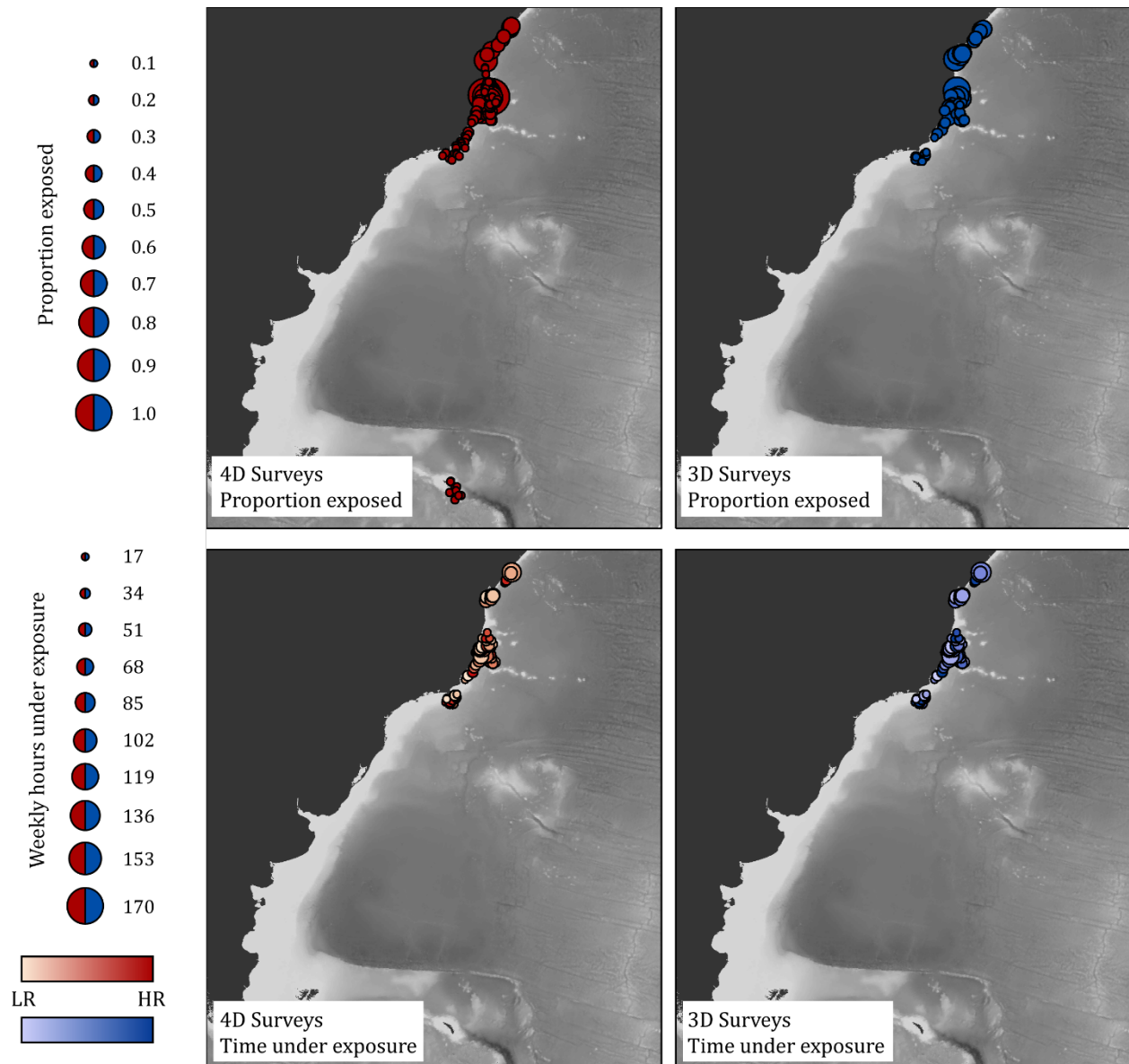
Humpback whales – Antarctic Peninsula

Humpback whales – Gulf of Maine

Humpback whales – Southwest Atlantic

Humpback whales – Eastern Australia