## Highlights

* Quantifying wildlife conflicts requires robust data on incidence and amplitude.
* Conflict is emerging between little penguins and long-nosed fur seals in Australia.
* We assay predator diets for seabirds using a cost-effective, multi-assay framework.
* We provide a range of penguin consumption in 6–25% of fur seal samples.
* Genetic remains of 21 little penguins were identified in 99 predator samples.