Habitat use of Kelp gulls

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Intro

Anthropogenic activities such as urbanization change dramatically the environment

However, some species experience population growth thanks to urbanization (Neubauer 2006, Lisnizer et al. 2011, Cotter et al. 2012)

E.g. many species of opportunistic gulls (Duhem et al. 2008, Yoda et al. 2012, Spelt et al. 2019)

Intro

Kelp gulls are distributed throughout the Southern Hemisphere

Are generalist and opportunistic foragers (Ludynia et al. 2005)

In South America numbers are increasing likely due to the predictable and abundant anthropogenic food subsidies (Yorio et al. 2016)

Conflicts

Increase predation on threatened seabird populations

Kelp gulls prey on eggs and chicks of Humboldt penguins, Peruvian boobies, and Diving petrels (Simeone and Luna-Jorquera 2012, Pastén-Araya et al. 2021)

A risk to public health

Kelp gulls can be carriers of Salmonella

(Rodriguez et al. 2012)

Transport pollutants

Take plastic and other objects to their breeding colonies (Lenzi et al. 2016)

See Mylene Seguel's poster > here at PSG

Objectives

› What habitats do Kelp gulls use and in which proportion?

Methods

Walk-in traps

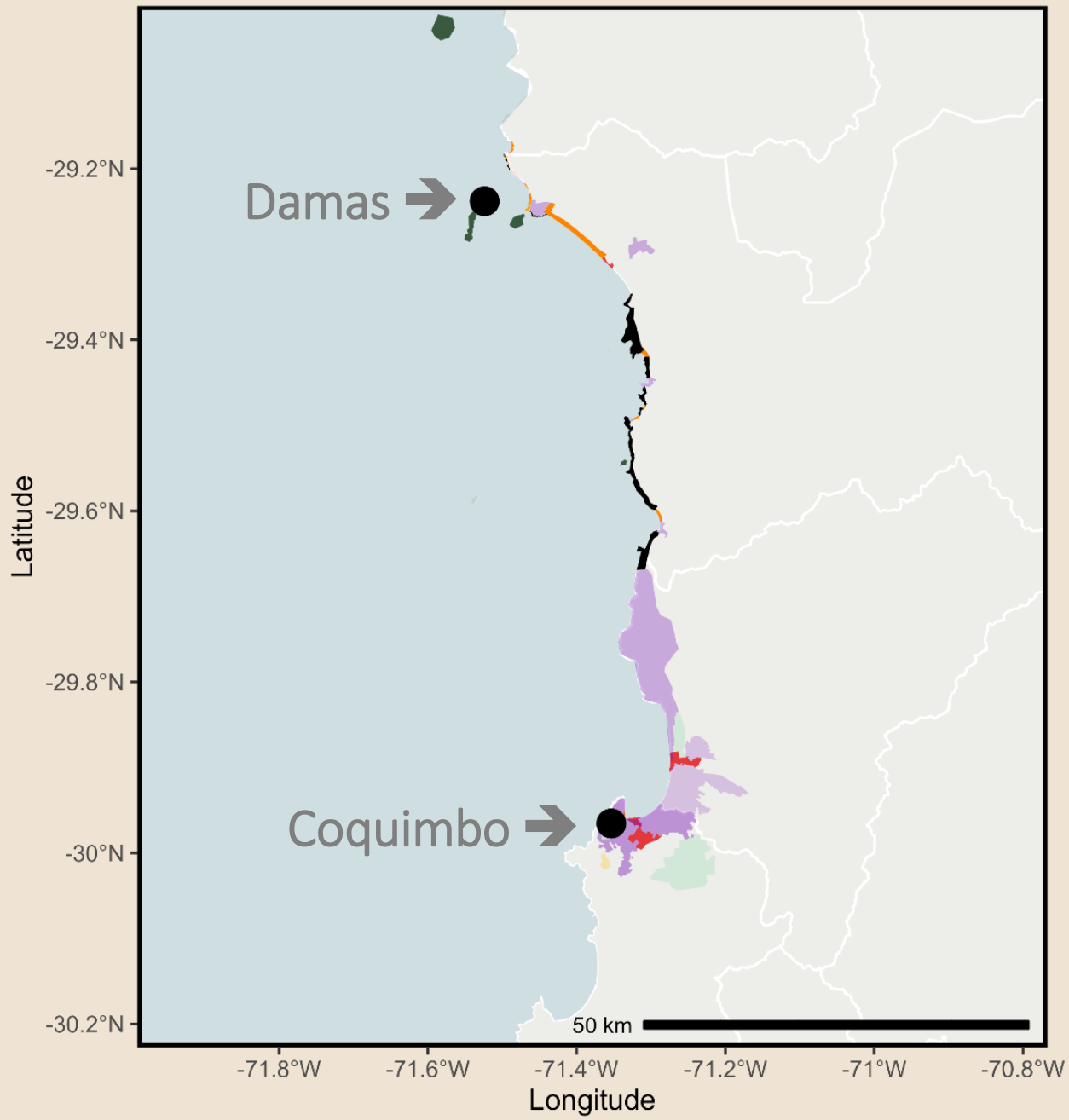
GPS/GSM device with a solar panel (OrniTrack-20, Ornitela, Lituania)

Using a body harness

Methods

Coquimbo city and Damas Island

- Roof-top of the UCN
- Sandy beach at Damas Island



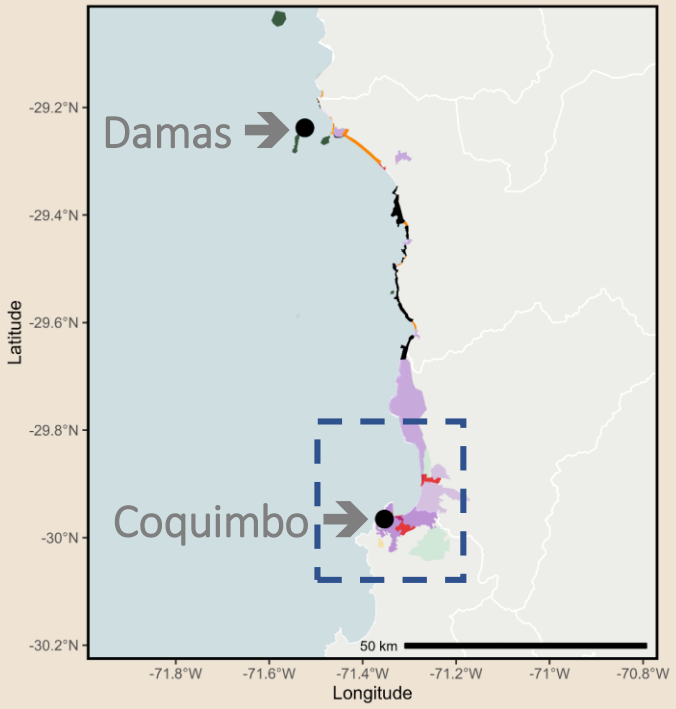
Methods

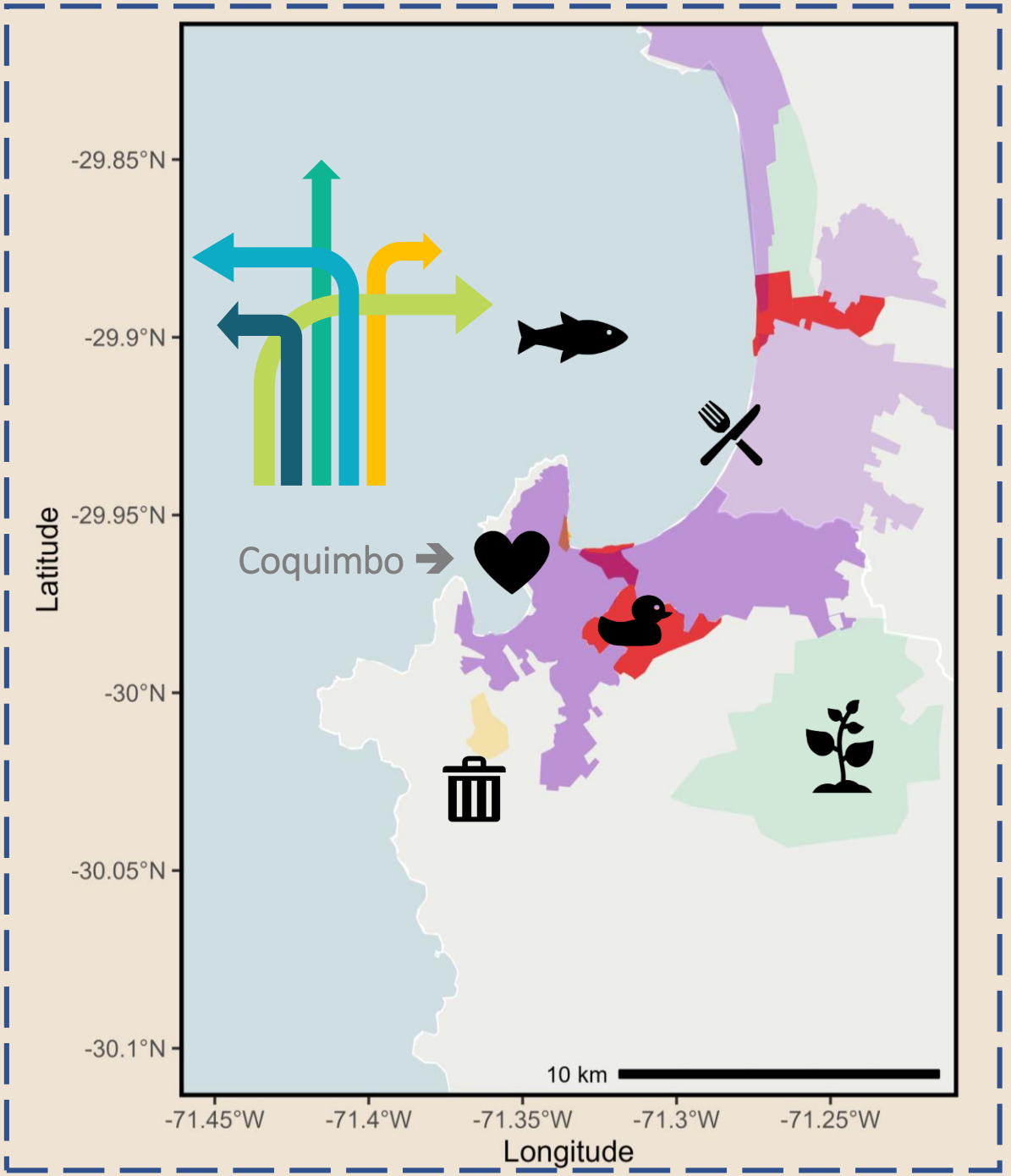
Temporal overlap

From 02 Dec to 14 Jan

Spatial polygons defining the habitat type - QGIS

Habitat type was assigned to each location - R





Results

1 Habitat use

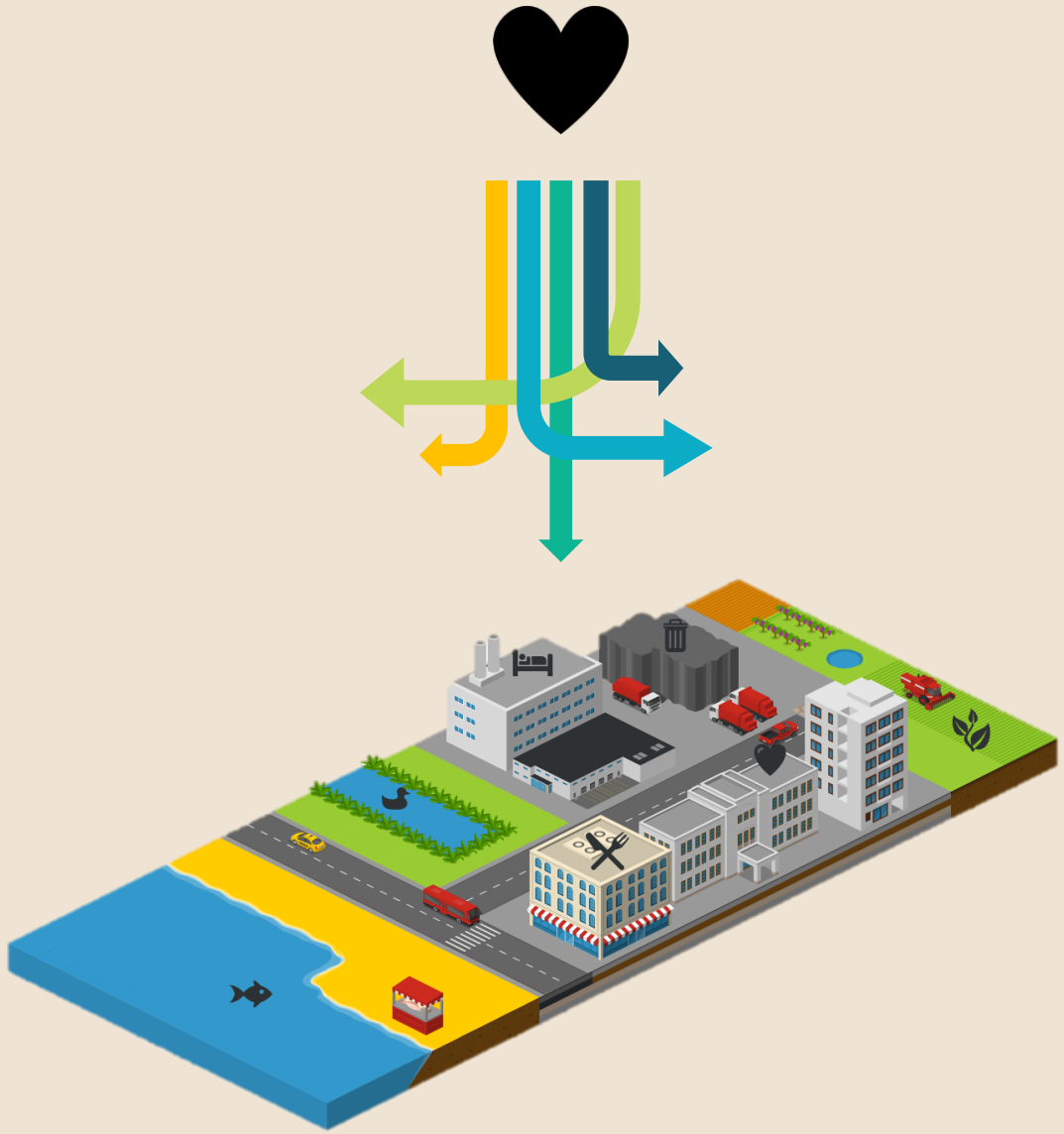
Coquimbo (5 individuals)

Damas (4 individuals)

Utilization distributions per gull

2 Foraging trip parameters

Comparison between individuals



Gull 1

Landfill:

56%

+ wetland

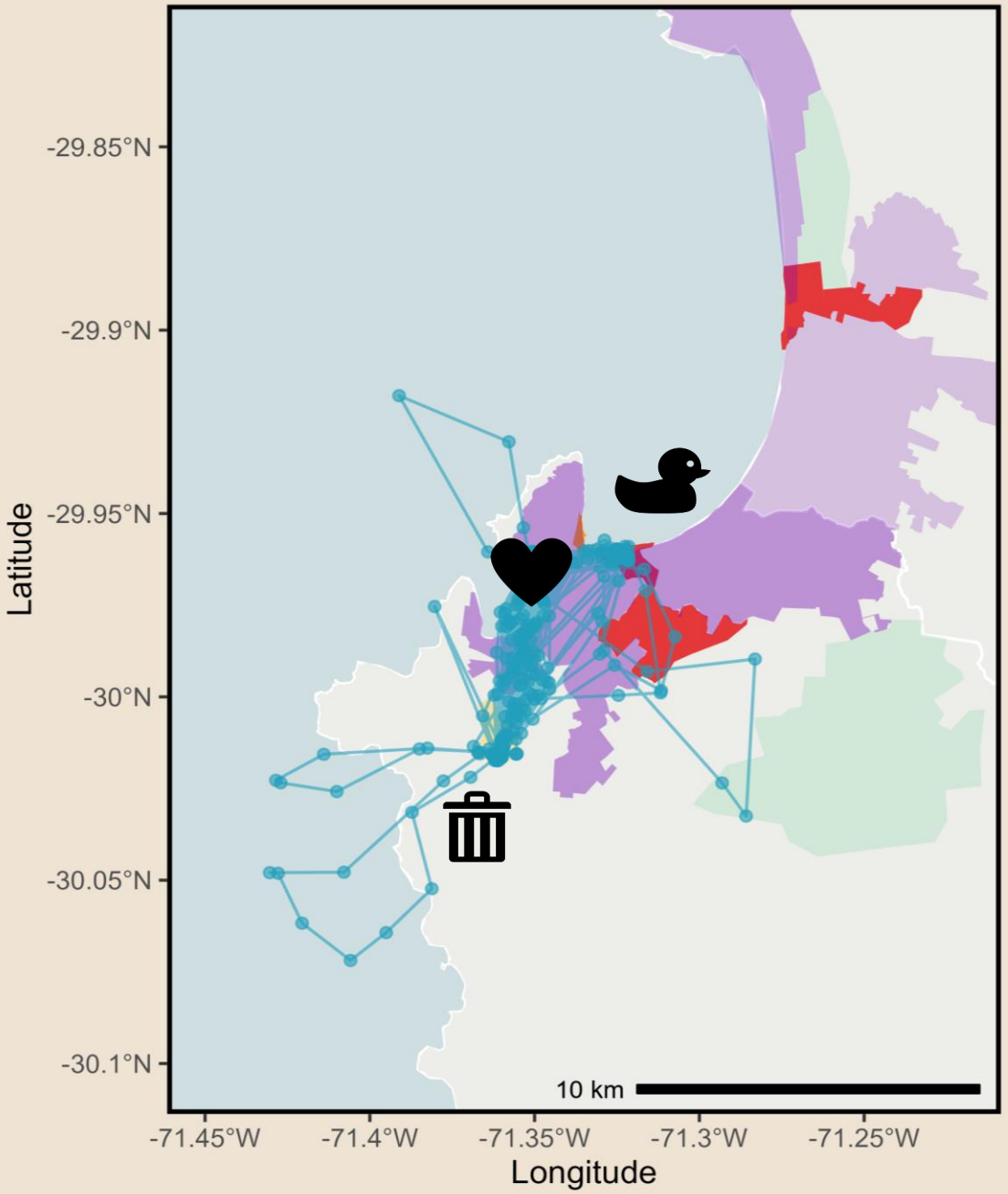
15 %

City:

13%

+ wetland

8 %

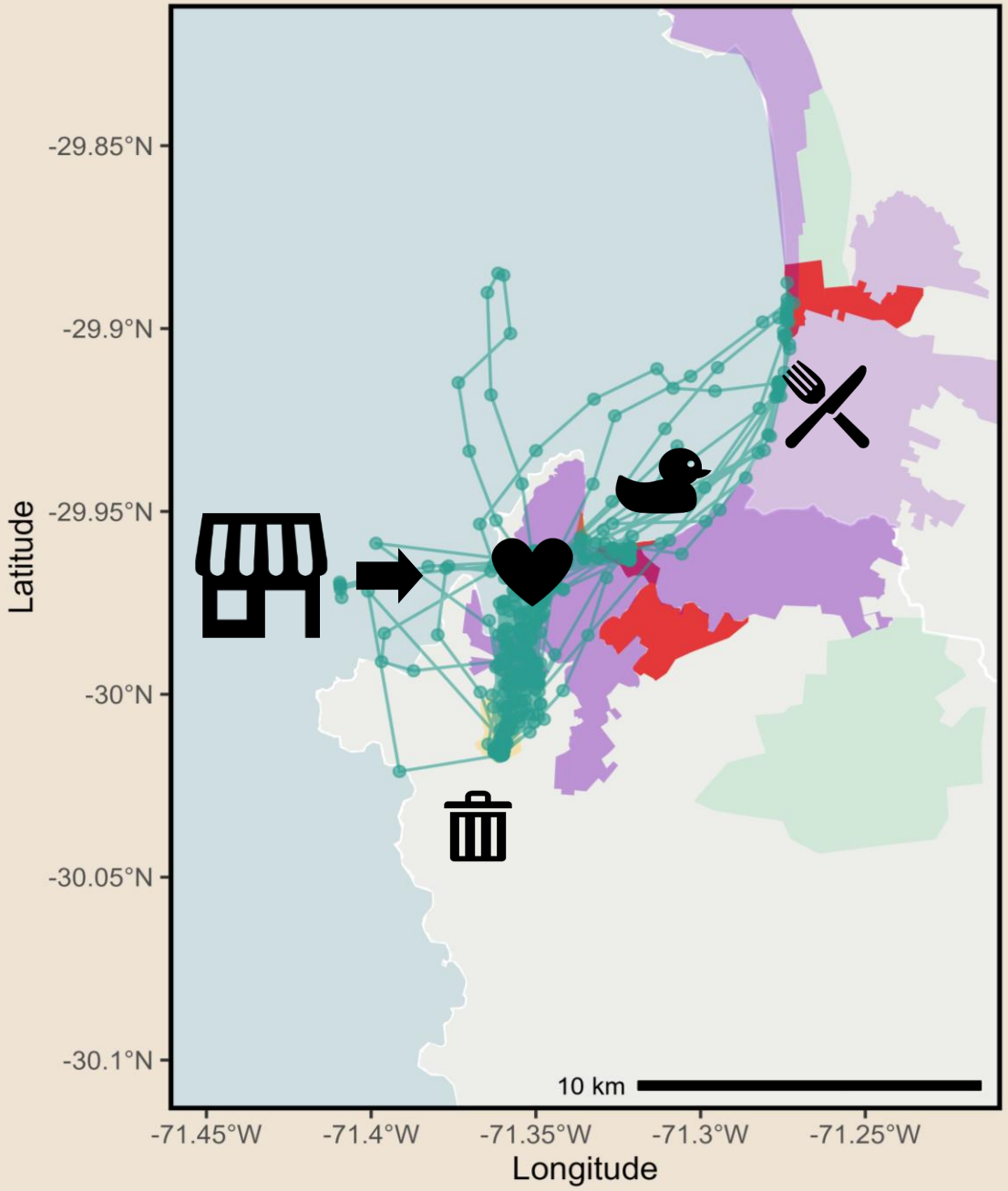


Gull 2

Landfill:
46 %
+ wetland
3 %

Fish market:
27%

City:
8%
+ wetland
9%



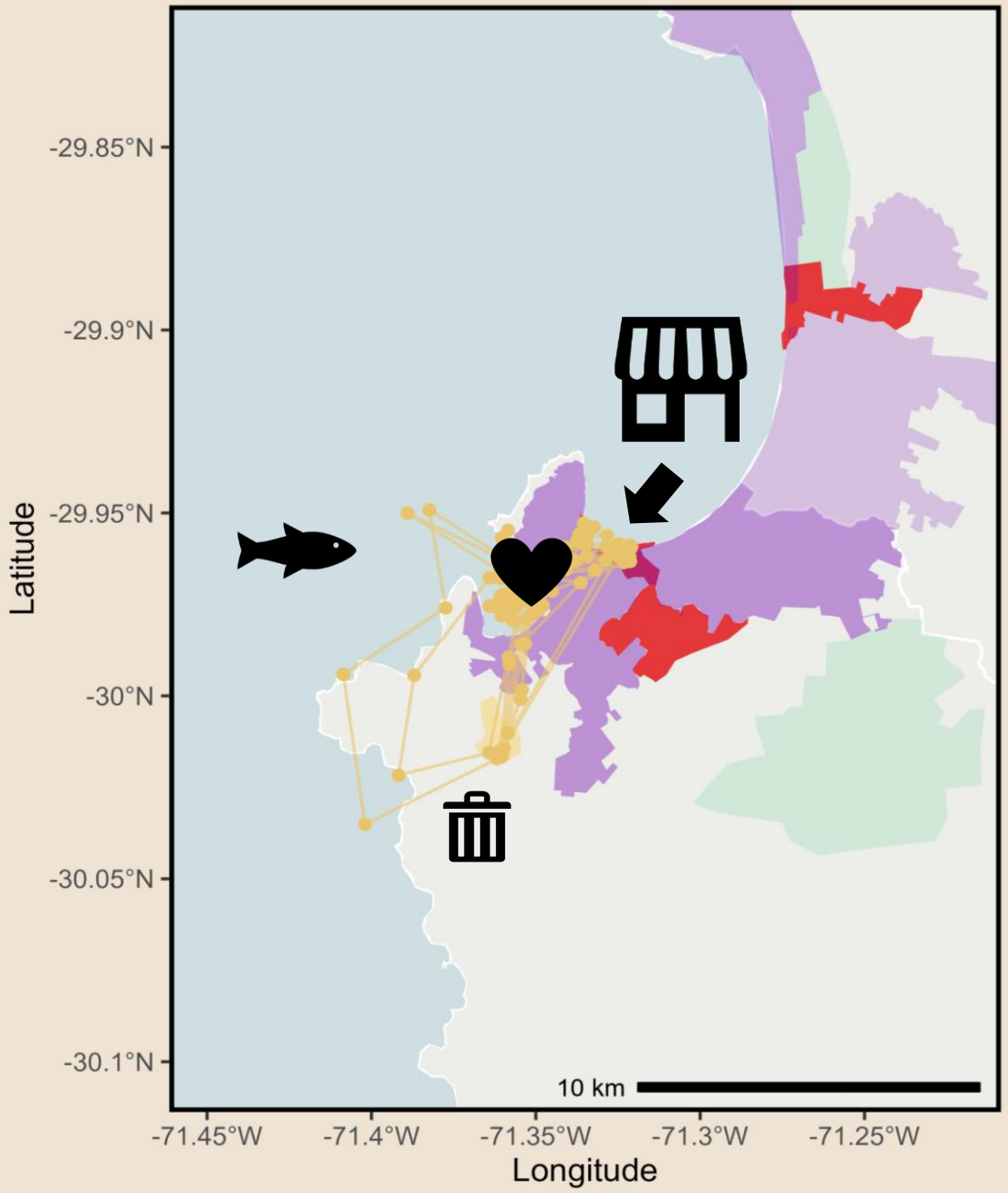
Gull 3

Fish Market:
60%

Water:
23%

City + wetland:
8%

Note that this gull died by a fishing hook



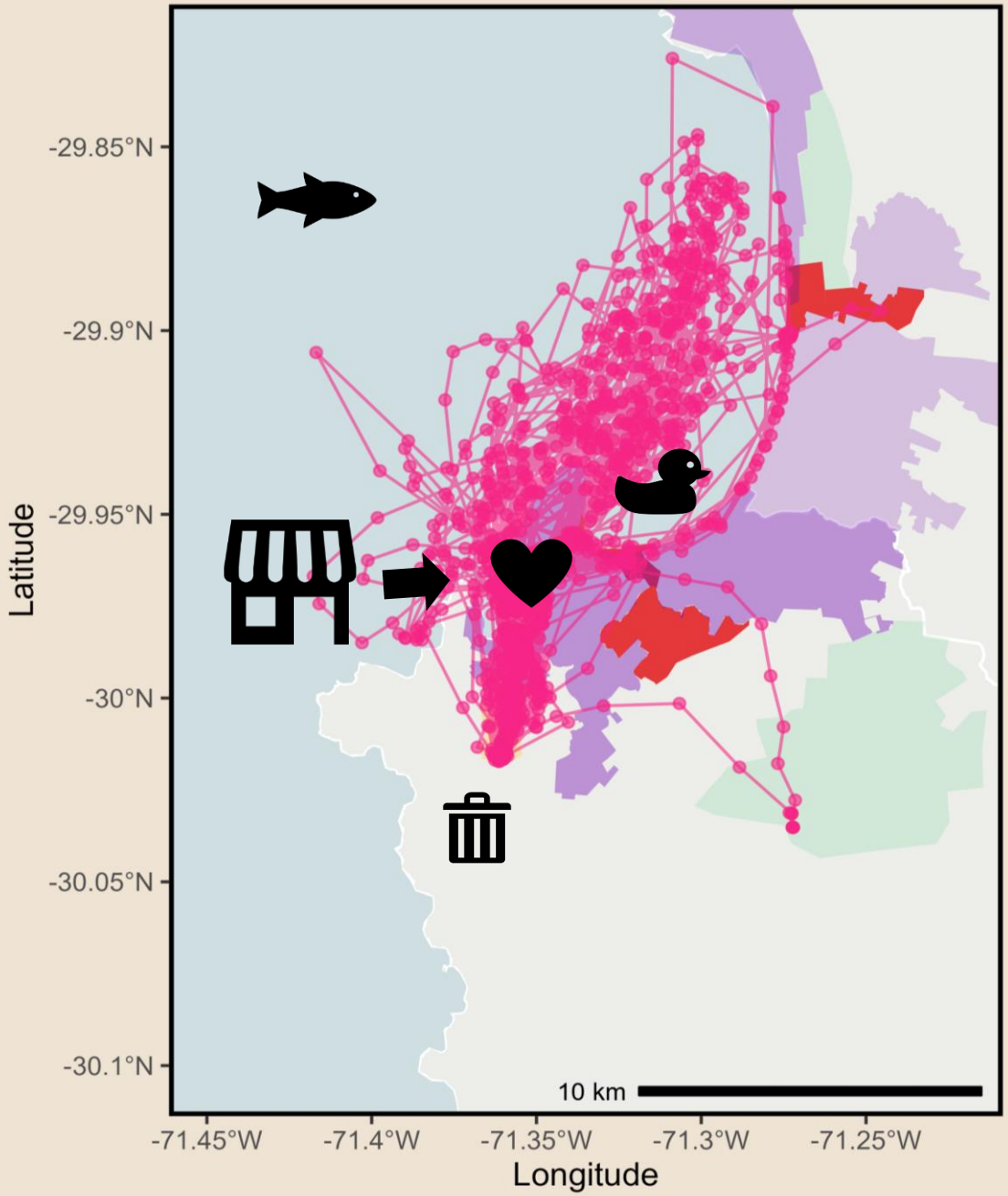
Gull 4

Water:
30%

Fish market:
30%

Landfill:
29%

+ wetland
2 %



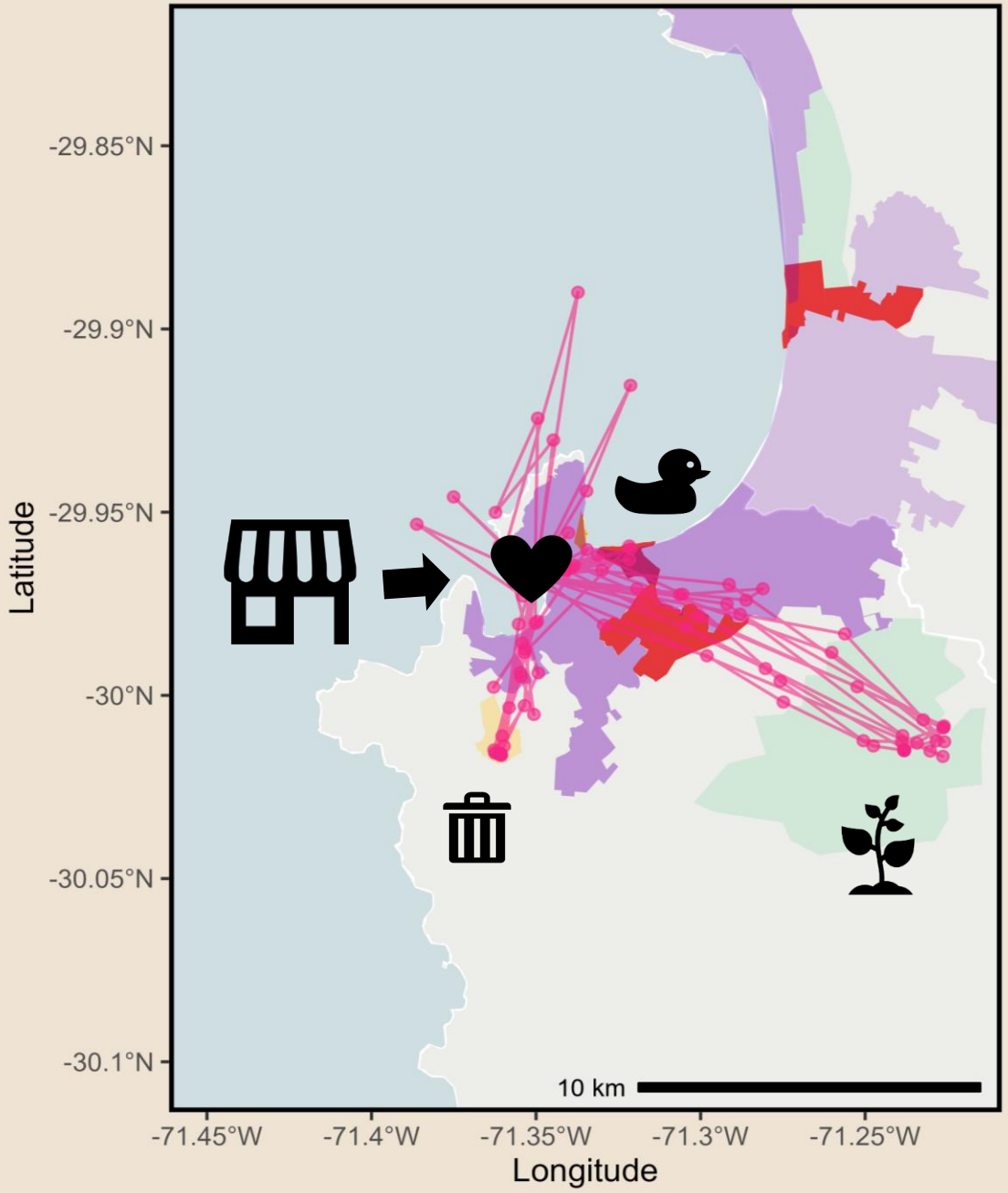
Gull 5

Fish market:
87%

Crops:
5%

City:
3%

Landfill
2%



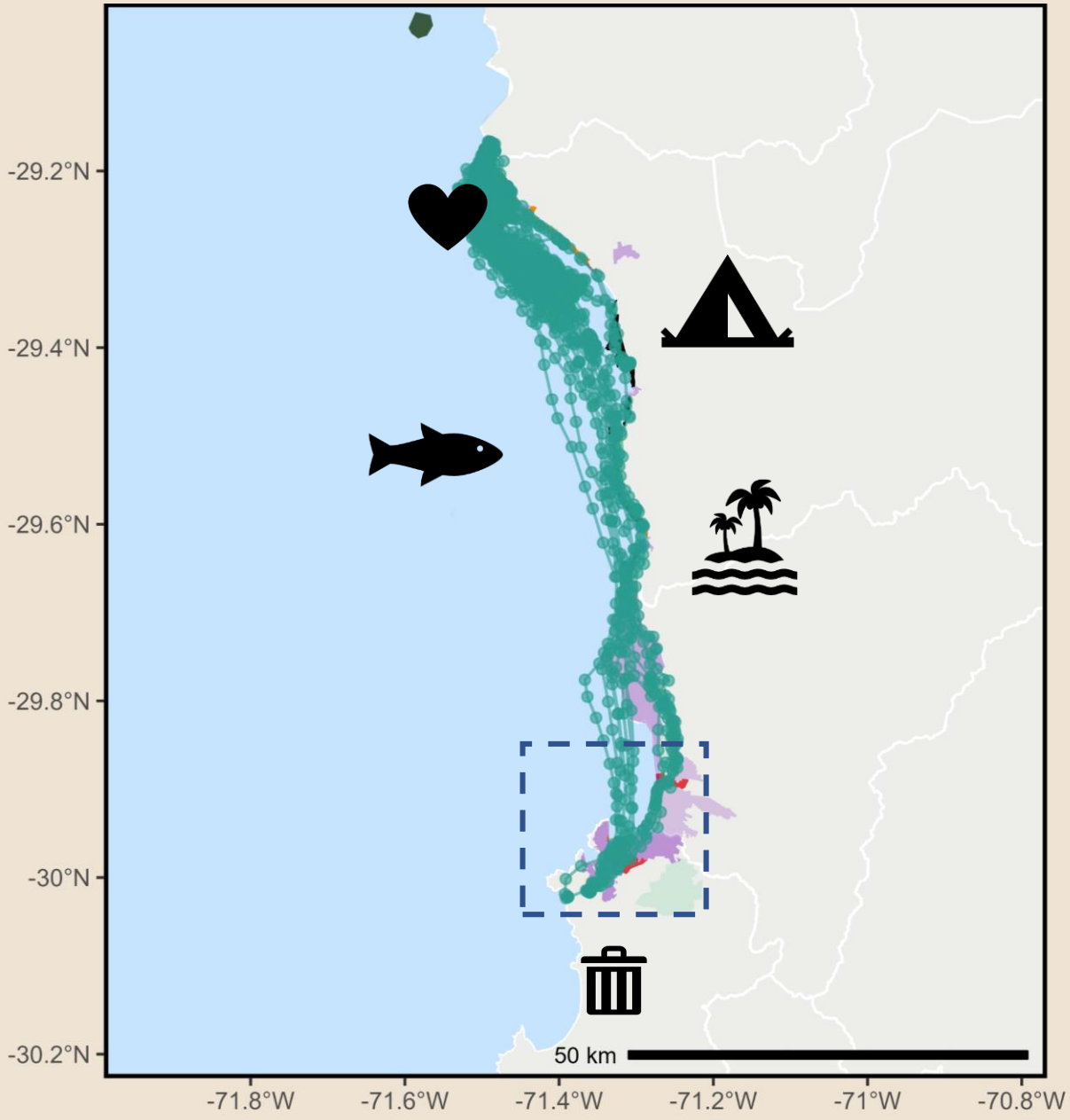
Gull 6

Water:
50%

Beach:
36%

Camping:
7%

Landfill:
6%



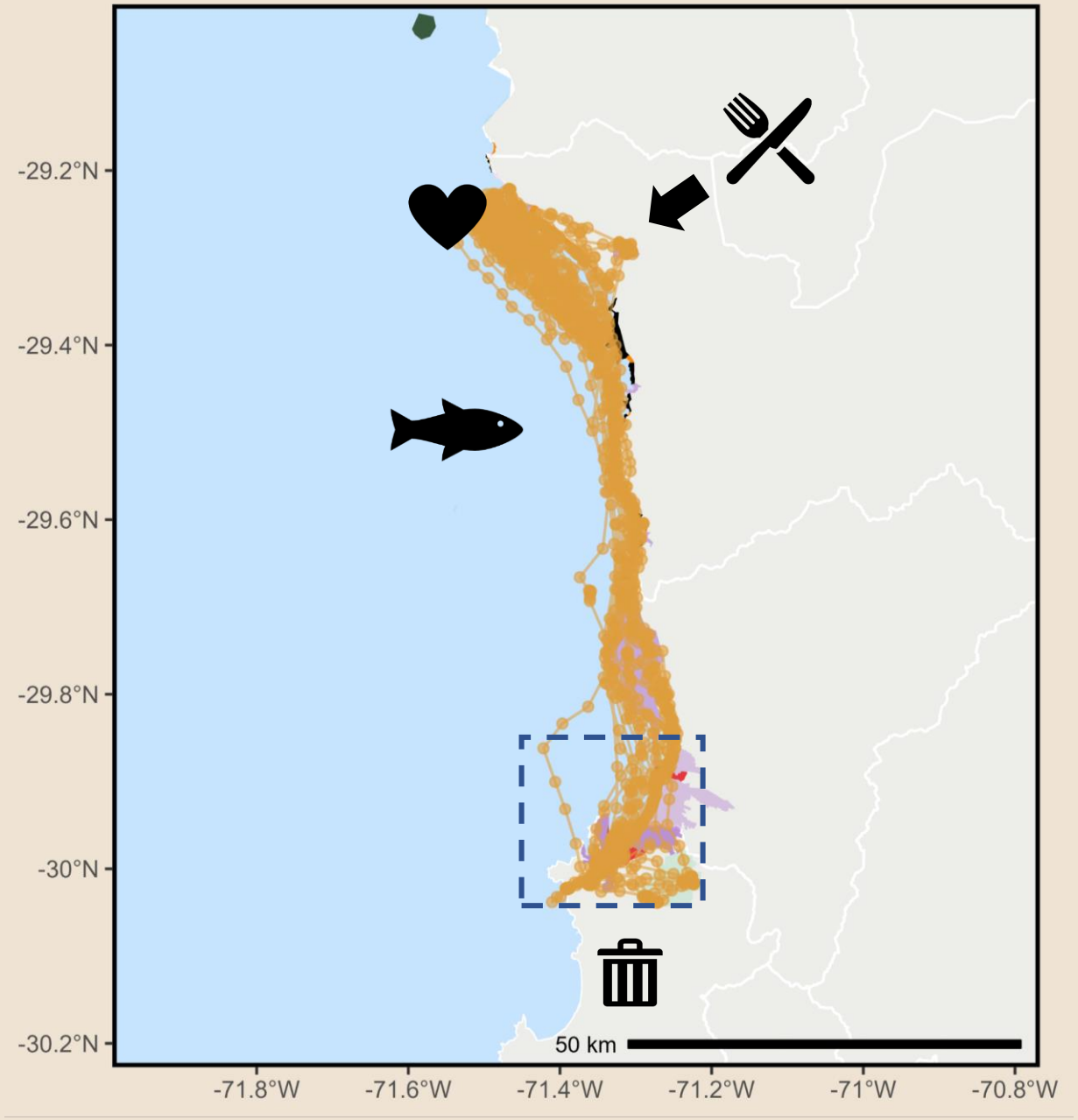
Gull 7

Water:
63%

Landfill:
10%

+ wetland:
18%

City:
Incursions to cities



Gull 8

Water:

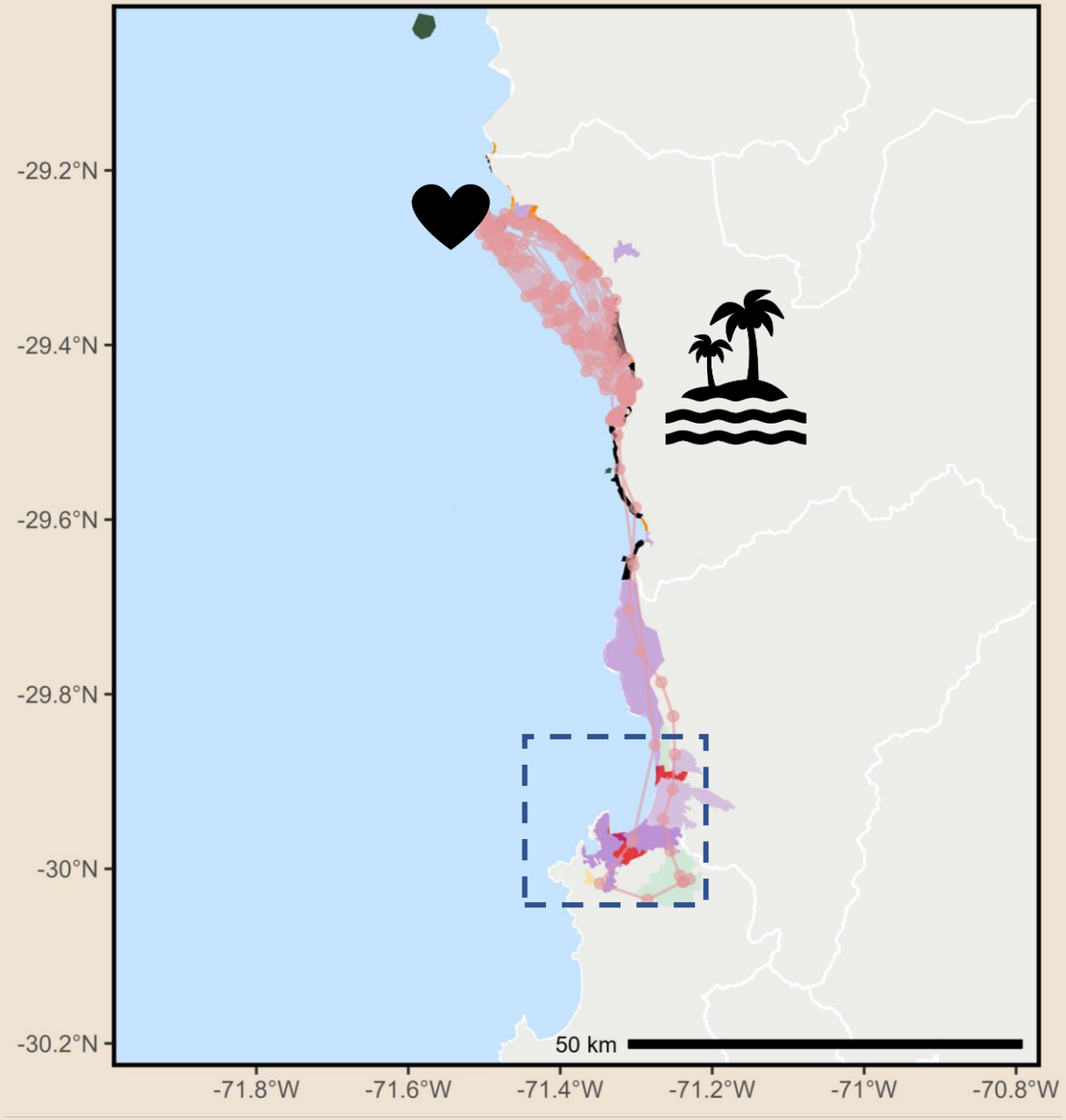
87%

Beach:

13%

Landfill:

nearby but didn't enter the polygon



Gull 9

Rocky shores:

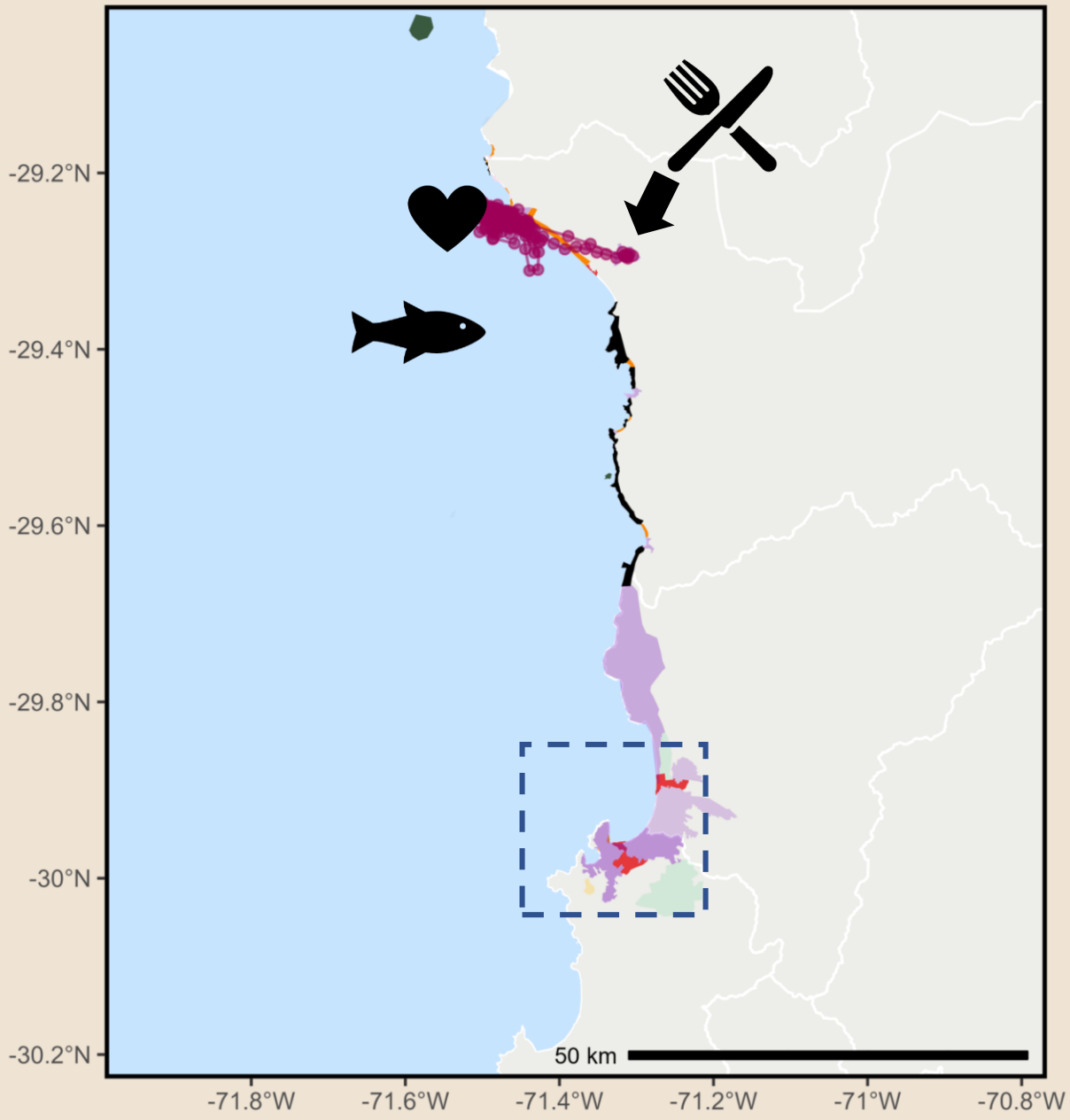
76%

Water:

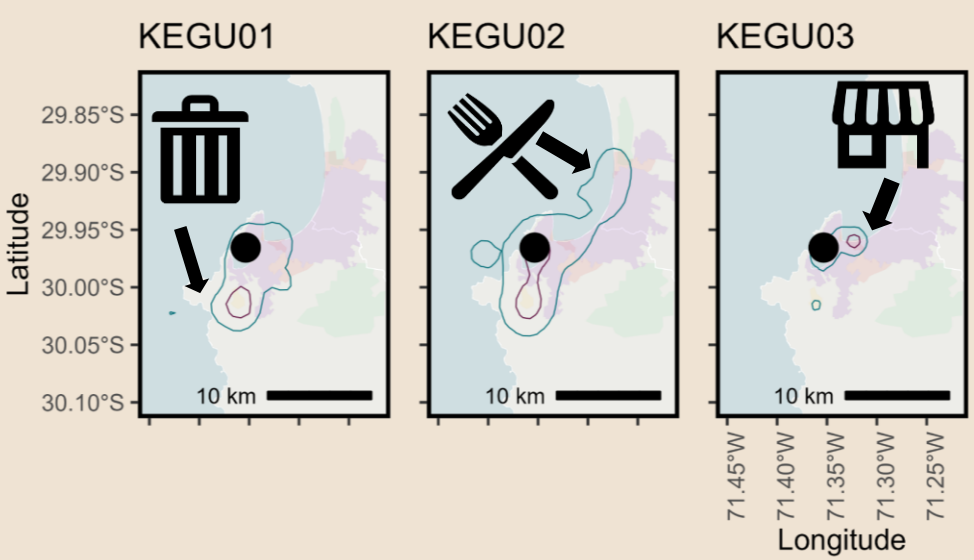
24%

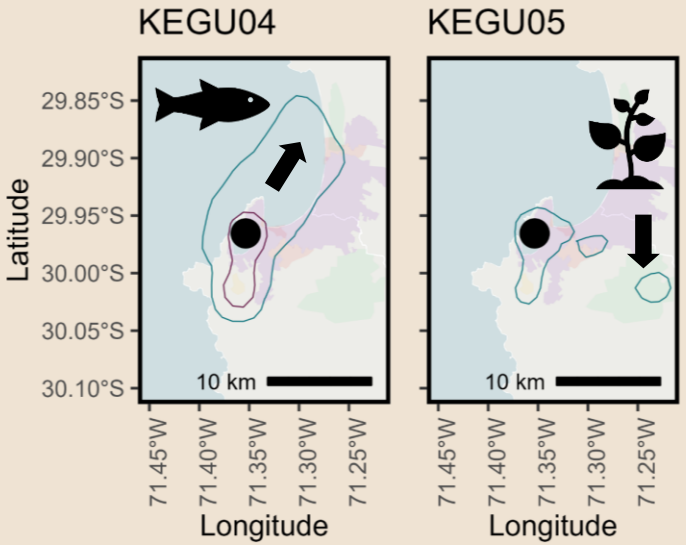
City:

In one trip it made incursions to the city



Habitat use


KEGU01
KEGU02
KEGU03
Latitude
29.85°S
29.90°S
29.95°S
30.00°S
30.05°S
30.10°S
10 km
71.45°W
71.40°W
71.35°W
71.30°W
71.25°W
Longitude


KEGU04
KEGU05
Latitude
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29.90°S
29.95°S
30.00°S
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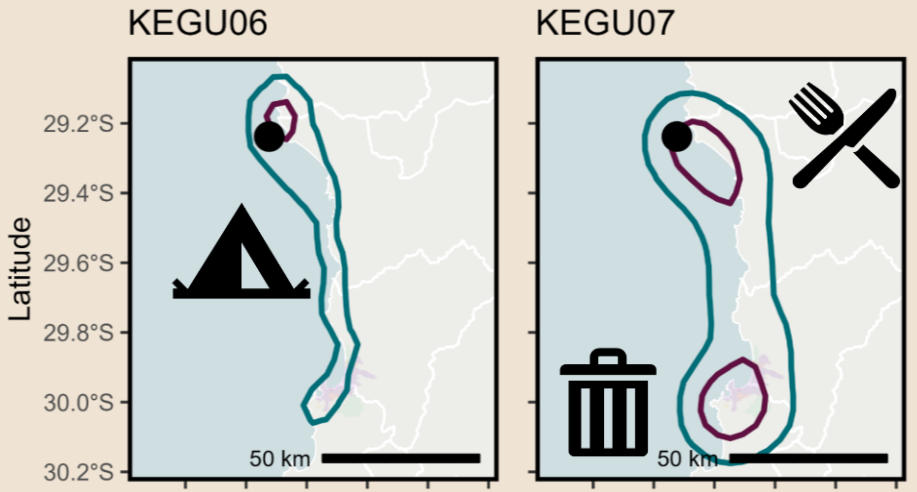
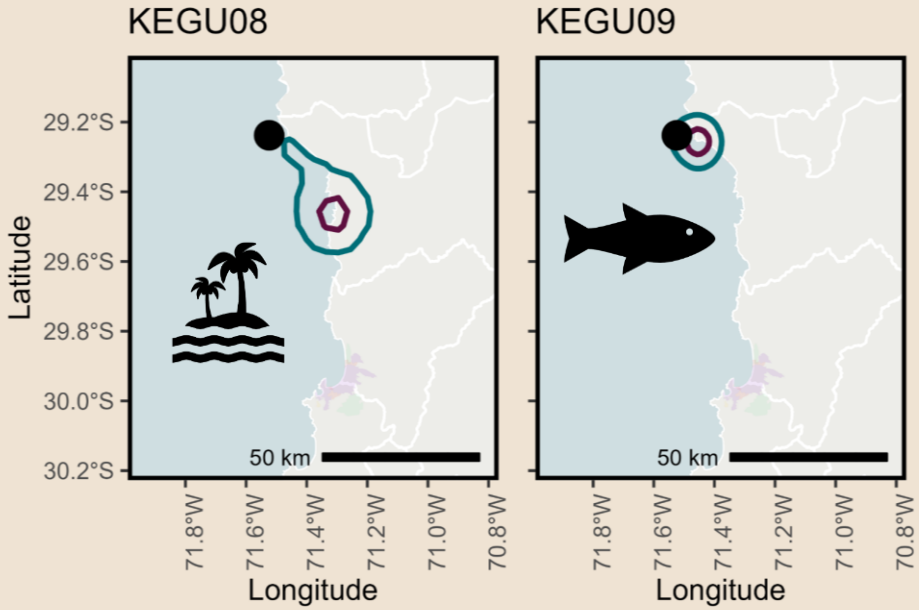
30.10°S
10 km
71.45°W
71.40°W
71.35°W
71.30°W
71.25°W
Longitude

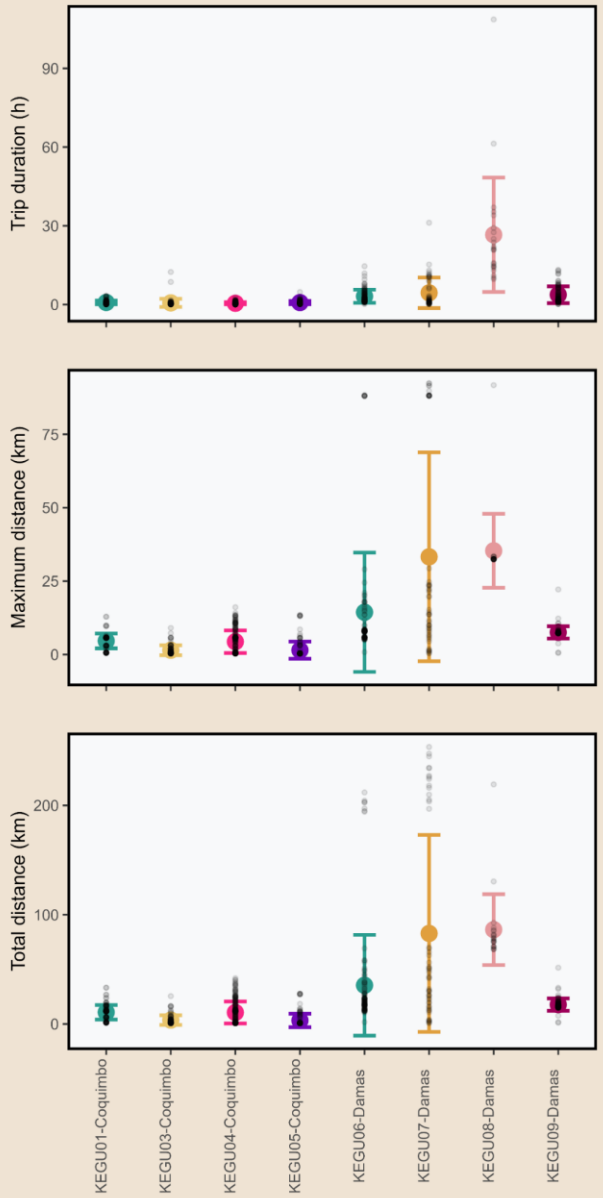

KEGU06
KEGU07
Latitude
29.2°S
29.4°S
29.6°S
29.8°S
30.0°S
30.2°S
50 km


KEGU08
KEGU09
Latitude
29.2°S
29.4°S
29.6°S
29.8°S
30.0°S
30.2°S
50 km
71.8°W
71.6°W
71.4°W
71.2°W
71.0°W
70.8°W
Longitude

Foraging trip parameters

There were differences between colonies

Gulls inhabiting the city made shorter trips than most of those breeding at the island



Discussion

Use of landfills by Kelp gulls is consistent with literature (Argentina, Kasinsky 2018; Uruguay, Lenzi 2018; South Africa, Reusch et al. 2020)

Use of food provided by human might improve individual body condition, higher breeding success and population growth (Oro et al. 2013)

However, gulls might be injured or killed by entanglement (Witteveen et al. 2017)

Conflicts

Increase predation on threatened seabird populations

We did not find evidence of a greater use of islands for foraging

A risk to public health

The use of landfills might be problematic

Transport pollutants

There are plastic in the gull colonies

See Mylene Seguel's poster > here at PSG

Conclusion

We confirmed that Kelp gulls, as in other colonies, use a variety of habitats

The use of the landfill and the wetland could be problematic in terms of transportation of diseases and garbage

In the future: breeding success of urban gulls is higher than those of the island ?

Thank you for your attention

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To download the presentation:

www.miriam-lerma.com/psg2023

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