

Atlas of the distribution of skates and rays

Sumaris consortium

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SUMARiS consortium

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1 Framework

The atlas of the distribution of skates and rays belongs to the work package (WP) one of the project SUMARiS. This WP aims to improve knowledge on rays' fisheries, in support of management decisions. This atlas is a deliverable of the activity 1.1 of the WP 1. Data related to skates and rays were collected from different data providers and combined in order to map out their spatial distributions.

The atlas of the spatial distribution of the different species of skates and rays in the Channel and the Southern North Sea is built on historical data per species and per fishery and information collected during the project, including reconstructed per-specie catches and landings, and new information from the fisheries campaigns

This document is a reproducible document: its contents can be updated automatically according to the arrival of new information.

```
## -----
## COSTcore - "The DCF Statistical Suite"
## (Version: 1.4-0. Built on: R 3.5.1; ; 2018-11-29 08:18:55 UTC; unix)
## -----
```

1.1 Data

Data were collected from three sources:

- landing: from logbooks and sales notes collected at the national level, the landings weights are reported in space and time,
- commercial sampling: fishery catches are sampled at the national level and they provide information in weights and size of the catches (landings and discards),
- survey sampling: fishery survey provide indices of the species distribution (density...), and biological information of the individuals (size, weights, sex, maturity).

1.2 Preprocessing

1.2.1 Data format

Data format follows the DATRAS format (ICES 2018) and the fishframe format (COST 2006). The metier level 6 have been grouped in 4 categories to simplify the outputs:

- trawler: all the active gears (OTB, PTM, OTT, TBB...),
- net: all the passive gears (GTN, GTR...),
- line: all the gears based on lines and hooks (LHM, LLS...),
- other: all the other gears (MIS, FPO...).

1.2.2 Data filtering

The time range is fixed to the year 2000 to 2017. In space, the ICES division on which the data are mapped are the divisions 27.4.b, 27.4.c, 27.7.d and 27.7.e (Figure 1.1). Only the rays and skates species are extracted from the different data sources.

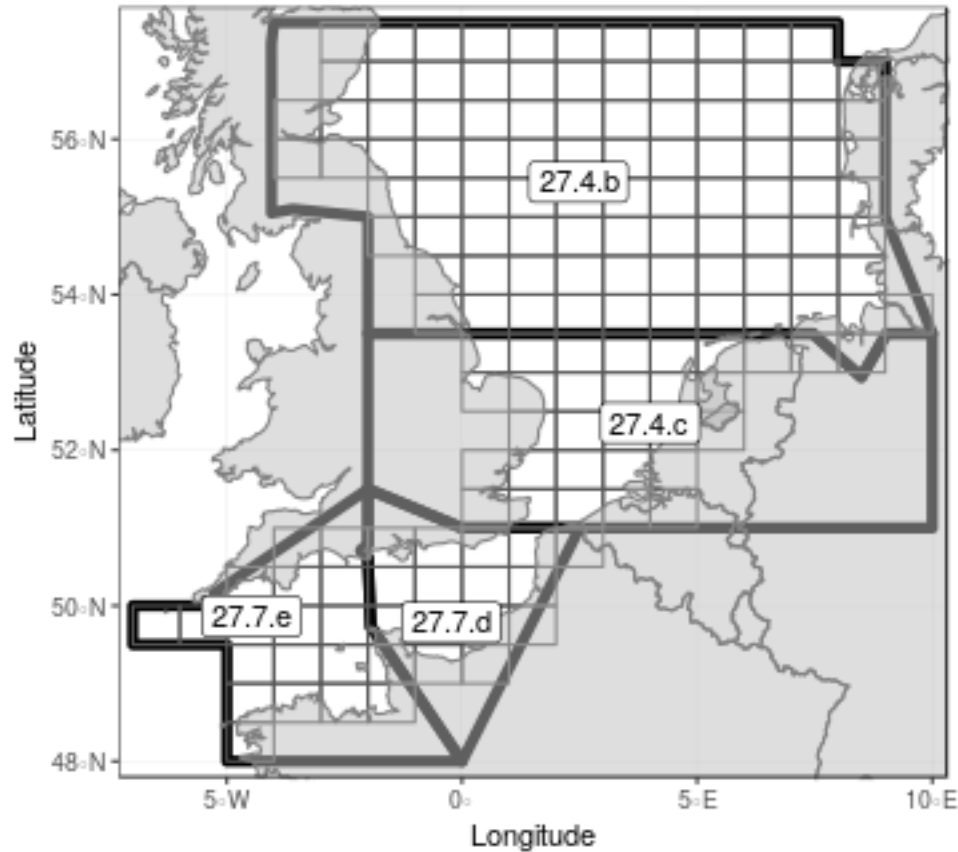


Figure 1.1: area of interest.

1.2.3 Maps

For each species, by data source, a set of map is processed. If no information is available, the related map is empty and contains the message “no information available”. Data are mapped on the ICES statistical rectangle. The information presented on the map (weights, CPUE...) is aggregated using the sum or the average of the values in each statistical rectangle. Annual values are aggregated following the same process. Catch per unit effort are computed using fishing weight divided by the time fishing in hour.

1.3 Data overview

An overview of the data is presented in the Table 1.1.

Table 1: Table continues below

taxon	name	spp	worms	w
RAJ	Rays and skates nei	Rajidae	105711	19462
RJC	Thornback ray	Raja clavata	105883	10179
RJM	Spotted ray	Raja montagui	105887	5999
RJN	Cuckoo ray	Leucoraja naevus	105876	3839
RJH	Blonde ray	Raja brachyura	367297	2013
SRX	Rays, stingrays, mantas nei	Rajiformes	10216	366.7
RJE	Small-eyed ray	Raja microocellata	105885	278.4
RJU	Undulate ray	Raja undulata	105891	255.3
RJB	Blue skate	Raja batis	105869	200.3
RJA	White skate	Raja alba	105896	149.5
JDP	Common stingray	Dasyatis pastinaca	105851	78.02
RJI	Sandy ray	Raja circularis	105873	46.13
RJF	Shagreen ray	Raja fullonica	105874	43.48
RJO	Longnosed skate	Raja oxyrinchus	105872	25.67
RJR	Starry ray	Raja radiata	105865	2.533

FRA	GB_ENG	BTS	FR-CGFS	NS-IBTS
575	0	0	0	1
4397	2411	713	705	489
1443	876	338	52	414
1245	518	115	9	476
1758	431	97	76	73
9	0	0	0	3
239	130	24	28	3
1976	212	48	150	8
49	11	0	0	7
1	0	NA	NA	NA
93	0	0	50	0
11	10	2	2	1
58	0	0	1	0
7	0	NA	NA	NA
9	796	723	2	1984

Table 1.1: Landing (w, in kg), number of sampling in commercial sampling by country (FRA: France, GB_ENG: England) and survey (BTS, FR-CGFS, NS-IBTS) for 2000-2017 by species (taxon: FAO code,

name: common name, spp: latin name, worms: worms code).

2 Rajidae

2.1 Survey

2.1.1 Average CPUE

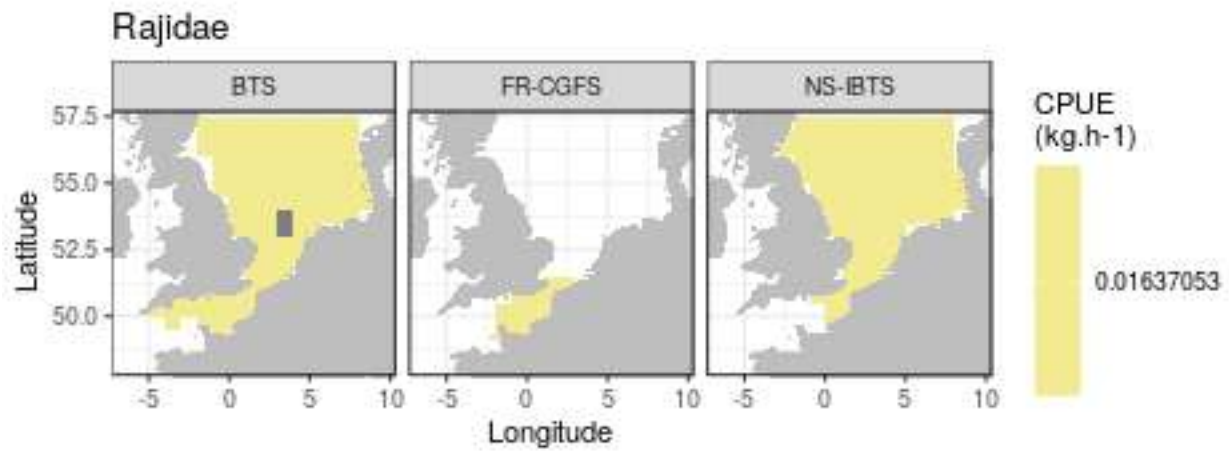


Figure 2.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log₁₀ transformed.

2.1.2 Annual CPUE: BTS

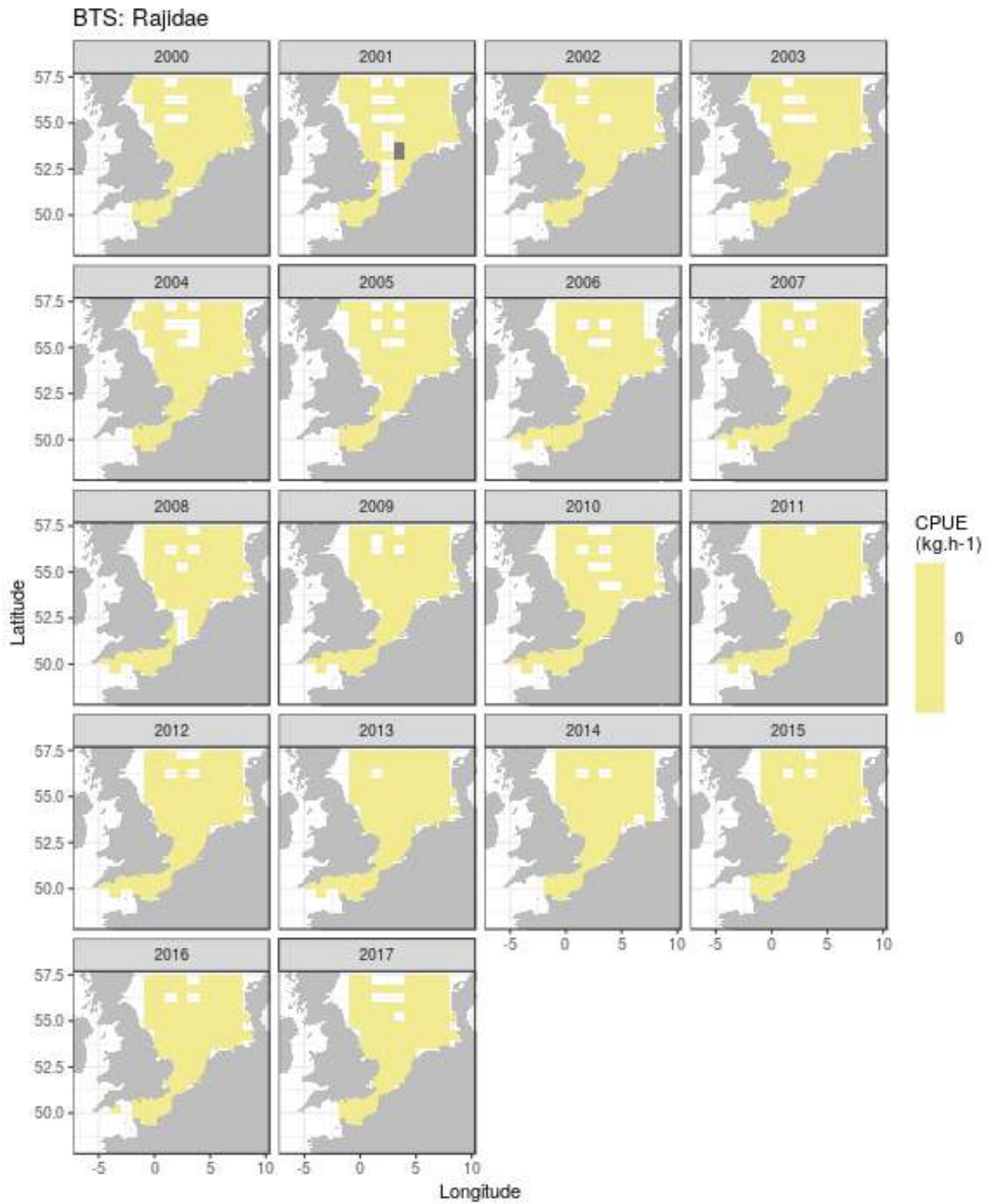


Figure 2.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

2.1.3 Annual CPUE: FR-CGFS

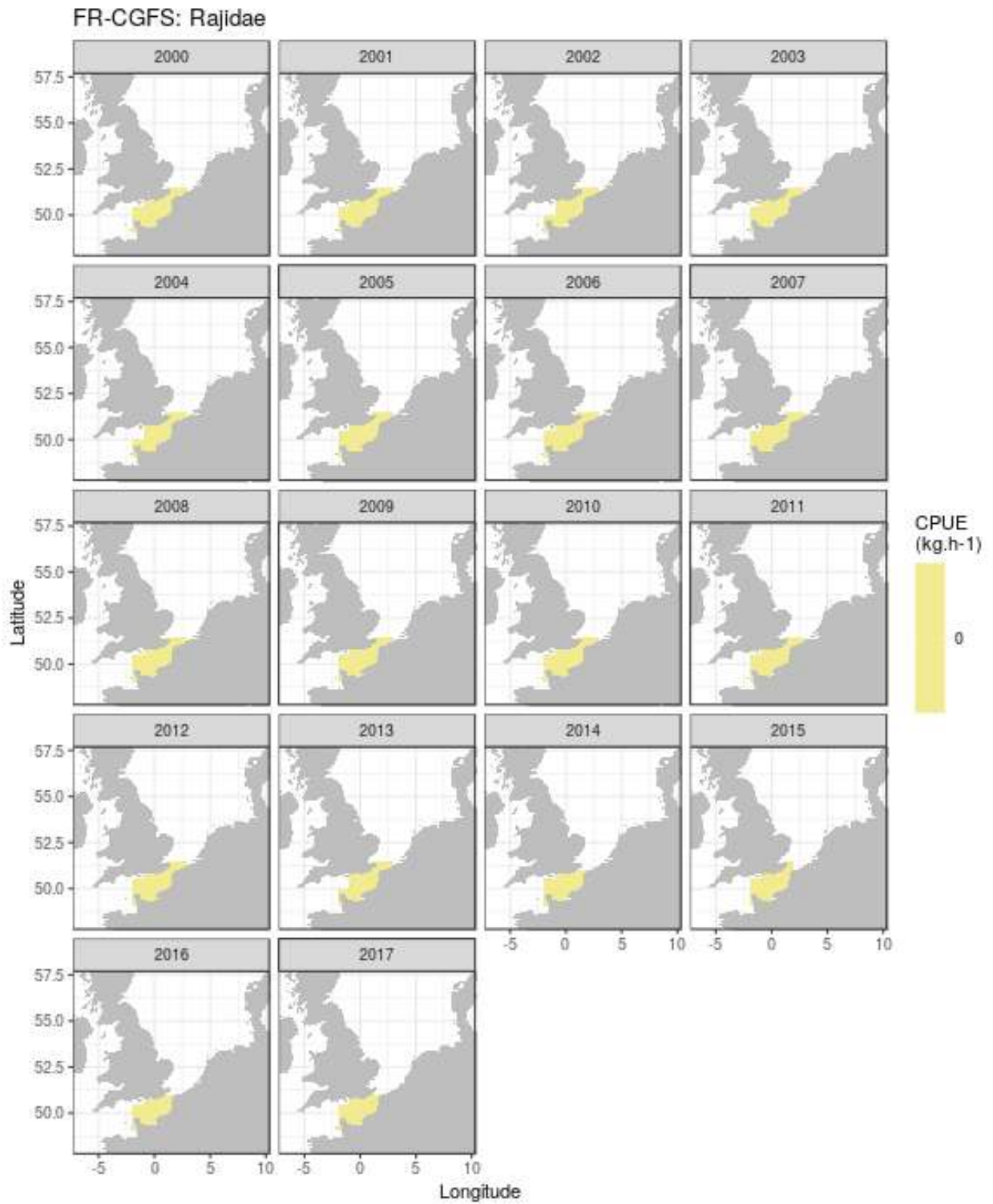


Figure 2.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

2.1.4 Annual CPUE: NS-IBTS

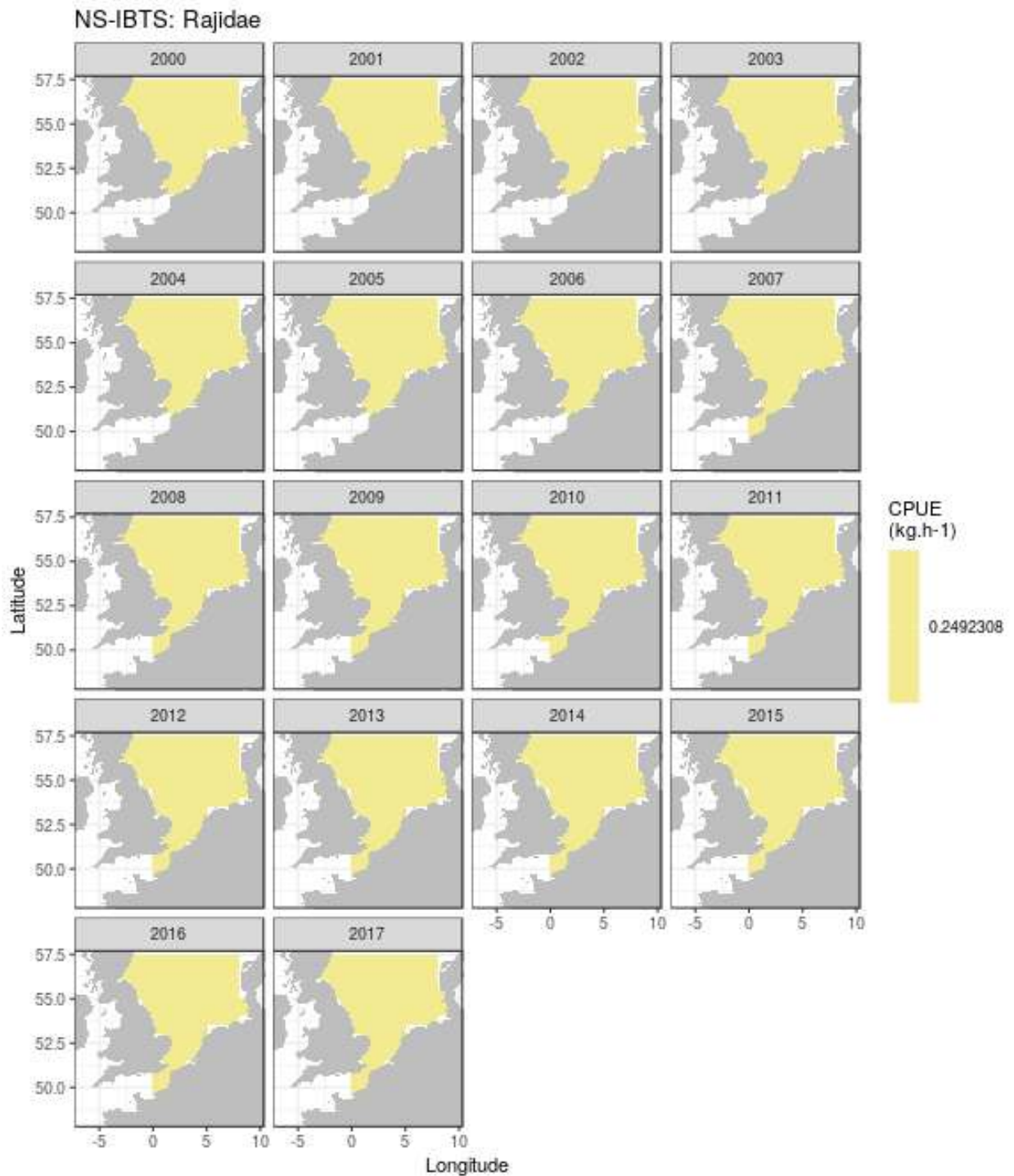


Figure 2.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

2.2 Fishery dependent information

2.2.1 Landings

2.2.1.1 Landings by country

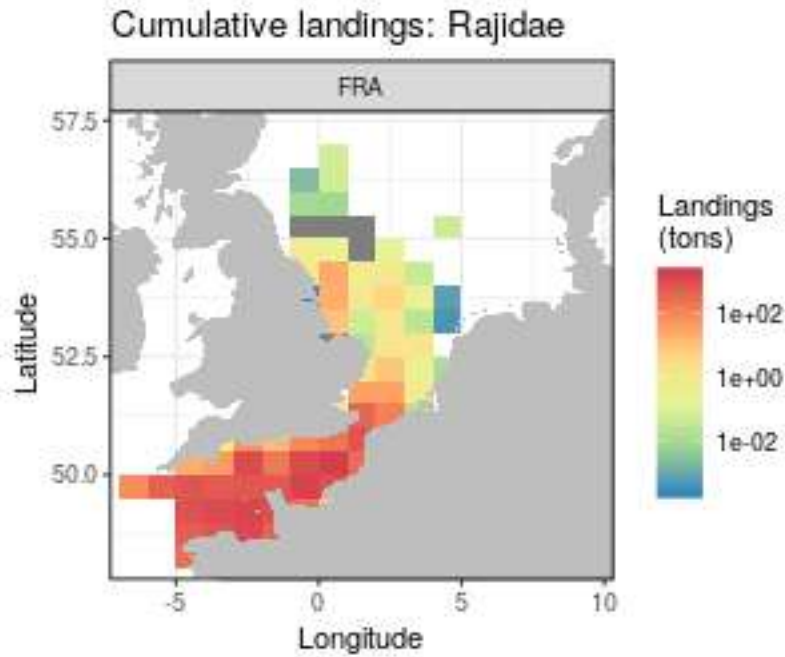


Figure 2.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

2.2.1.2 Landings by country and gear category

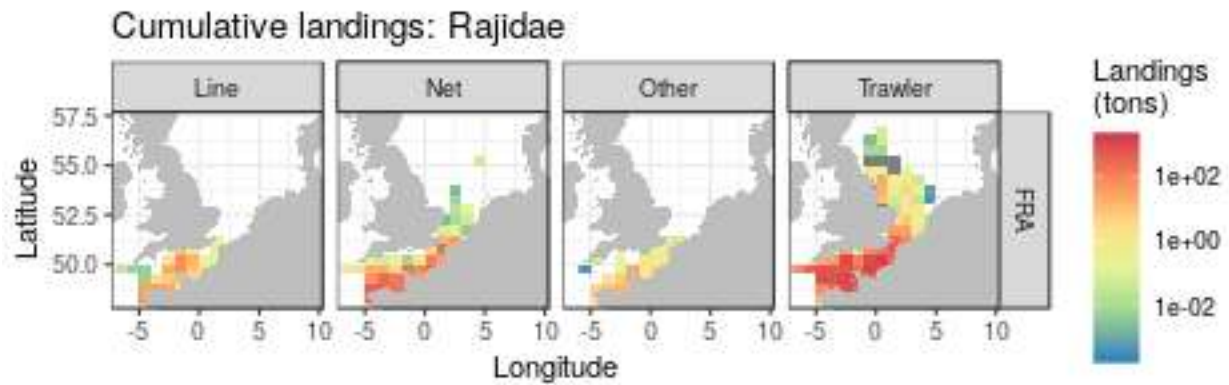


Figure 2.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

2.2.1.3 Annual landings

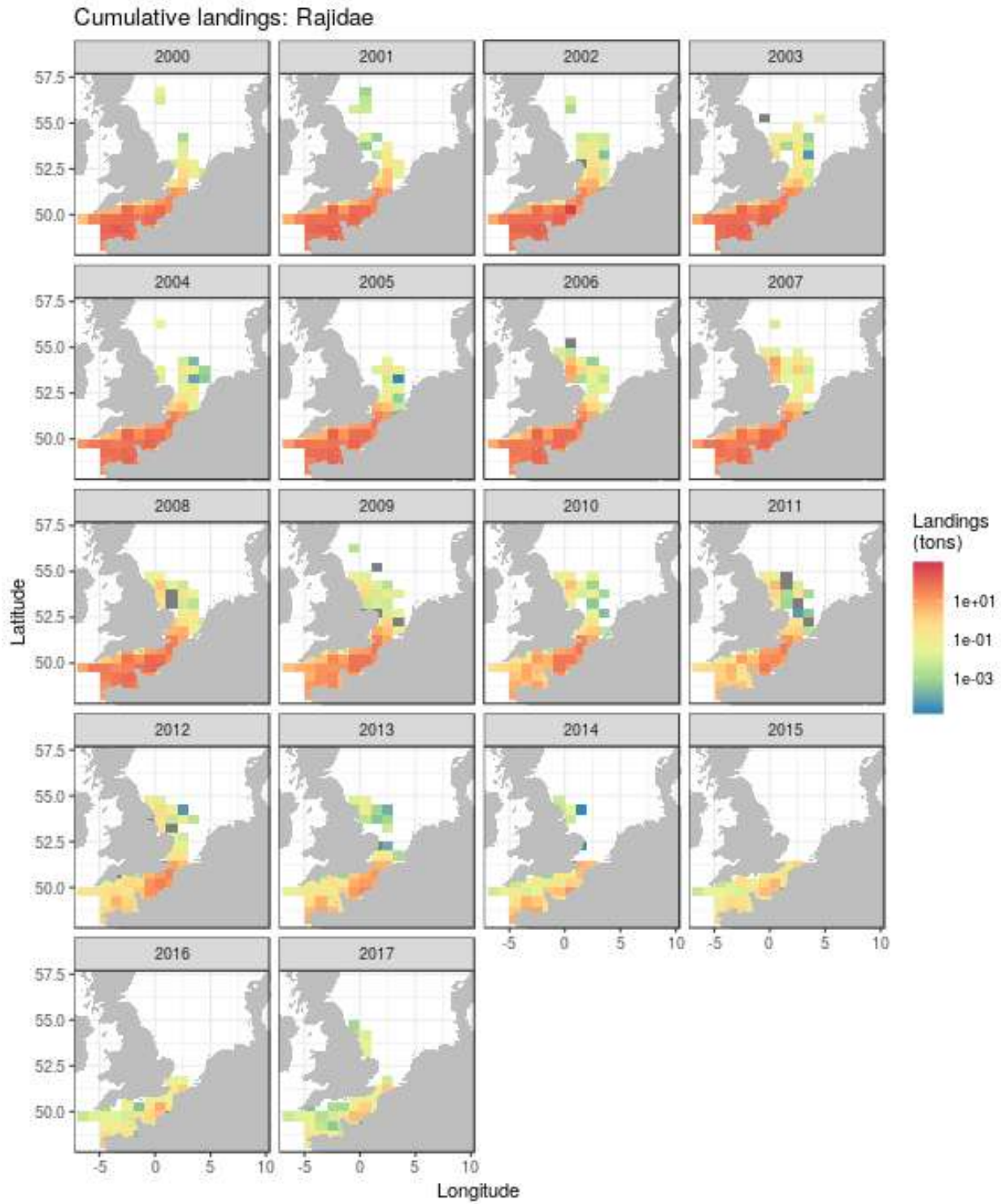


Figure 2.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

2.2.1.4 Annual landings for gear category trawler

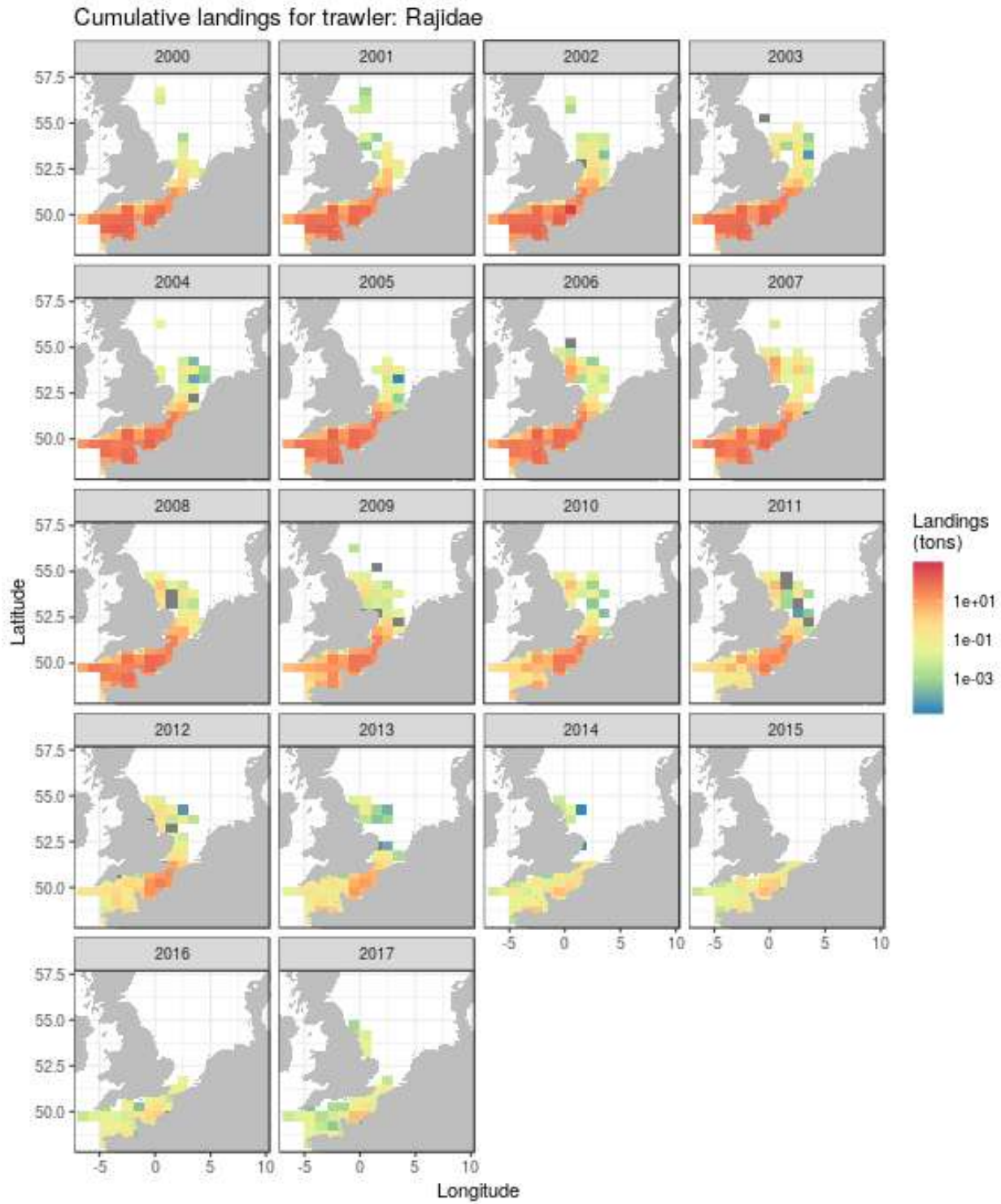


Figure 2.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

2.2.1.5 Annual landings for gear category nets

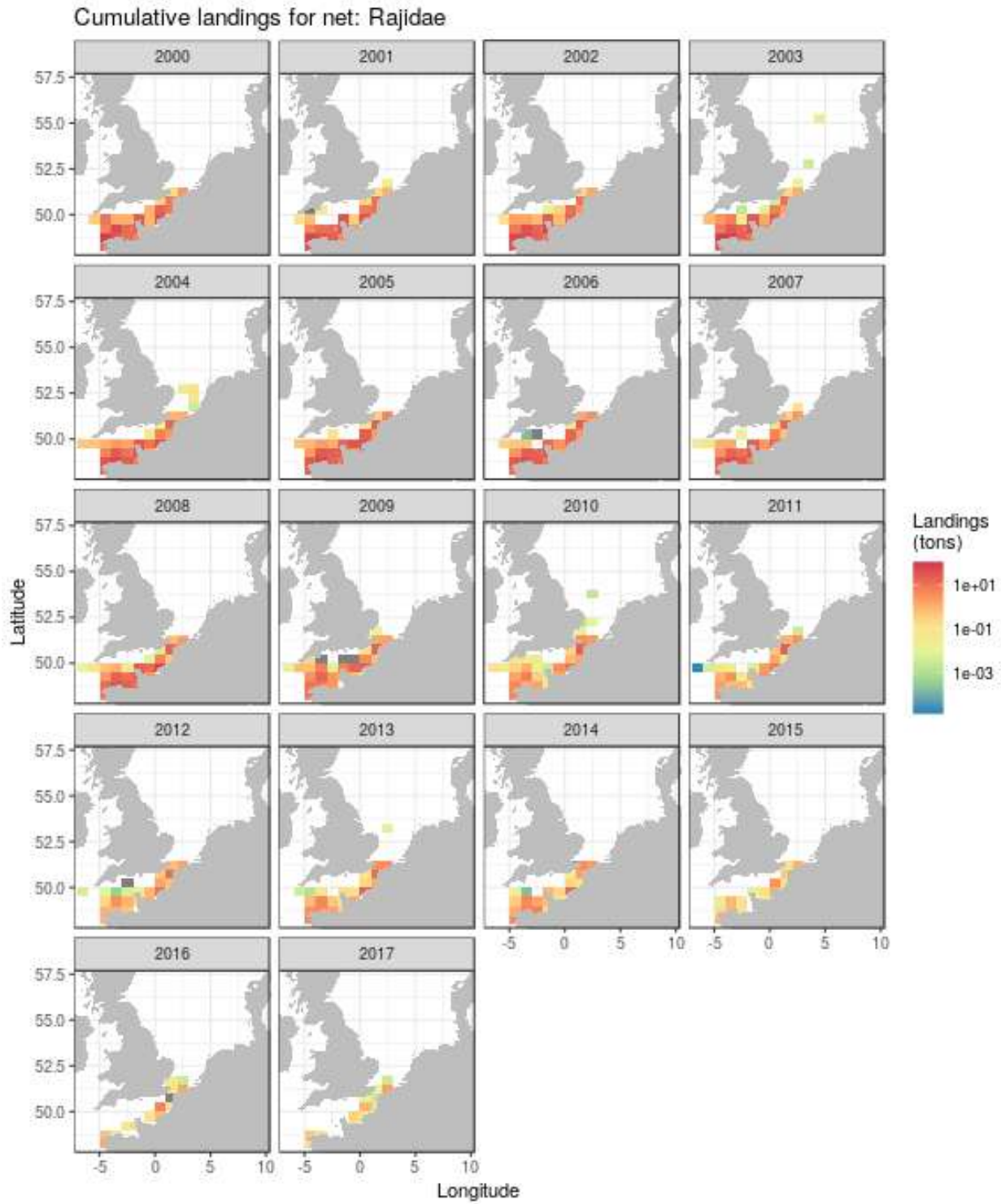


Figure 2.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

2.2.1.6 Annual landings for gear category lines

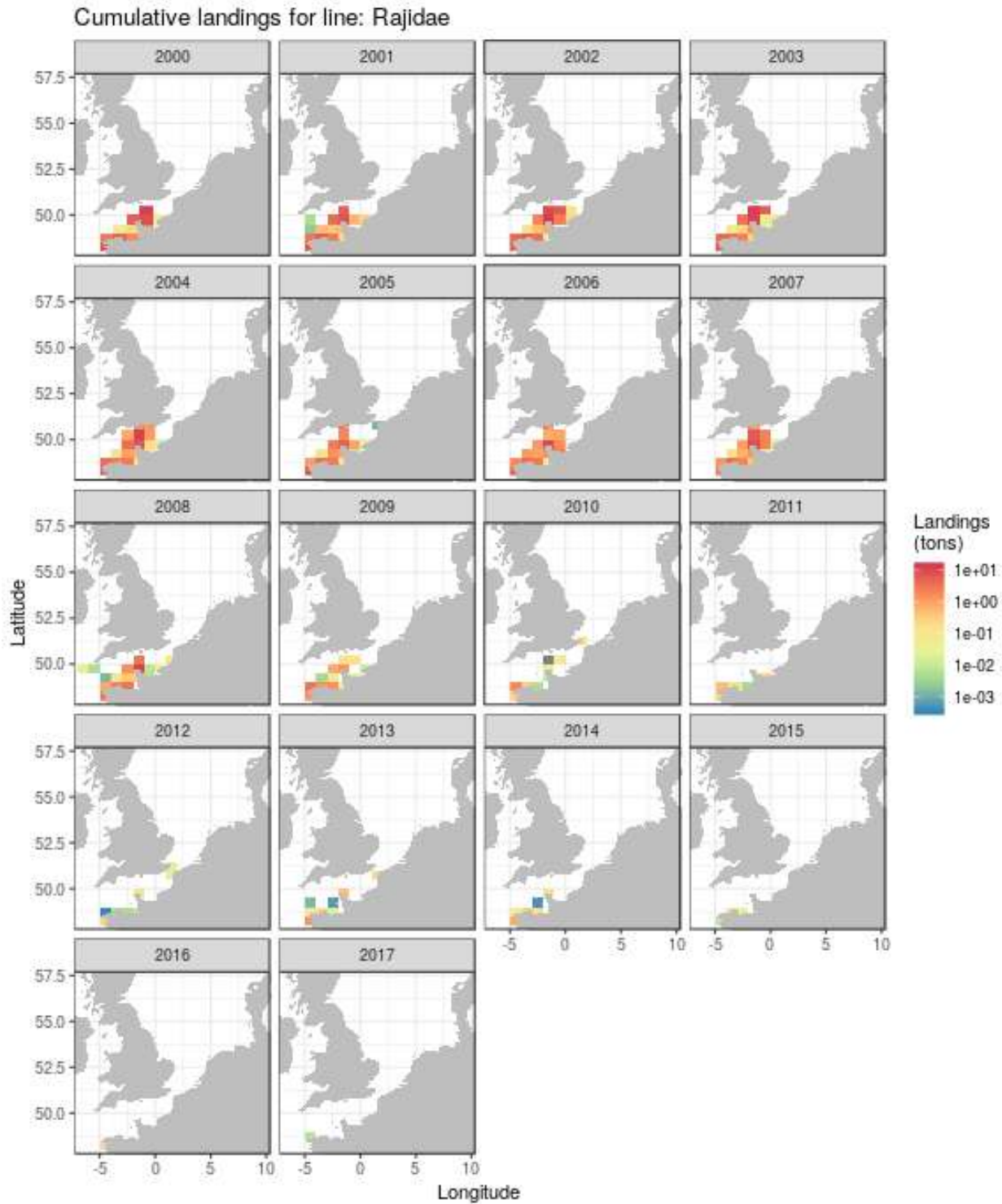


Figure 2.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

2.2.1.7 Annual landings for gear category other

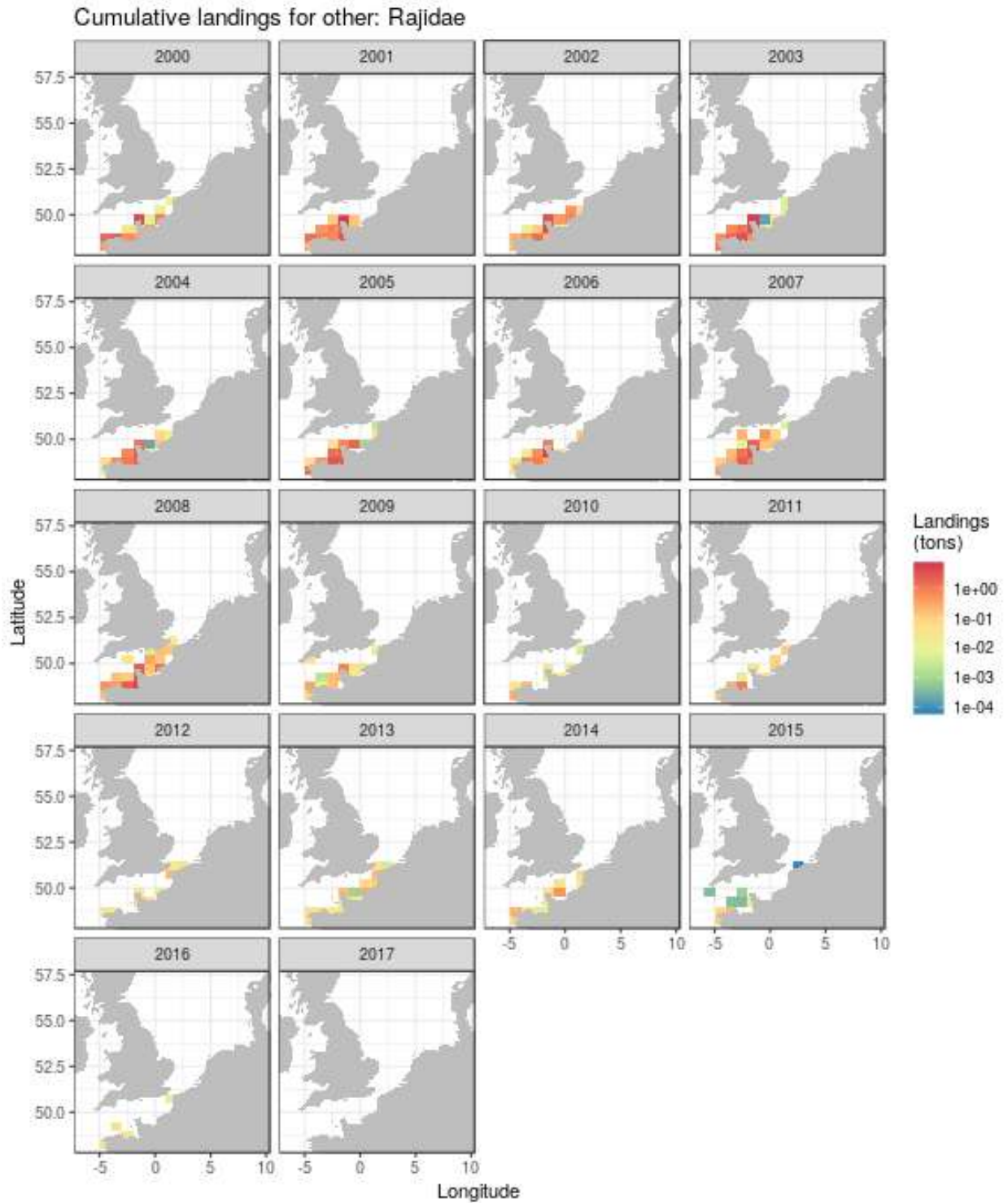


Figure 2.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

2.2.2 Commercial sampling

2.2.2.1 Landings and discards per unit effort and country

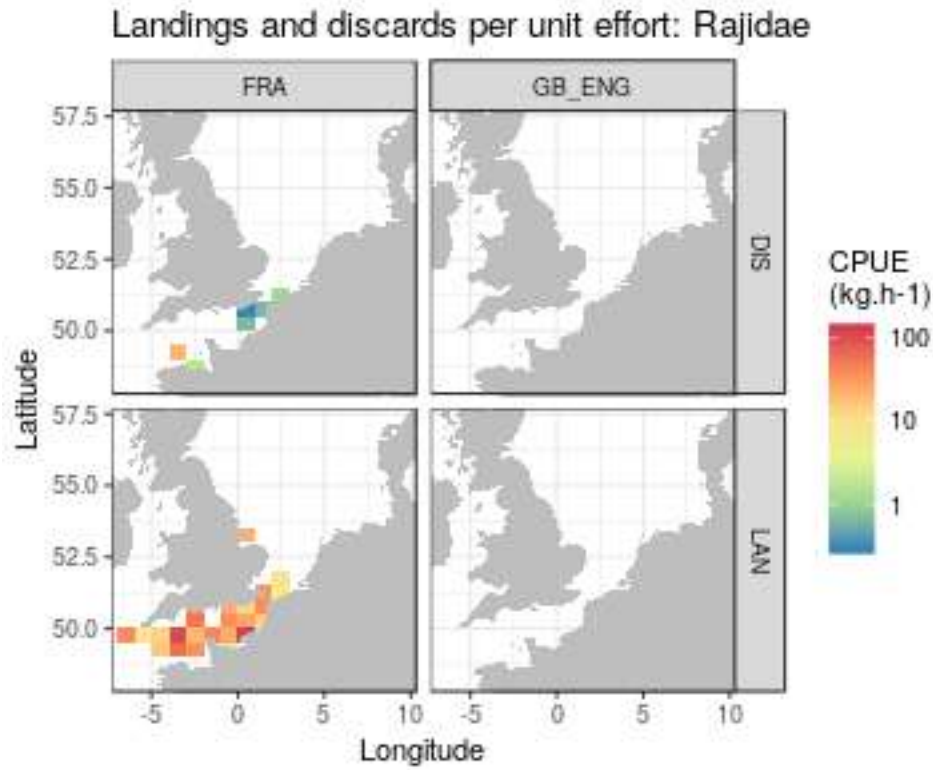


Figure 2.12: Average landing (LAN) and discard (DIS) per hour fishing by country(FRA: France, GB_ENG: England). The color scale is log 10 transformed.

2.2.2.2 Annual catch per unit effort

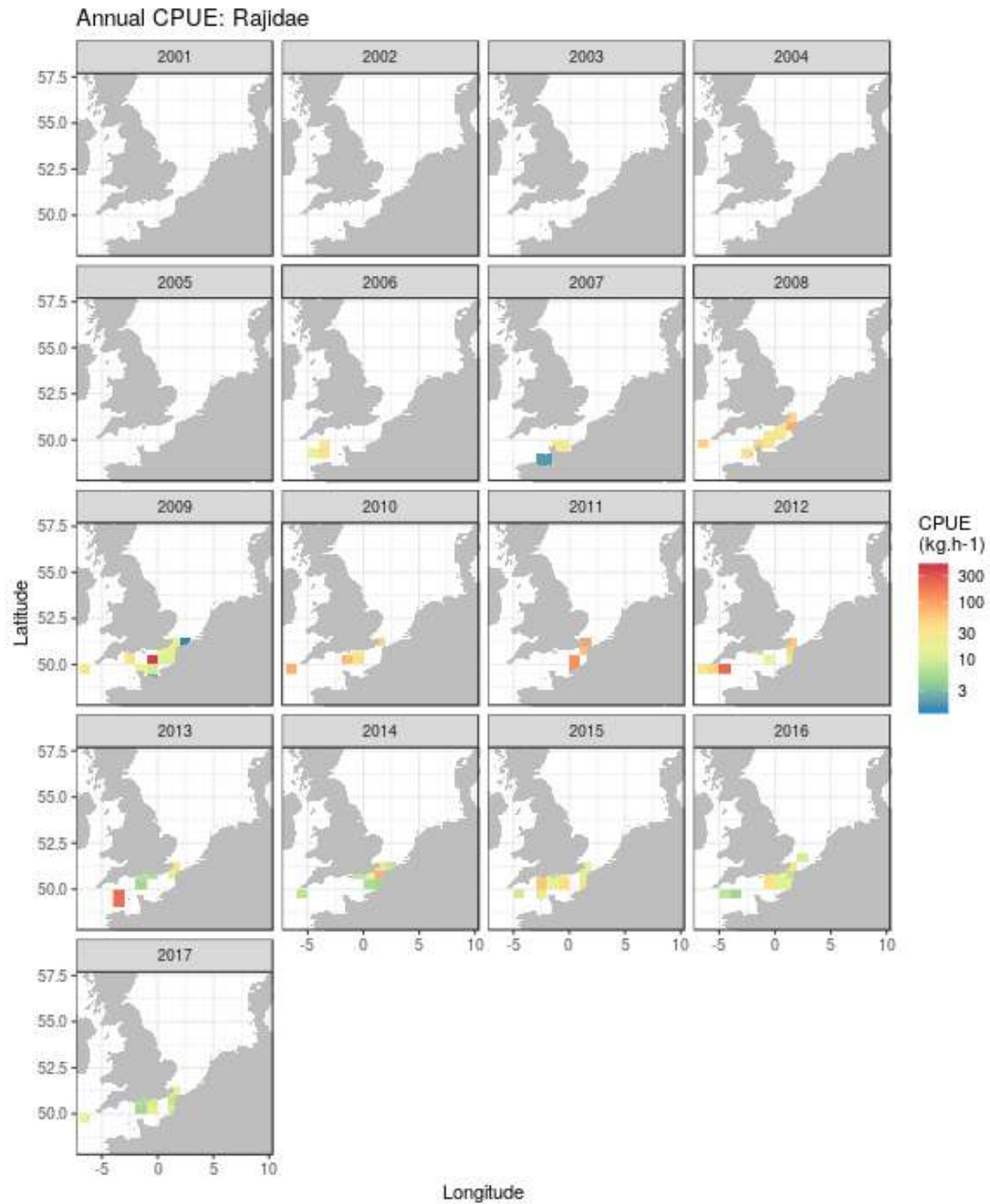


Figure 2.13: Catches per unit effort per year. The color scale is log 10 transformed.

2.2.2.3 Annual catch per unit effort for gear category trawler

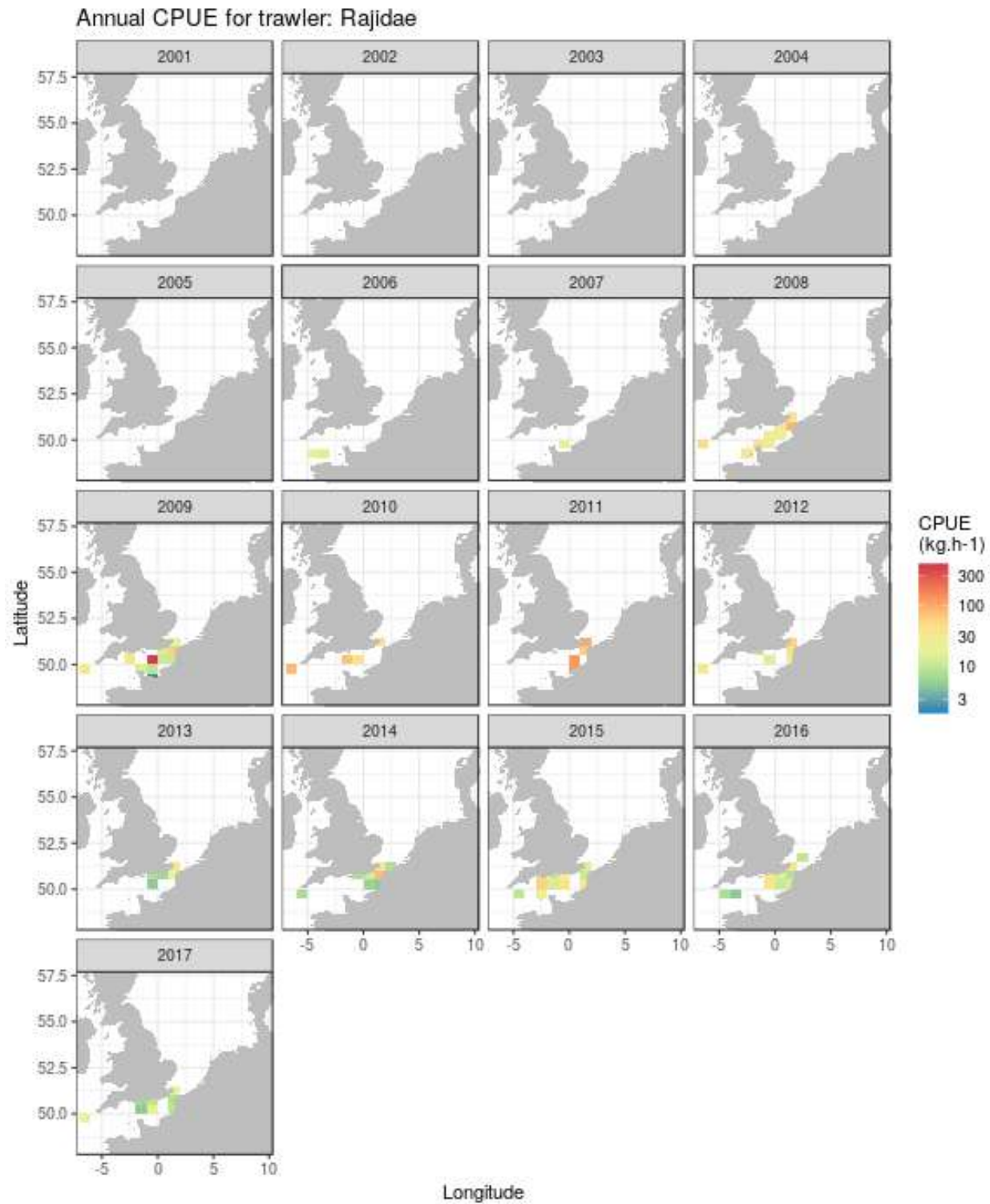


Figure 2.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

2.2.2.4 Annual catch per unit effort for gear category net

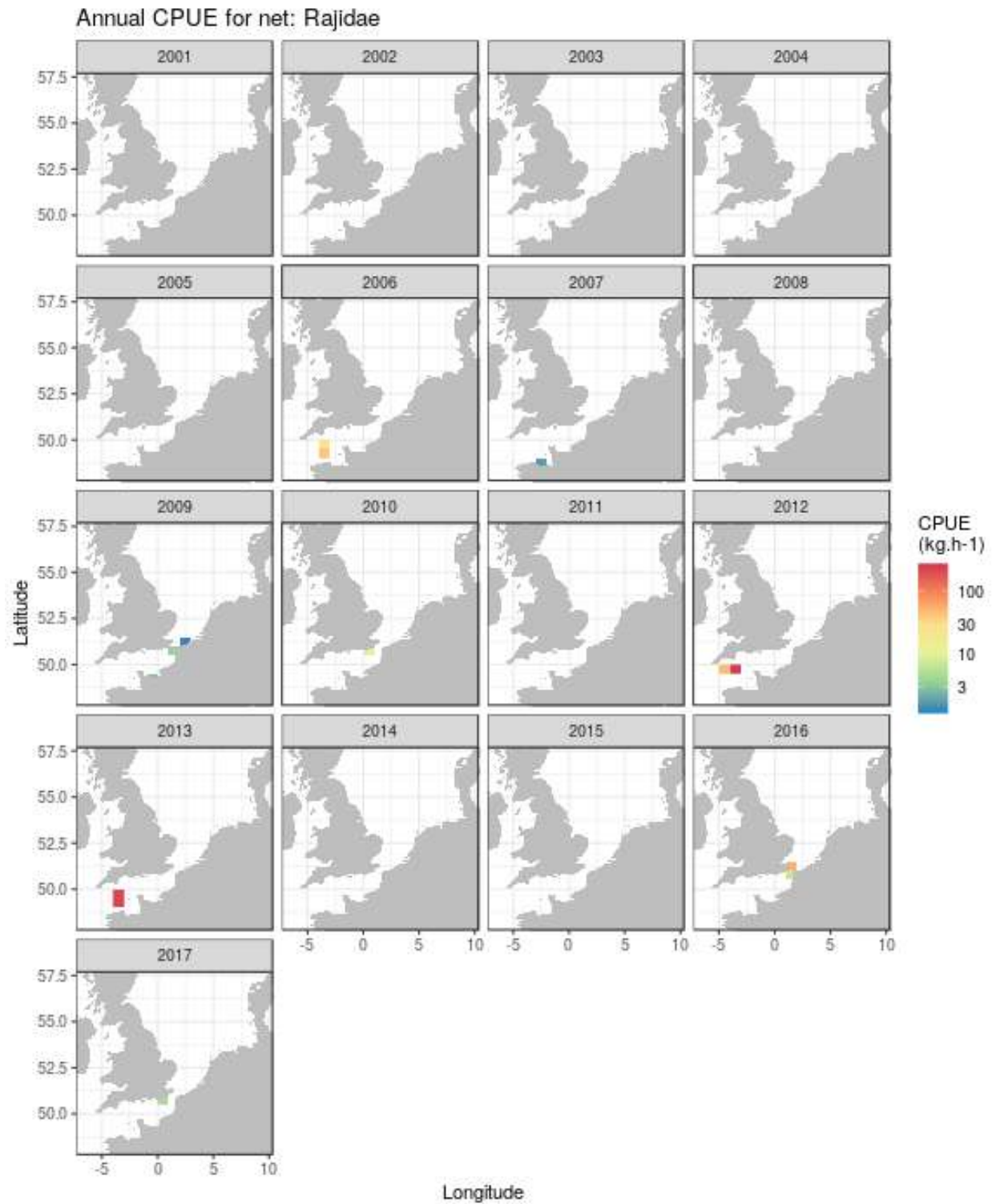


Figure 2.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

2.2.2.5 Annual catch per unit effort for gear category line



Figure 2.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

2.2.2.6 Annual catch per unit effort for gear category other



Figure 2.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

3 *Raja clavata*

3.1 Survey

3.1.1 Average CPUE

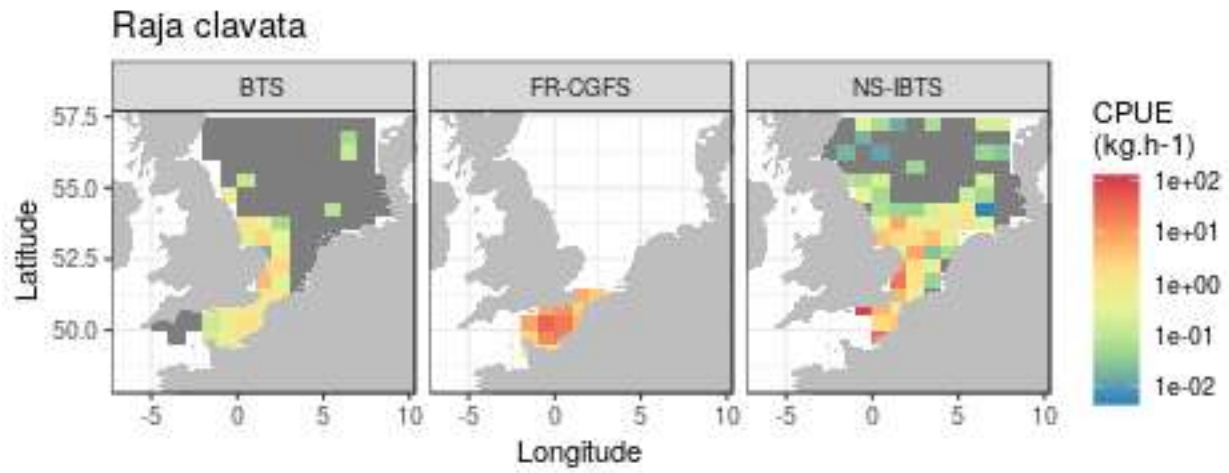


Figure 3.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

3.1.2 Annual CPUE: BTS

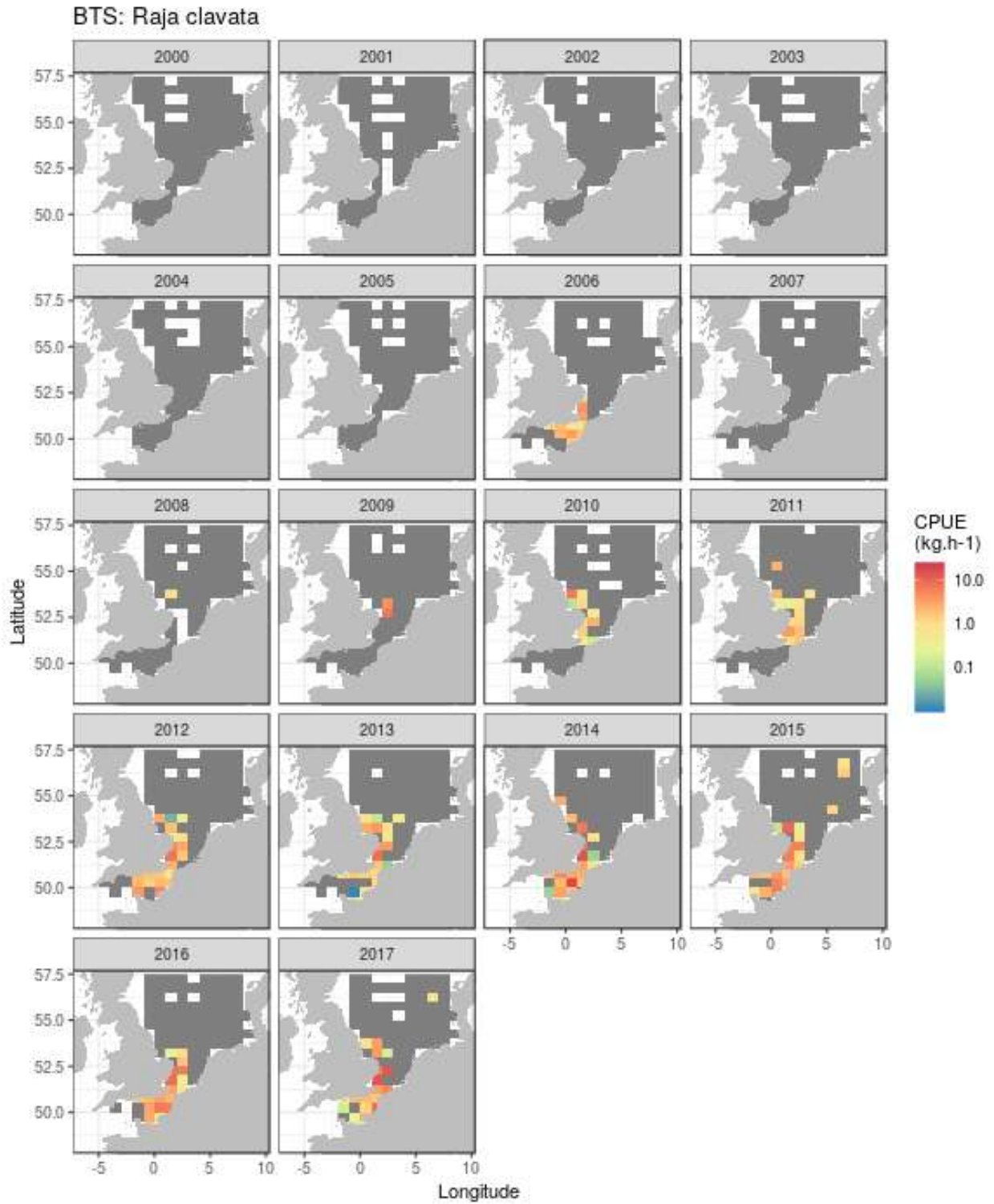


Figure 3.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

3.1.3 Annual CPUE: FR-CGFS

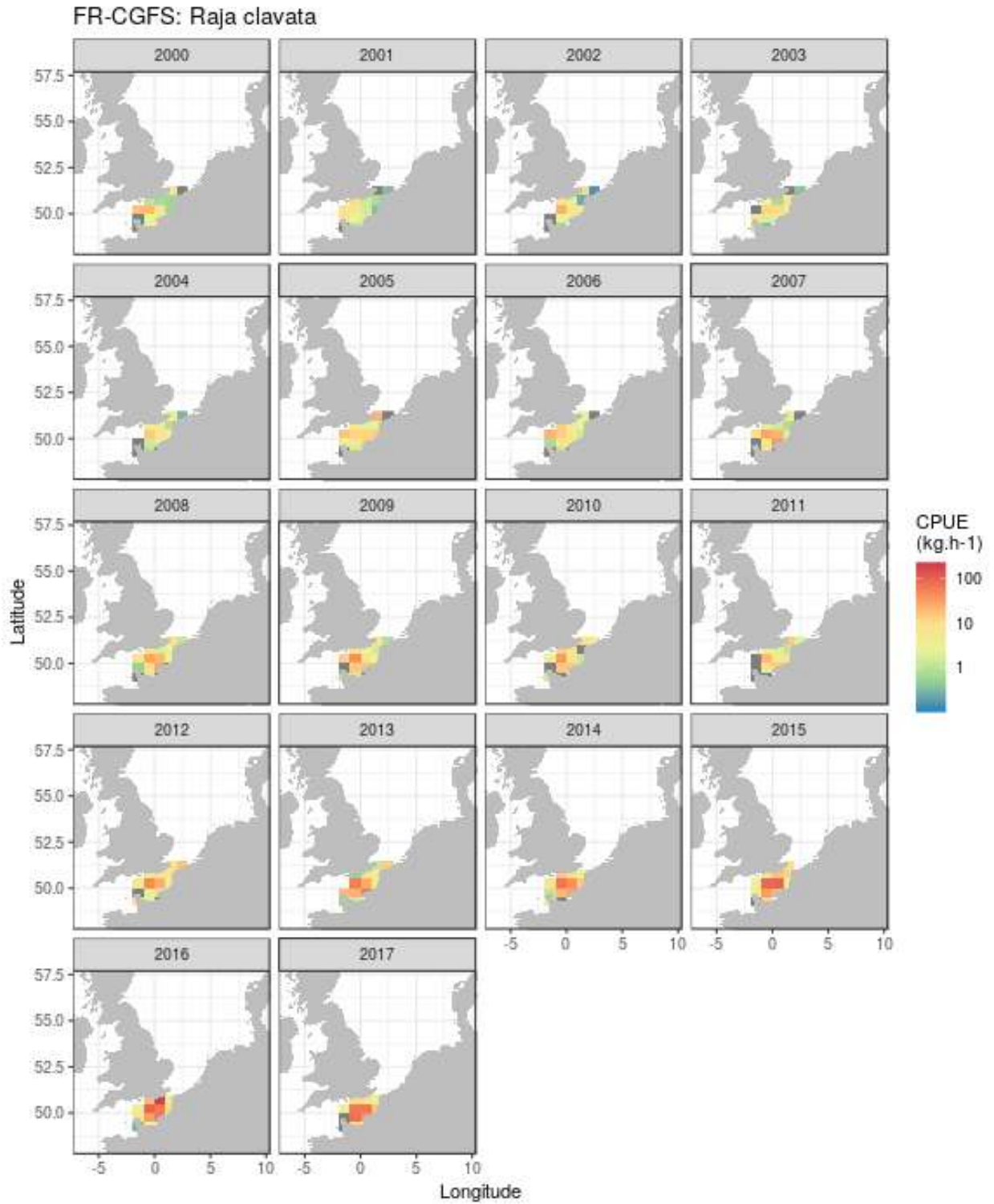


Figure 3.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

3.1.4 Annual CPUE: NS-IBTS

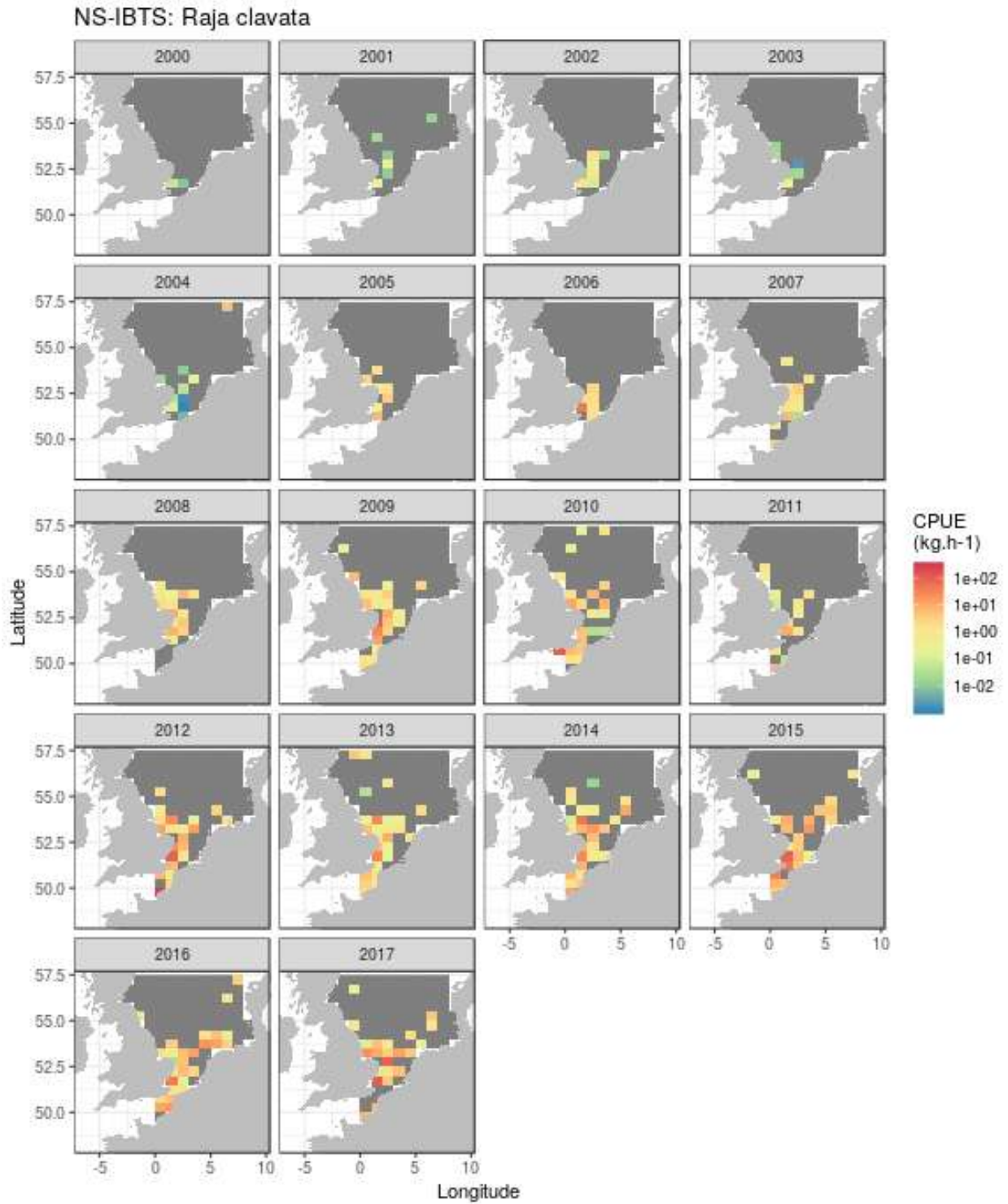


Figure 3.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

3.2 Fishery dependent information

3.2.1 Landings

3.2.1.1 Landings by country

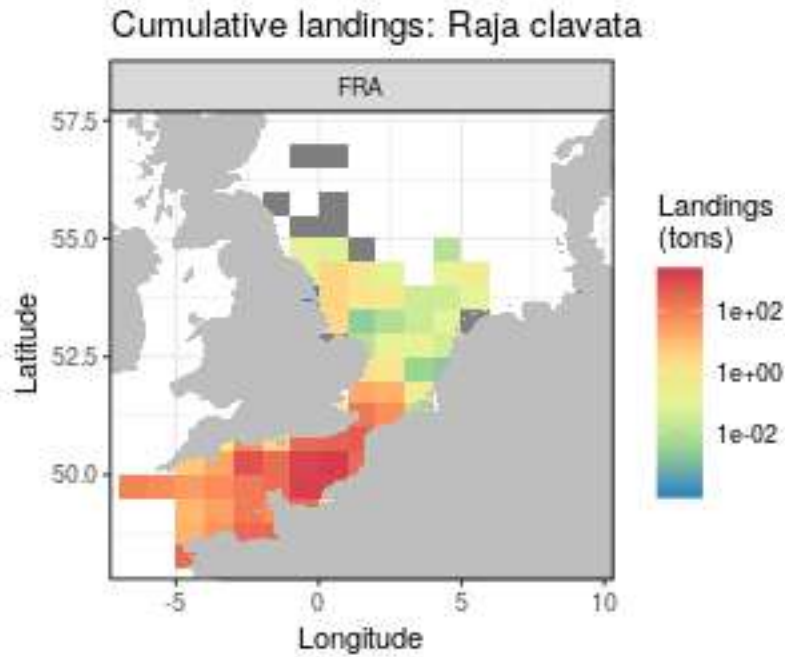


Figure 3.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

3.2.1.2 Landings by country and gear category

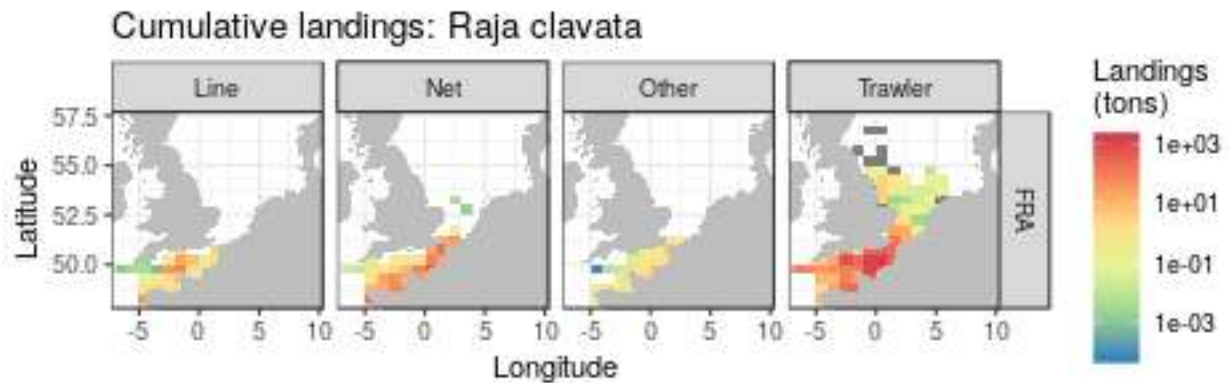


Figure 3.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

3.2.1.3 Annual landings

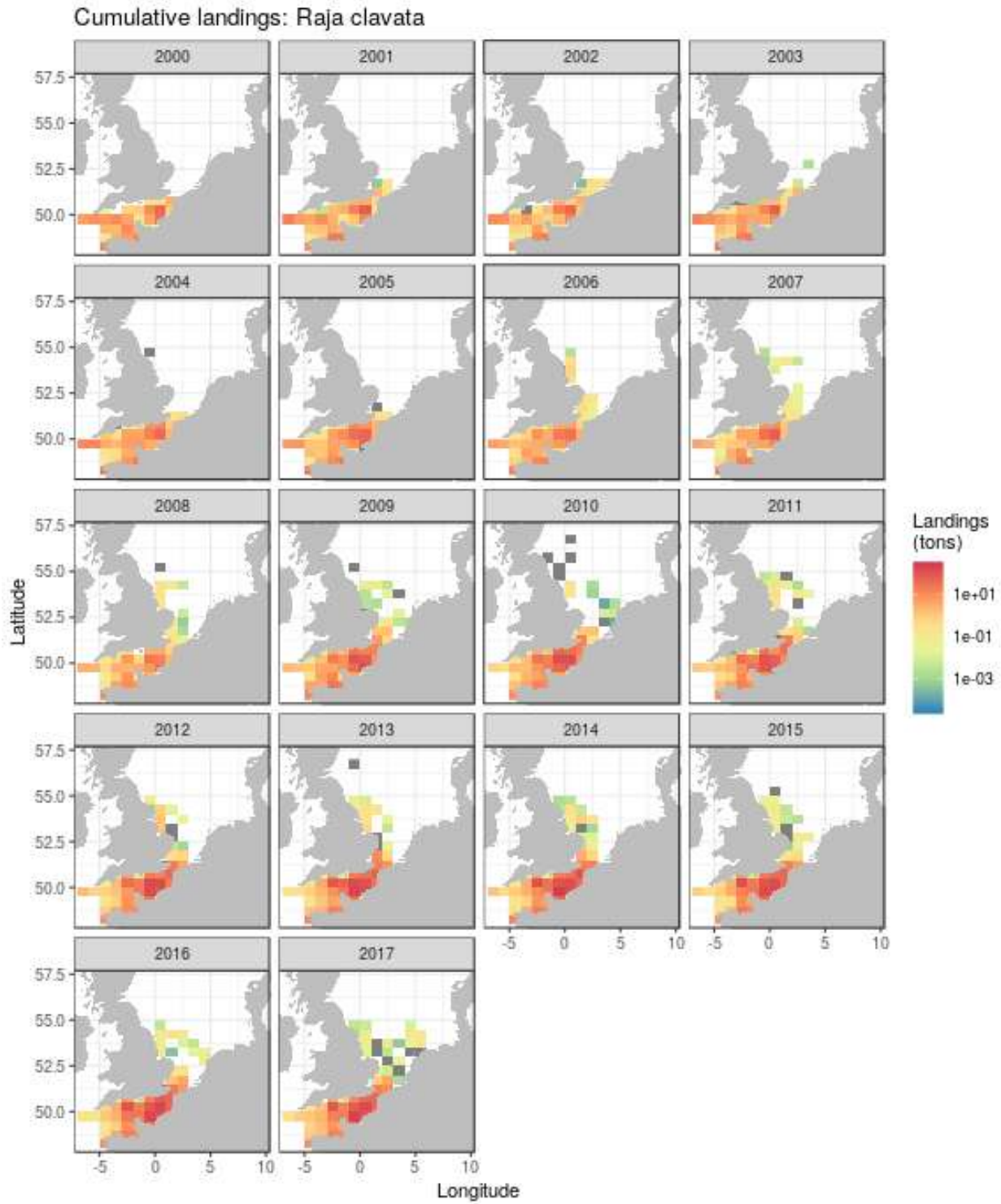


Figure 3.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

3.2.1.4 Annual landings for gear category trawler

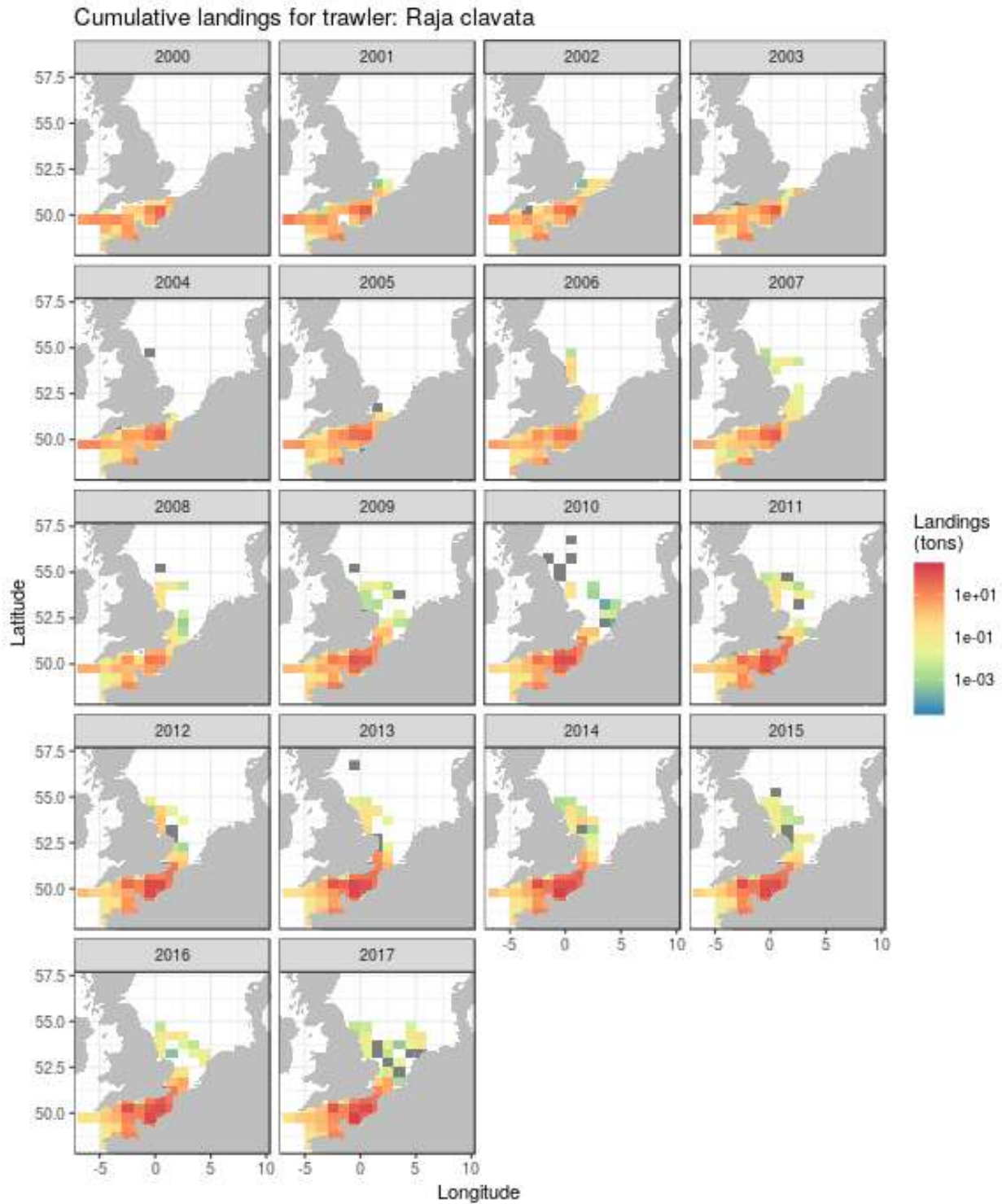


Figure 3.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

3.2.1.5 Annual landings for gear category nets

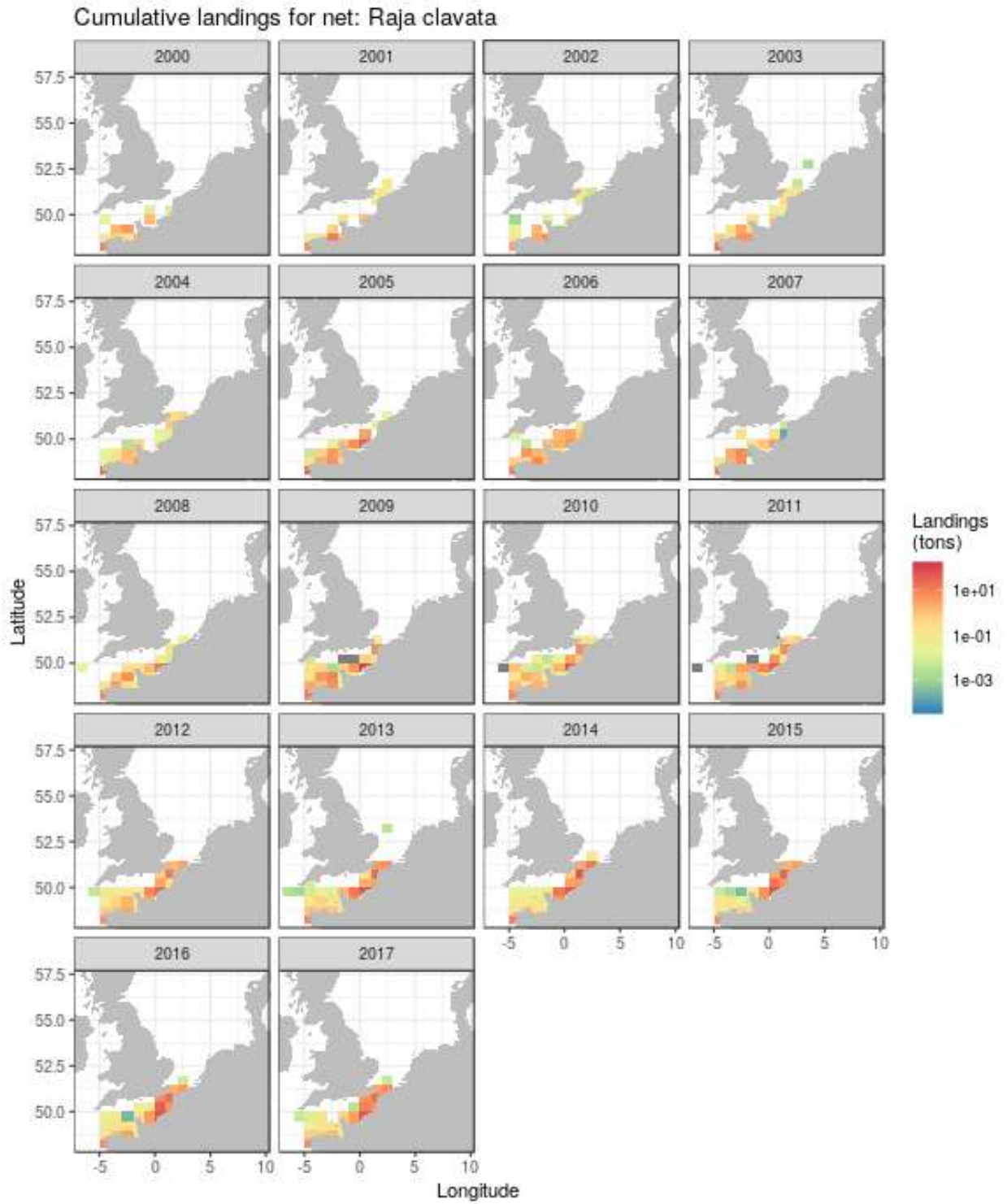


Figure 3.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

3.2.1.6 Annual landings for gear category lines

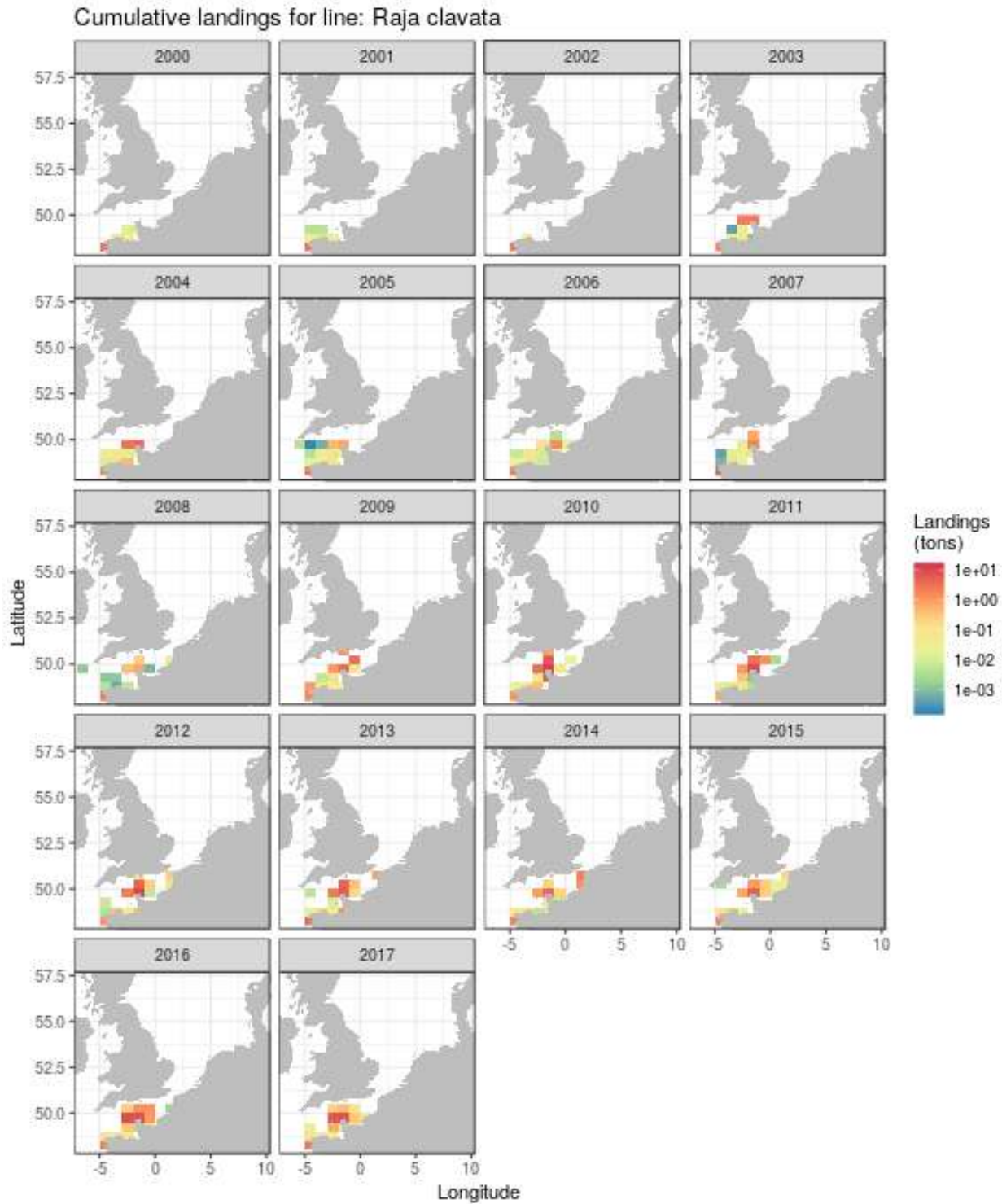


Figure 3.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

3.2.1.7 Annual landings for gear category other

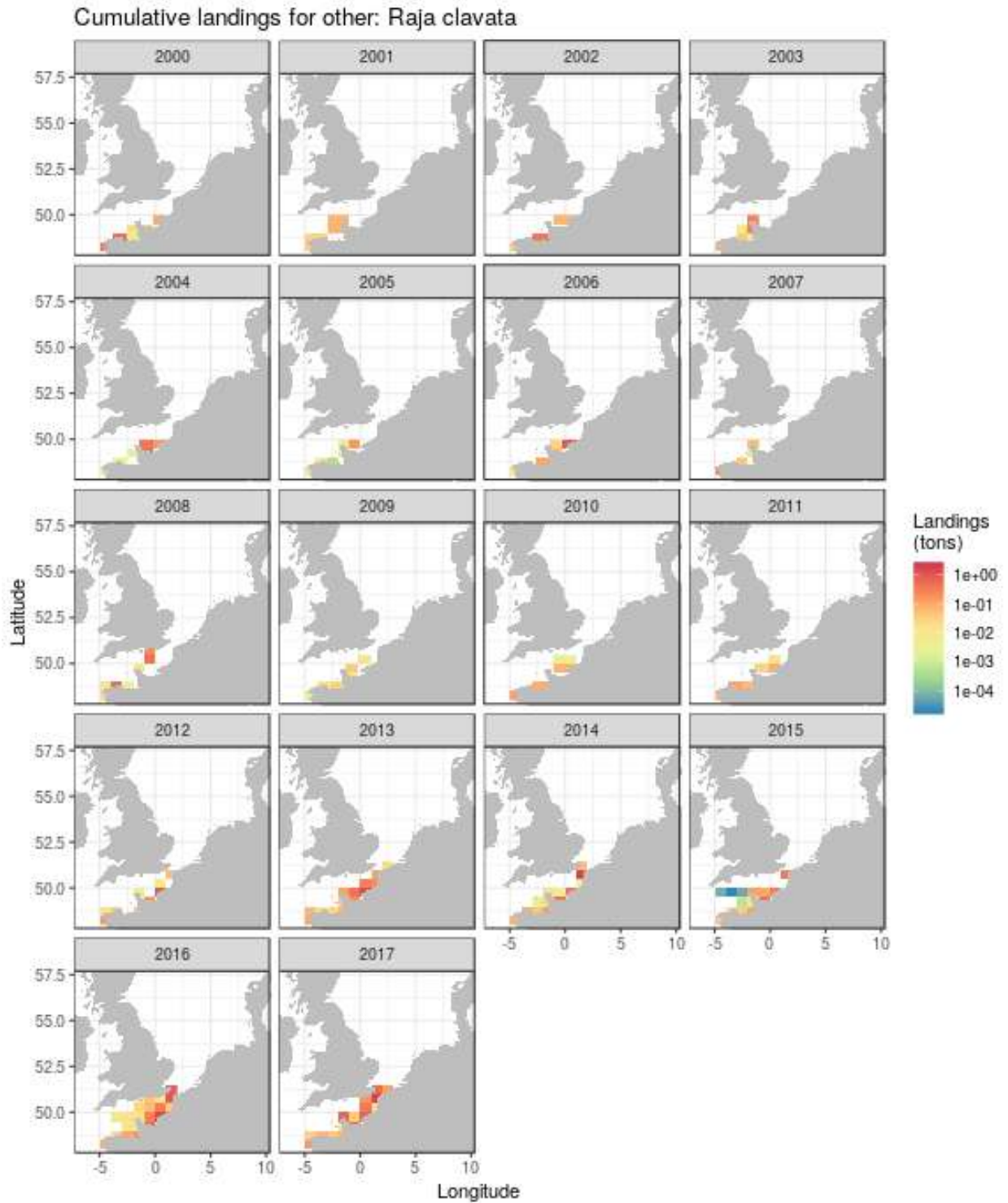


Figure 3.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

3.2.2 Commercial sampling

3.2.2.1 Landings and discards per unit effort and country

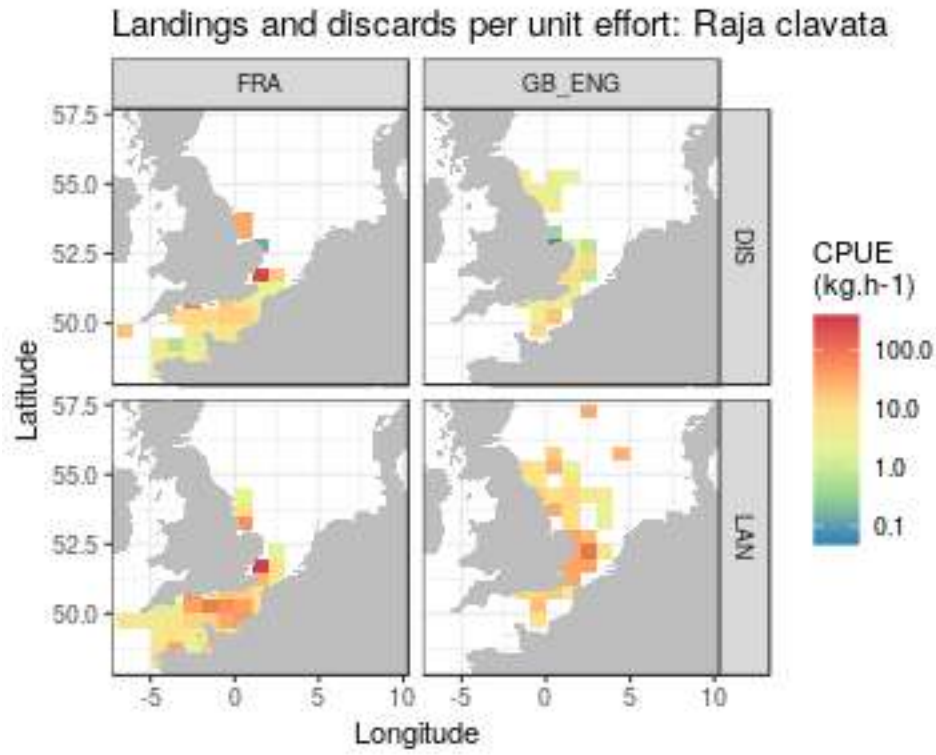


Figure 3.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

3.2.2.2 Annual catch per unit effort

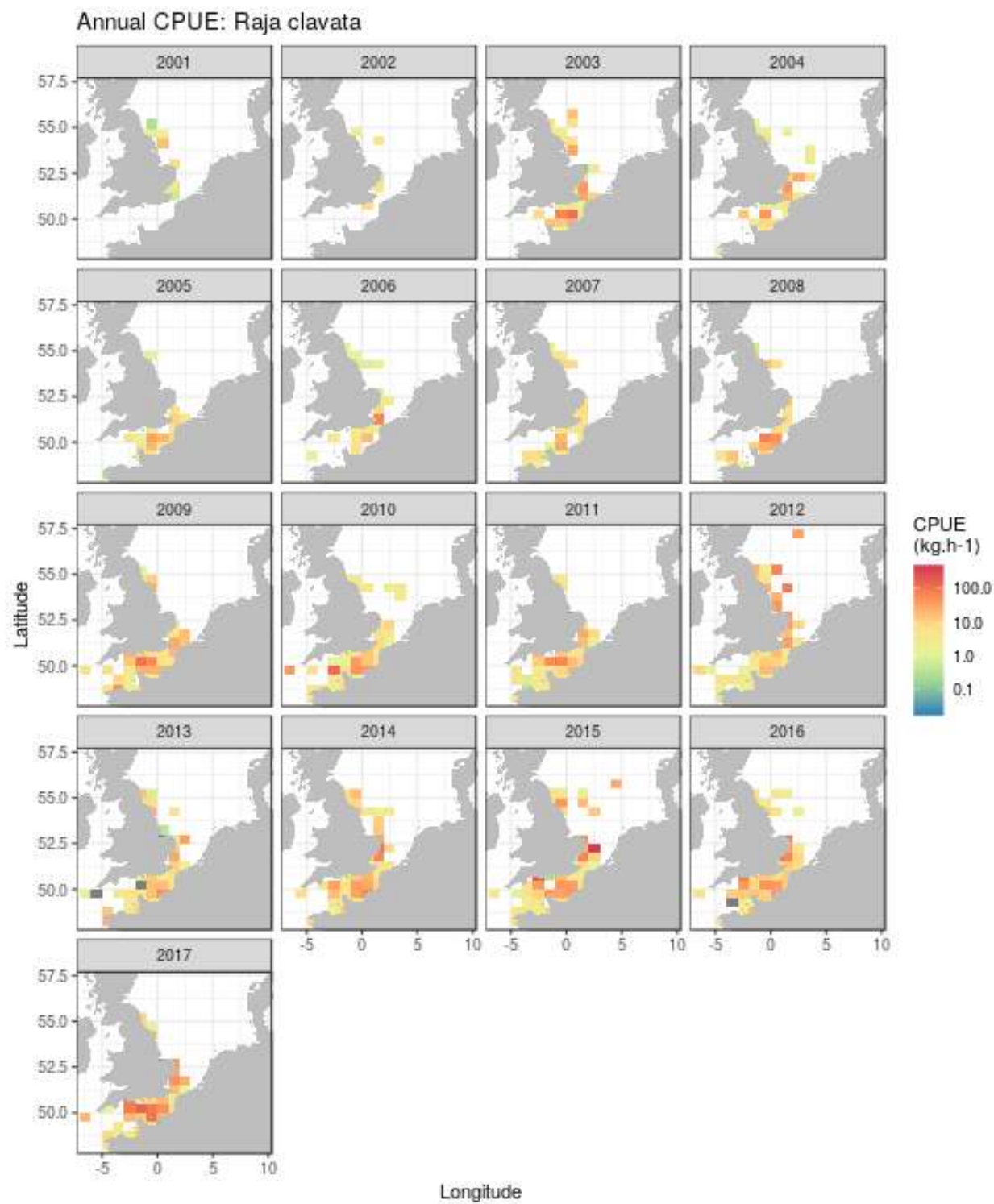


Figure 3.13: Catches per unit effort per year. The color scale is log 10 transformed.

3.2.2.3 Annual catch per unit effort for gear category trawler

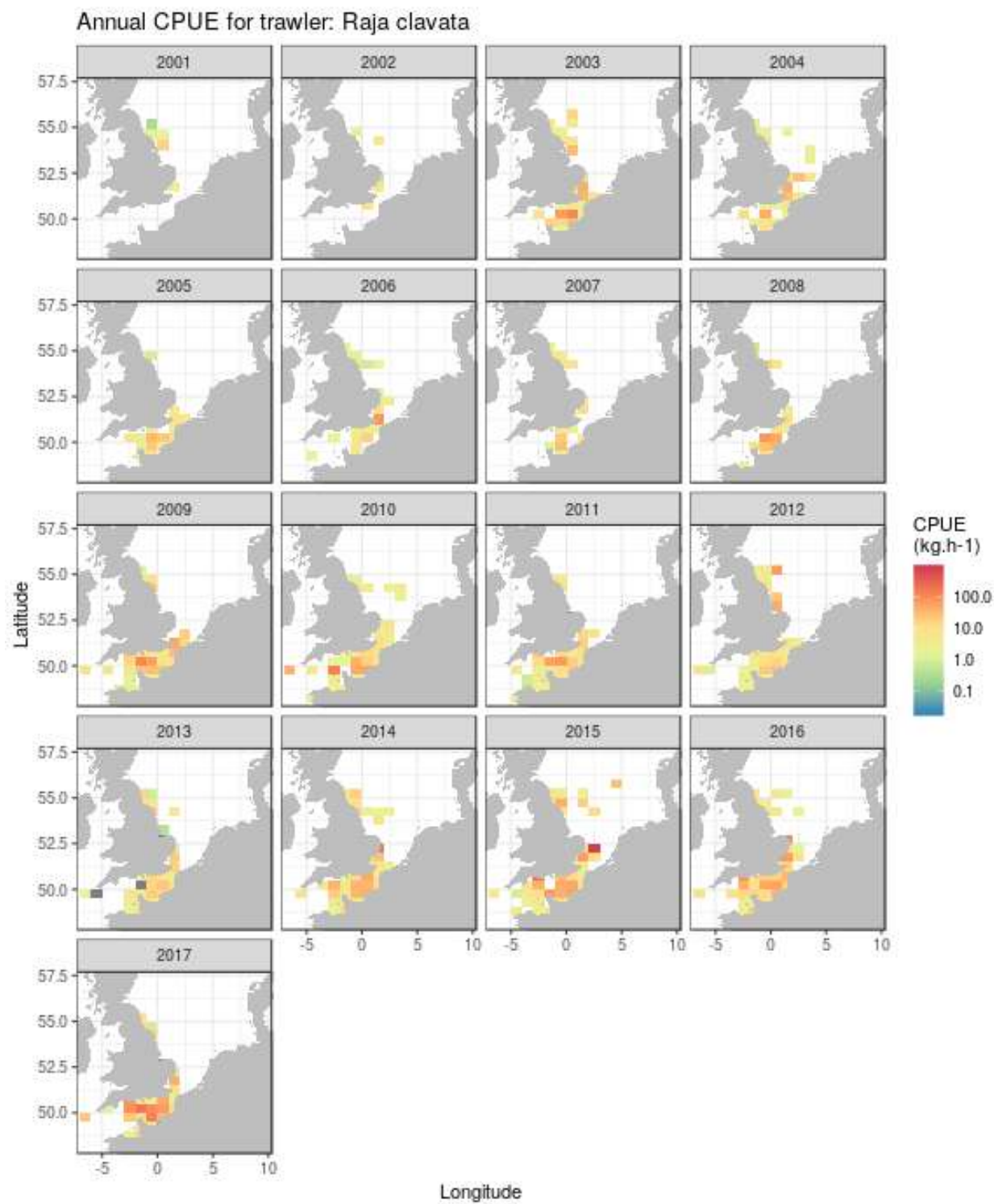


Figure 3.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

3.2.2.4 Annual catch per unit effort for gear category net

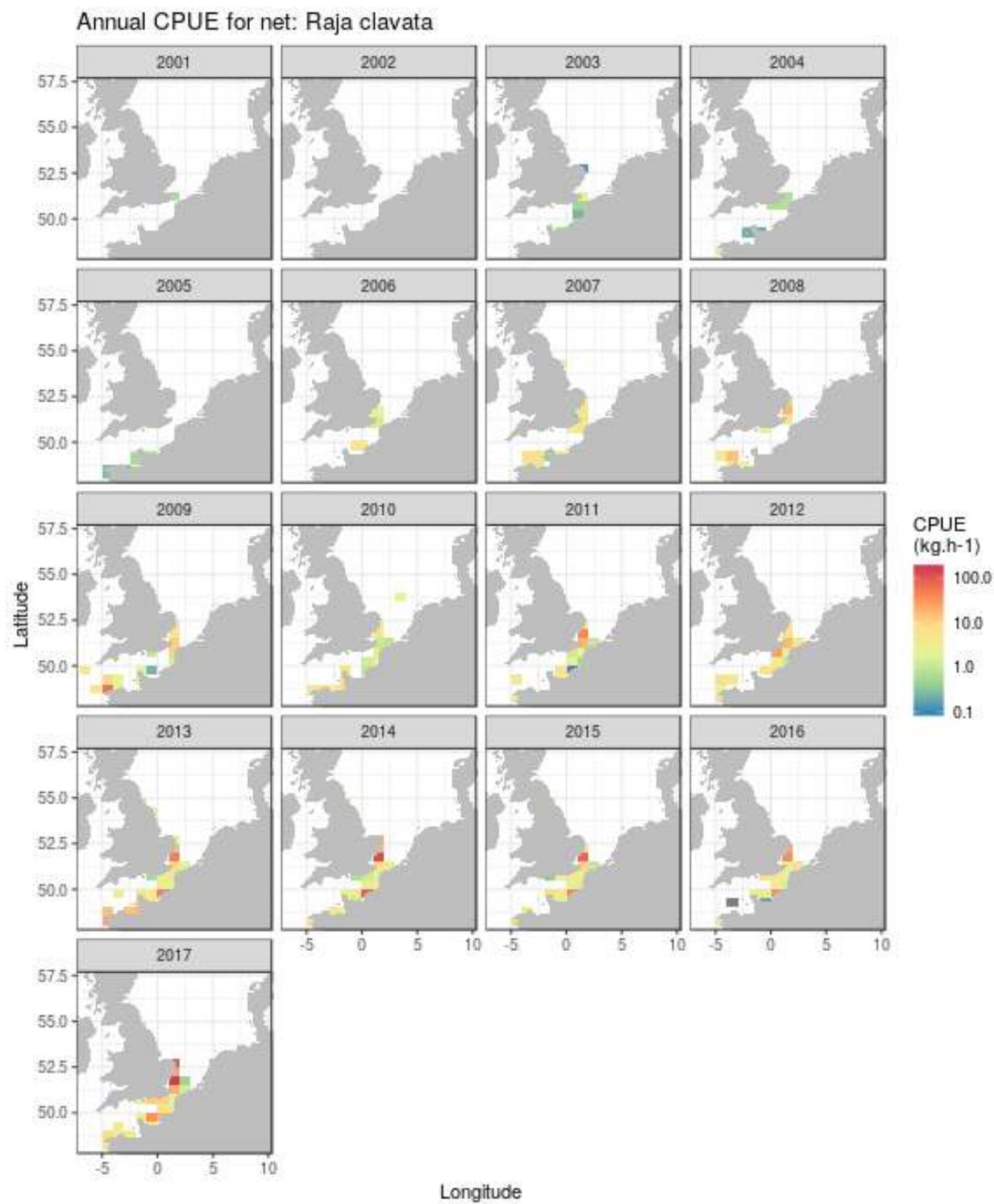


Figure 3.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

3.2.2.5 Annual catch per unit effort for gear category line

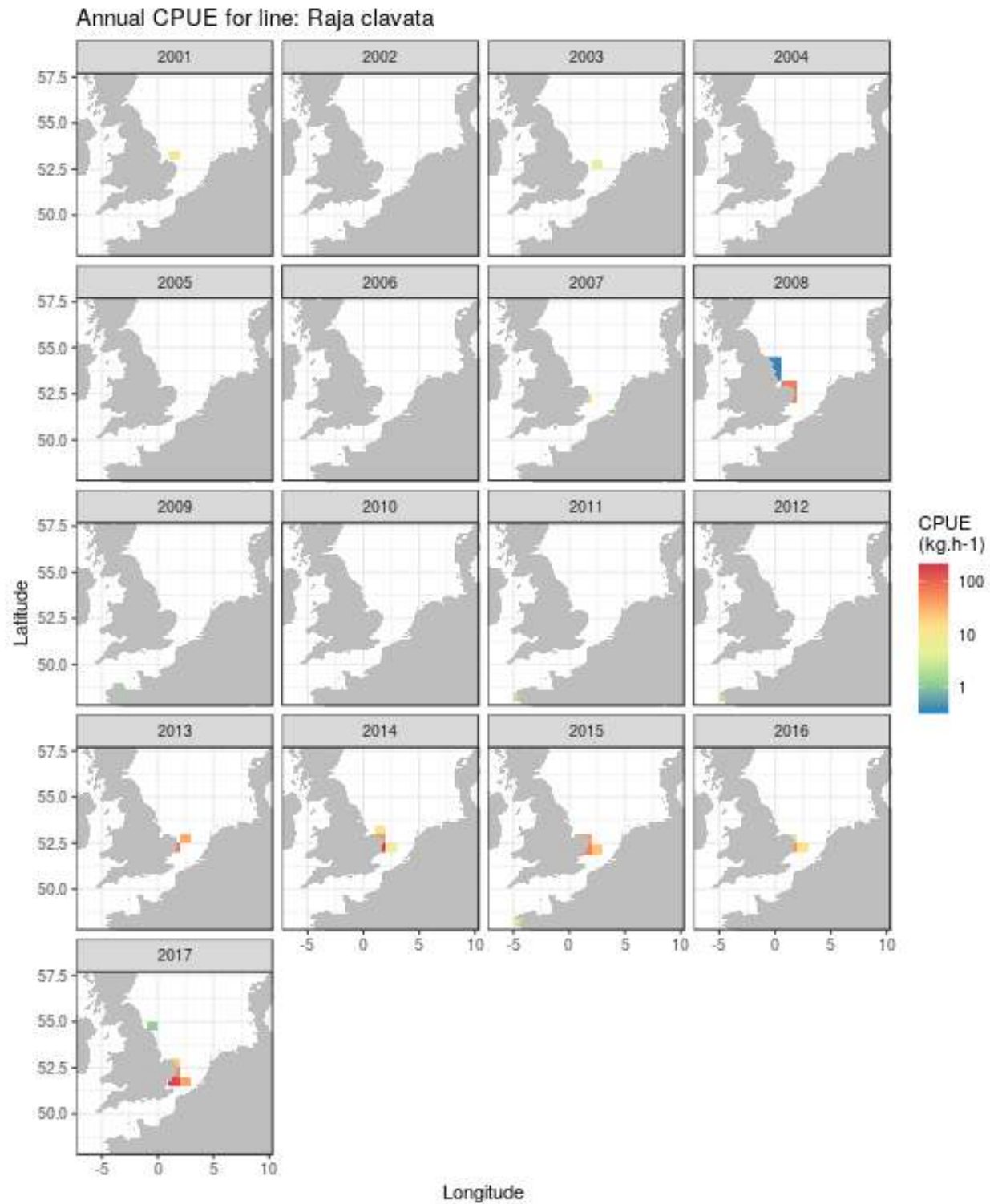


Figure 3.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

3.2.2.6 Annual catch per unit effort for gear category other

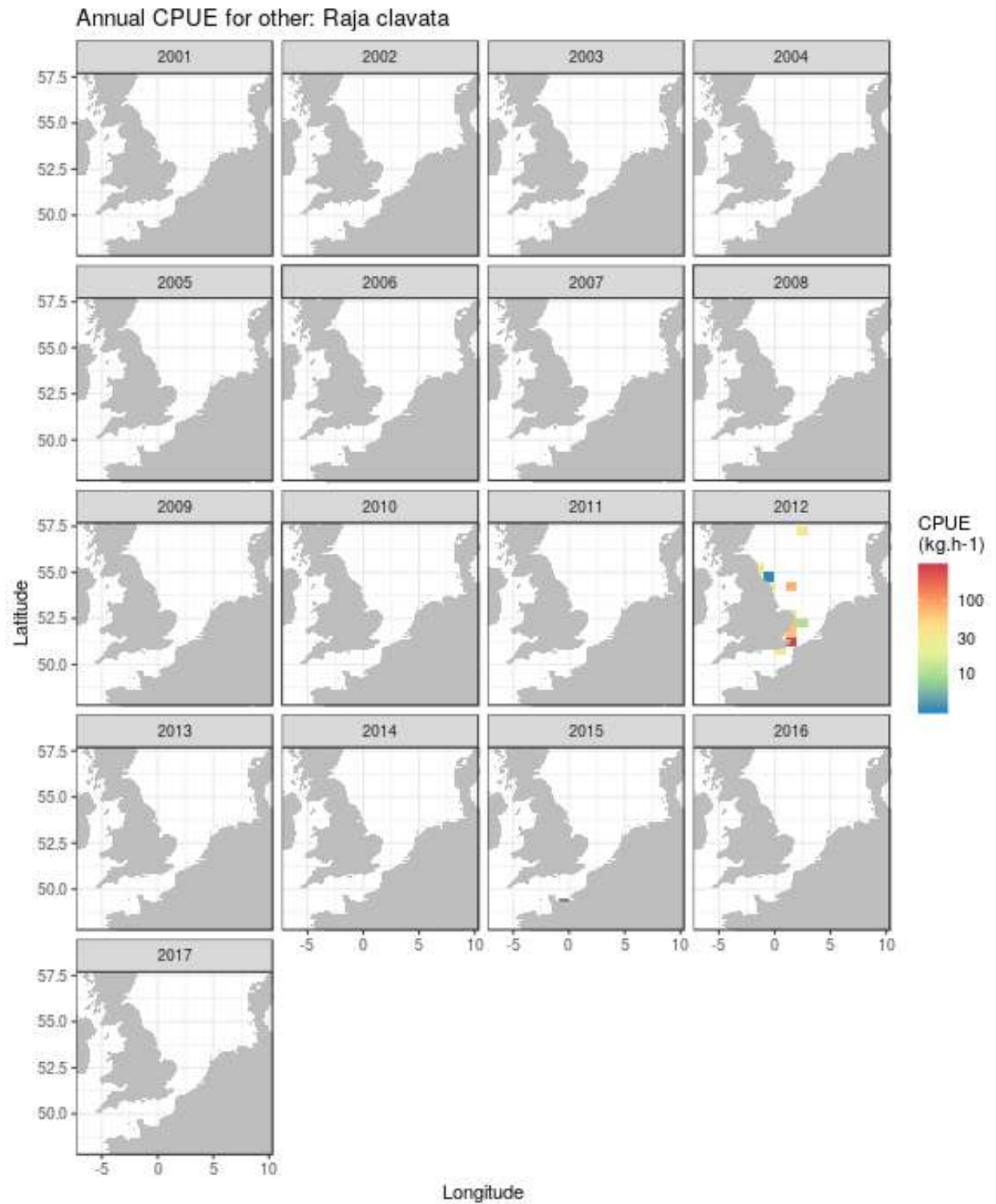


Figure 3.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

4 Raja montagui

4.1 Survey

4.1.1 Average CPUE

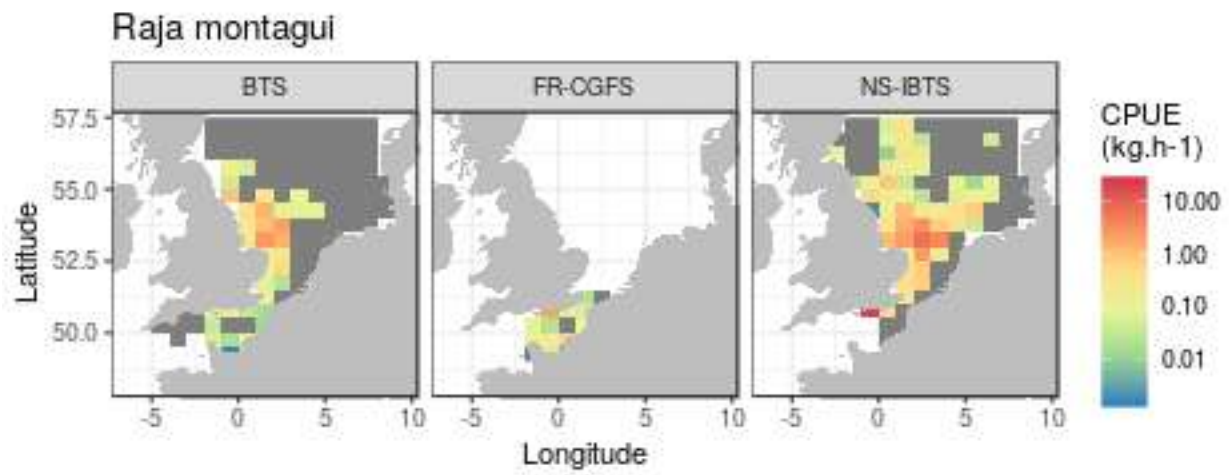


Figure 4.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

4.1.2 Annual CPUE: BTS

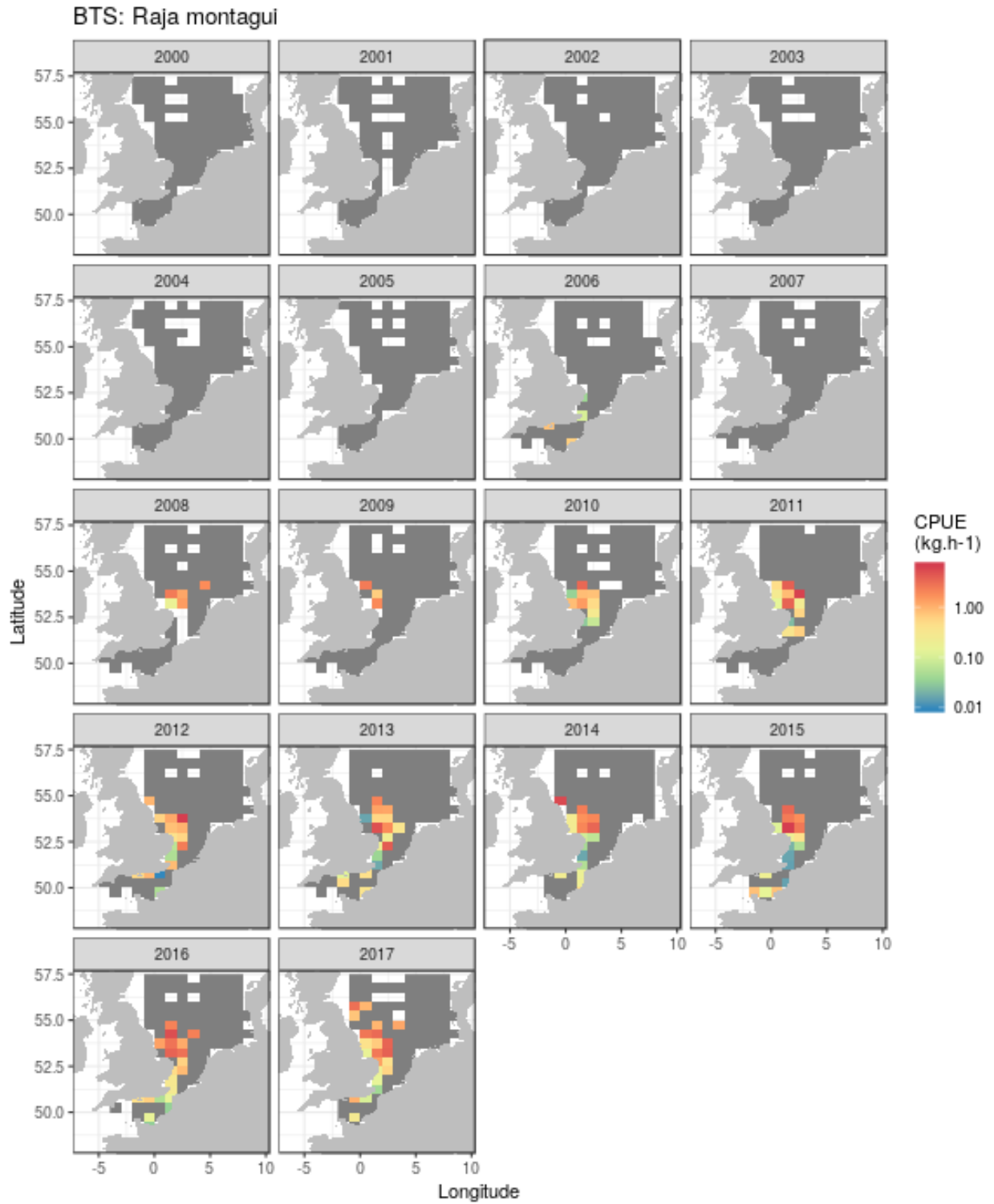


Figure 4.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

4.1.3 Annual CPUE: FR-CGFS

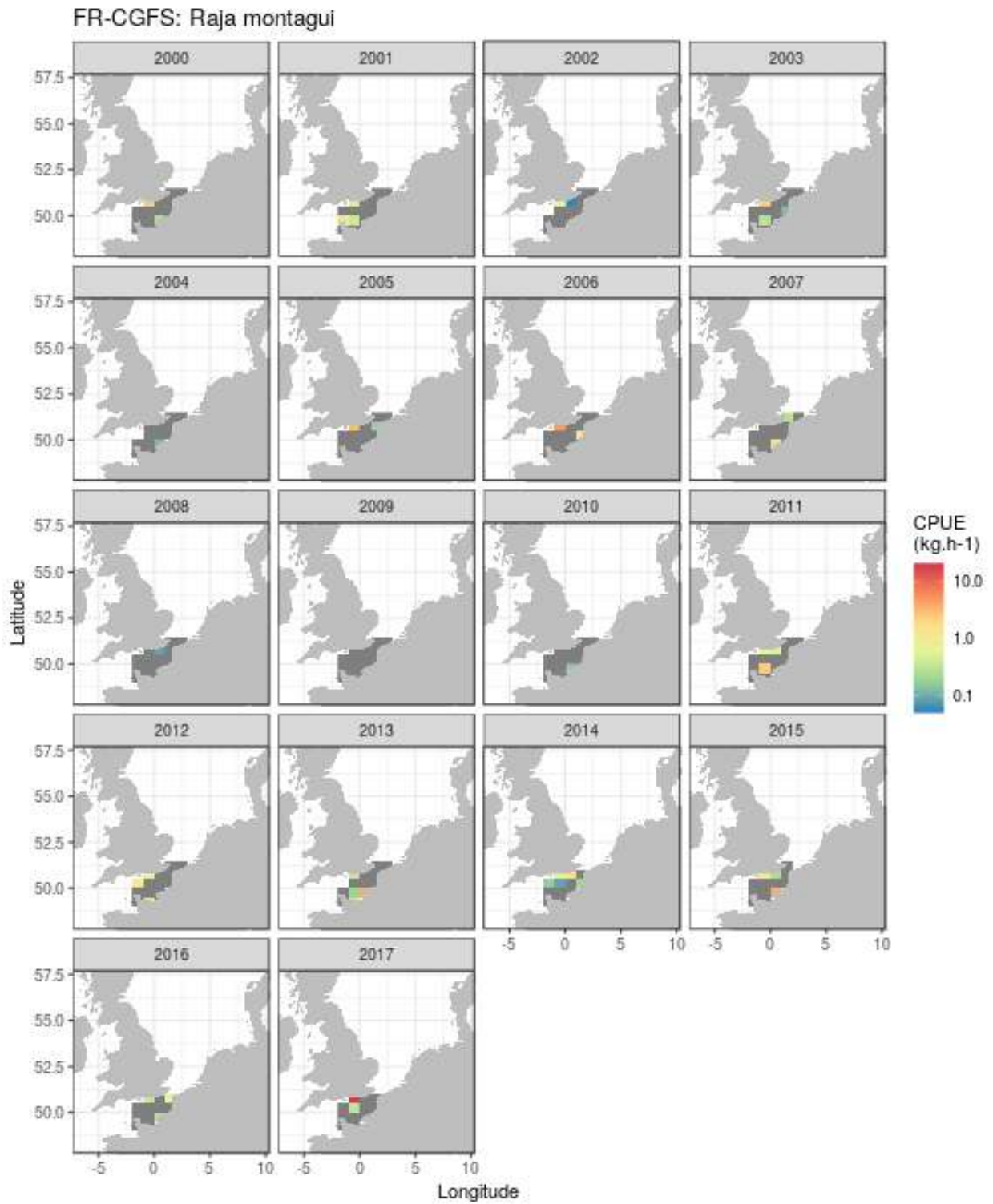


Figure 4.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log₁₀ transformed.

4.1.4 Annual CPUE: NS-IBTS

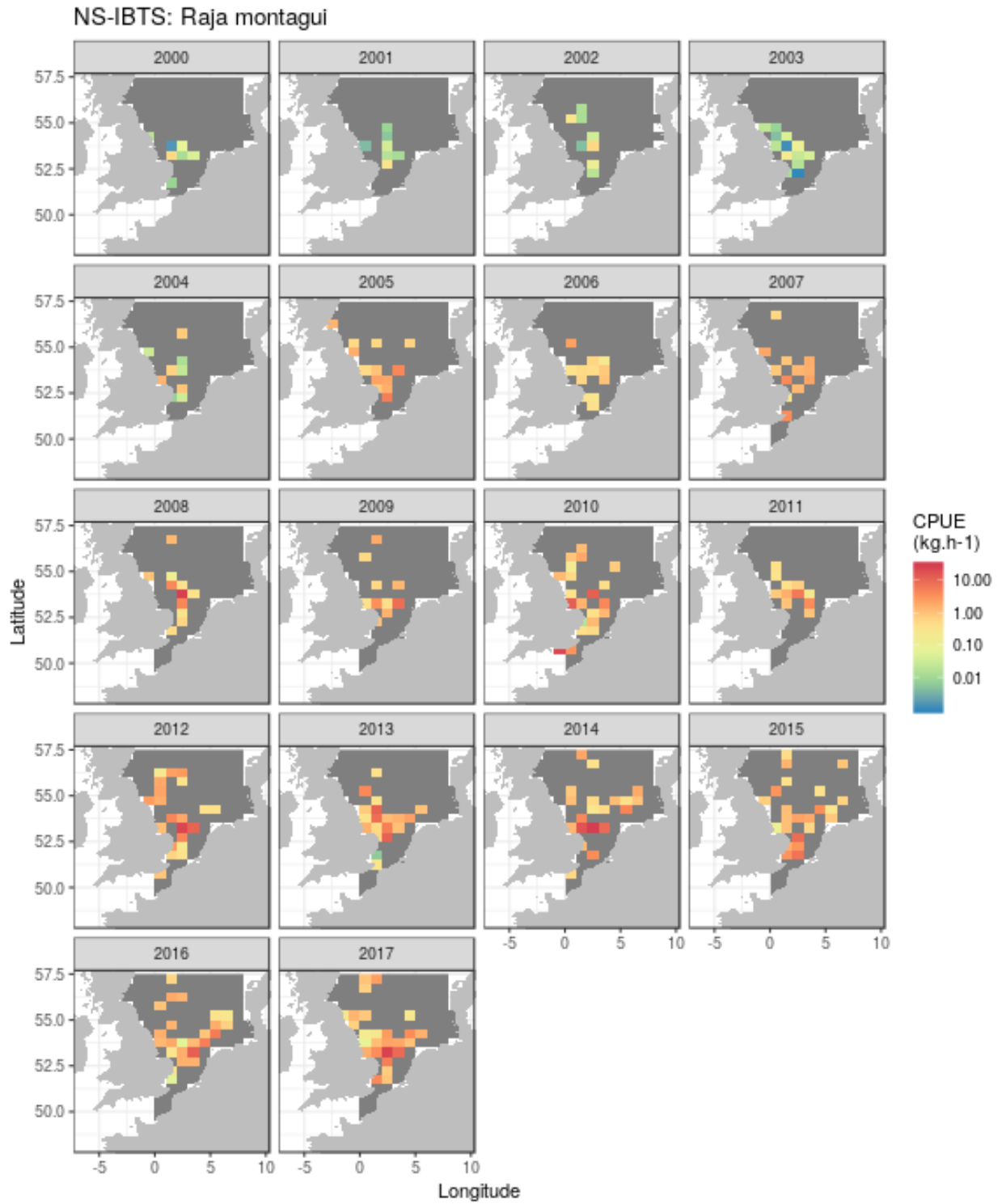


Figure 4.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

4.2 Fishery dependent information

4.2.1 Landings

4.2.1.1 Landings by country

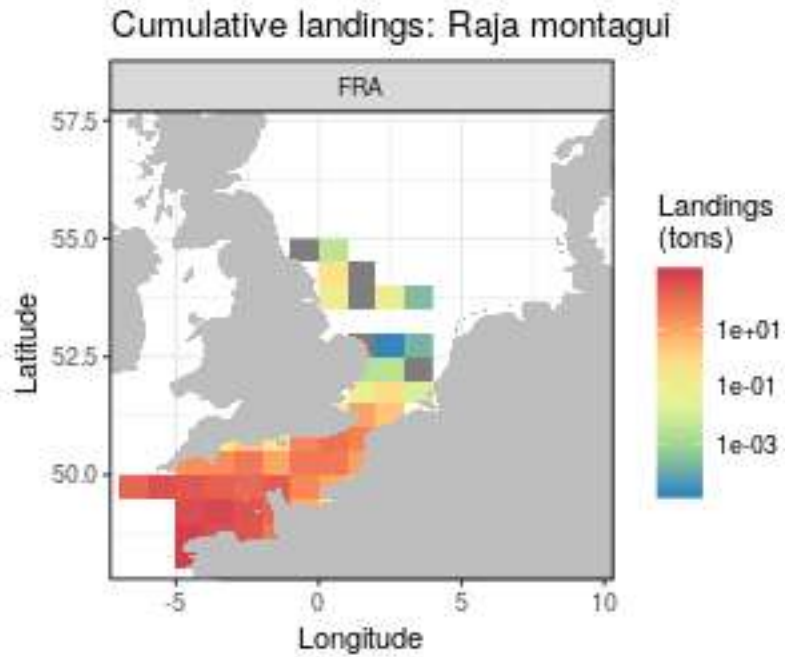


Figure 4.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

4.2.1.2 Landings by country and gear category

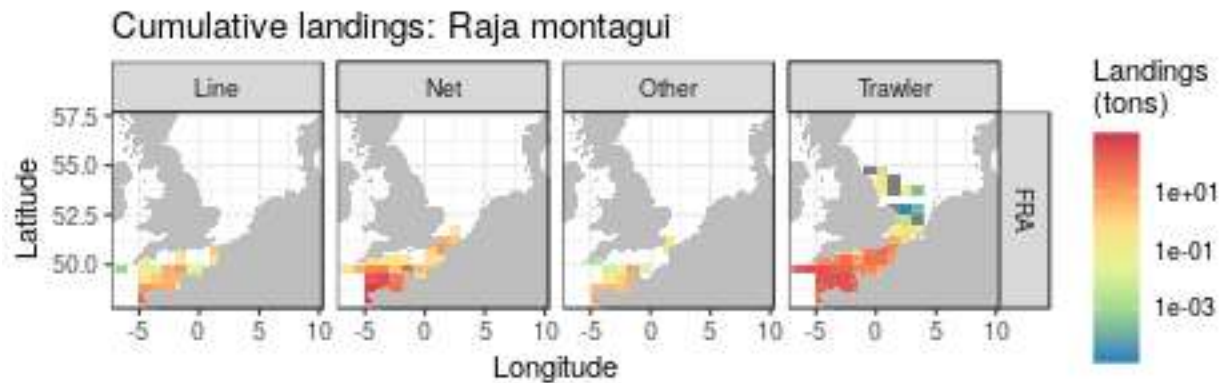


Figure 4.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

4.2.1.3 Annual landings

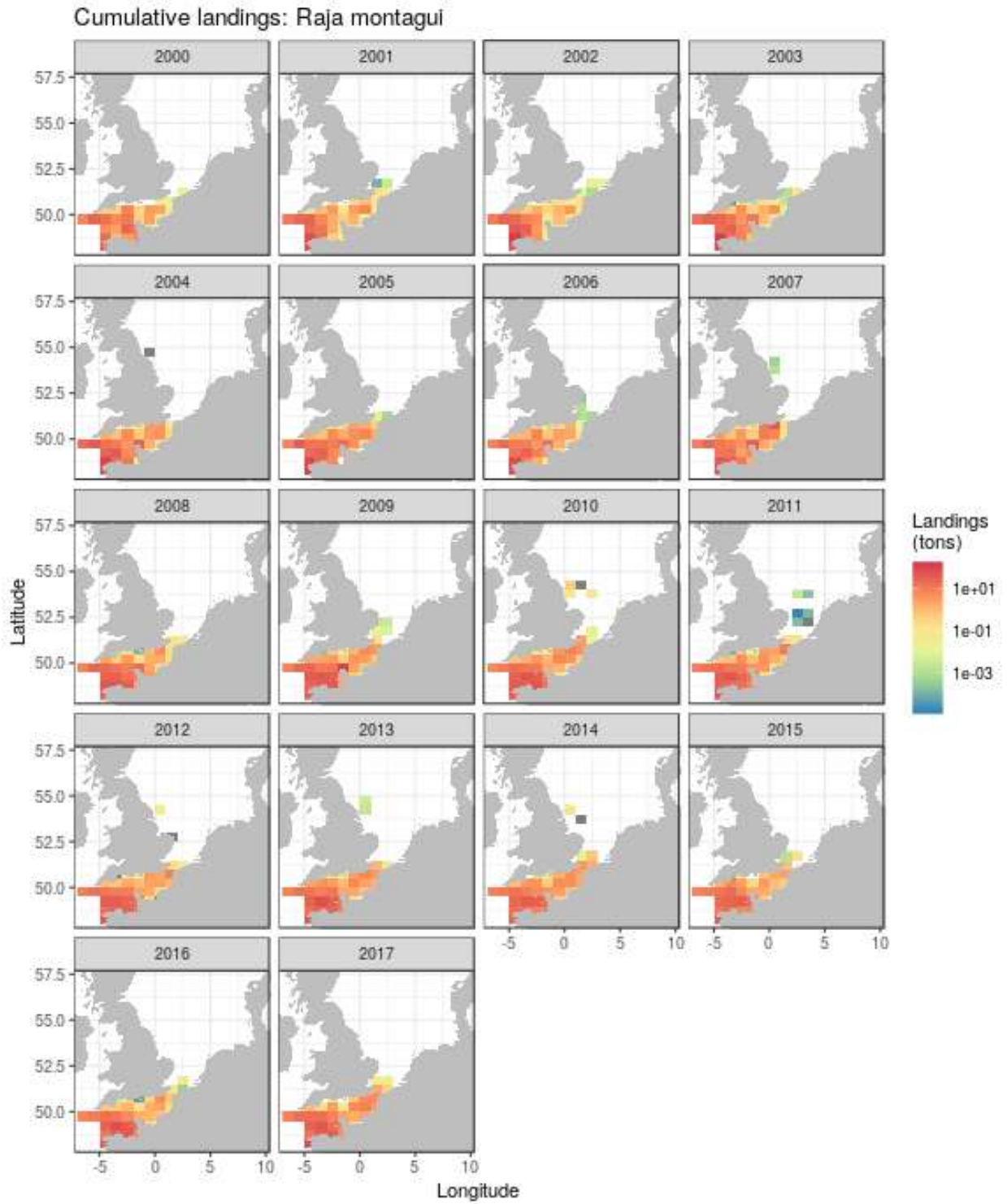


Figure 4.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

4.2.1.4 Annual landings for gear category trawler

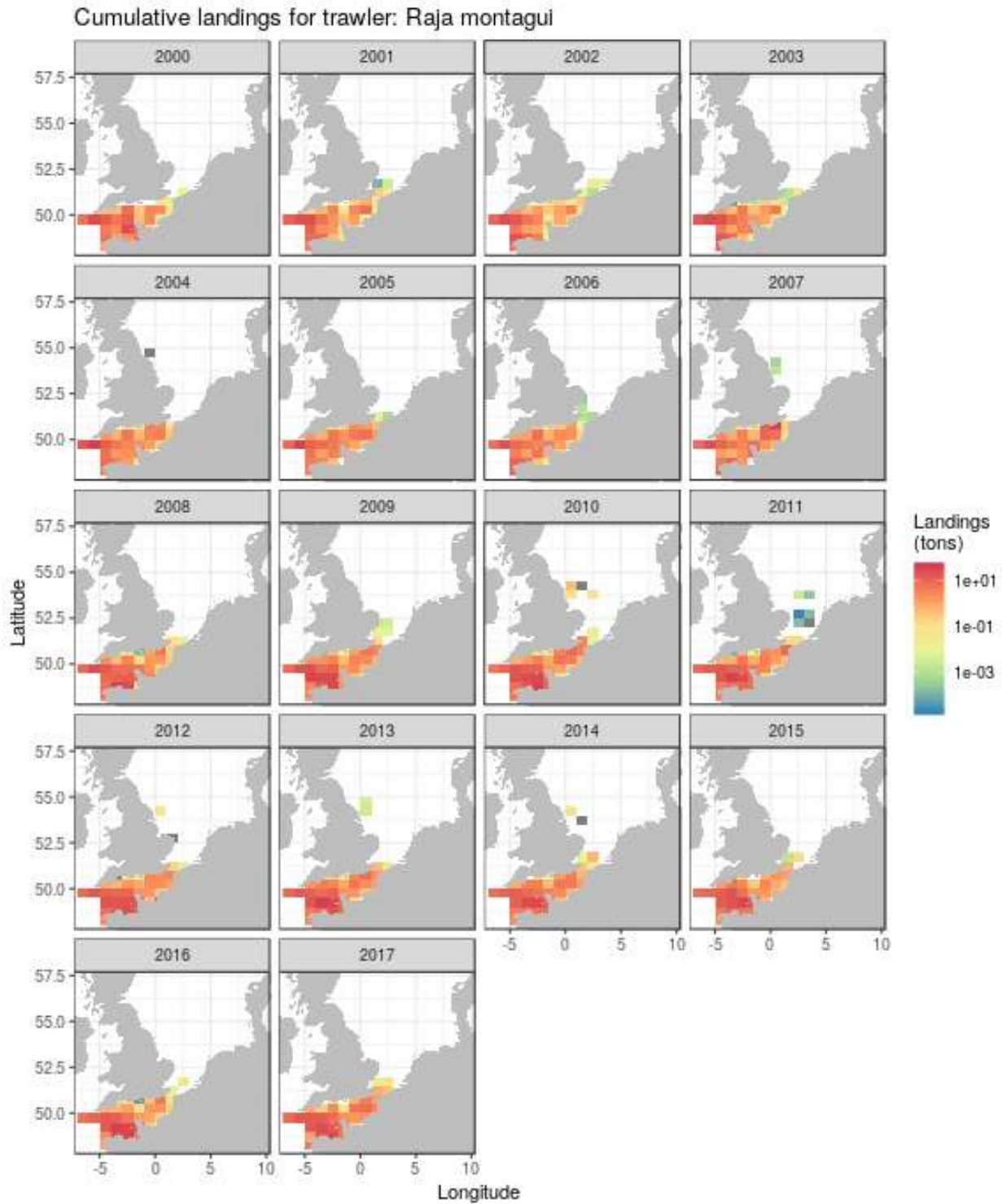


Figure 4.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

4.2.1.5 Annual landings for gear category nets

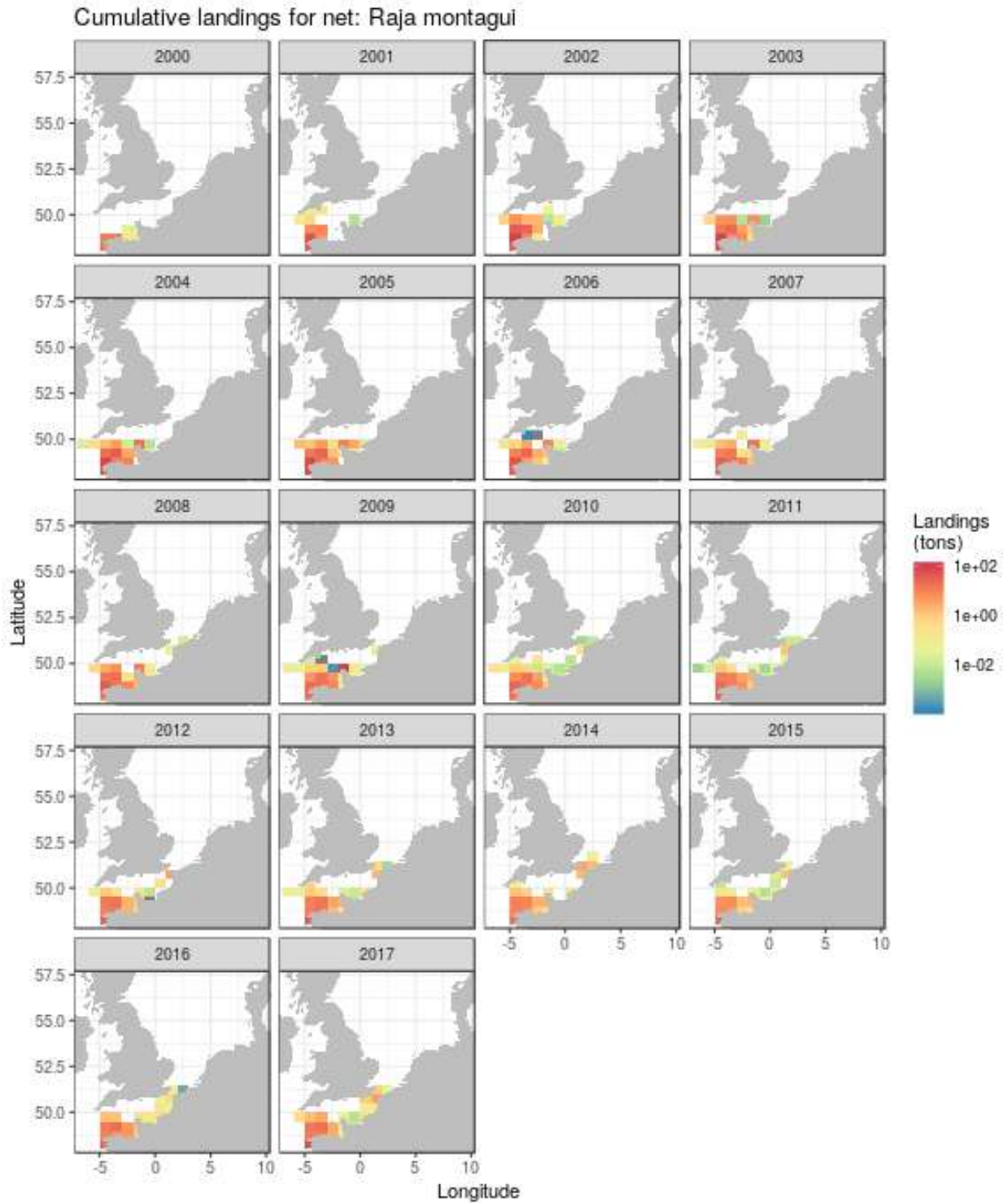


Figure 4.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

4.2.1.6 Annual landings for gear category lines

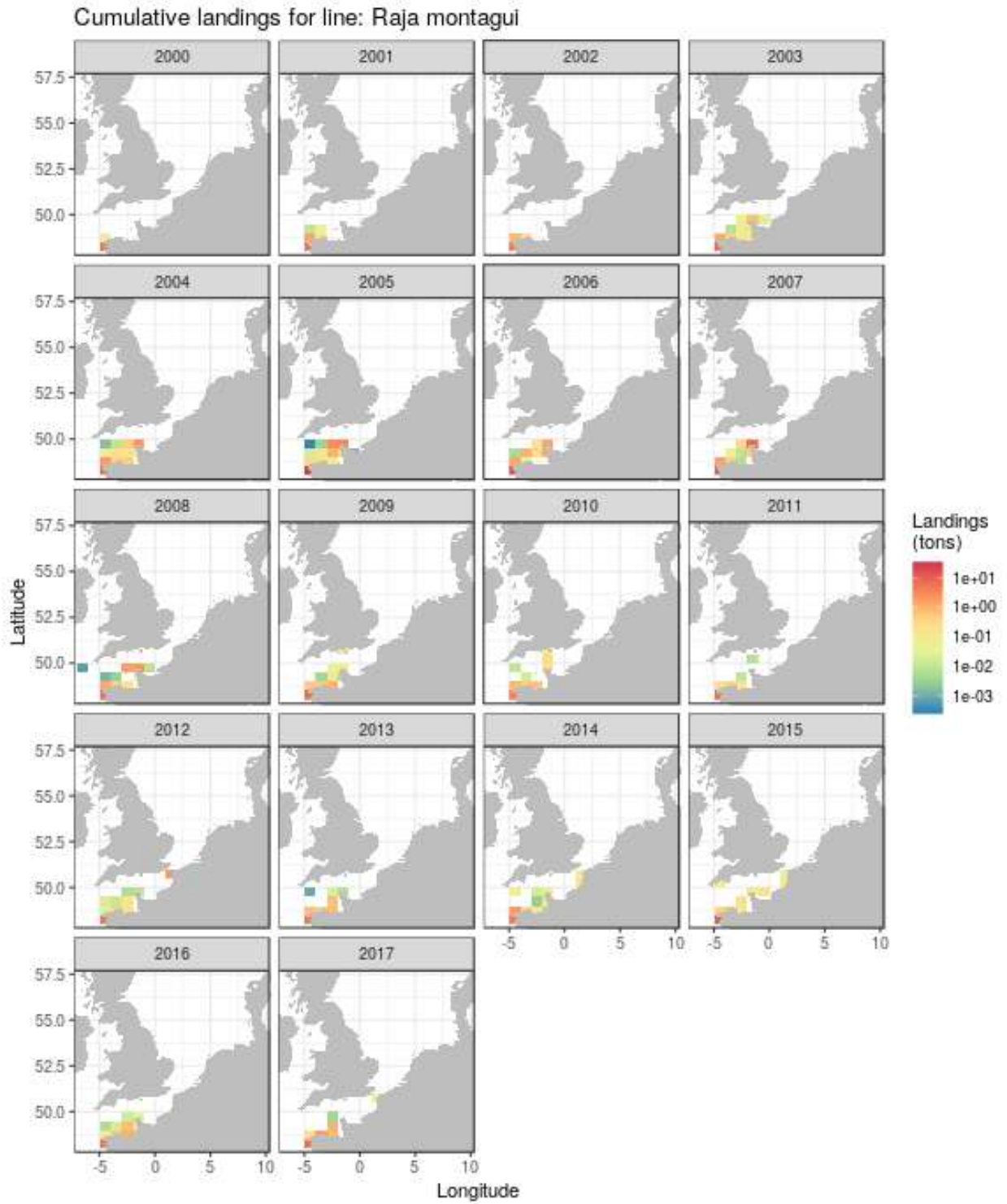


Figure 4.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

4.2.1.7 Annual landings for gear category other

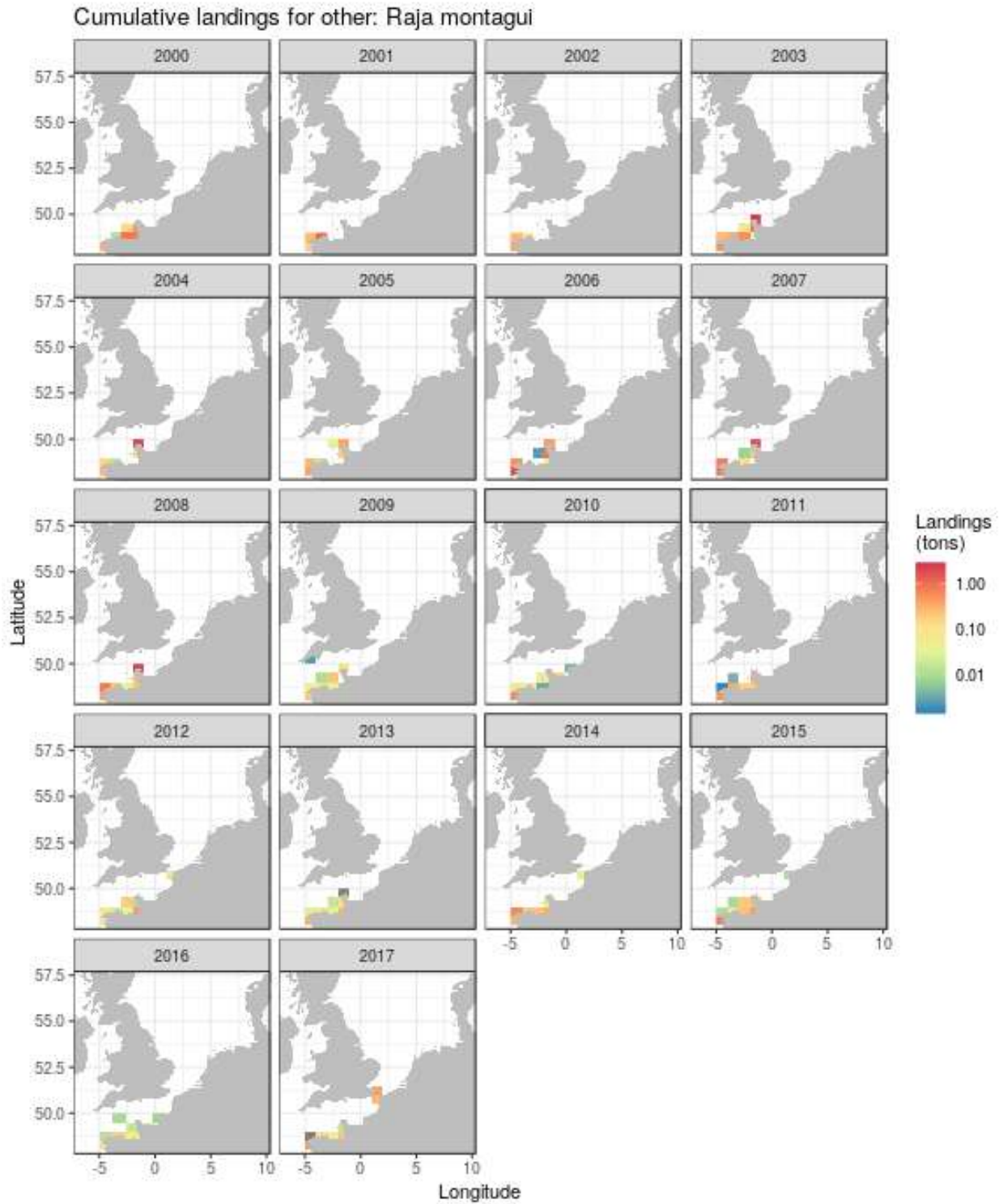


Figure 4.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

4.2.2 Commercial sampling

4.2.2.1 Landings and discards per unit effort and country

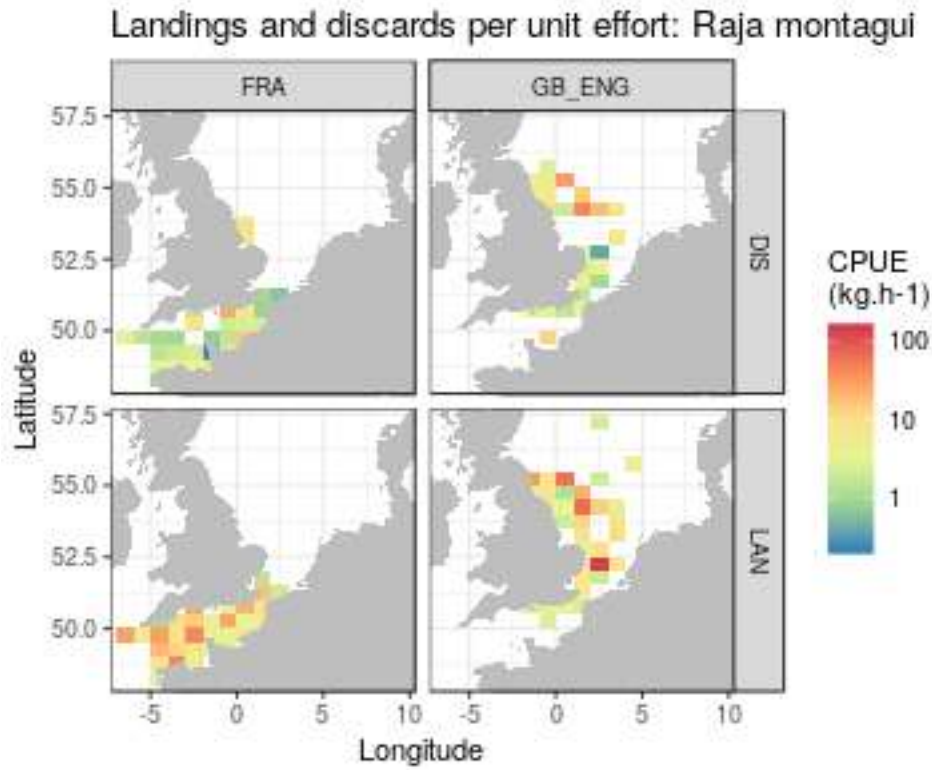


Figure 4.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

4.2.2.2 Annual catch per unit effort

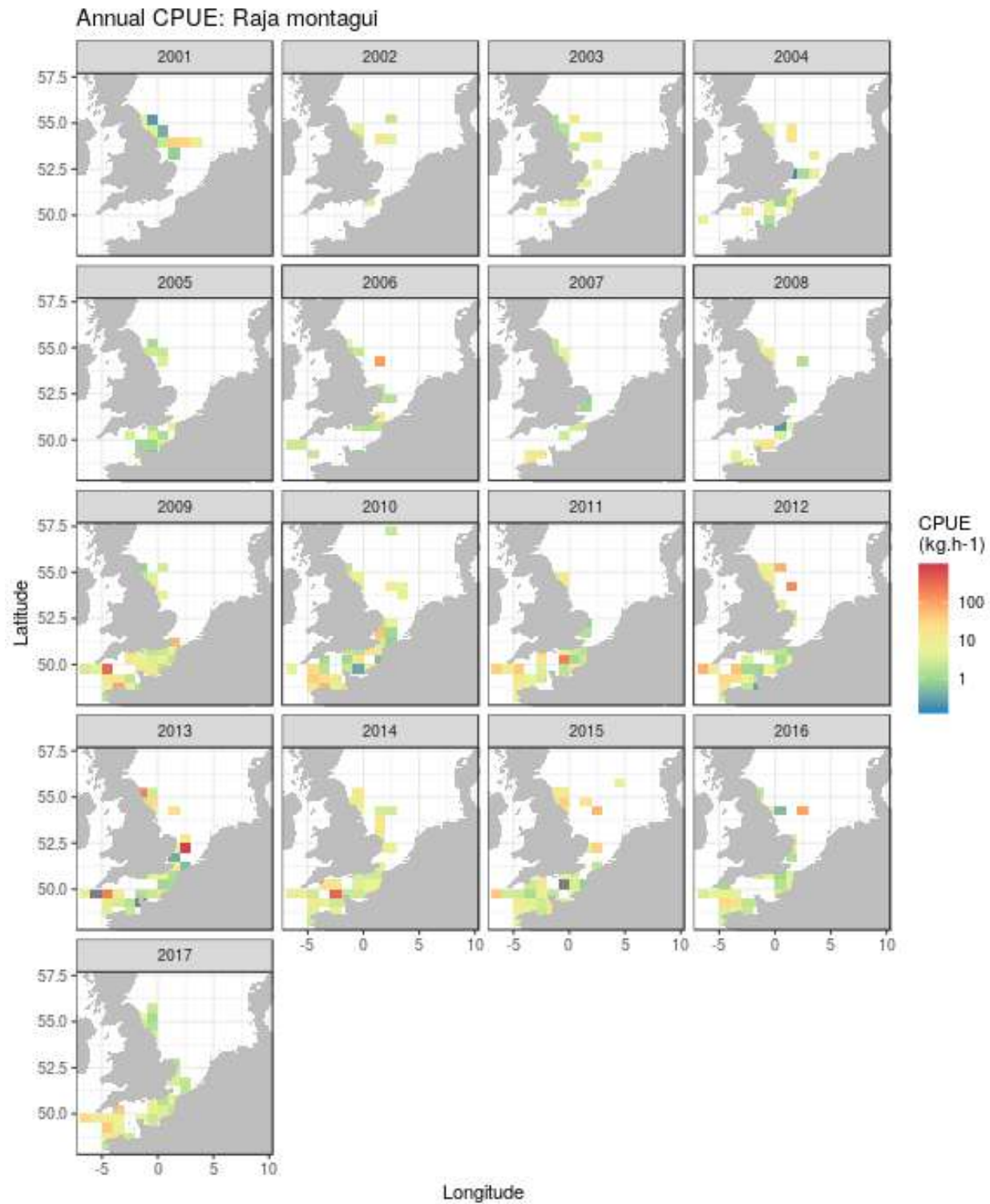


Figure 4.13: Catches per unit effort per year. The color scale is log 10 transformed.

4.2.2.3 Annual catch per unit effort for gear category trawler

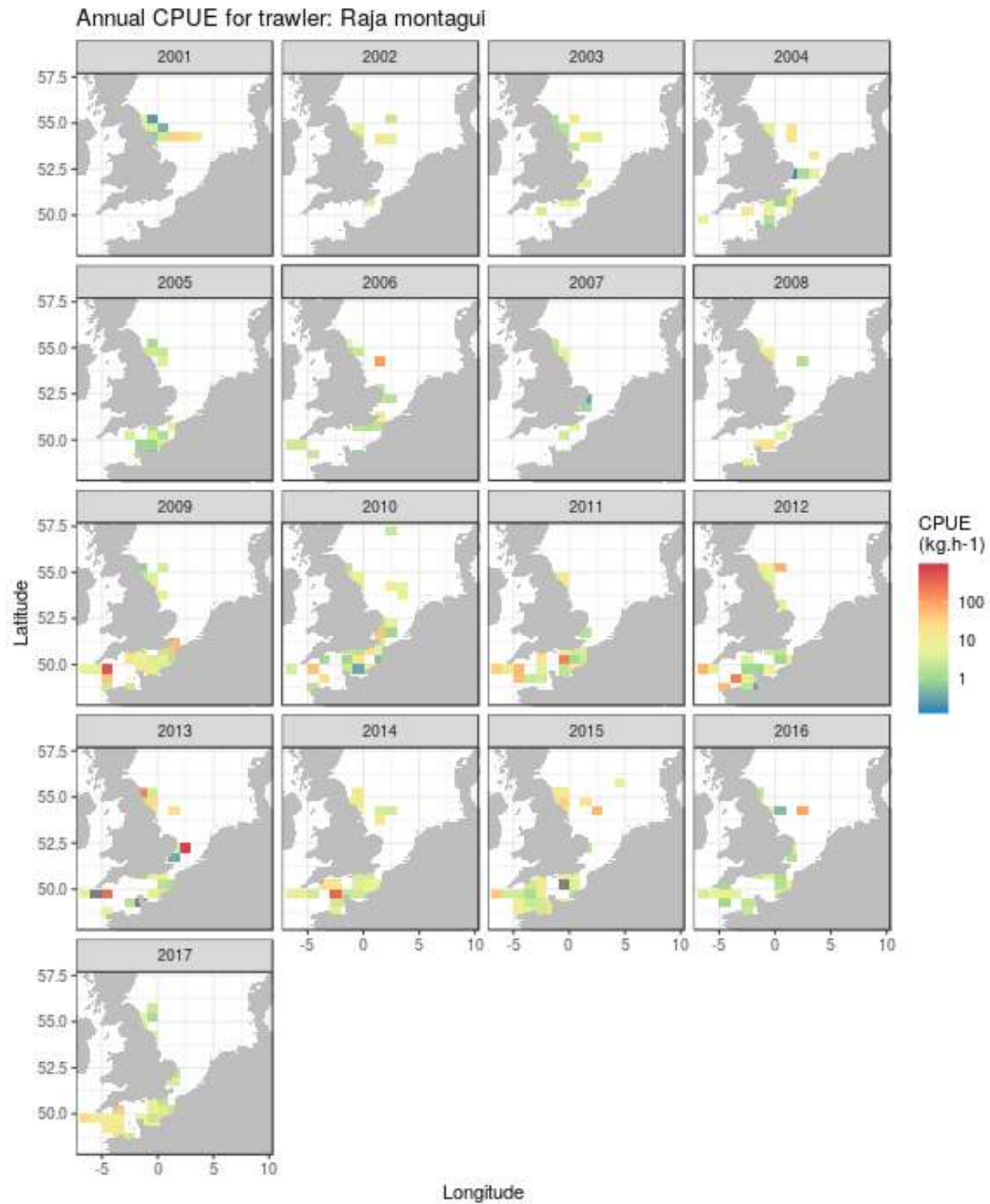


Figure 4.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

4.2.2.4 Annual catch per unit effort for gear category net

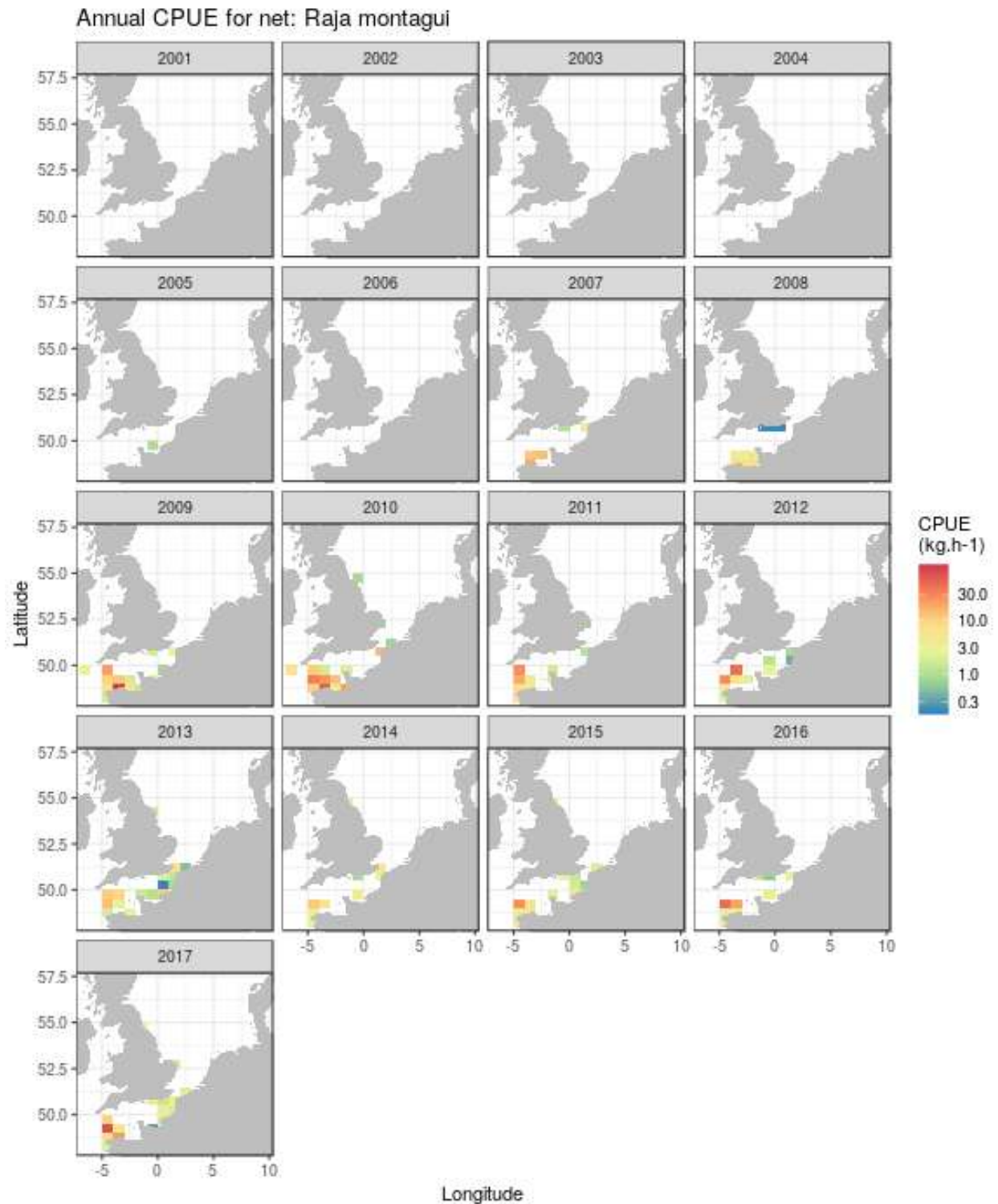


Figure 4.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

4.2.2.5 Annual catch per unit effort for gear category line

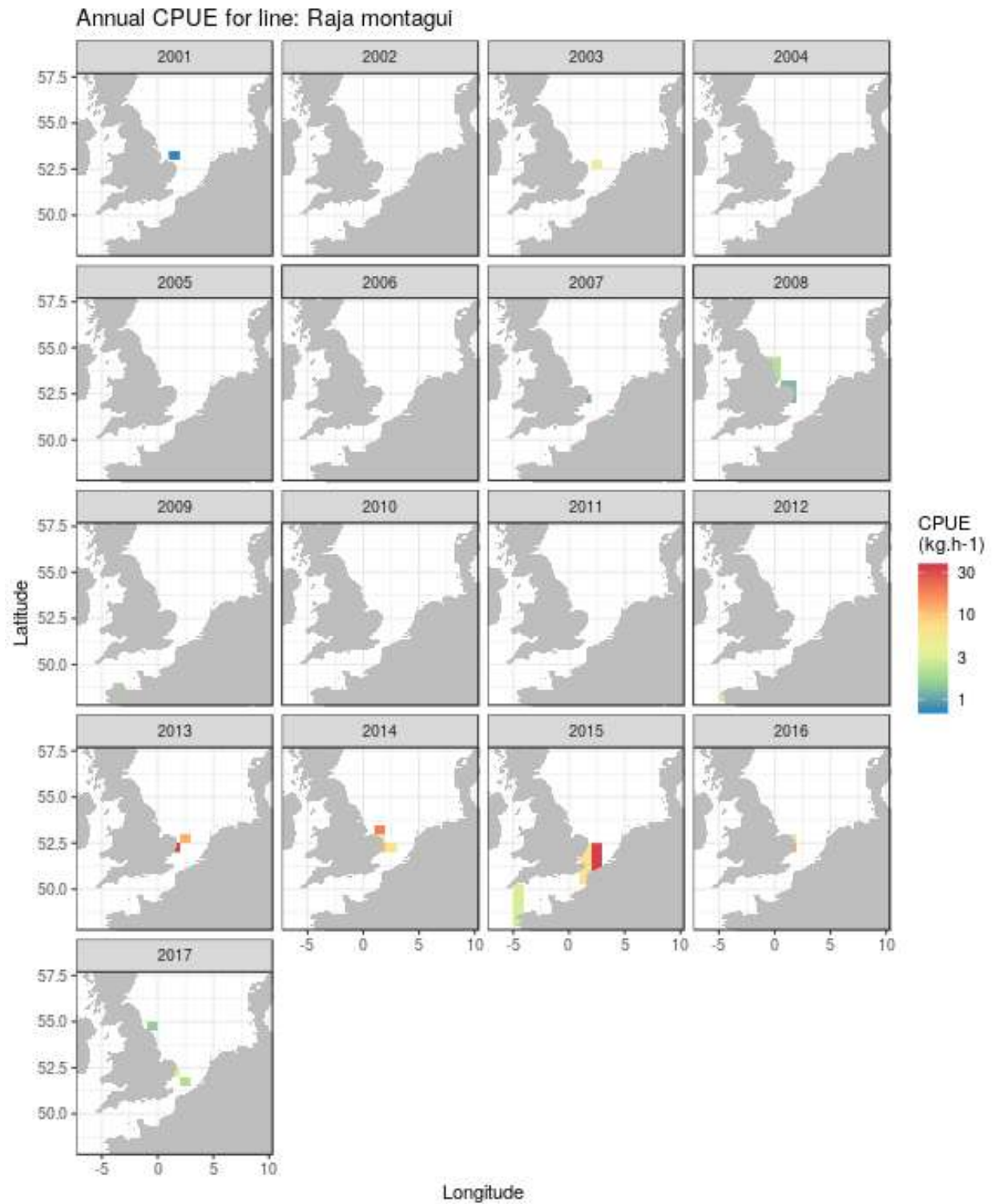


Figure 4.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

4.2.2.6 Annual catch per unit effort for gear category other

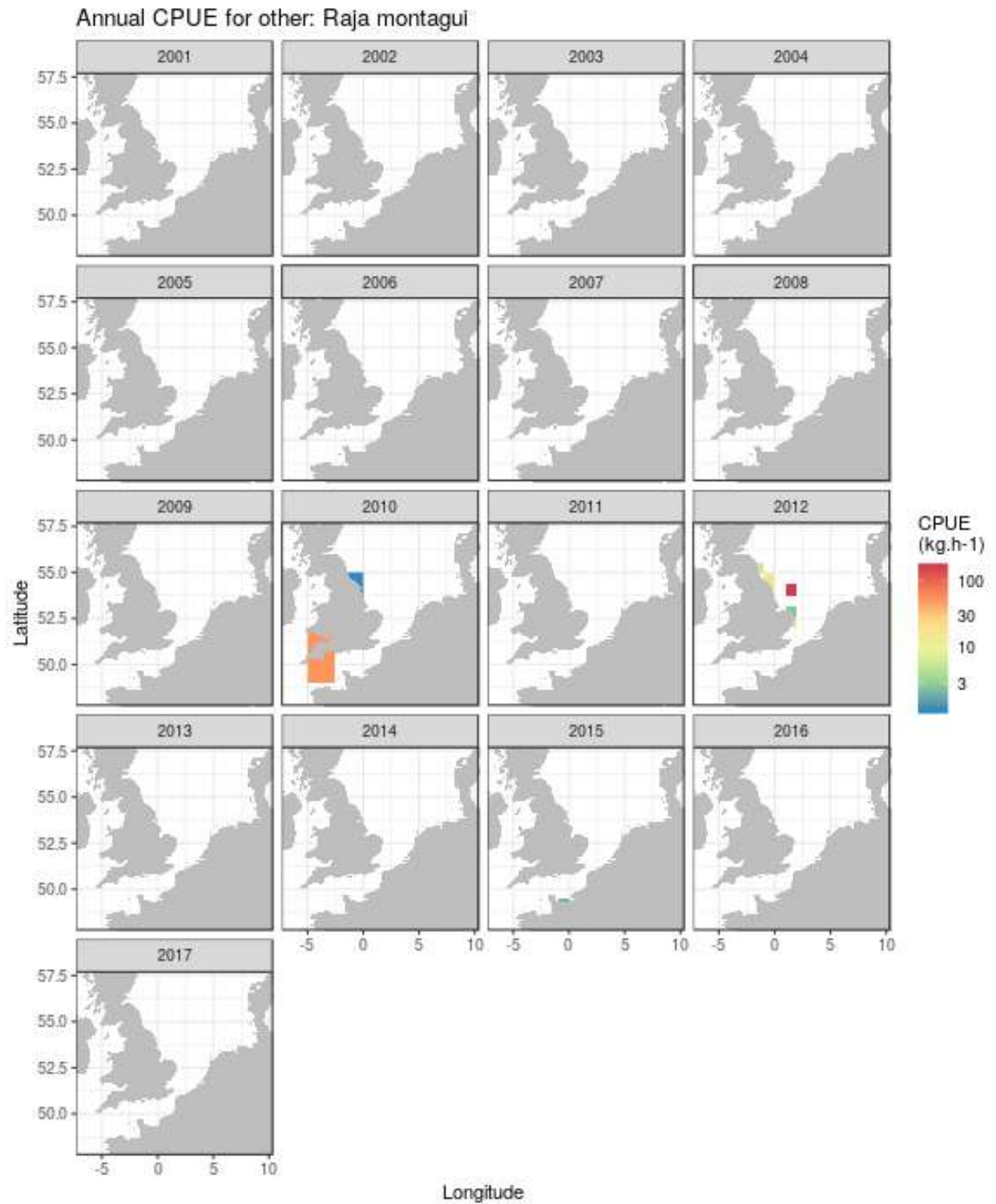


Figure 4.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

5 *Leucoraja naevus*

5.1 Survey

5.1.1 Average CPUE

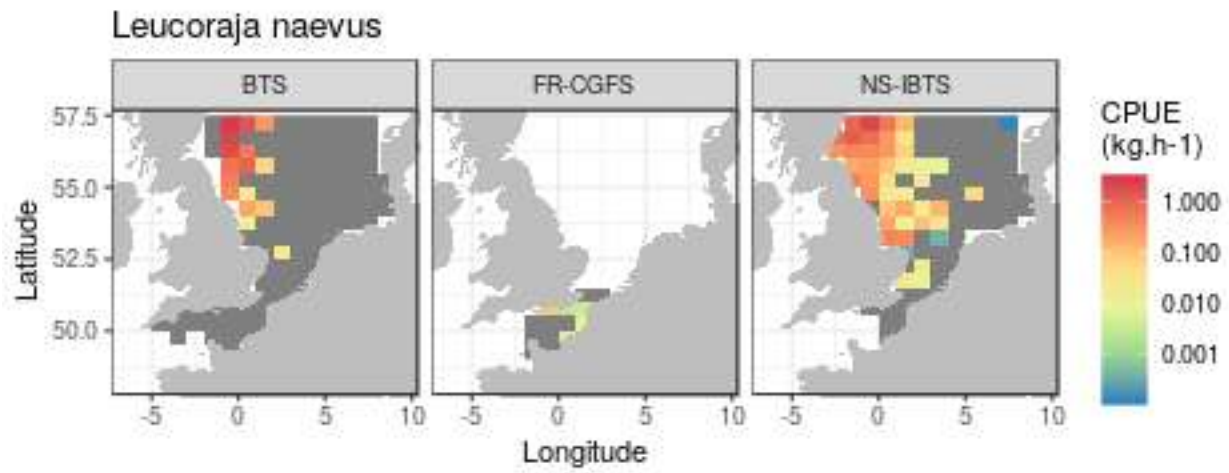


Figure 5.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

5.1.2 Annual CPUE: BTS

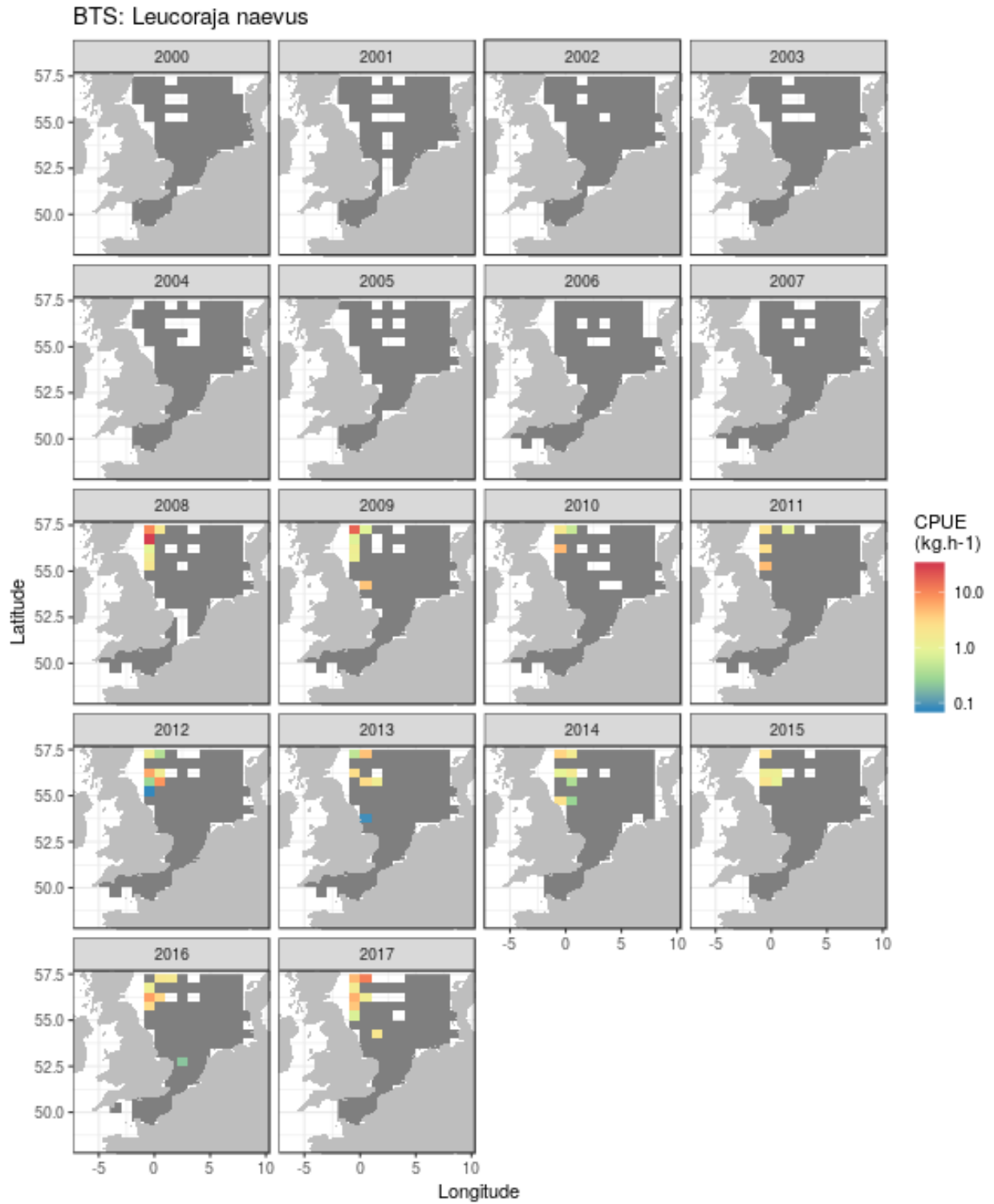


Figure 5.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

5.1.3 Annual CPUE: FR-CGFS

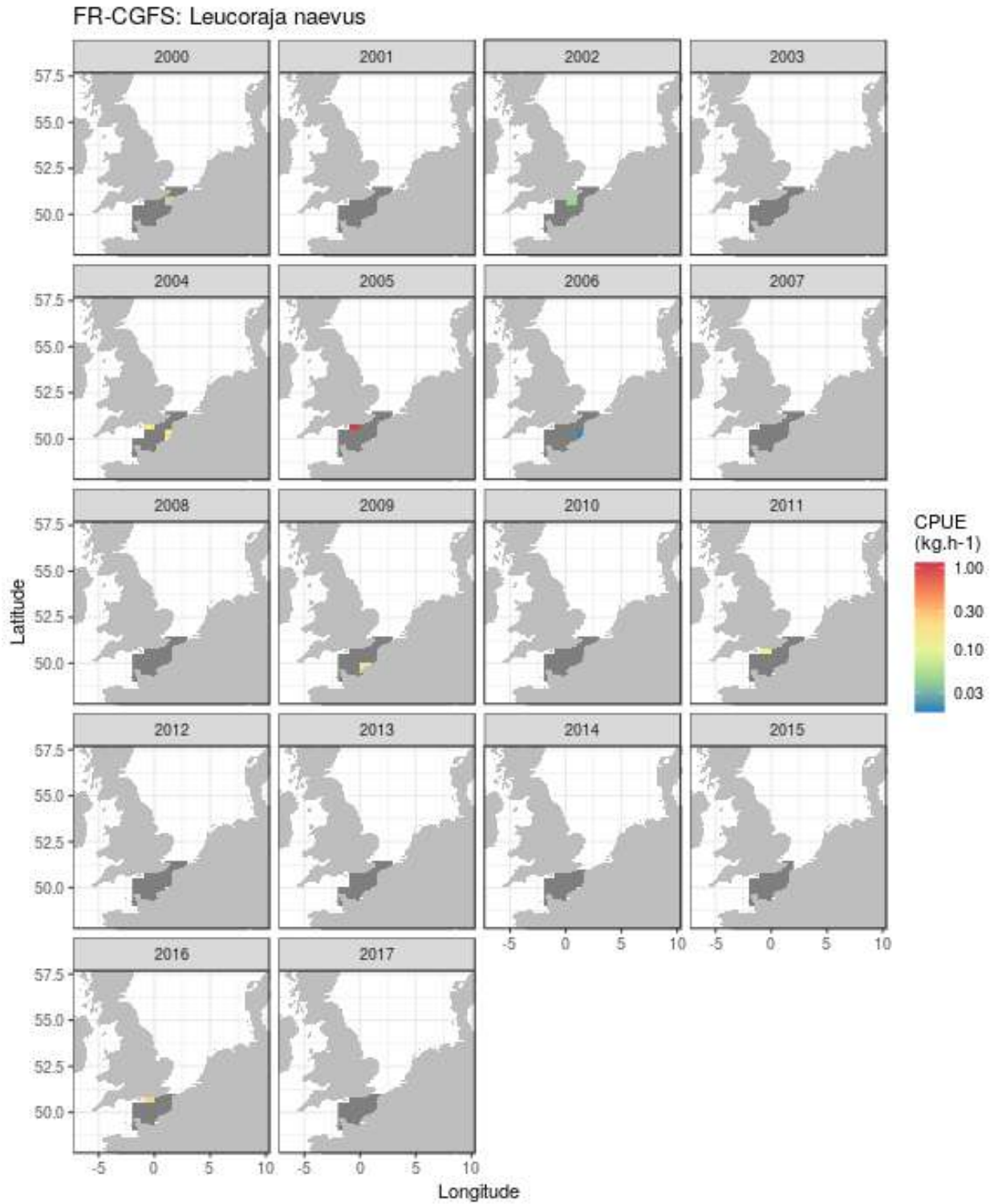


Figure 5.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

5.1.4 Annual CPUE: NS-IBTS

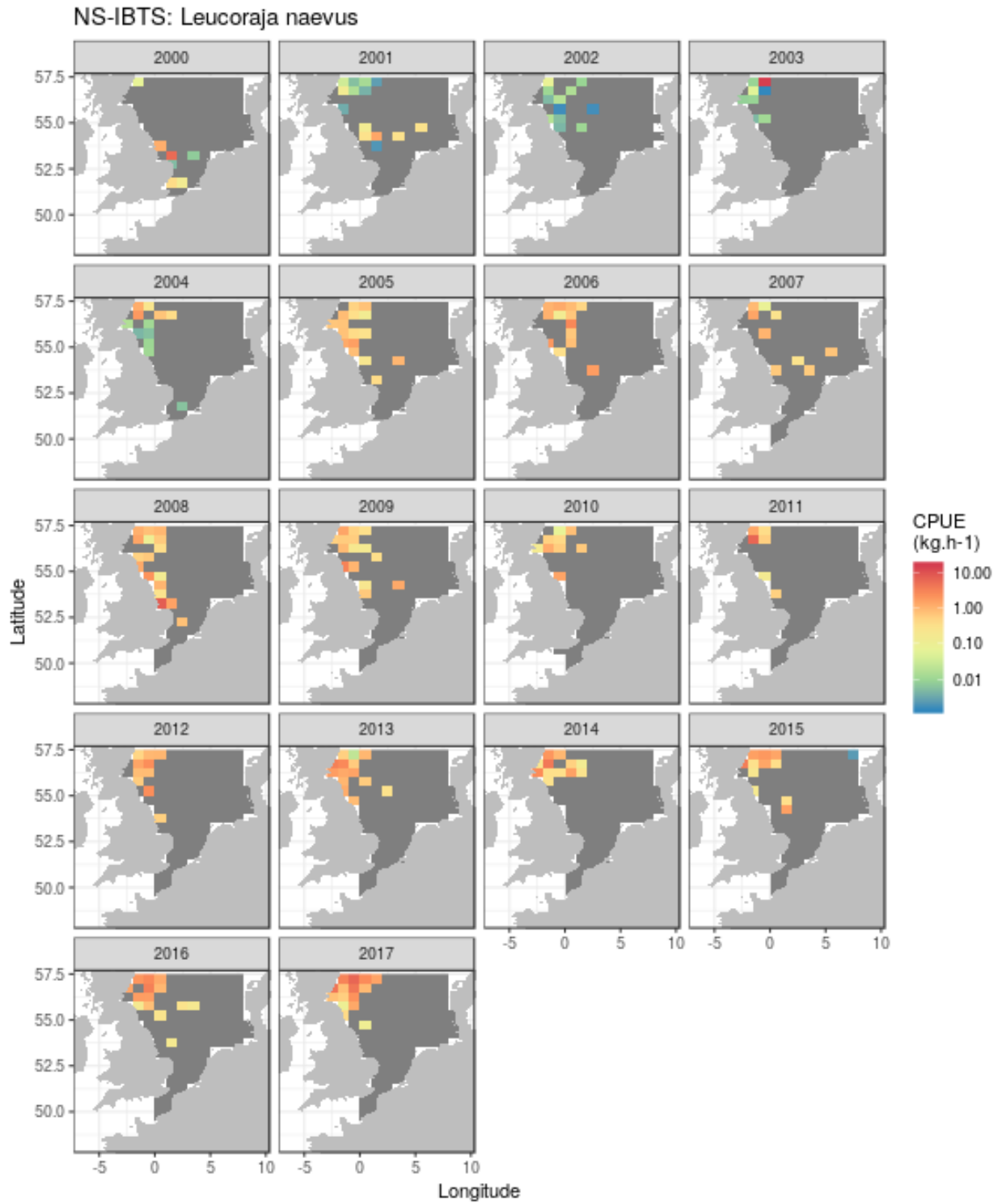


Figure 5.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

5.2 Fishery dependent information

5.2.1 Landings

5.2.1.1 Landings by country

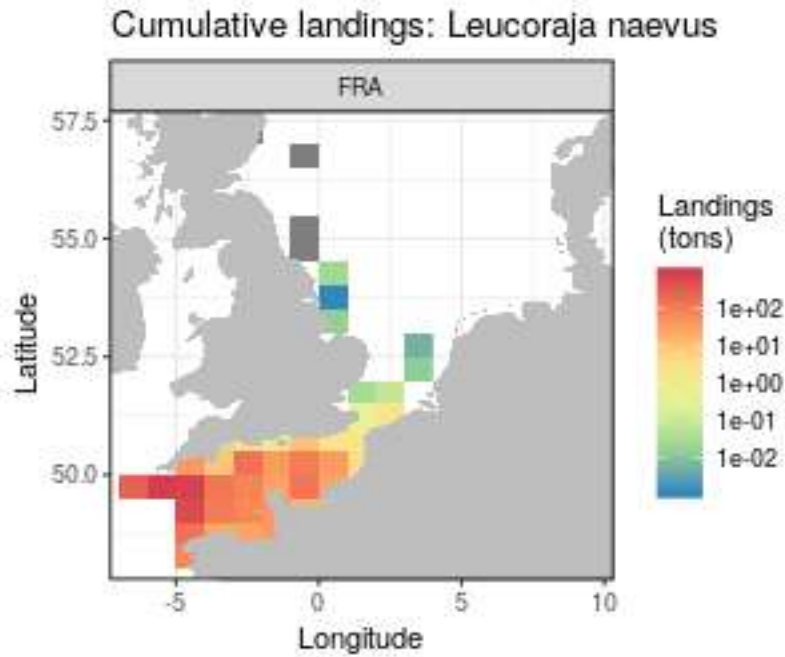


Figure 5.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

5.2.1.2 Landings by country and gear category

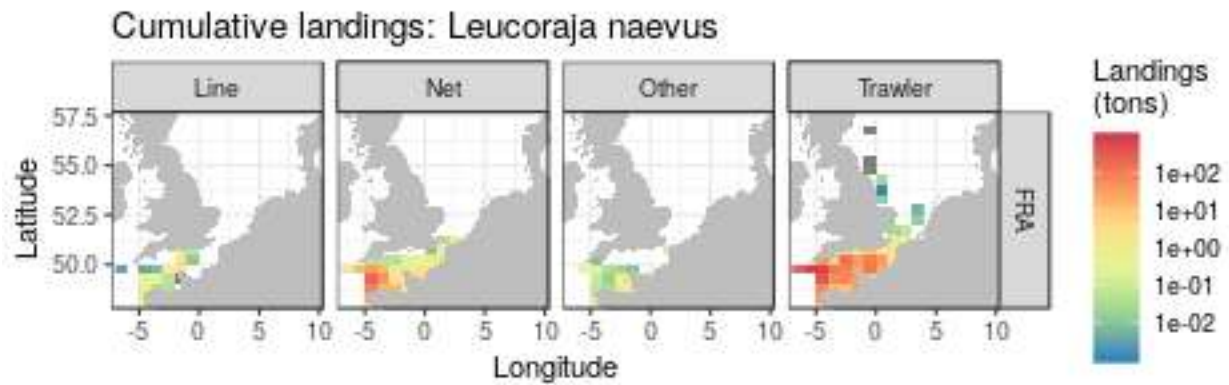


Figure 5.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

5.2.1.3 Annual landings

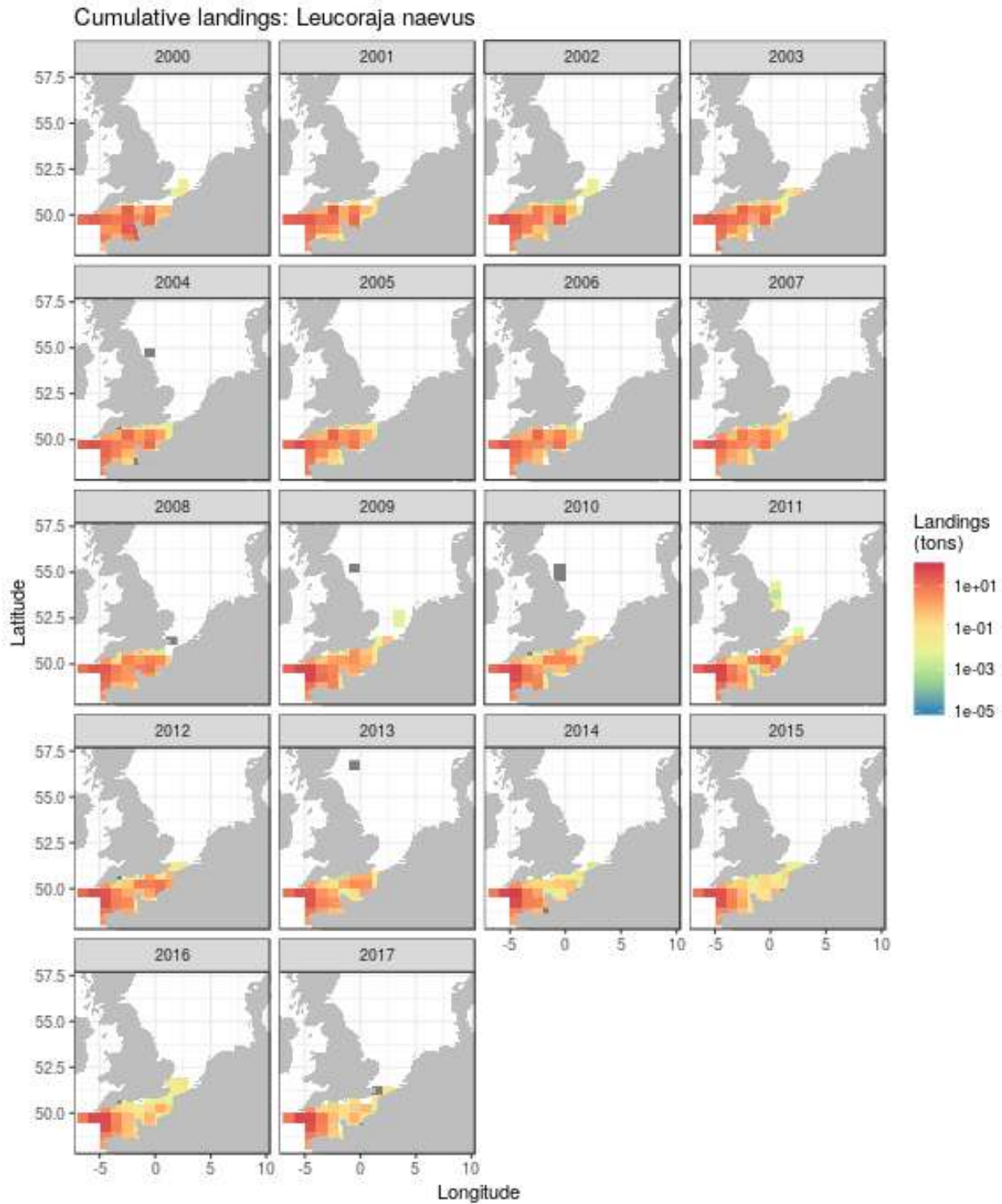


Figure 5.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

5.2.1.4 Annual landings for gear category trawler

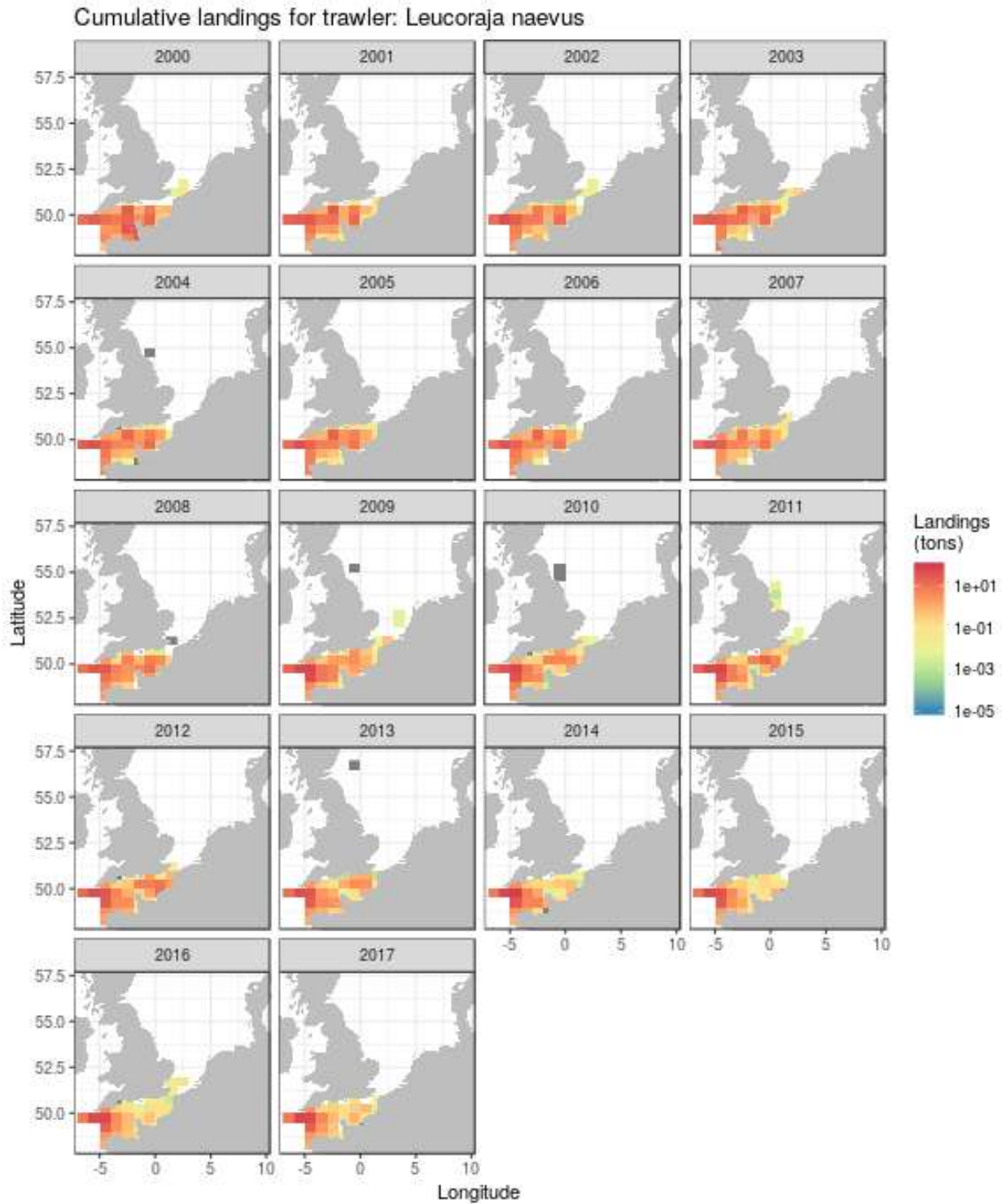


Figure 5.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

5.2.1.5 Annual landings for gear category nets

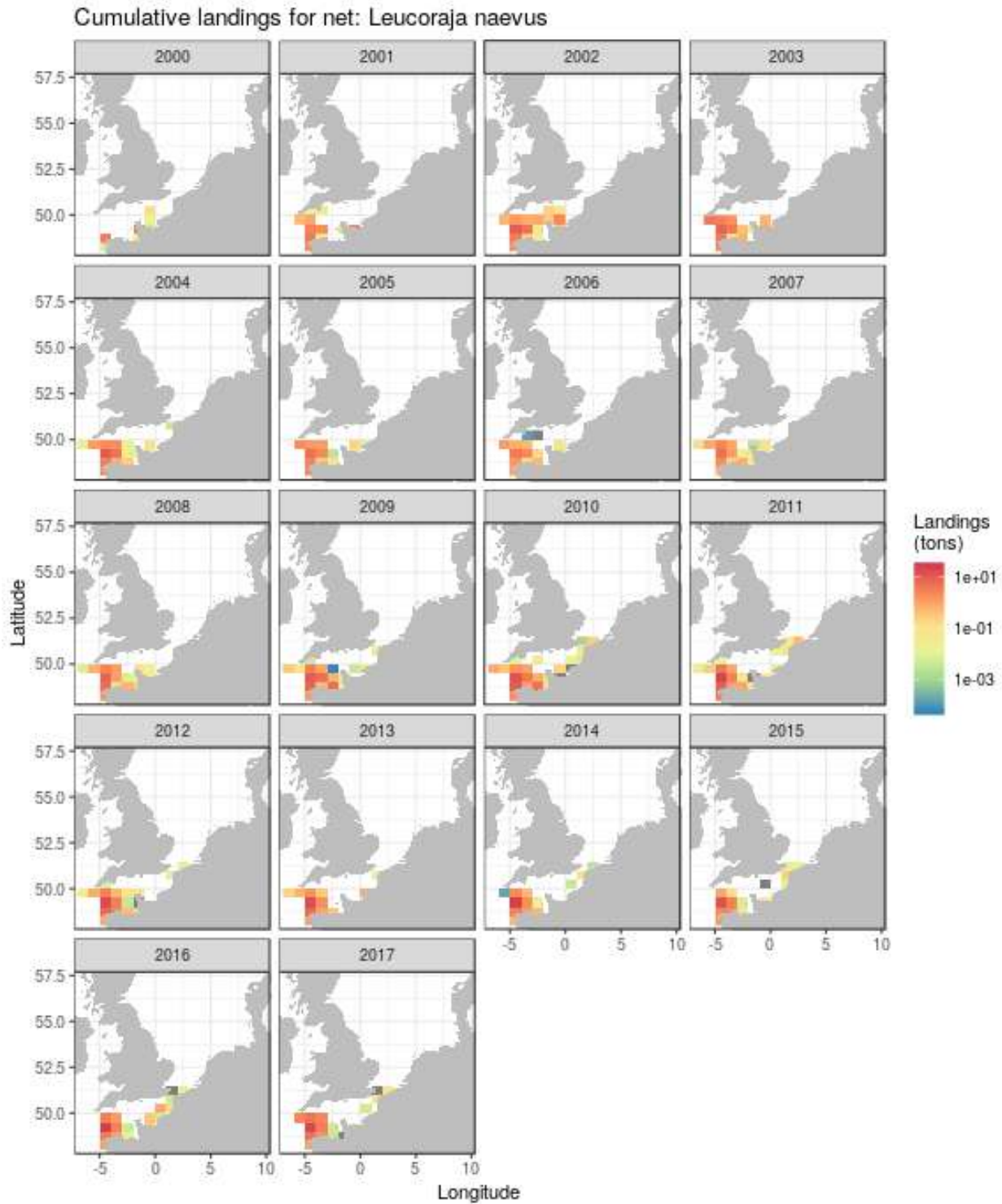


Figure 5.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

5.2.1.6 Annual landings for gear category lines

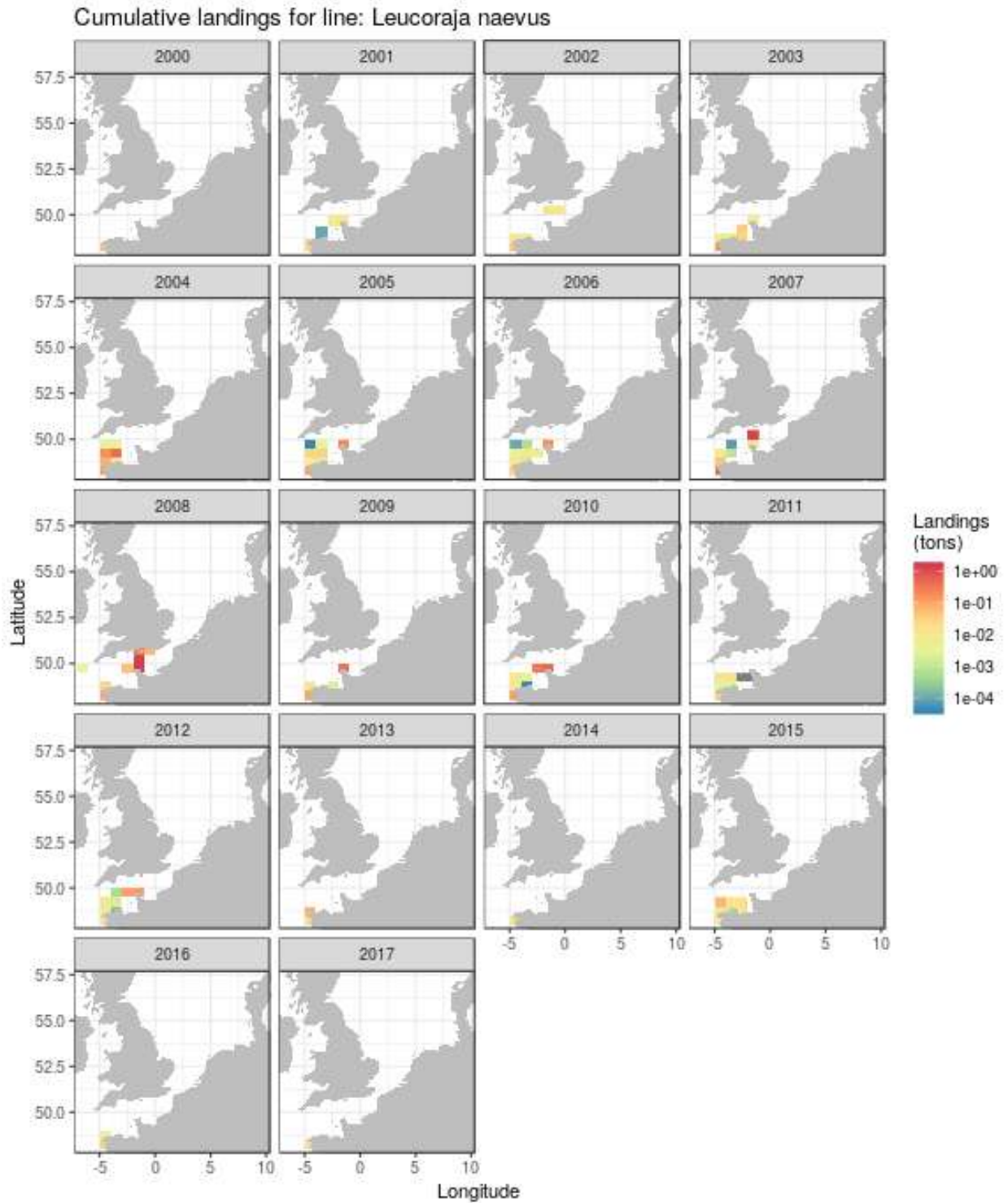


Figure 5.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

5.2.1.7 Annual landings for gear category other

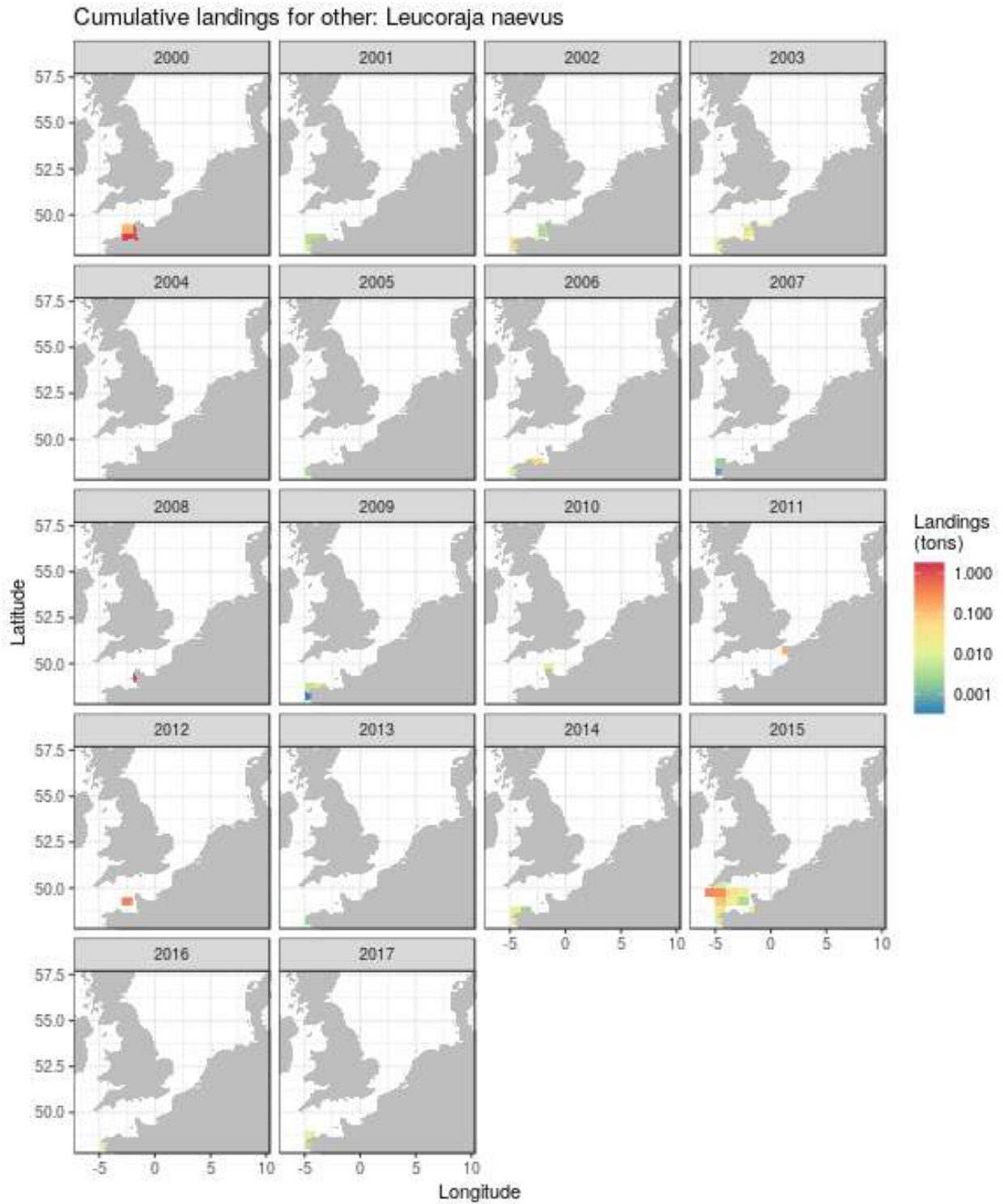


Figure 5.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

5.2.2 Commercial sampling

5.2.2.1 Landings and discards per unit effort and country

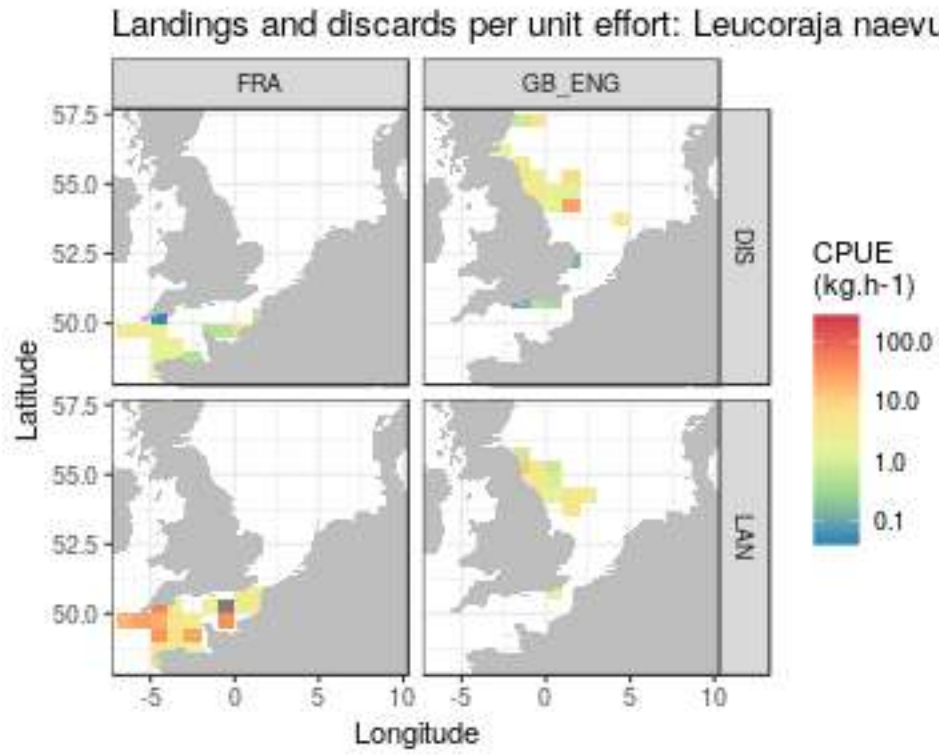


Figure 5.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

5.2.2.2 Annual catch per unit effort

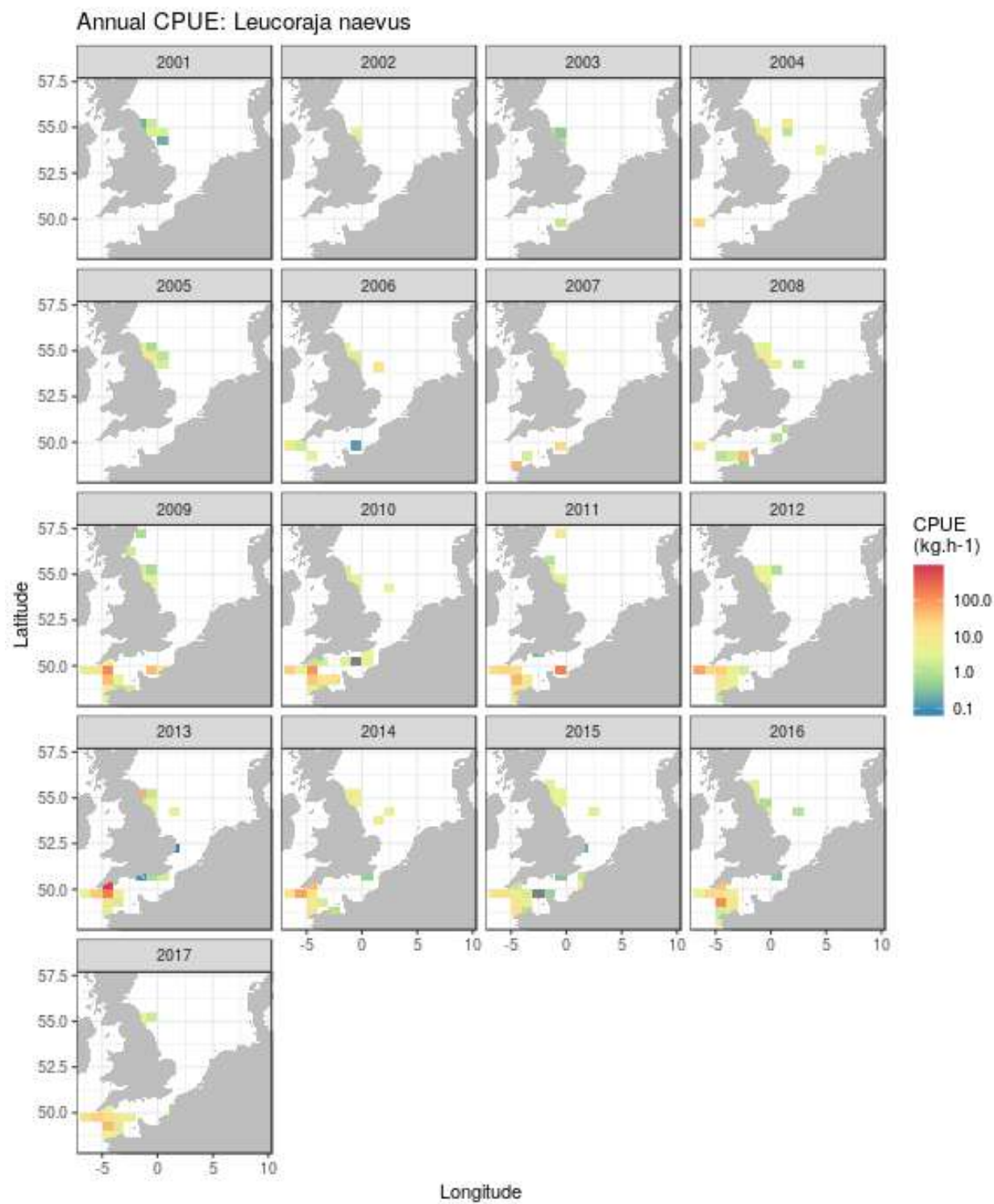


Figure 5.13: Catches per unit effort per year. The color scale is log 10 transformed.

5.2.2.3 Annual catch per unit effort for gear category trawler

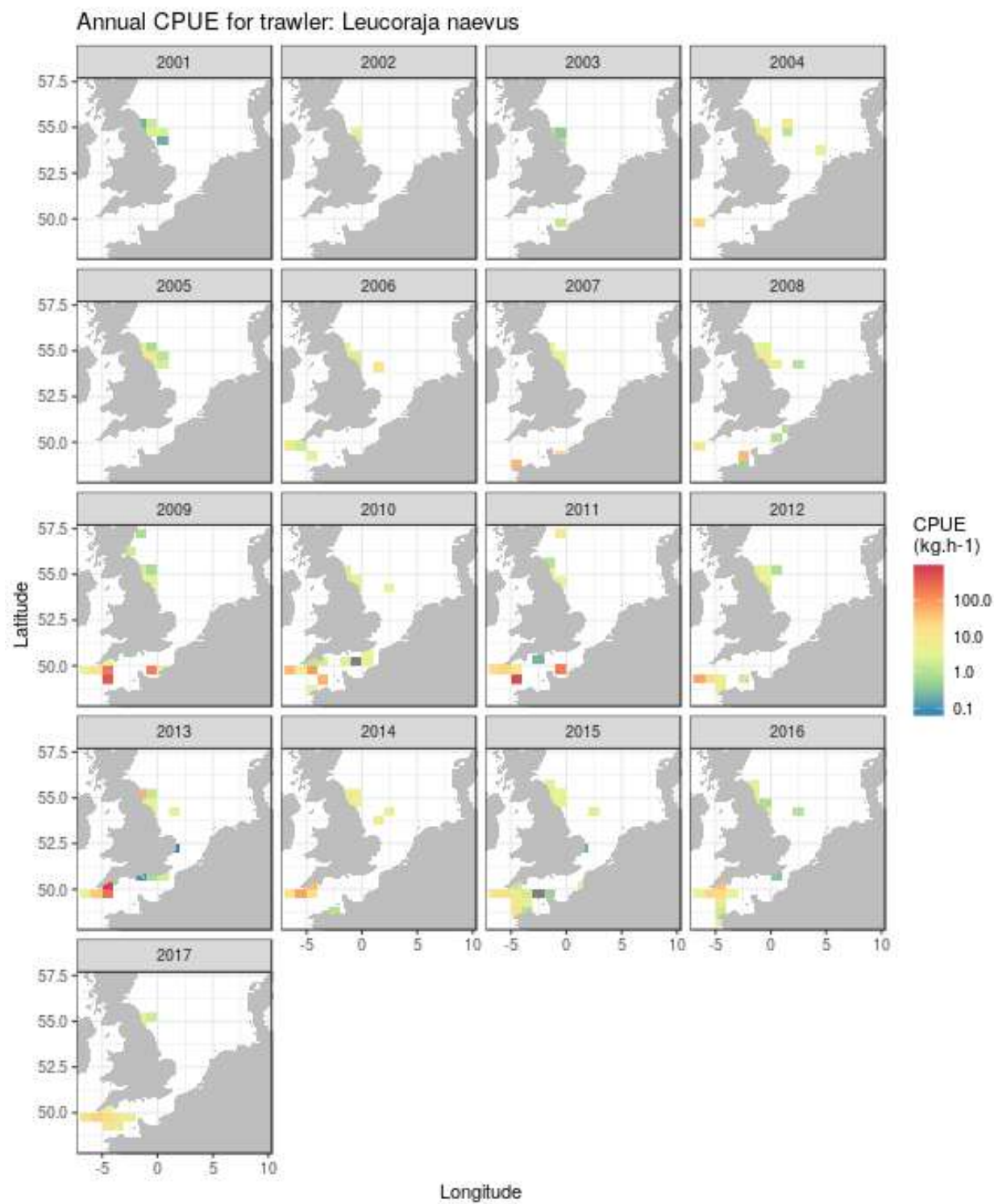


Figure 5.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

5.2.2.4 Annual catch per unit effort for gear category net

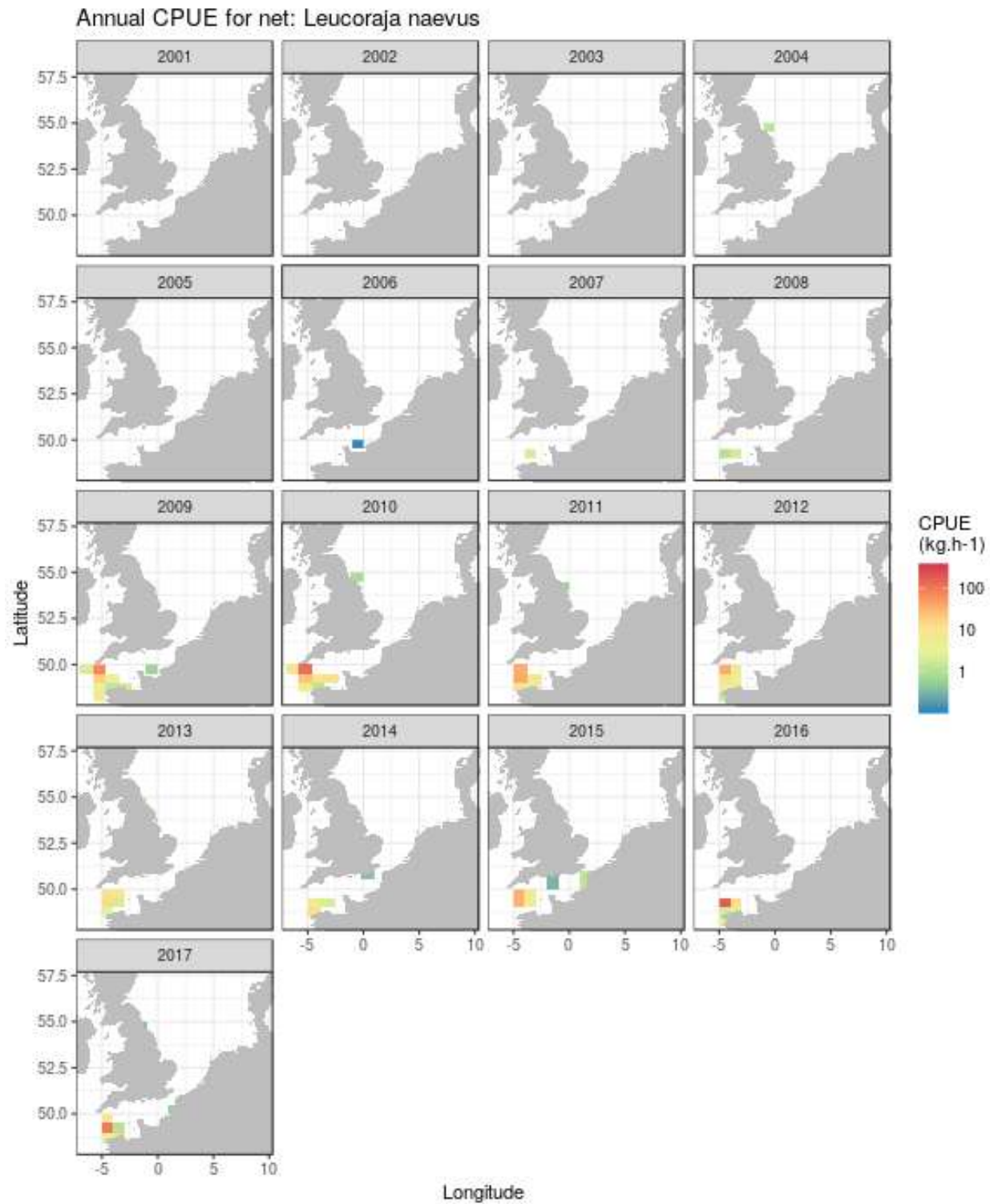


Figure 5.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

5.2.2.5 Annual catch per unit effort for gear category line



Figure 5.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

5.2.2.6 Annual catch per unit effort for gear category other

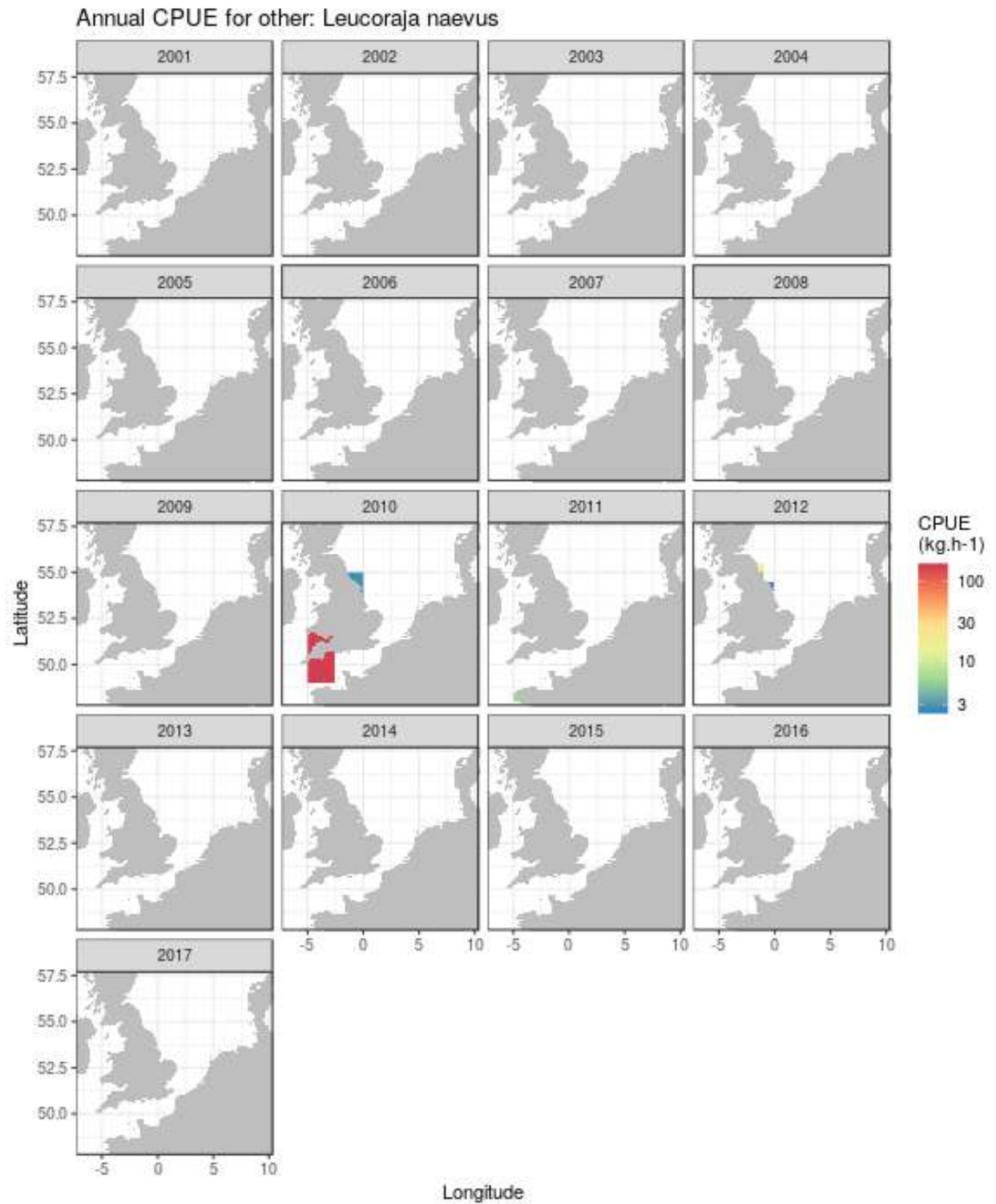


Figure 5.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

6 *Raja brachyura*

6.1 Survey

6.1.1 Average CPUE

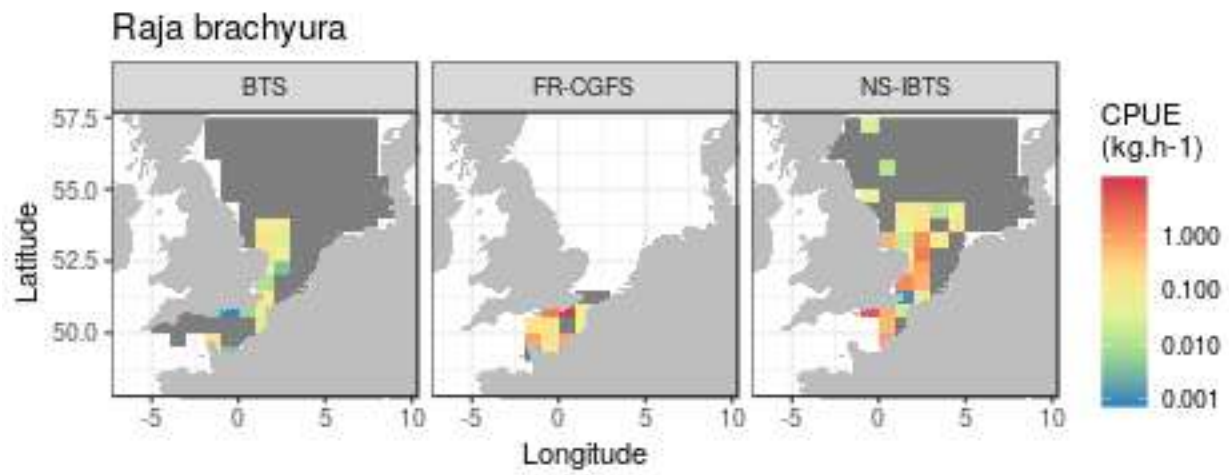


Figure 6.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

6.1.2 Annual CPUE: BTS

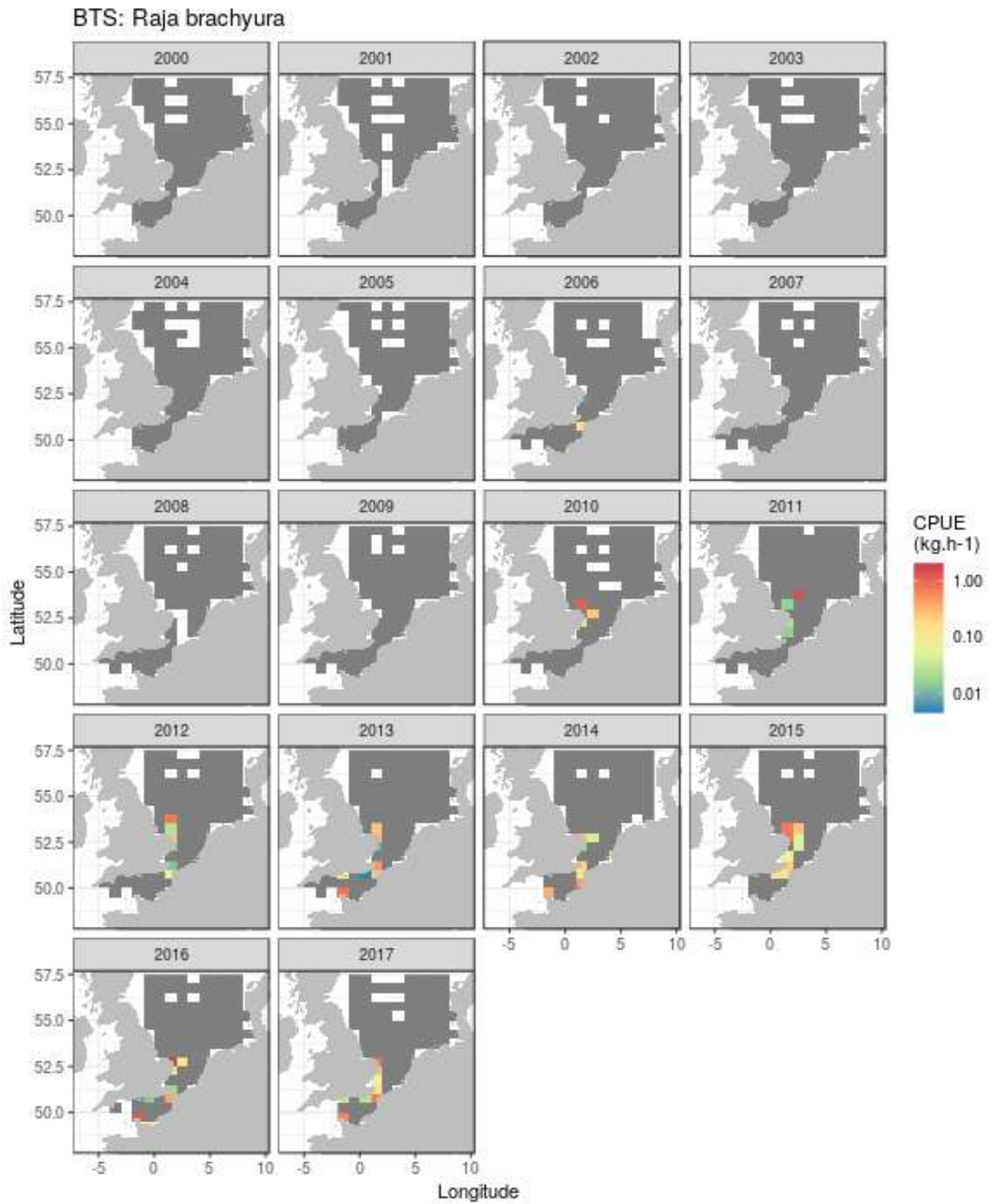


Figure 6.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

6.1.3 Annual CPUE: FR-CGFS

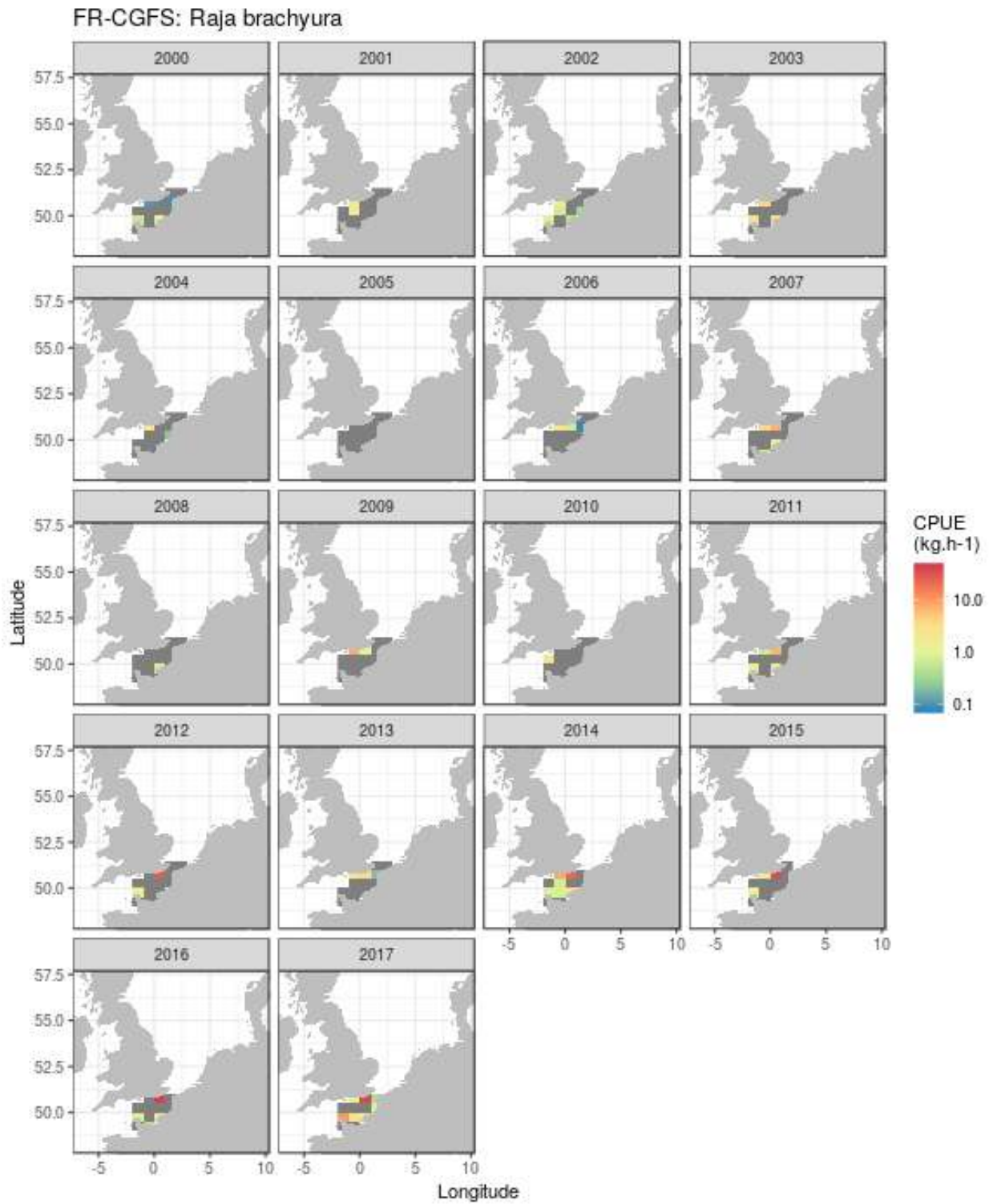


Figure 6.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

6.1.4 Annual CPUE: NS-IBTS

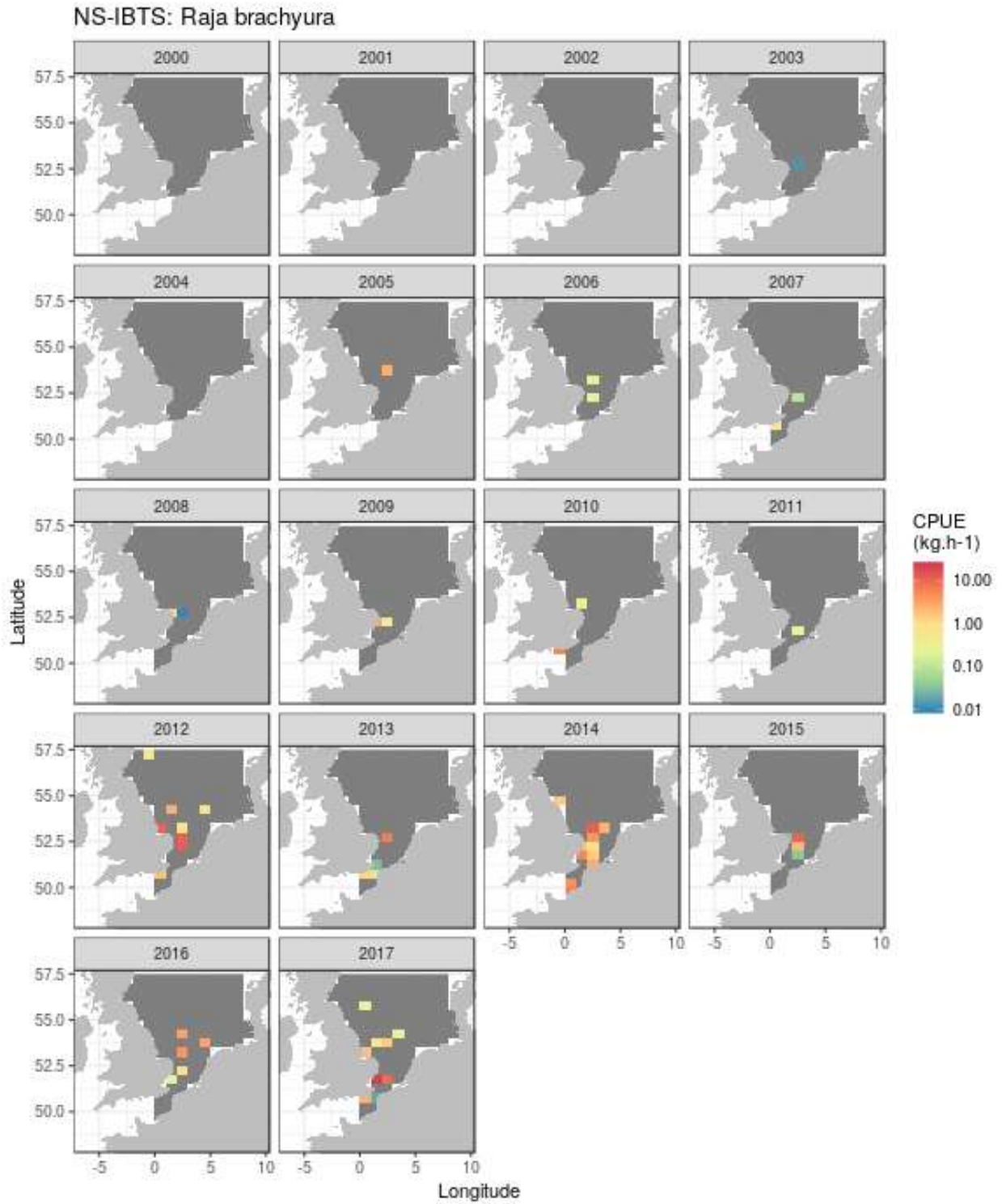


Figure 6.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

6.2 Fishery dependent information

6.2.1 Landings

6.2.1.1 Landings by country

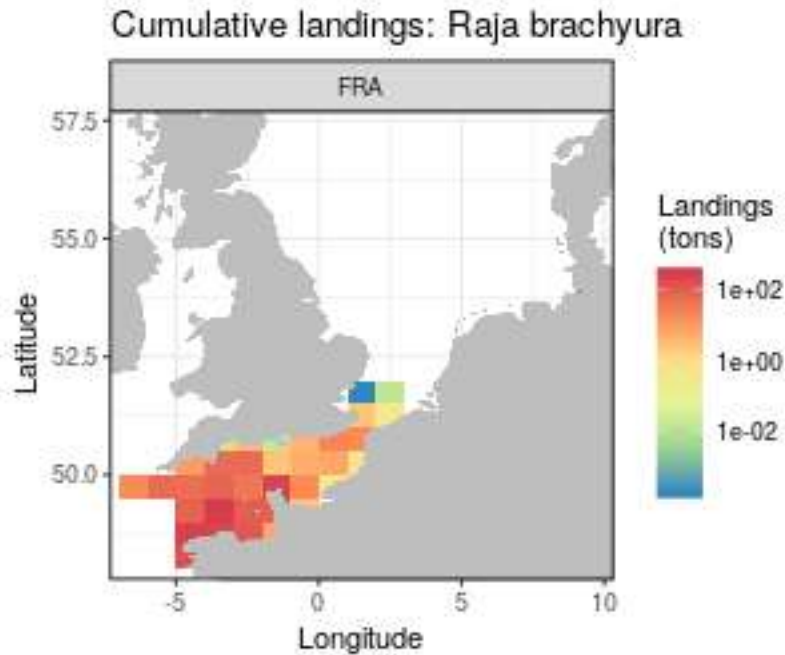


Figure 6.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

6.2.1.2 Landings by country and gear category

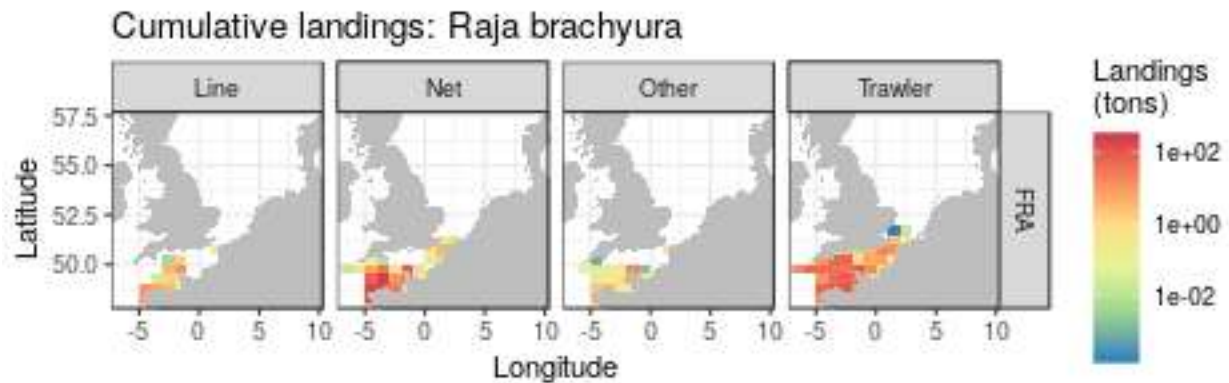


Figure 6.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

6.2.1.3 Annual landings

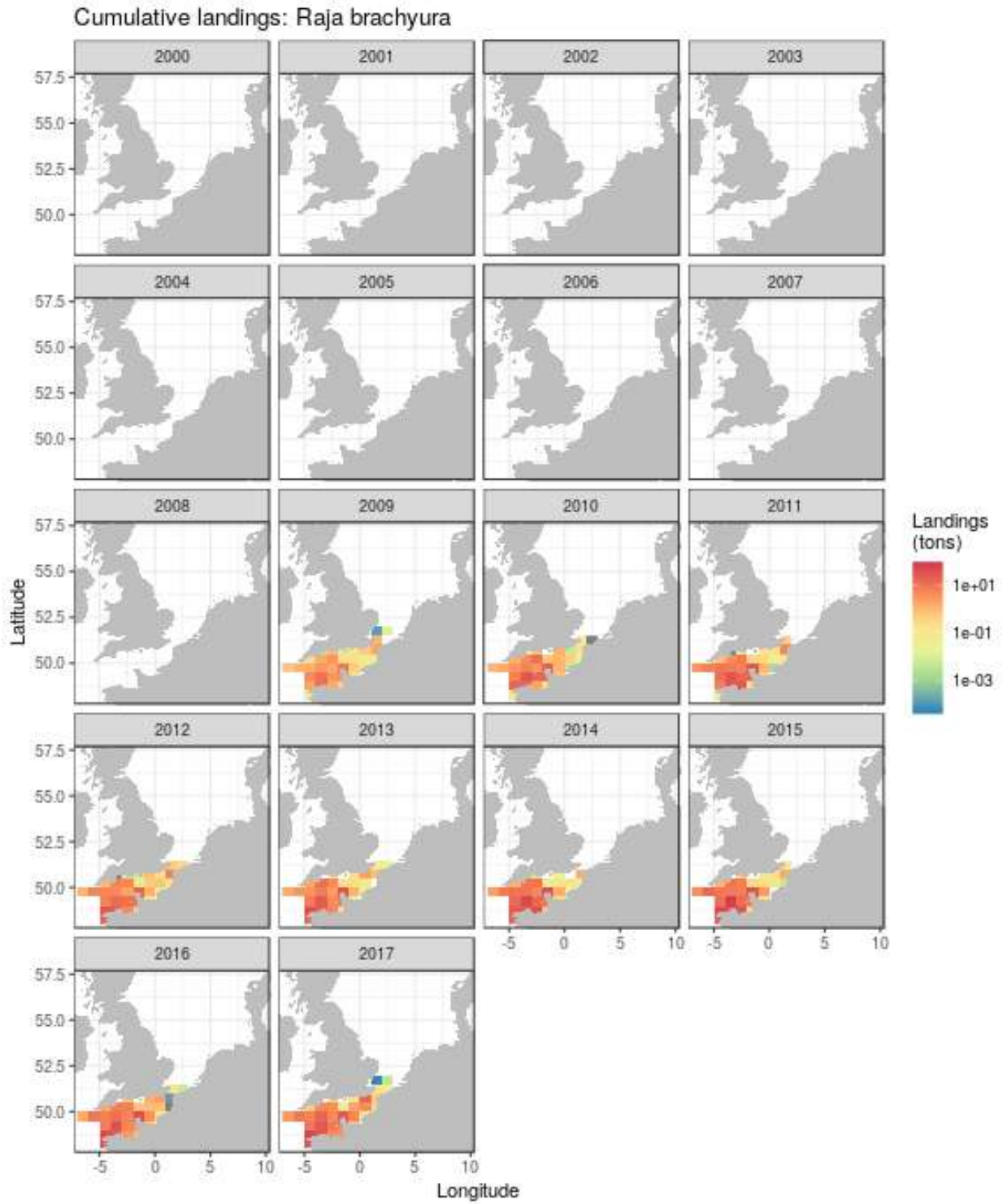


Figure 6.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

6.2.1.4 Annual landings for gear category trawler

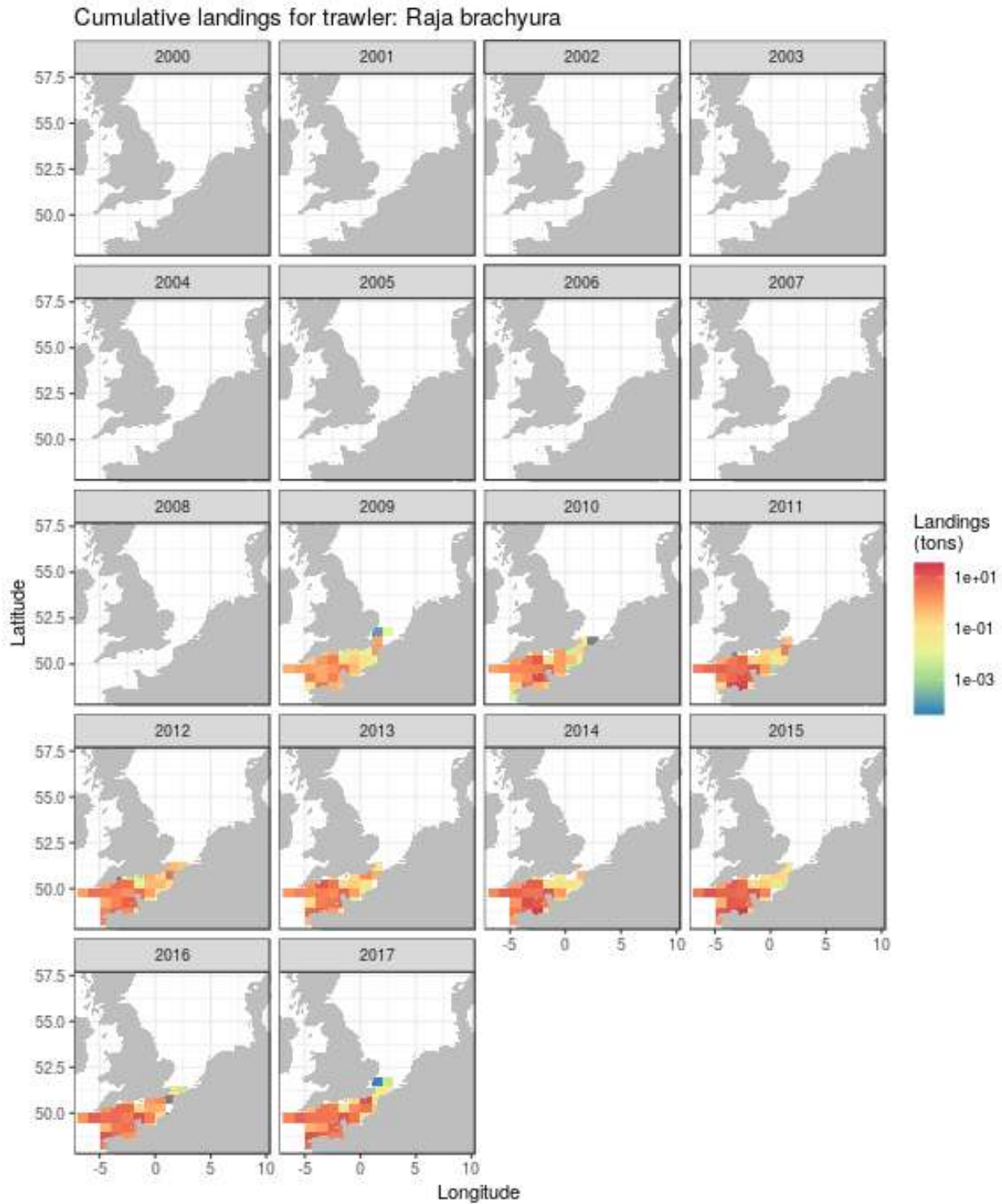


Figure 6.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

6.2.1.5 Annual landings for gear category nets

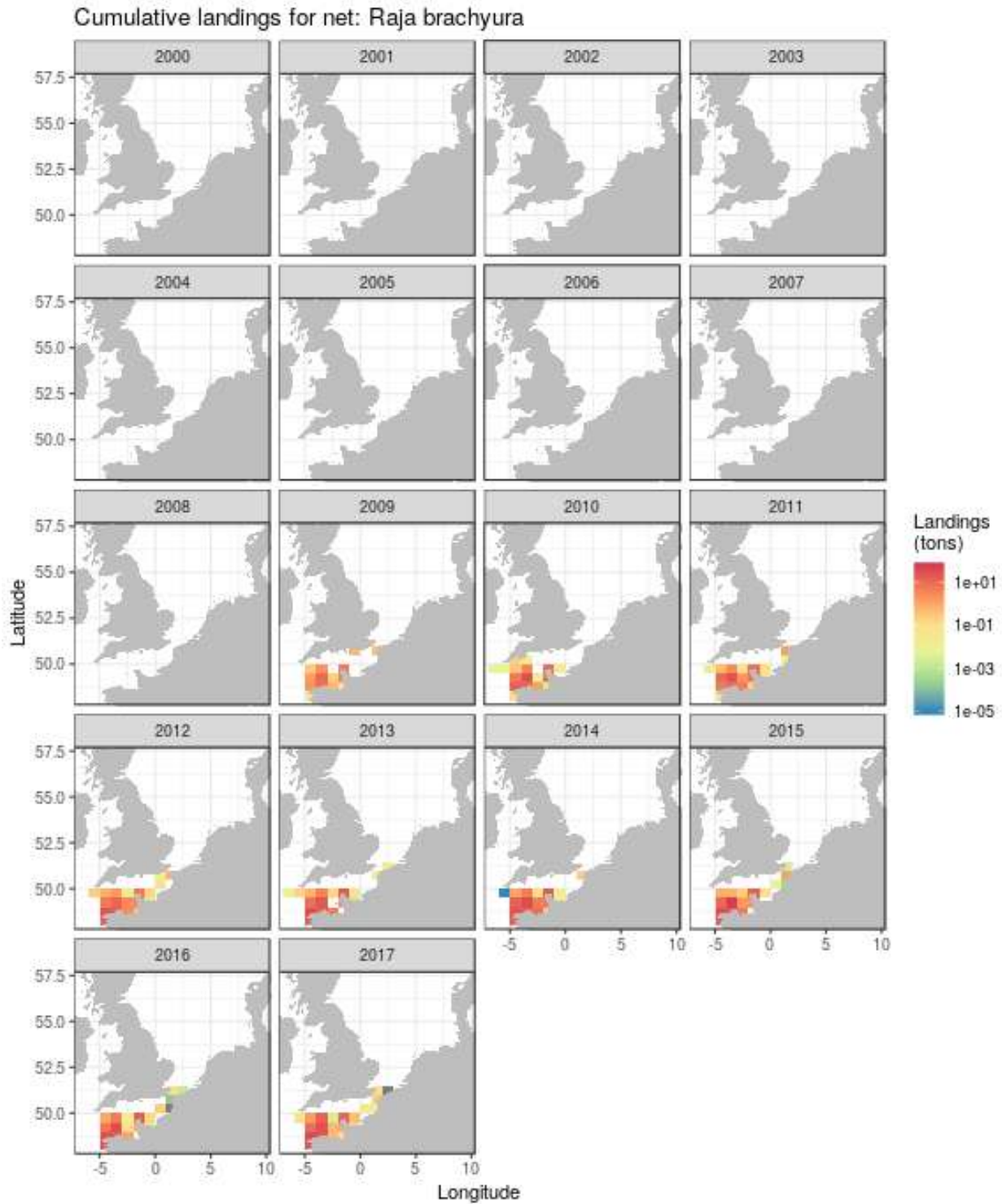


Figure 6.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

6.2.1.6 Annual landings for gear category lines

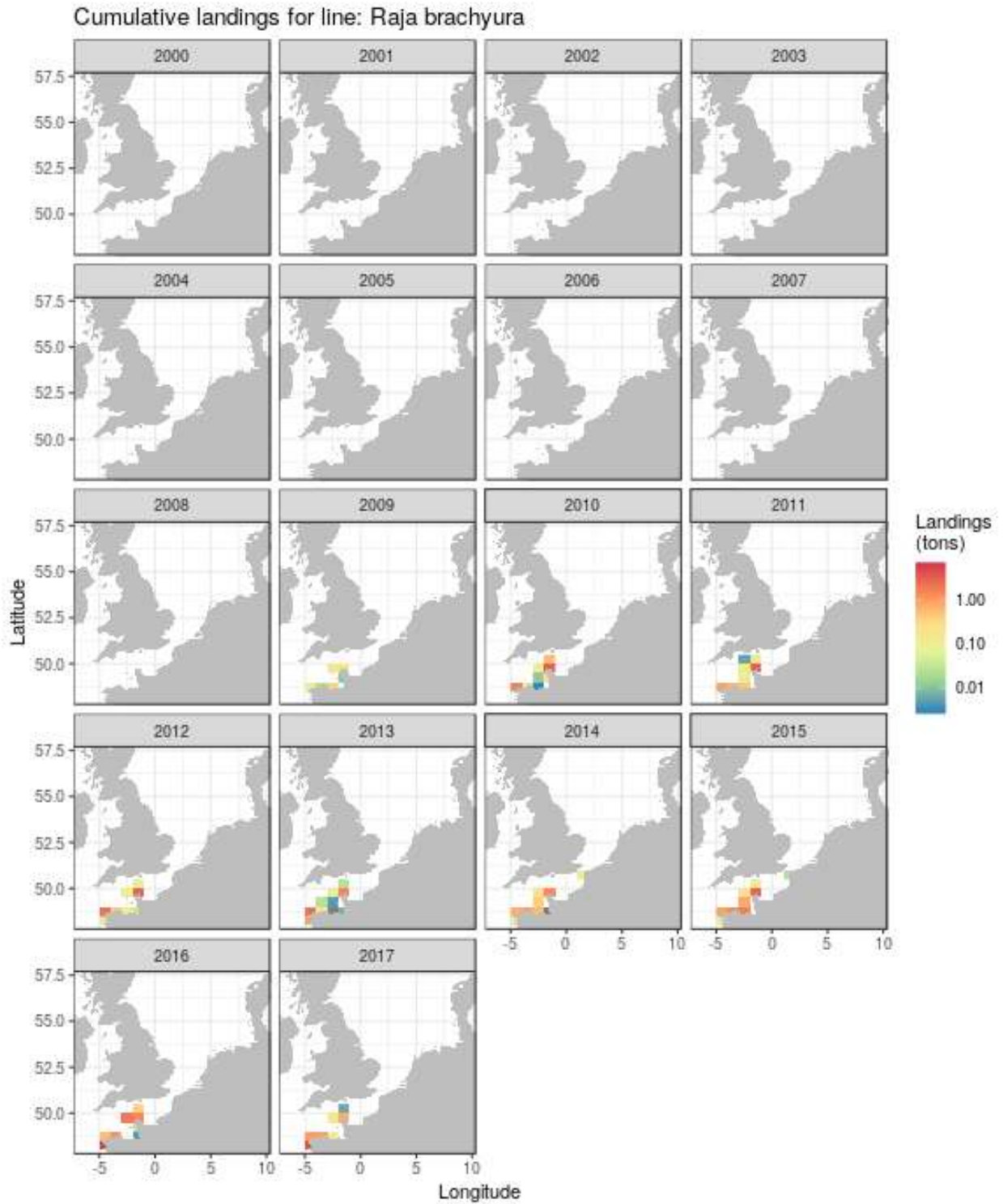


Figure 6.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

6.2.1.7 Annual landings for gear category other

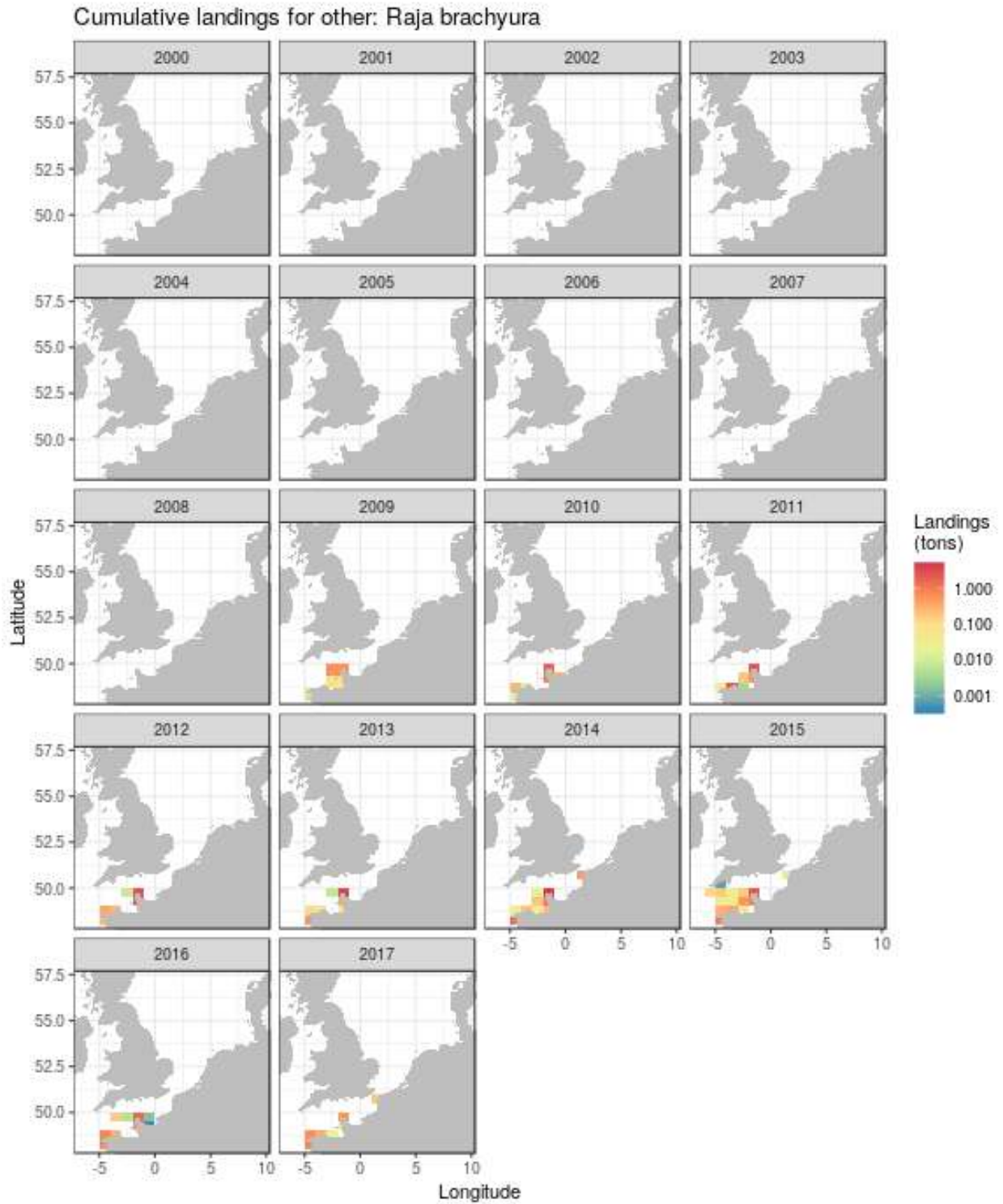


Figure 6.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

6.2.2 Commercial sampling

6.2.2.1 Landings and discards per unit effort and country

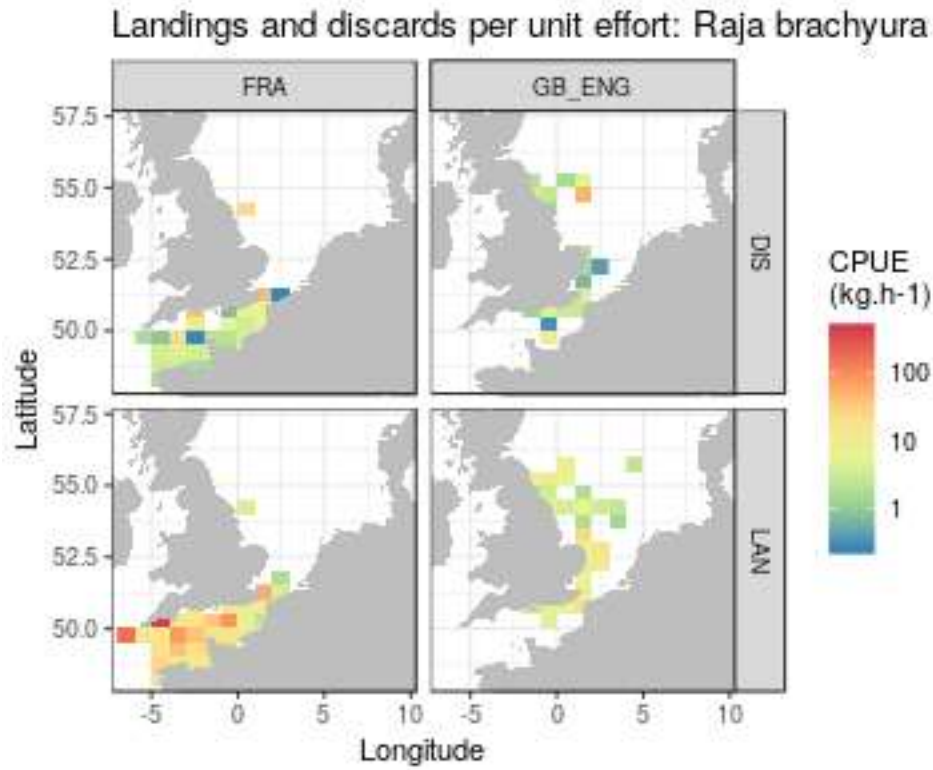


Figure 6.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

6.2.2.2 Annual catch per unit effort

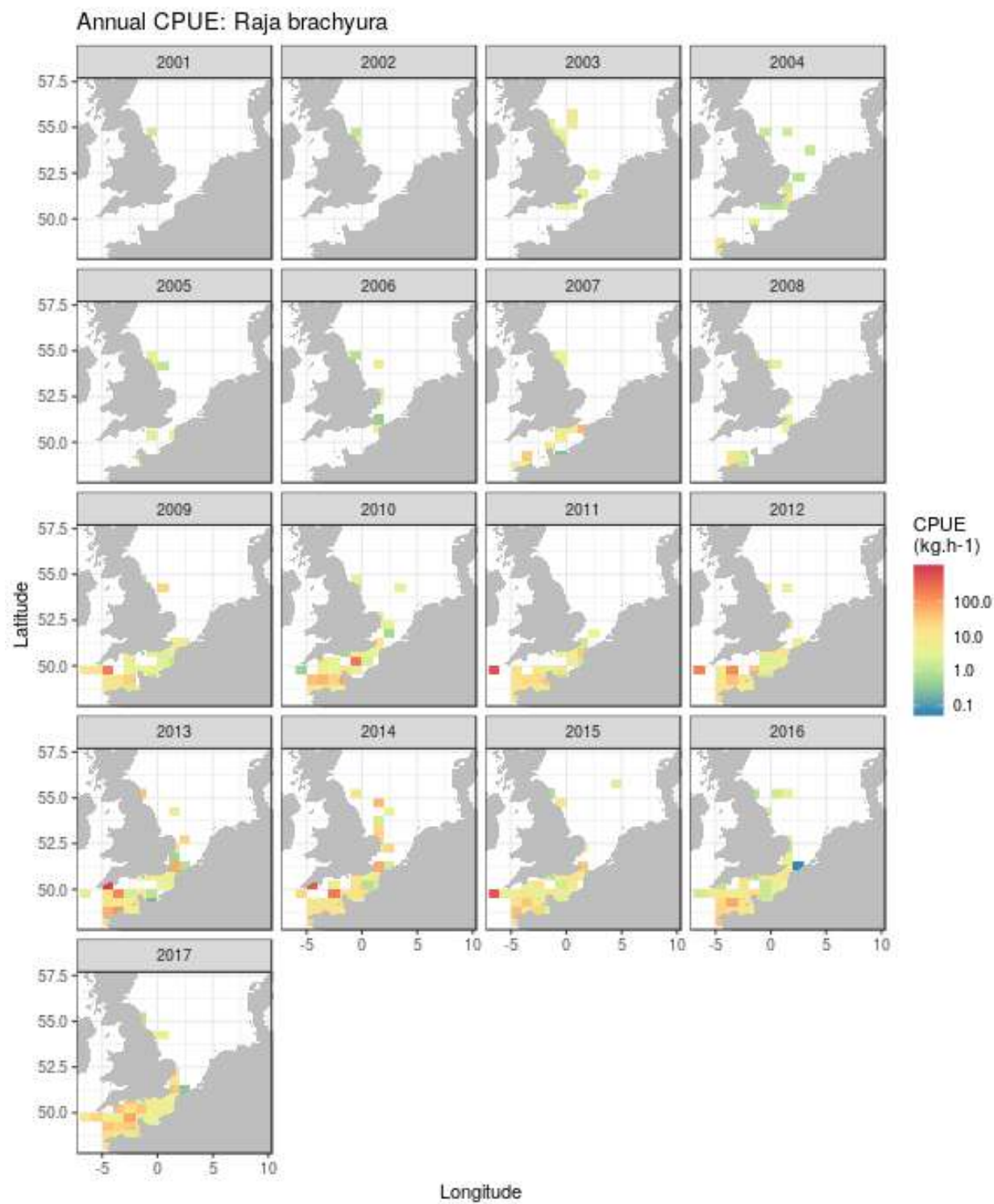


Figure 6.13: Catches per unit effort per year. The color scale is log 10 transformed.

6.2.2.3 Annual catch per unit effort for gear category trawler

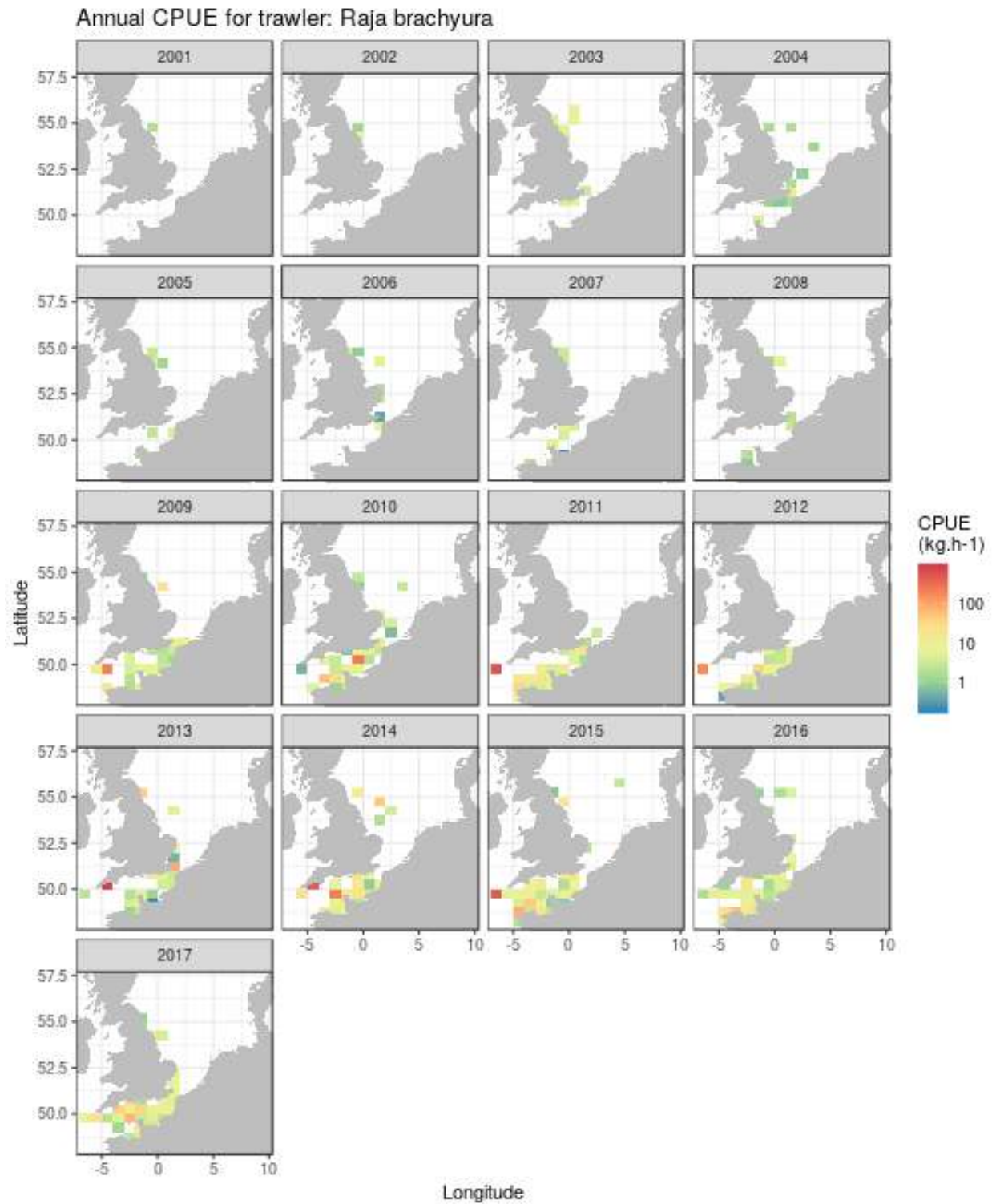


Figure 6.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

6.2.2.4 Annual catch per unit effort for gear category net

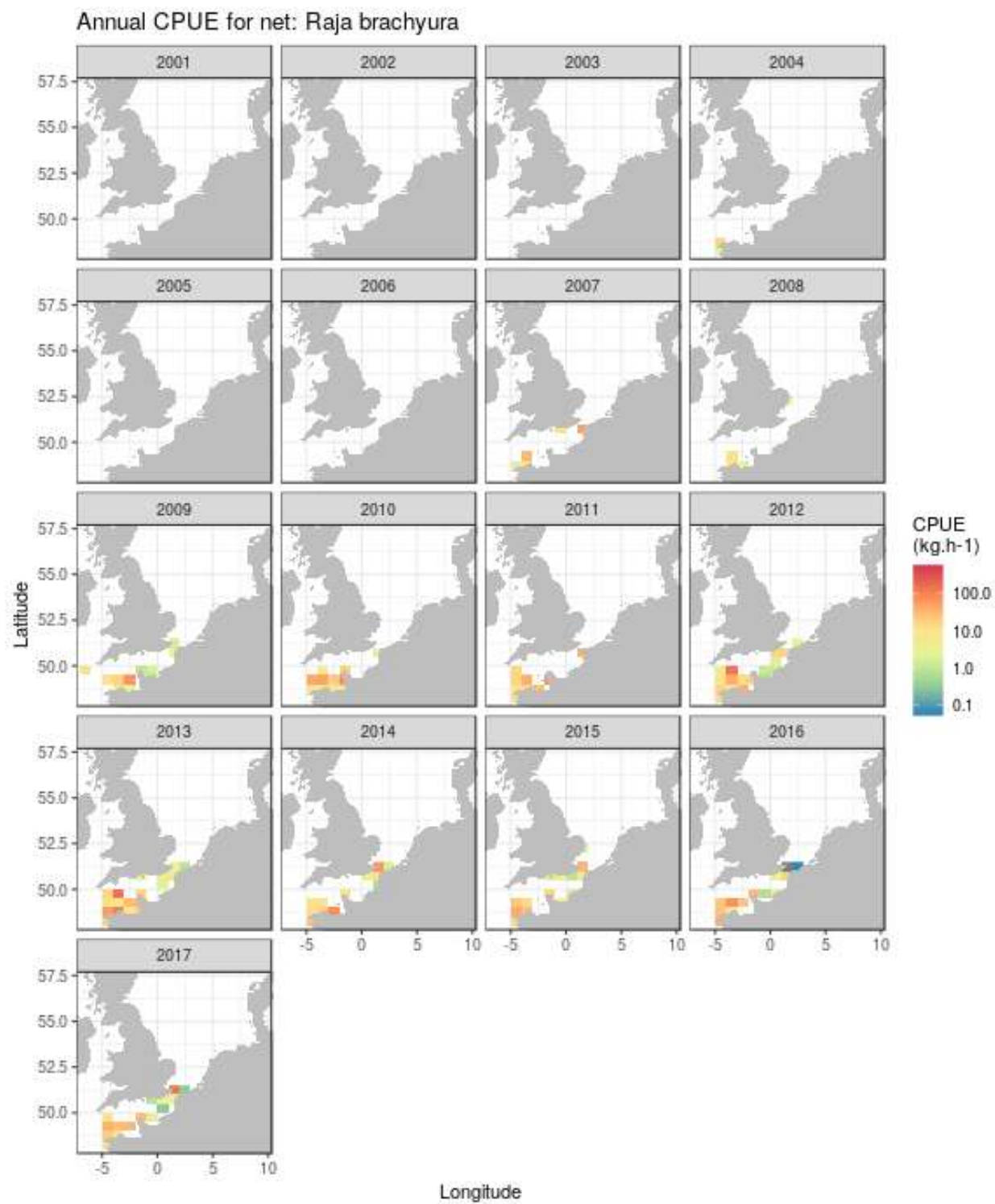


Figure 6.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

6.2.2.5 Annual catch per unit effort for gear category line

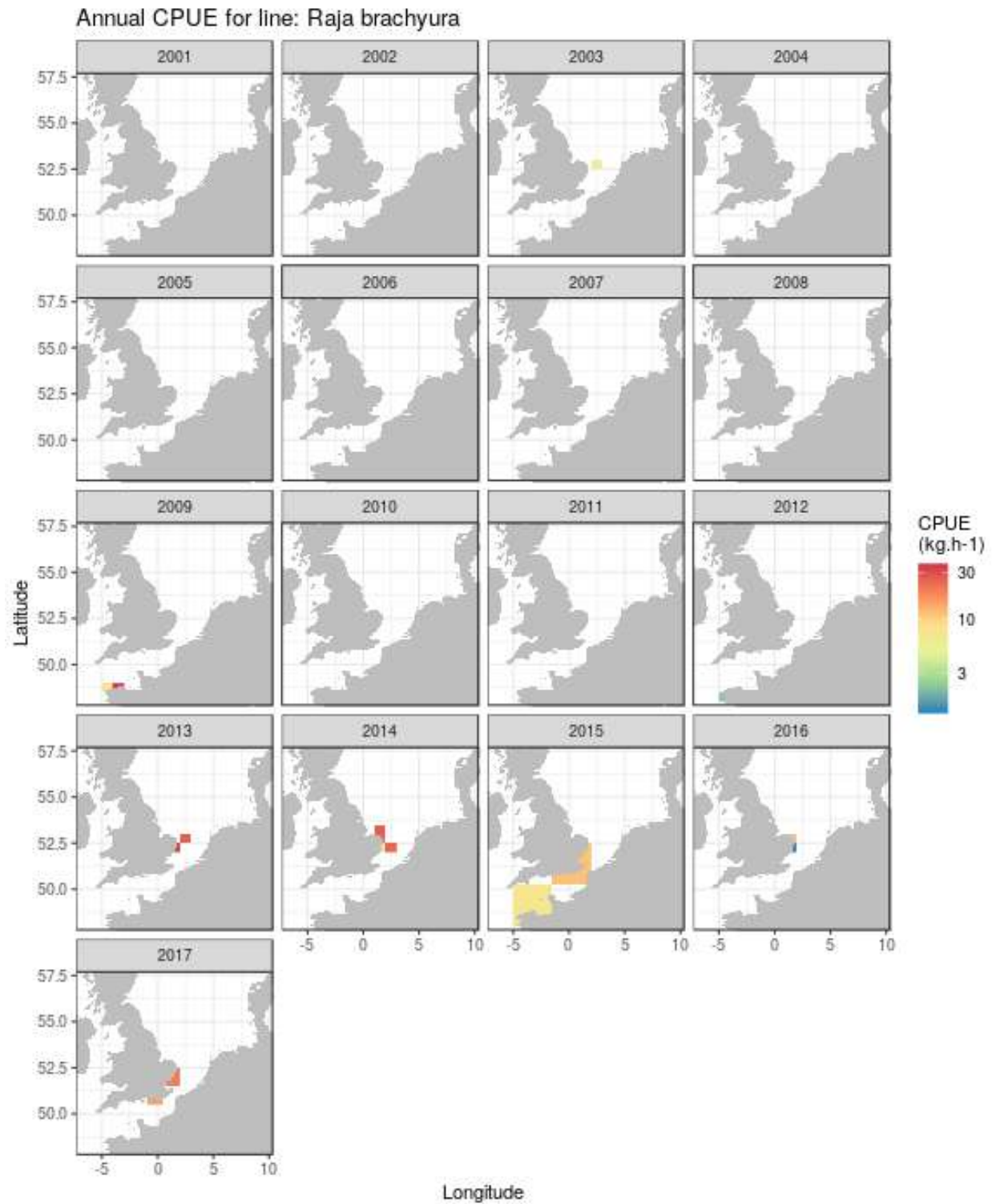


Figure 6.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

6.2.2.6 Annual catch per unit effort for gear category other

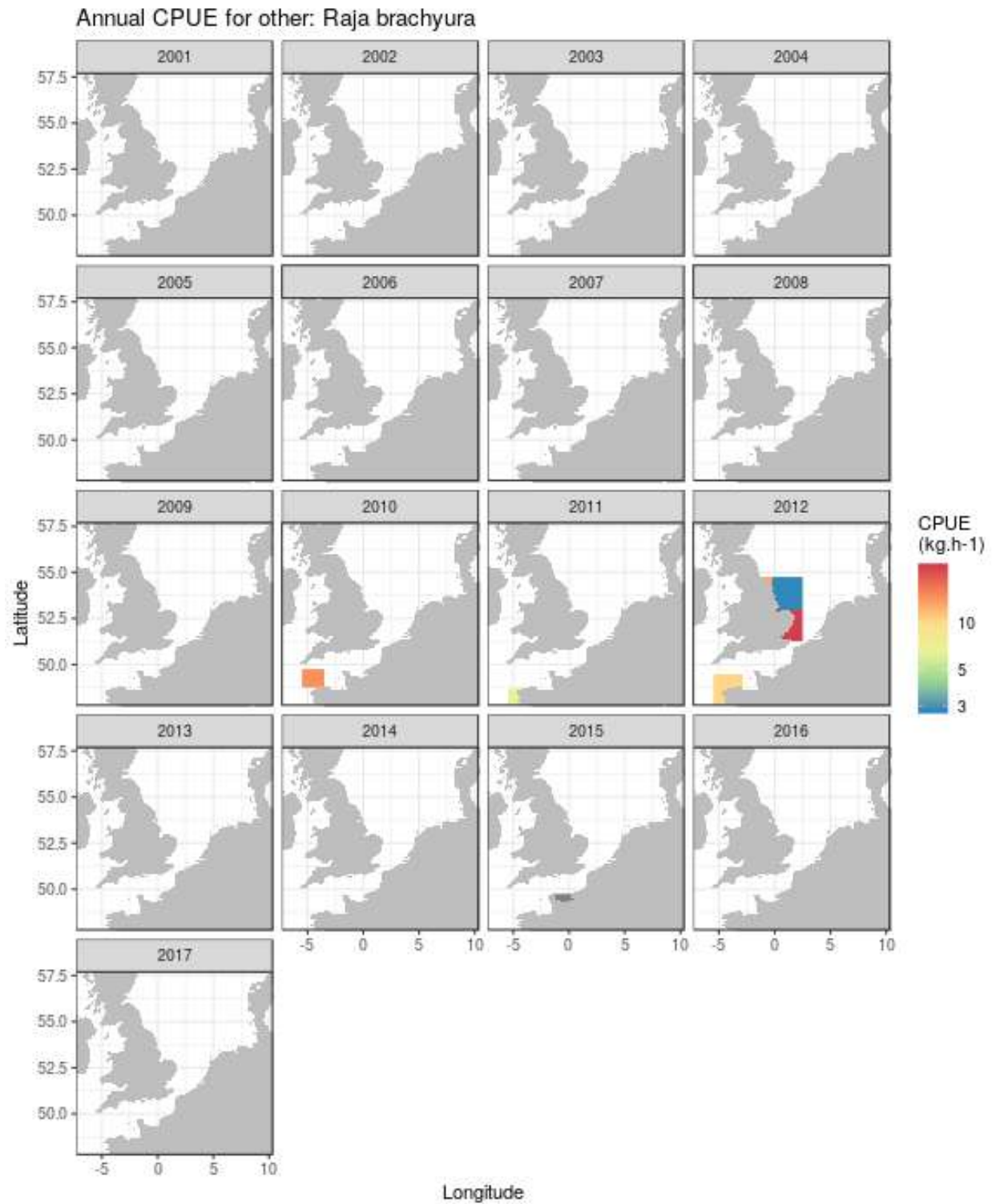


Figure 6.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

7 Rajiformes

7.1 Survey

7.1.1 Average CPUE

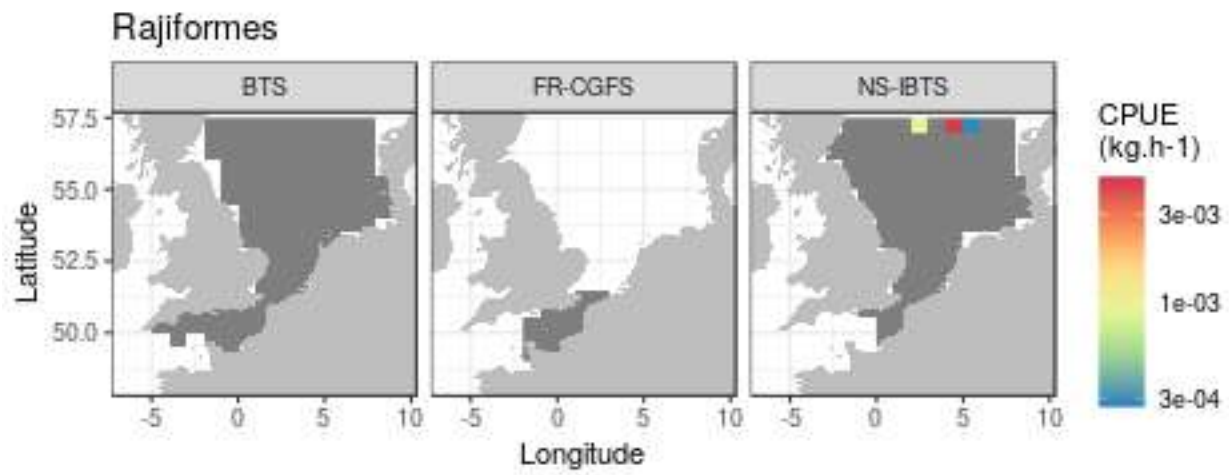


Figure 7.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

7.1.2 Annual CPUE: BTS

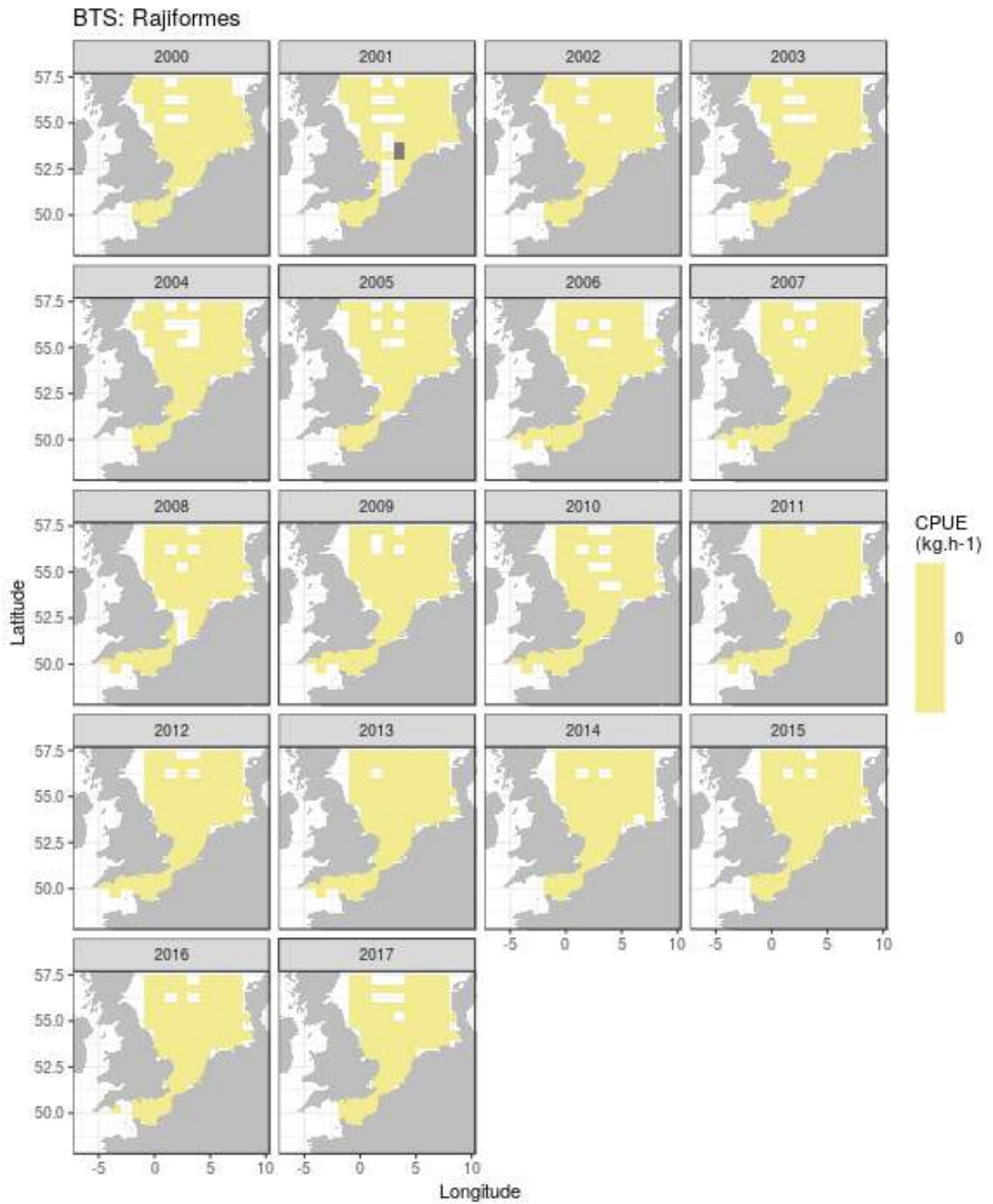


Figure 7.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

7.1.3 Annual CPUE: FR-CGFS

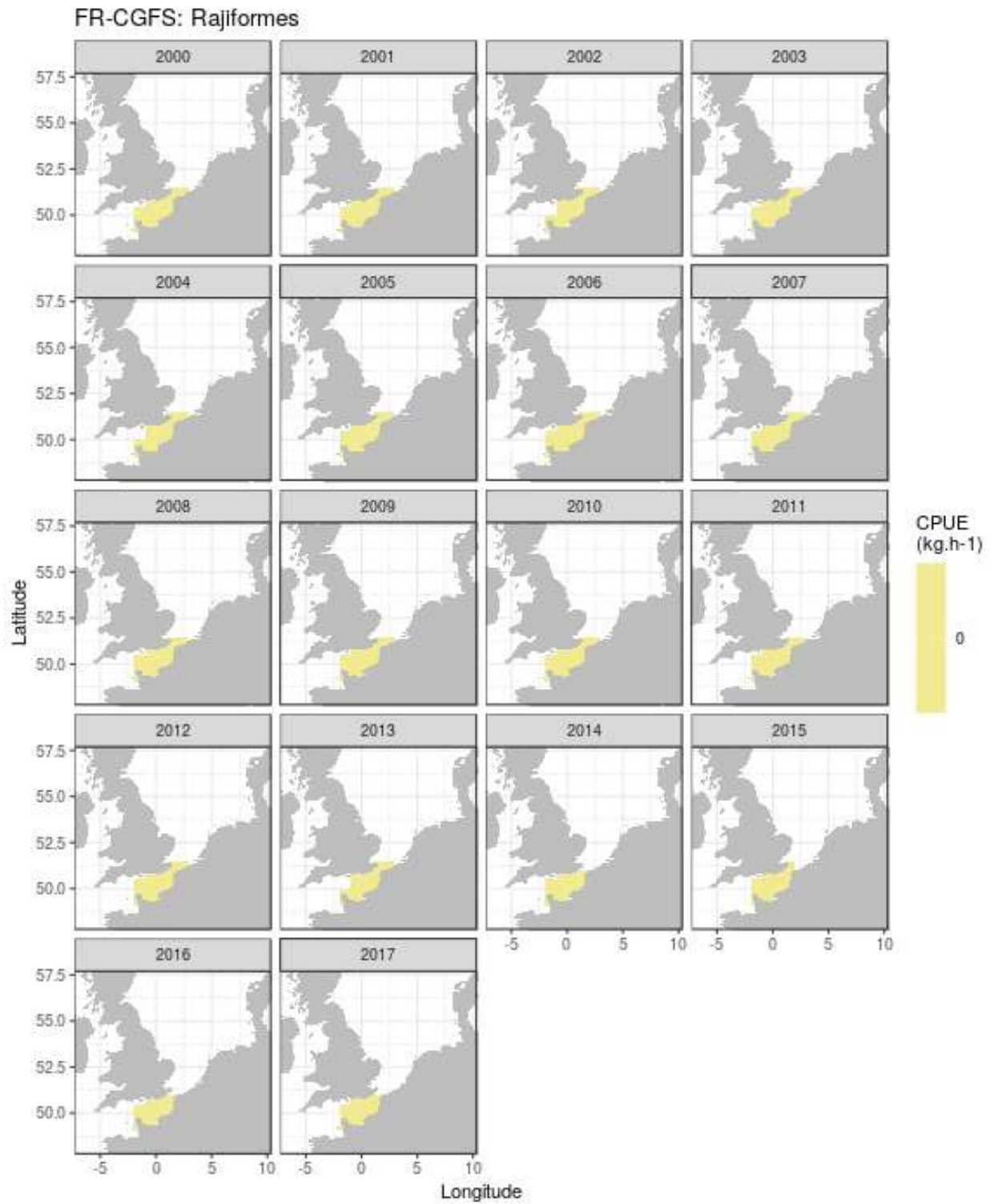


Figure 7.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

7.1.4 Annual CPUE: NS-IBTS

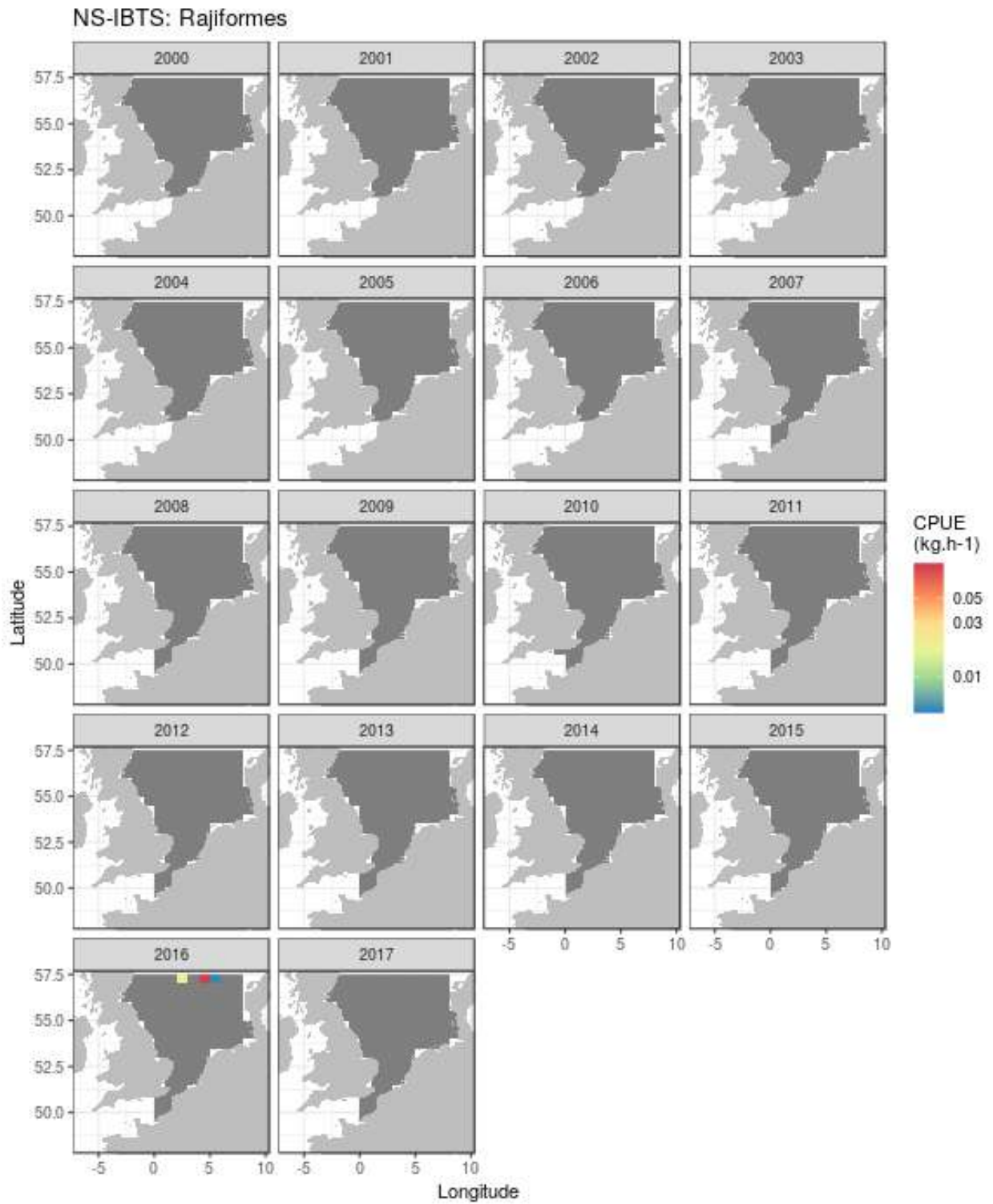


Figure 7.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

7.2 Fishery dependent information

7.2.1 Landings

7.2.1.1 Landings by country

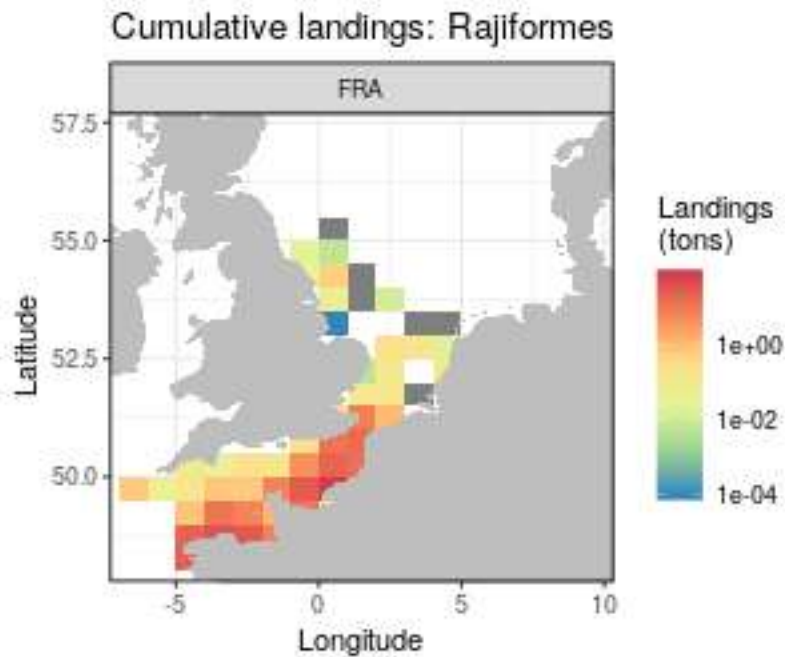


Figure 7.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

7.2.1.2 Landings by country and gear category

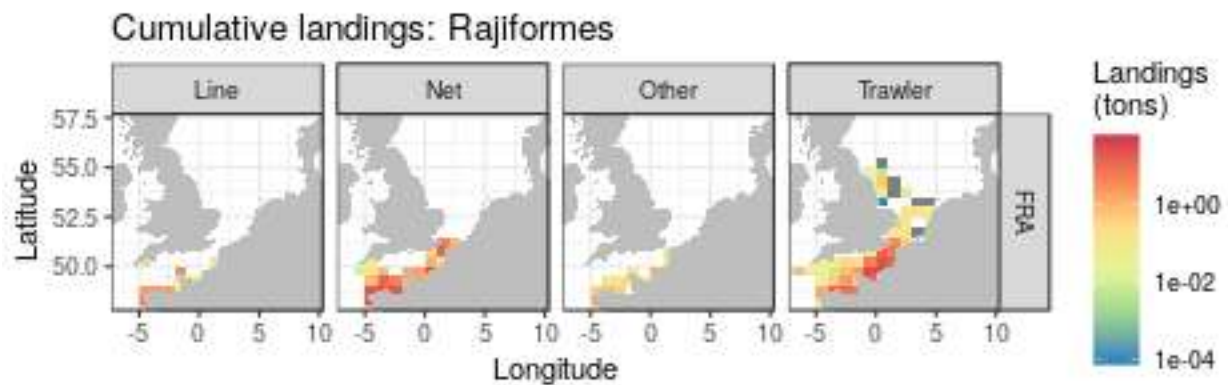


Figure 7.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

7.2.1.3 Annual landings

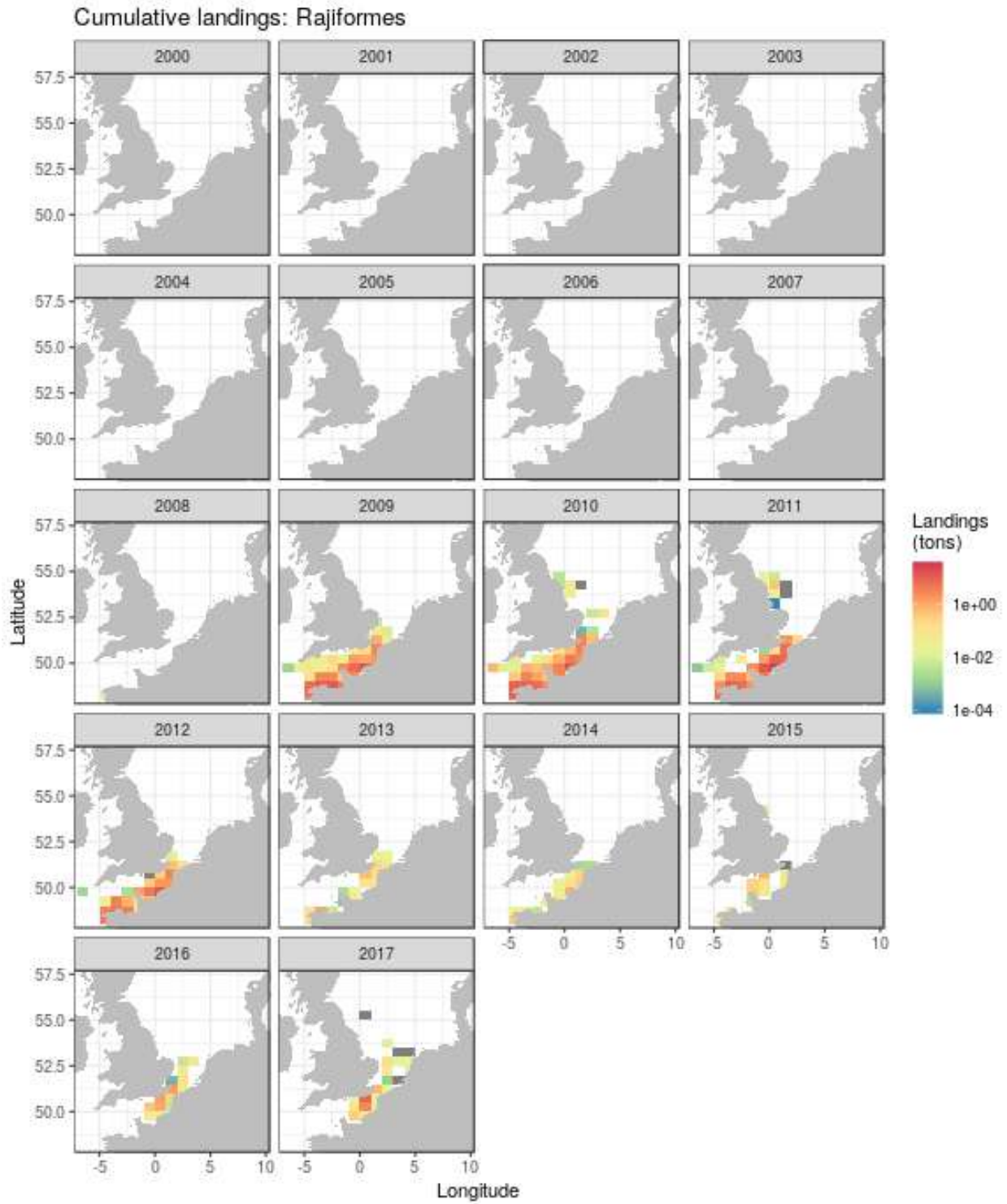


Figure 7.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

7.2.1.4 Annual landings for gear category trawler

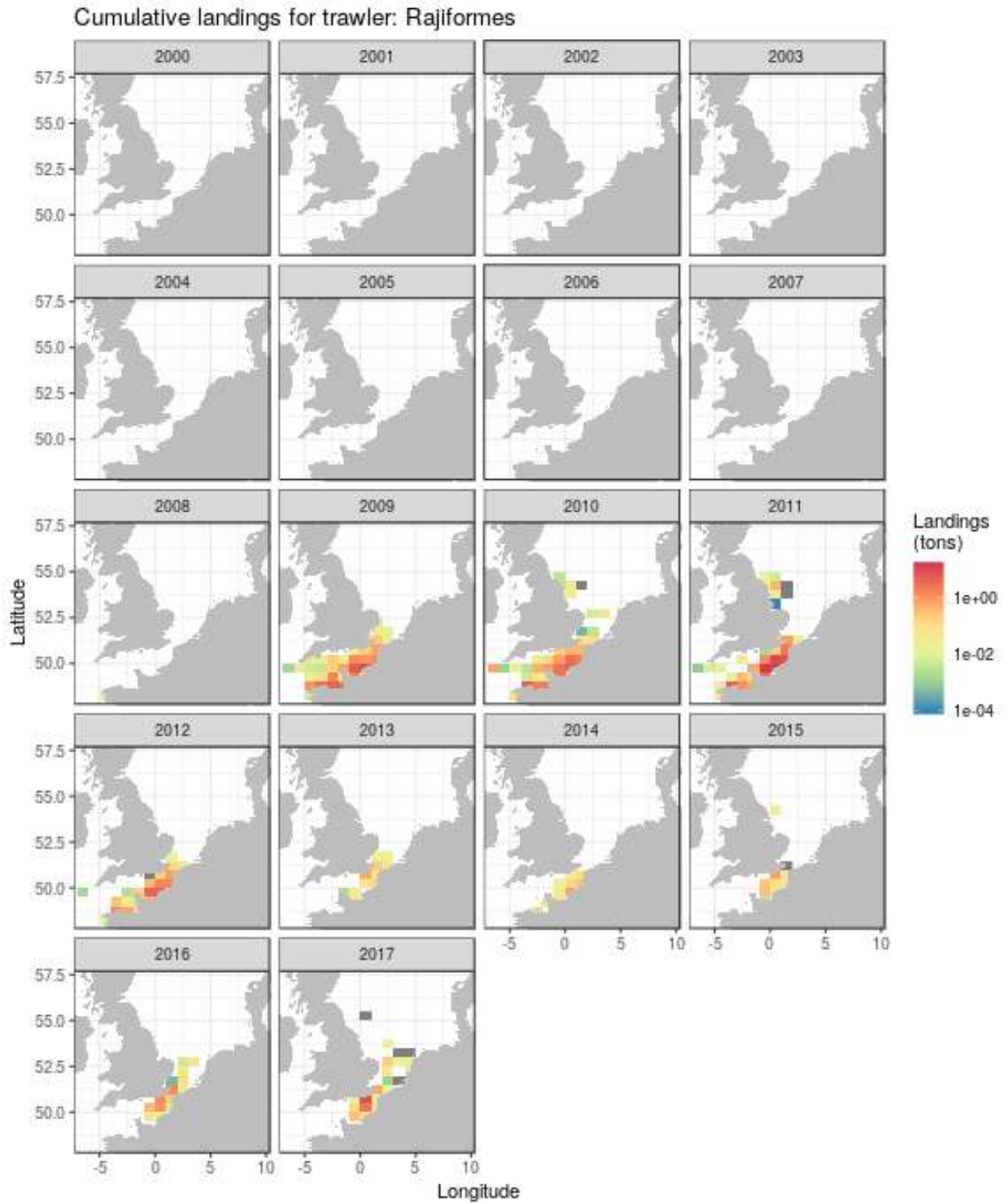


Figure 7.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

7.2.1.5 Annual landings for gear category nets

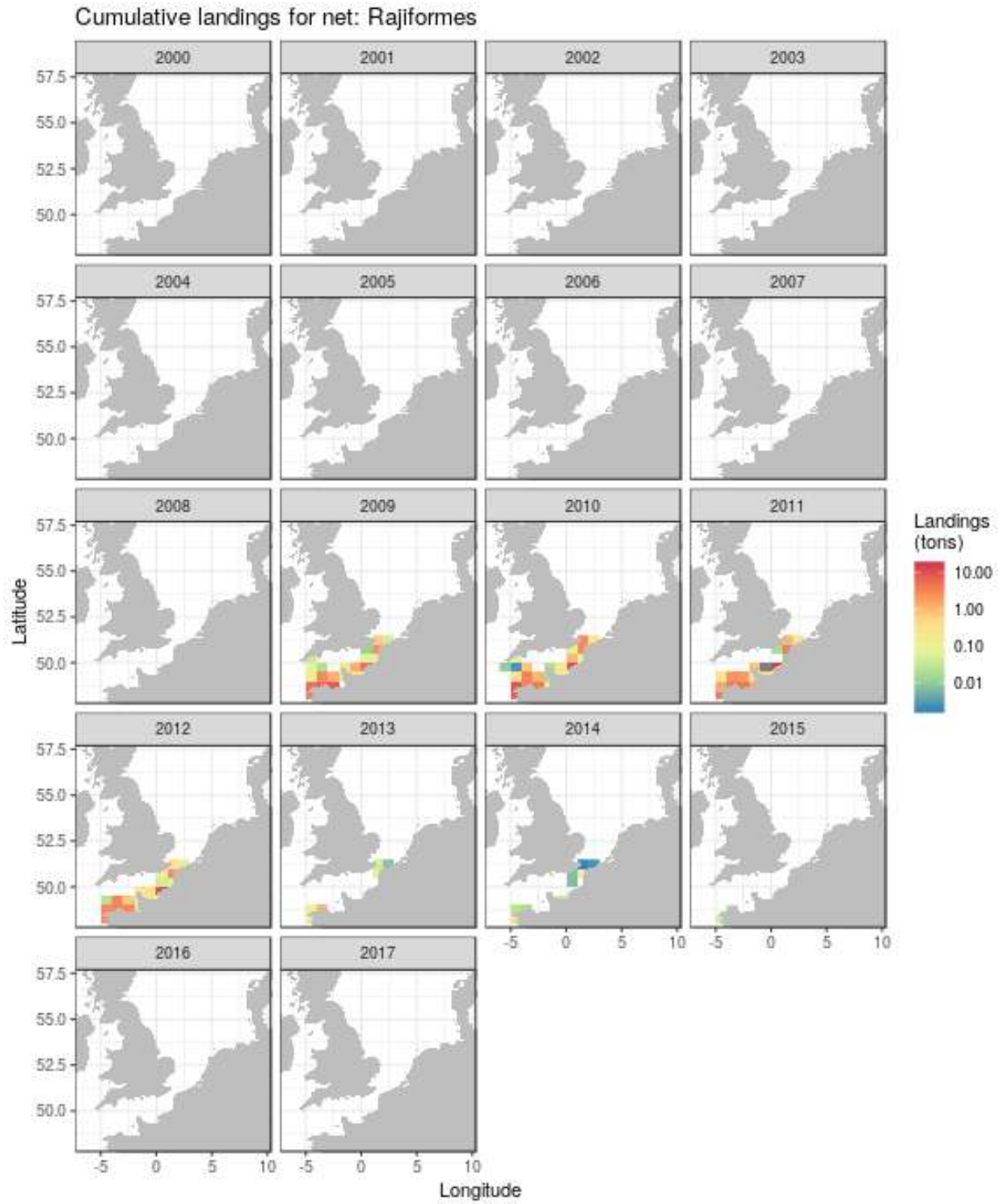


Figure 7.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

7.2.1.6 Annual landings for gear category lines

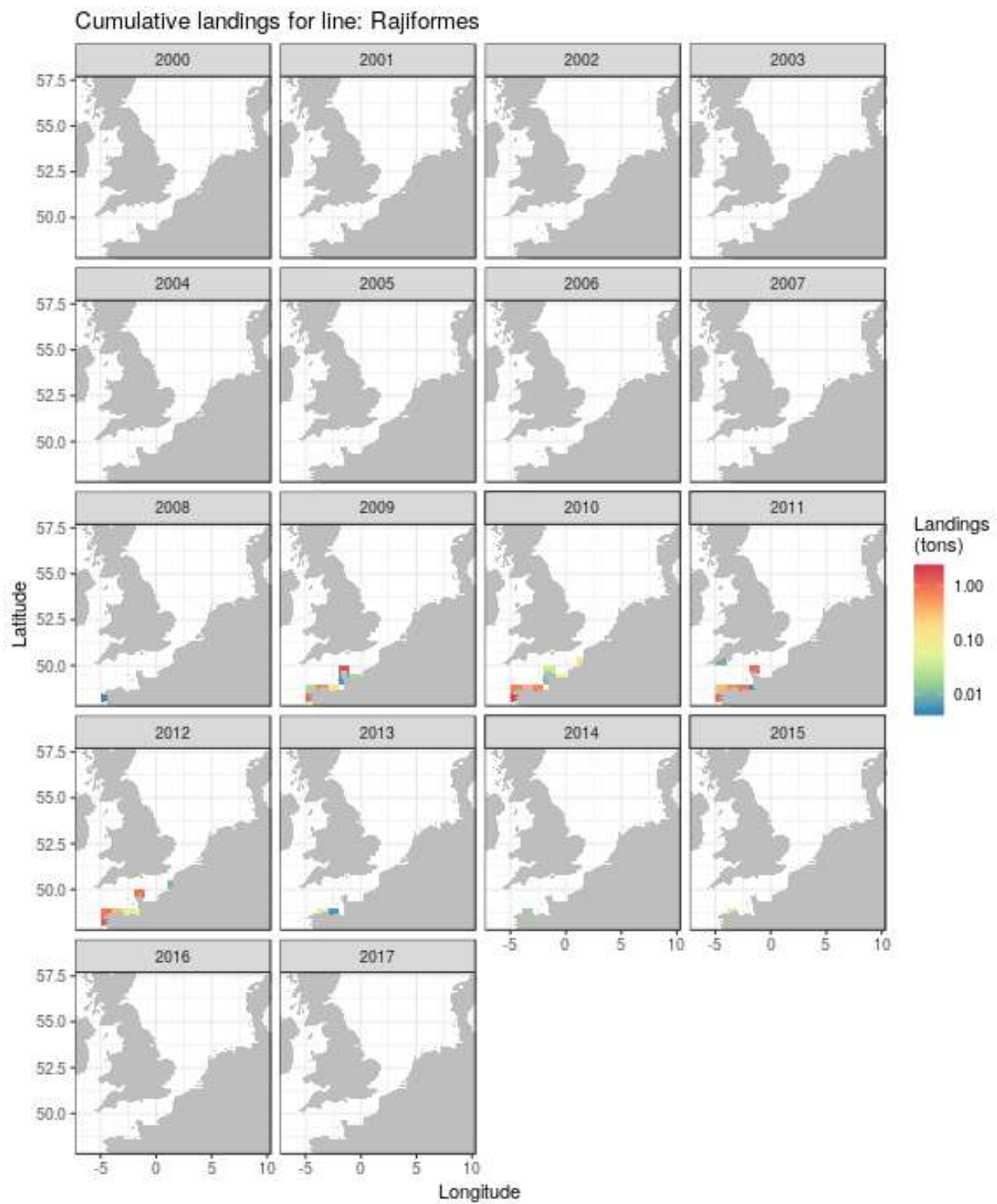


Figure 7.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

7.2.1.7 Annual landings for gear category other

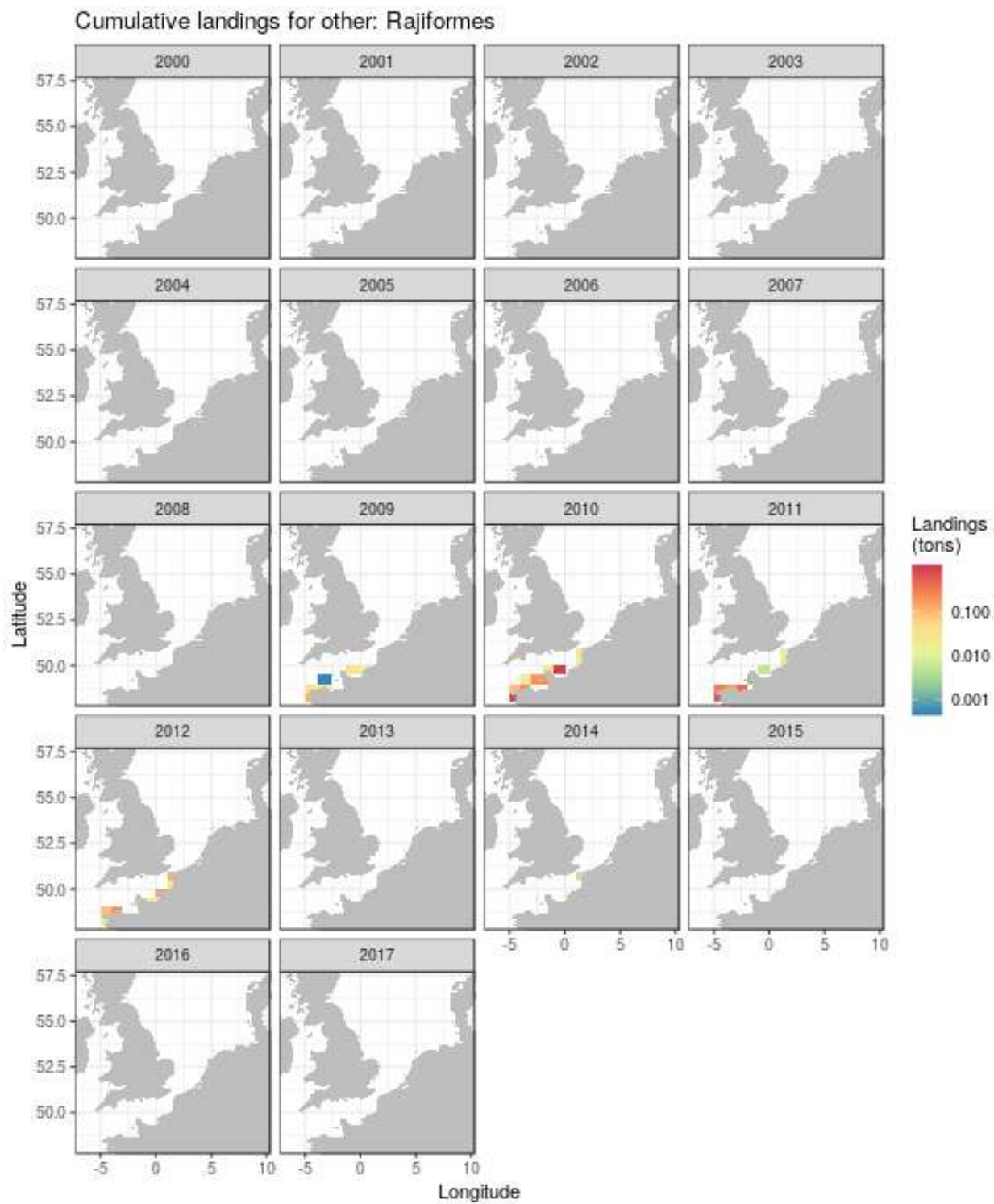


Figure 7.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

7.2.2 Commercial sampling

7.2.2.1 Landings and discards per unit effort and country

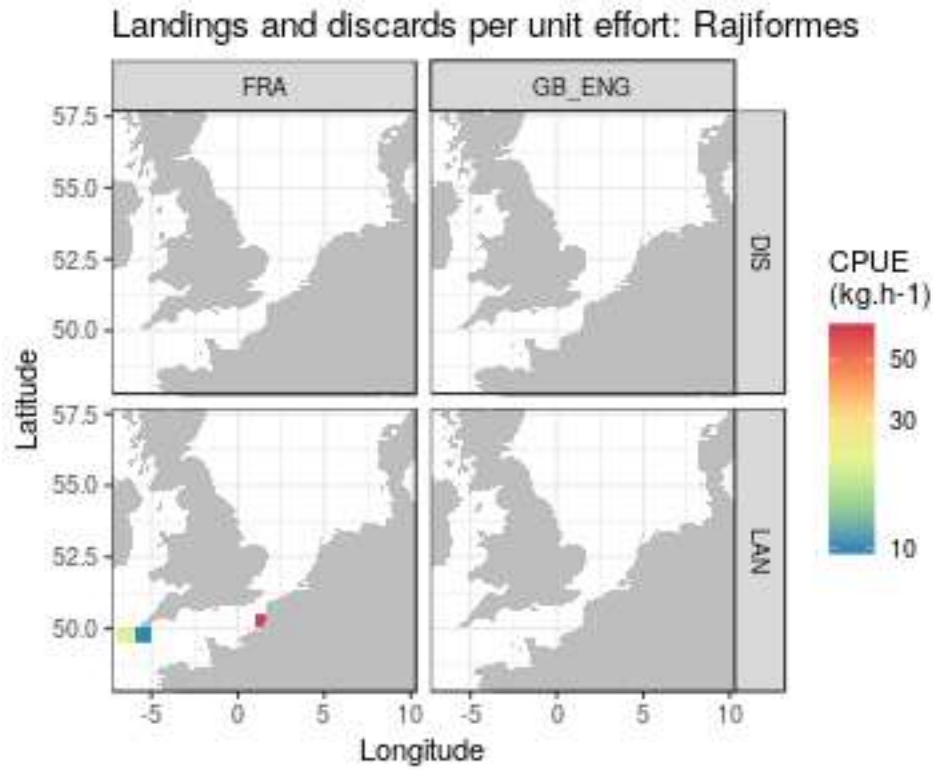


Figure 7.12: Average landing (LAN) and discard (DIS) per hour fishing by country(FRA: France, GB_ENG: England). The color scale is log 10 transformed.

7.2.2.2 Annual catch per unit effort

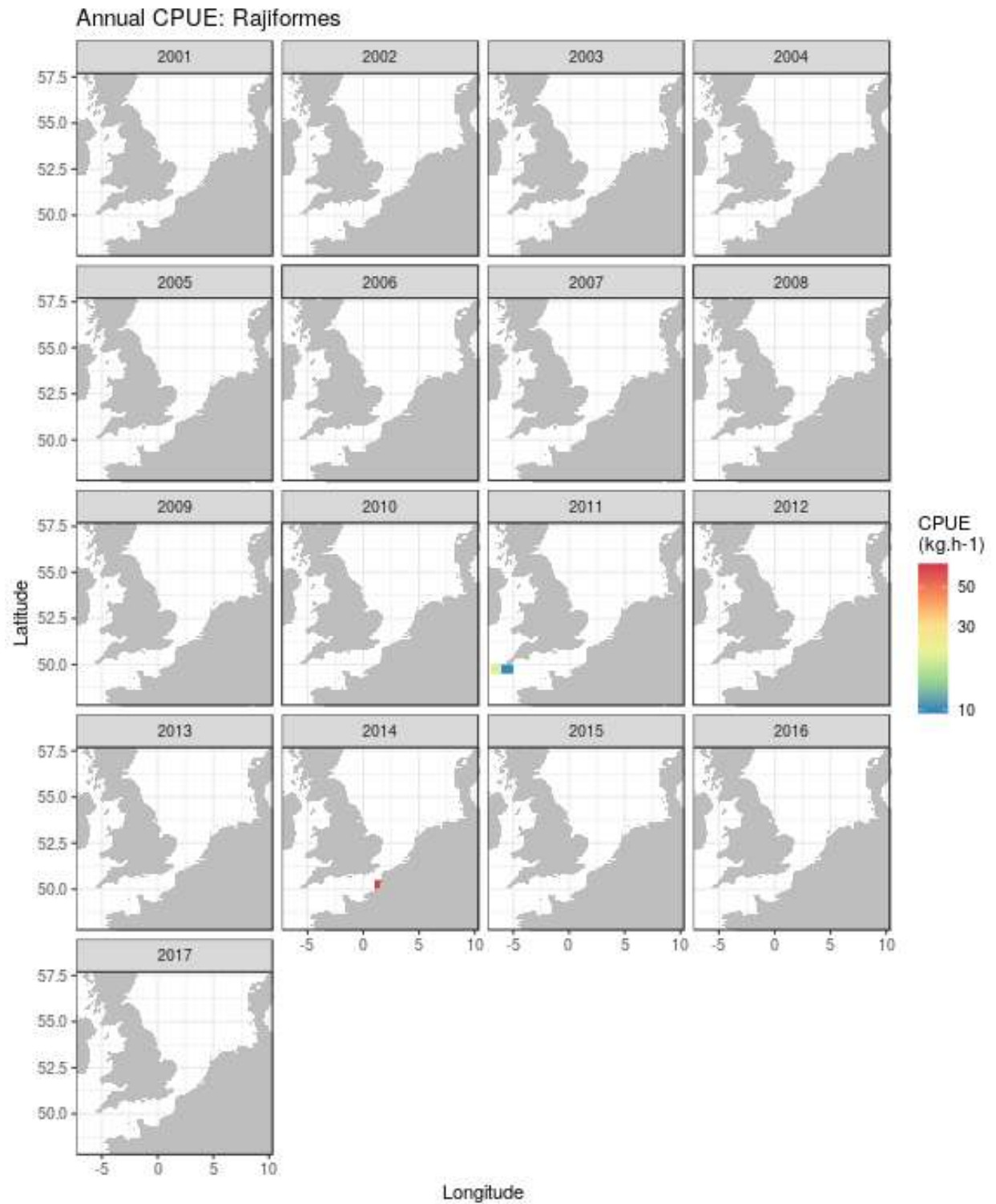


Figure 7.13: Catches per unit effort per year. The color scale is log 10 transformed.

7.2.2.3 Annual catch per unit effort for gear category trawler

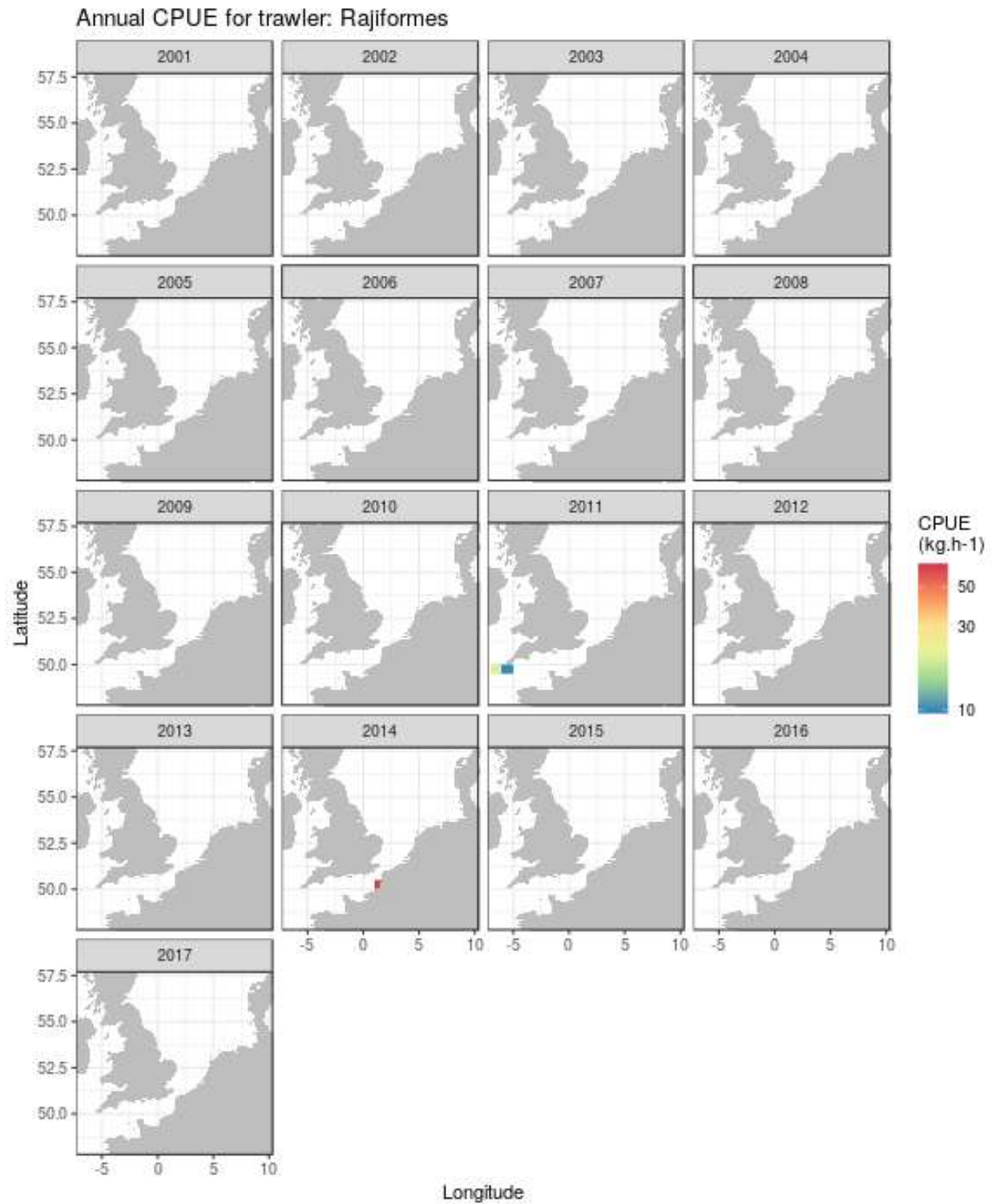


Figure 7.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

7.2.2.4 Annual catch per unit effort for gear category net

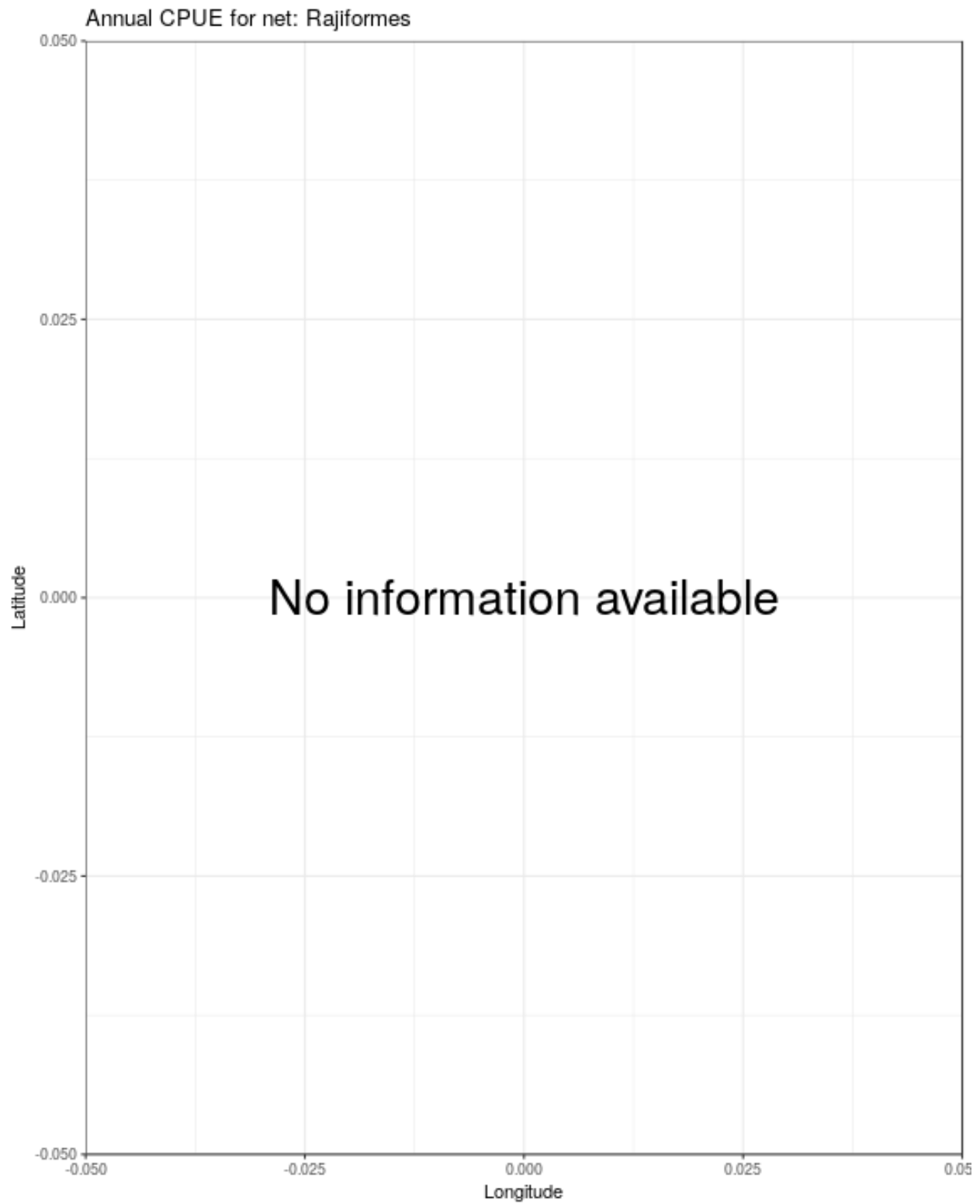


Figure 7.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

7.2.2.5 Annual catch per unit effort for gear category line



Figure 7.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

7.2.2.6 Annual catch per unit effort for gear category other



Figure 7.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

8 *Raja microocellata*

8.1 Survey

8.1.1 Average CPUE

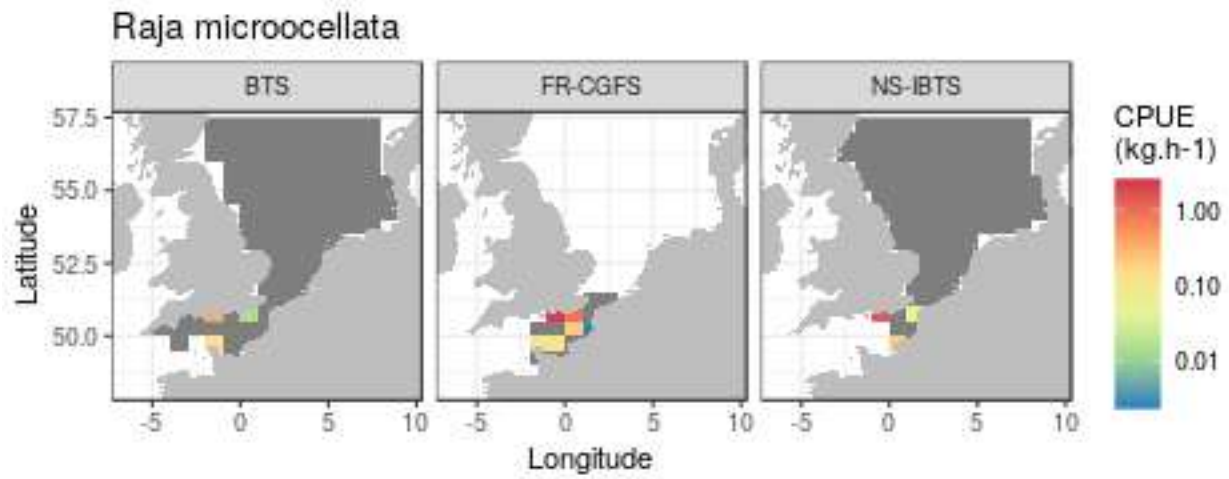


Figure 8.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

8.1.2 Annual CPUE: BTS

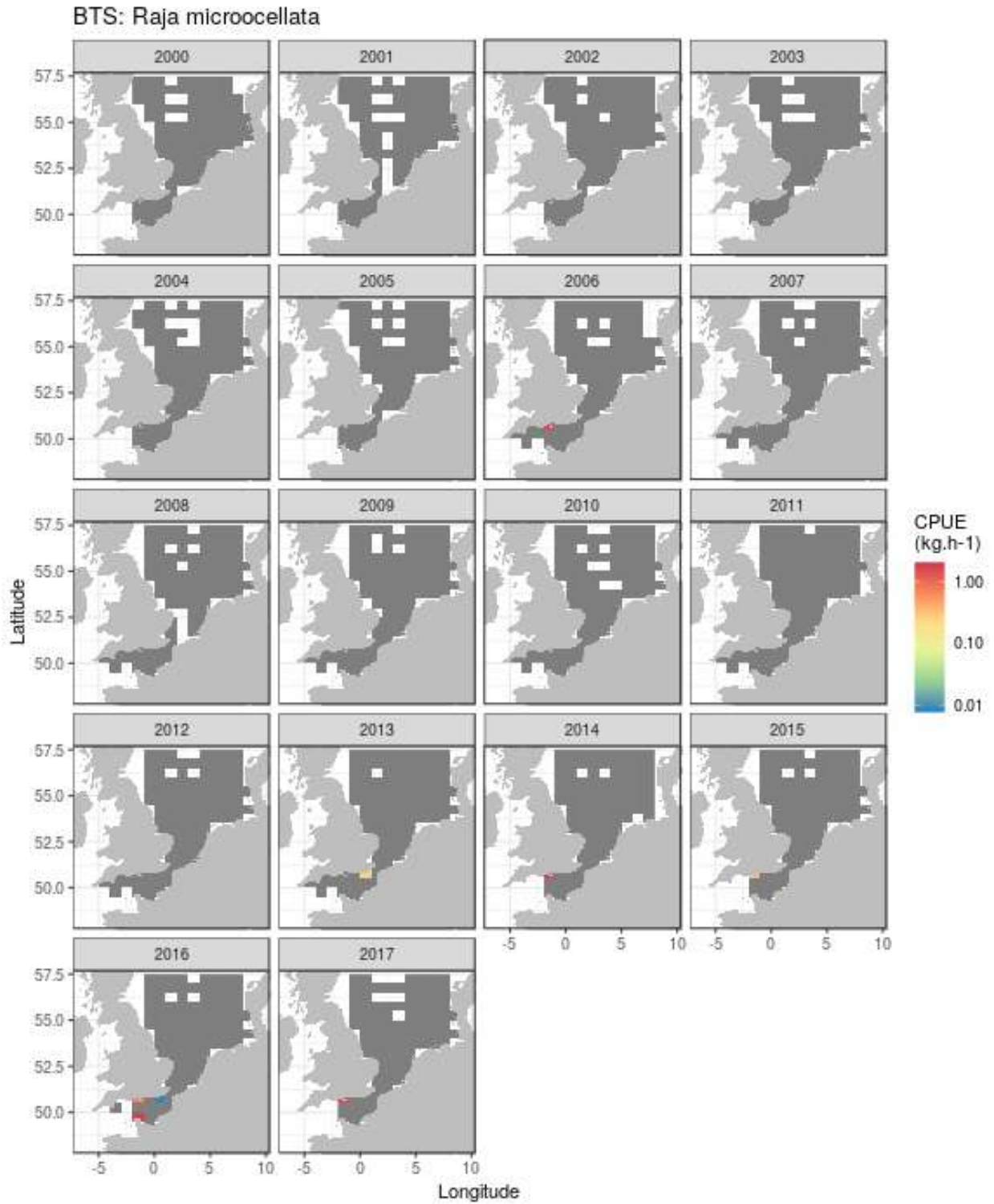


Figure 8.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

8.1.3 Annual CPUE: FR-CGFS

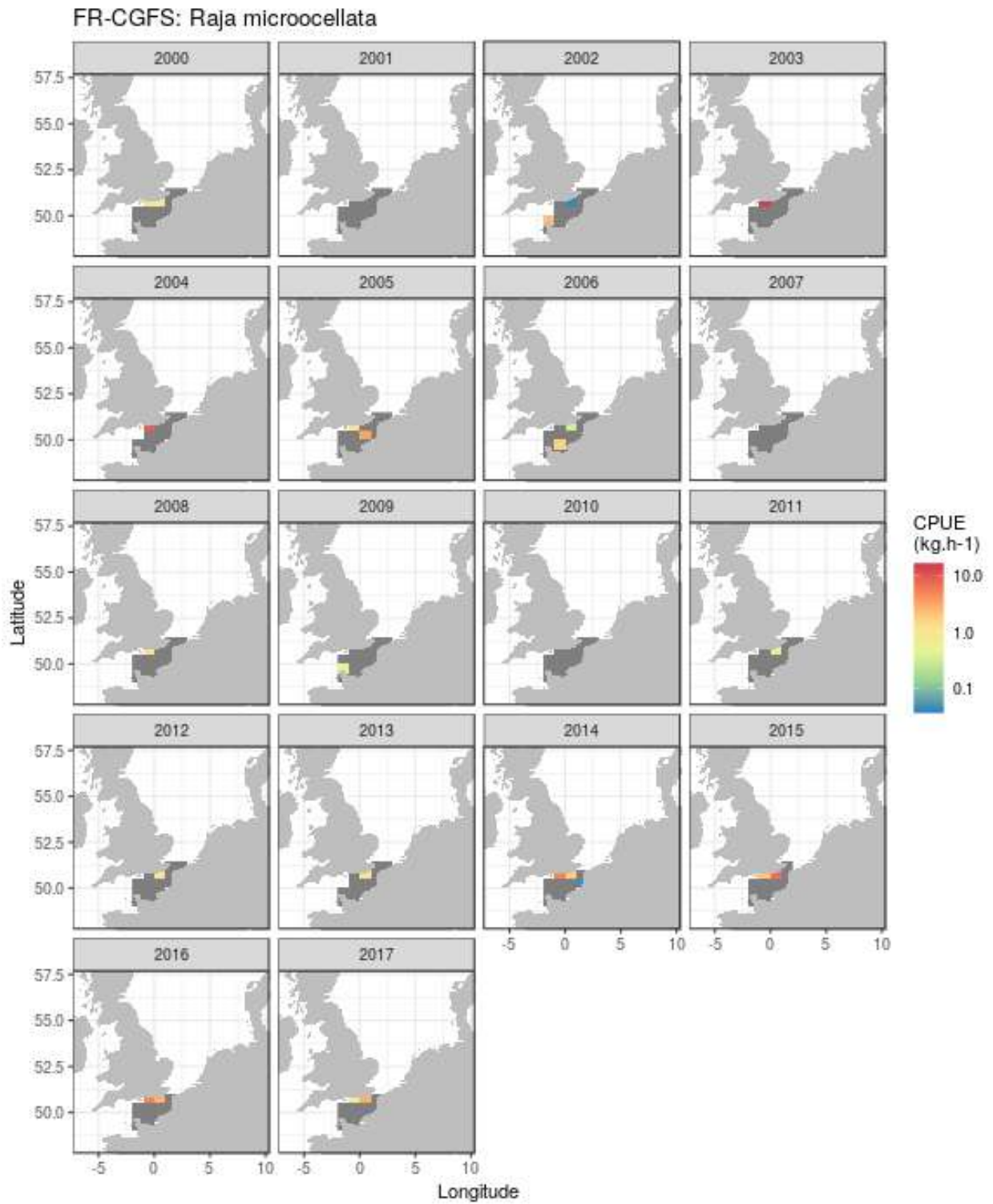


Figure 8.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

8.1.4 Annual CPUE: NS-IBTS

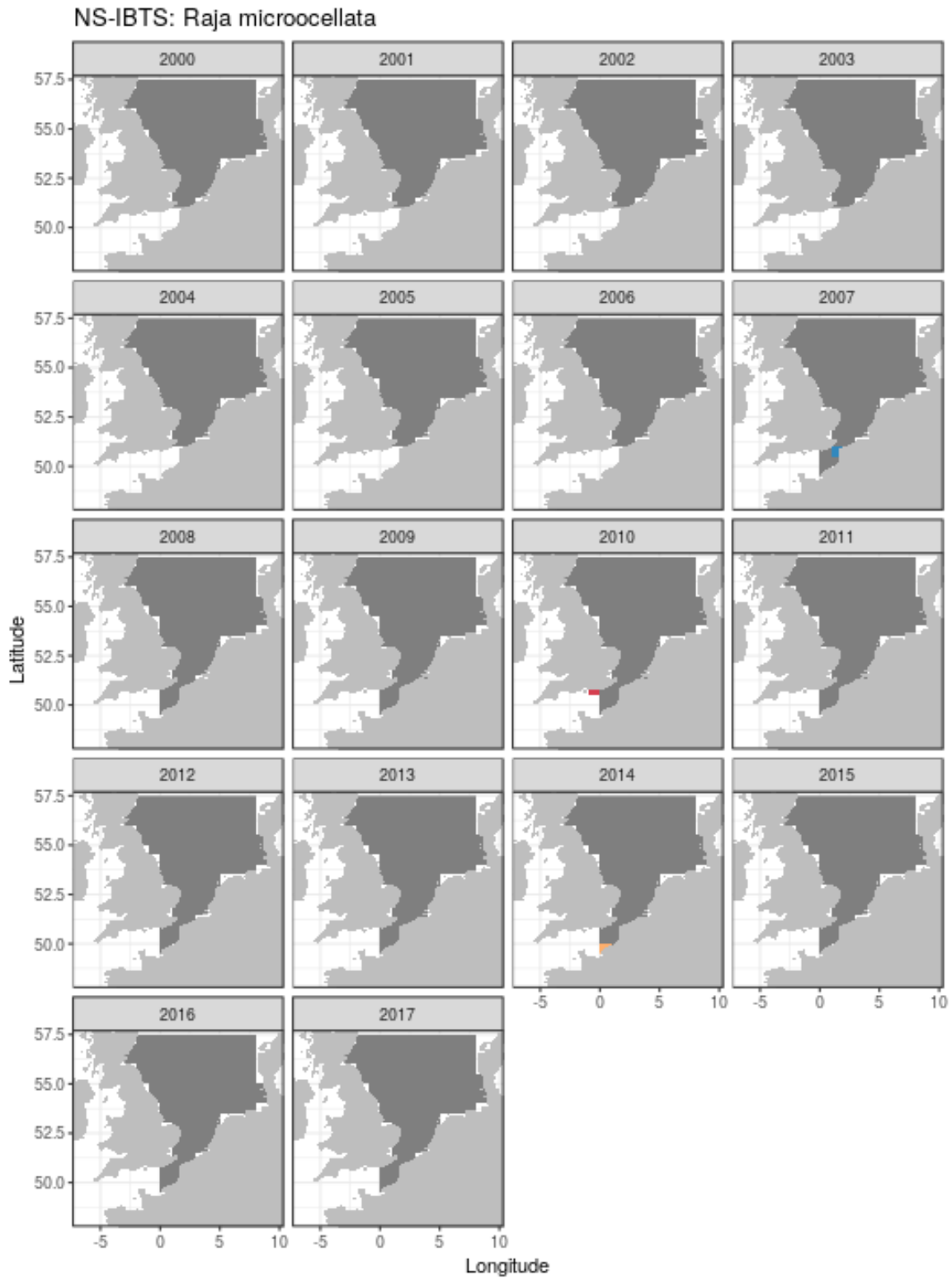


Figure 8.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

8.2 Fishery dependent information

8.2.1 Landings

8.2.1.1 Landings by country

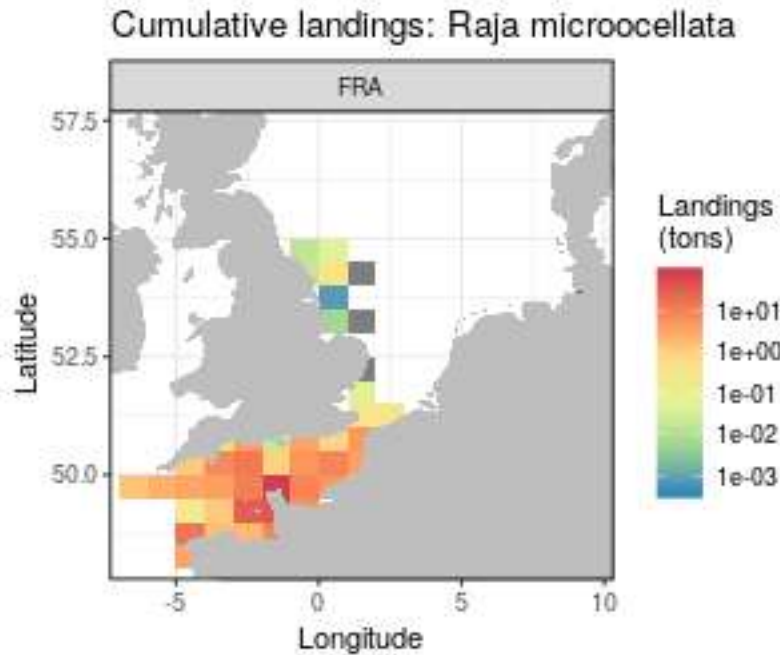


Figure 8.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

8.2.1.2 Landings by country and gear category

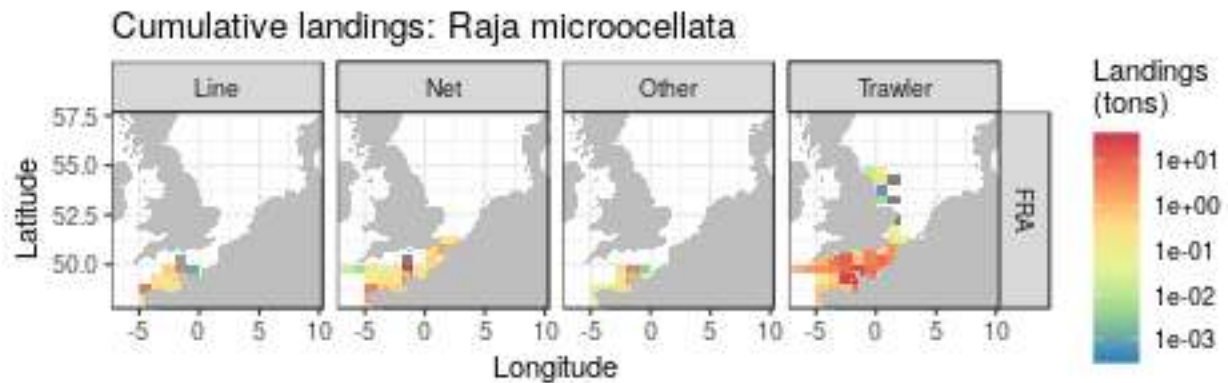


Figure 8.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

8.2.1.3 Annual landings

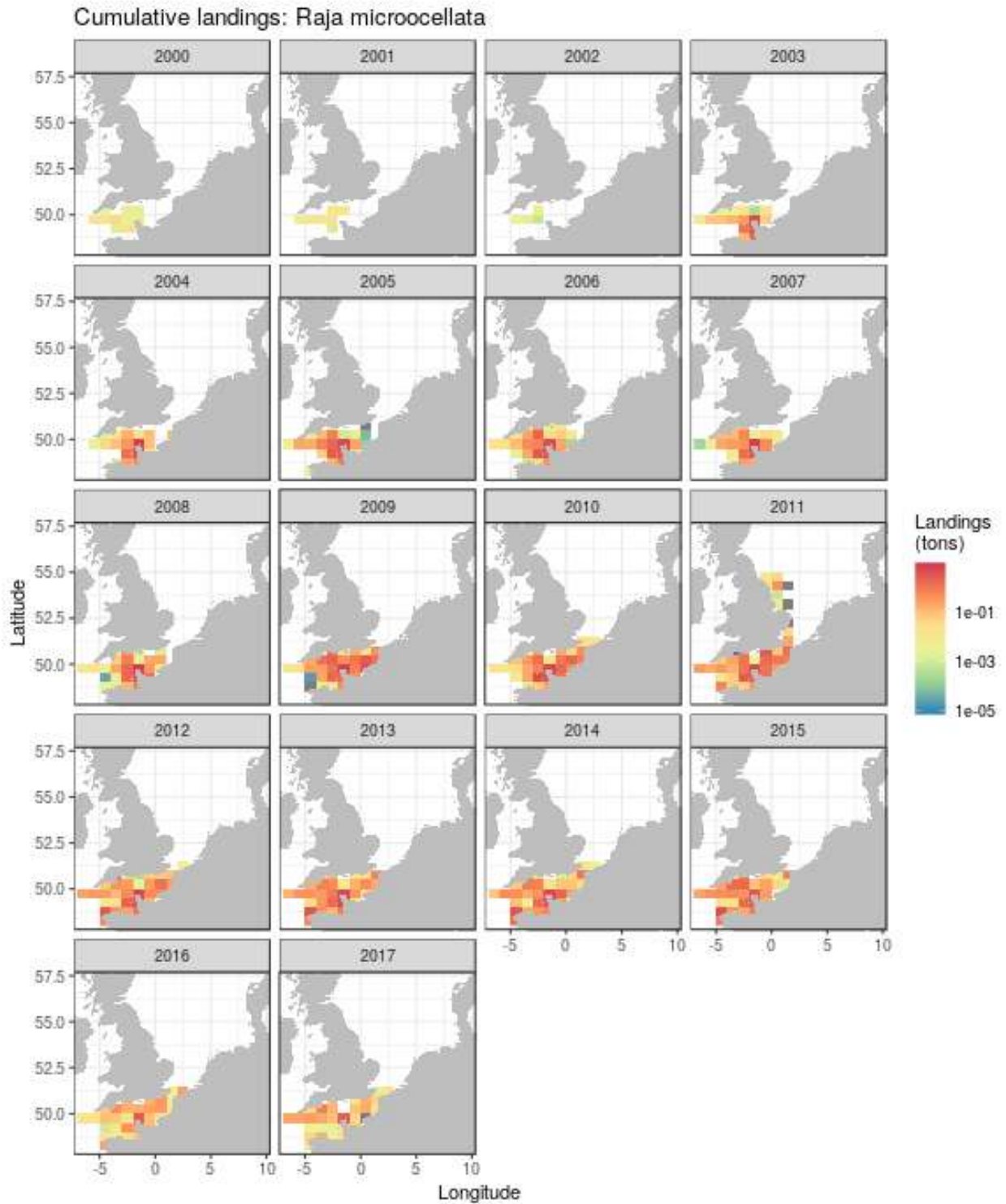


Figure 8.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

8.2.1.4 Annual landings for gear category trawler

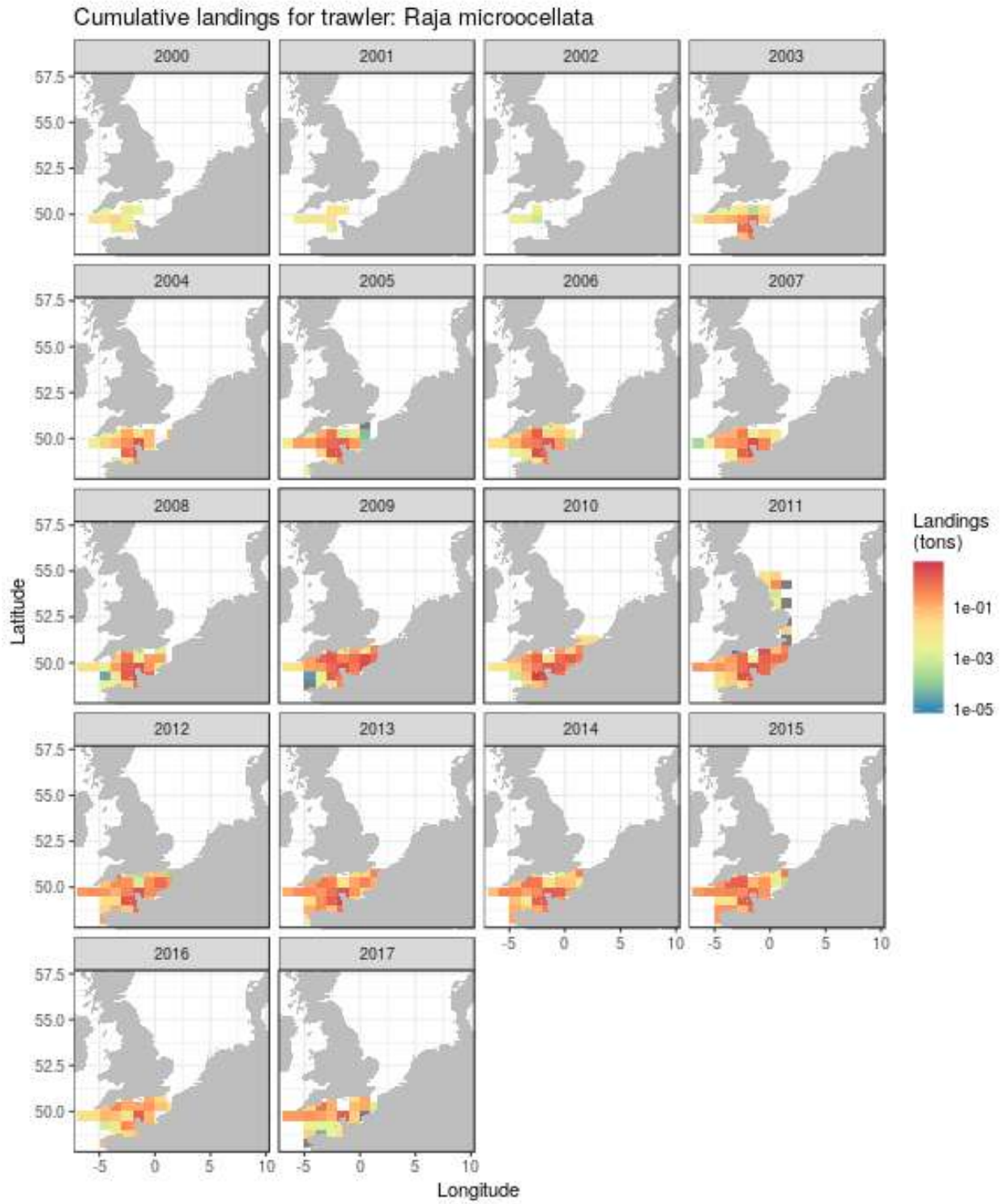


Figure 8.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

8.2.1.5 Annual landings for gear category nets

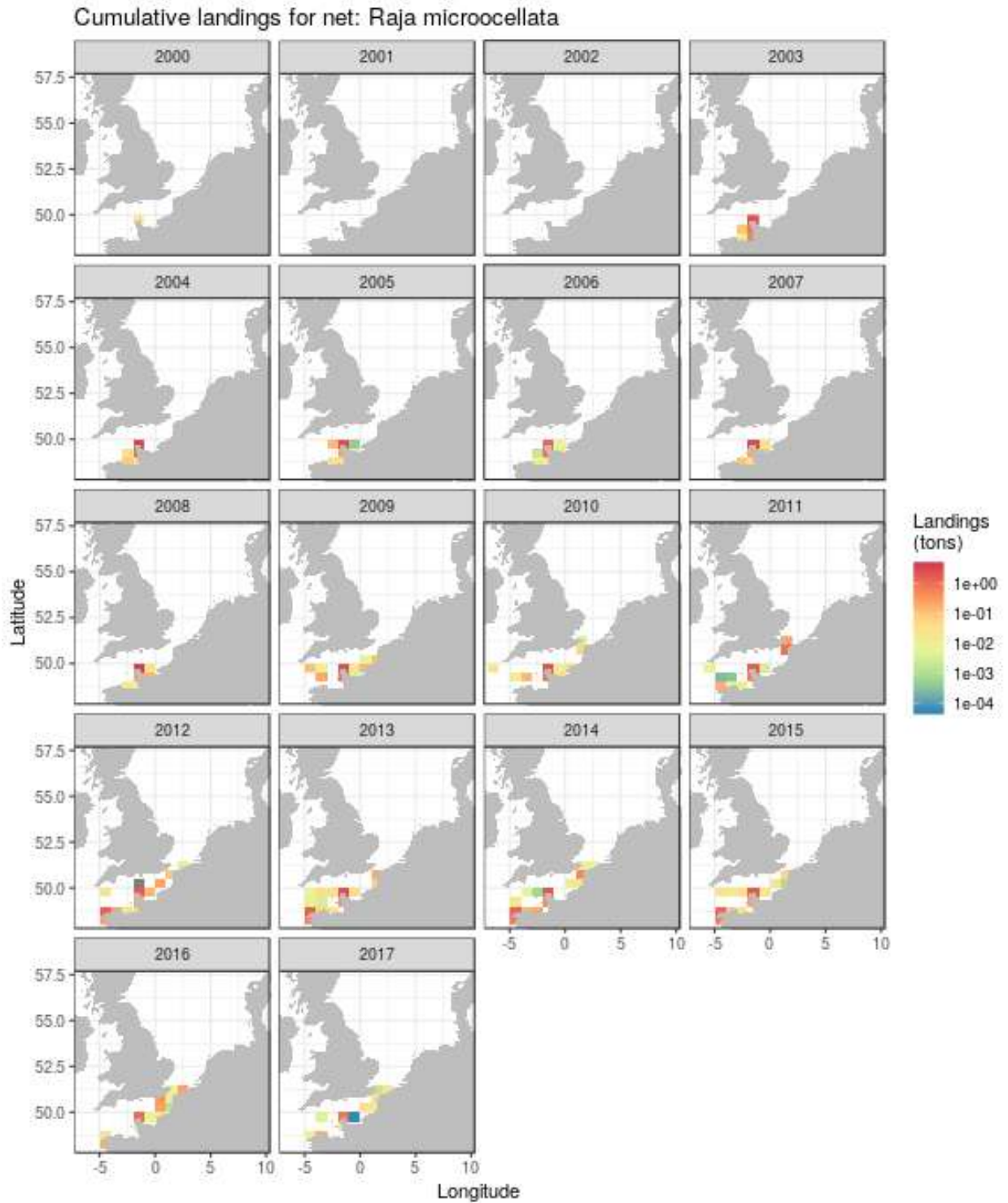


Figure 8.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

8.2.1.6 Annual landings for gear category lines

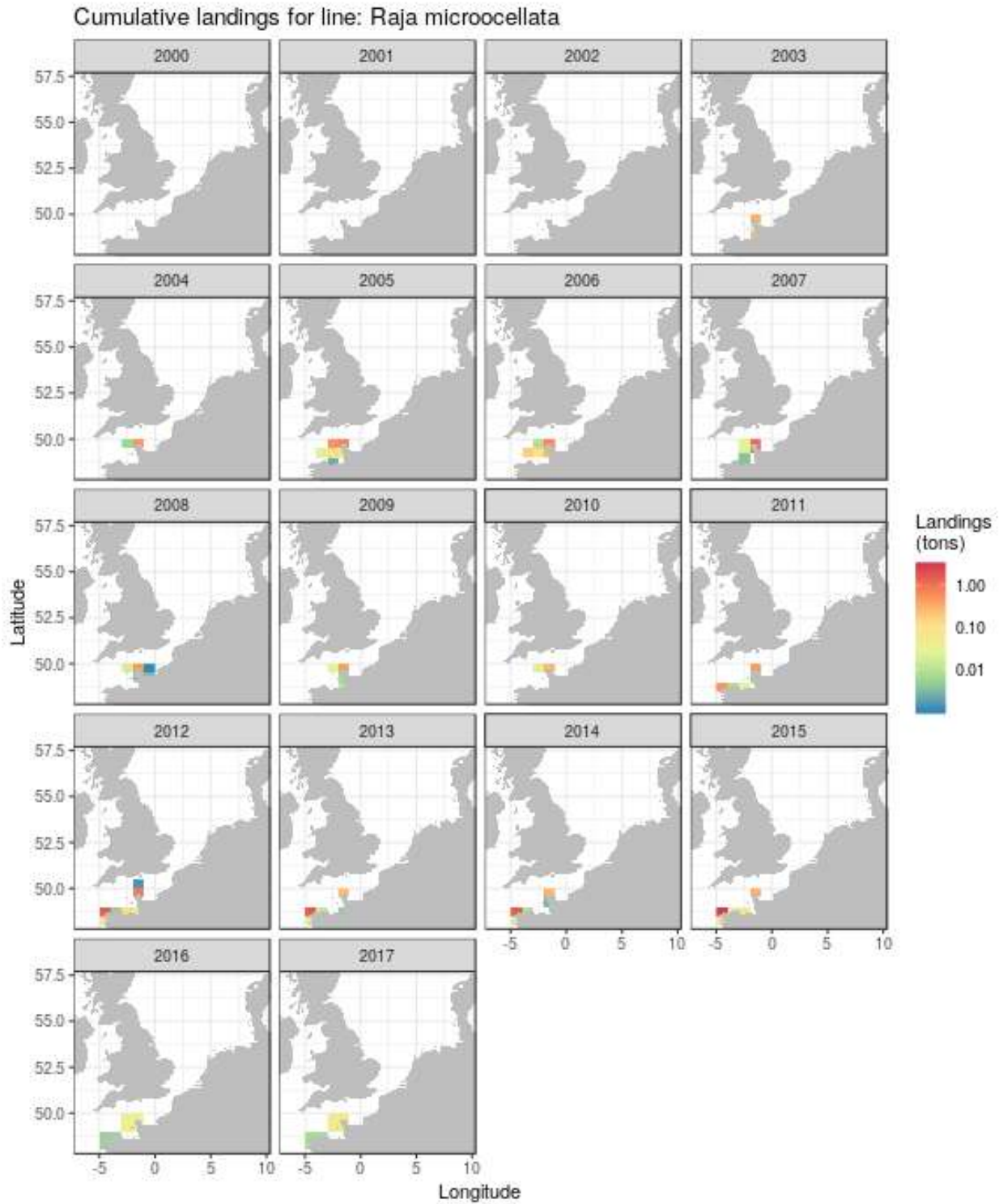


Figure 8.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

8.2.1.7 Annual landings for gear category other

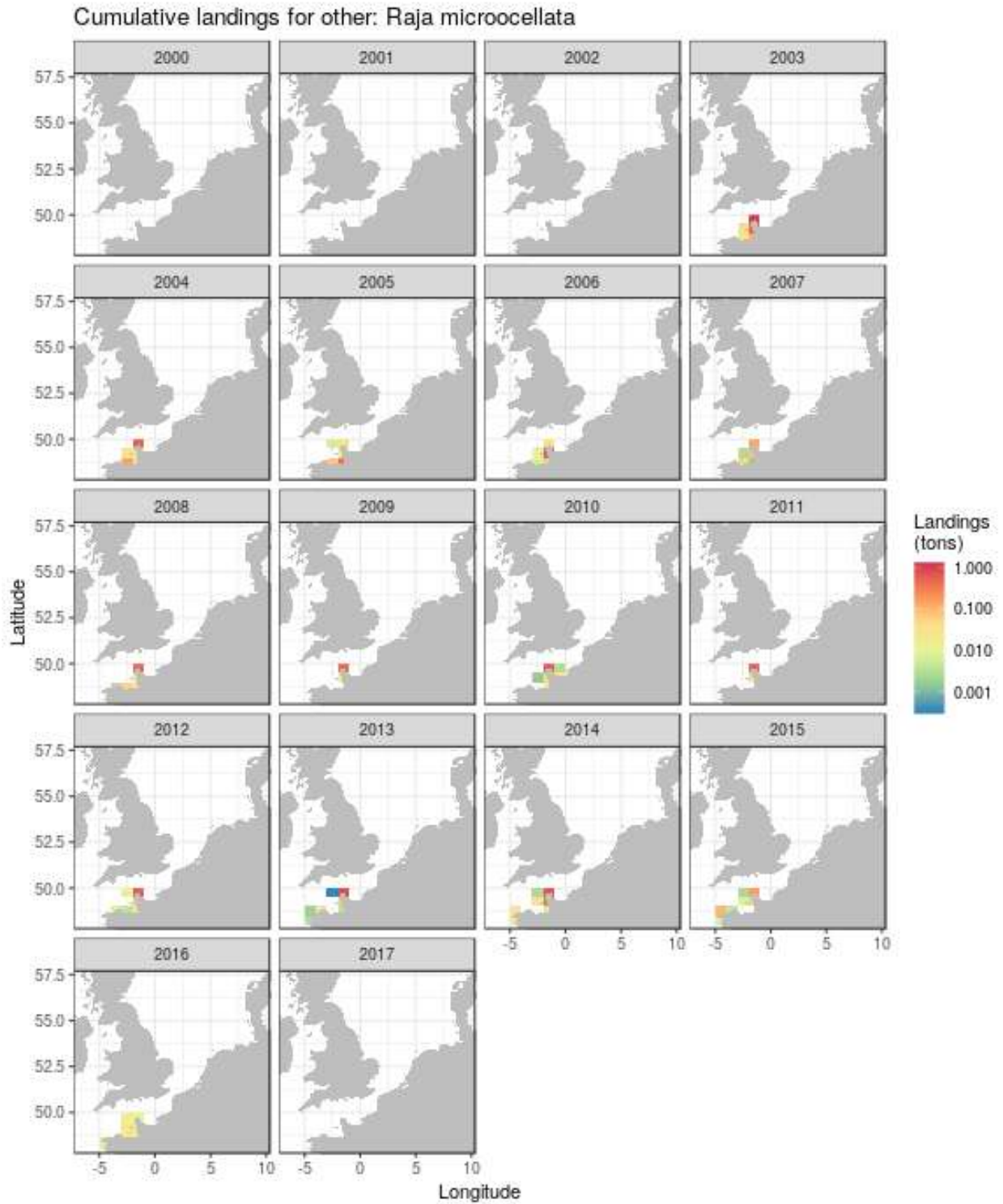


Figure 8.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

8.2.2 Commercial sampling

8.2.2.1 Landings and discards per unit effort and country

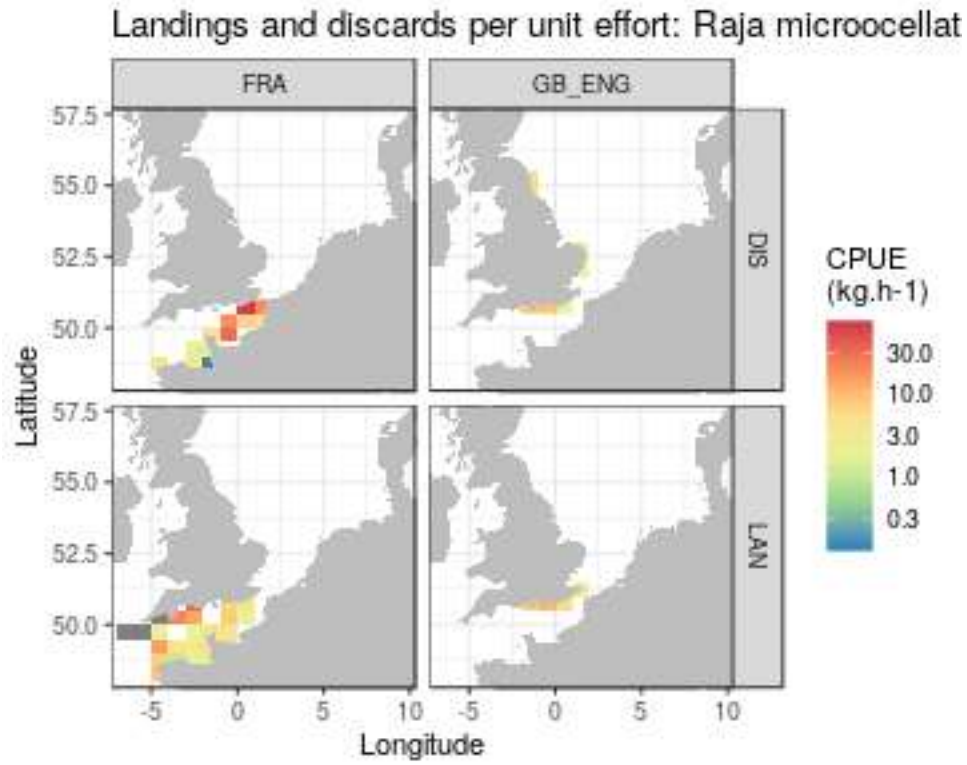


Figure 8.12: Average landing (LAN) and discard (DIS) per hour fishing by country(FRA: France, GB_ENG: England). The color scale is log 10 transformed.

8.2.2.2 Annual catch per unit effort

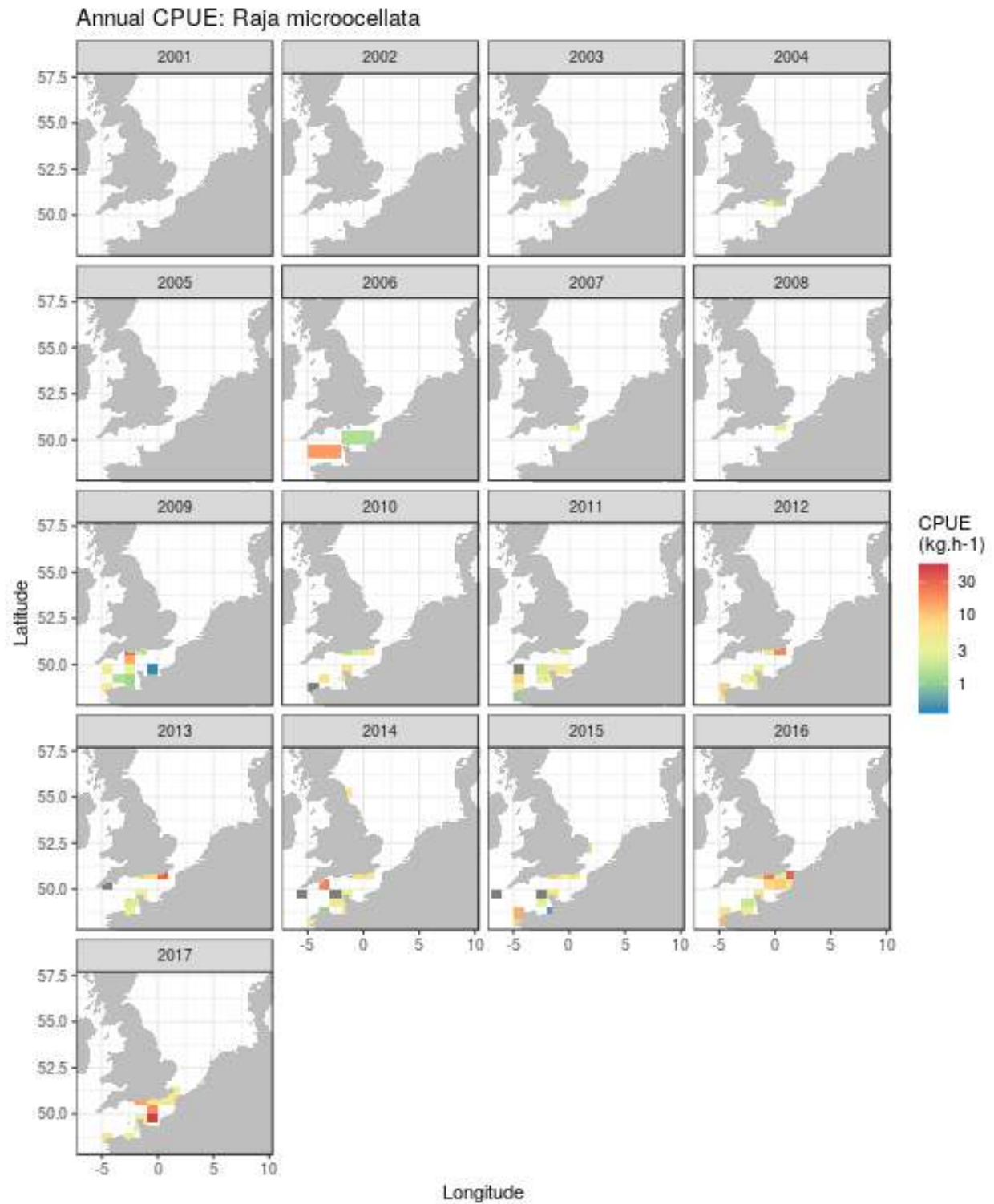


Figure 8.13: Catches per unit effort per year. The color scale is log 10 transformed.

8.2.2.3 Annual catch per unit effort for gear category trawler

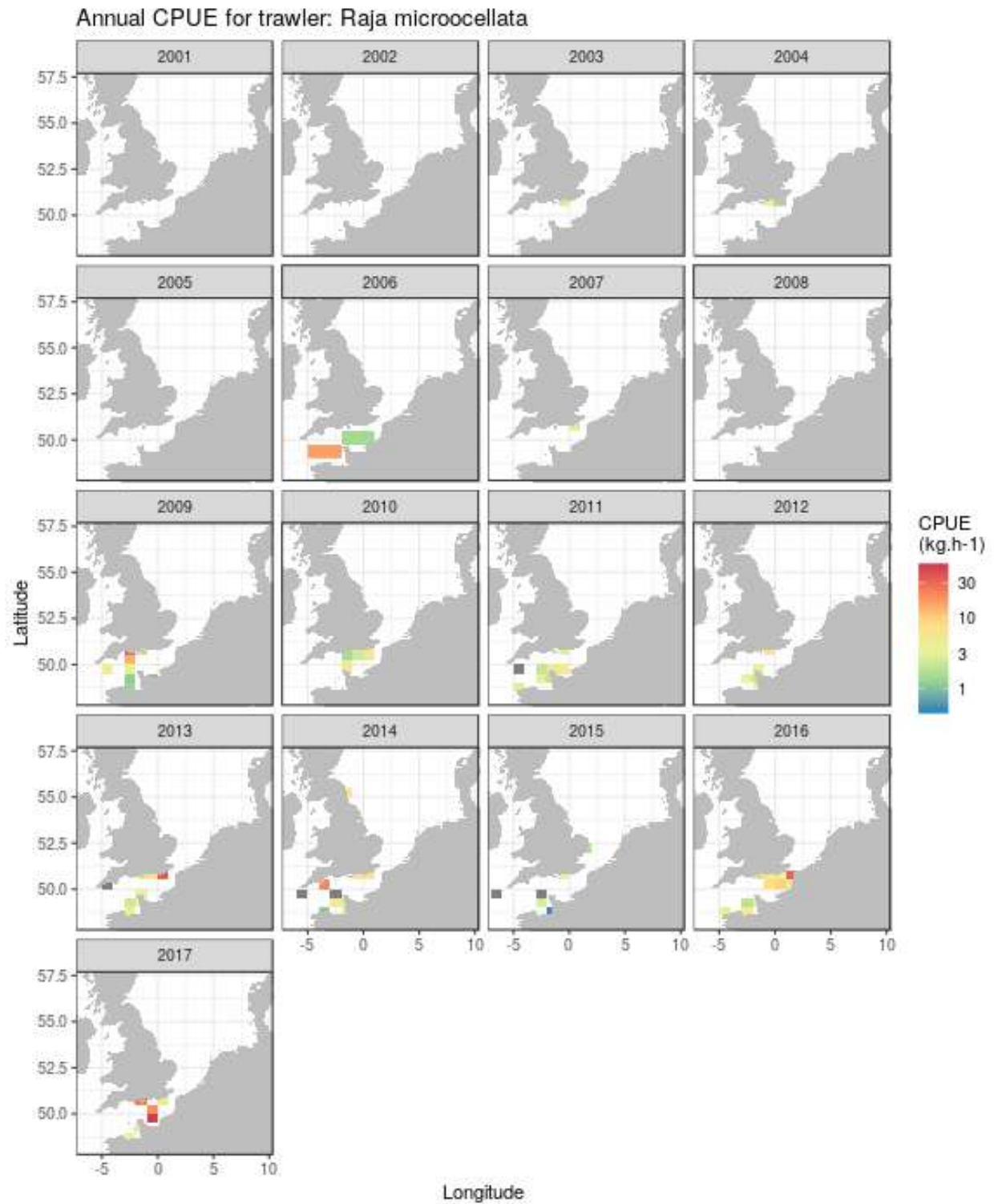


Figure 8.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

8.2.2.4 Annual catch per unit effort for gear category net

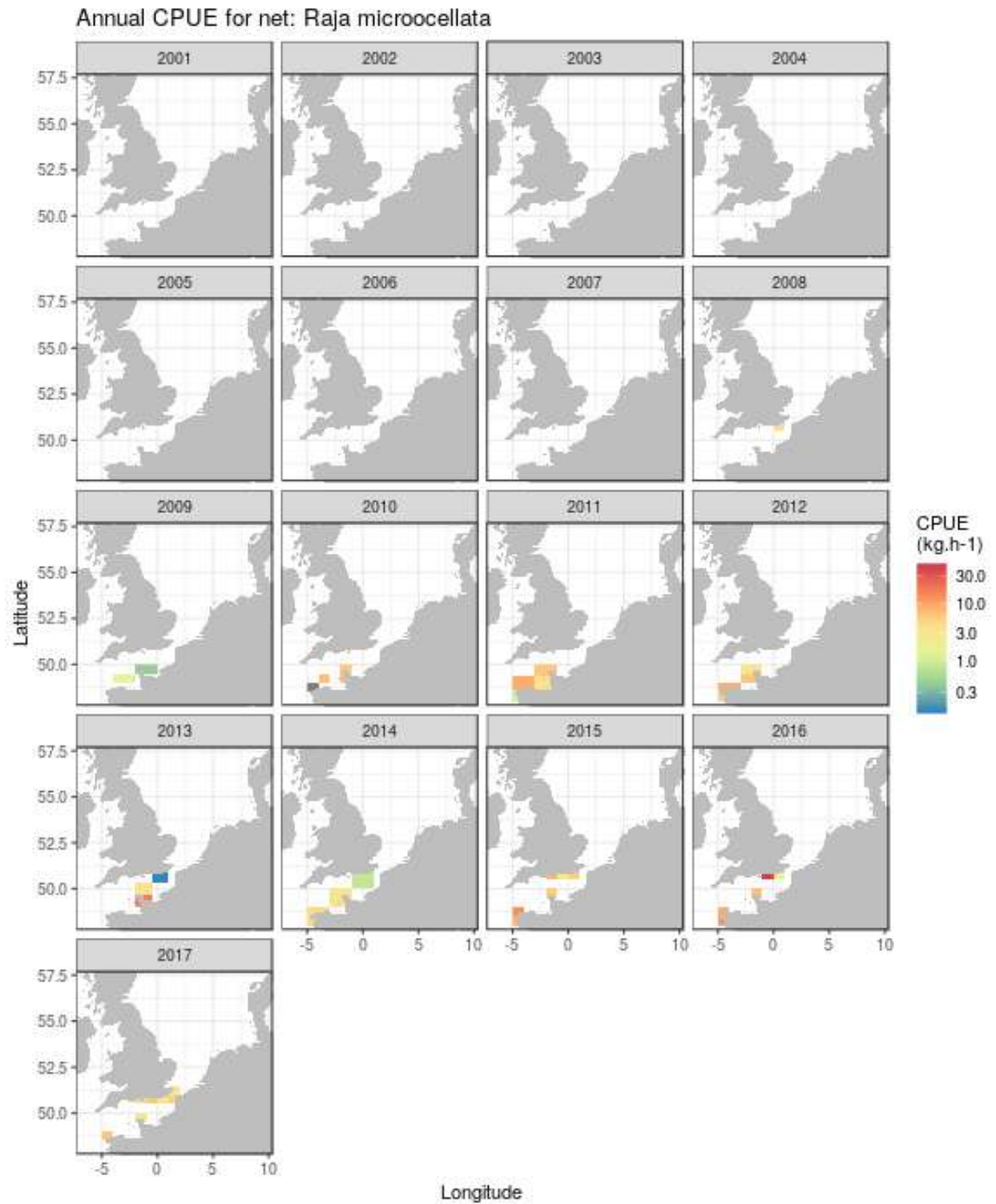


Figure 8.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

8.2.2.5 Annual catch per unit effort for gear category line

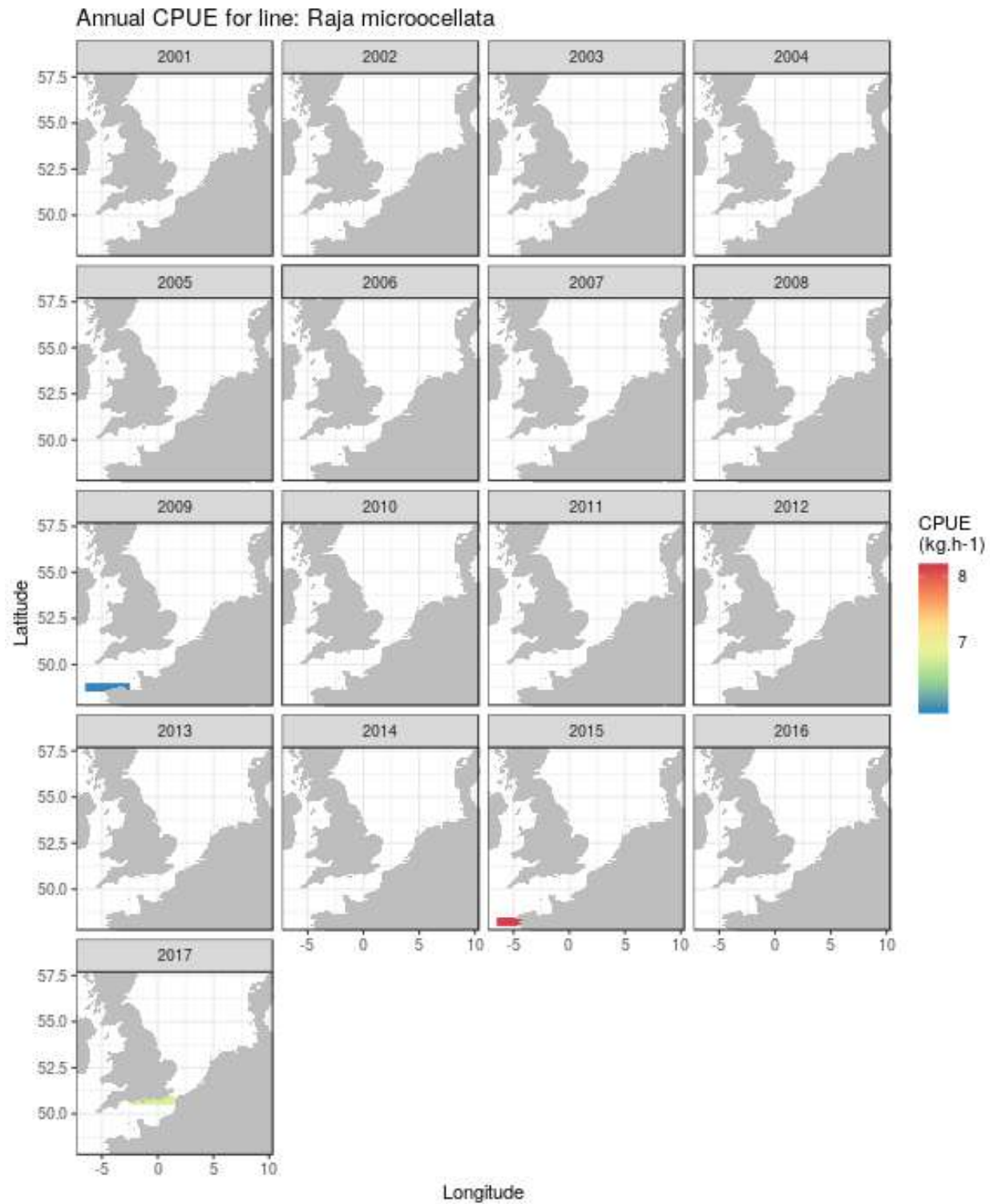


Figure 8.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

8.2.2.6 Annual catch per unit effort for gear category other

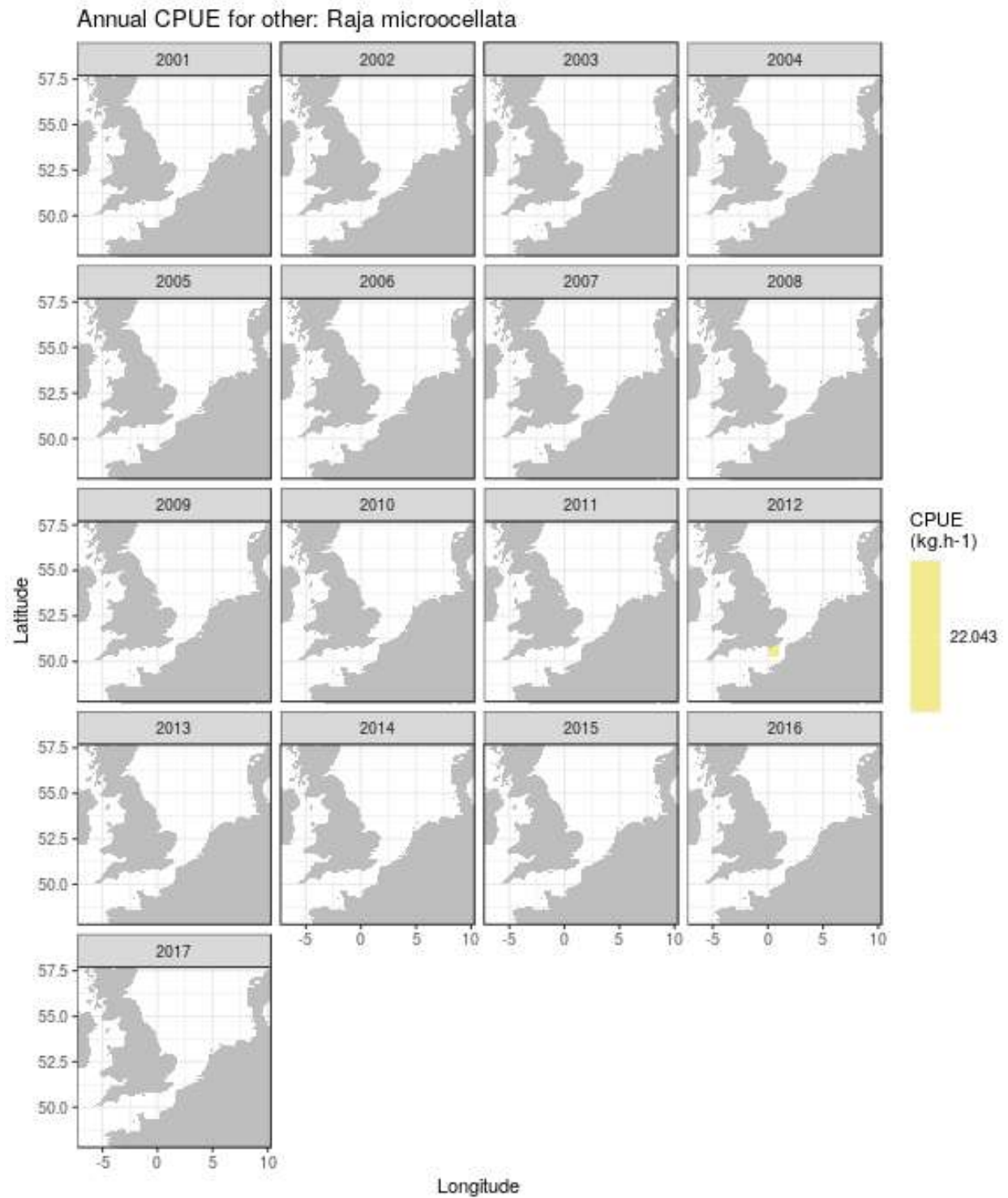


Figure 8.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

9 *Raja undulata*

9.1 Survey

9.1.1 Average CPUE

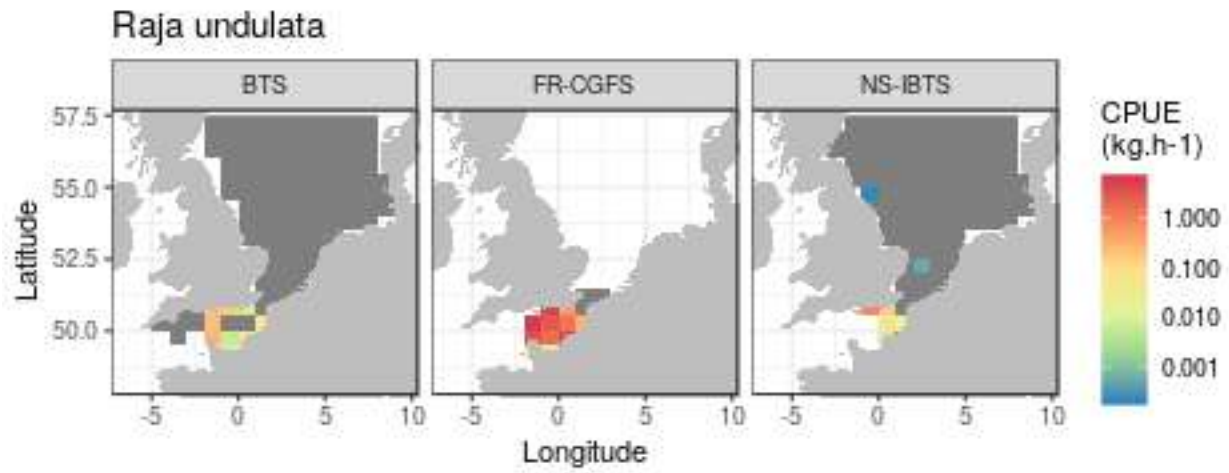


Figure 9.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

9.1.2 Annual CPUE: BTS

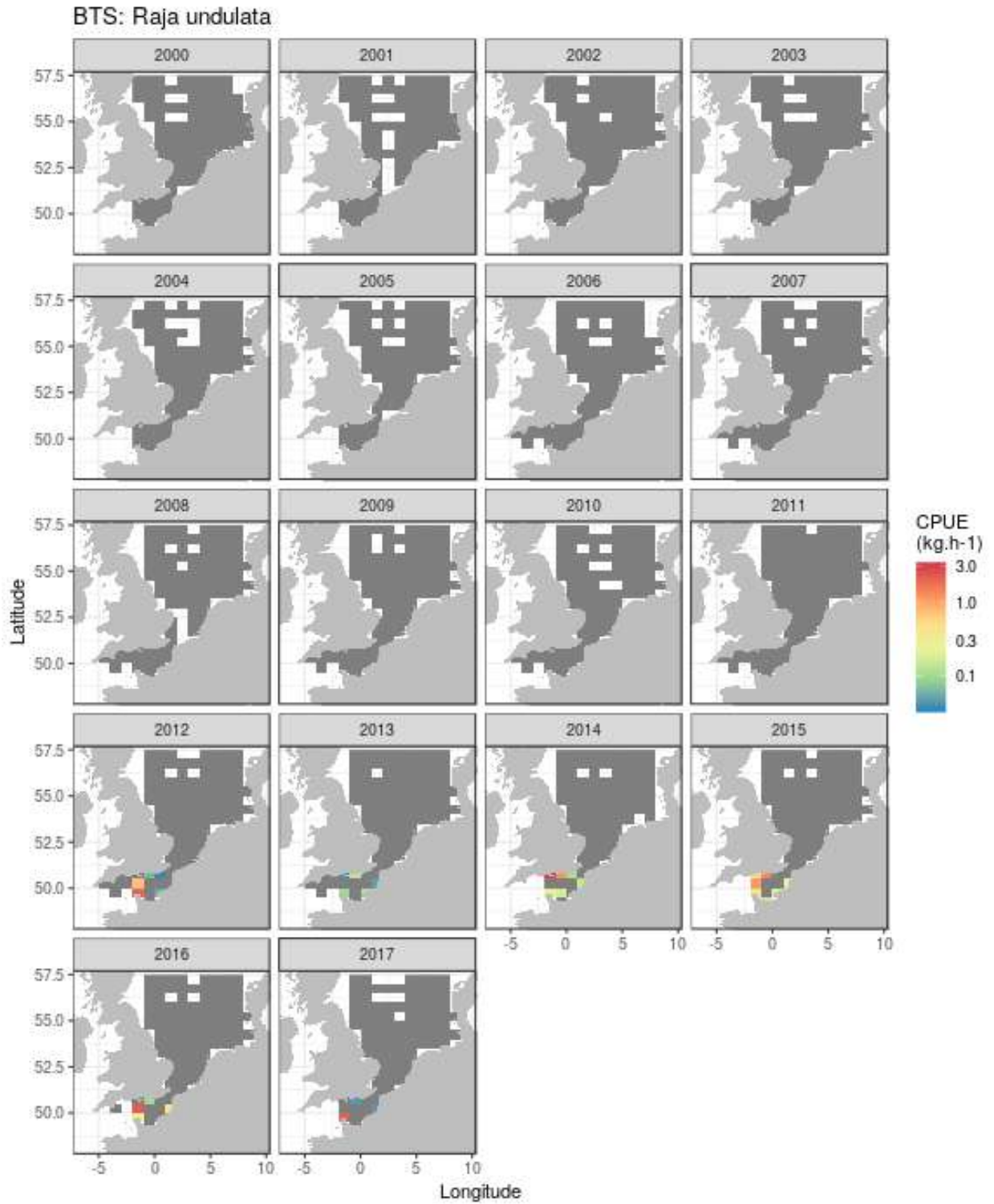


Figure 9.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

9.1.3 Annual CPUE: FR-CGFS

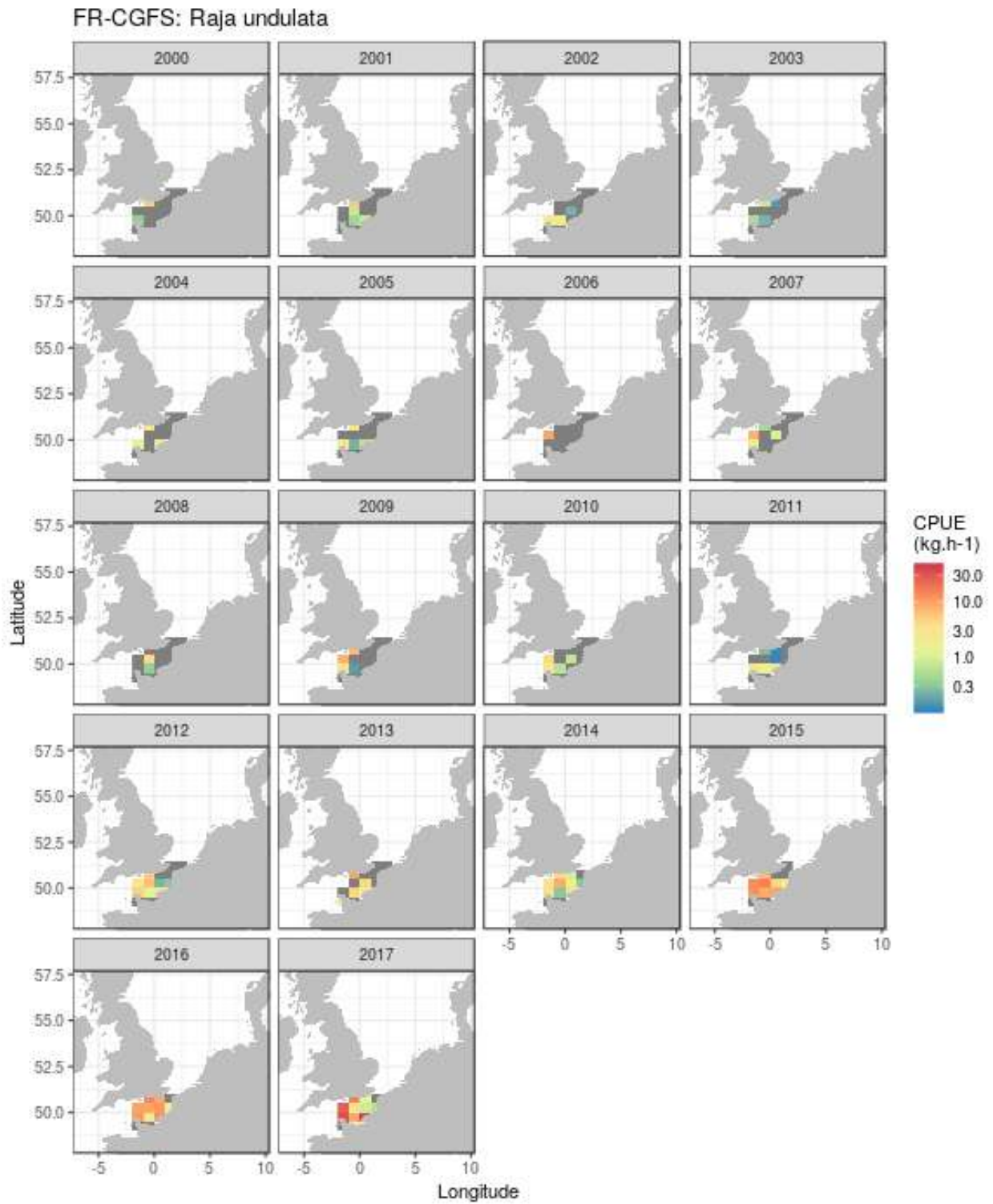


Figure 9.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

9.1.4 Annual CPUE: NS-IBTS

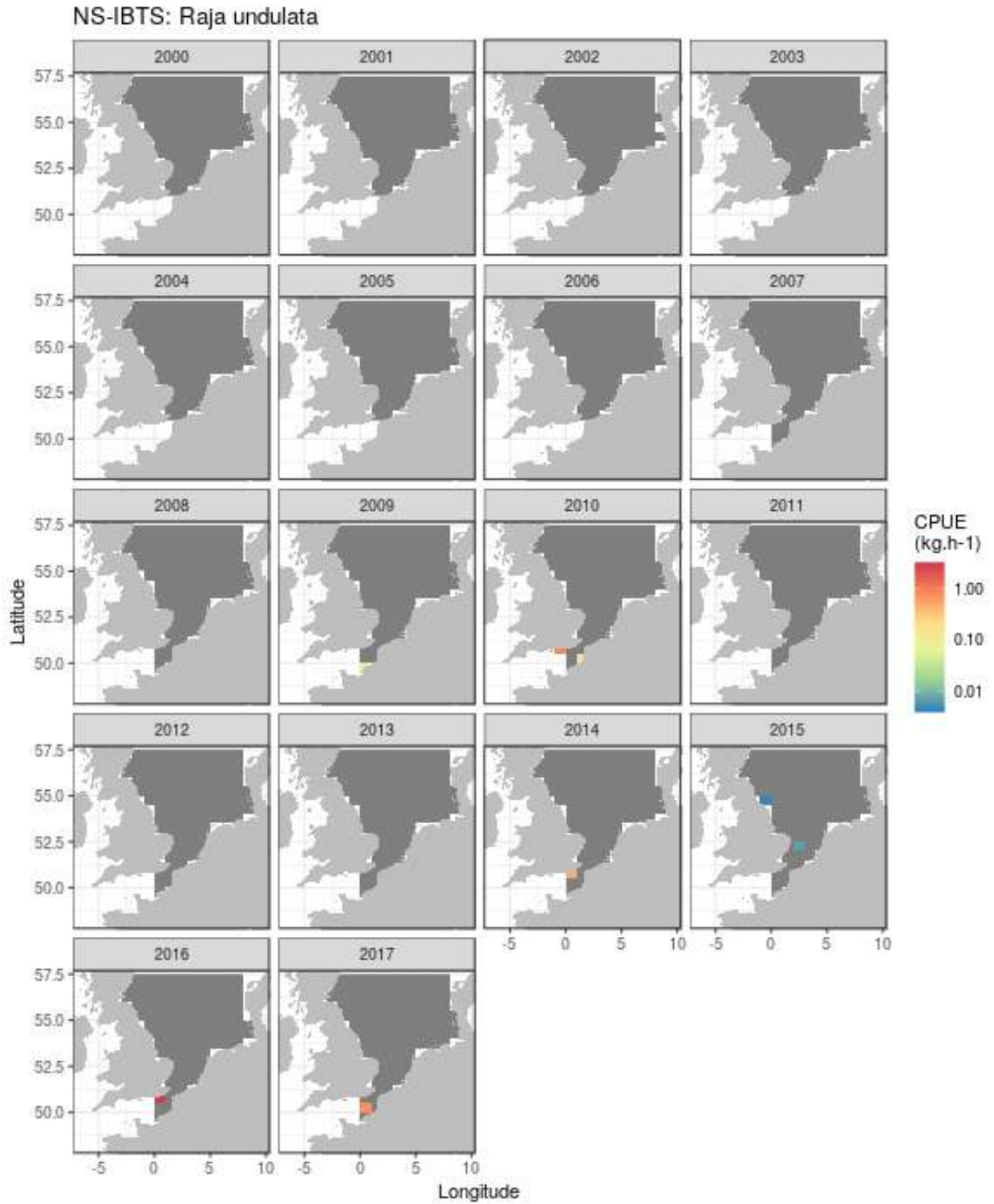


Figure 9.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

9.2 Fishery dependent information

9.2.1 Landings

9.2.1.1 Landings by country

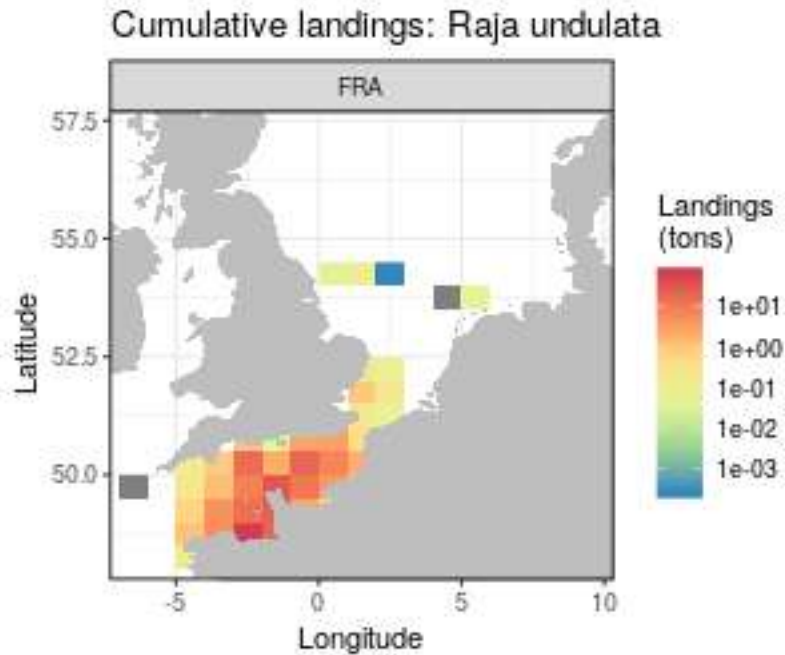


Figure 9.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

9.2.1.2 Landings by country and gear category

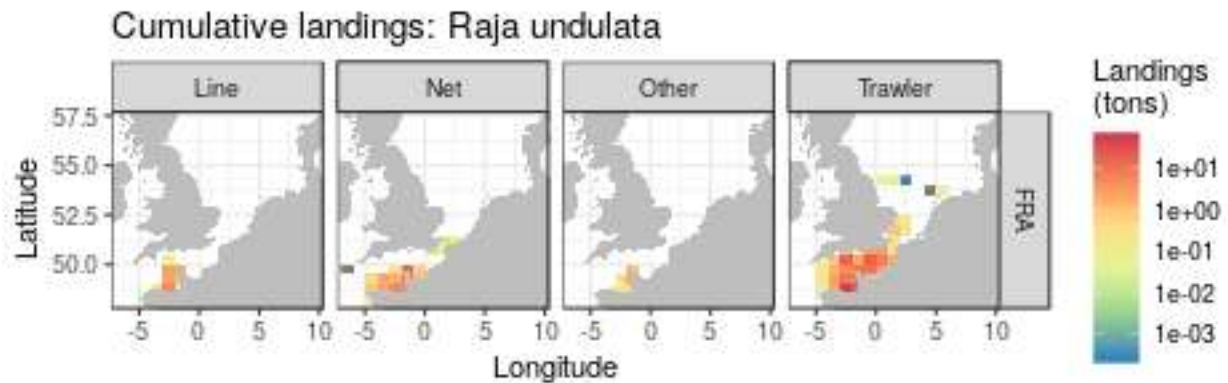


Figure 9.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

9.2.1.3 Annual landings

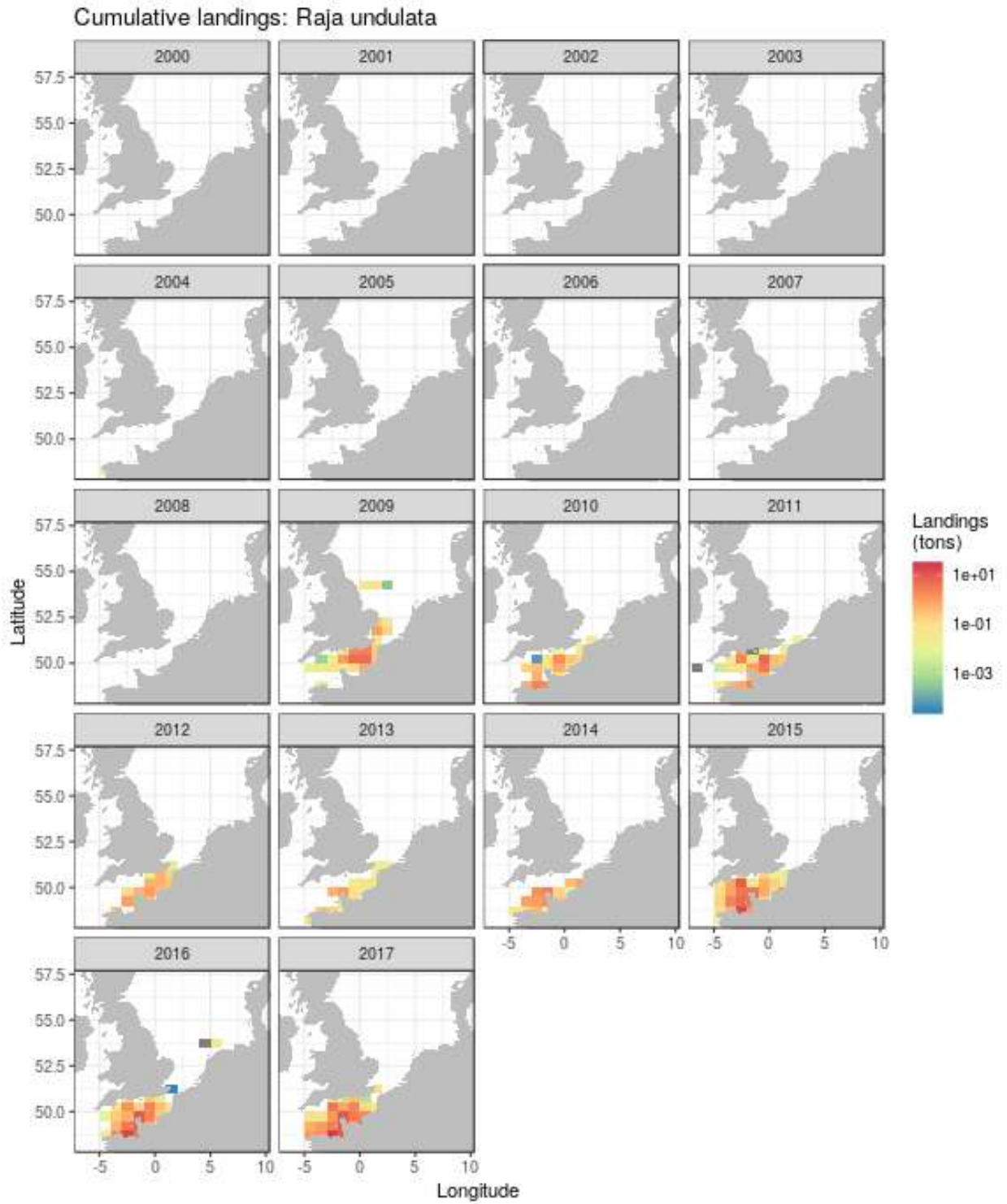


Figure 9.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

9.2.1.4 Annual landings for gear category trawler

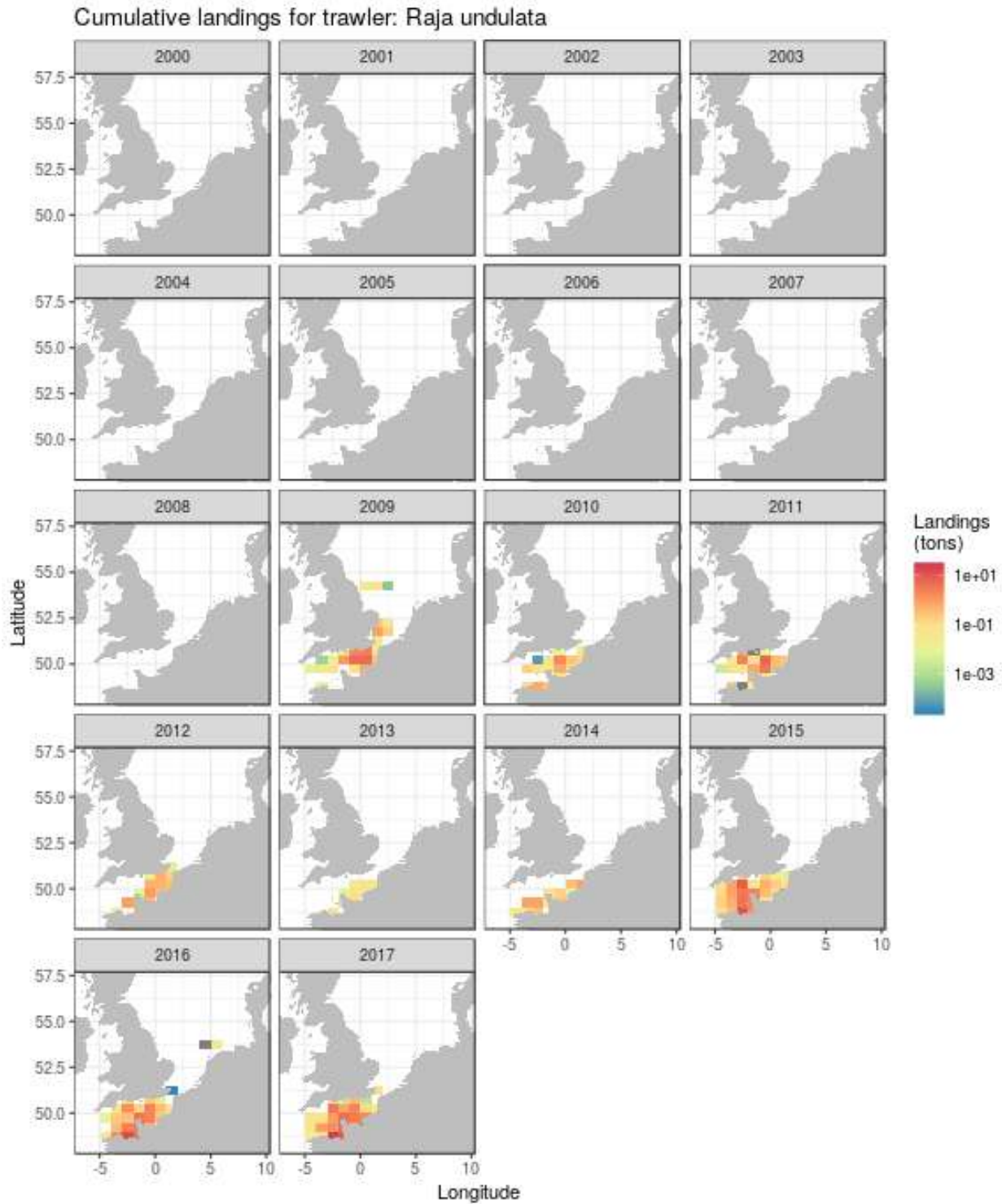


Figure 9.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

9.2.1.5 Annual landings for gear category nets

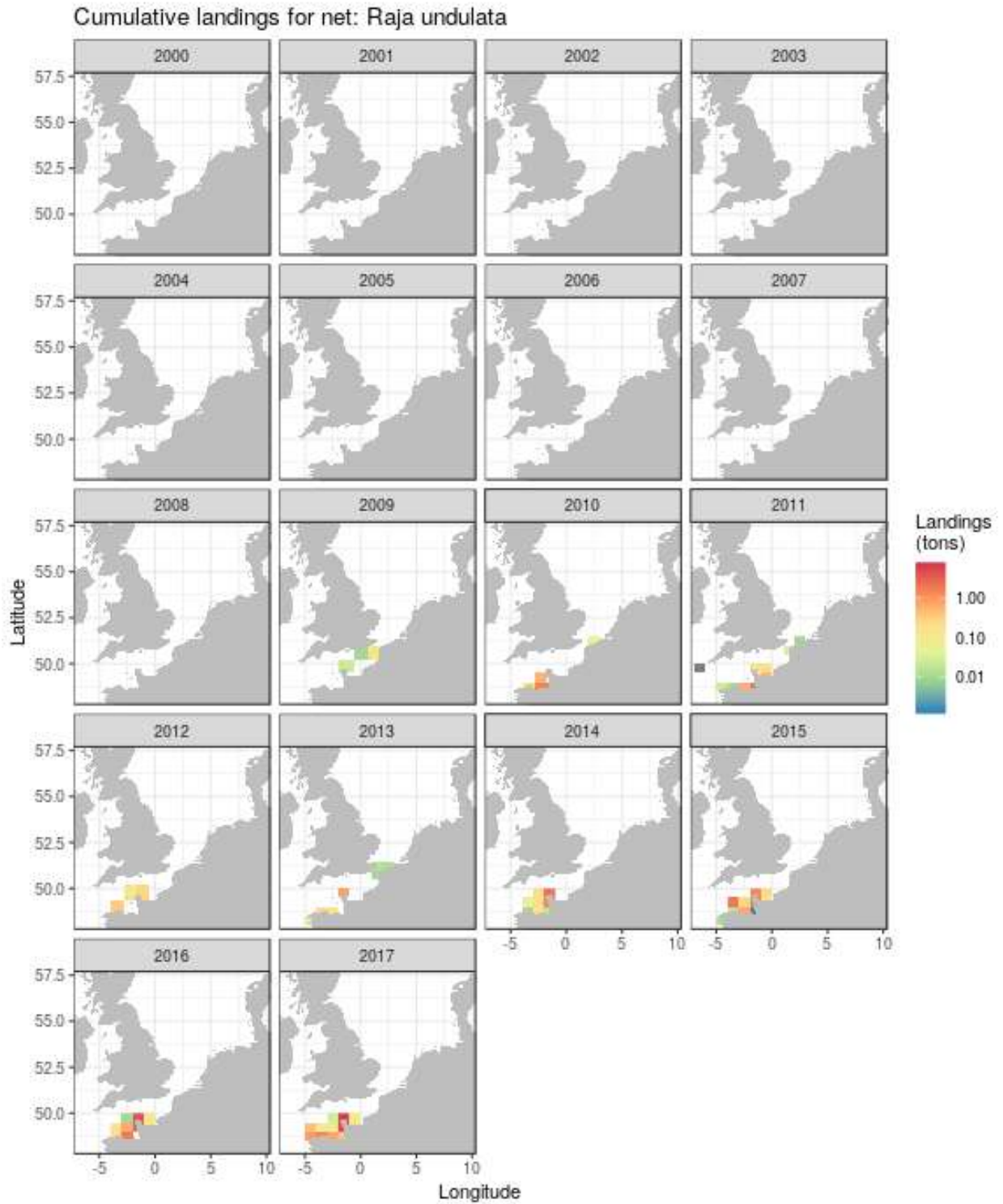


Figure 9.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

9.2.1.6 Annual landings for gear category lines

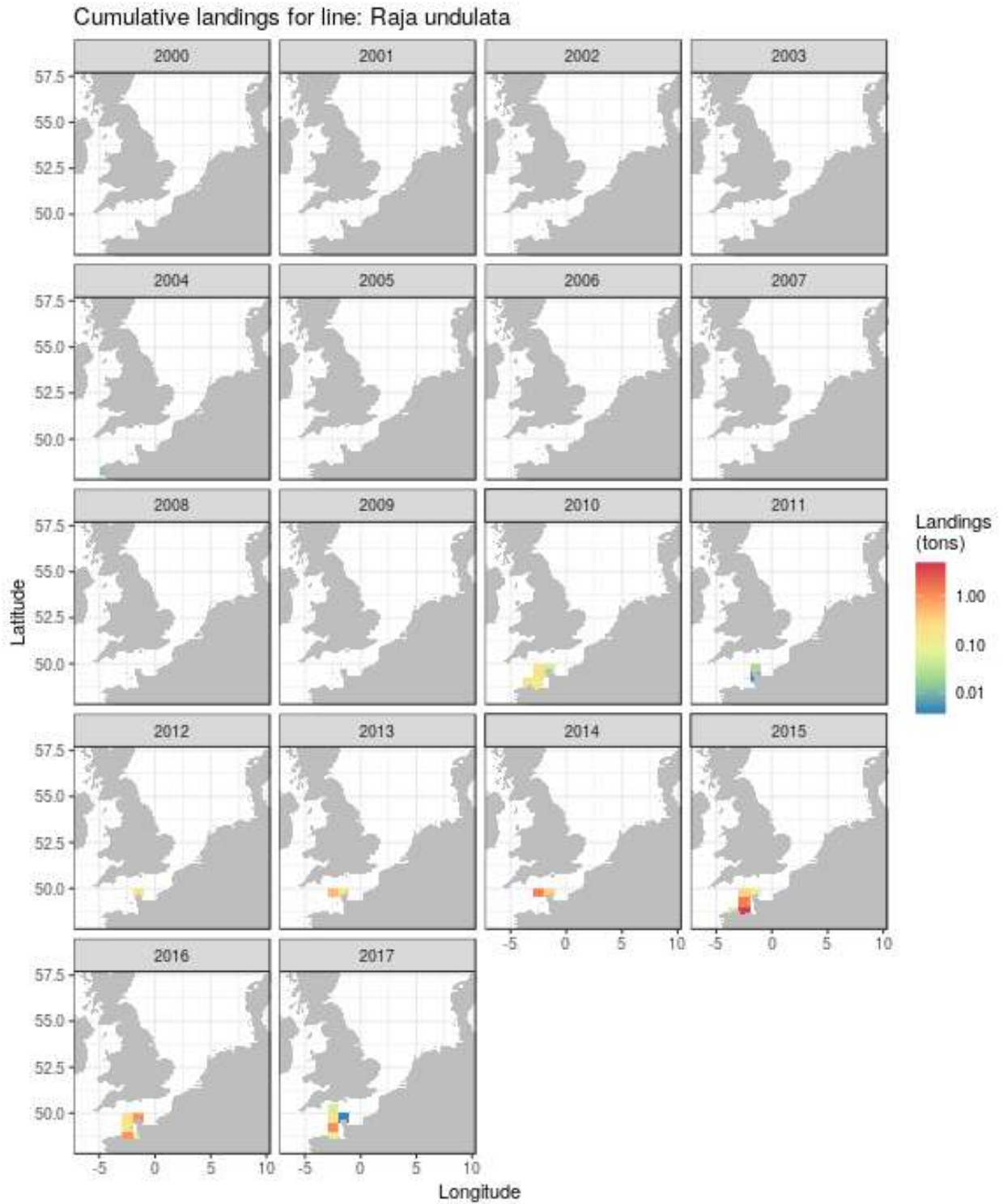


Figure 9.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

9.2.1.7 Annual landings for gear category other

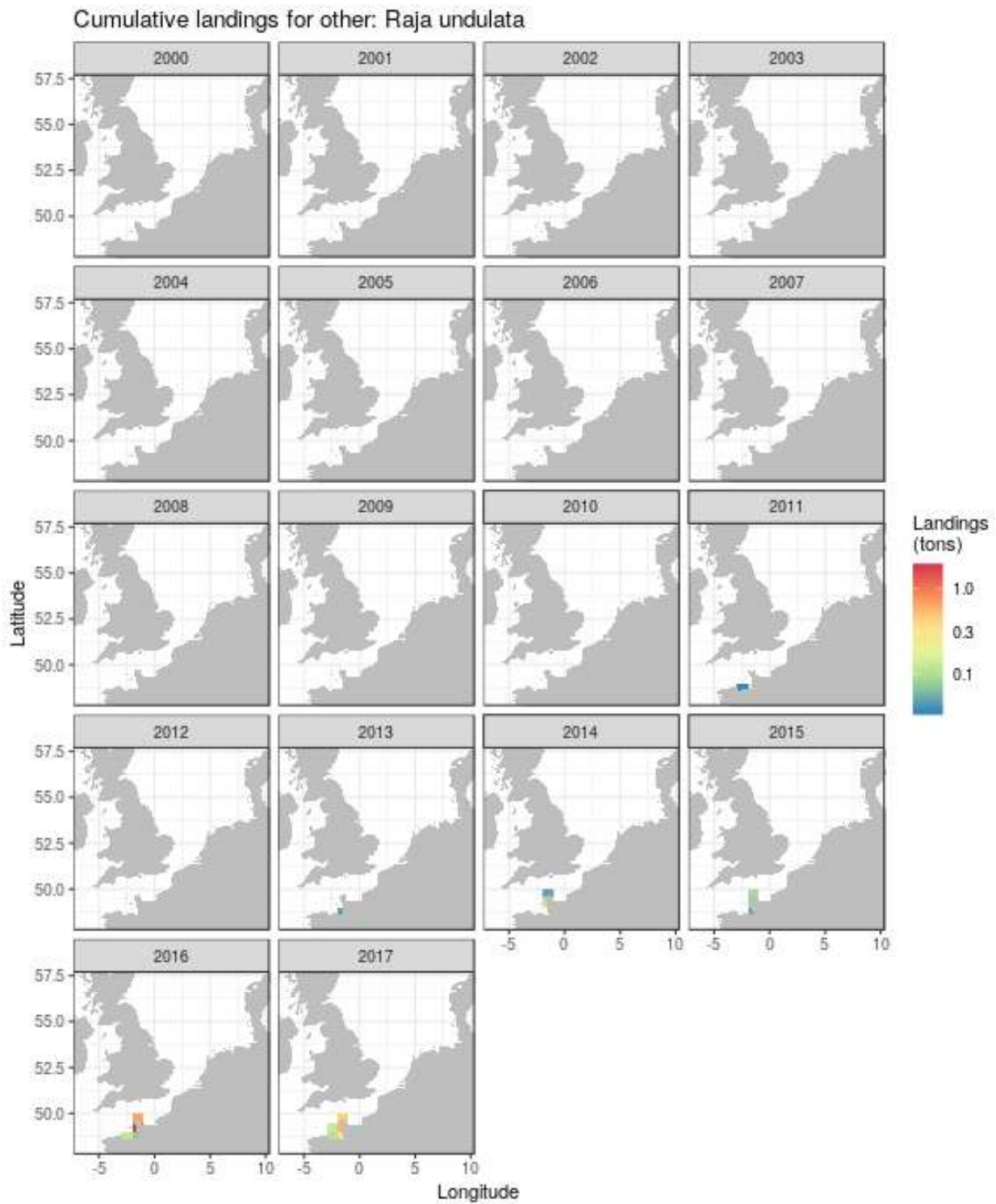


Figure 9.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

9.2.2 Commercial sampling

9.2.2.1 Landings and discards per unit effort and country

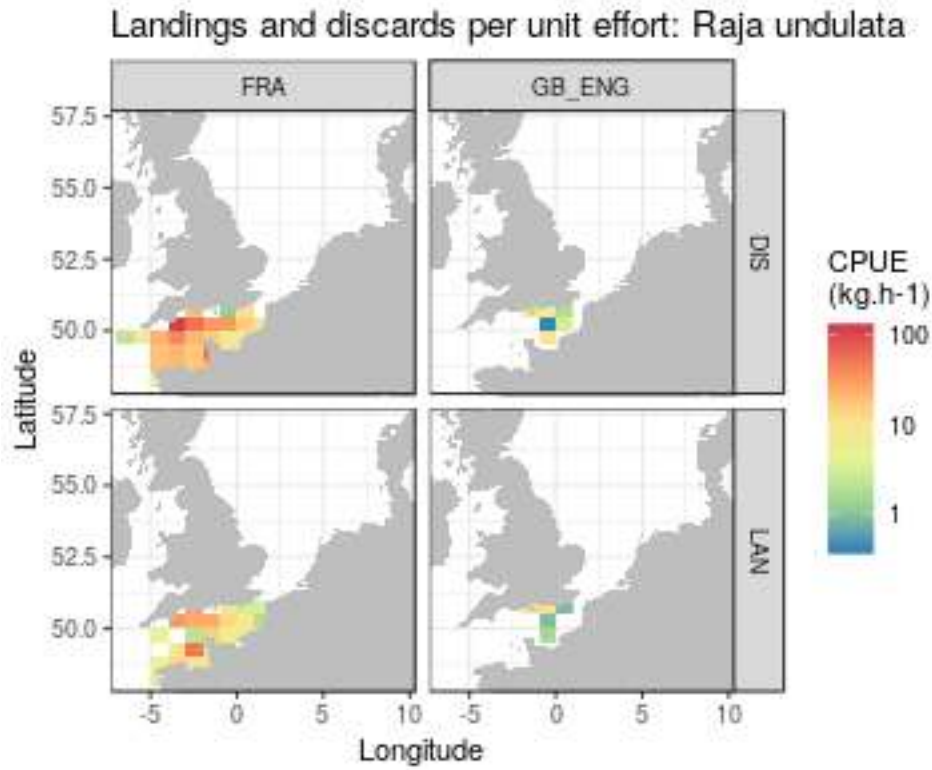


Figure 9.12: Average landing (LAN) and discard (DIS) per hour fishing by country(FRA: France, GB_ENG: England). The color scale is log 10 transformed.

9.2.2.2 Annual catch per unit effort

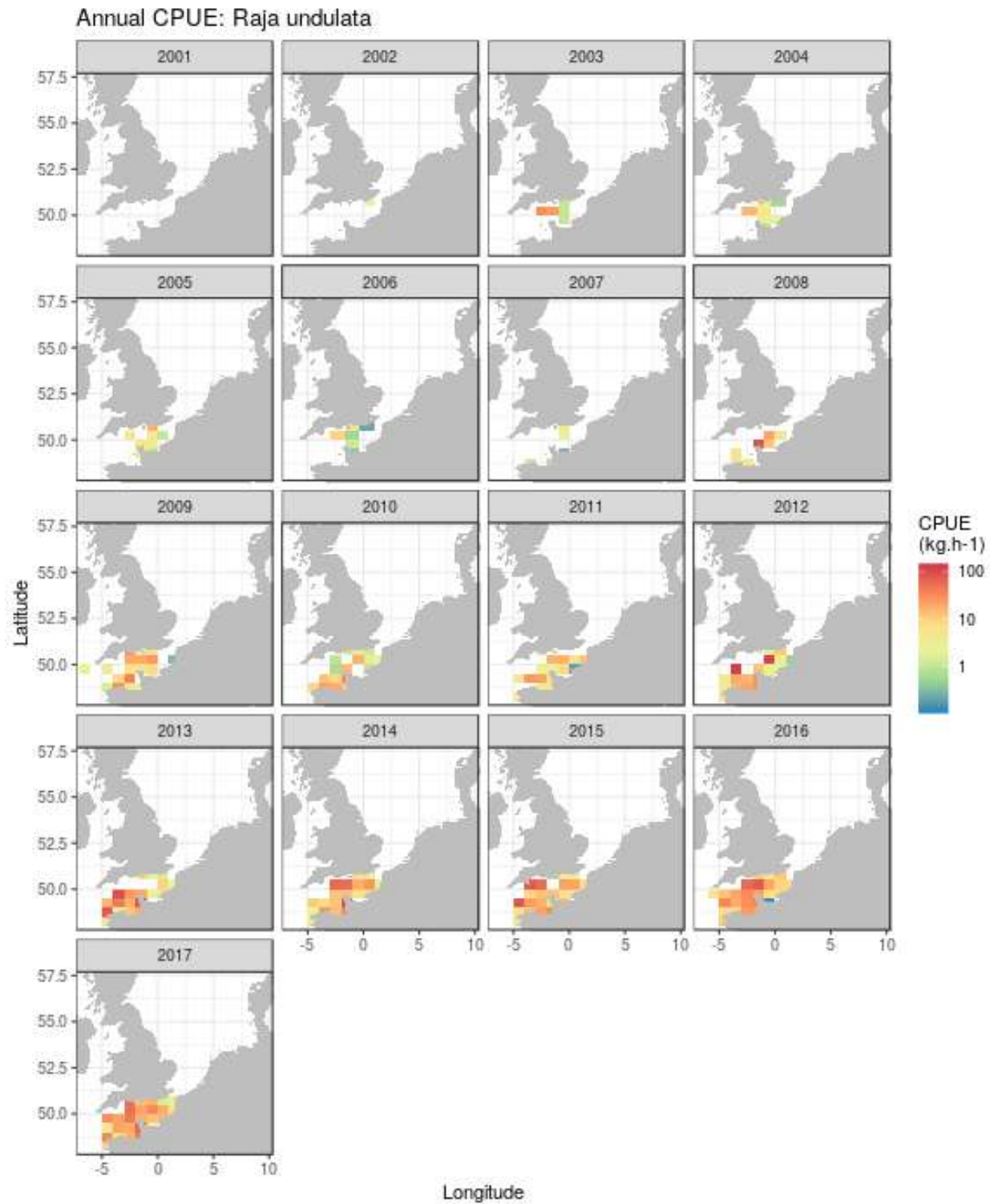


Figure 9.13: Catches per unit effort per year. The color scale is log 10 transformed.

9.2.2.3 Annual catch per unit effort for gear category trawler

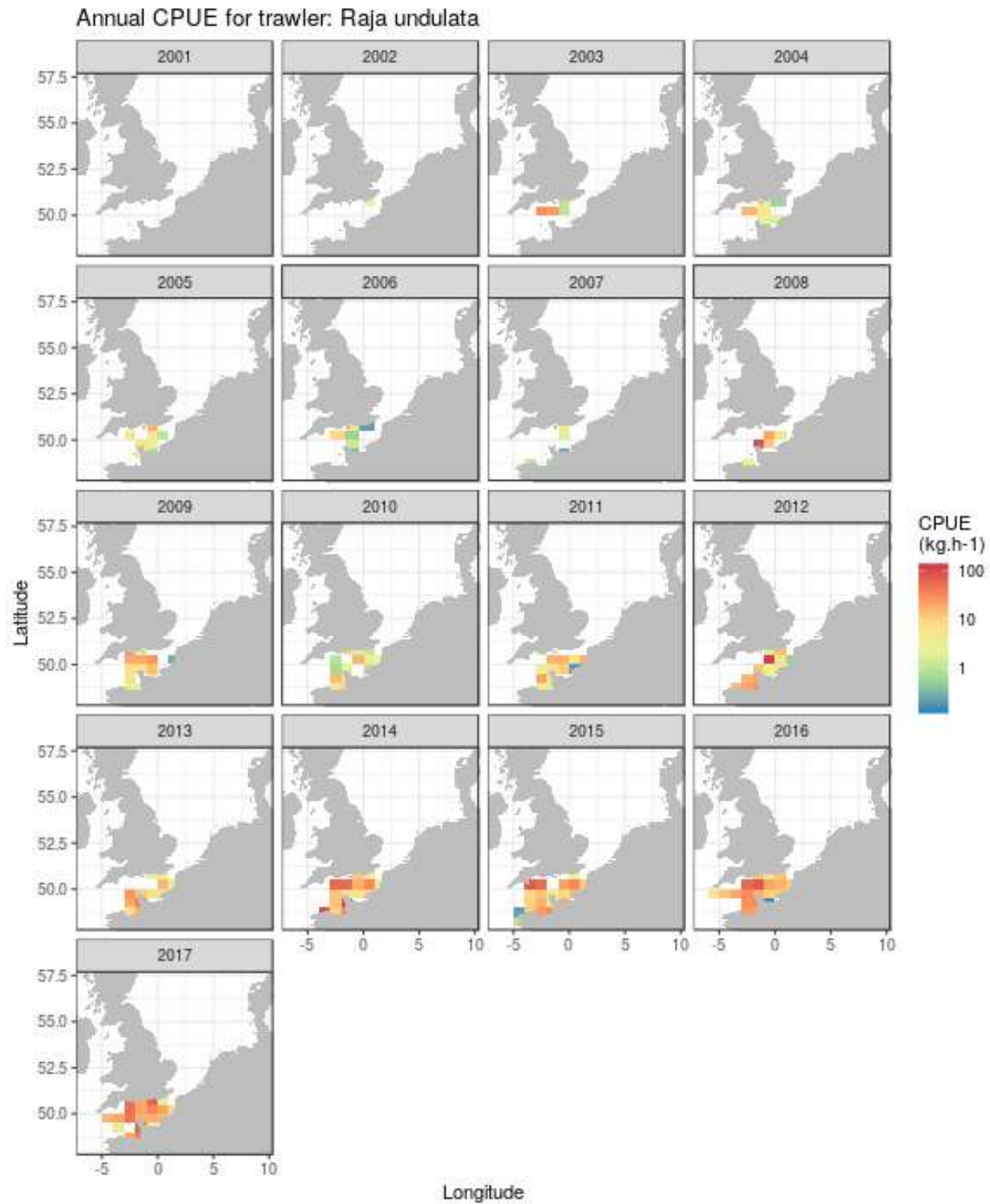


Figure 9.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

9.2.2.4 Annual catch per unit effort for gear category net

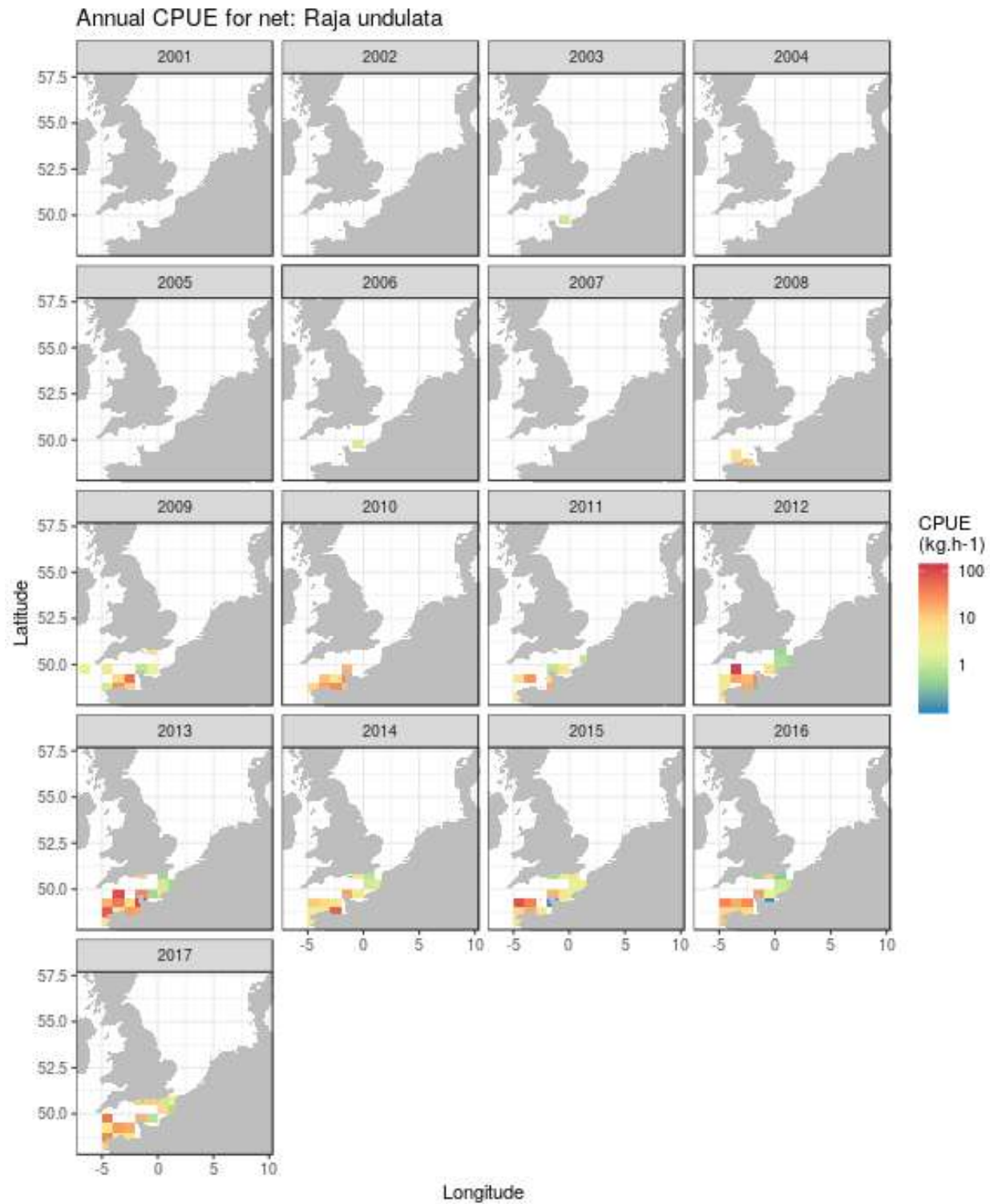


Figure 9.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

9.2.2.5 Annual catch per unit effort for gear category line

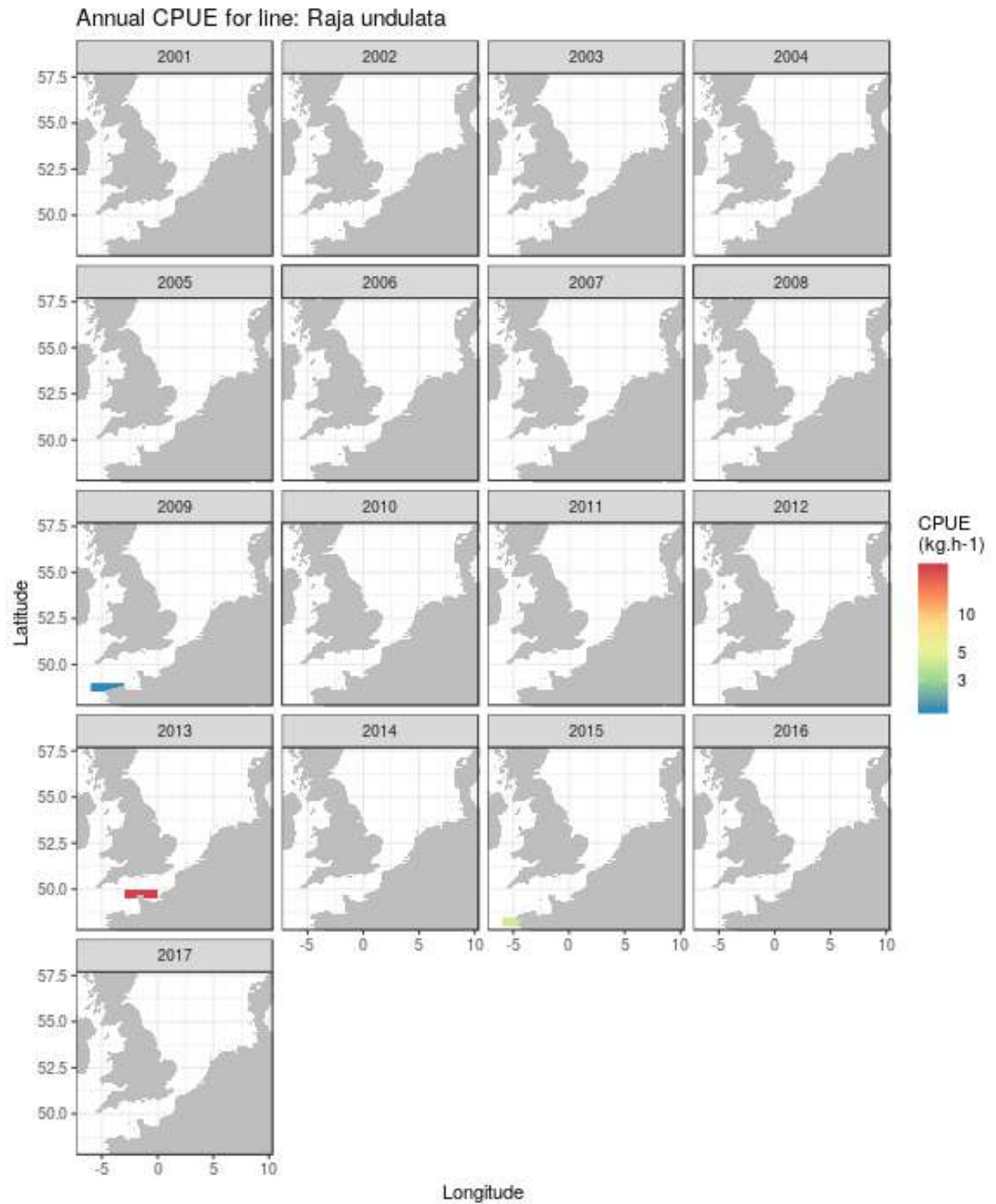


Figure 9.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

9.2.2.6 Annual catch per unit effort for gear category other

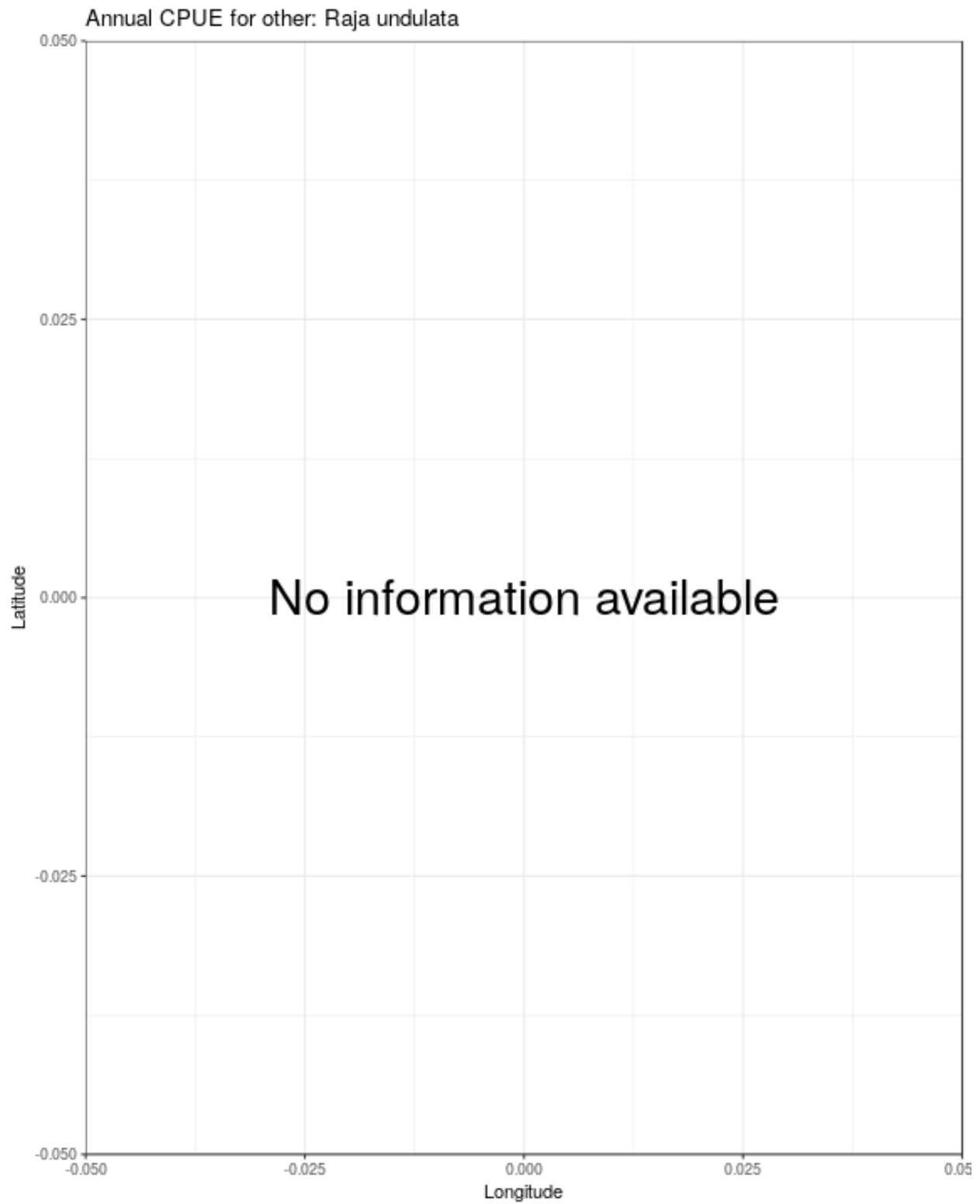


Figure 9.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

10 Raja batis

10.1 Survey

10.1.1 Average CPUE

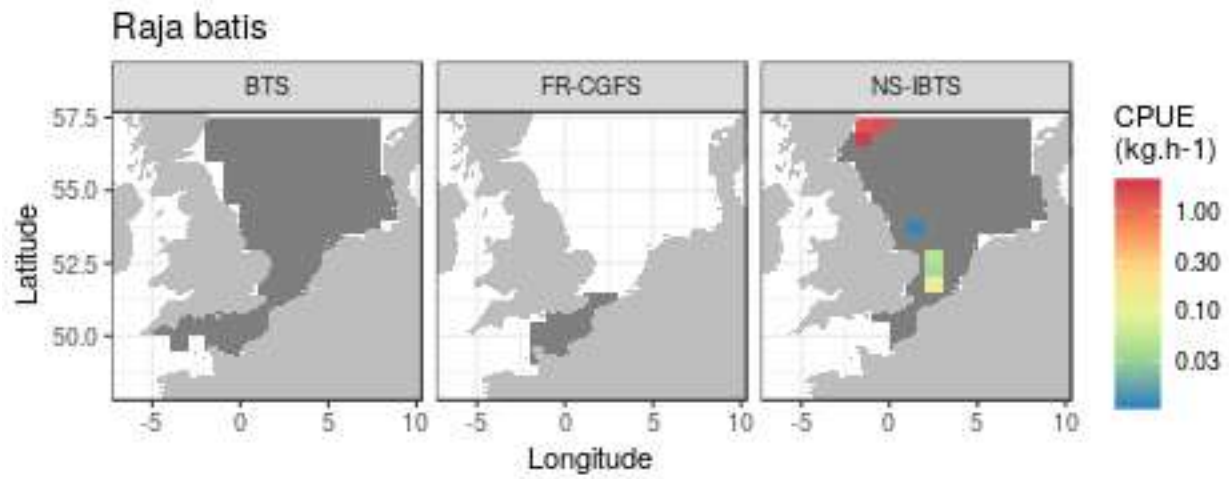


Figure 10.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

10.1.2 Annual CPUE: BTS

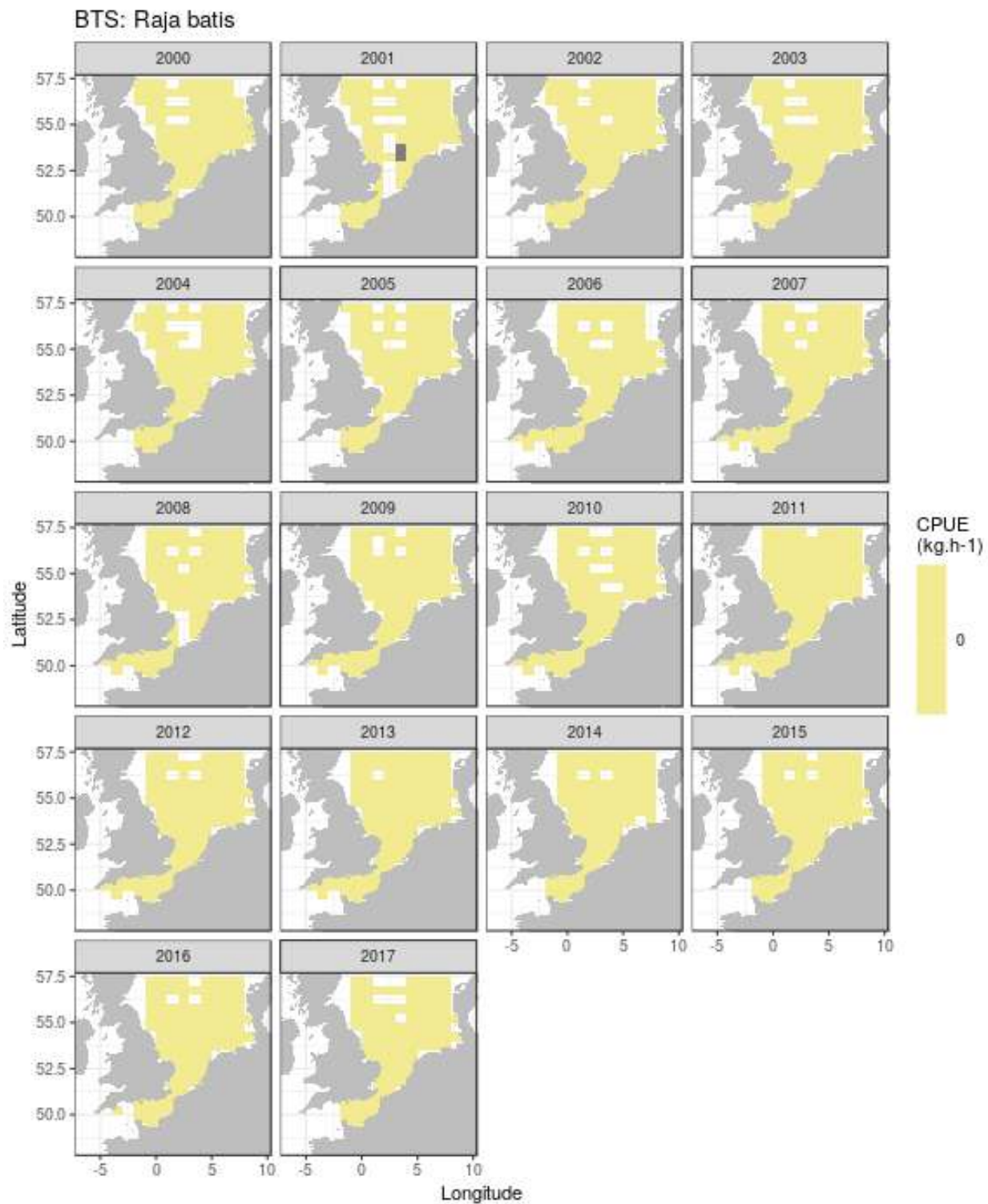


Figure 10.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

10.1.3 Annual CPUE: FR-CGFS

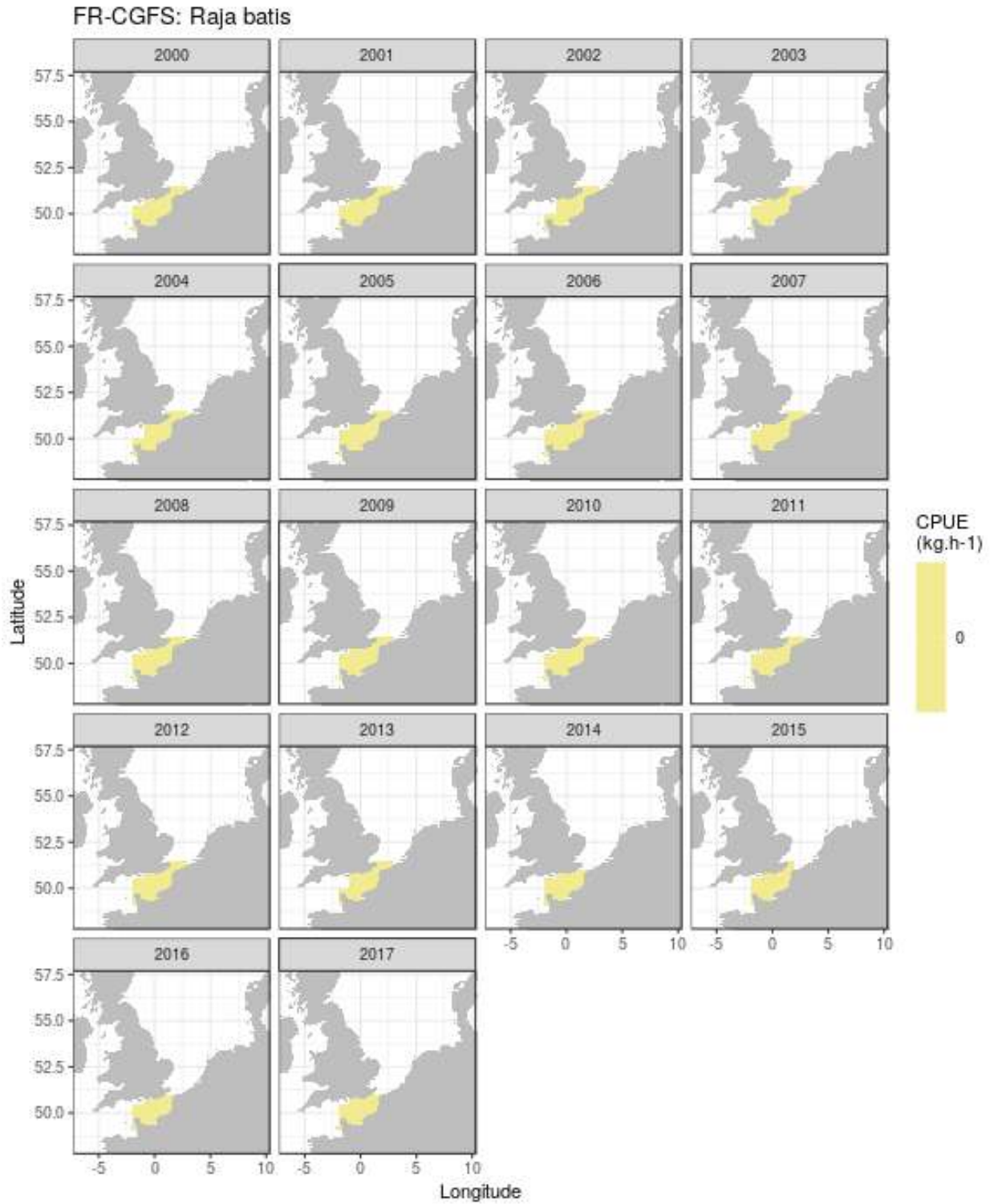


Figure 10.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

10.1.4 Annual CPUE: NS-IBTS

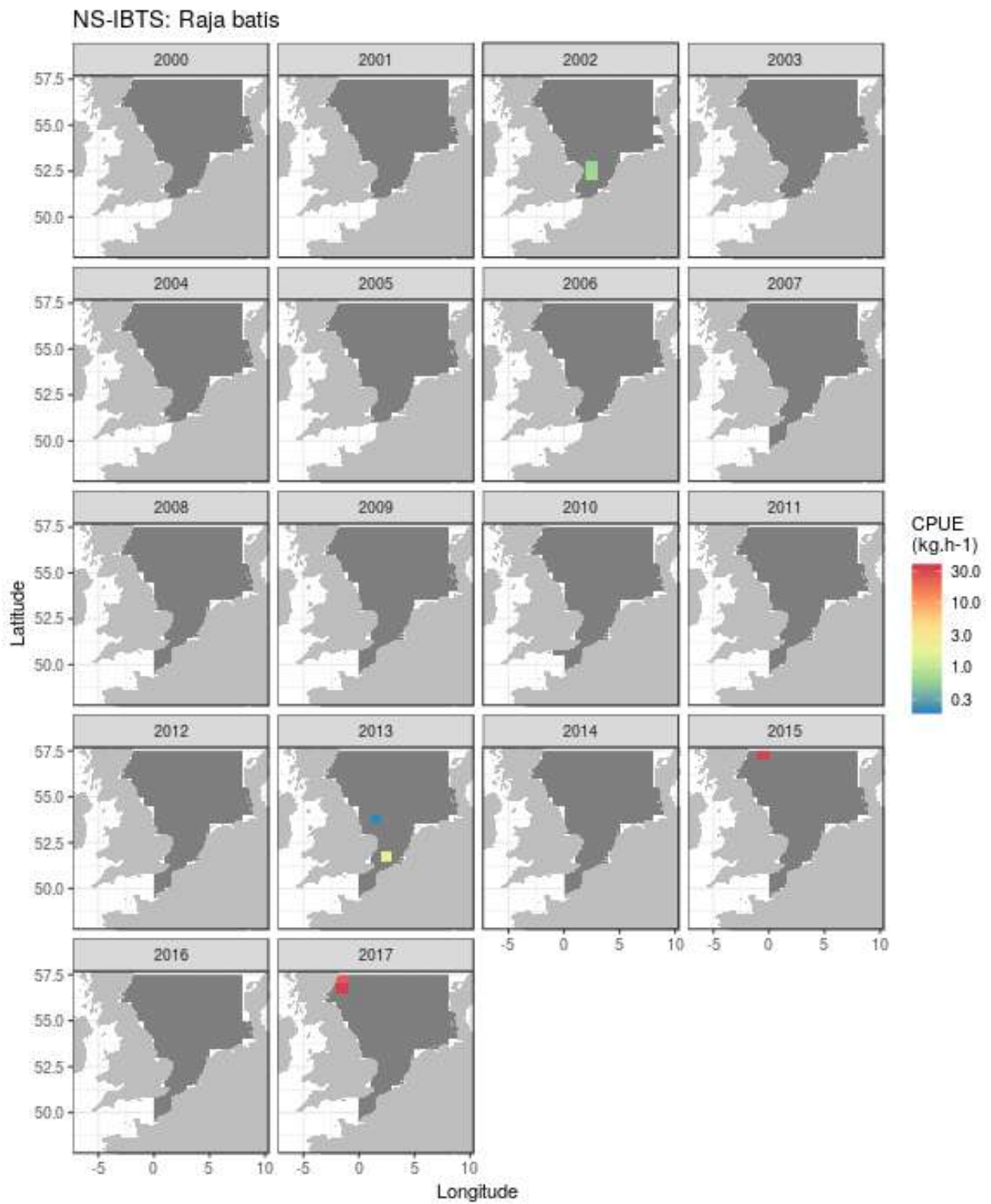


Figure 10.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

10.2 Fishery dependent information

10.2.1 Landings

10.2.1.1 Landings by country

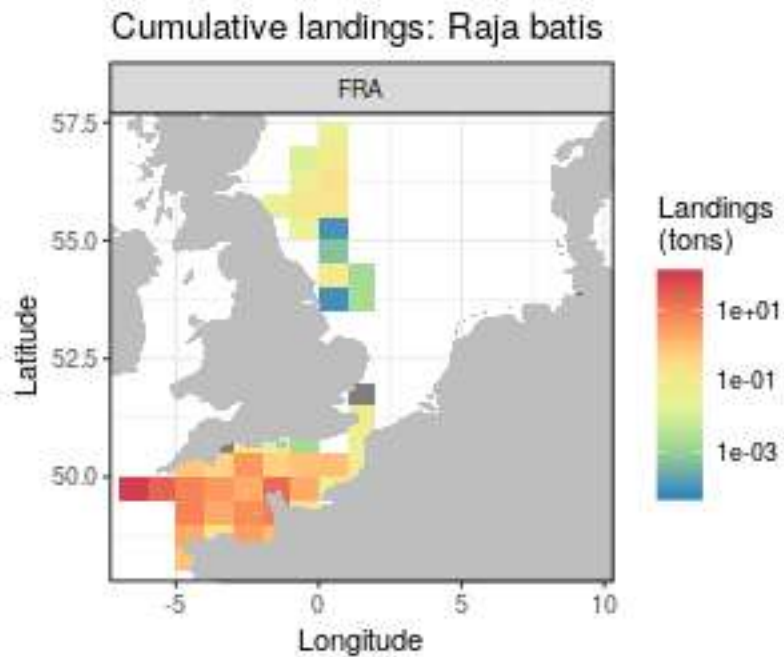


Figure 10.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

10.2.1.2 Landings by country and gear category

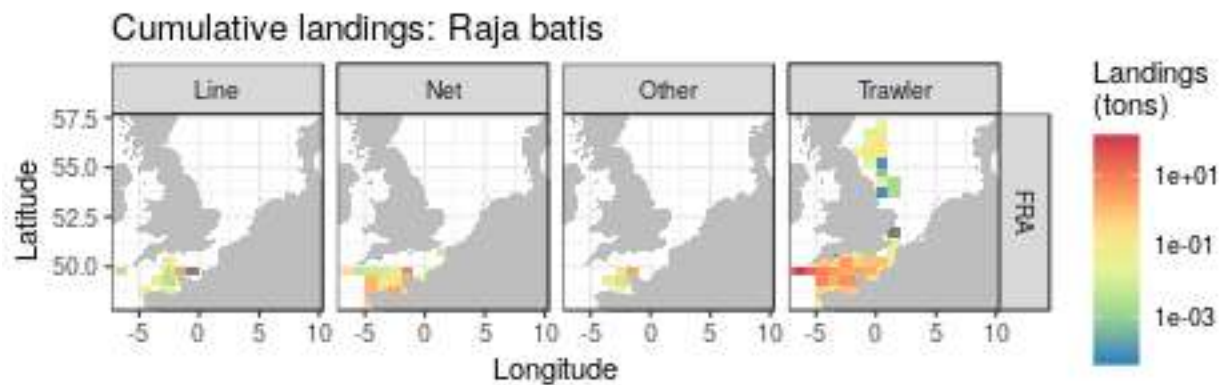


Figure 10.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

10.2.1.3 Annual landings

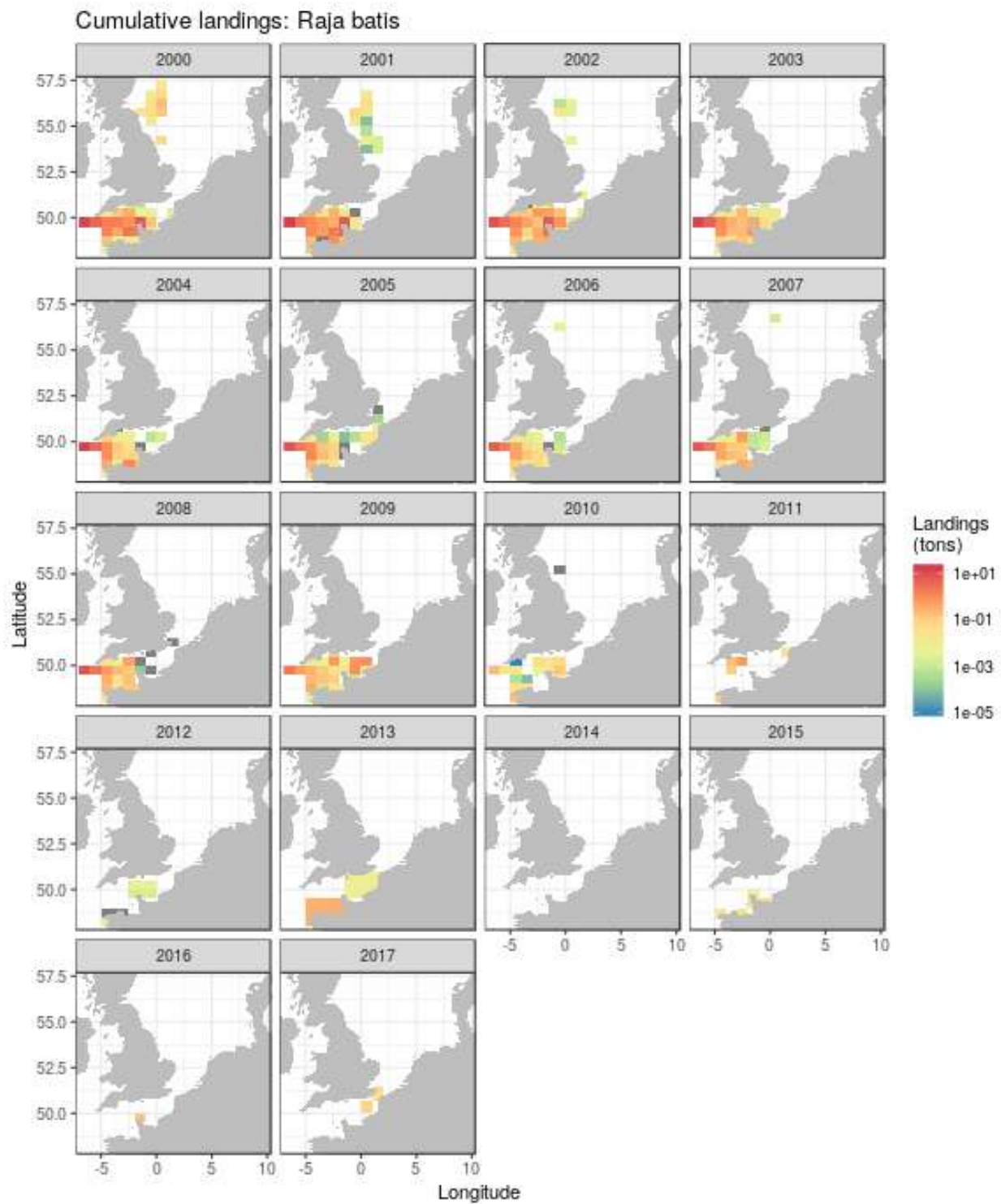


Figure 10.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

10.2.1.4 Annual landings for gear category trawler

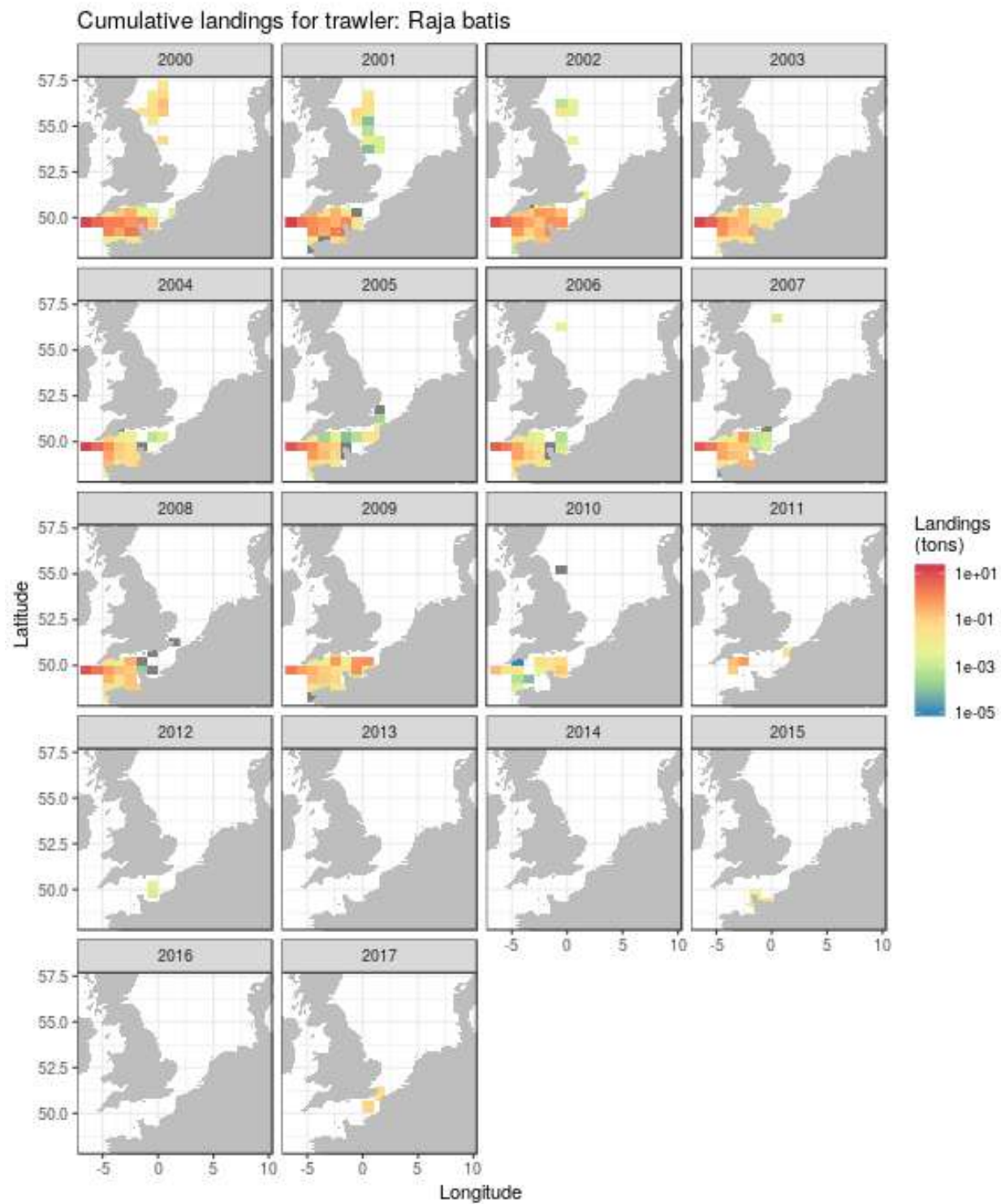


Figure 10.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

10.2.1.5 Annual landings for gear category nets

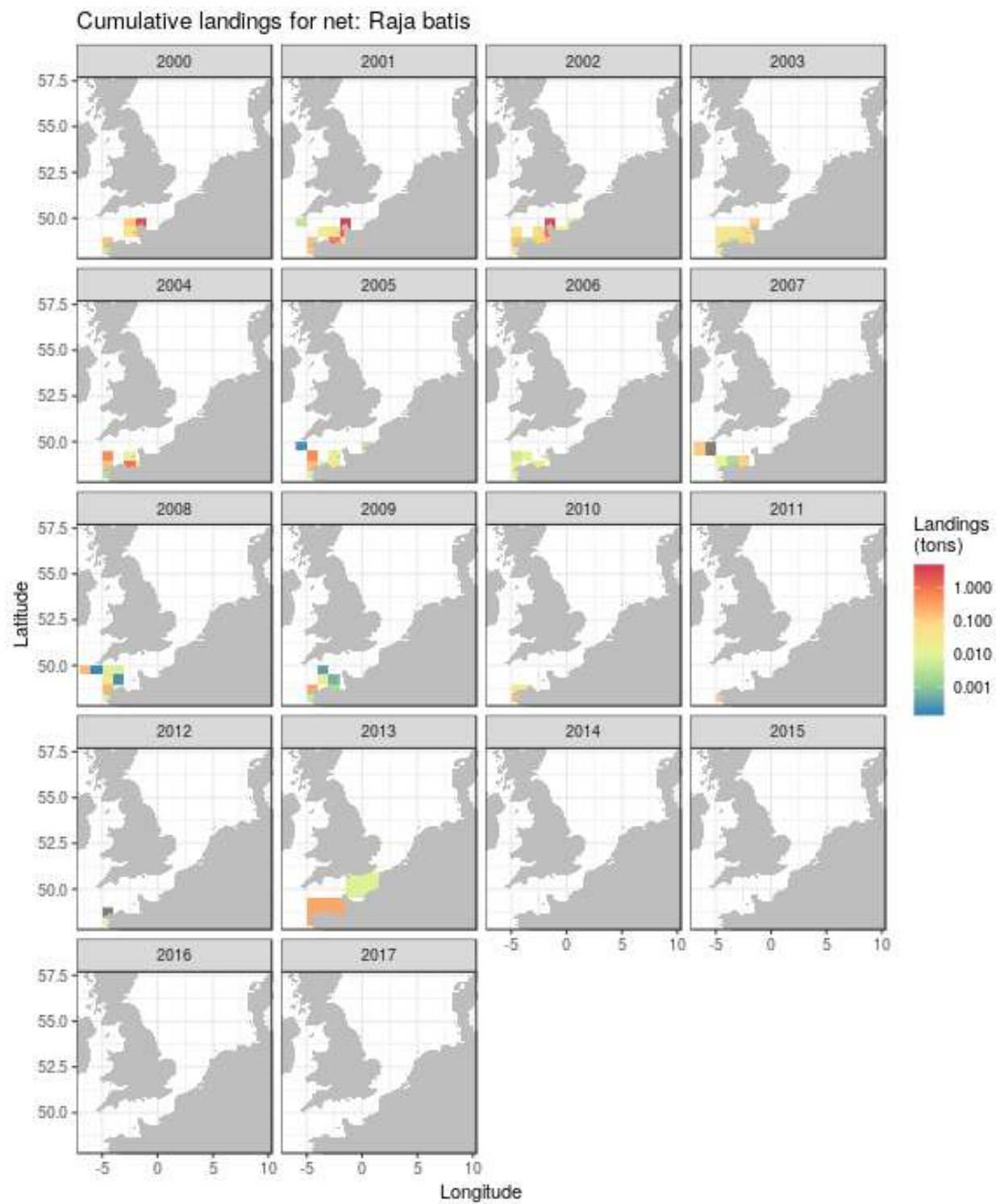


Figure 10.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

10.2.1.6 Annual landings for gear category lines

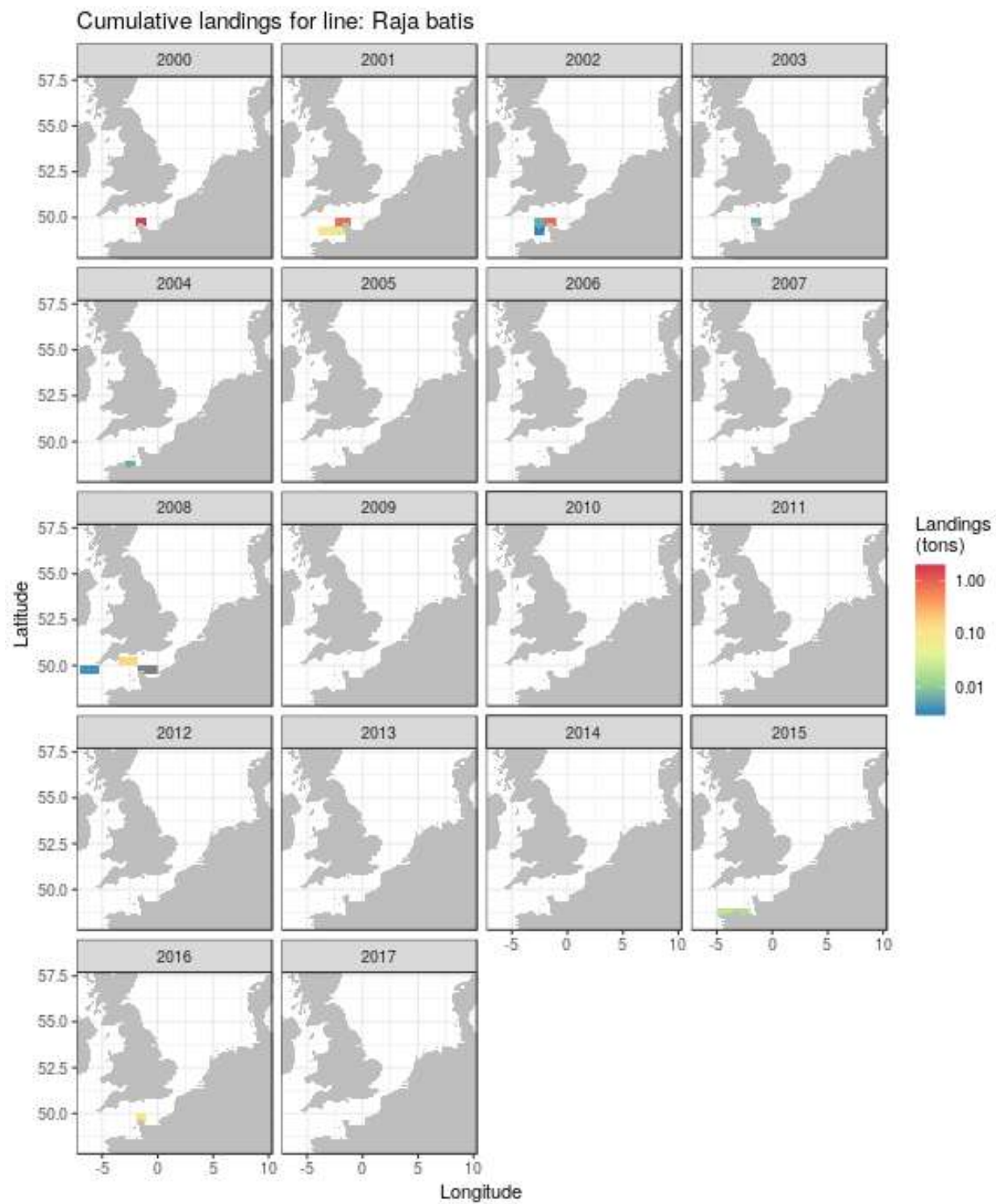


Figure 10.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

10.2.1.7 Annual landings for gear category other

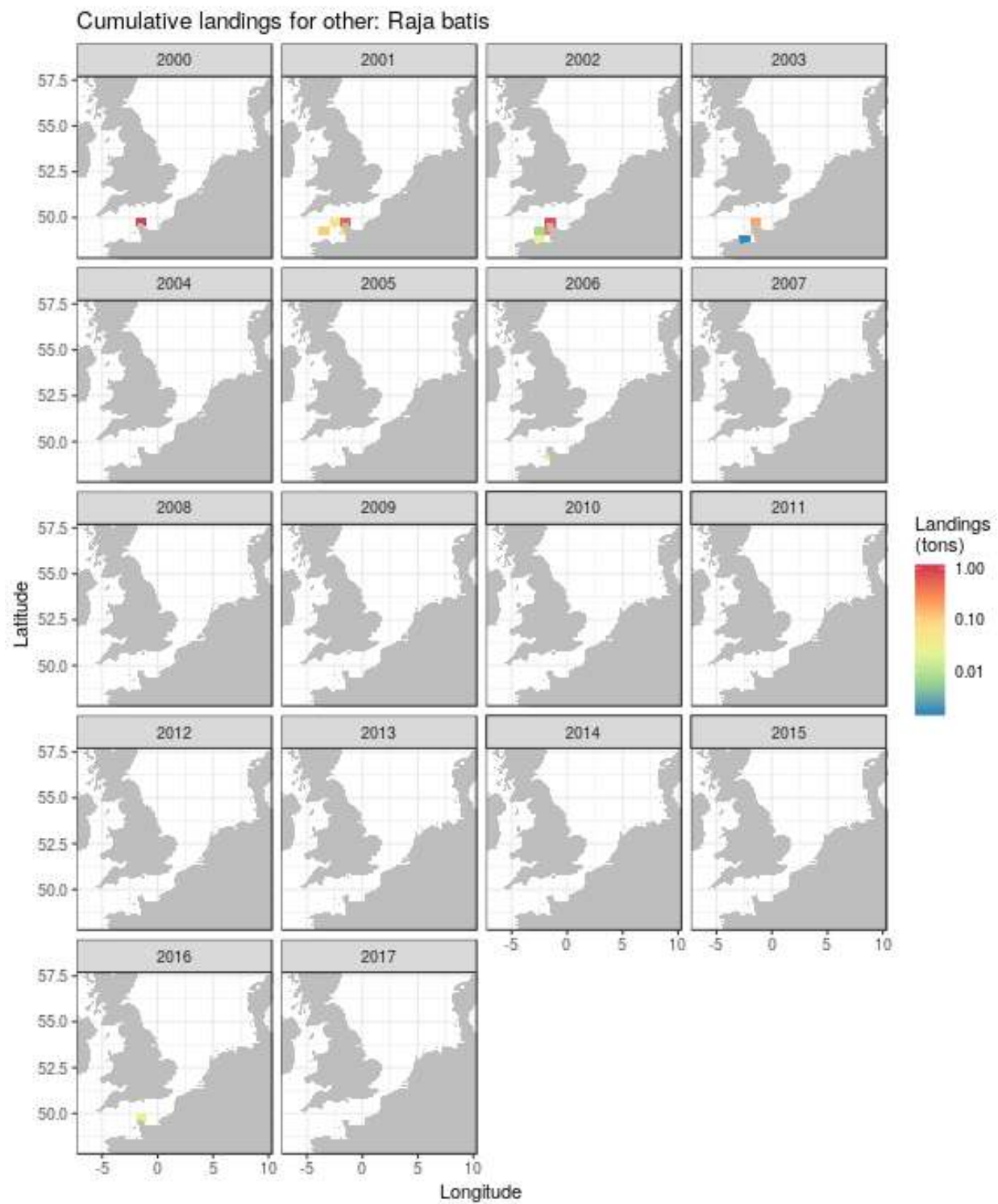


Figure 10.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

10.2.2 Commercial sampling

10.2.2.1 Landings and discards per unit effort and country

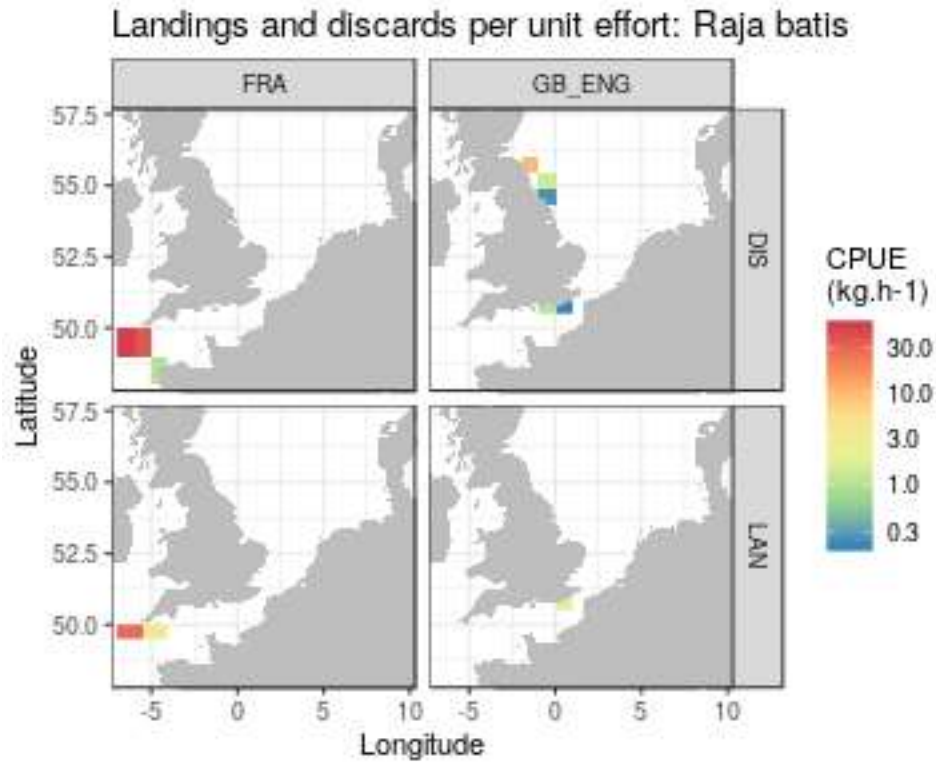


Figure 10.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log₁₀ transformed.

10.2.2.2 Annual catch per unit effort

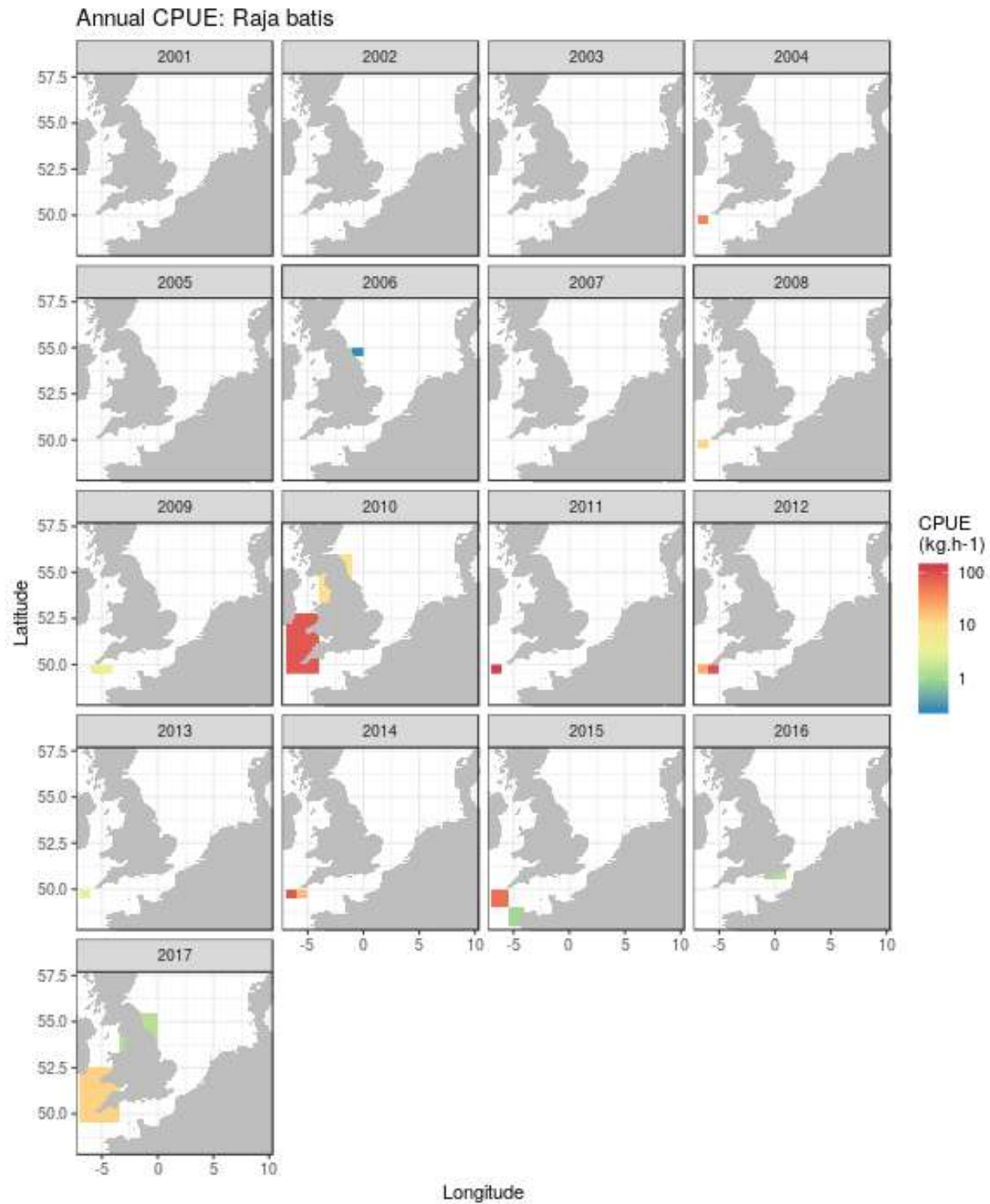


Figure 10.13: Catches per unit effort per year. The color scale is log 10 transformed.

10.2.2.3 Annual catch per unit effort for gear category trawler

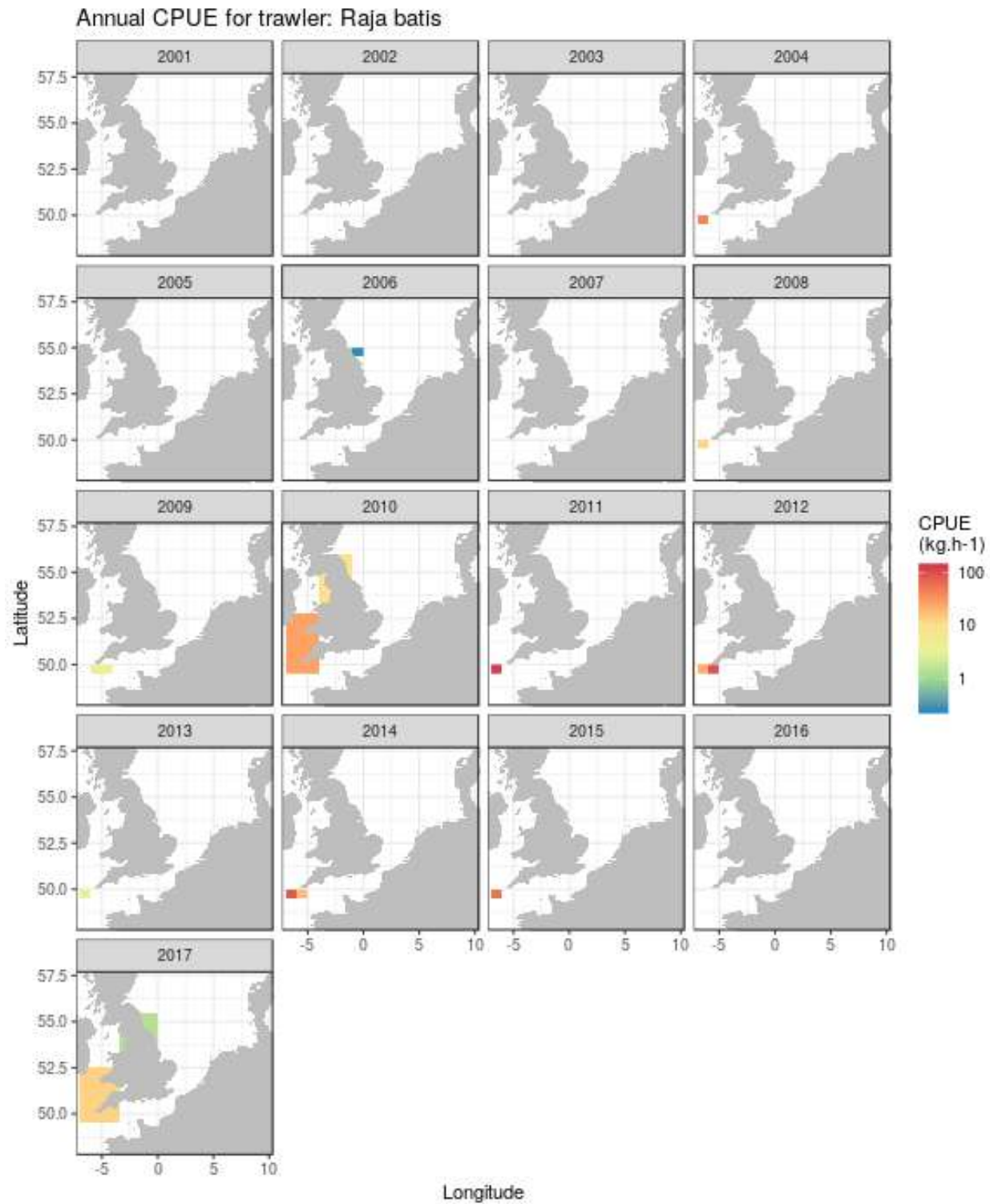


Figure 10.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

10.2.2.4 Annual catch per unit effort for gear category net

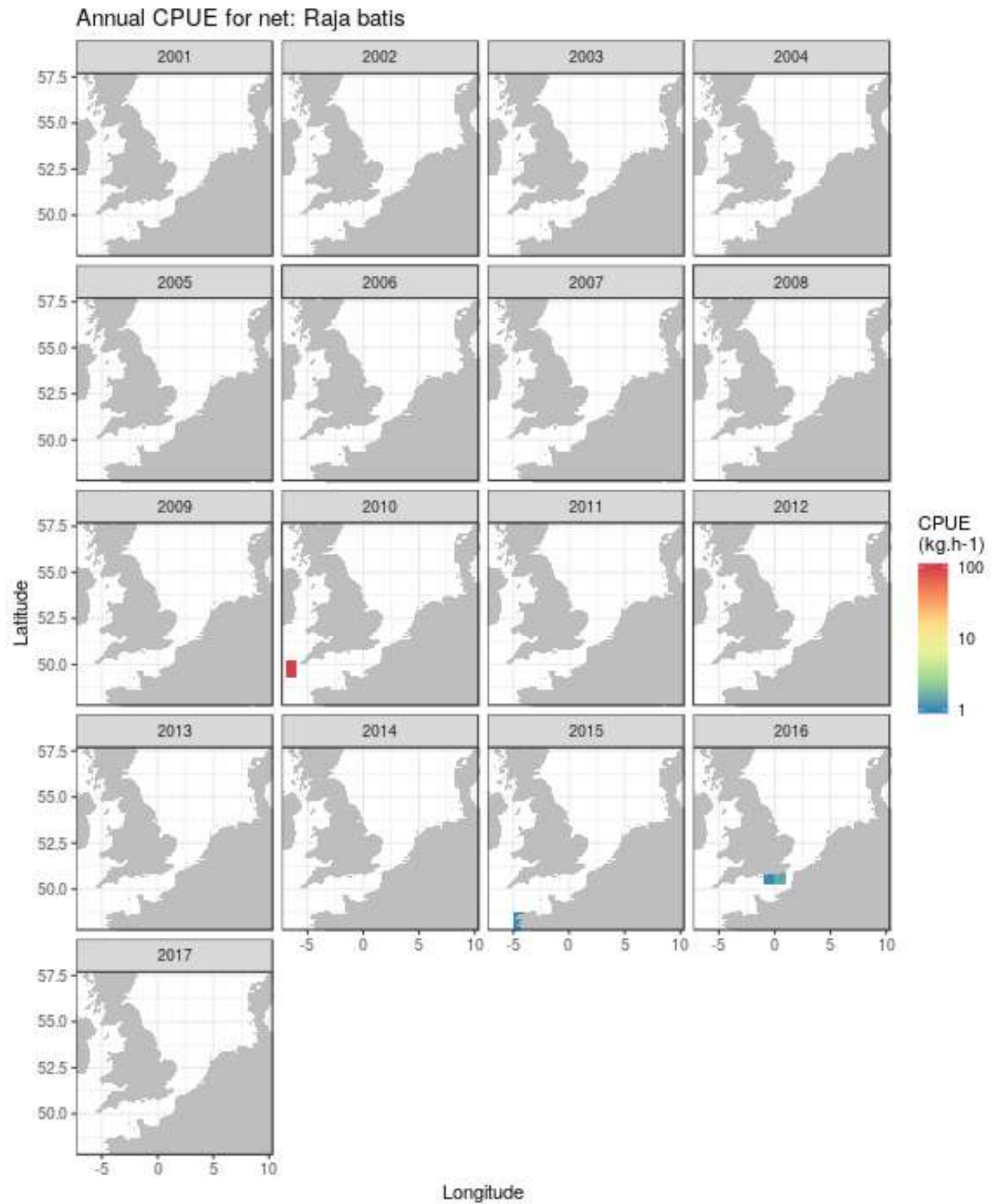


Figure 10.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

10.2.2.5 Annual catch per unit effort for gear category line



Figure 10.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

10.2.2.6 Annual catch per unit effort for gear category other

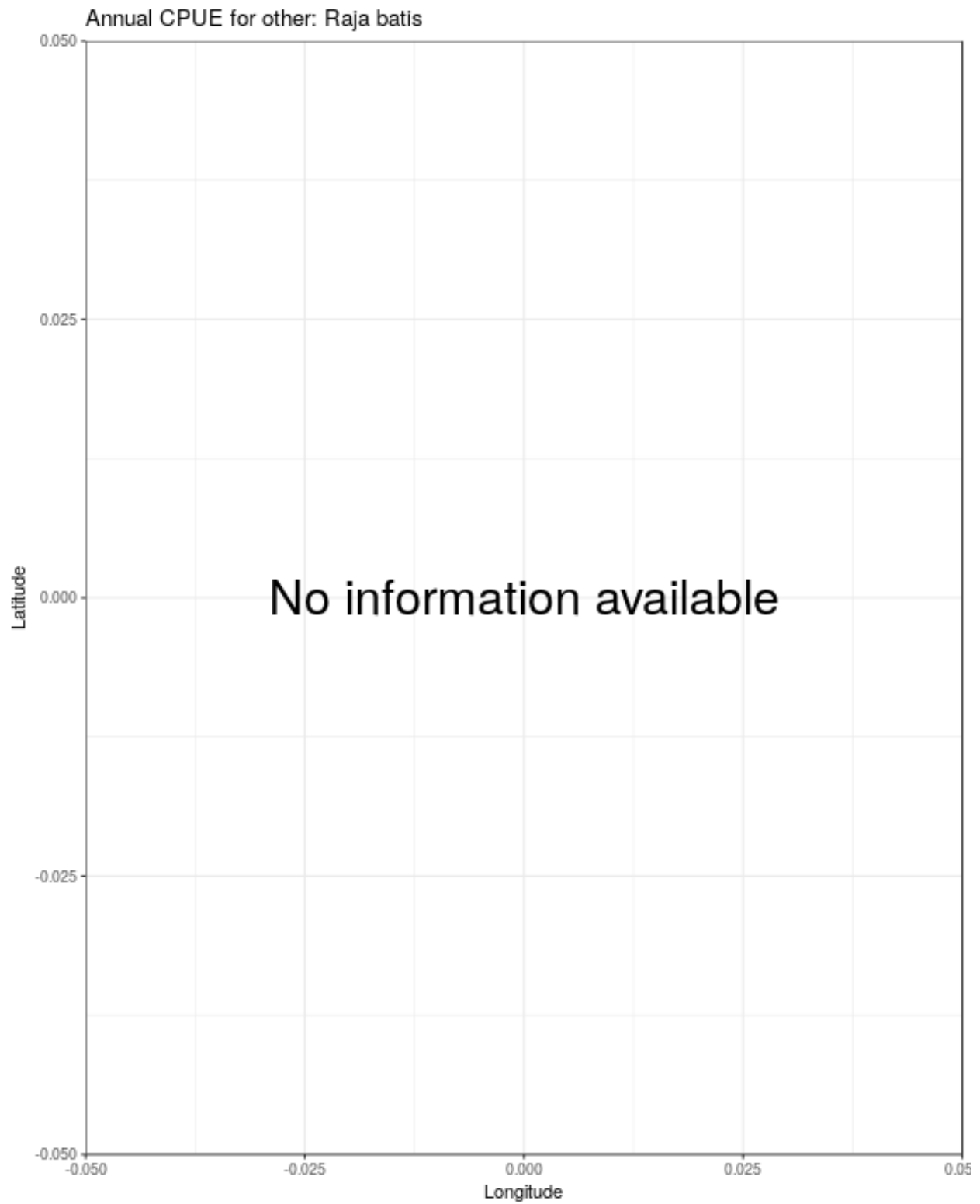


Figure 10.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

11 Raja alba

11.1 Survey

11.1.1 Average CPUE

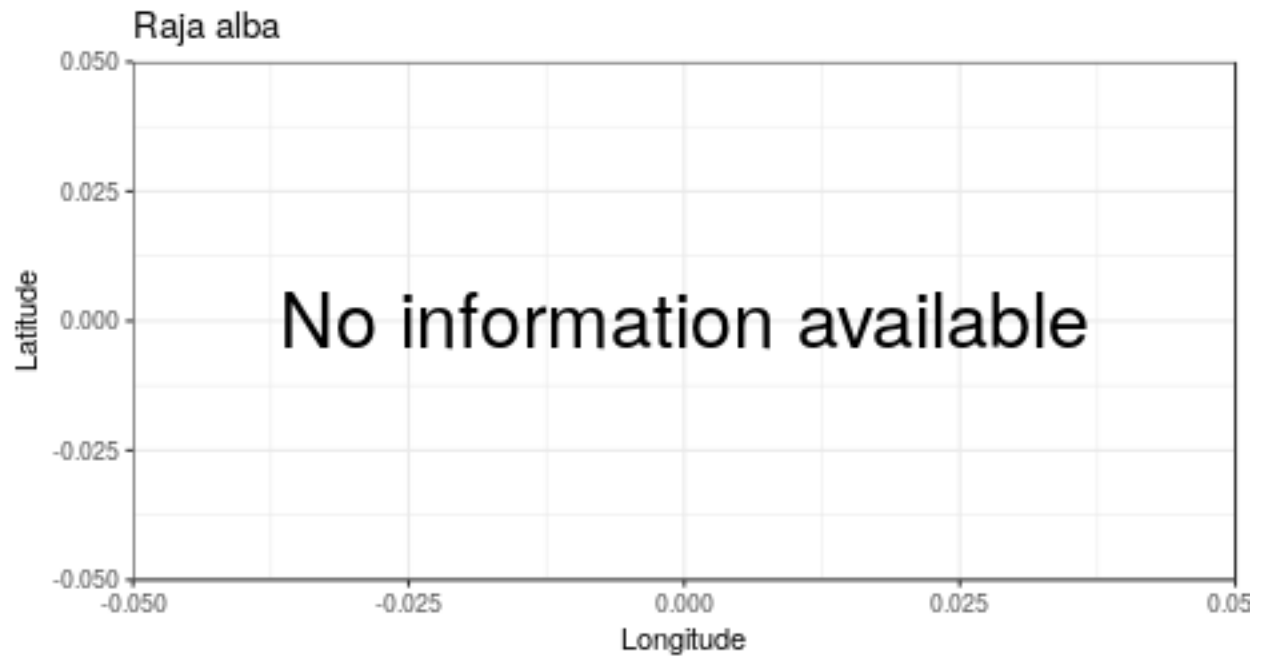


Figure 11.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

11.1.2 Annual CPUE: BTS

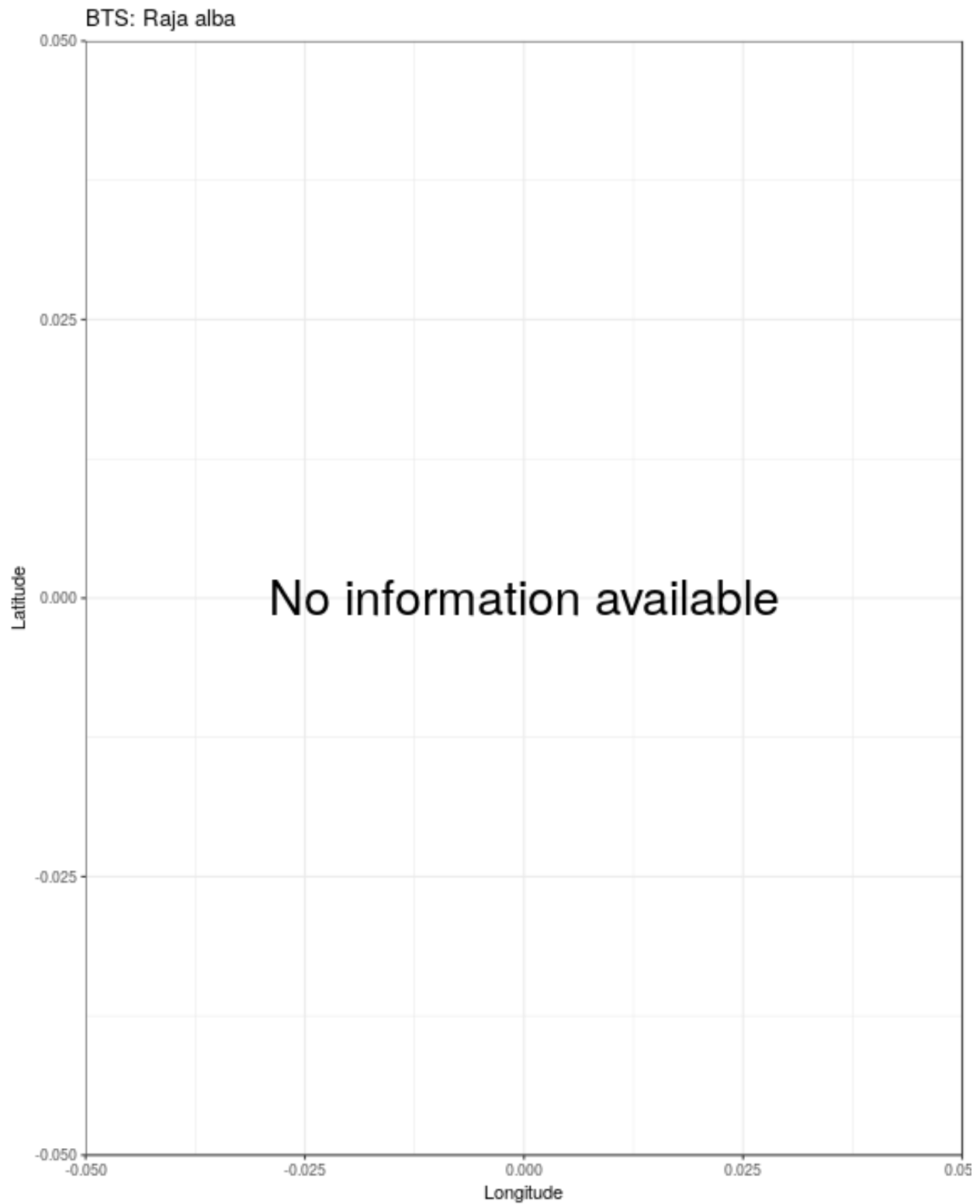


Figure 11.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

11.1.3 Annual CPUE: FR-CGFS

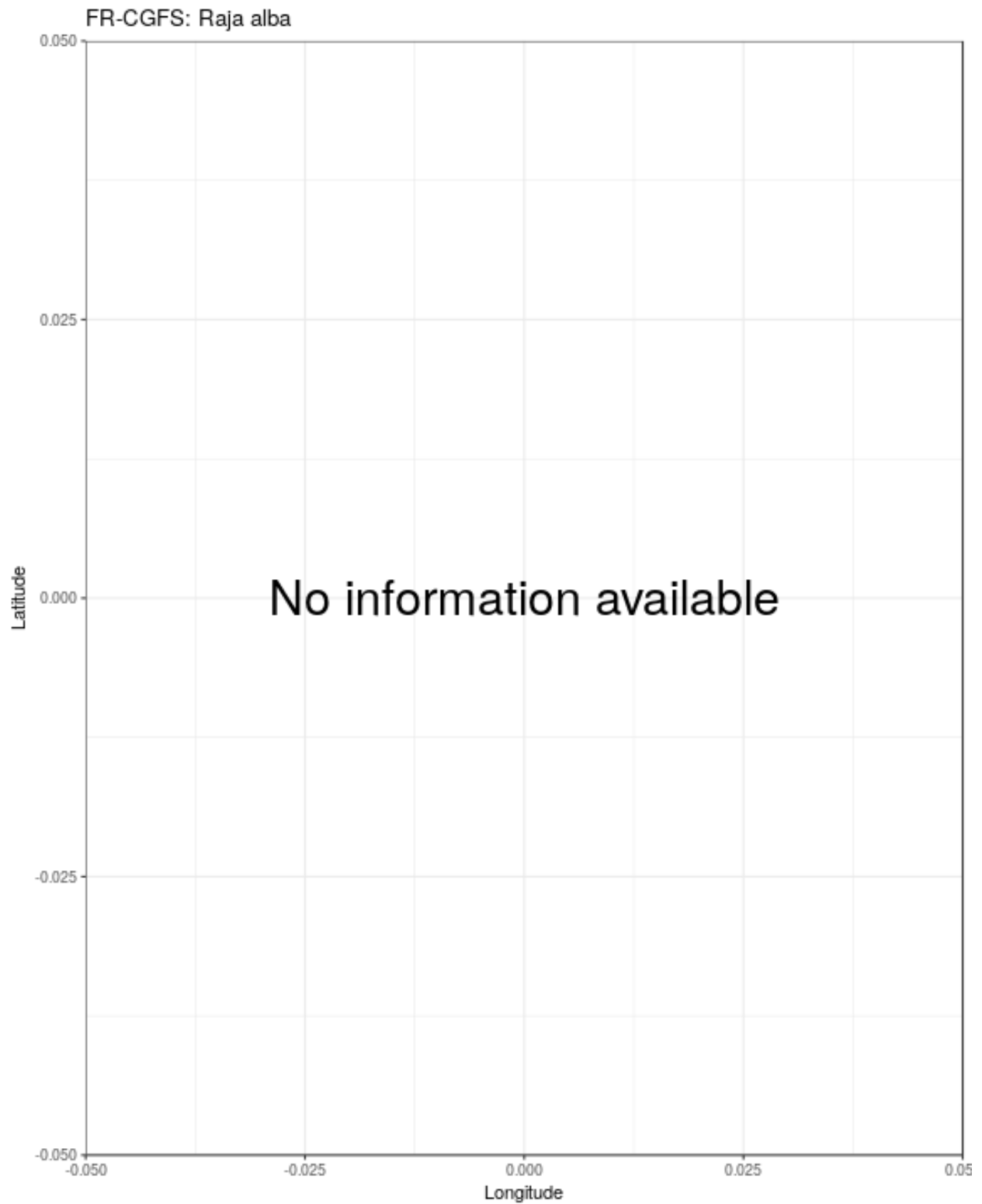


Figure 11.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

11.1.4 Annual CPUE: NS-IBTS

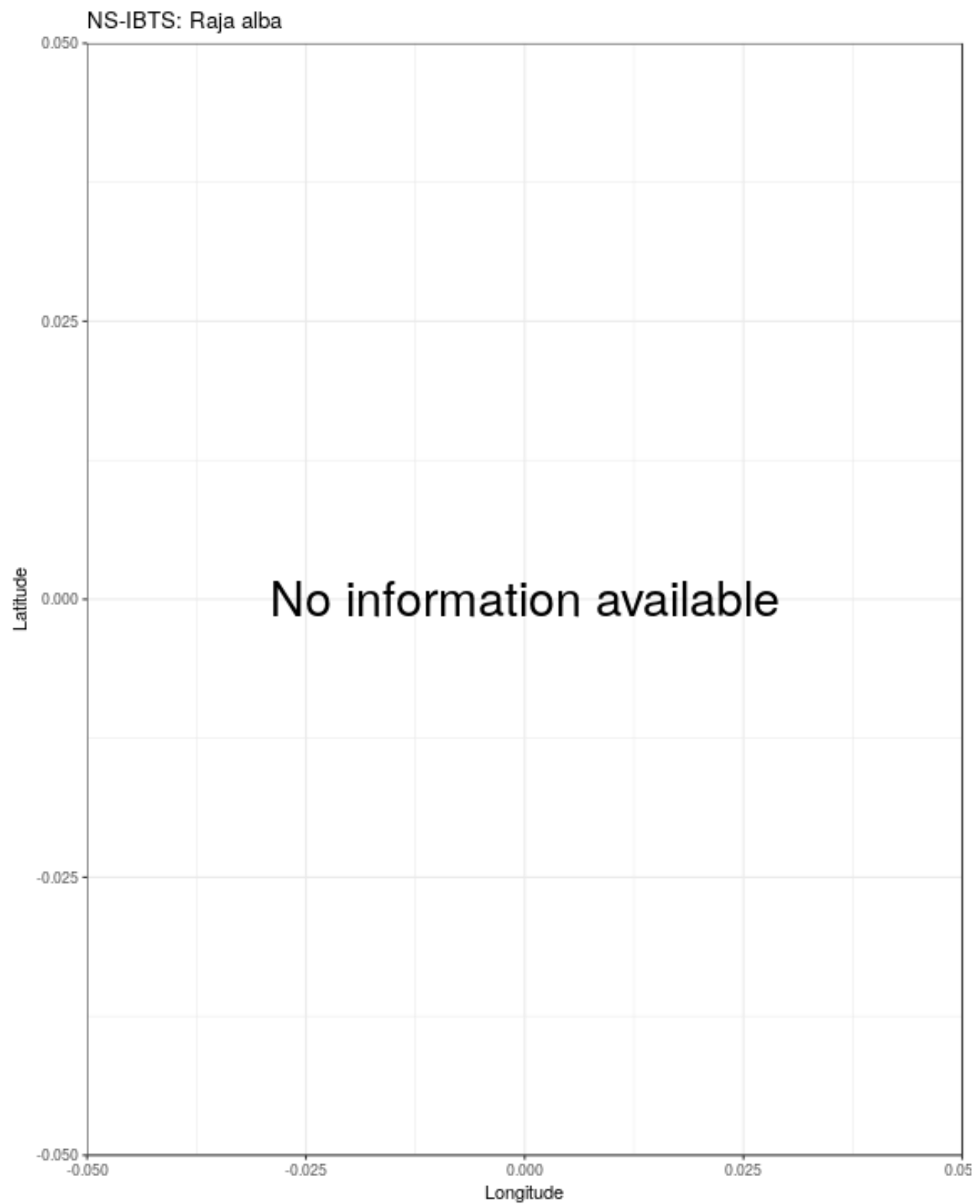


Figure 11.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

11.2 Fishery dependent information

11.2.1 Landings

11.2.1.1 Landings by country

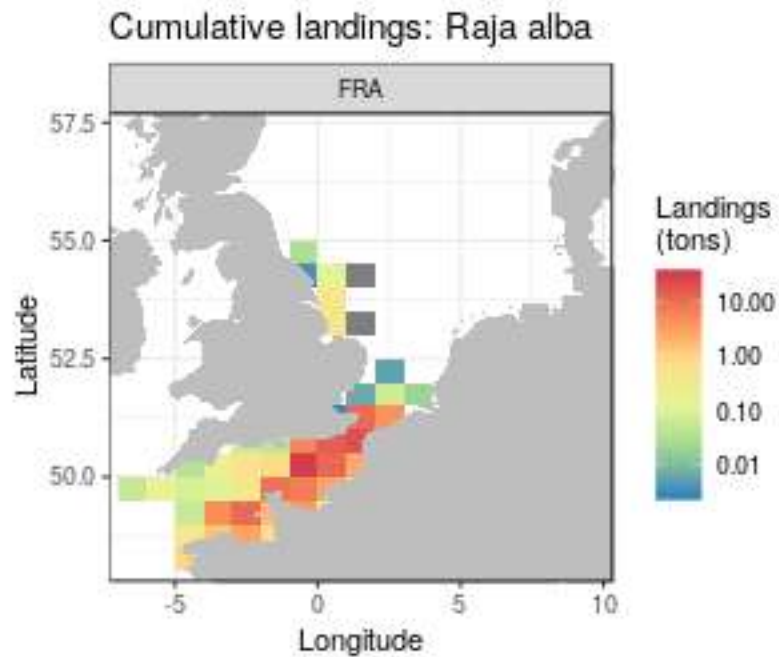


Figure 11.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

11.2.1.2 Landings by country and gear category

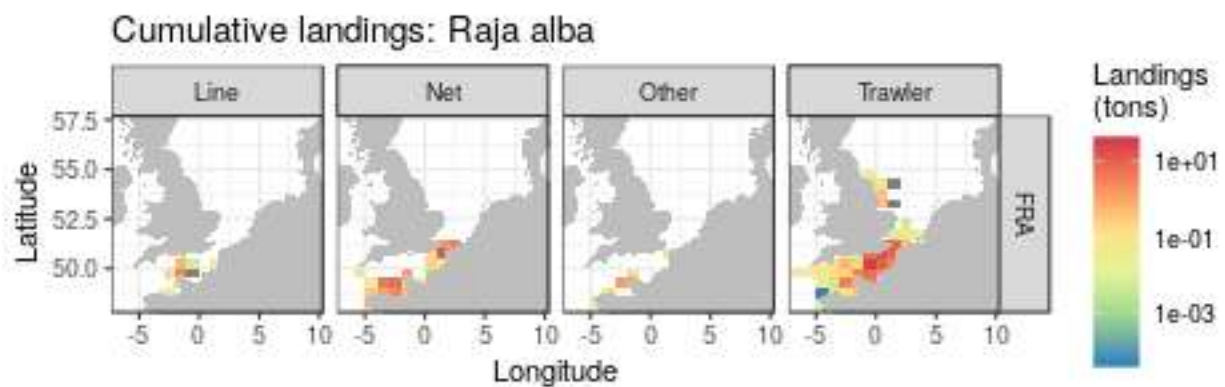


Figure 11.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

11.2.1.3 Annual landings

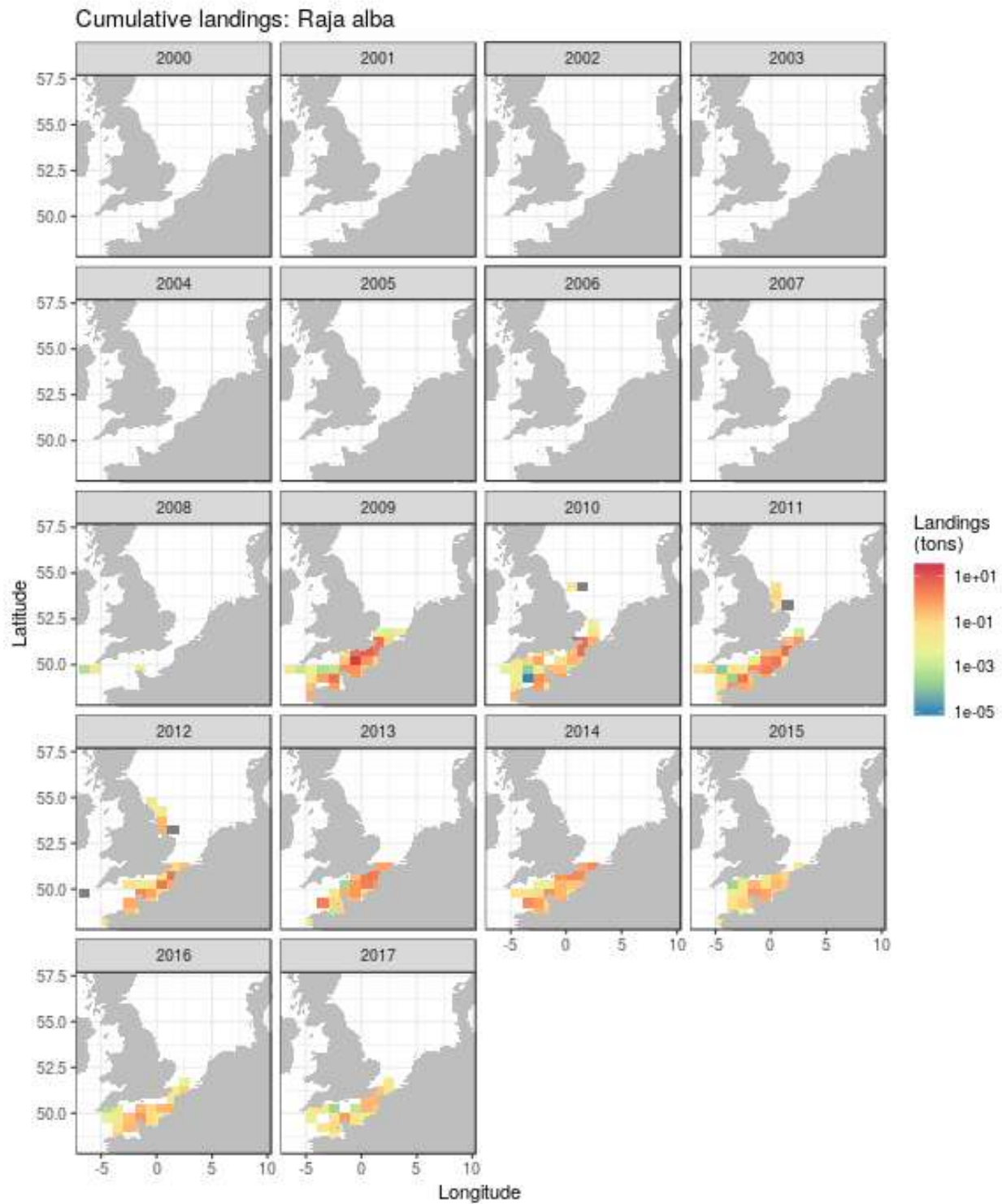


Figure 11.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

11.2.1.4 Annual landings for gear category trawler

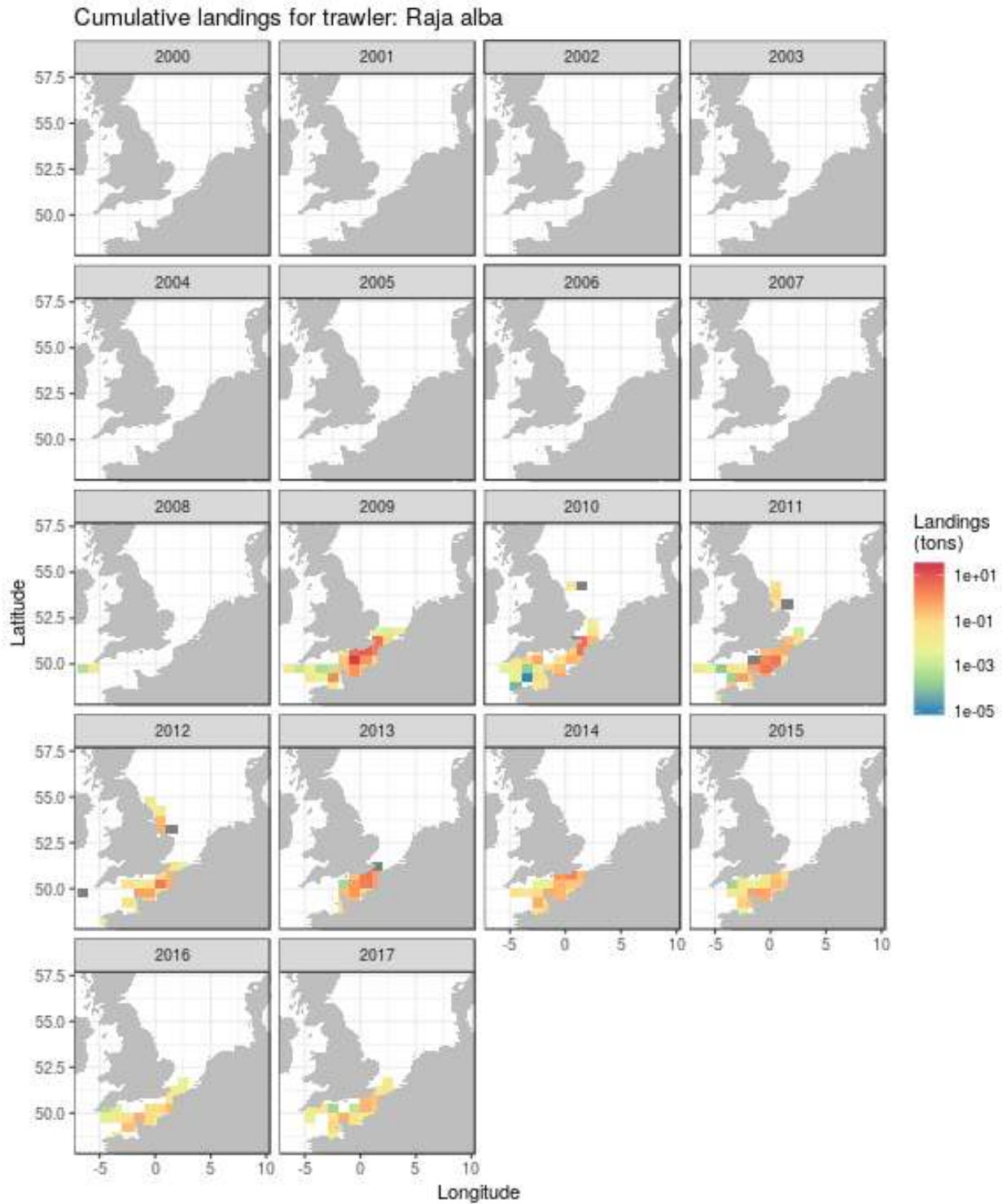


Figure 11.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

11.2.1.5 Annual landings for gear category nets

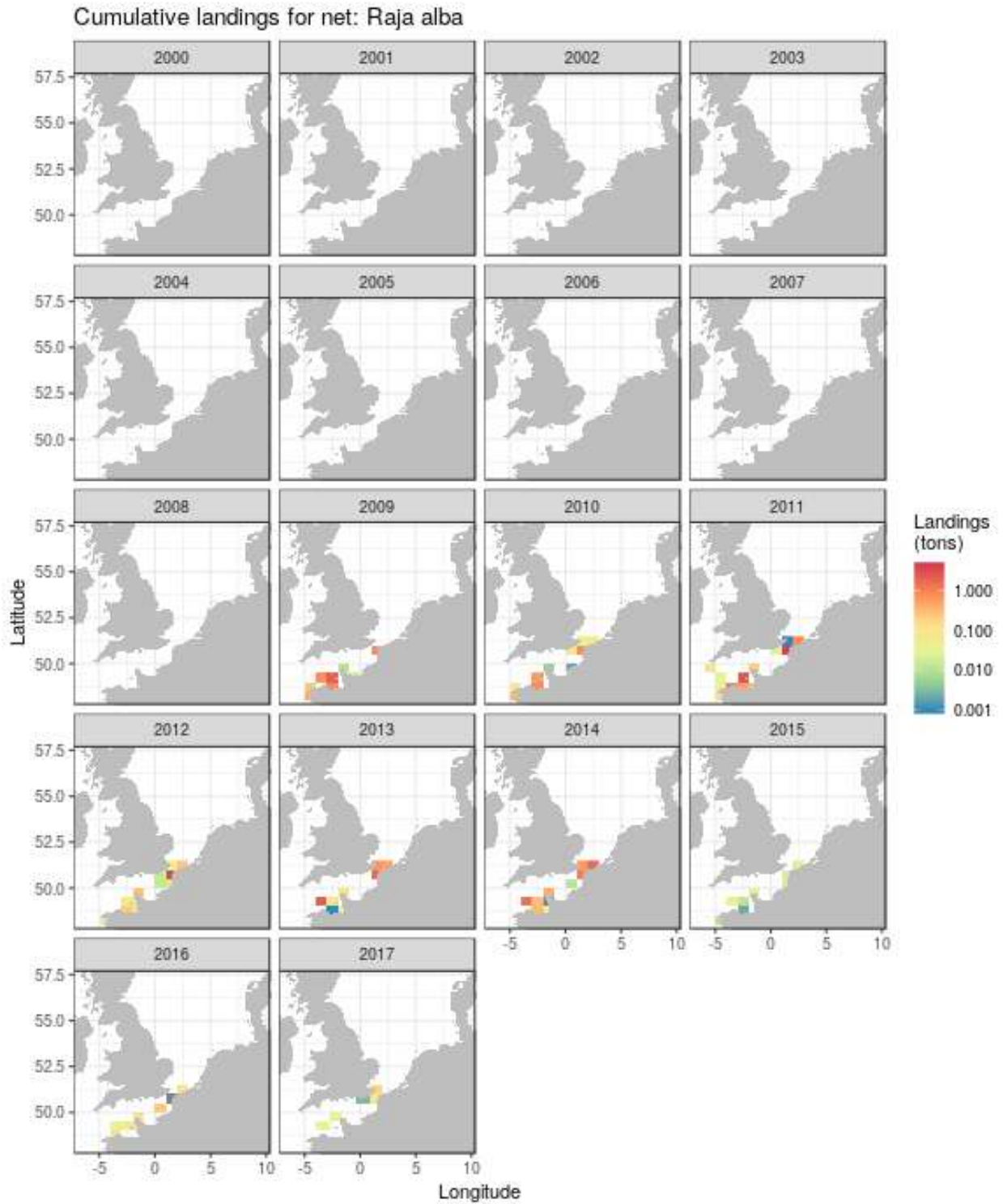


Figure 11.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

11.2.1.6 Annual landings for gear category lines

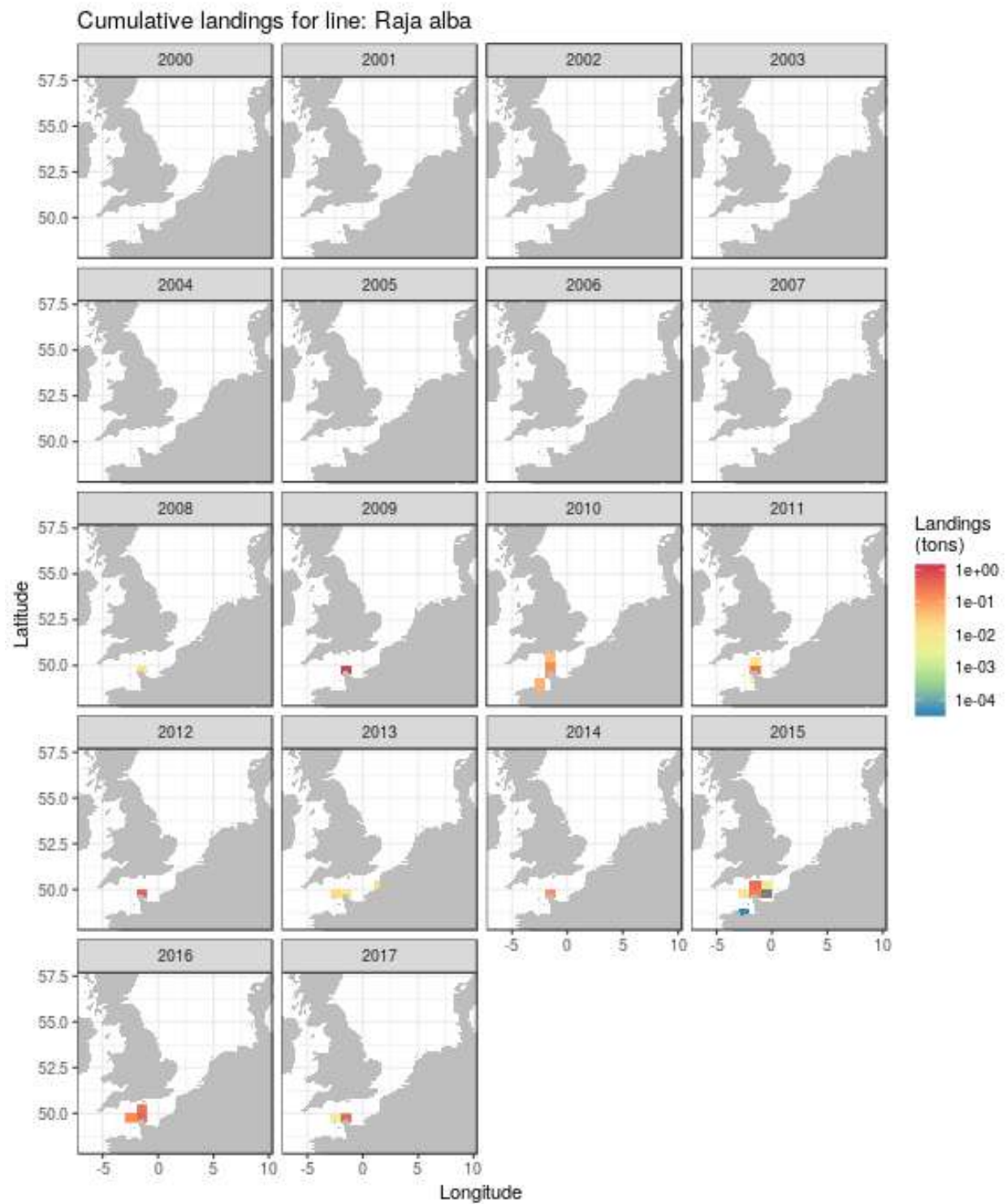


Figure 11.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

11.2.1.7 Annual landings for gear category other

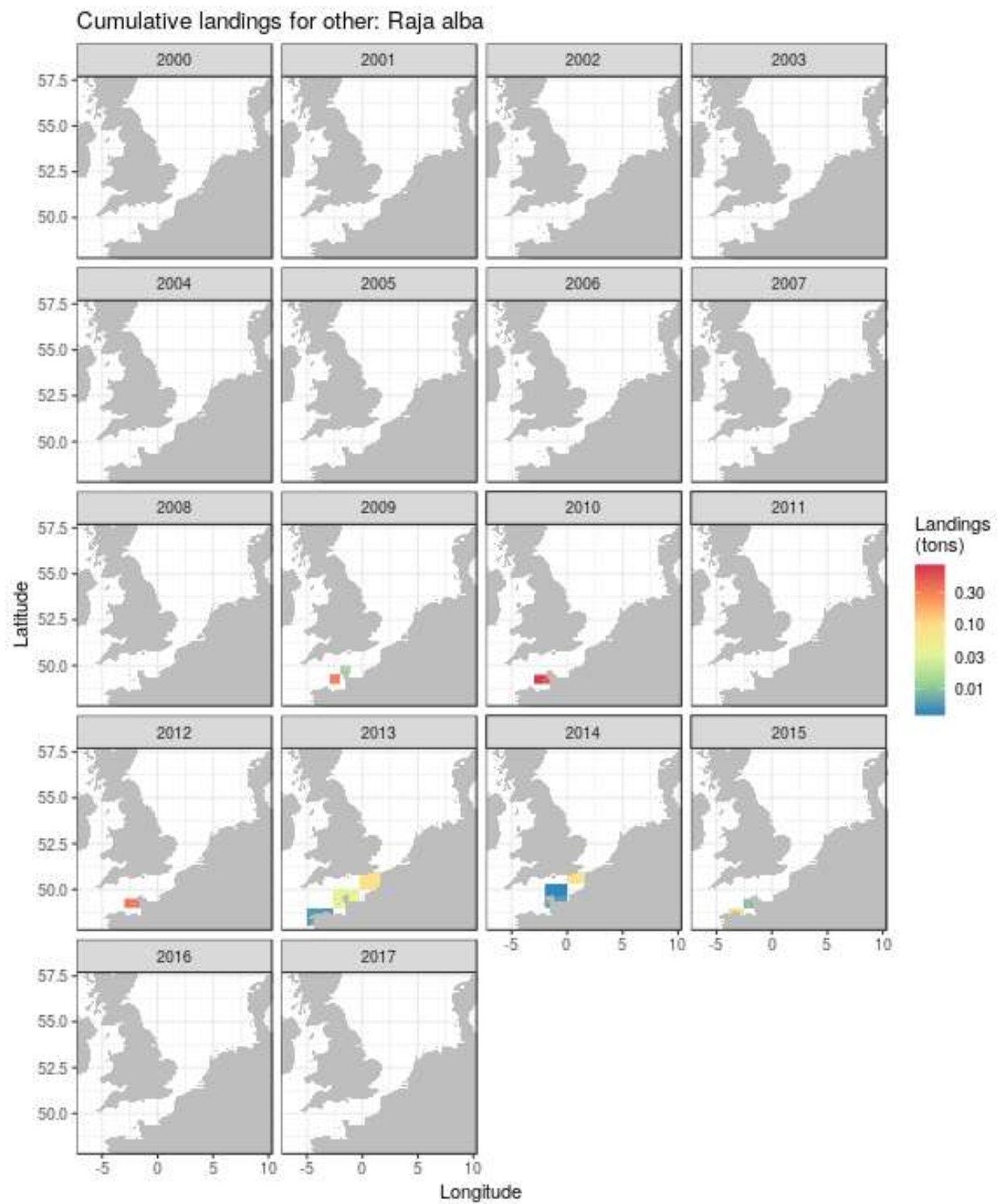


Figure 11.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

11.2.2 Commercial sampling

11.2.2.1 Landings and discards per unit effort and country

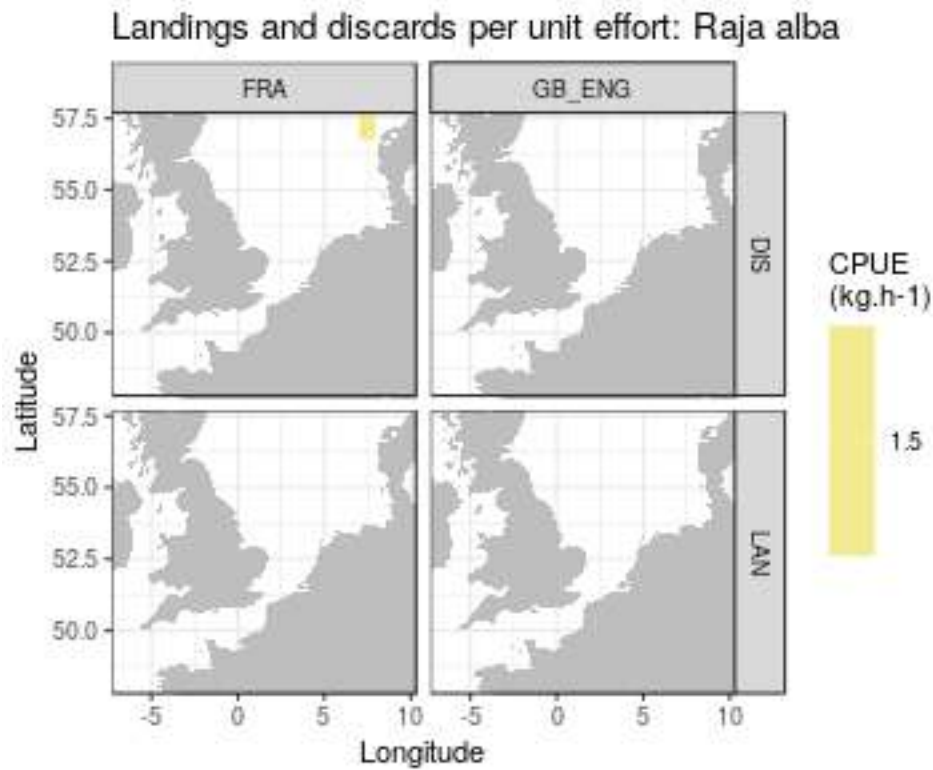


Figure 11.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log₁₀ transformed.

11.2.2.2 Annual catch per unit effort

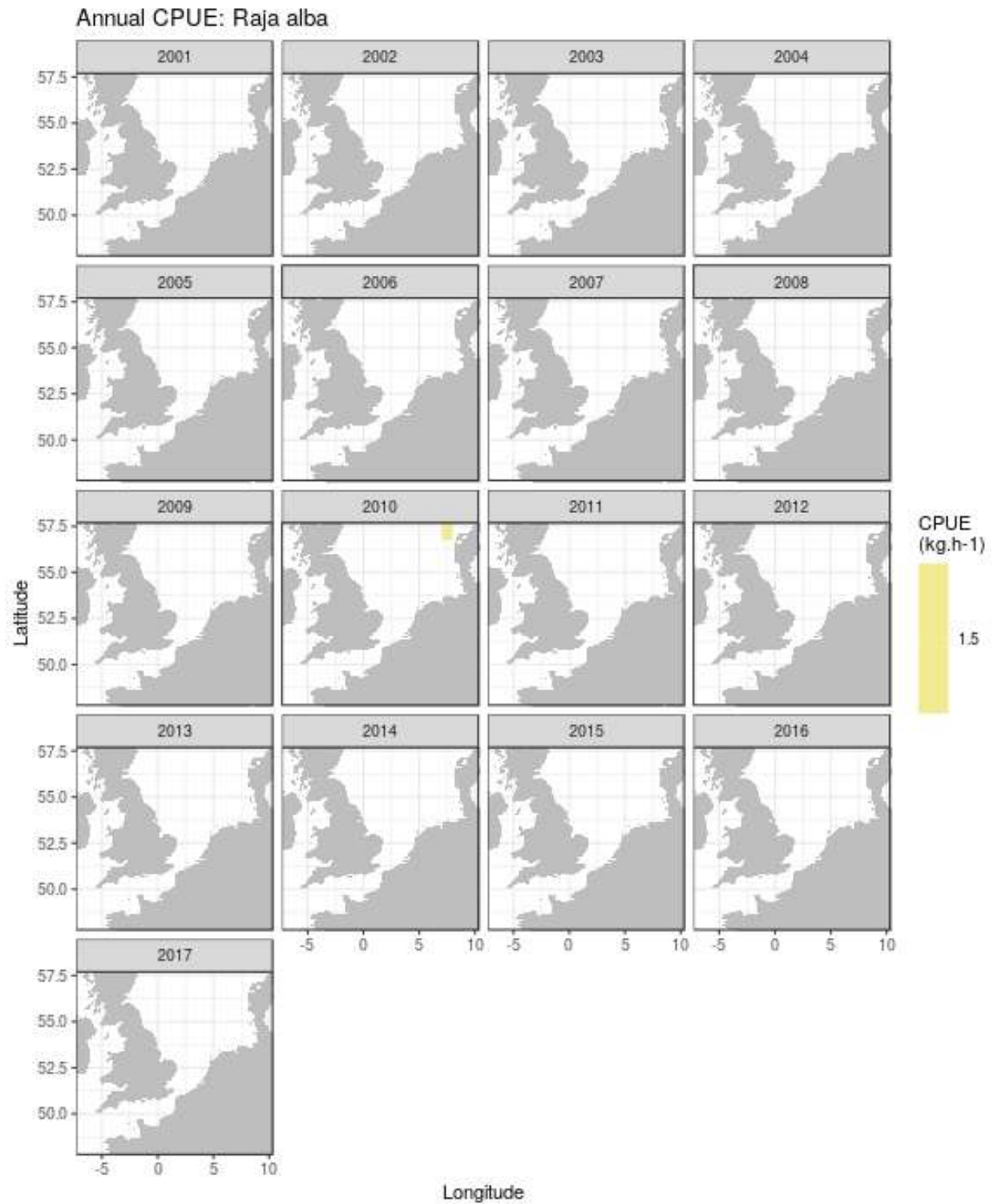


Figure 11.13: Catches per unit effort per year. The color scale is log 10 transformed.

11.2.2.3 Annual catch per unit effort for gear category trawler

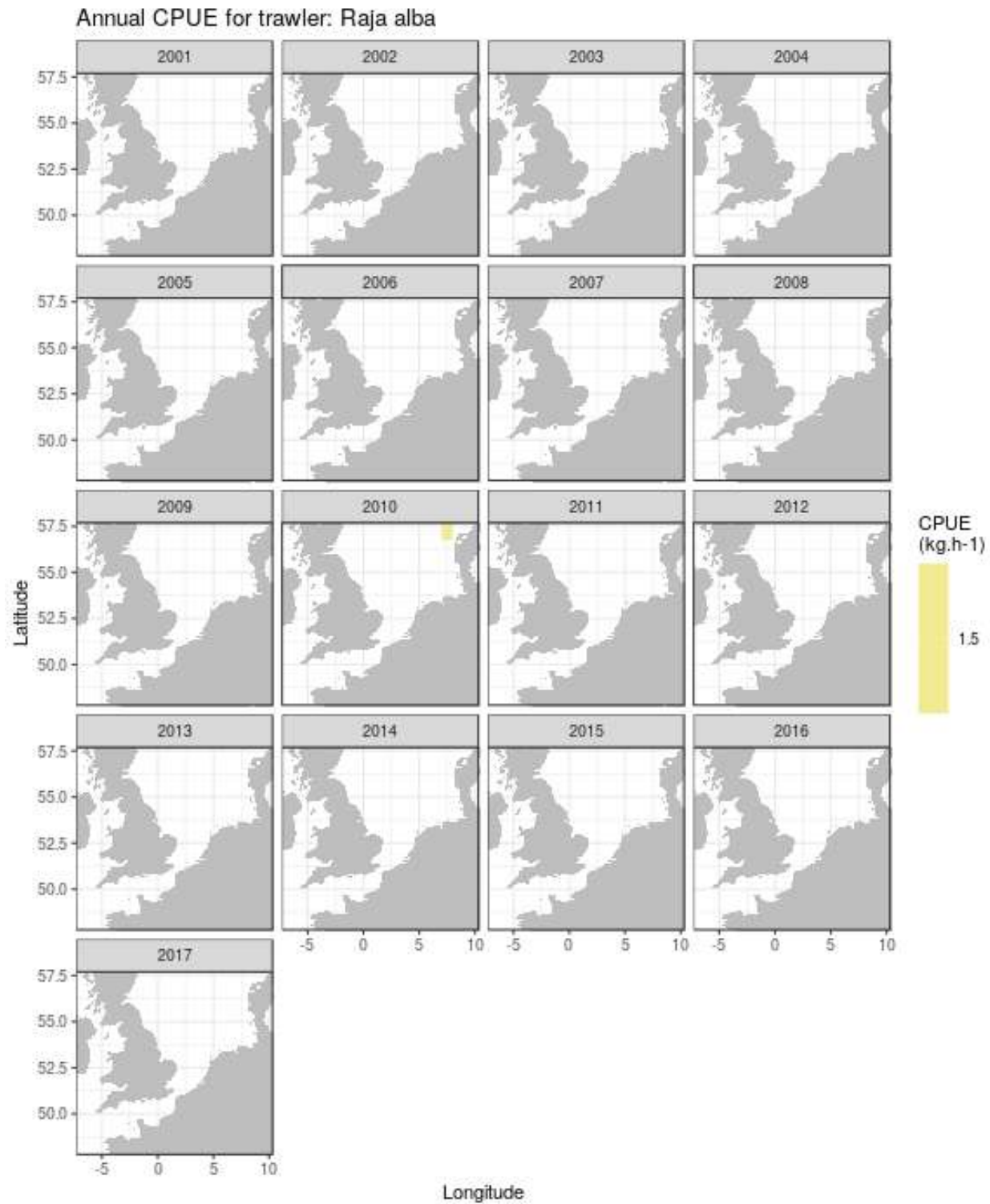


Figure 11.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

11.2.2.4 Annual catch per unit effort for gear category net

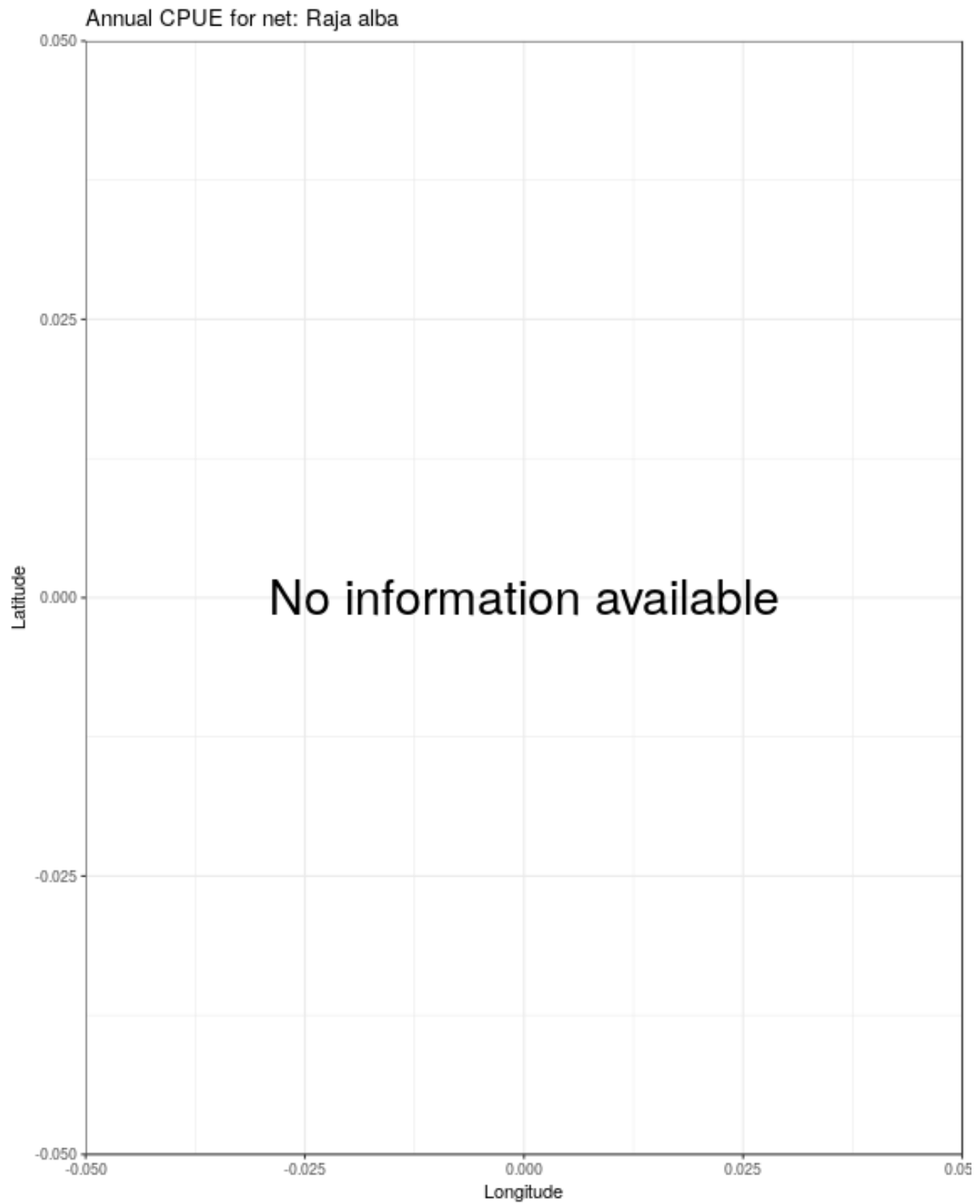


Figure 11.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

11.2.2.5 Annual catch per unit effort for gear category line

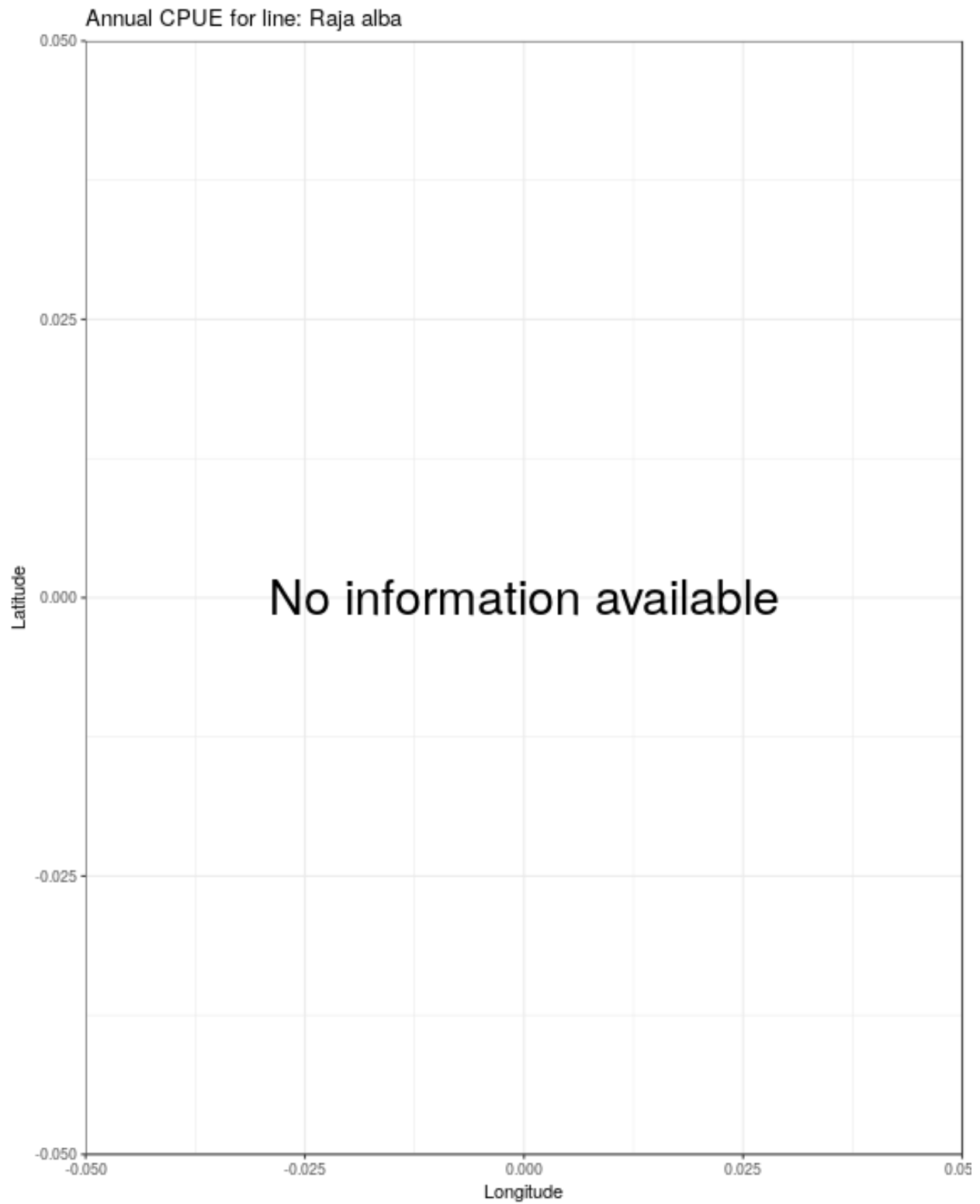


Figure 11.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

11.2.2.6 Annual catch per unit effort for gear category other



Figure 11.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

12 *Dasyatis pastinaca*

12.1 Survey

12.1.1 Average CPUE

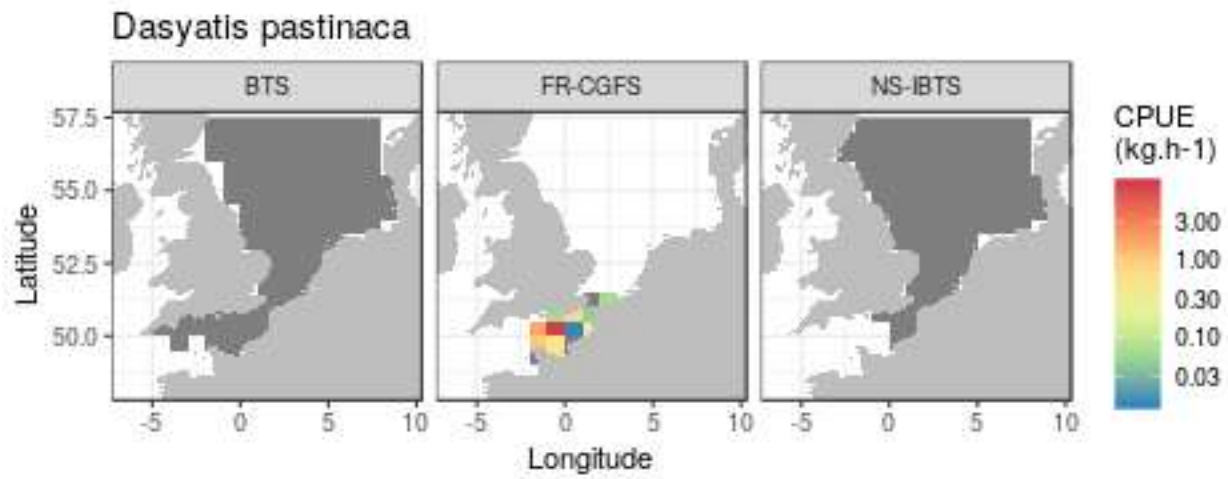


Figure 12.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

12.1.2 Annual CPUE: BTS

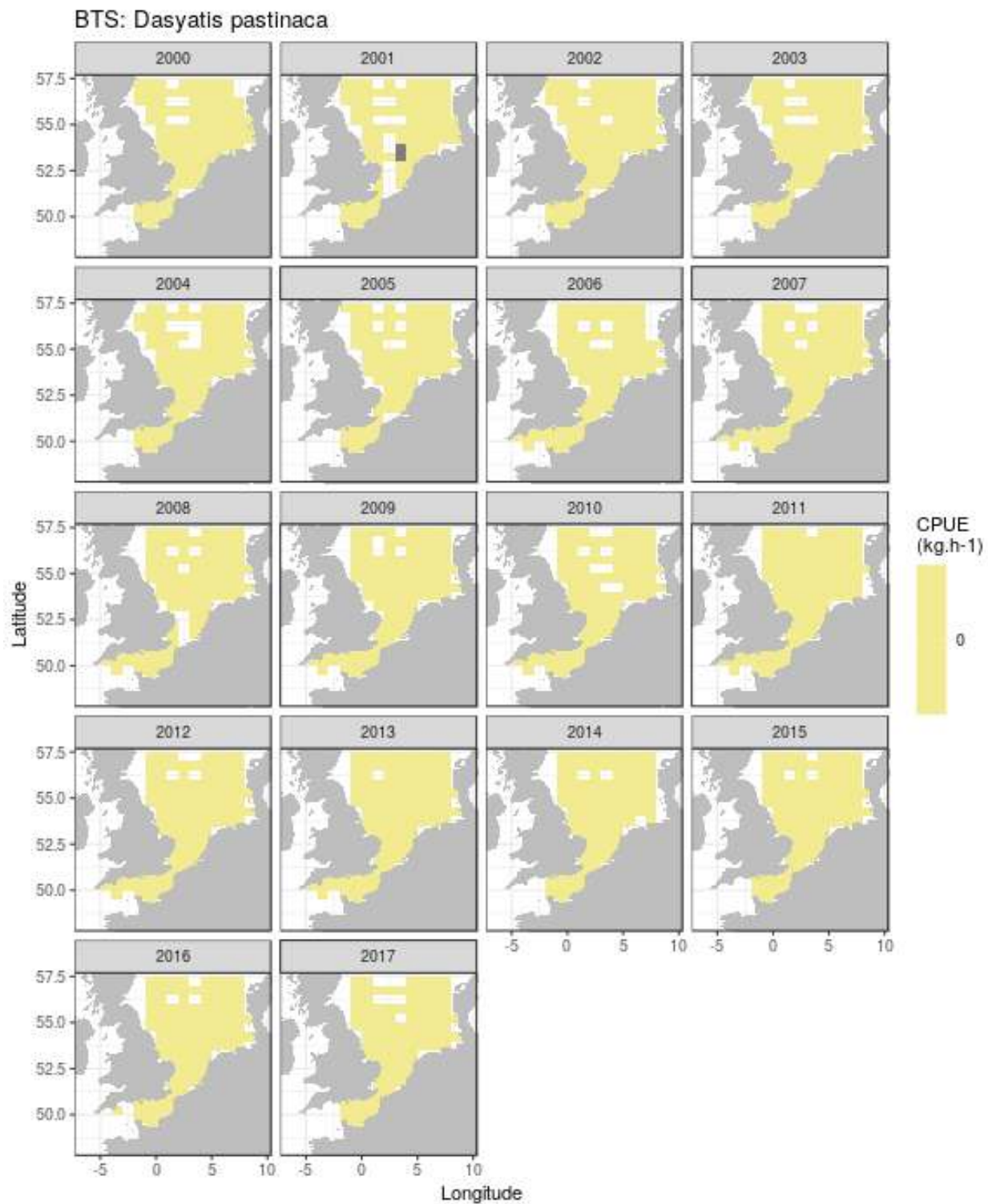


Figure 12.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

12.1.3 Annual CPUE: FR-CGFS

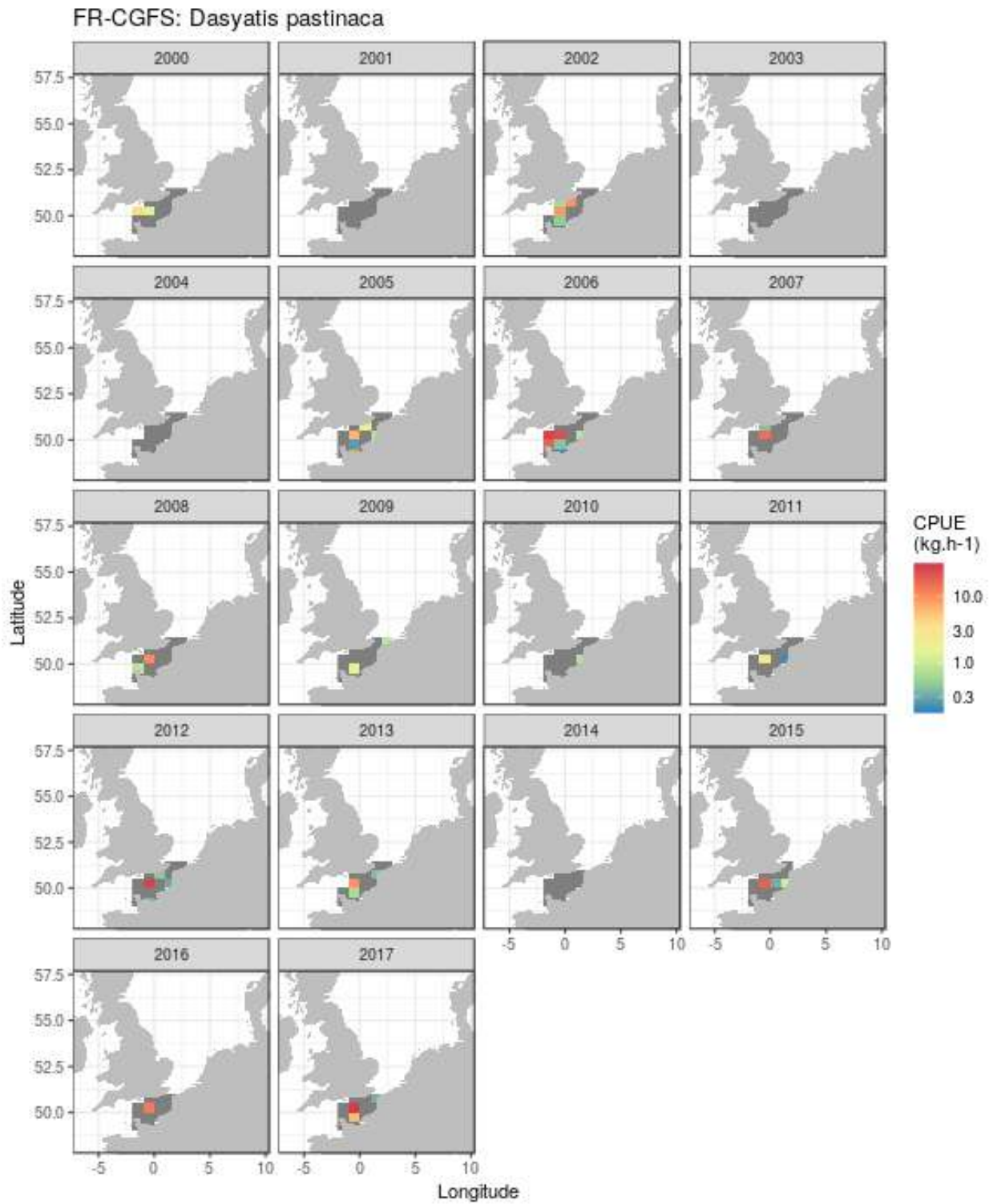


Figure 12.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

12.1.4 Annual CPUE: NS-IBTS

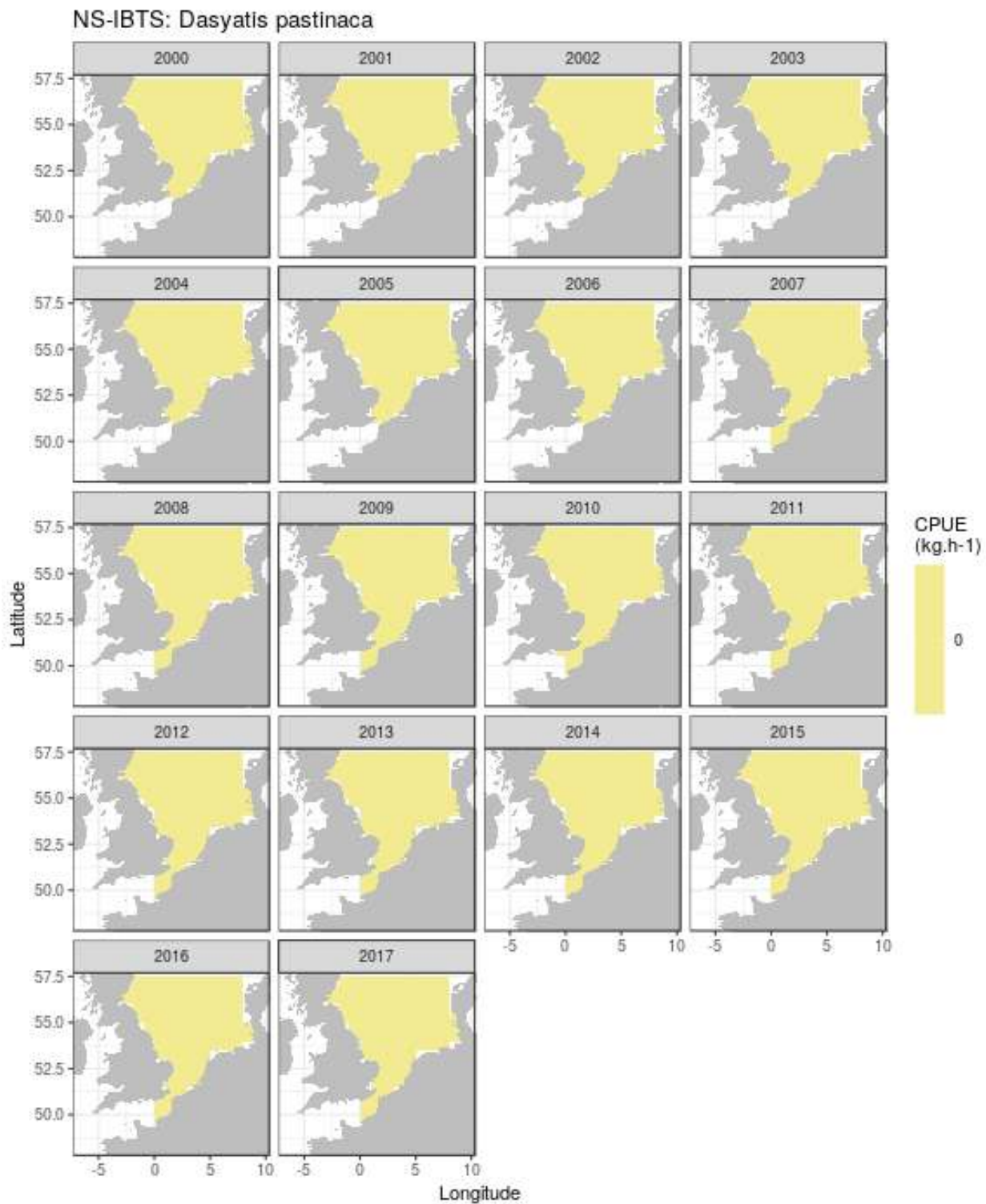


Figure 12.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

12.2 Fishery dependent information

12.2.1 Landings

12.2.1.1 Landings by country

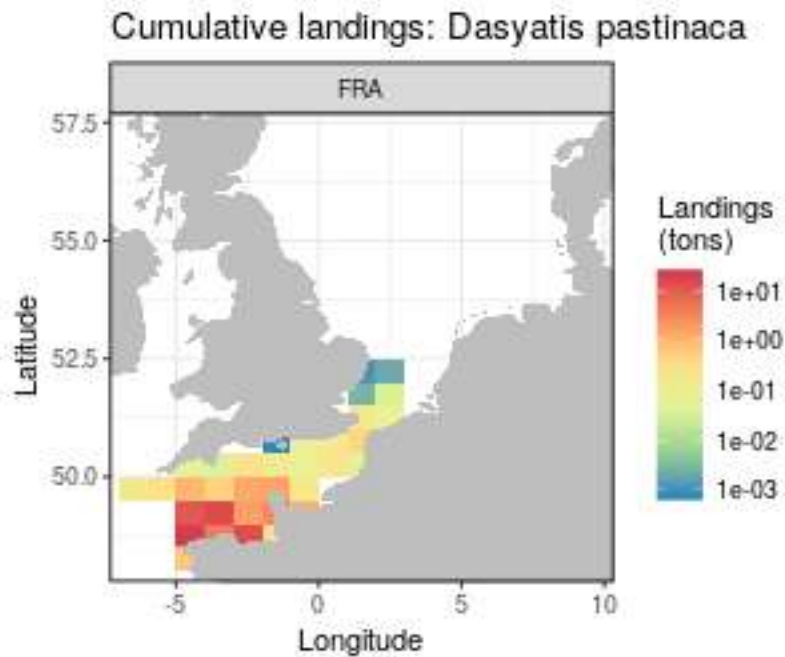


Figure 12.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

12.2.1.2 Landings by country and gear category

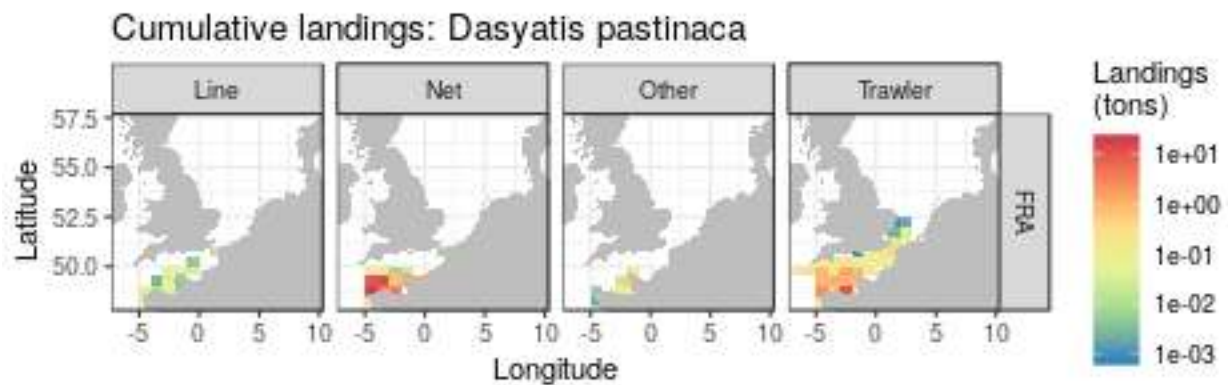


Figure 12.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

12.2.1.3 Annual landings

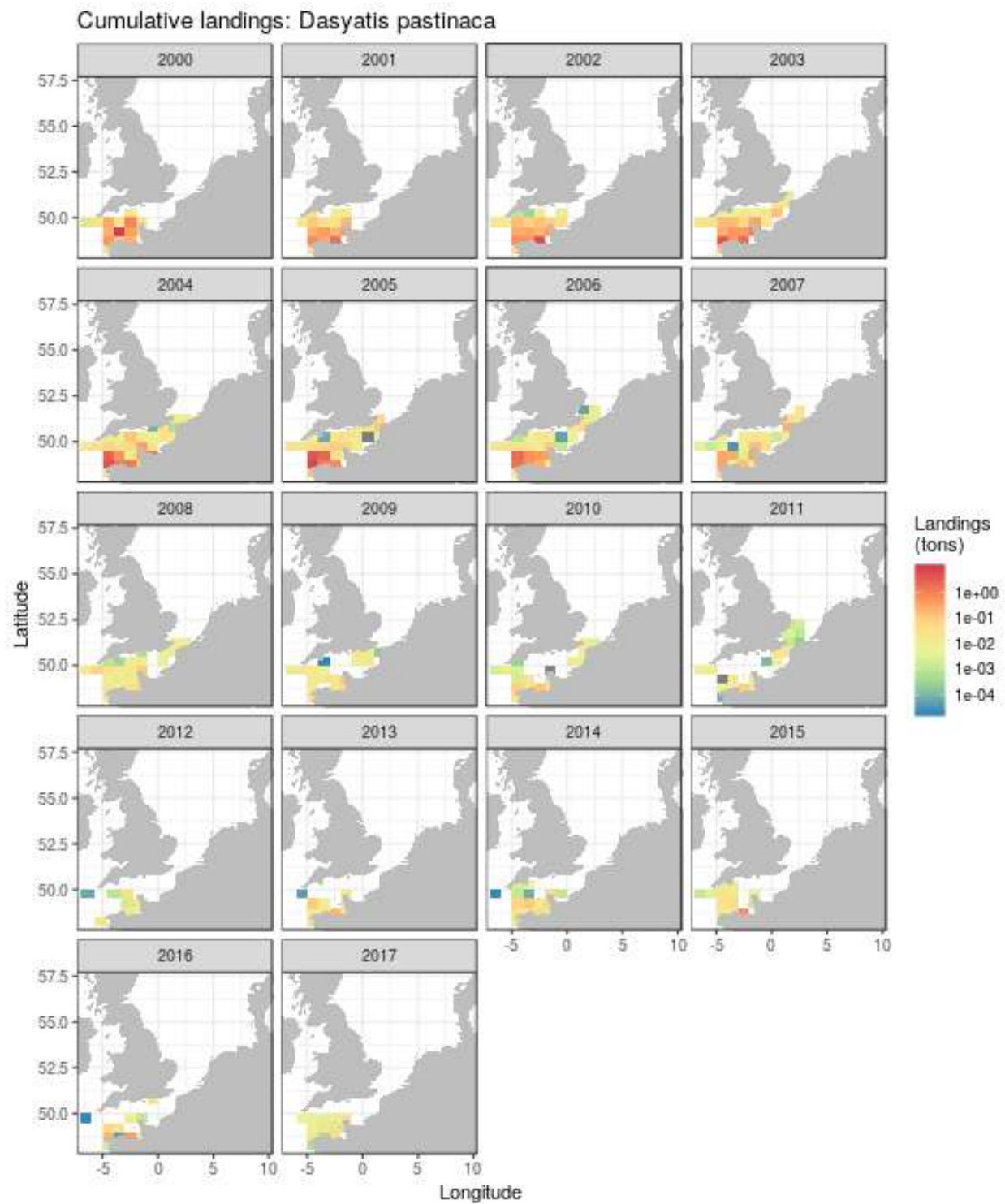


Figure 12.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

12.2.1.4 Annual landings for gear category trawler

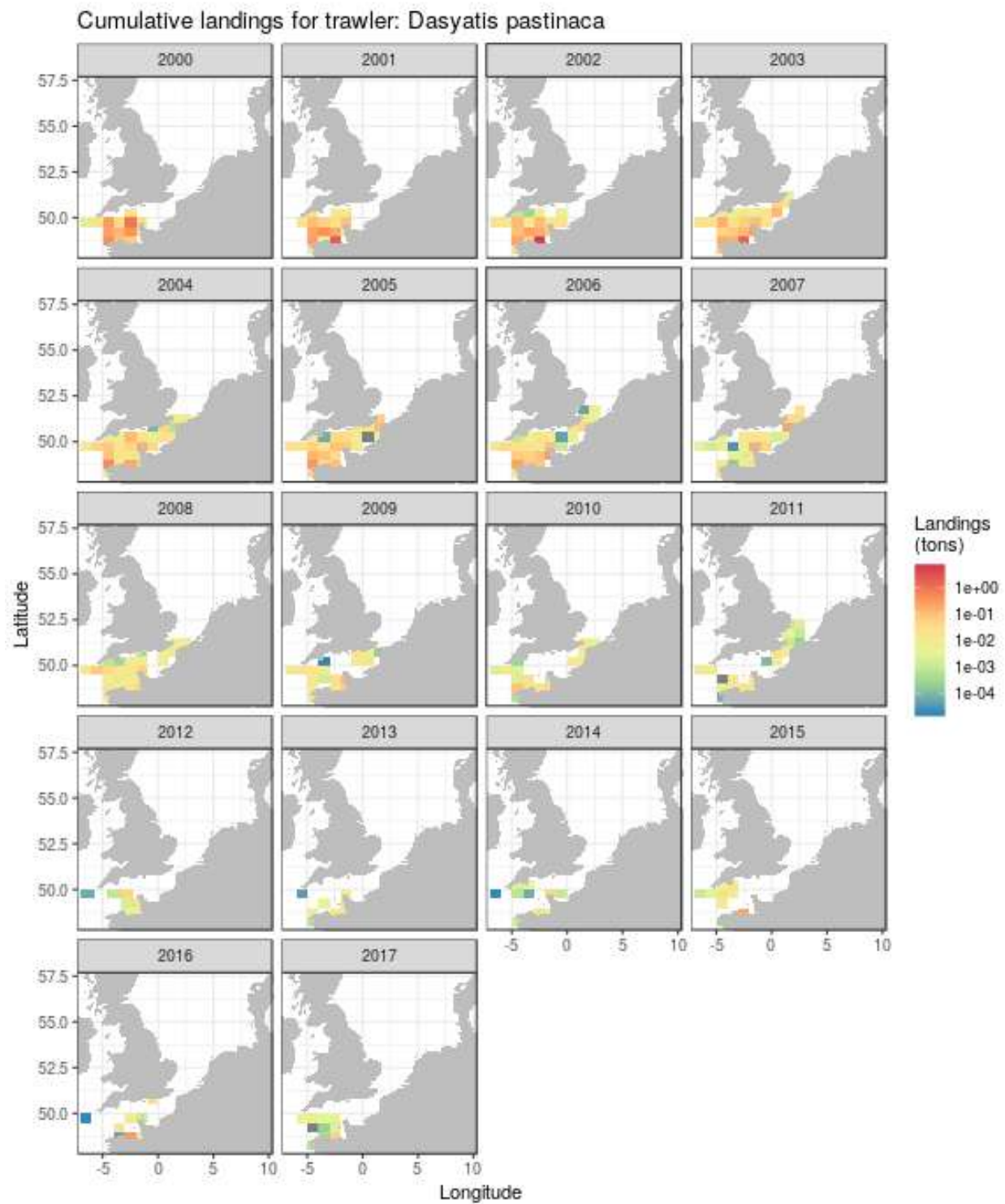


Figure 12.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

12.2.1.5 Annual landings for gear category nets

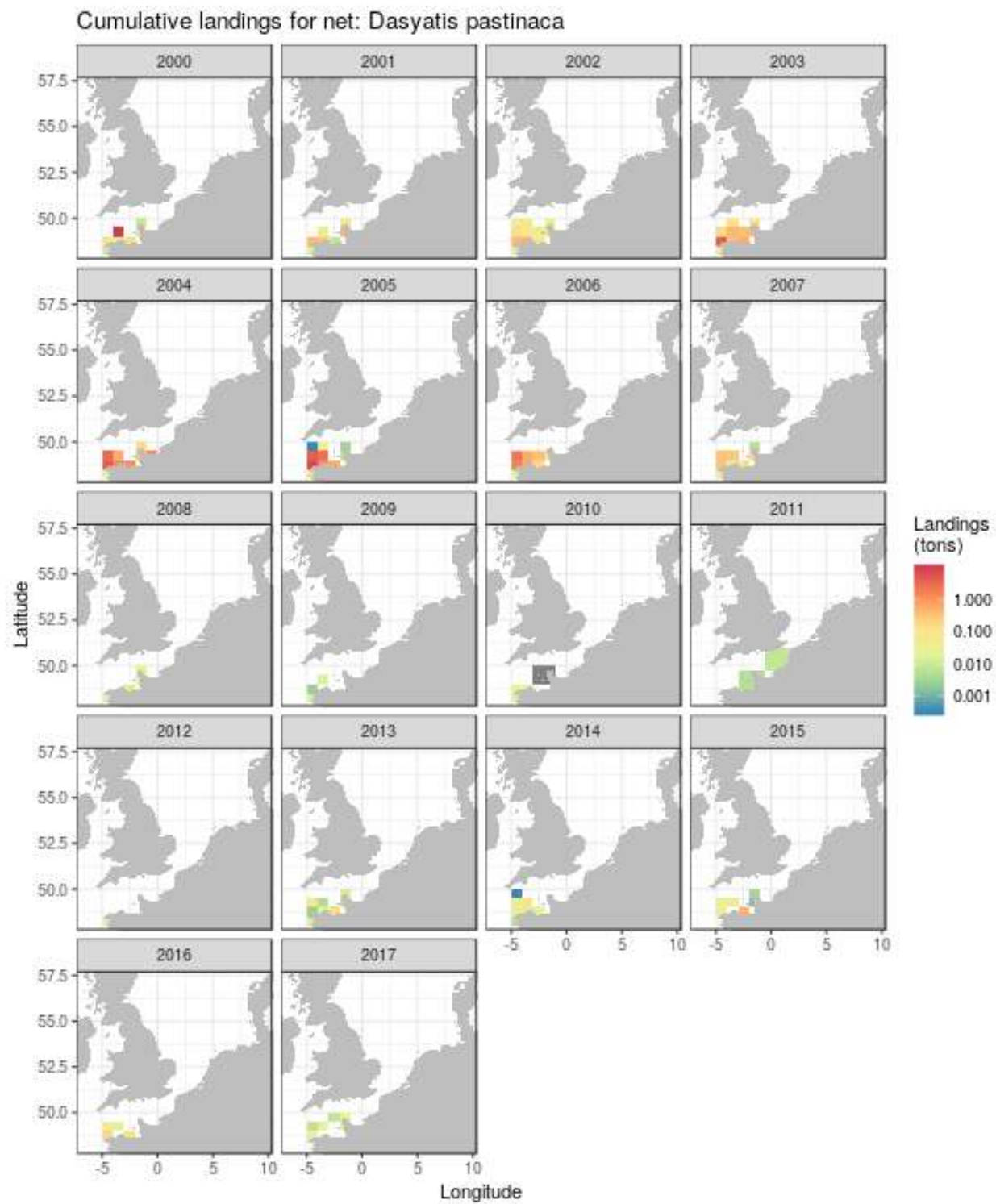


Figure 12.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

12.2.1.6 Annual landings for gear category lines

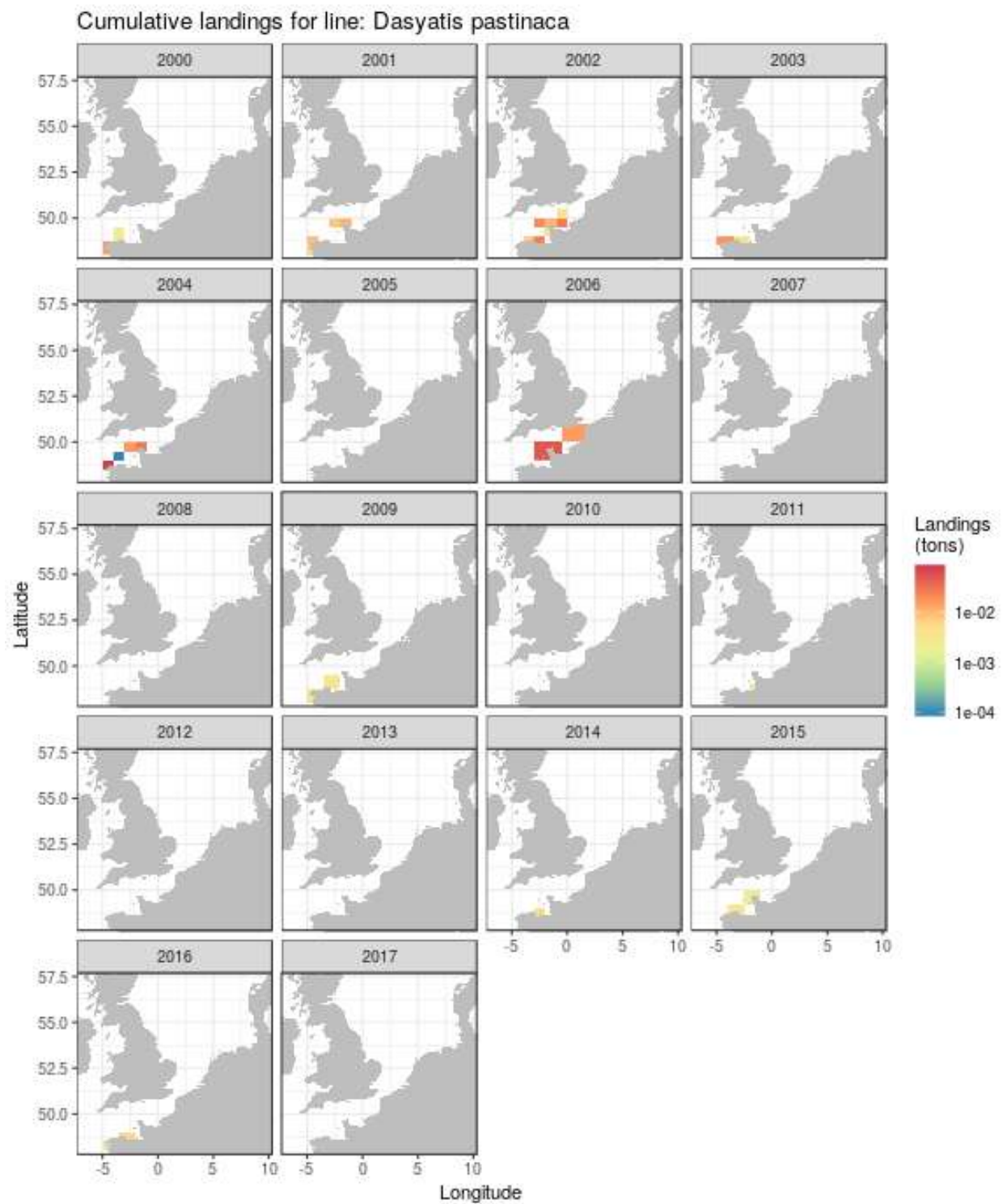


Figure 12.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

12.2.1.7 Annual landings for gear category other

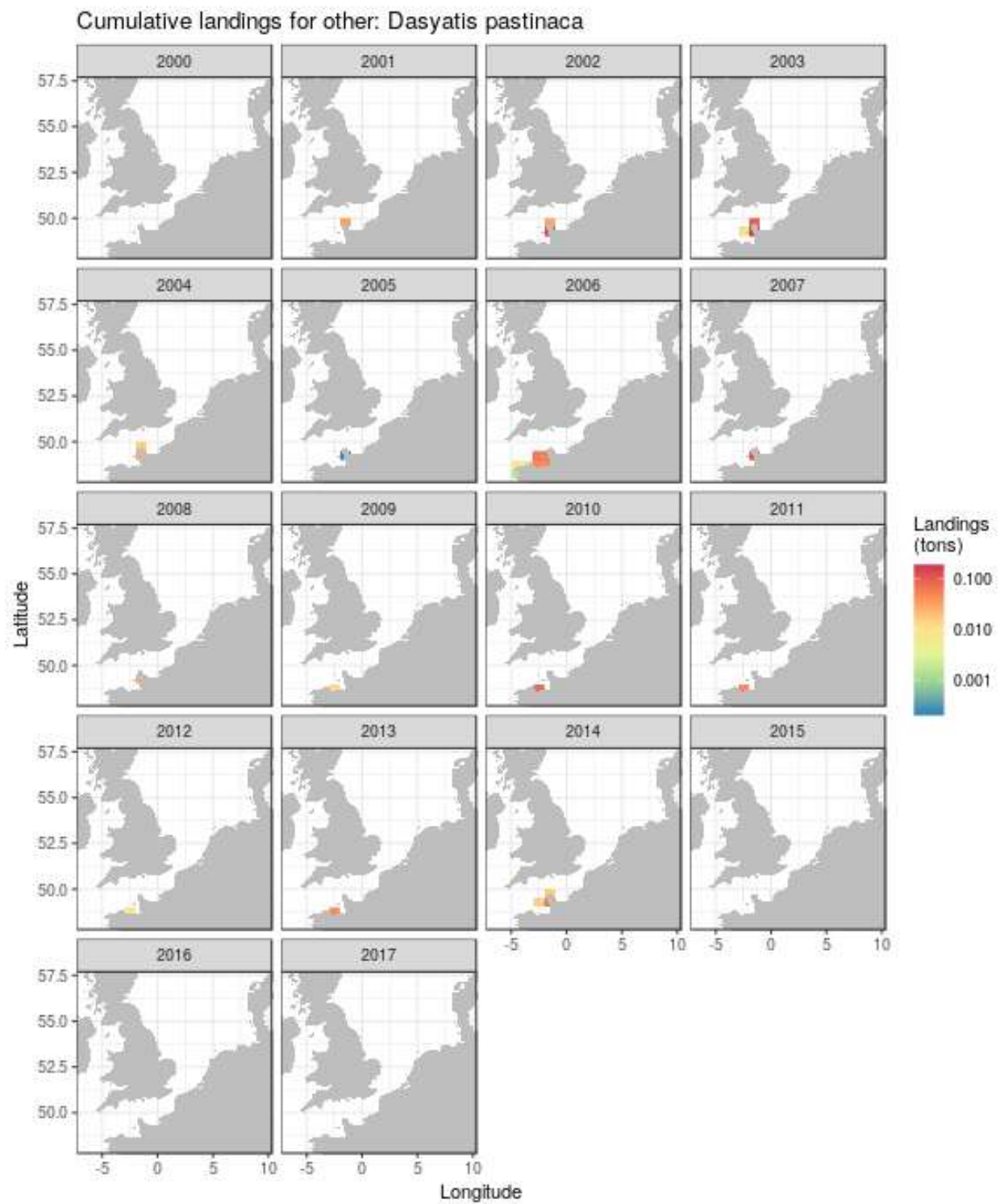


Figure 12.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

12.2.2 Commercial sampling

12.2.2.1 Landings and discards per unit effort and country

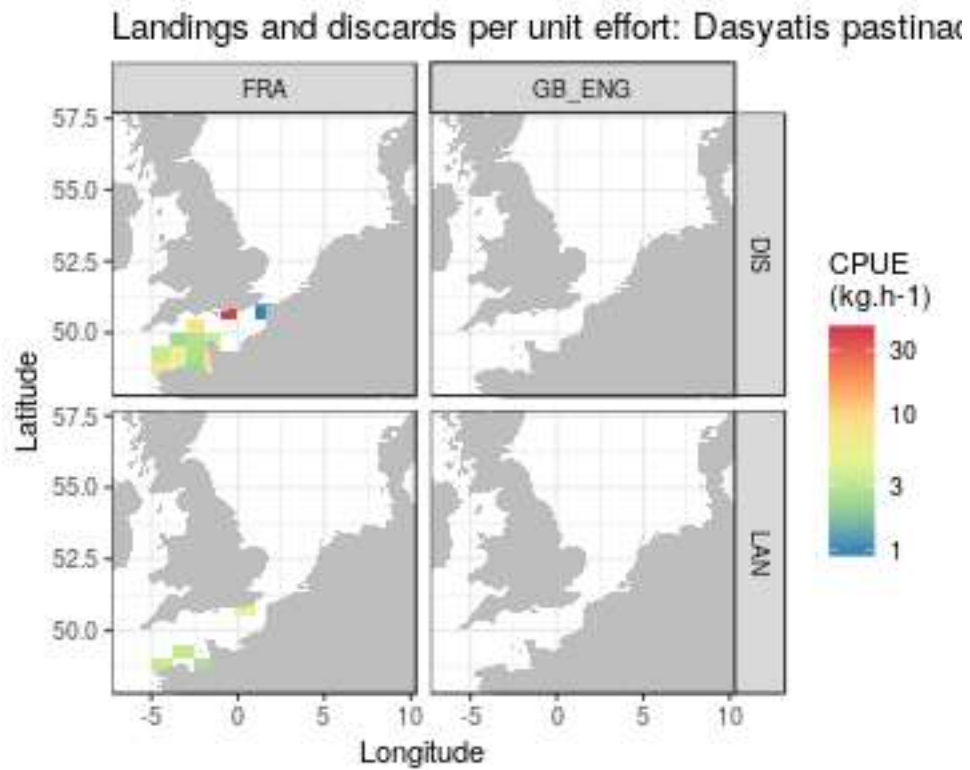


Figure 12.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log₁₀ transformed.

12.2.2.2 Annual catch per unit effort

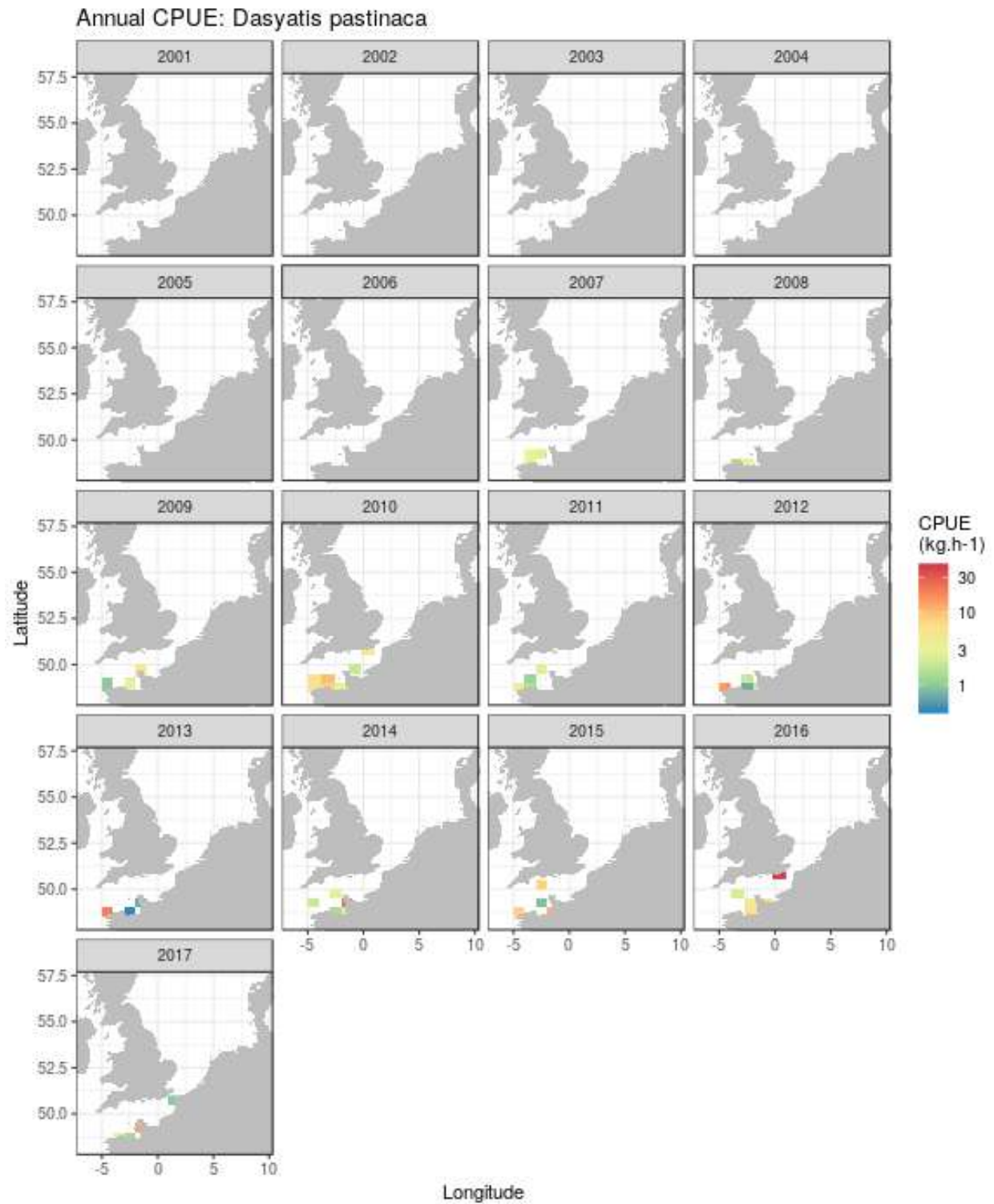


Figure 12.13: Catches per unit effort per year. The color scale is log 10 transformed.

12.2.2.3 Annual catch per unit effort for gear category trawler

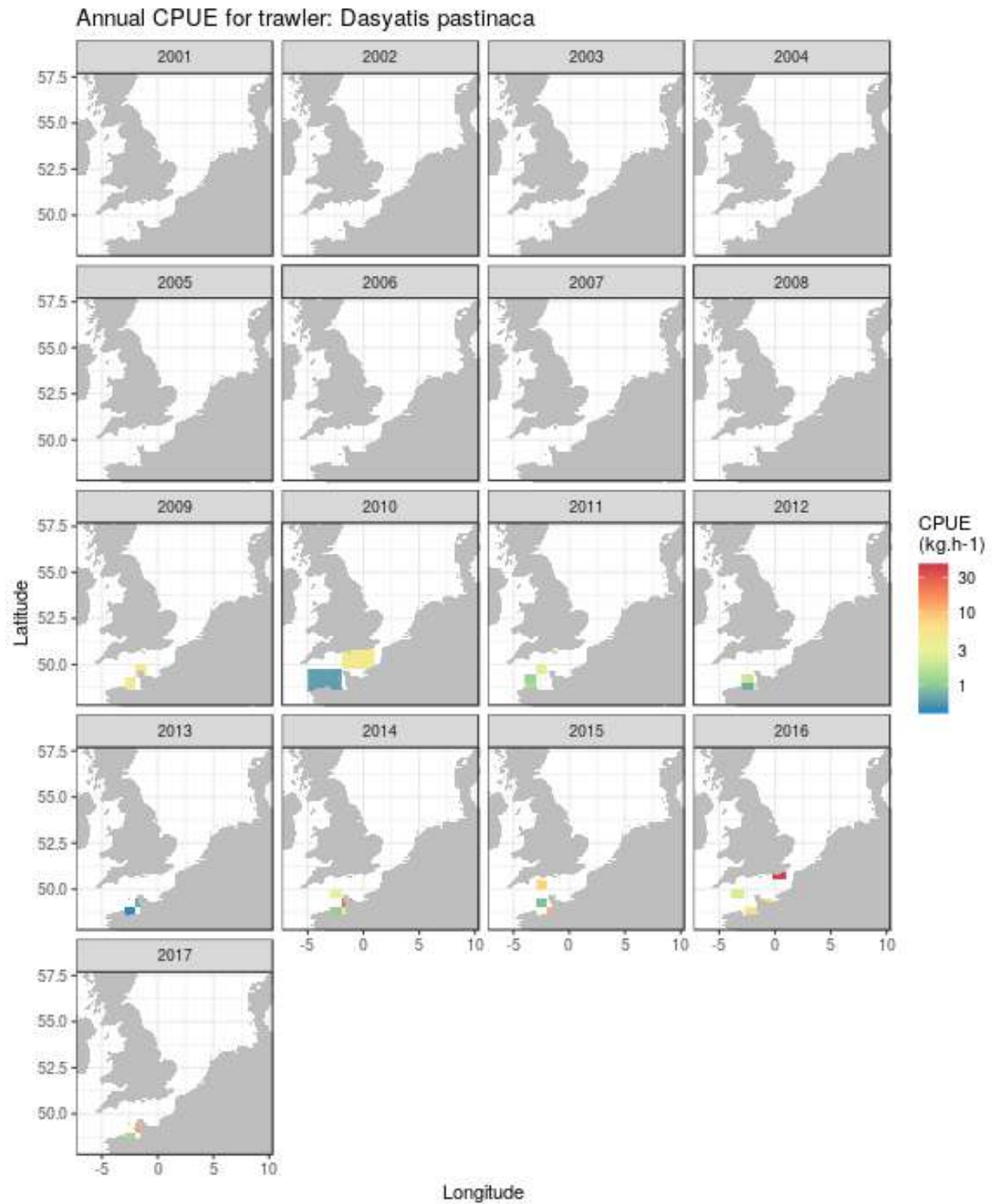


Figure 12.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

12.2.2.4 Annual catch per unit effort for gear category net

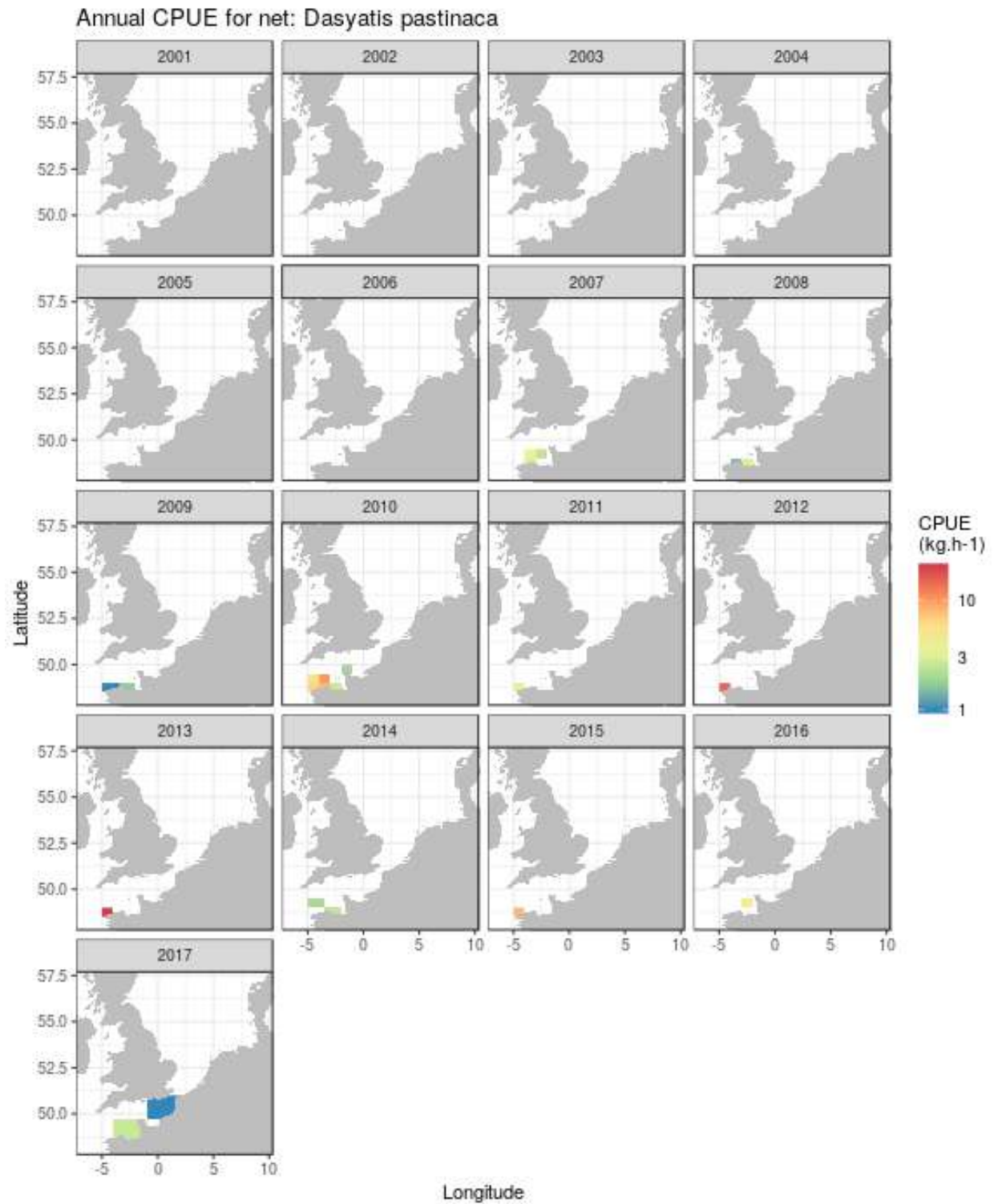


Figure 12.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

12.2.2.5 Annual catch per unit effort for gear category line

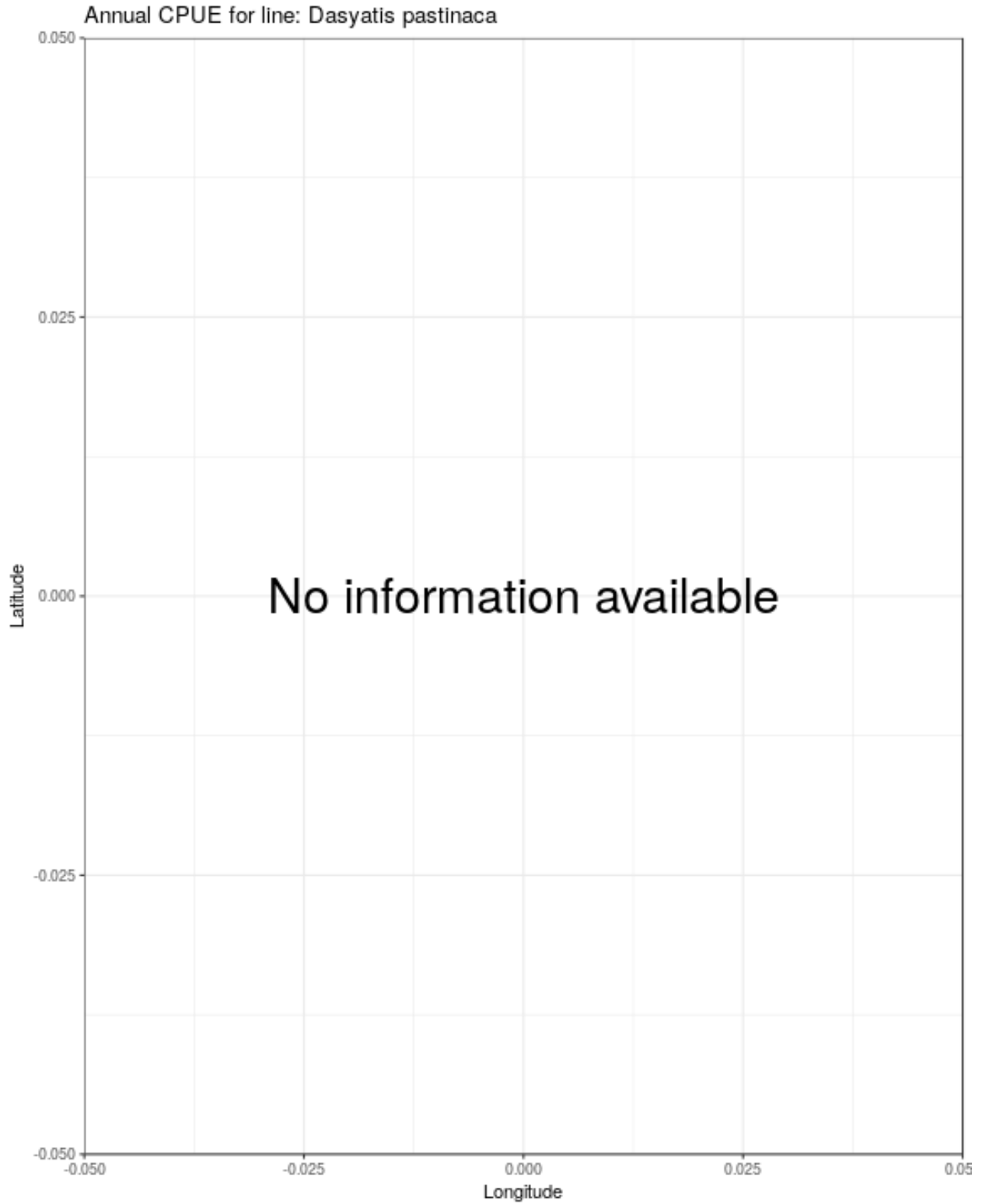


Figure 12.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

12.2.2.6 Annual catch per unit effort for gear category other



Figure 12.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

13 *Raja circularis*

13.1 Survey

13.1.1 Average CPUE

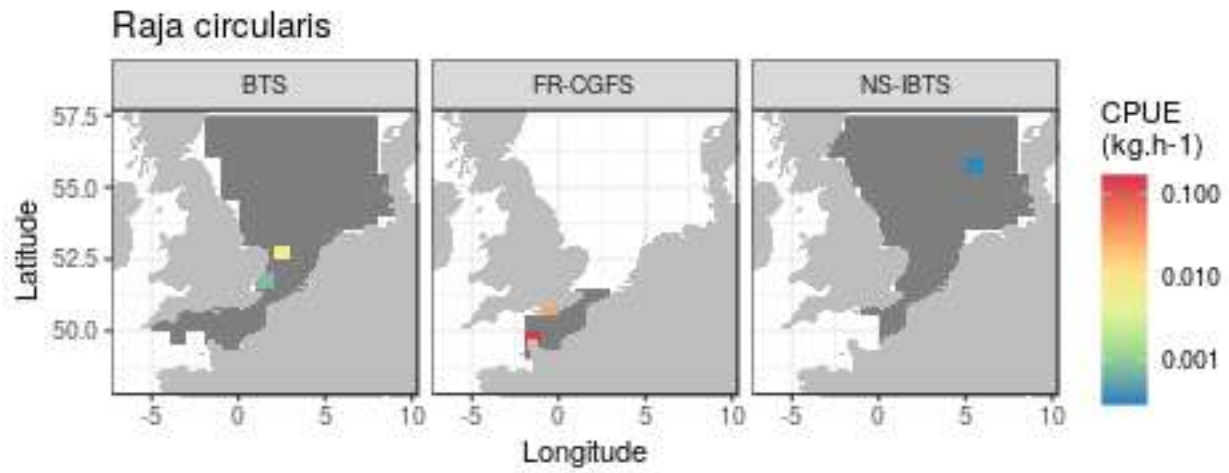


Figure 13.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

13.1.2 Annual CPUE: BTS

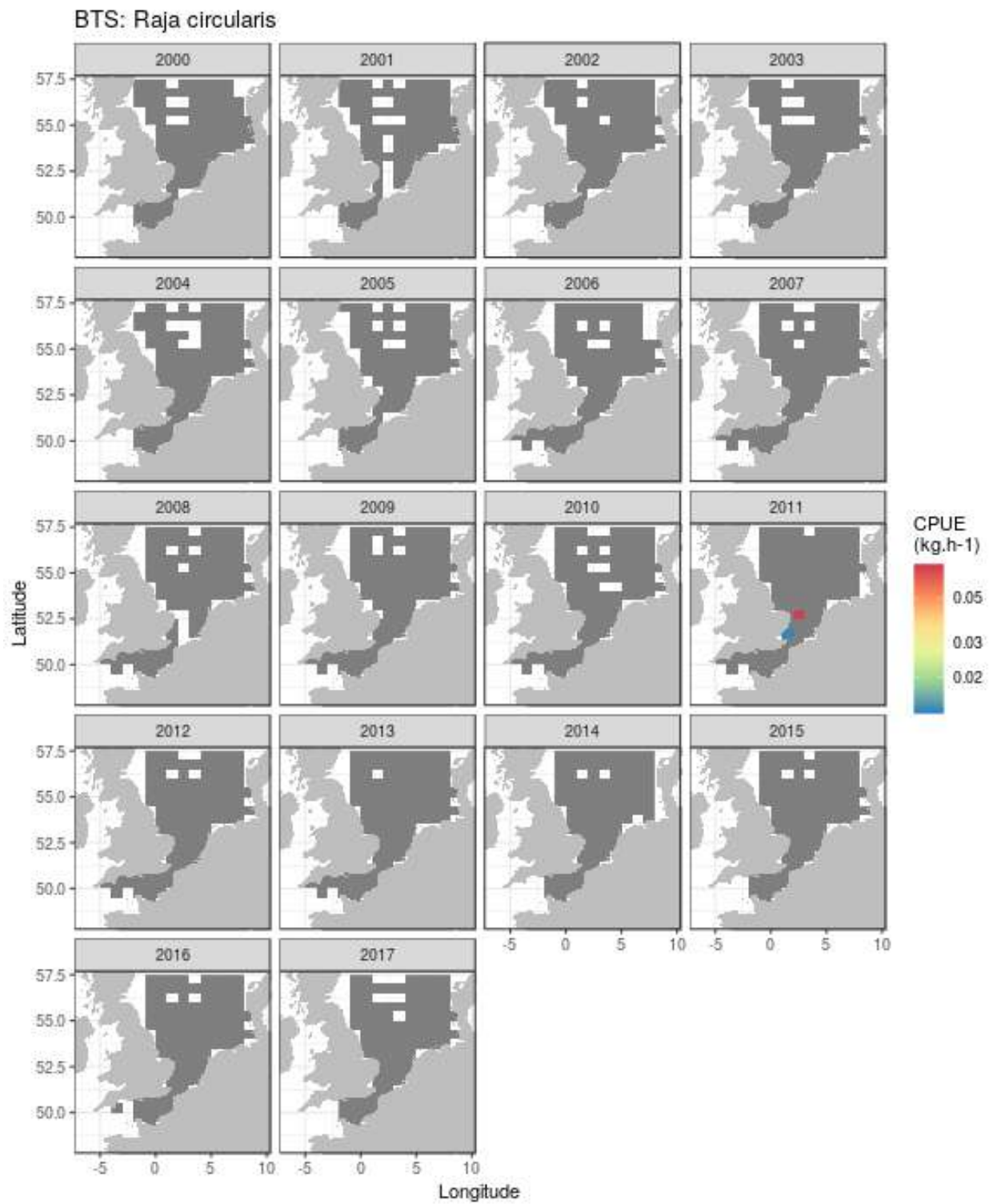


Figure 13.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

13.1.3 Annual CPUE: FR-CGFS

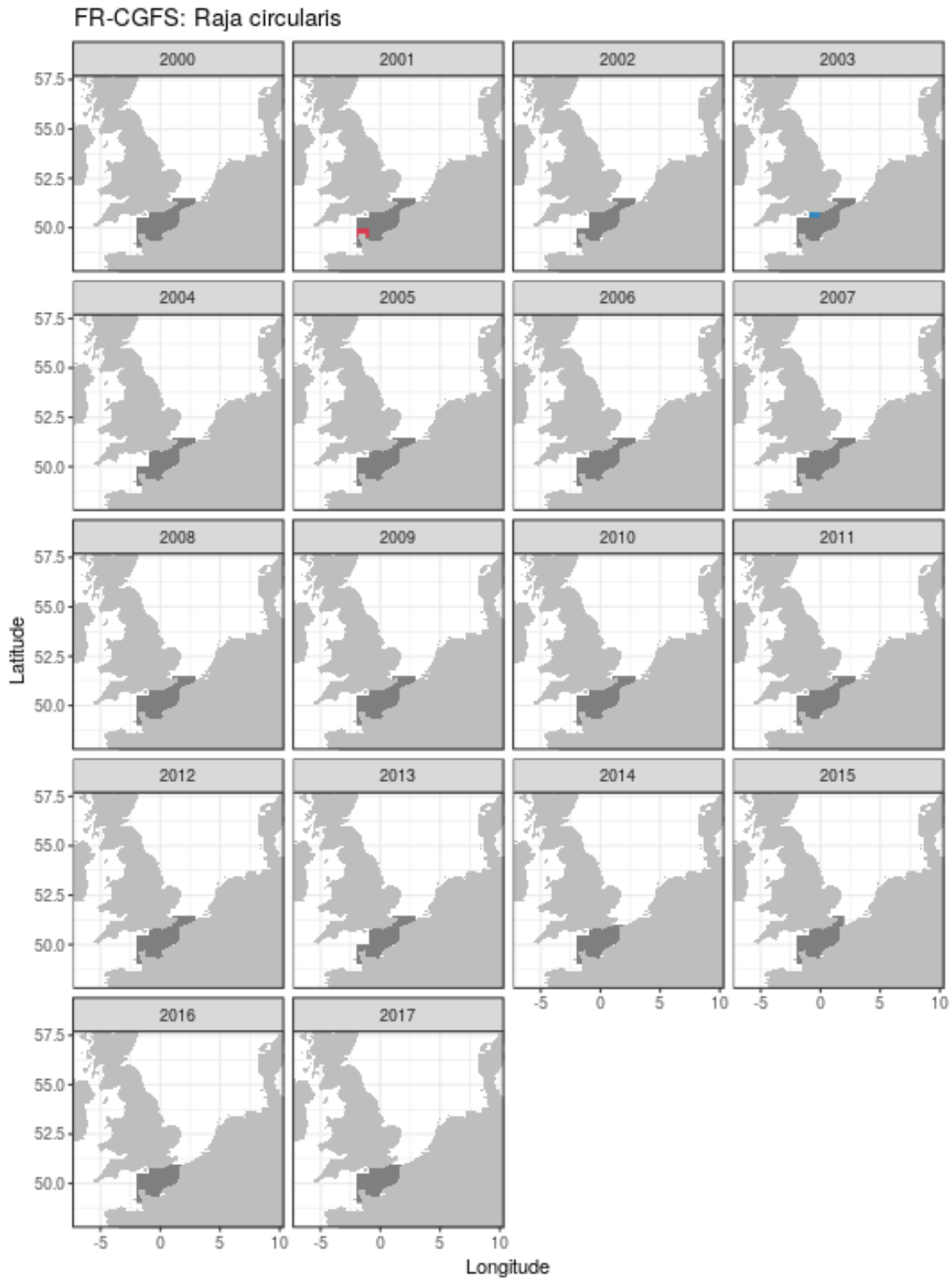


Figure 13.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

13.1.4 Annual CPUE: NS-IBTS

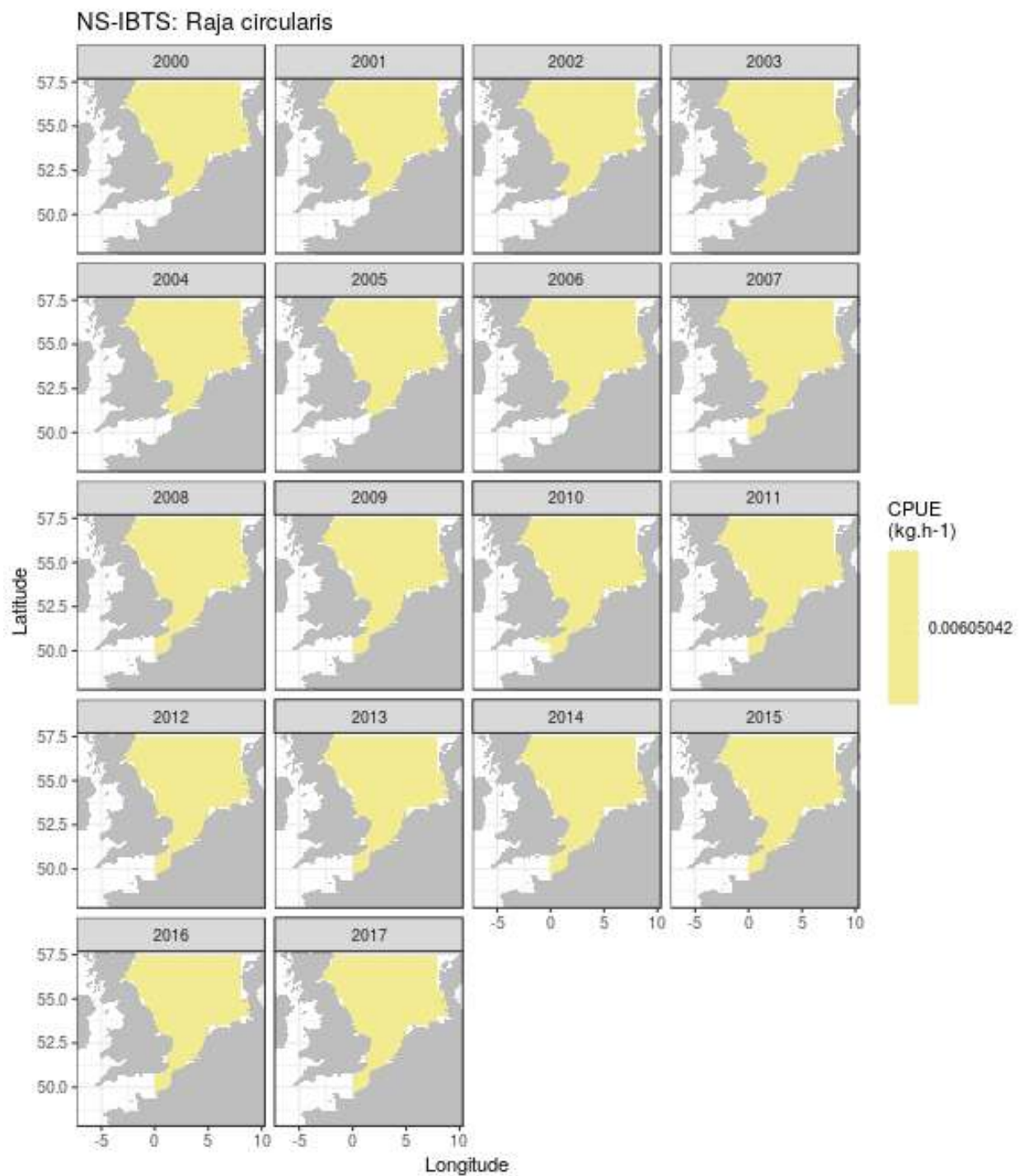


Figure 13.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

13.2 Fishery dependent information

13.2.1 Landings

13.2.1.1 Landings by country

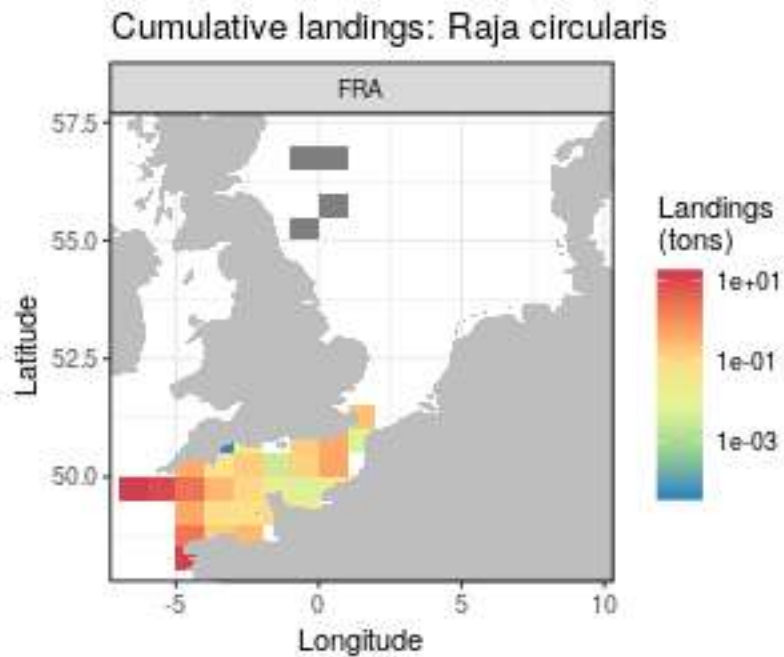


Figure 13.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

13.2.1.2 Landings by country and gear category

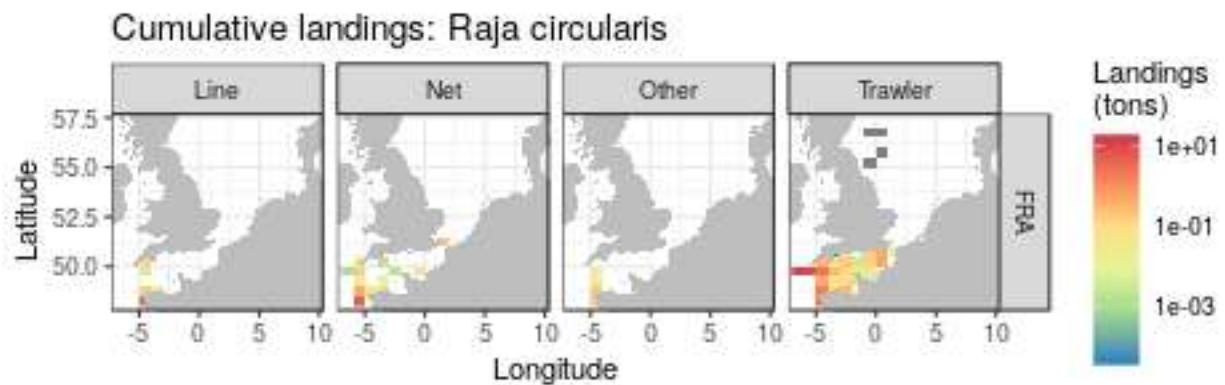


Figure 13.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

13.2.1.3 Annual landings

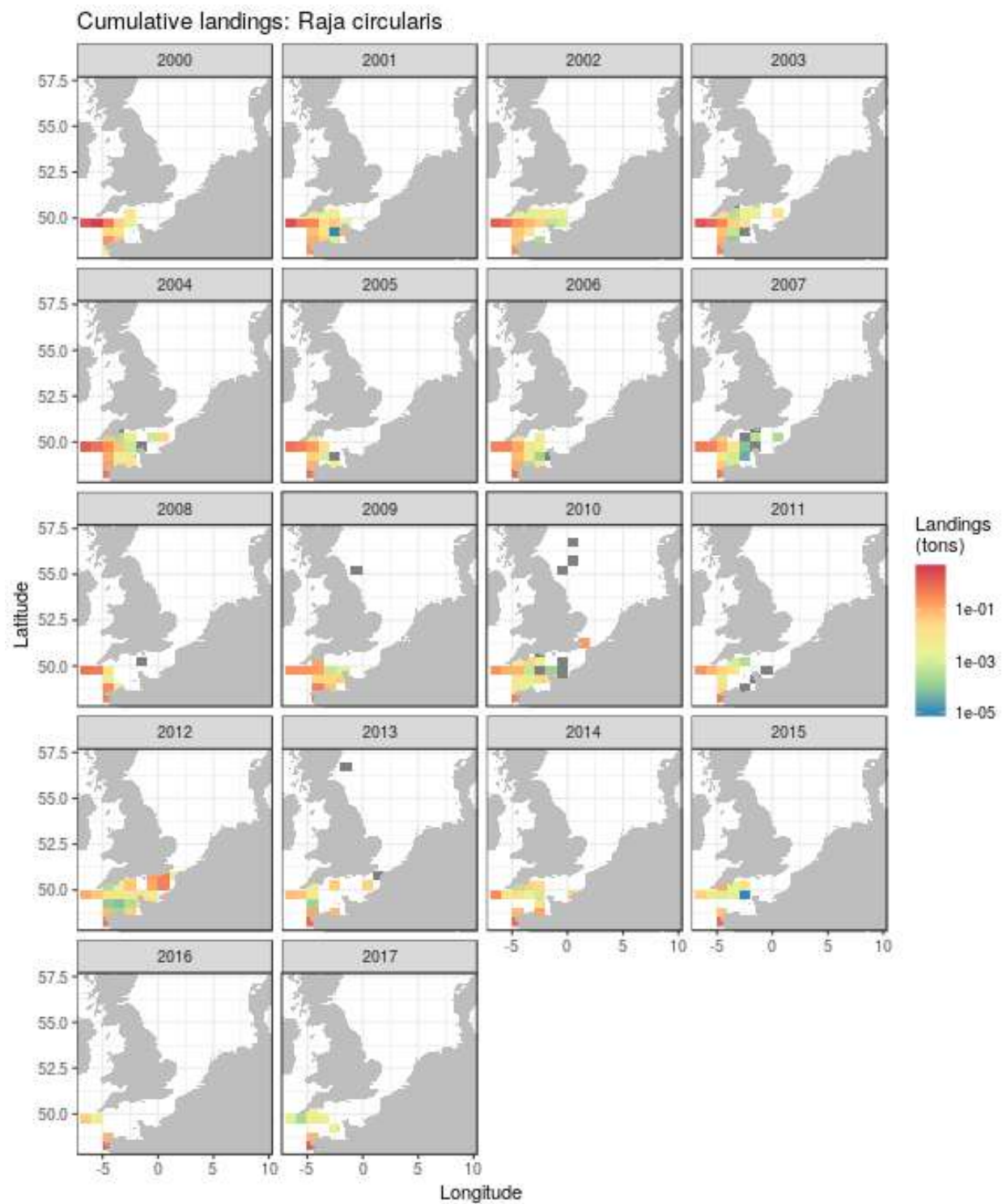


Figure 13.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

13.2.1.4 Annual landings for gear category trawler

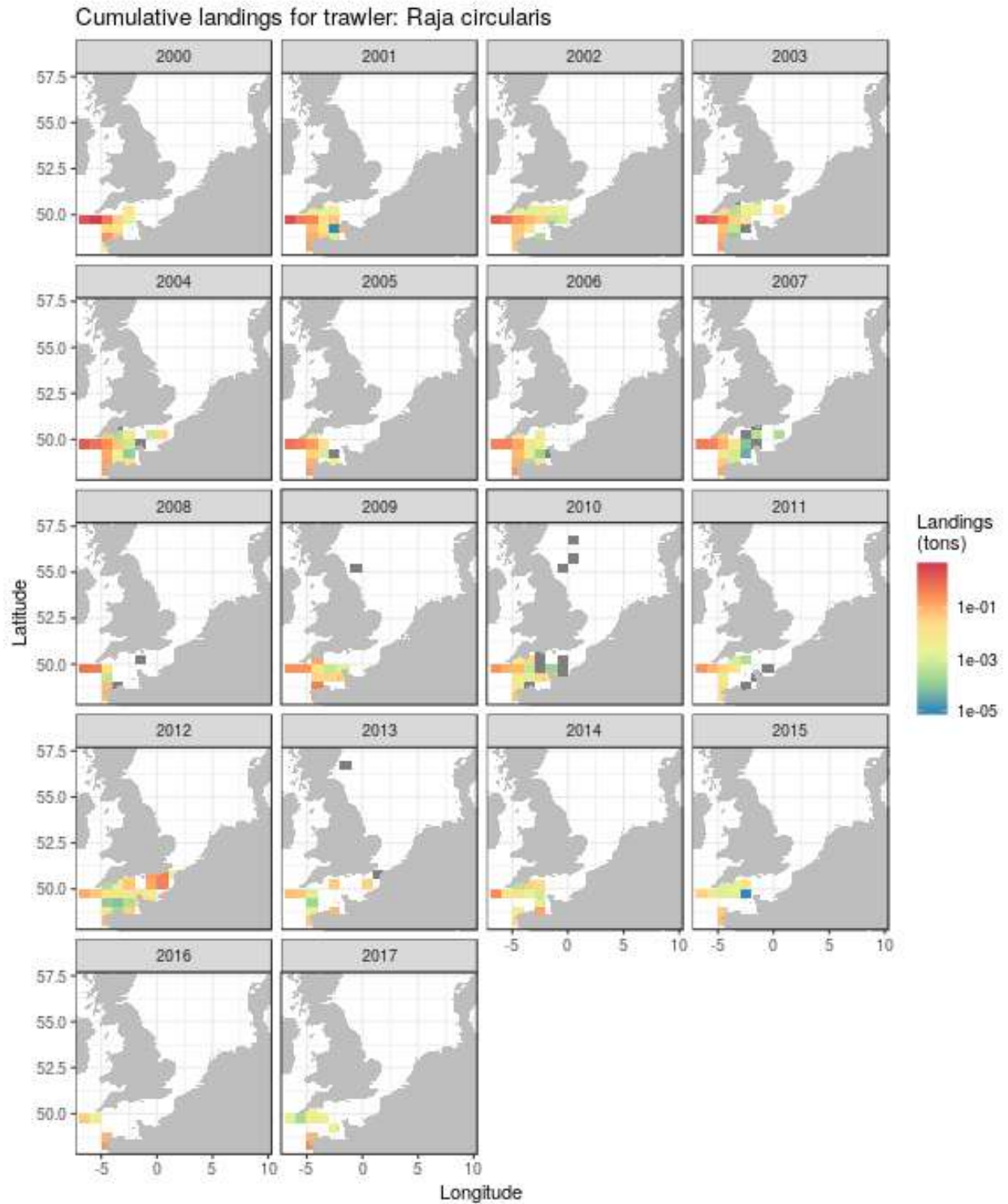


Figure 13.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

13.2.1.5 Annual landings for gear category nets

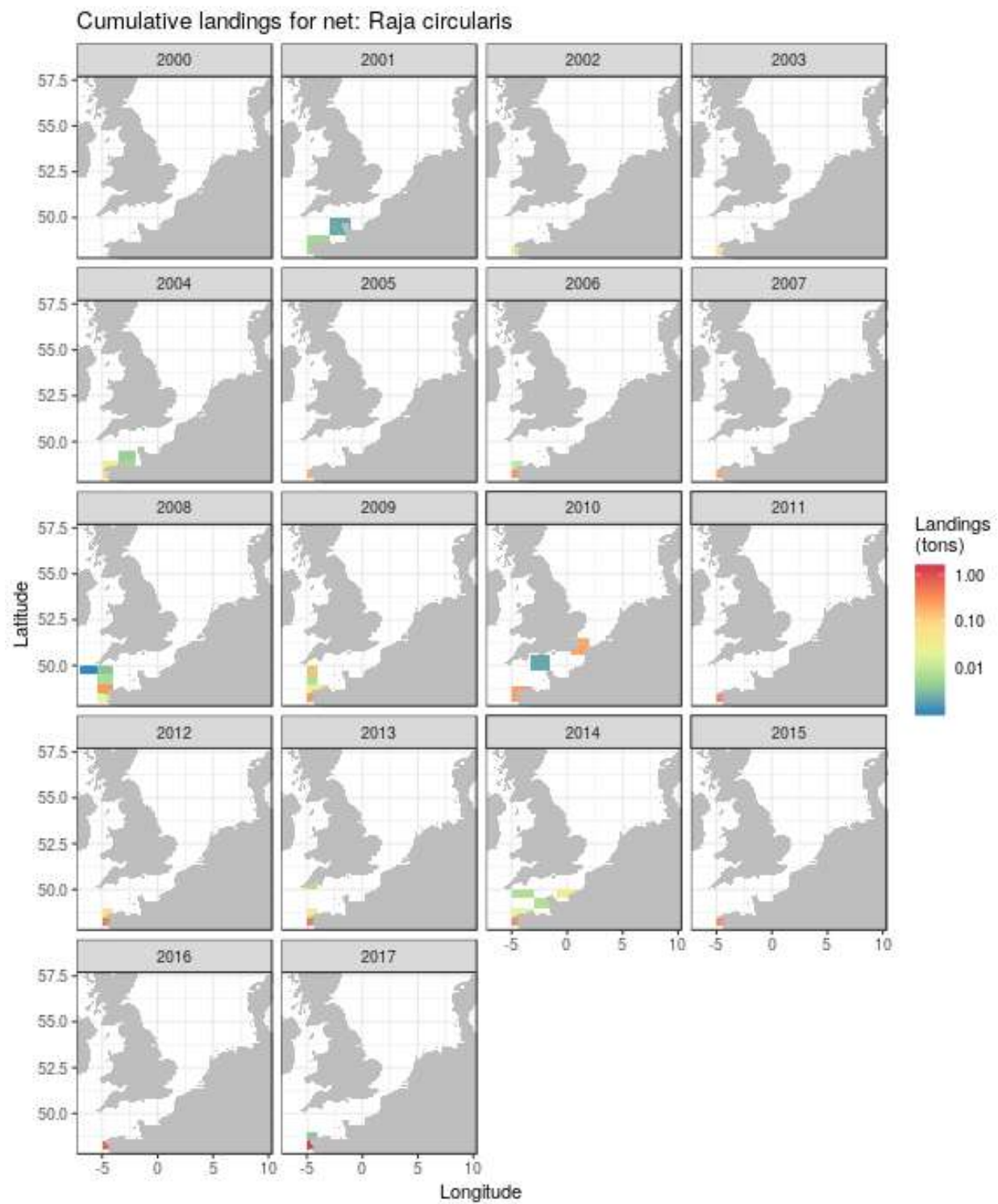


Figure 13.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

13.2.1.6 Annual landings for gear category lines

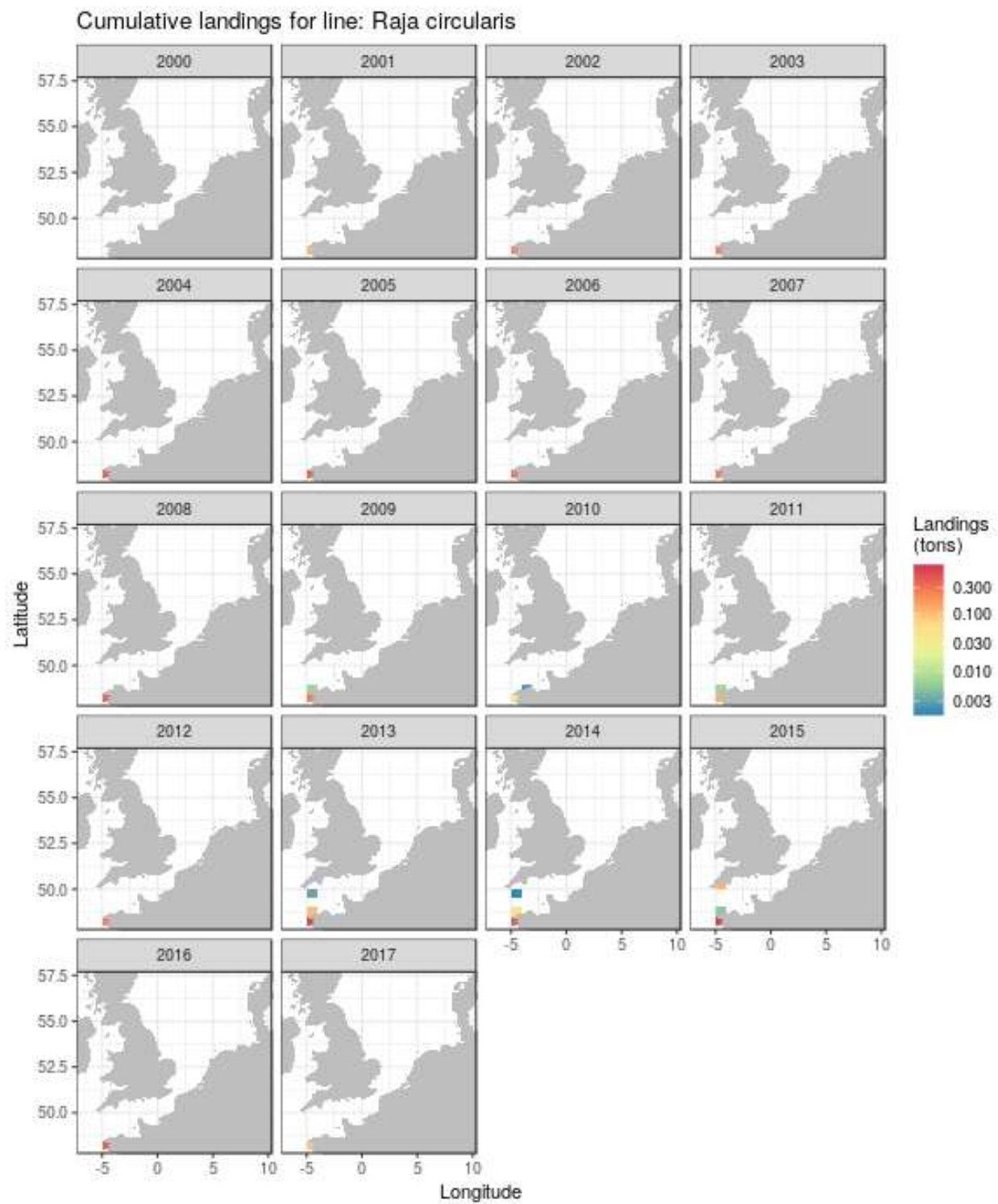


Figure 13.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

13.2.1.7 Annual landings for gear category other

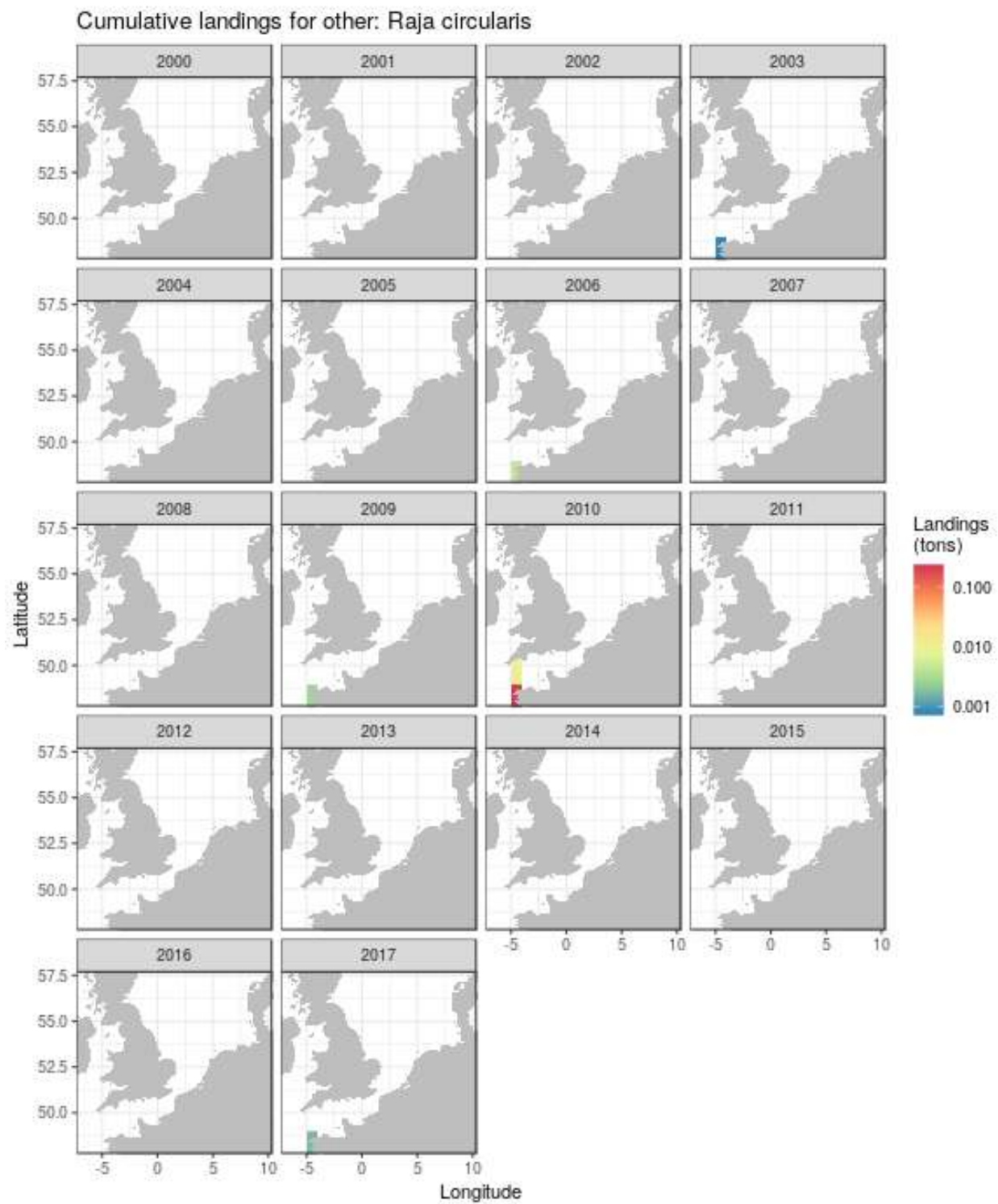


Figure 13.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

13.2.2 Commercial sampling

13.2.2.1 Landings and discards per unit effort and country

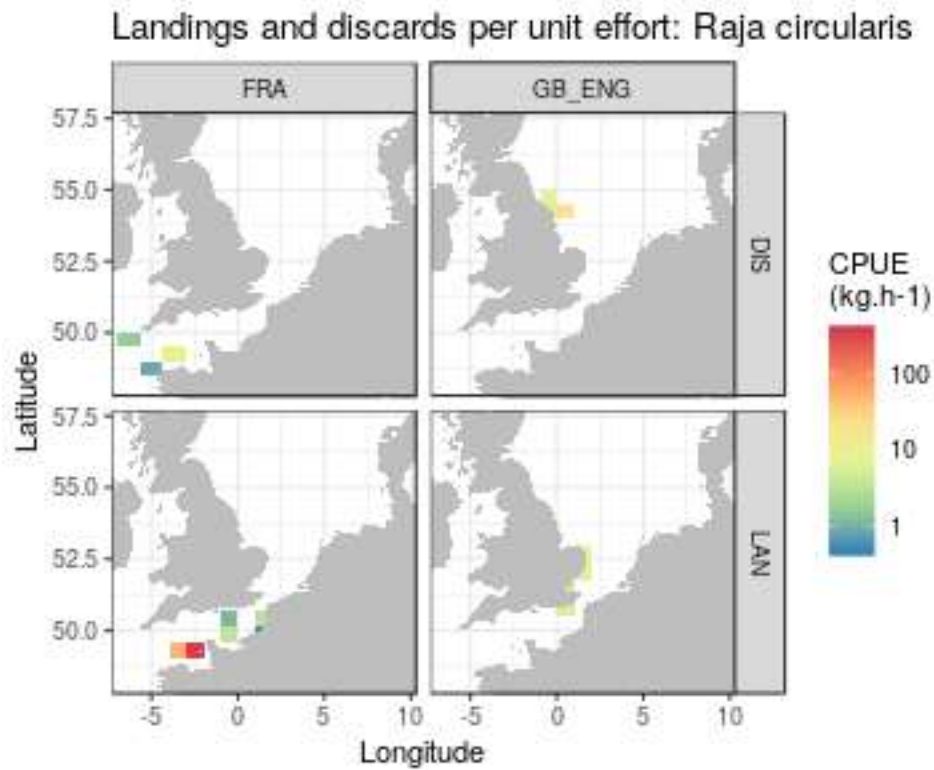


Figure 13.12: Average landing (LAN) and discard (DIS) per hour fishing by country(FRA: France, GB_ENG: England). The color scale is log 10 transformed.

13.2.2.2 Annual catch per unit effort

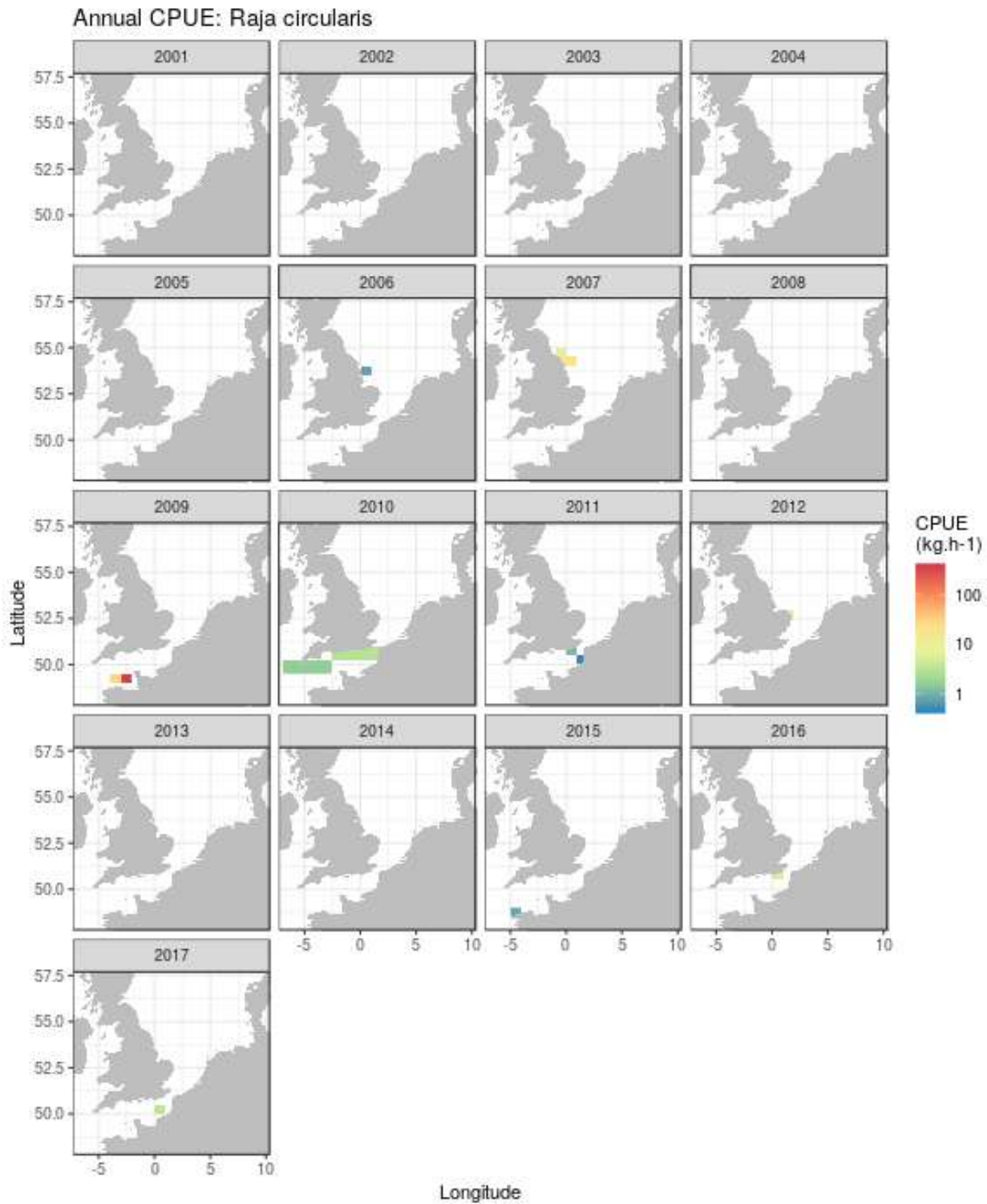


Figure 13.13: Catches per unit effort per year. The color scale is log 10 transformed.

13.2.2.3 Annual catch per unit effort for gear category trawler

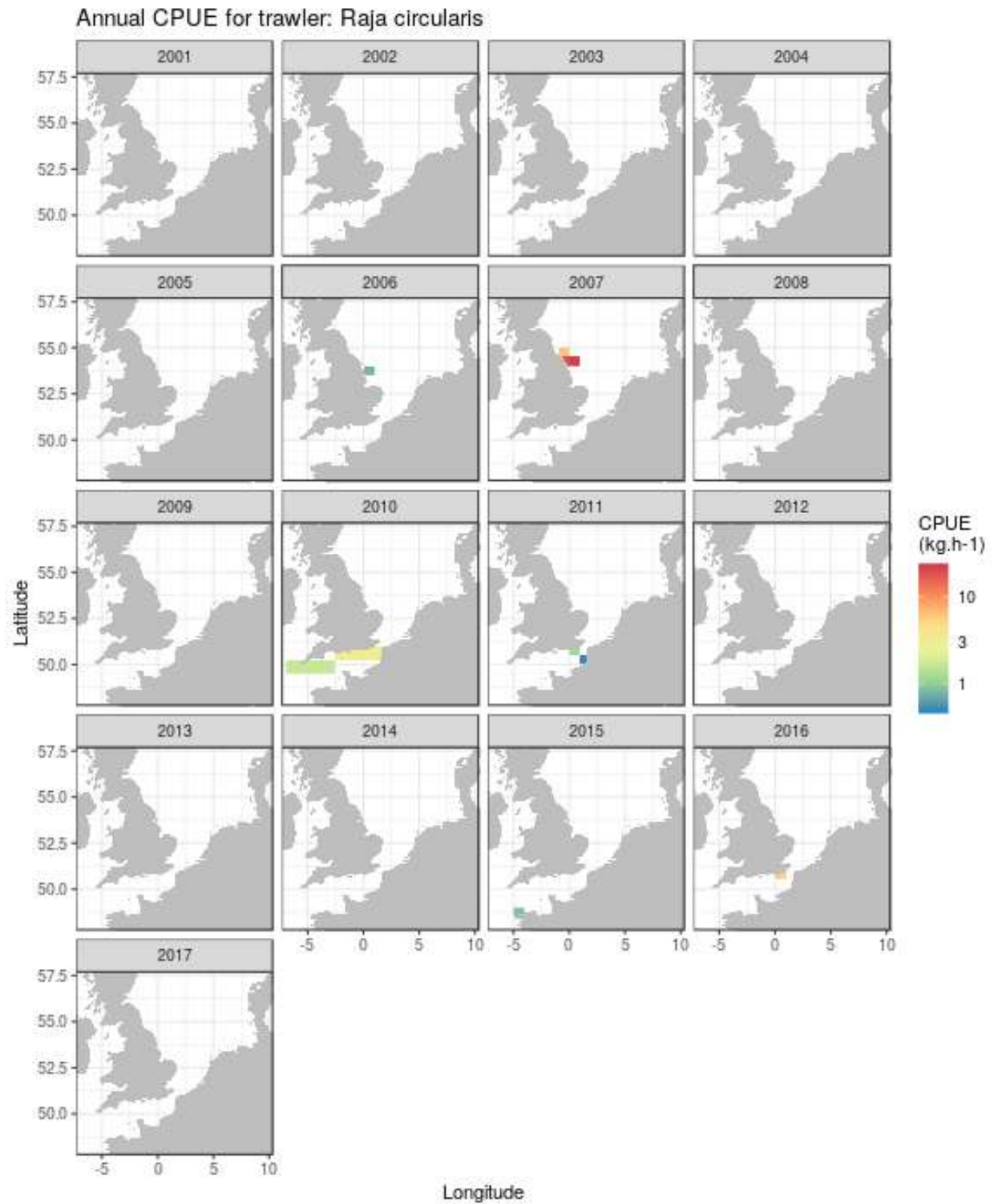


Figure 13.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

13.2.2.4 Annual catch per unit effort for gear category net

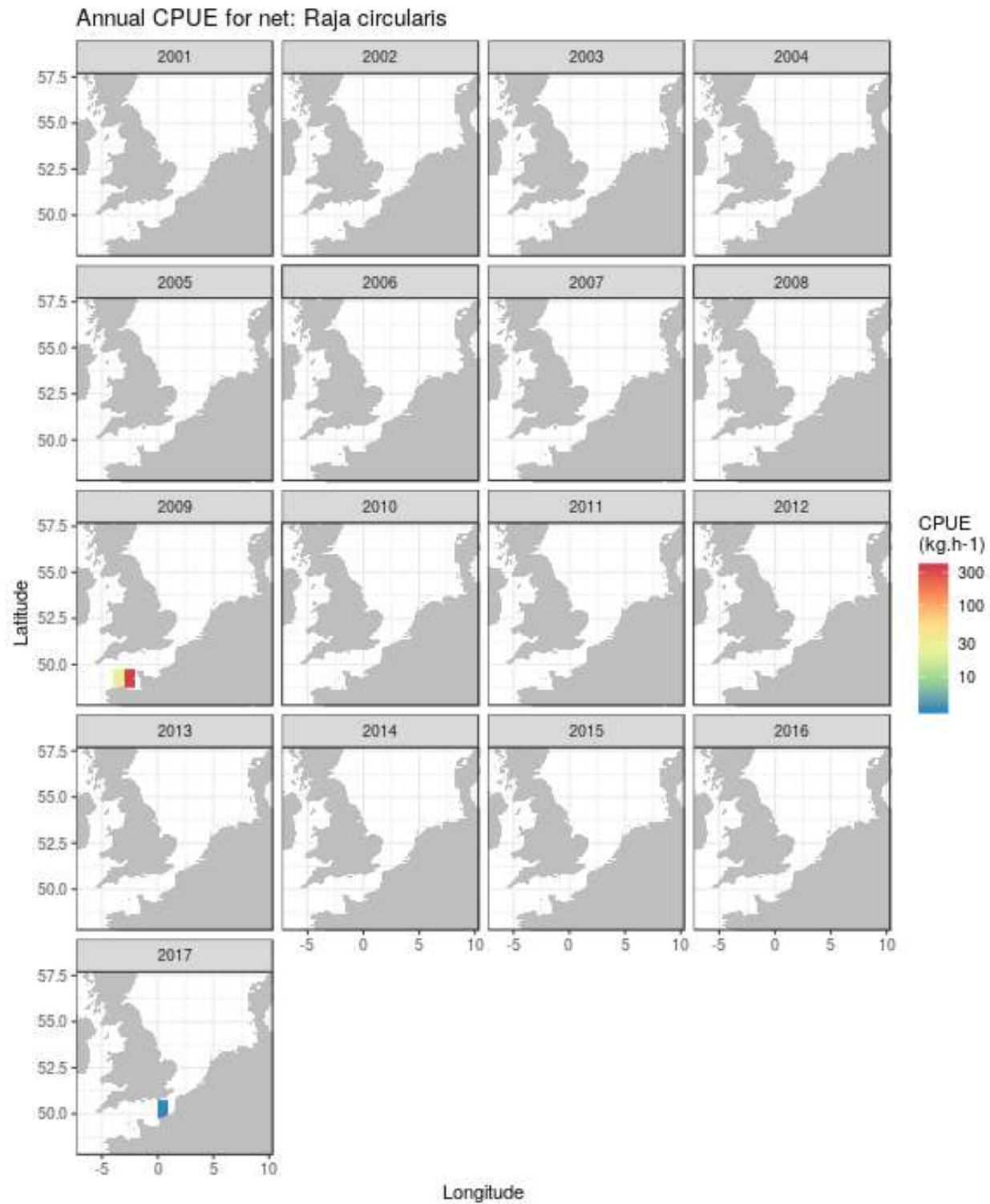


Figure 13.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

13.2.2.5 Annual catch per unit effort for gear category line



Figure 13.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

13.2.2.6 Annual catch per unit effort for gear category other

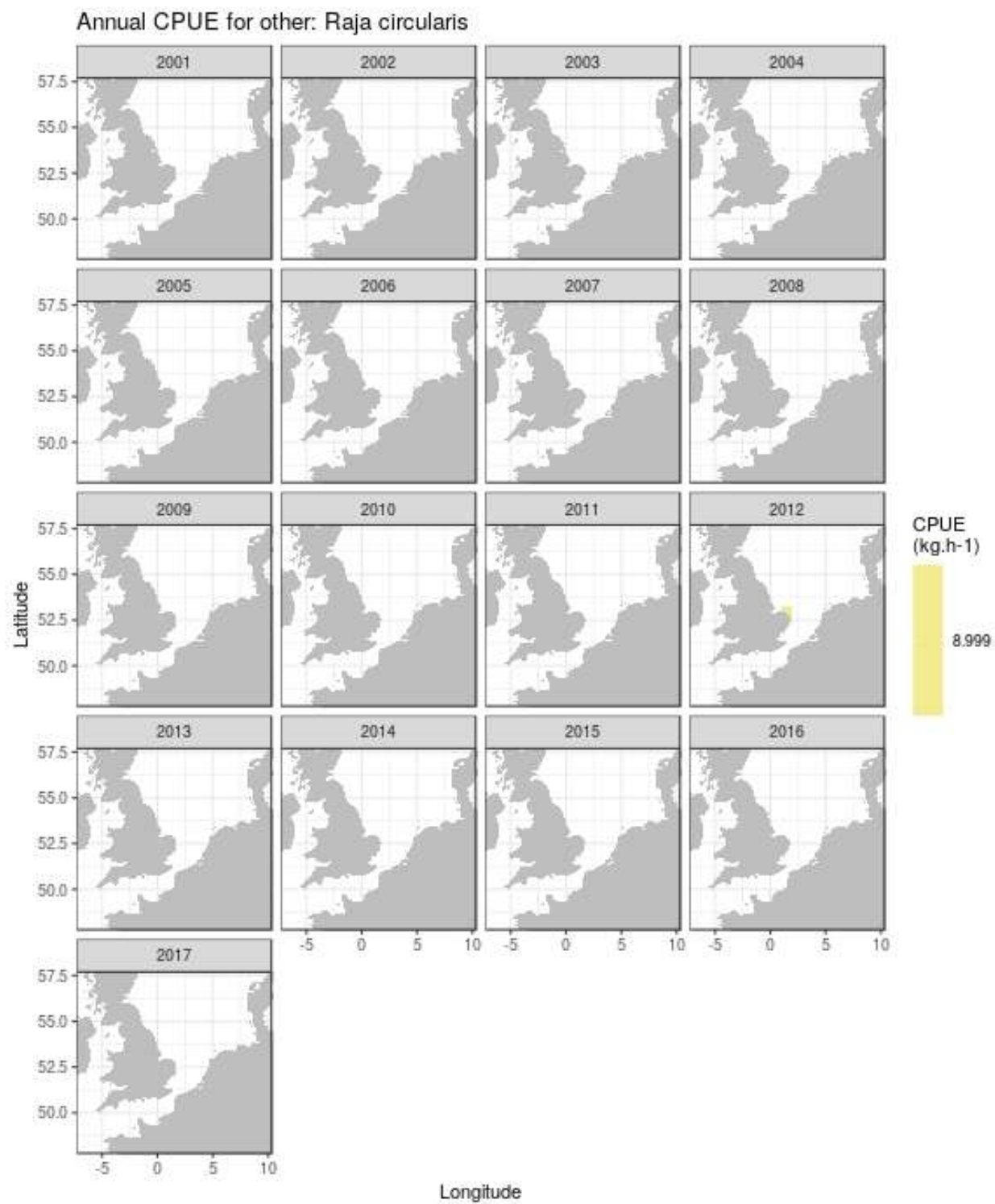


Figure 13.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

14 *Raja fullonica*

14.1 Survey

14.1.1 Average CPUE

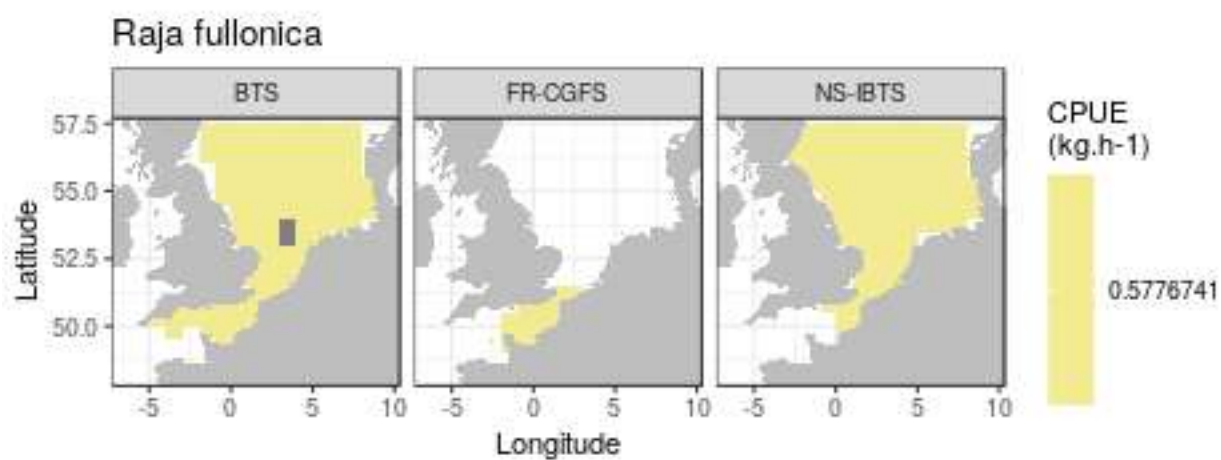


Figure 14.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

14.1.2 Annual CPUE: BTS

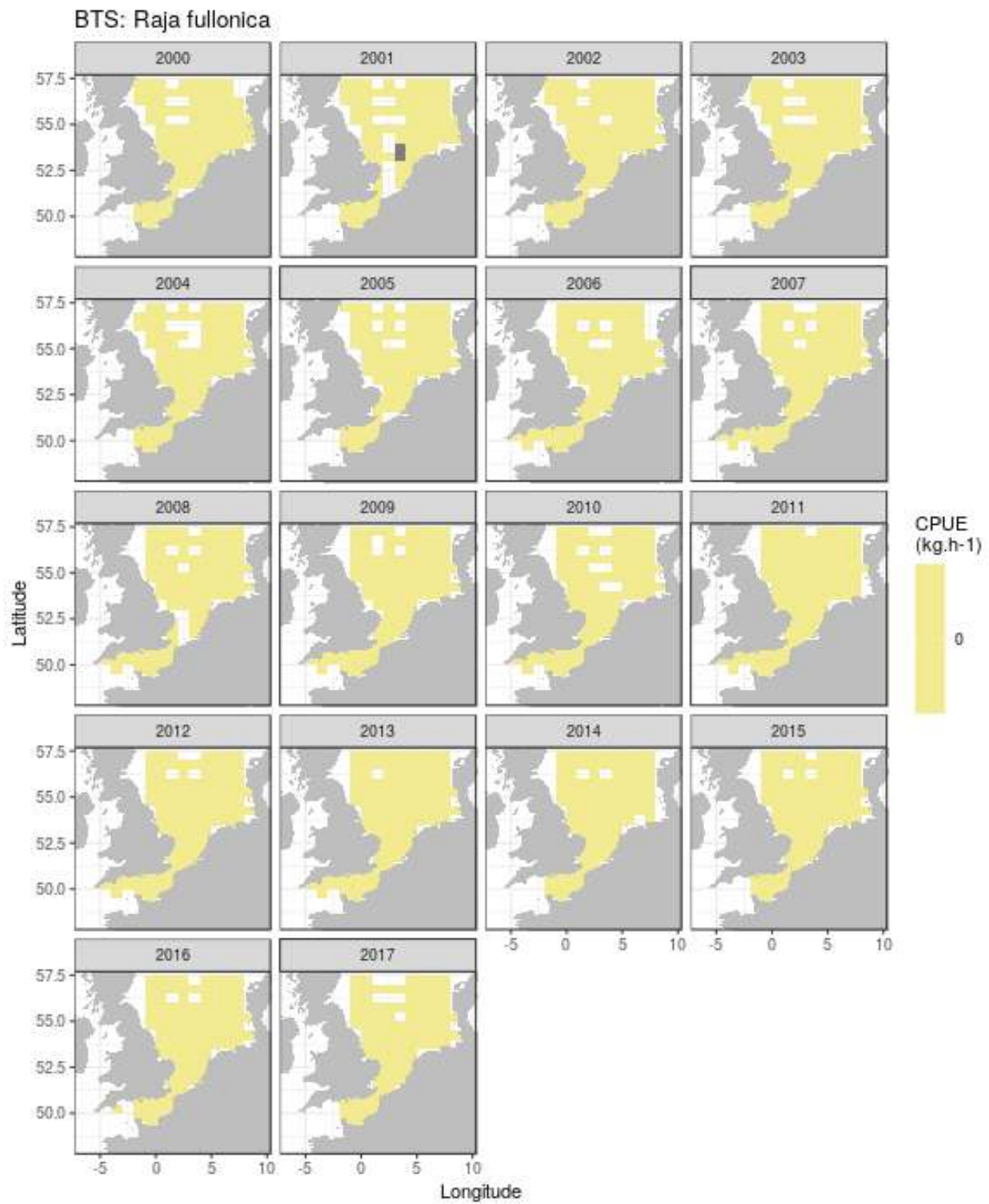


Figure 14.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

14.1.3 Annual CPUE: FR-CGFS

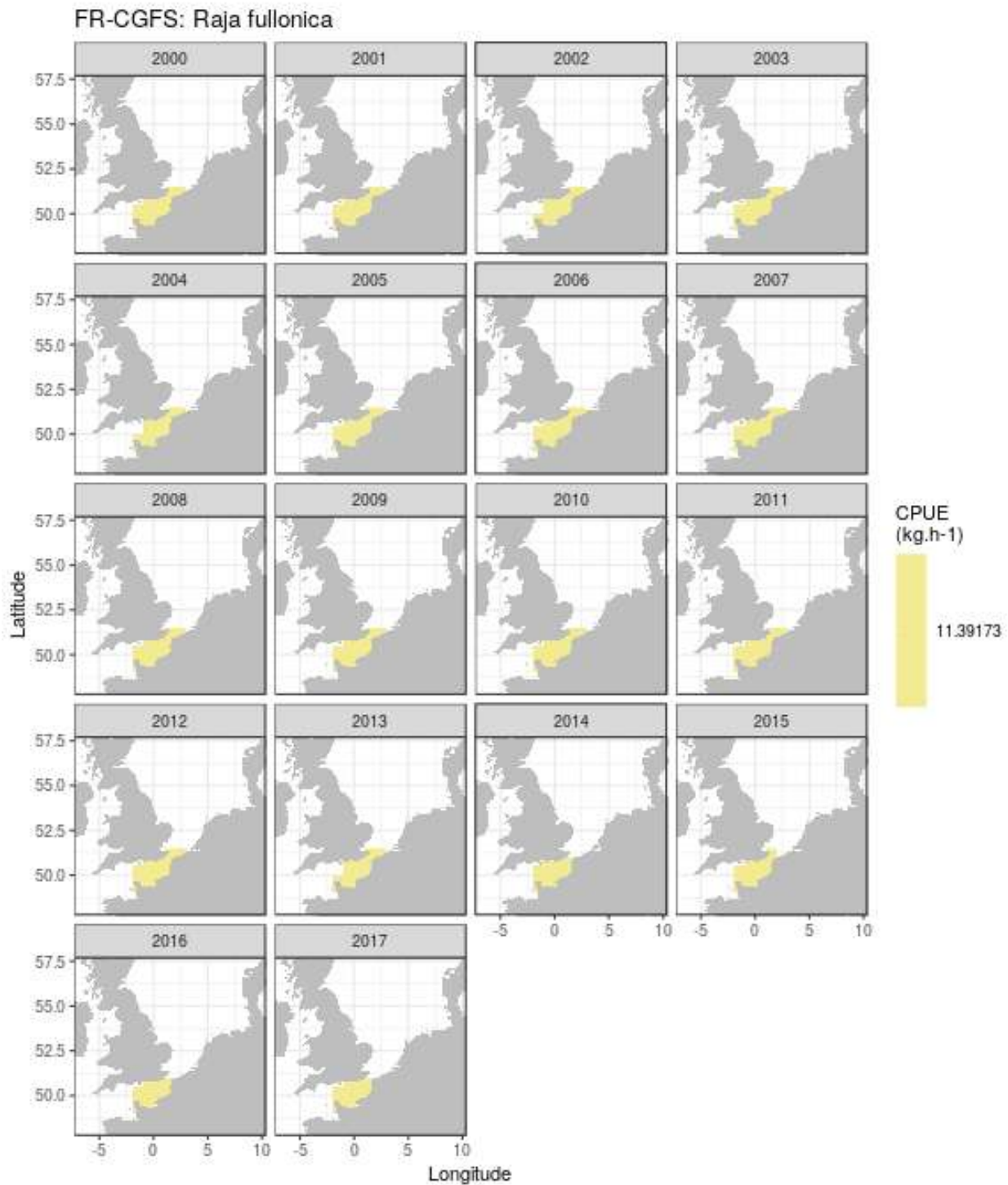


Figure 14.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

14.1.4 Annual CPUE: NS-IBTS

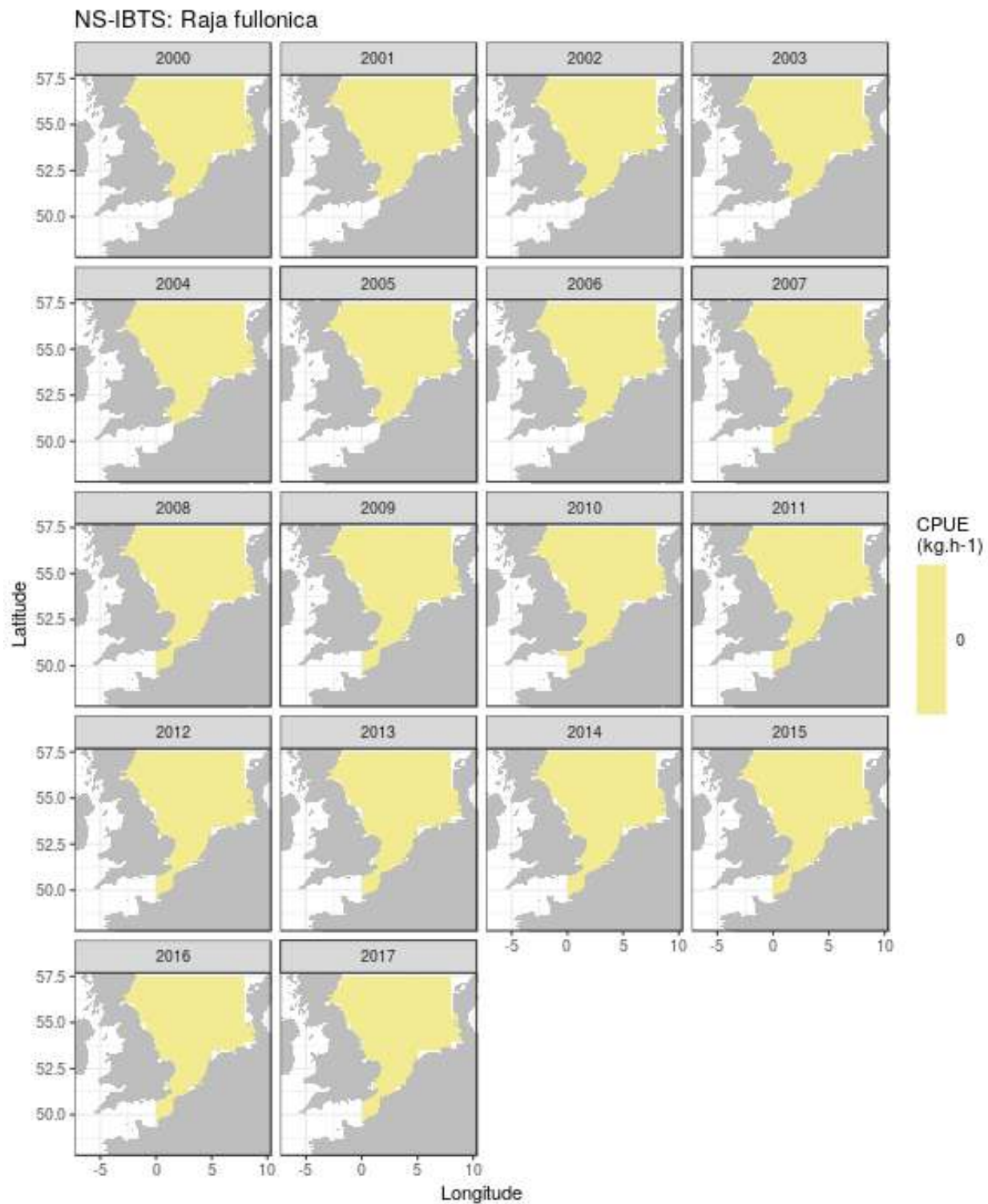


Figure 14.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

14.2 Fishery dependent information

14.2.1 Landings

14.2.1.1 Landings by country

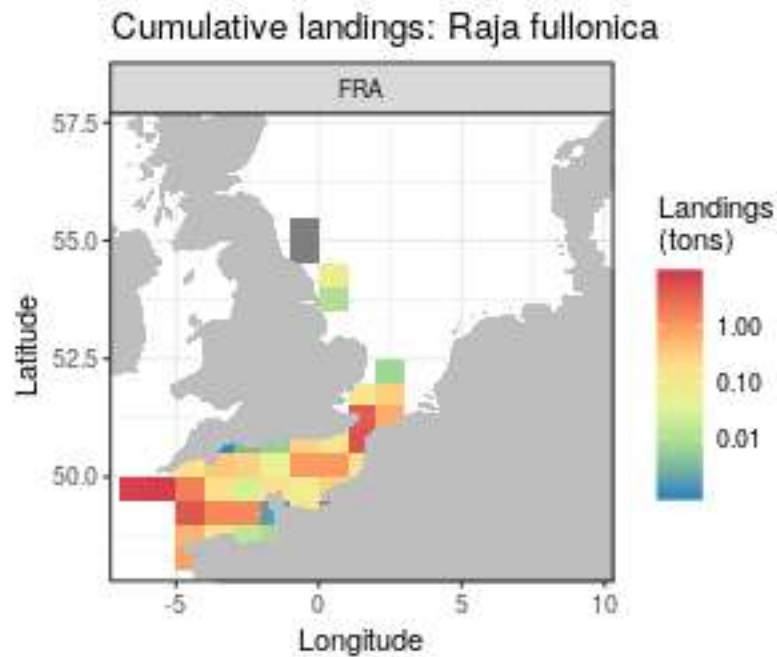


Figure 14.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

14.2.1.2 Landings by country and gear category

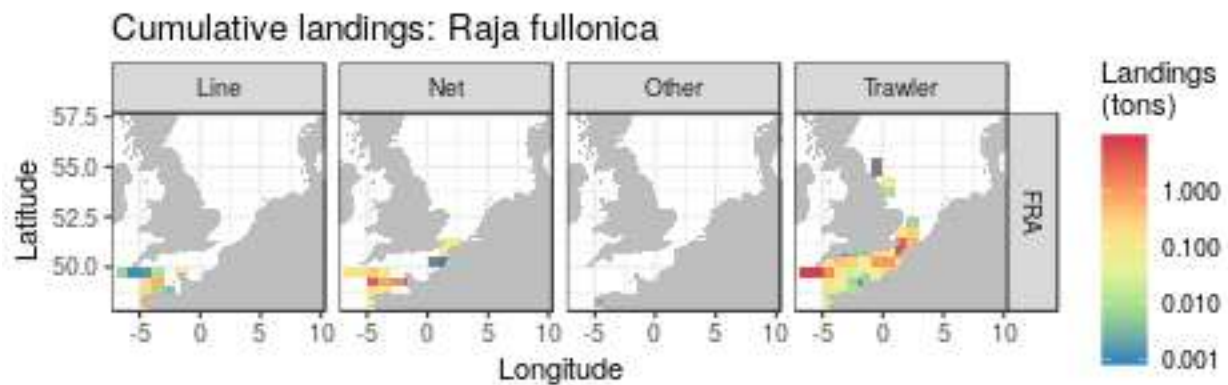


Figure 14.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

14.2.1.3 Annual landings

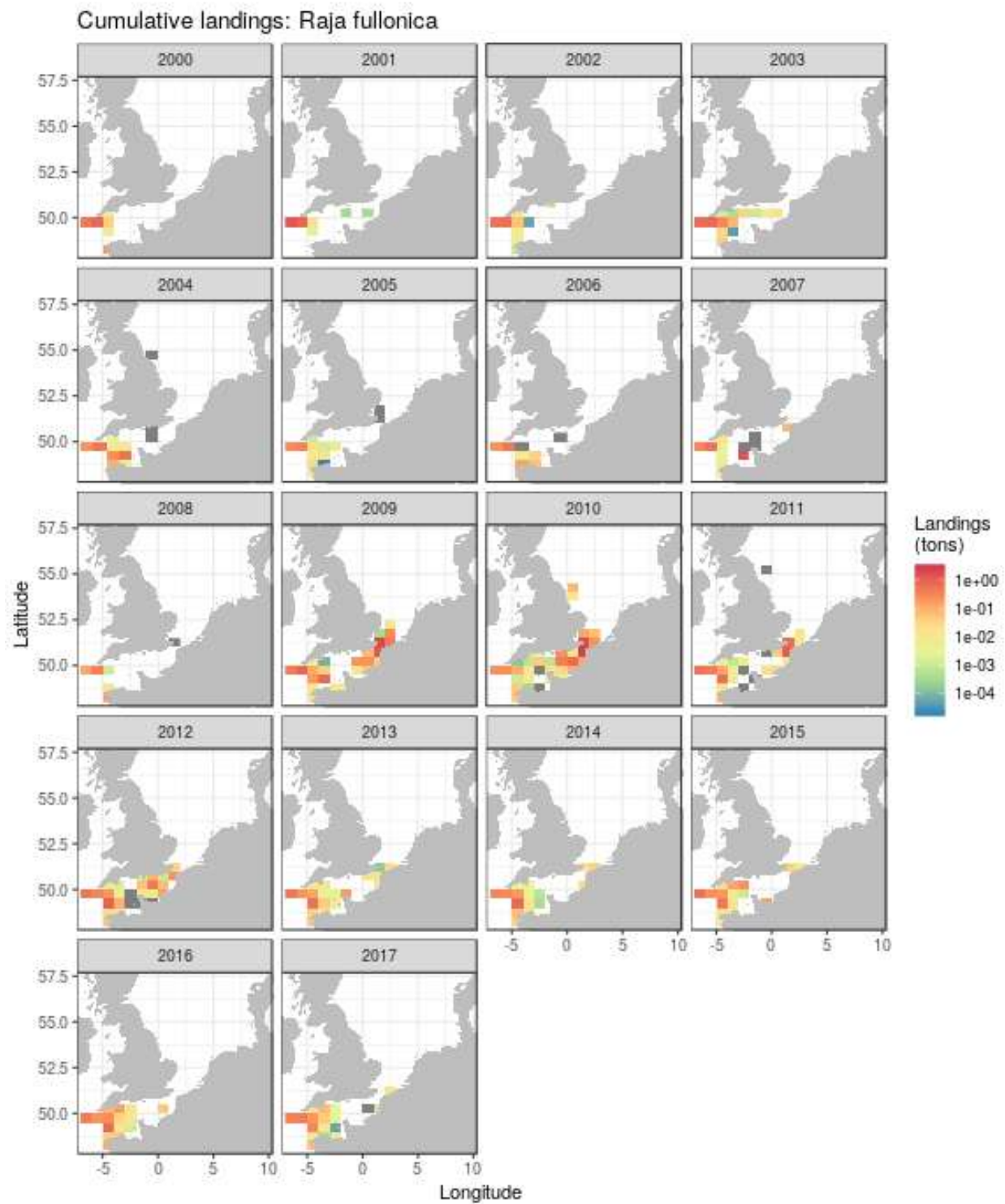


Figure 14.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

14.2.1.4 Annual landings for gear category trawler

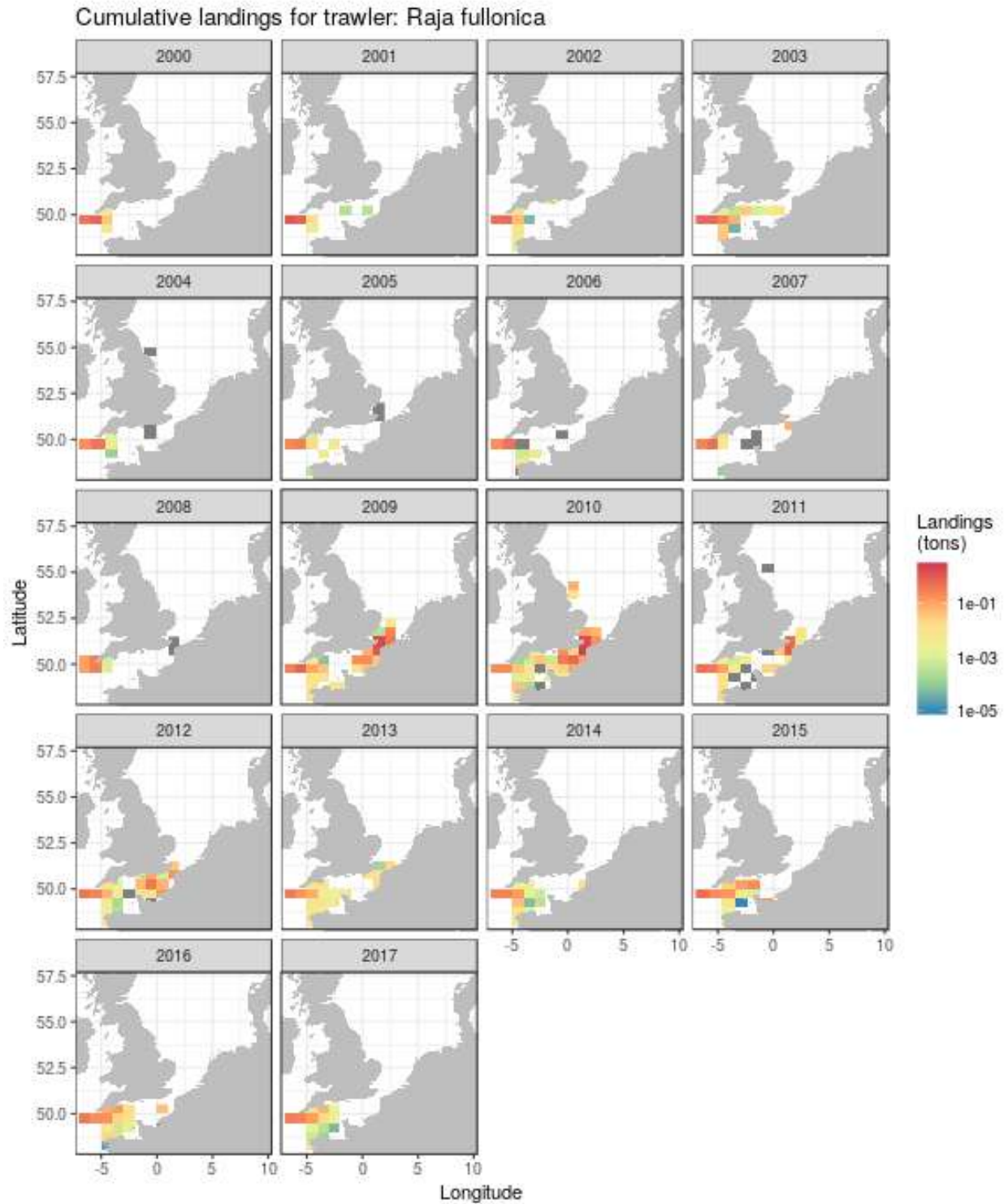


Figure 14.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

14.2.1.5 Annual landings for gear category nets

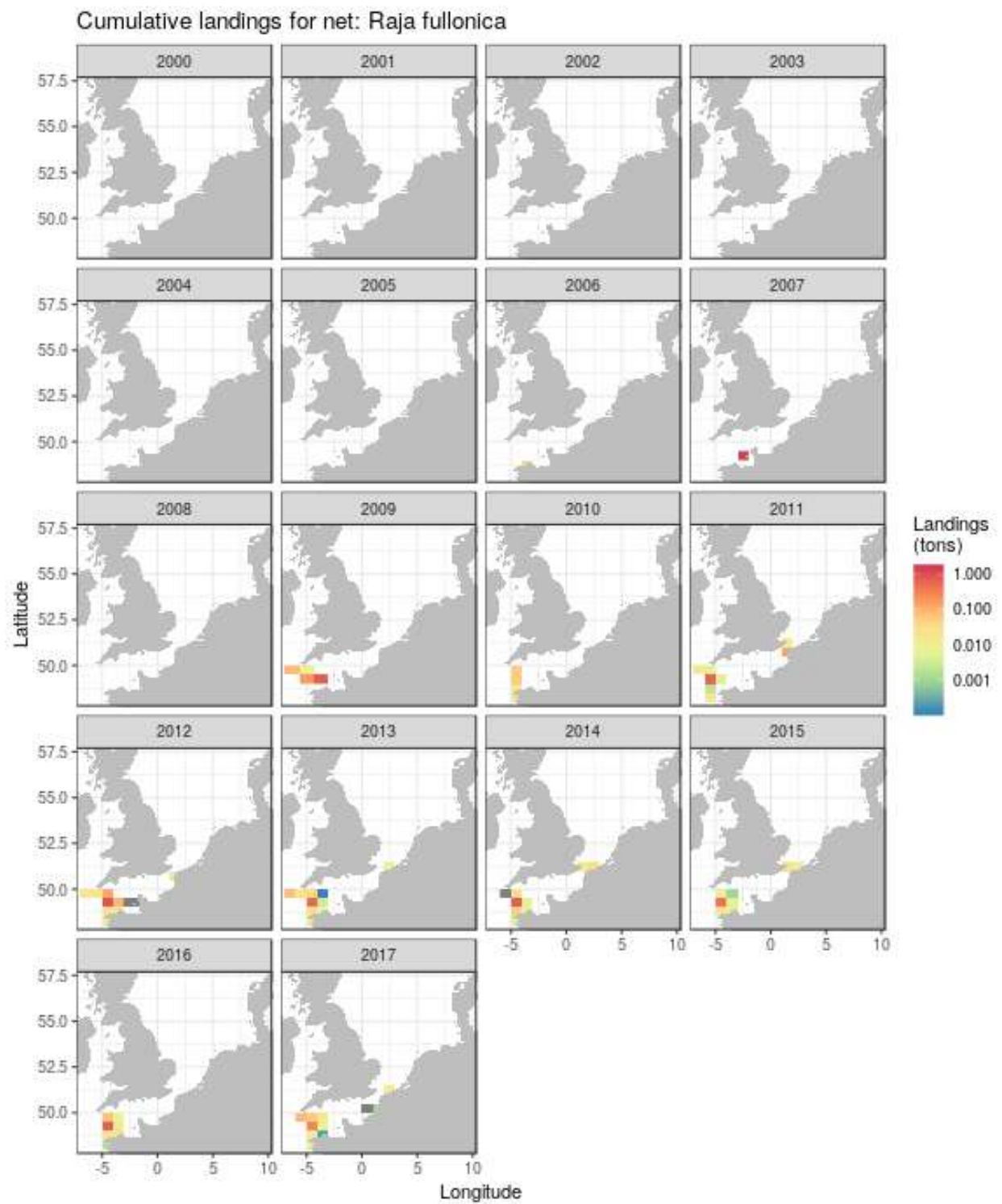


Figure 14.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

14.2.1.6 Annual landings for gear category lines

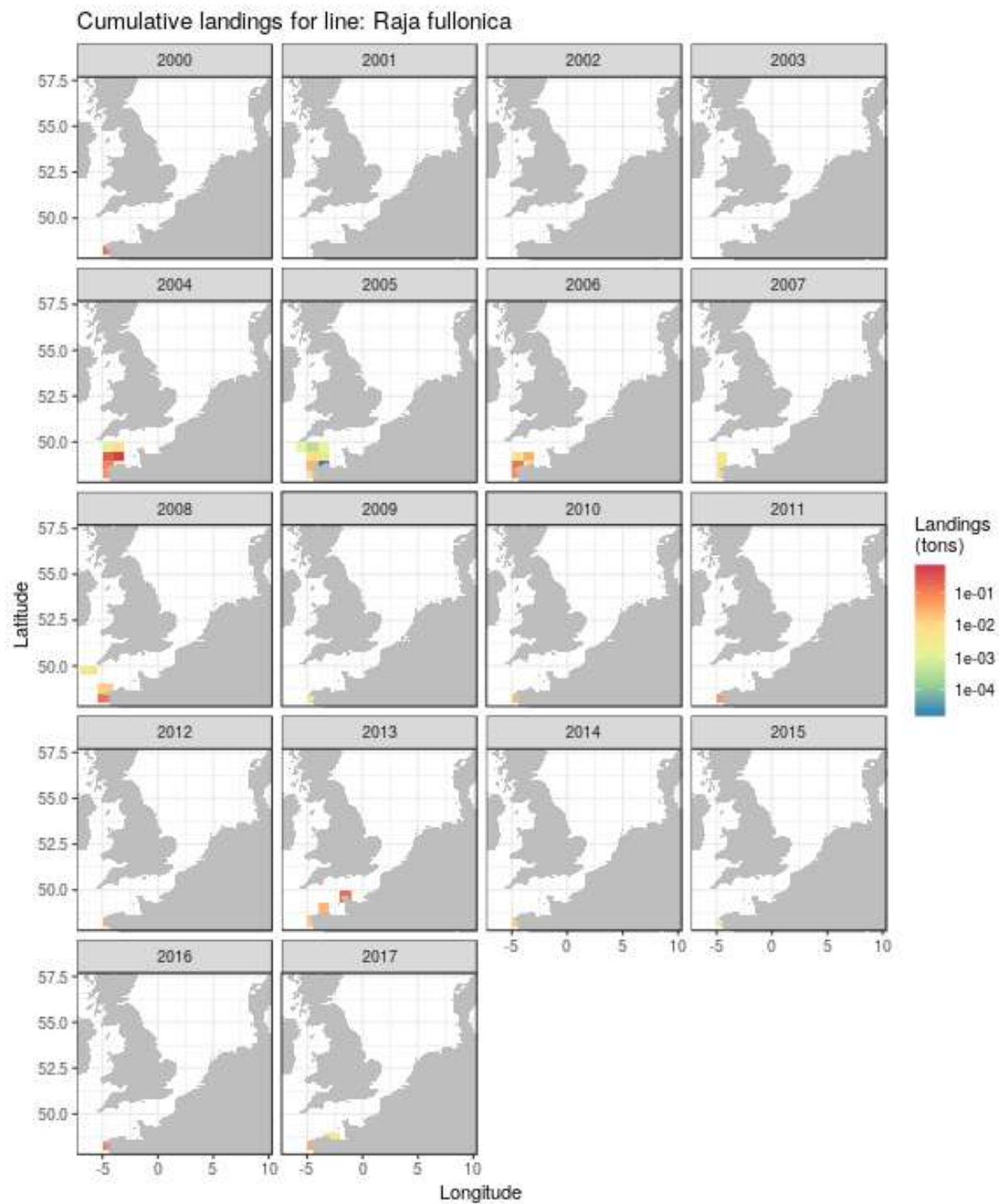


Figure 14.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

14.2.1.7 Annual landings for gear category other

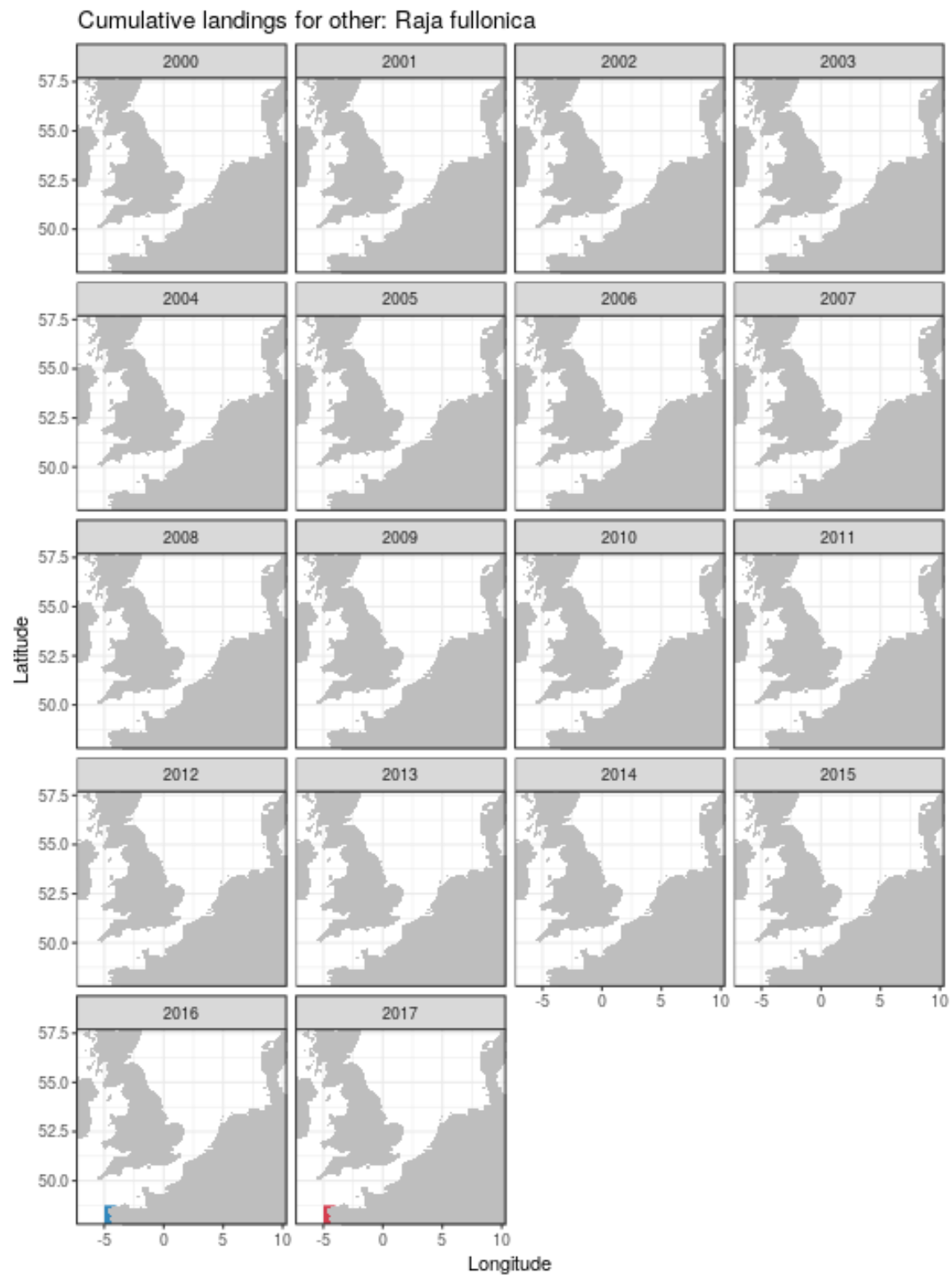


Figure 14.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

14.2.2 Commercial sampling

14.2.2.1 Landings and discards per unit effort and country

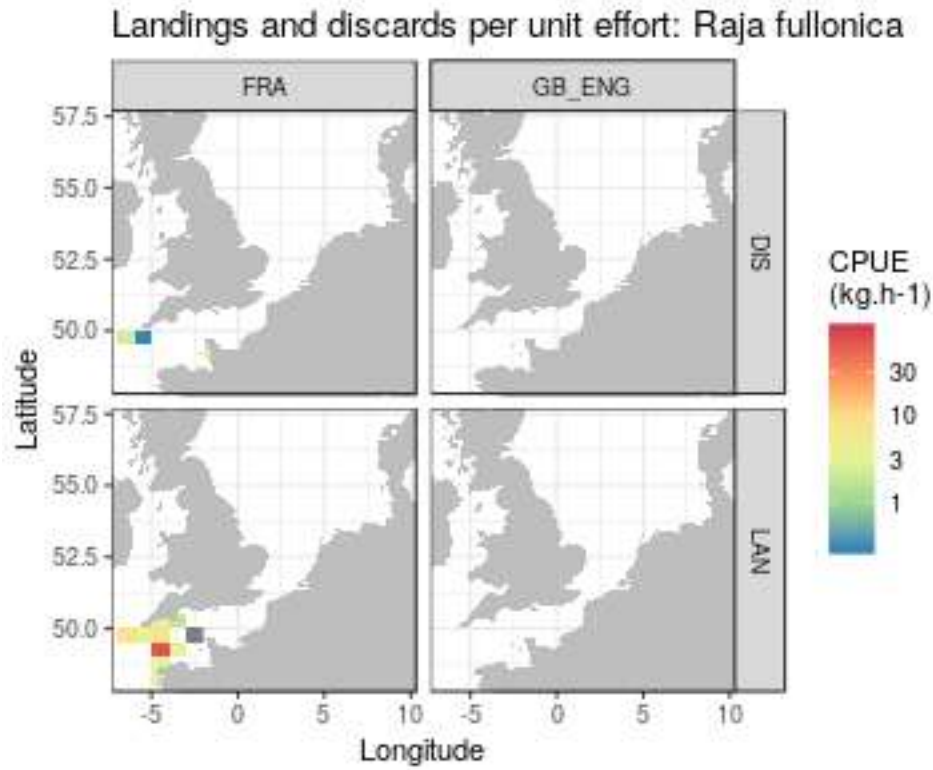


Figure 14.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

14.2.2.2 Annual catch per unit effort

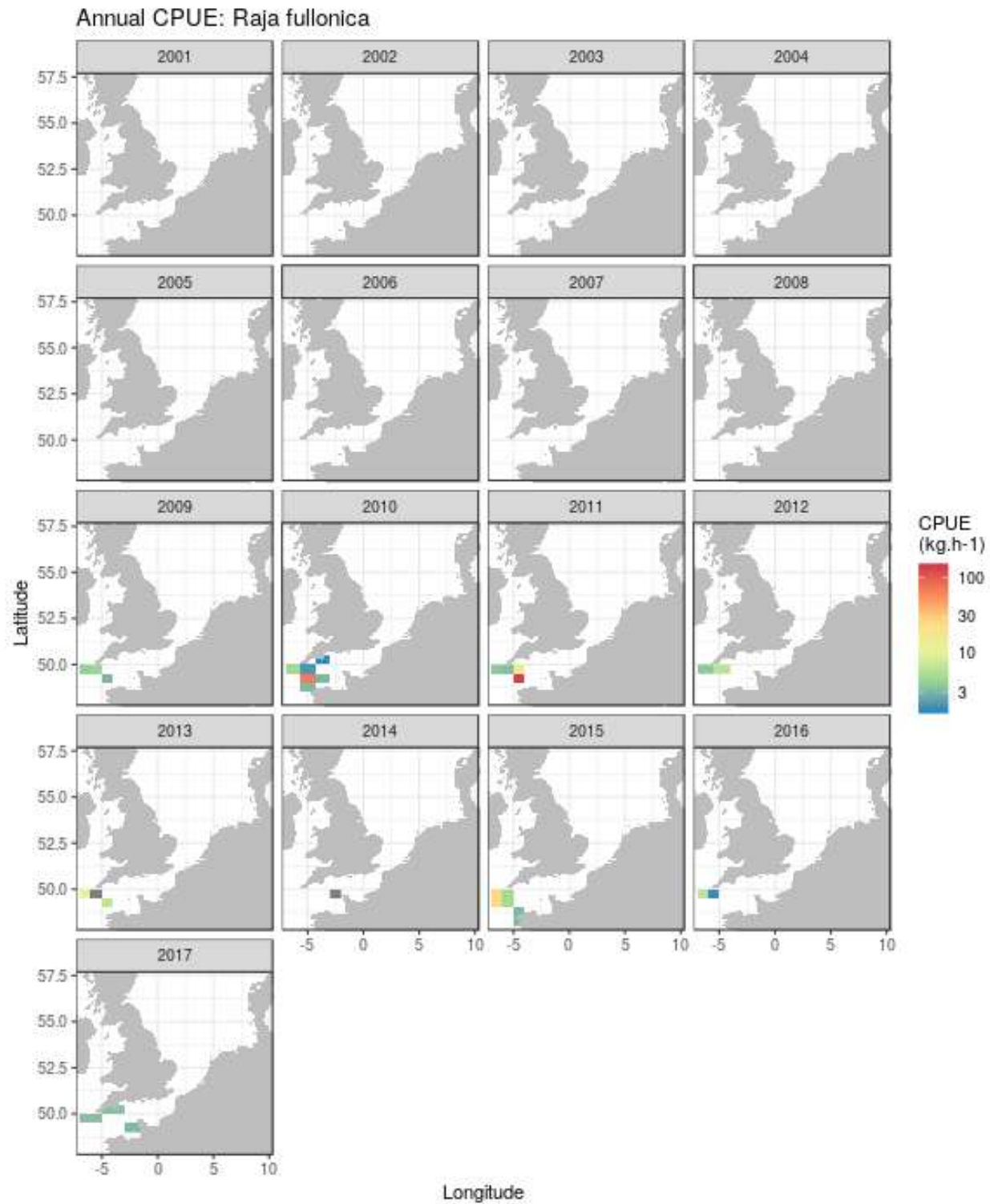


Figure 14.13: Catches per unit effort per year. The color scale is log 10 transformed.

14.2.2.3 Annual catch per unit effort for gear category trawler

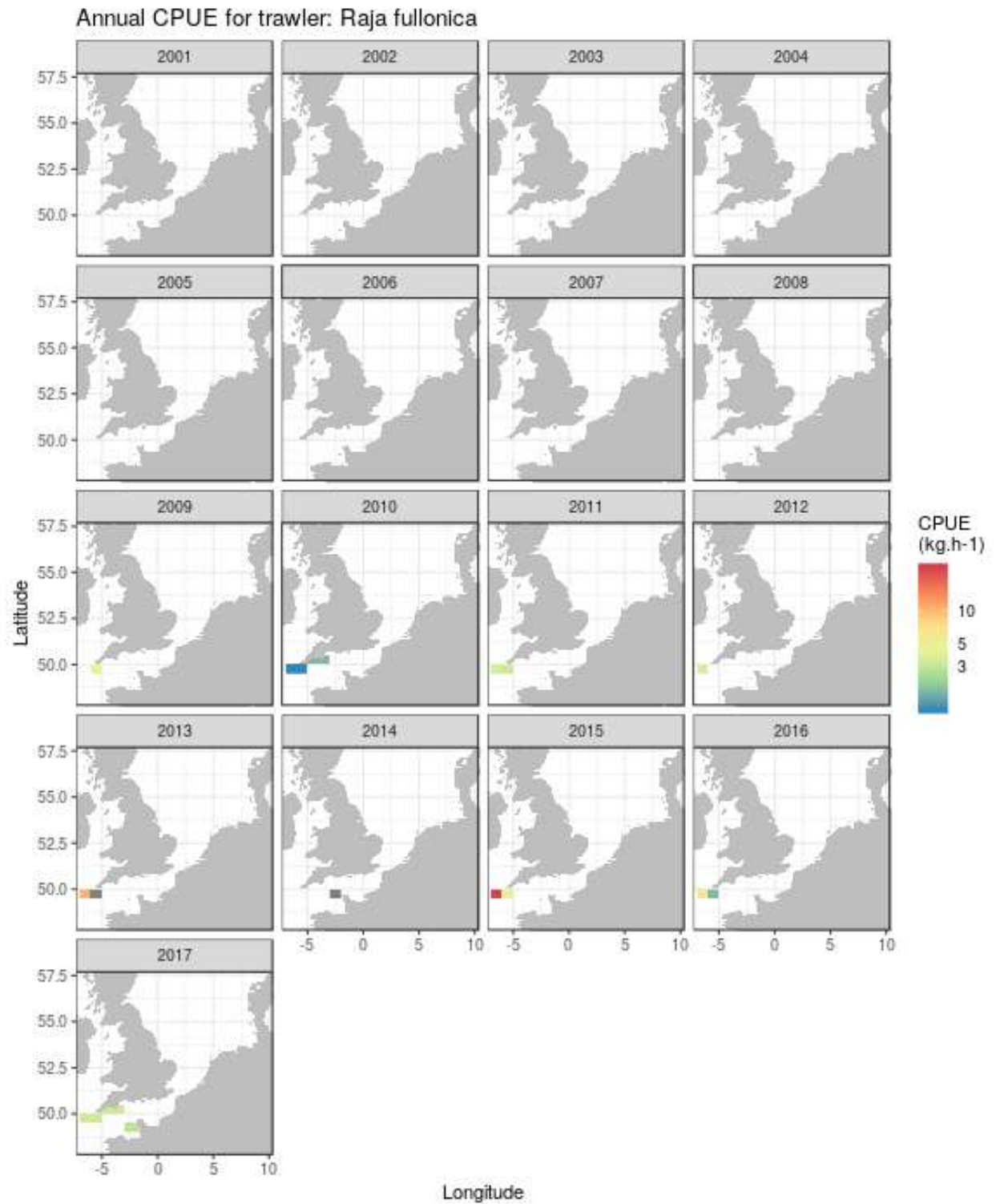


Figure 14.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

14.2.2.4 Annual catch per unit effort for gear category net

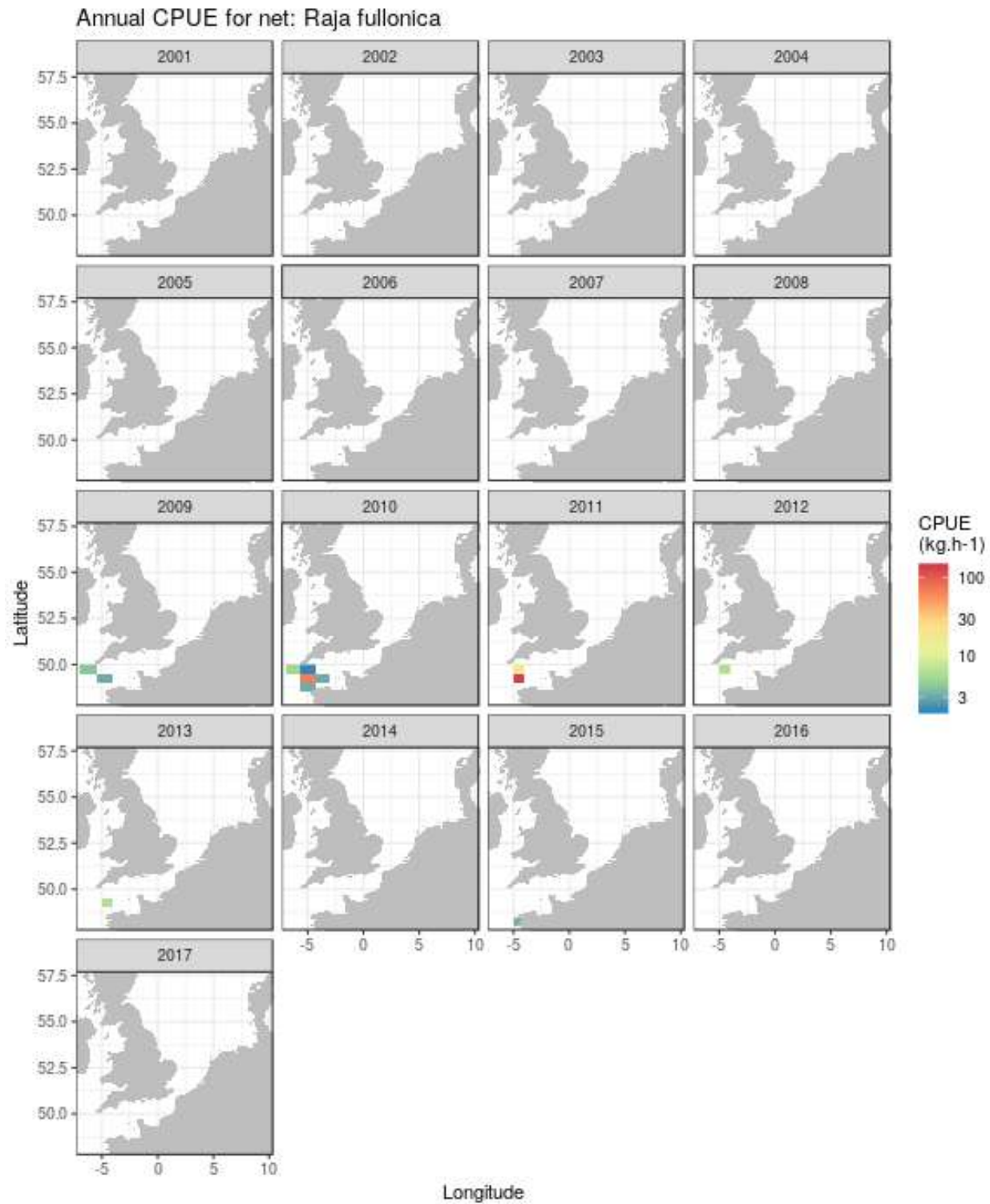


Figure 14.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

14.2.2.5 Annual catch per unit effort for gear category line



Figure 14.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

14.2.2.6 Annual catch per unit effort for gear category other



Figure 14.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

15 *Raja oxyrinchus*

15.1 Survey

15.1.1 Average CPUE

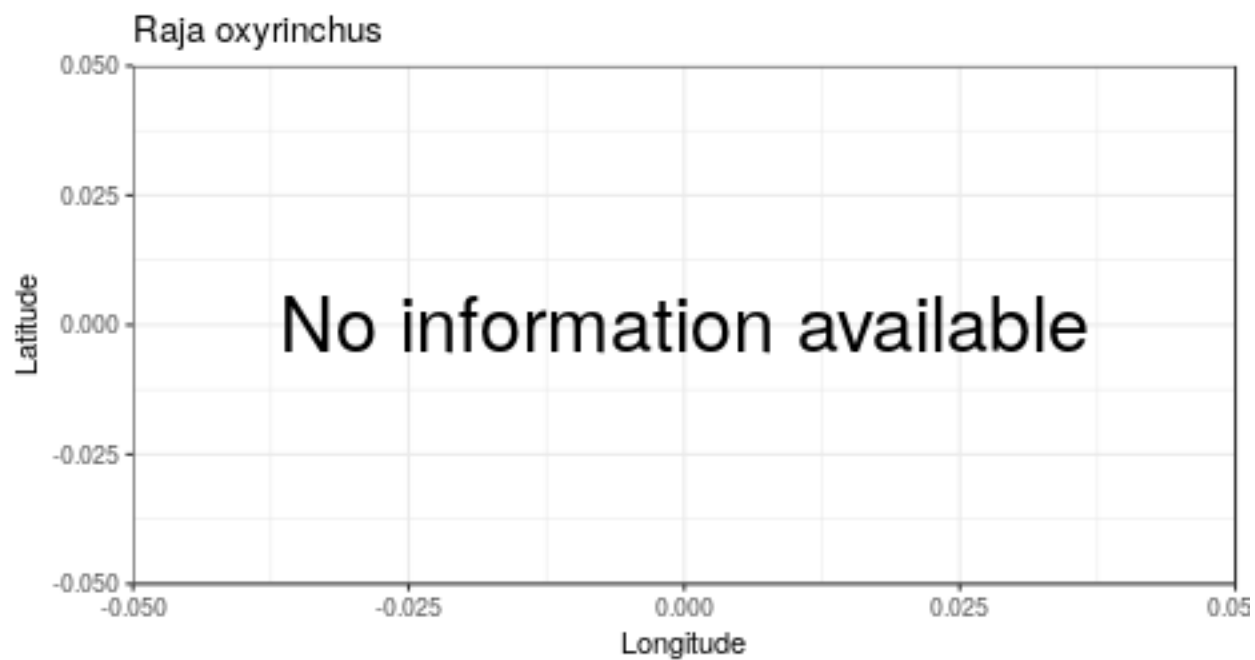


Figure 15.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

15.1.2 Annual CPUE: BTS

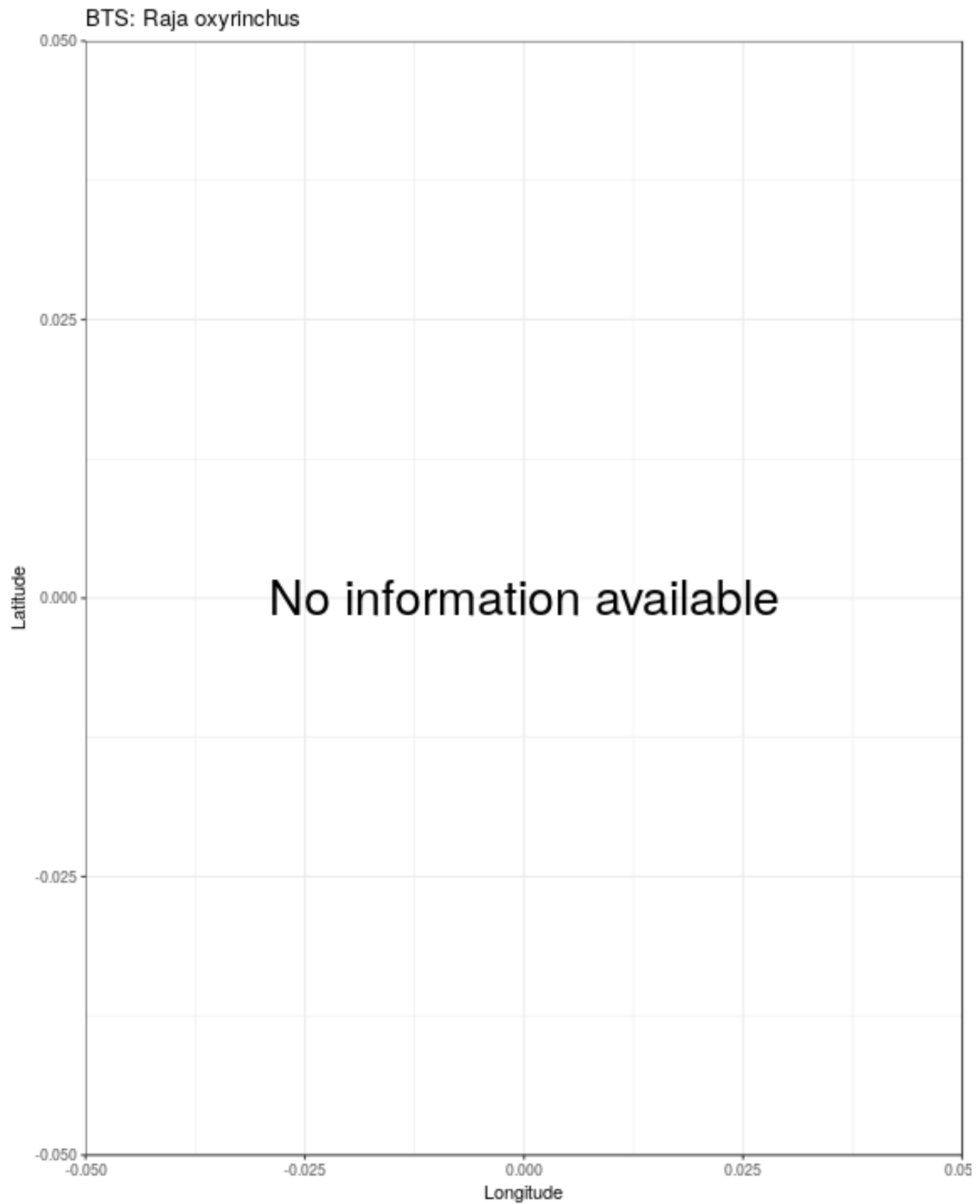


Figure 15.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

15.1.3 Annual CPUE: FR-CGFS



Figure 15.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

15.1.4 Annual CPUE: NS-IBTS



Figure 15.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

15.2 Fishery dependent information

15.2.1 Landings

15.2.1.1 Landings by country

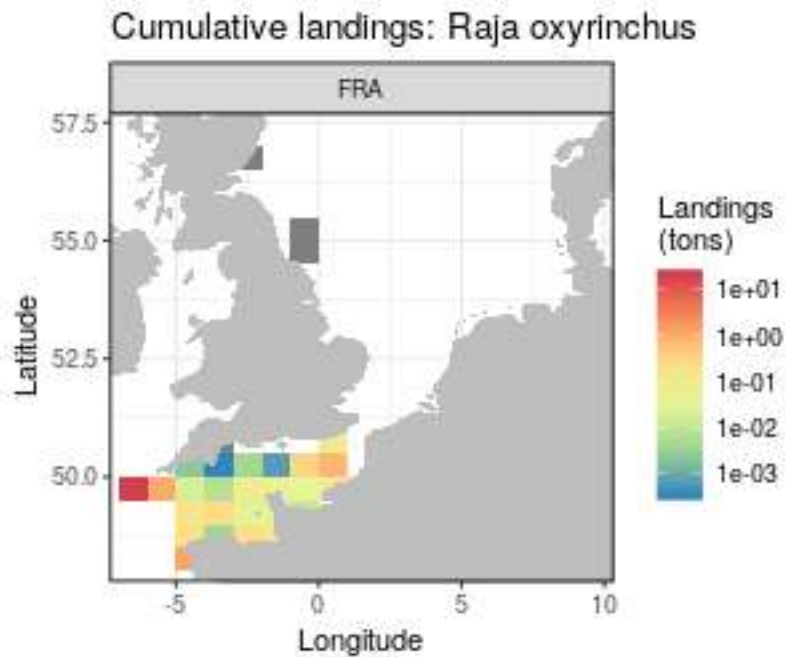


Figure 15.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

15.2.1.2 Landings by country and gear category

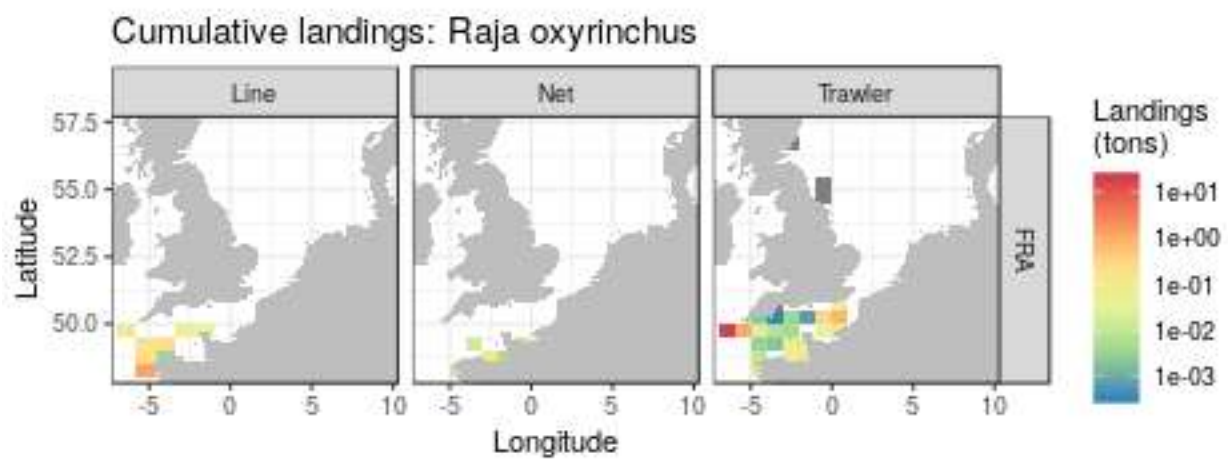


Figure 15.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

15.2.1.3 Annual landings

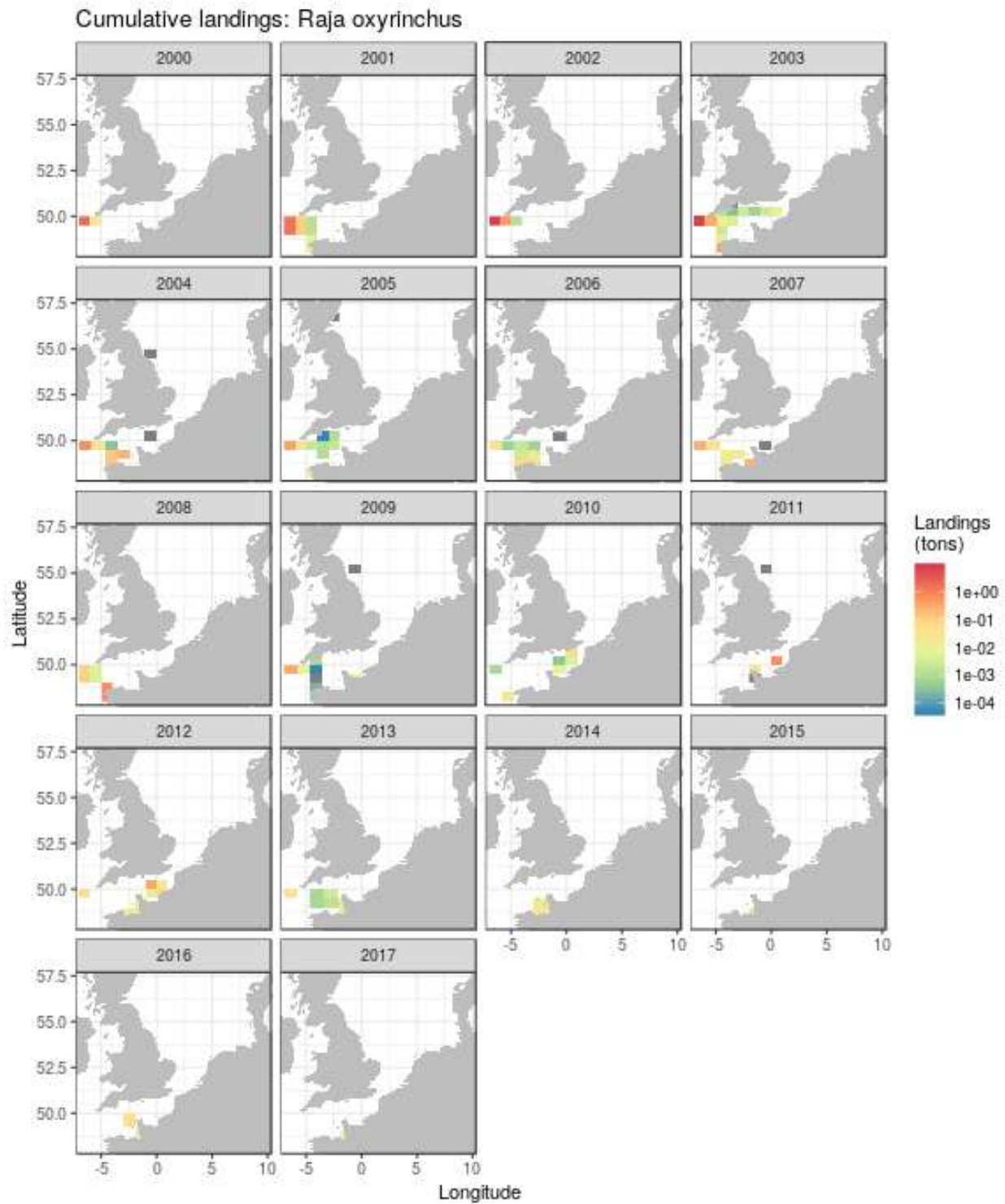


Figure 15.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

15.2.1.4 Annual landings for gear category trawler

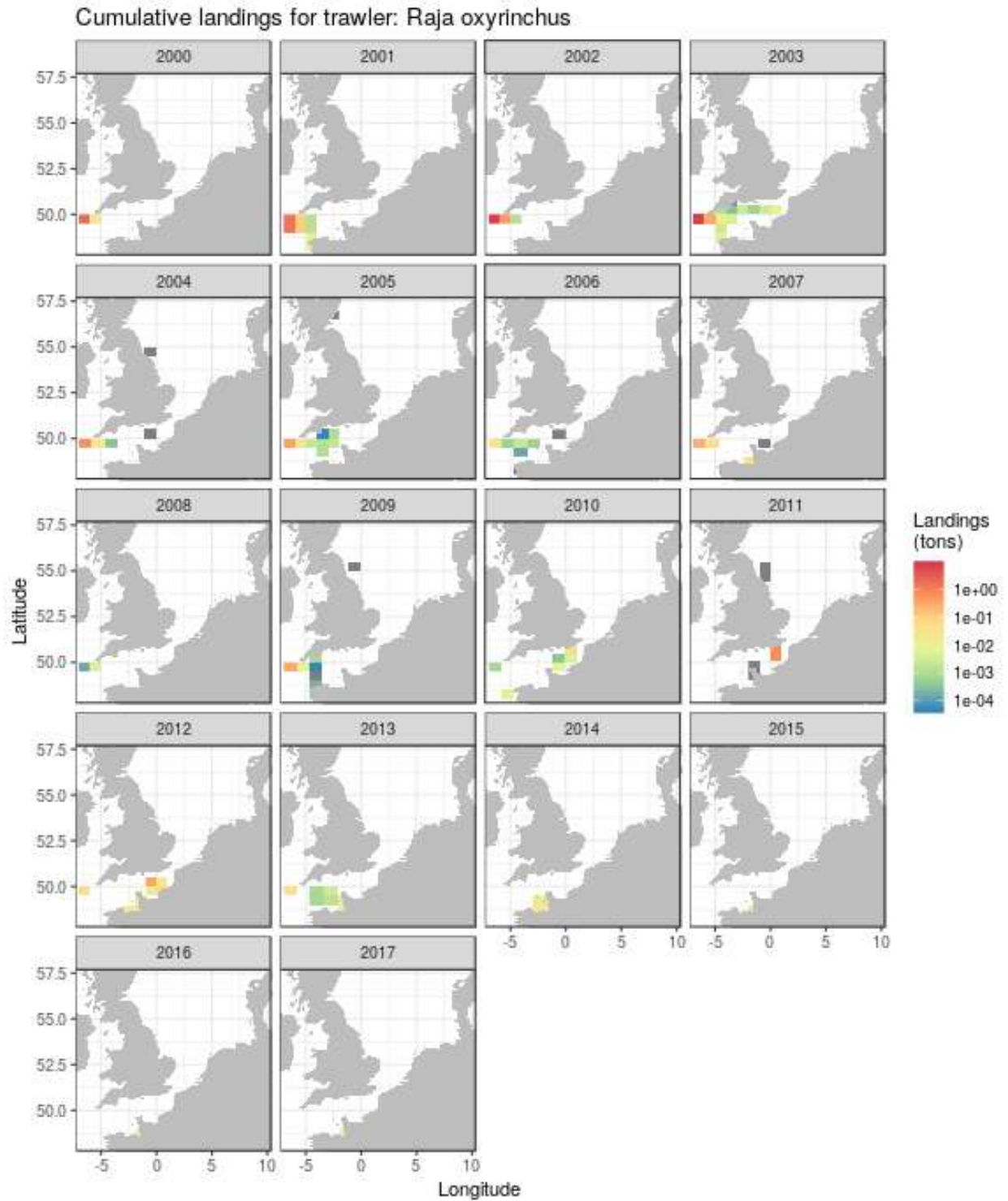


Figure 15.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

15.2.1.5 Annual landings for gear category nets

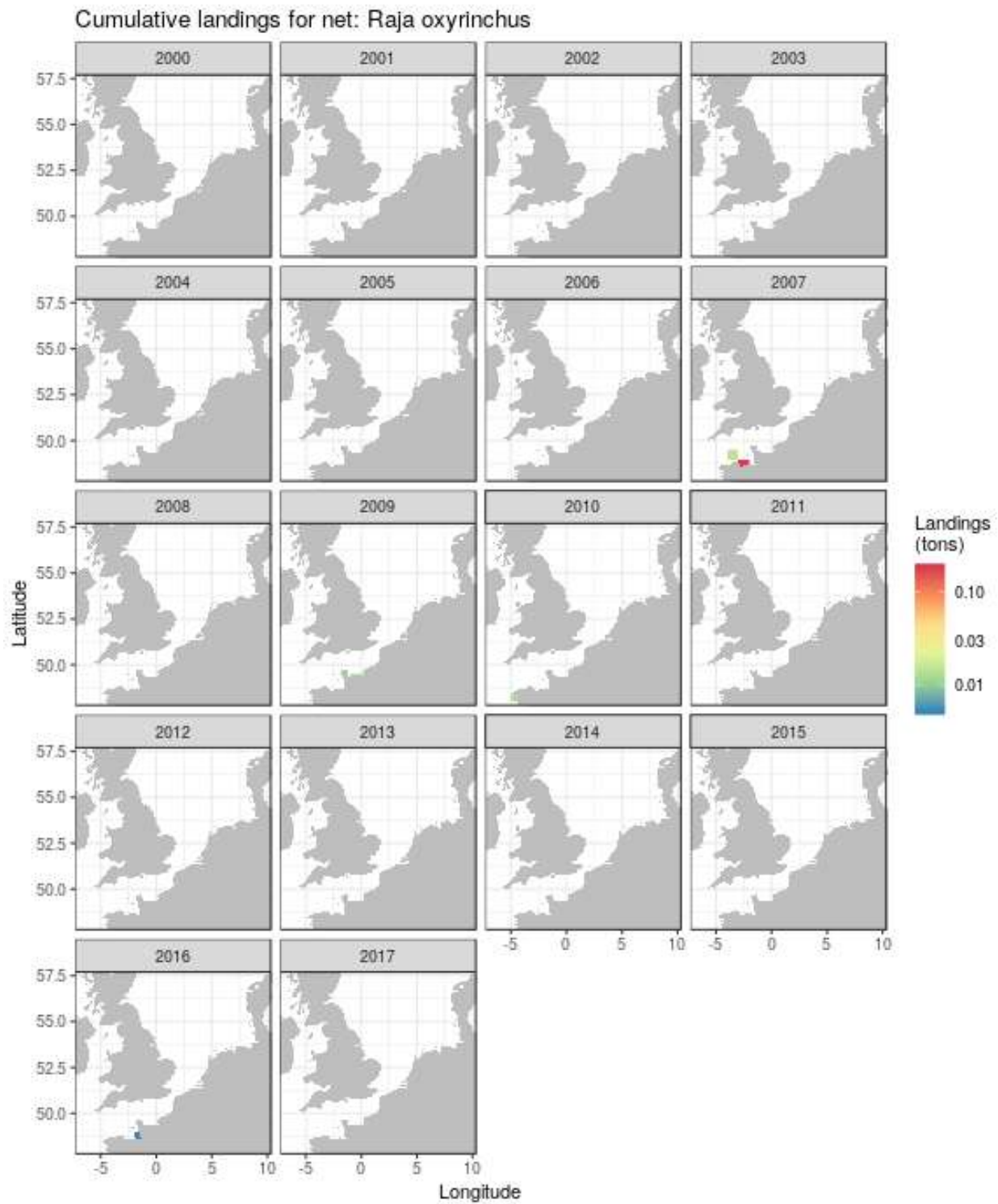


Figure 15.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

15.2.1.6 Annual landings for gear category lines

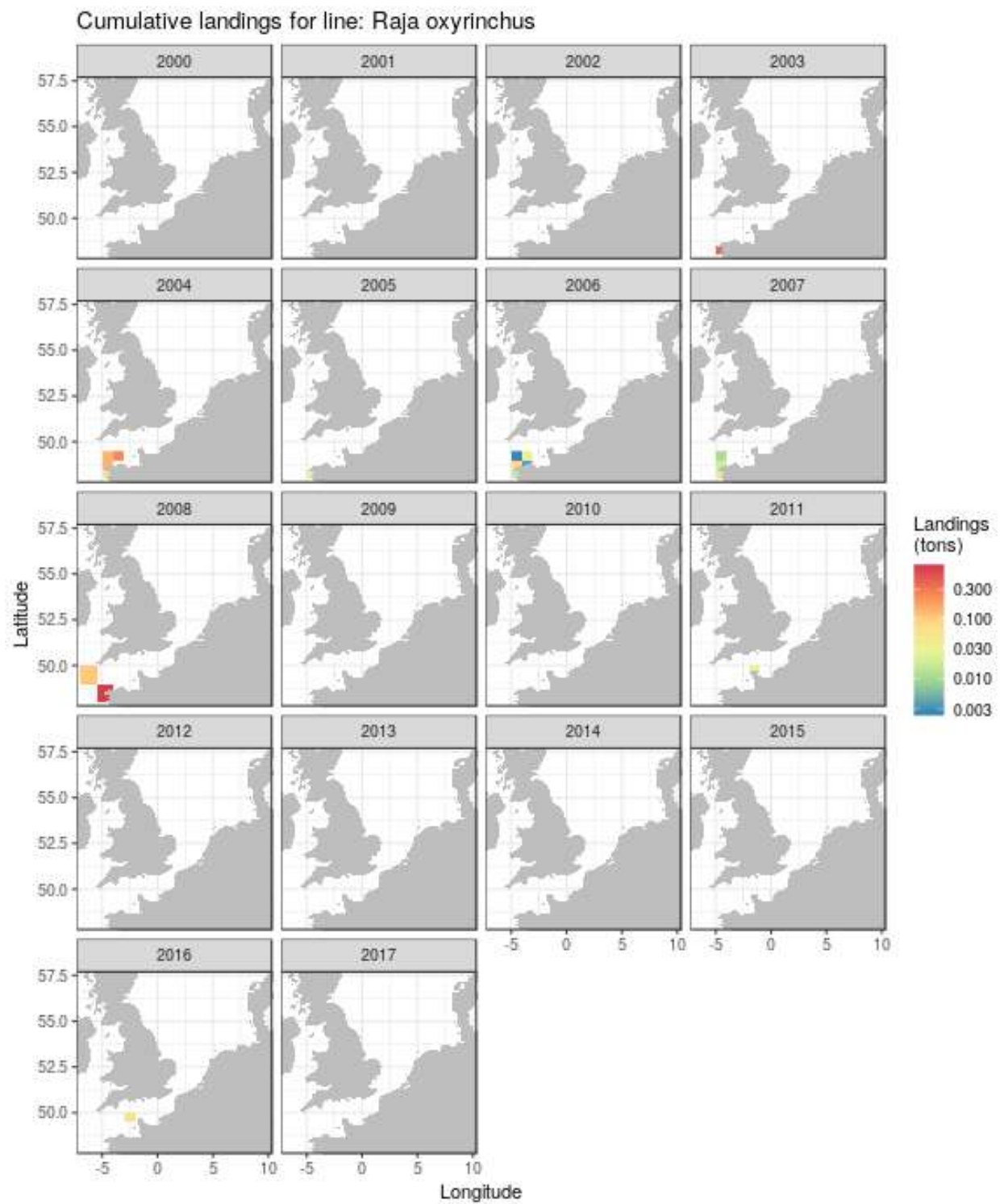


Figure 15.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

15.2.1.7 Annual landings for gear category other

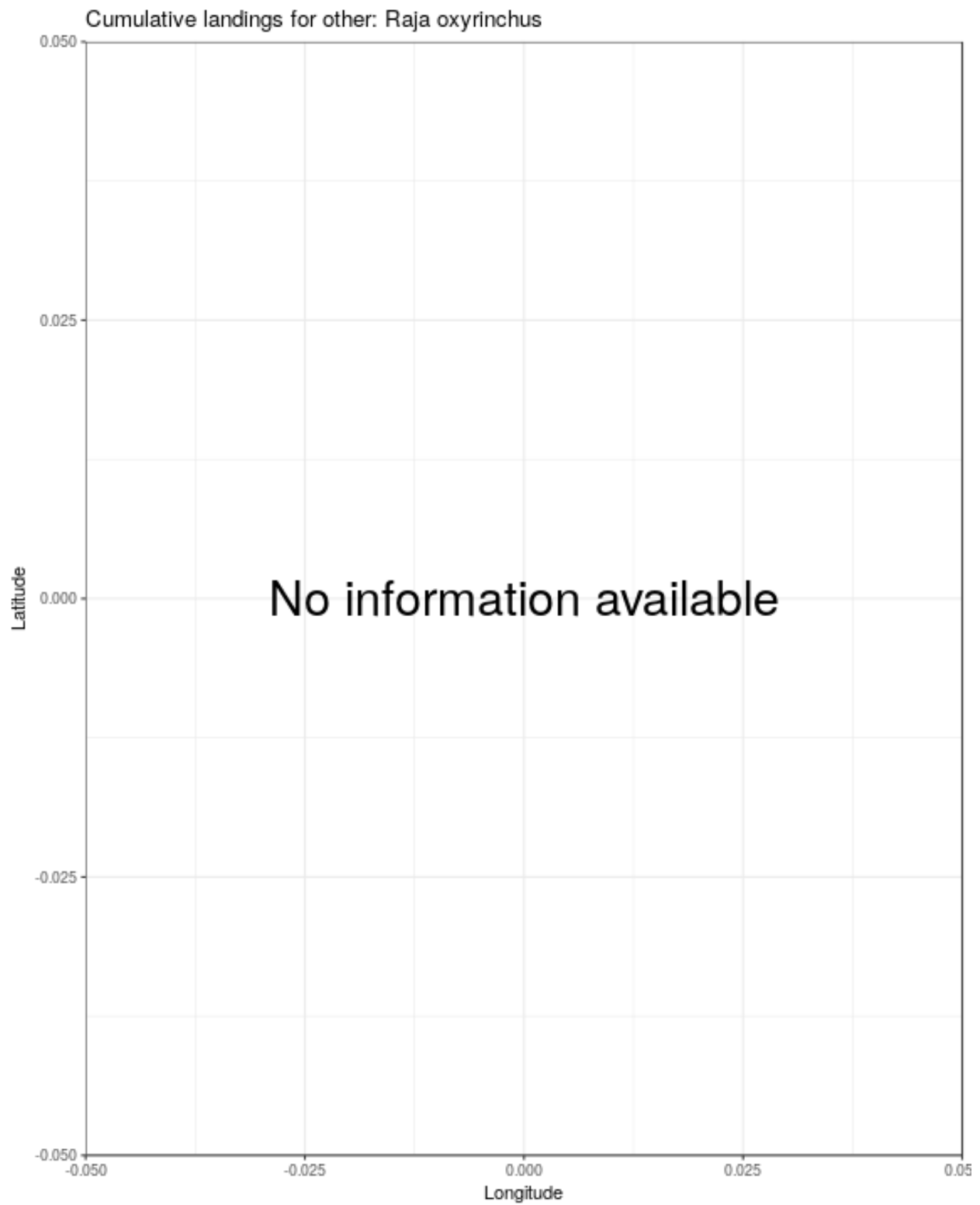


Figure 15.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

15.2.2 Commercial sampling

15.2.2.1 Landings and discards per unit effort and country

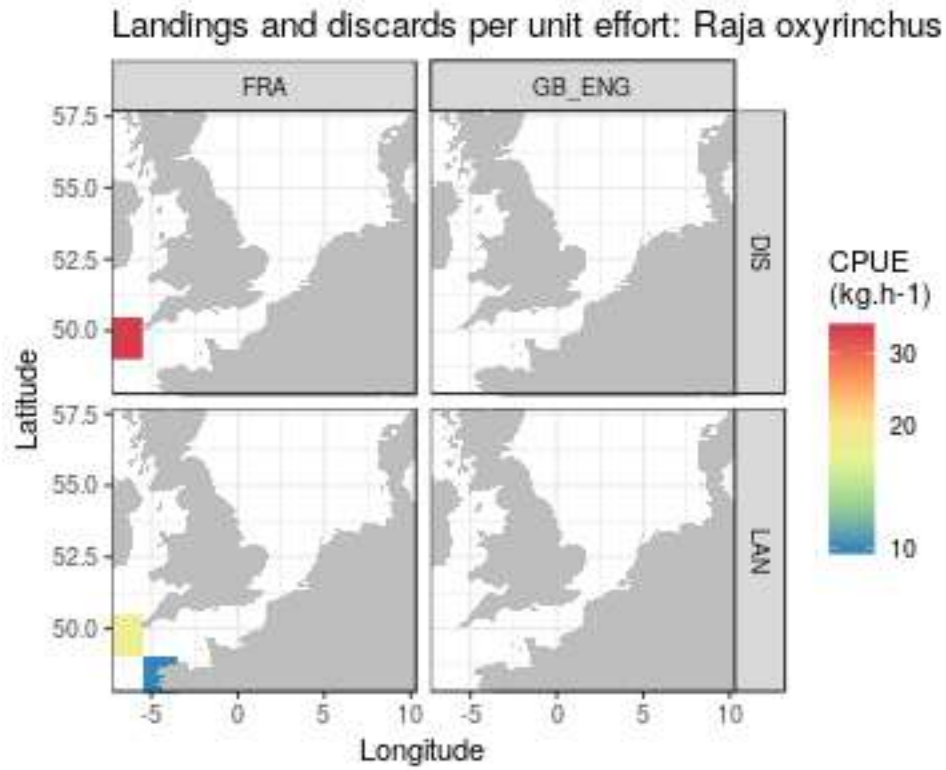


Figure 15.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log₁₀ transformed.

15.2.2.2 Annual catch per unit effort

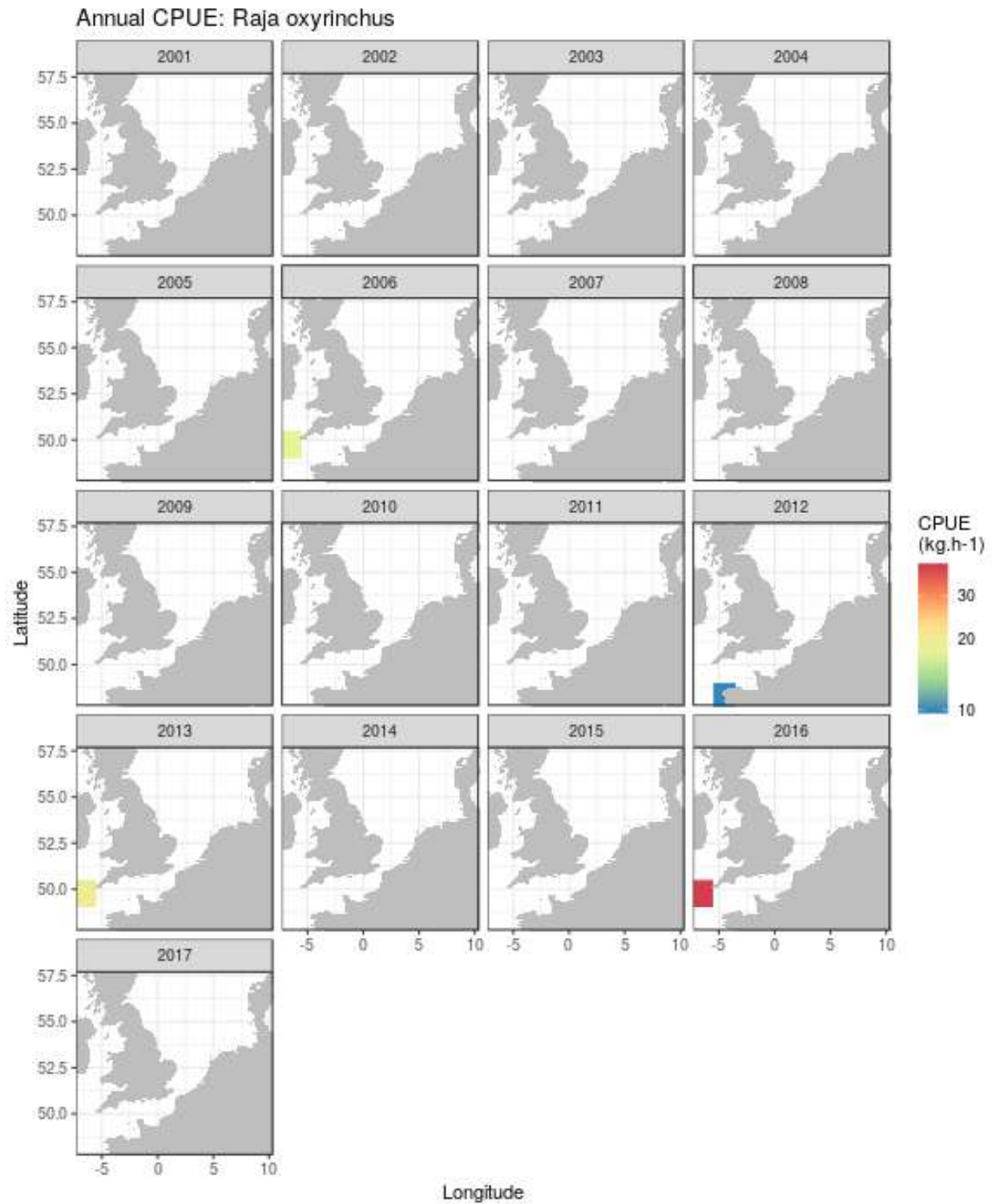


Figure 15.13: Catches per unit effort per year. The color scale is log 10 transformed.

15.2.2.3 Annual catch per unit effort for gear category trawler

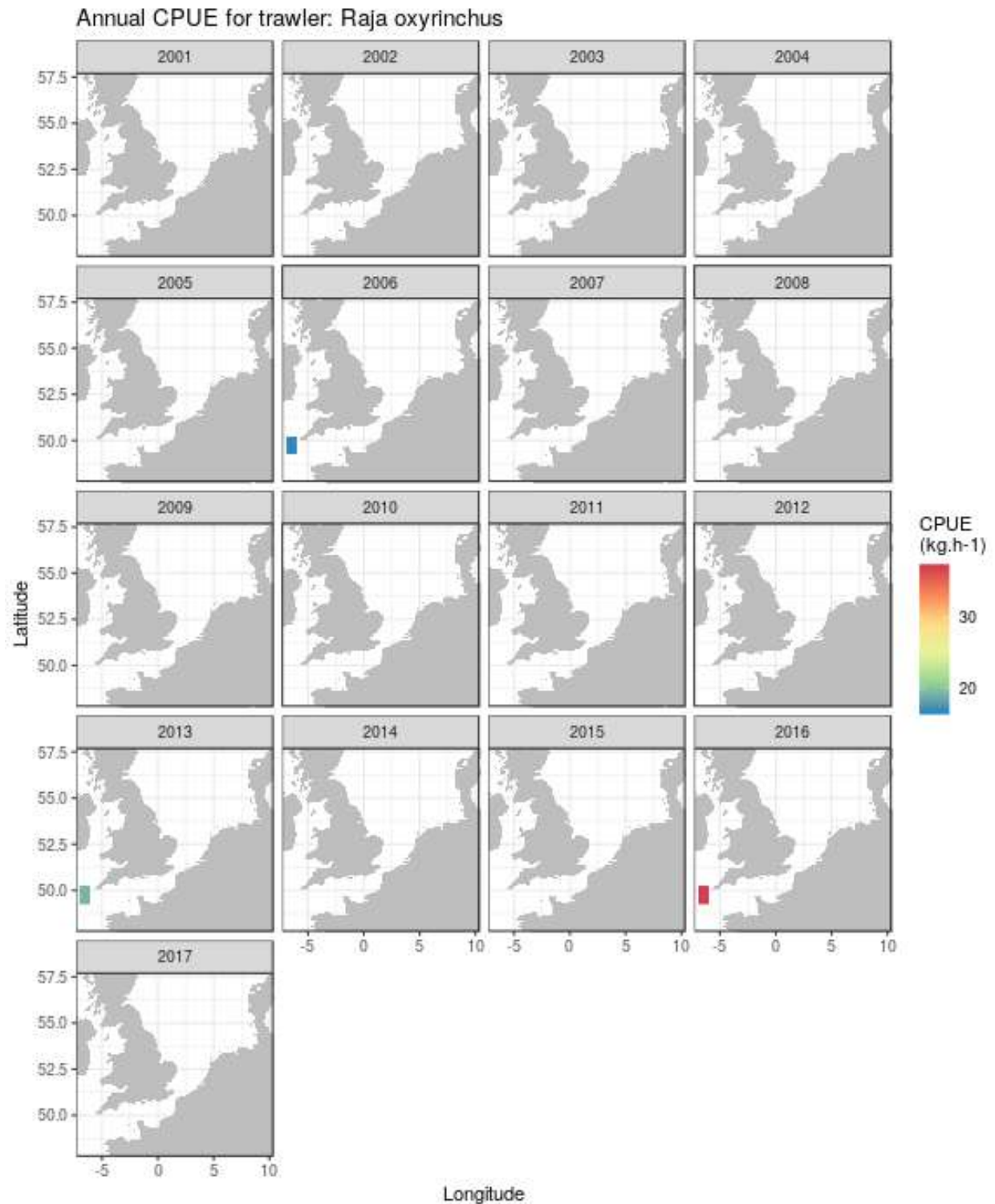


Figure 15.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

15.2.2.4 Annual catch per unit effort for gear category net

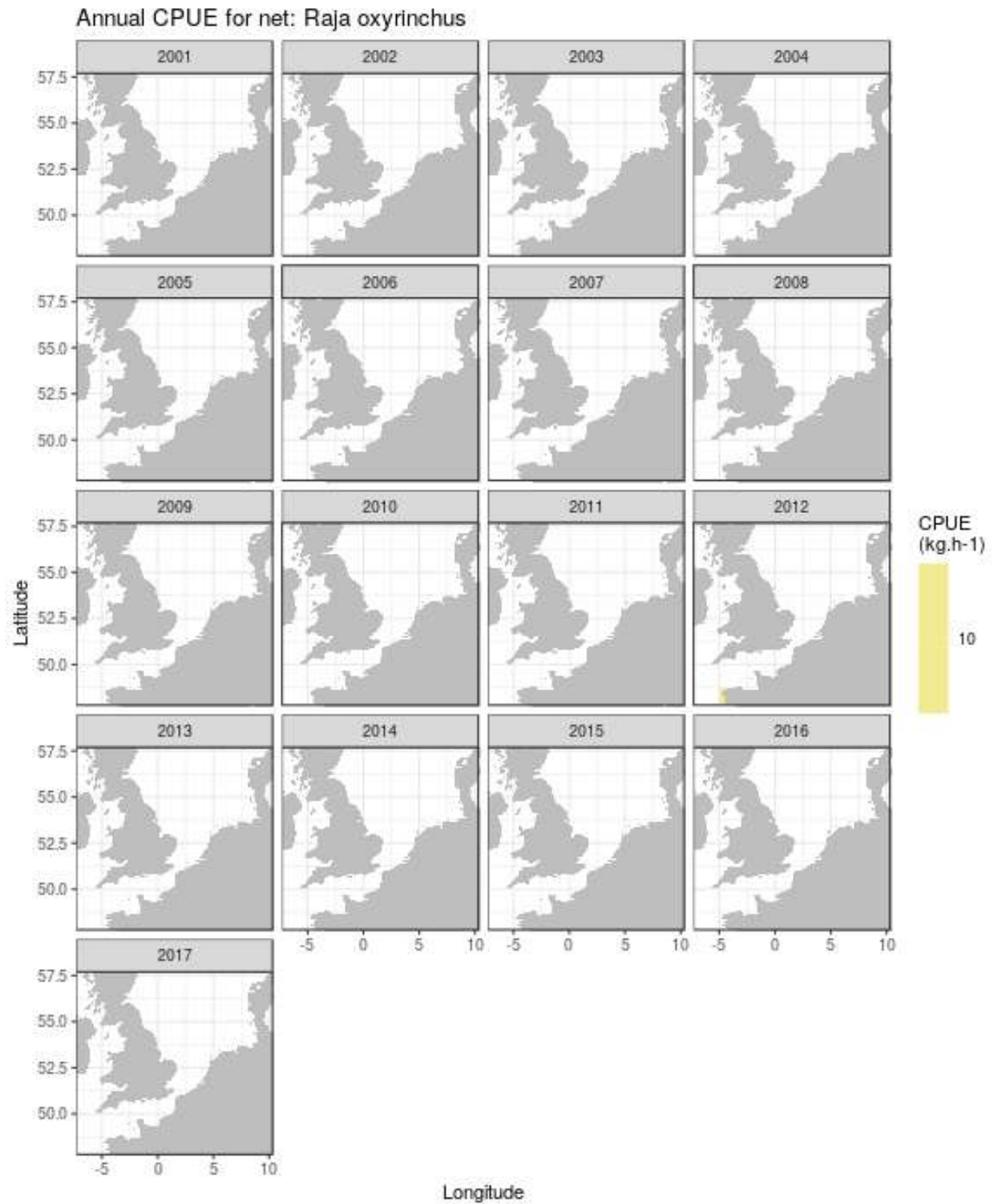


Figure 15.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

15.2.2.5 Annual catch per unit effort for gear category line



Figure 15.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

15.2.2.6 Annual catch per unit effort for gear category other



Figure 15.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

16 *Raja radiata*

16.1 Survey

16.1.1 Average CPUE

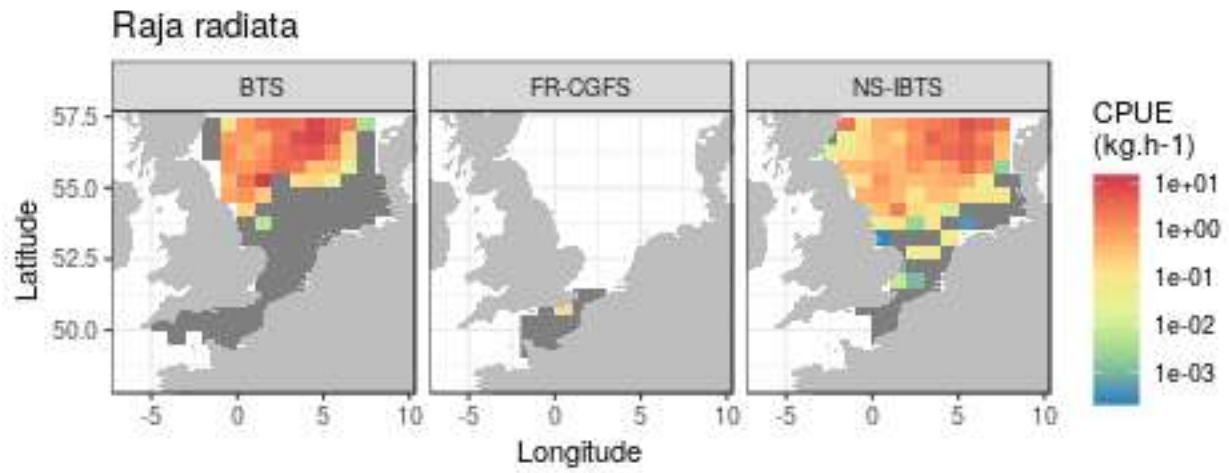


Figure 16.1: Average catch per unit effort (kg per hour) for the surveys. The color scale is log 10 transformed.

16.1.2 Annual CPUE: BTS

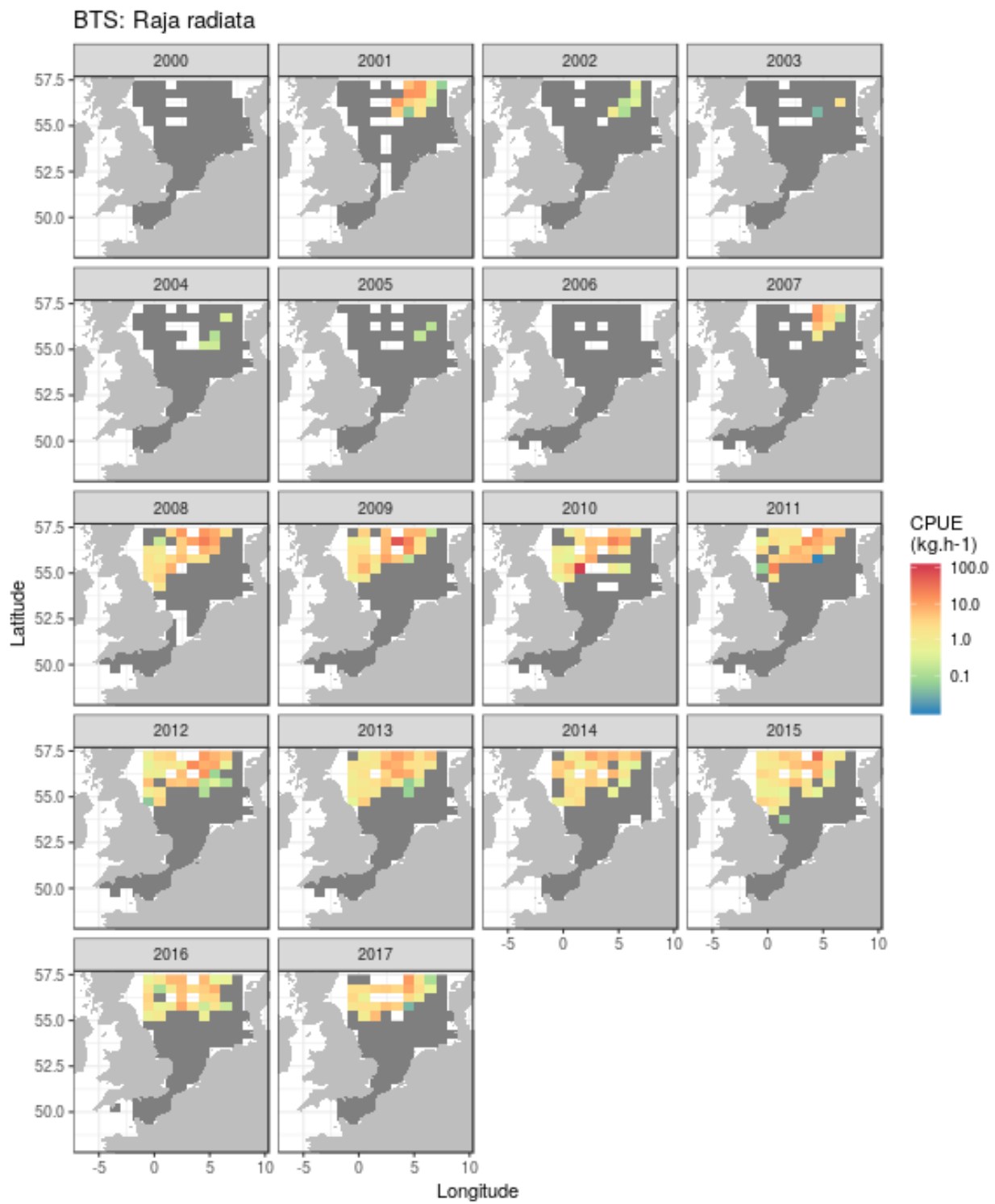


Figure 16.2: Average catch per unit effort (kg per hour) for the BTS survey. The color scale is log 10 transformed.

16.1.3 Annual CPUE: FR-CGFS

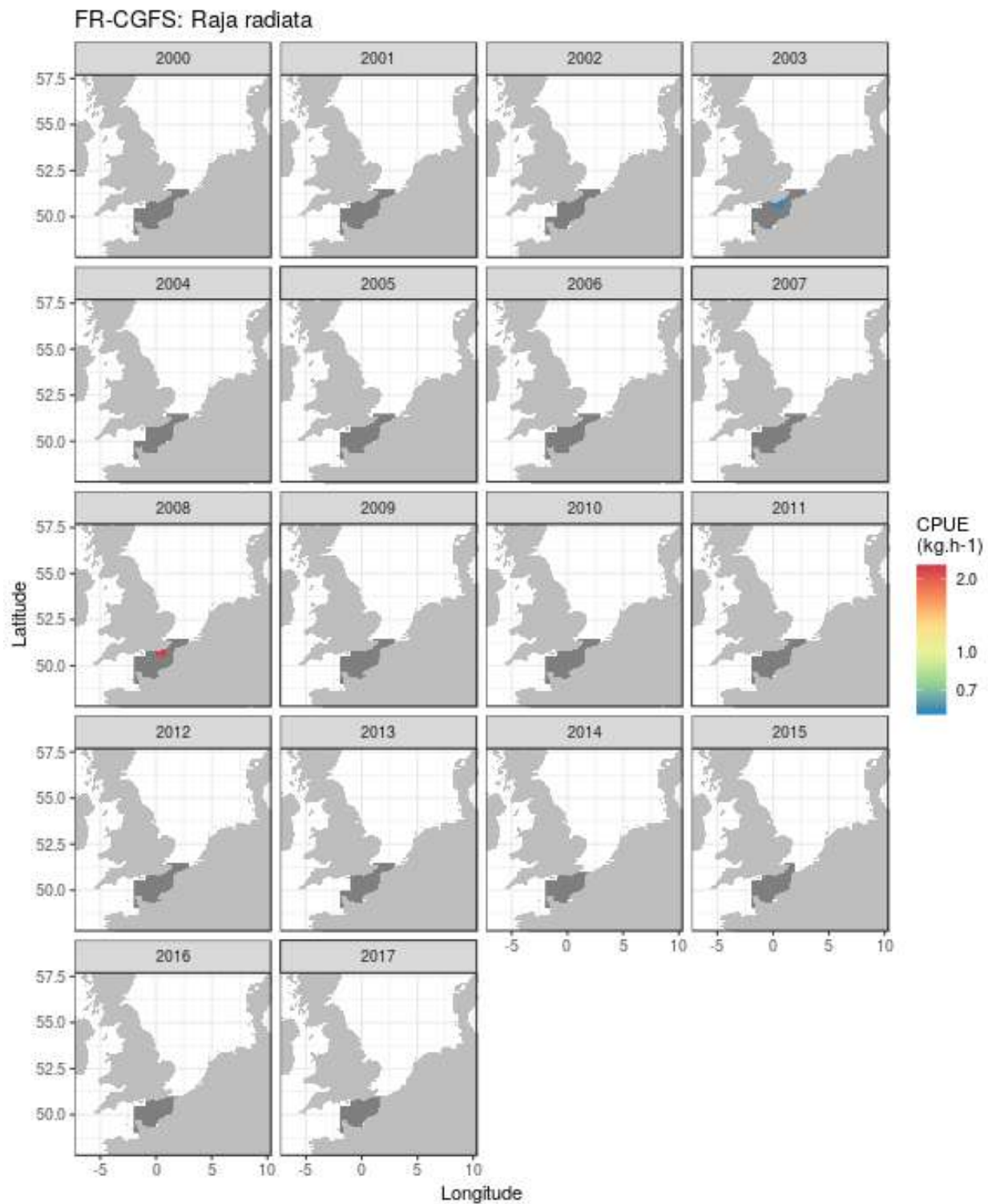


Figure 16.3: Average catch per unit effort (kg per hour) for the FR-CGFS survey. The color scale is log 10 transformed.

16.1.4 Annual CPUE: NS-IBTS

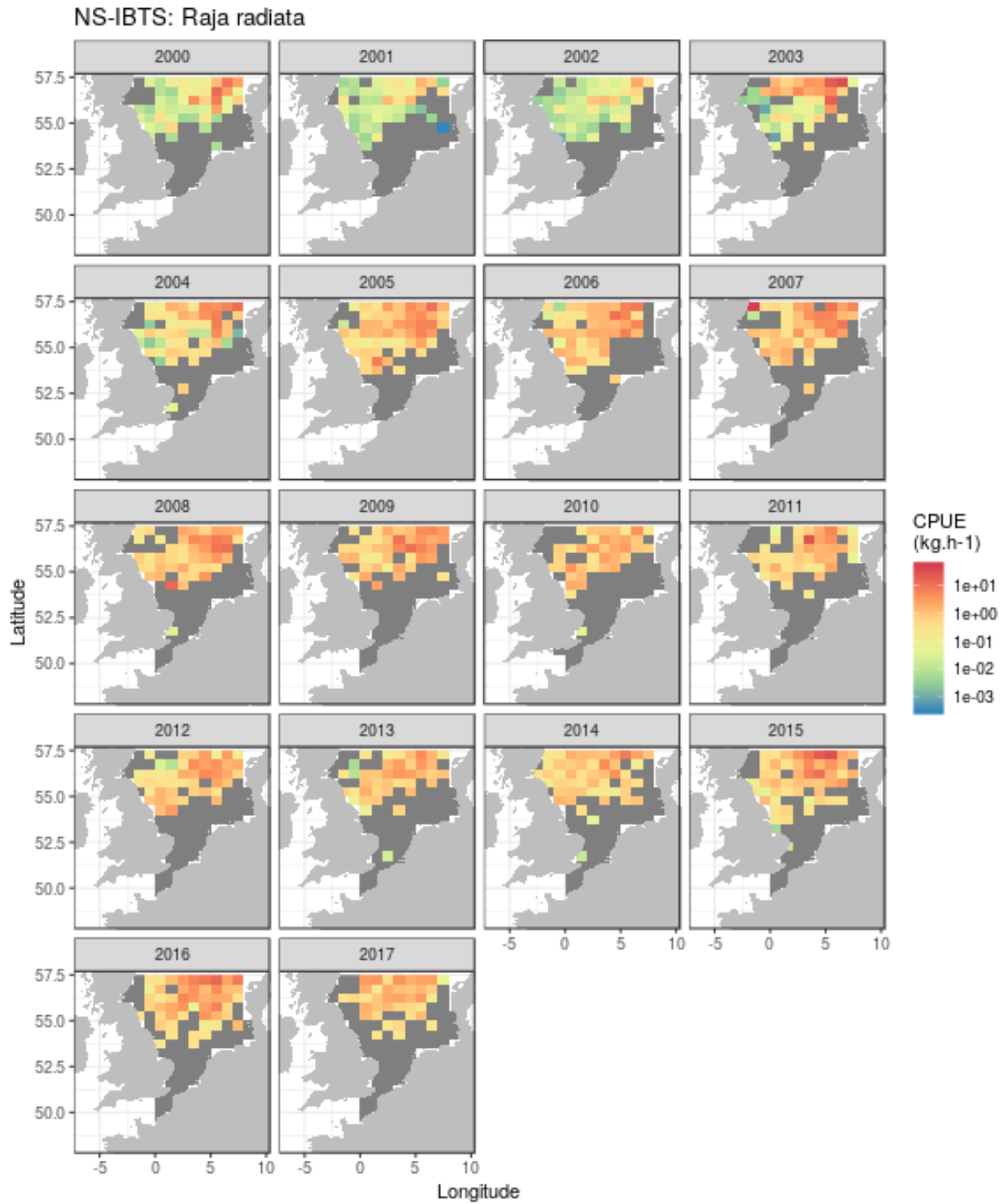


Figure 16.4: Average catch per unit effort (kg per hour) for the NS-IBTS survey. The color scale is log 10 transformed.

16.2 Fishery dependent information

16.2.1 Landings

16.2.1.1 Landings by country

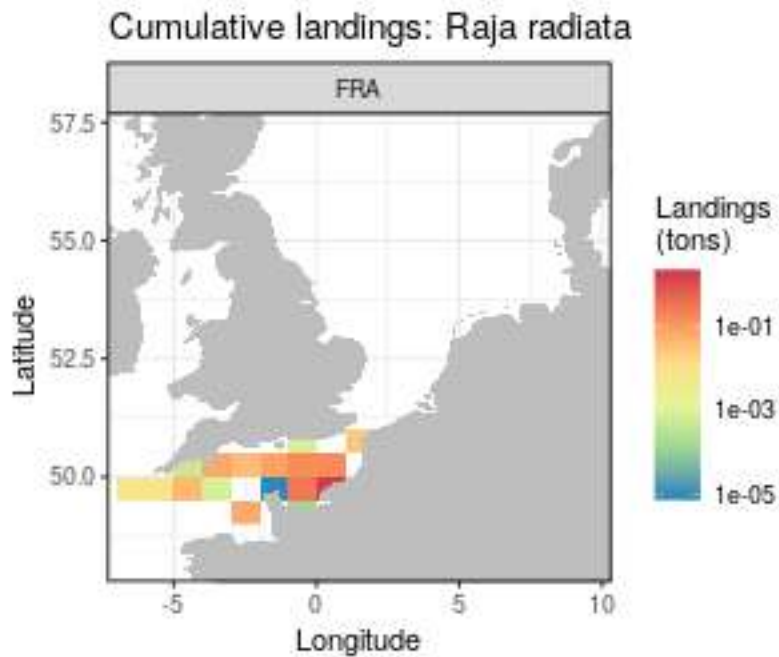


Figure 16.5: Sum of landings (in tons) per country. The color scale is log 10 transformed.

16.2.1.2 Landings by country and gear category

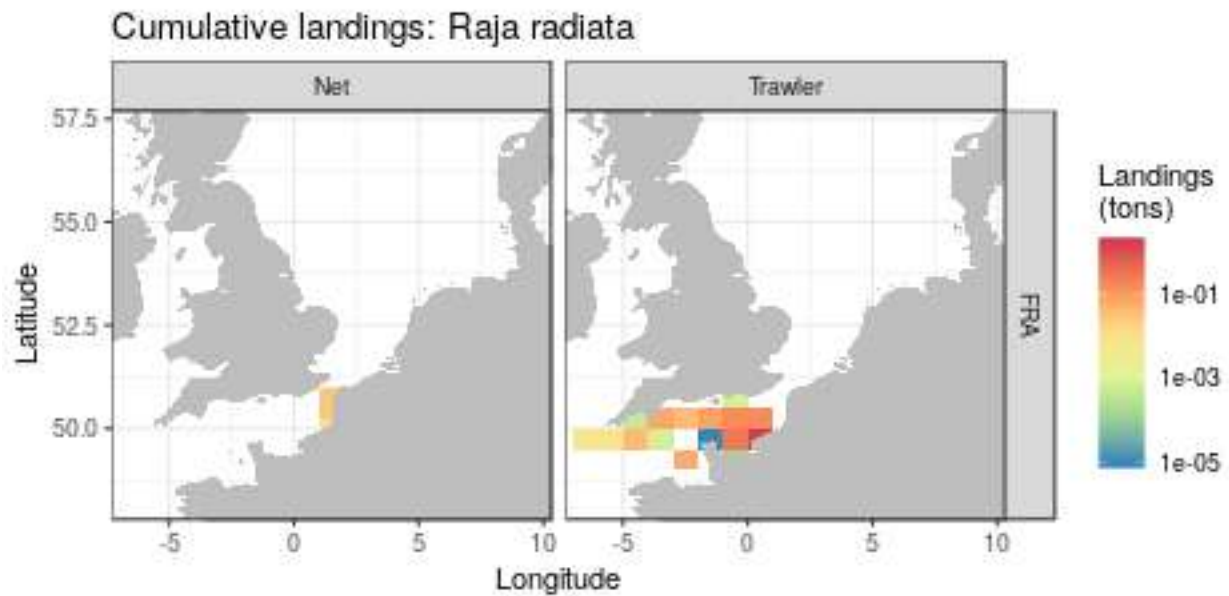


Figure 16.6: Sum of landings (in tons) per gear category and country. The color scale is log 10 transformed.

16.2.1.3 Annual landings

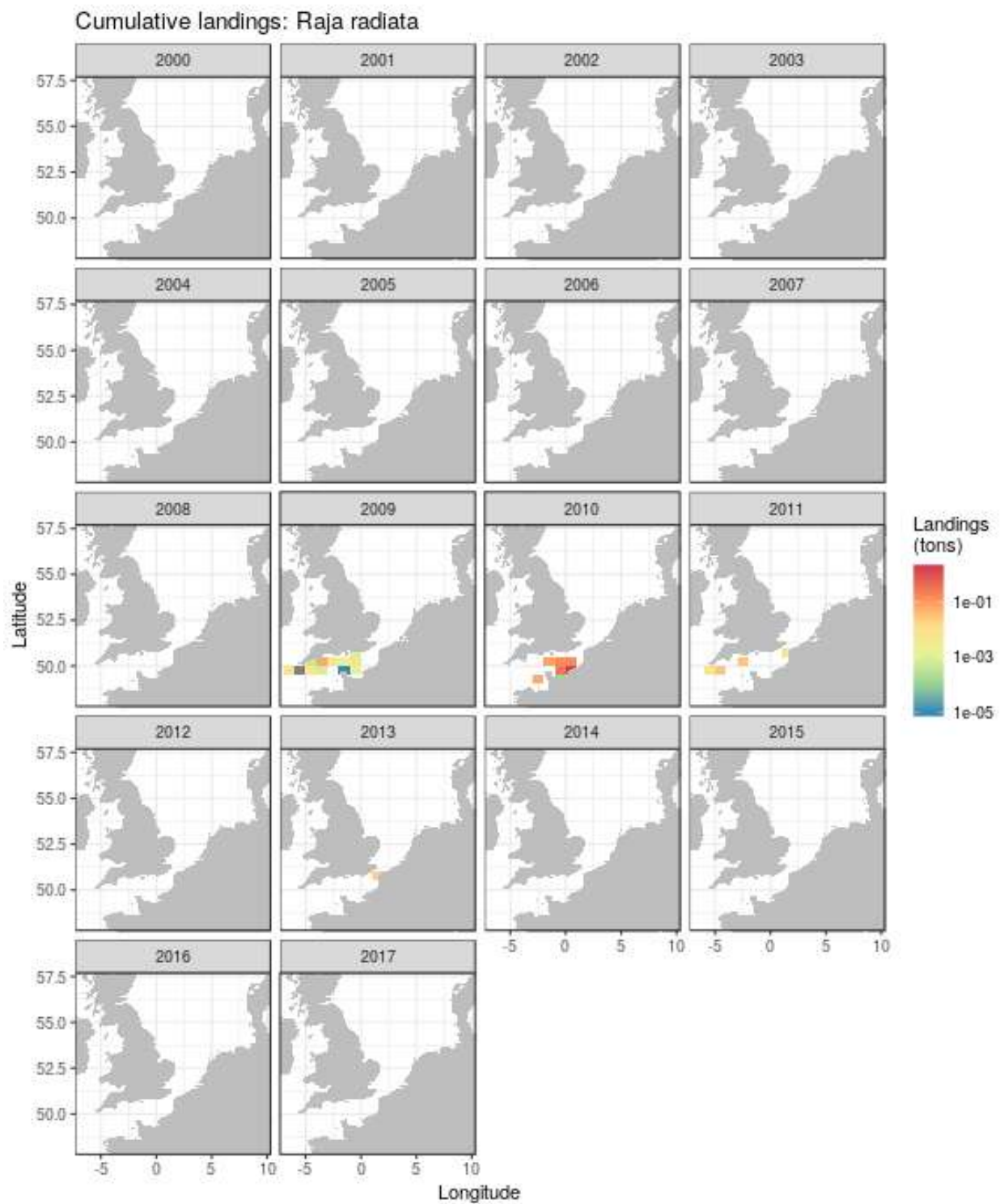


Figure 16.7: Sum of landings (in tons) per year. The color scale is log 10 transformed.

16.2.1.4 Annual landings for gear category trawler

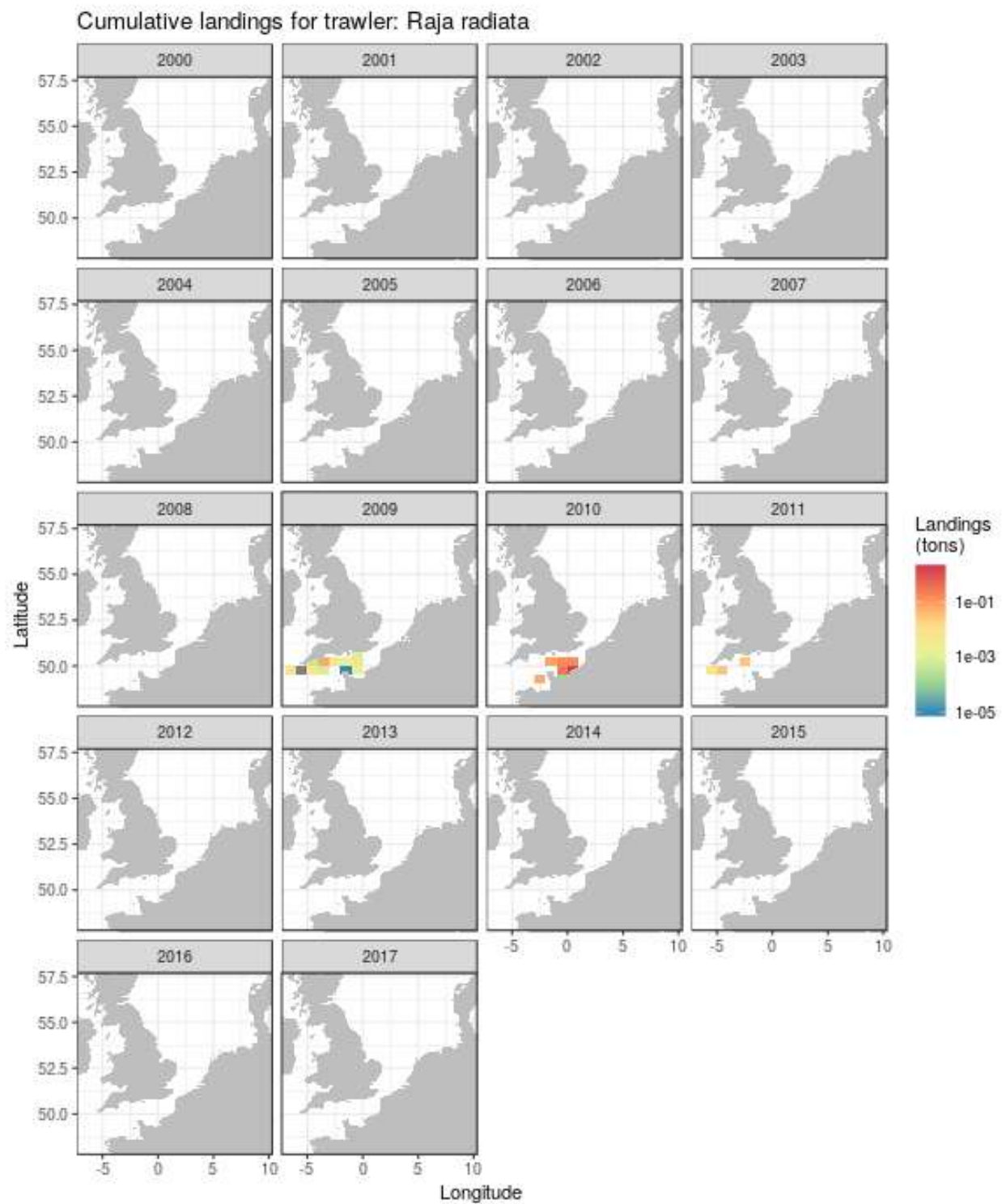


Figure 16.8: Sum of landings (in tons) per year. The color scale is log 10 transformed.

16.2.1.5 Annual landings for gear category nets

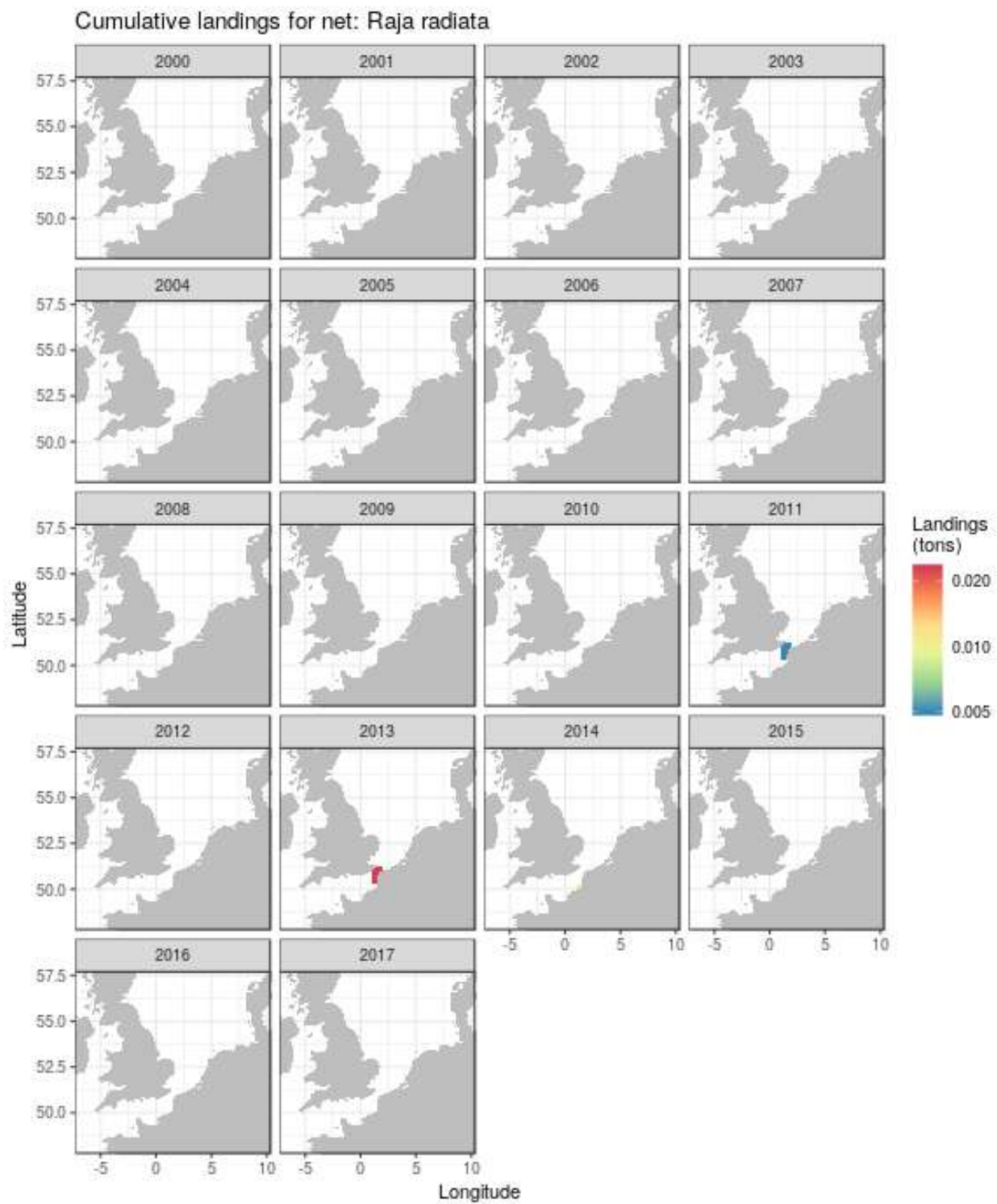


Figure 16.9: Sum of landings (in tons) per year. The color scale is log 10 transformed.

16.2.1.6 Annual landings for gear category lines

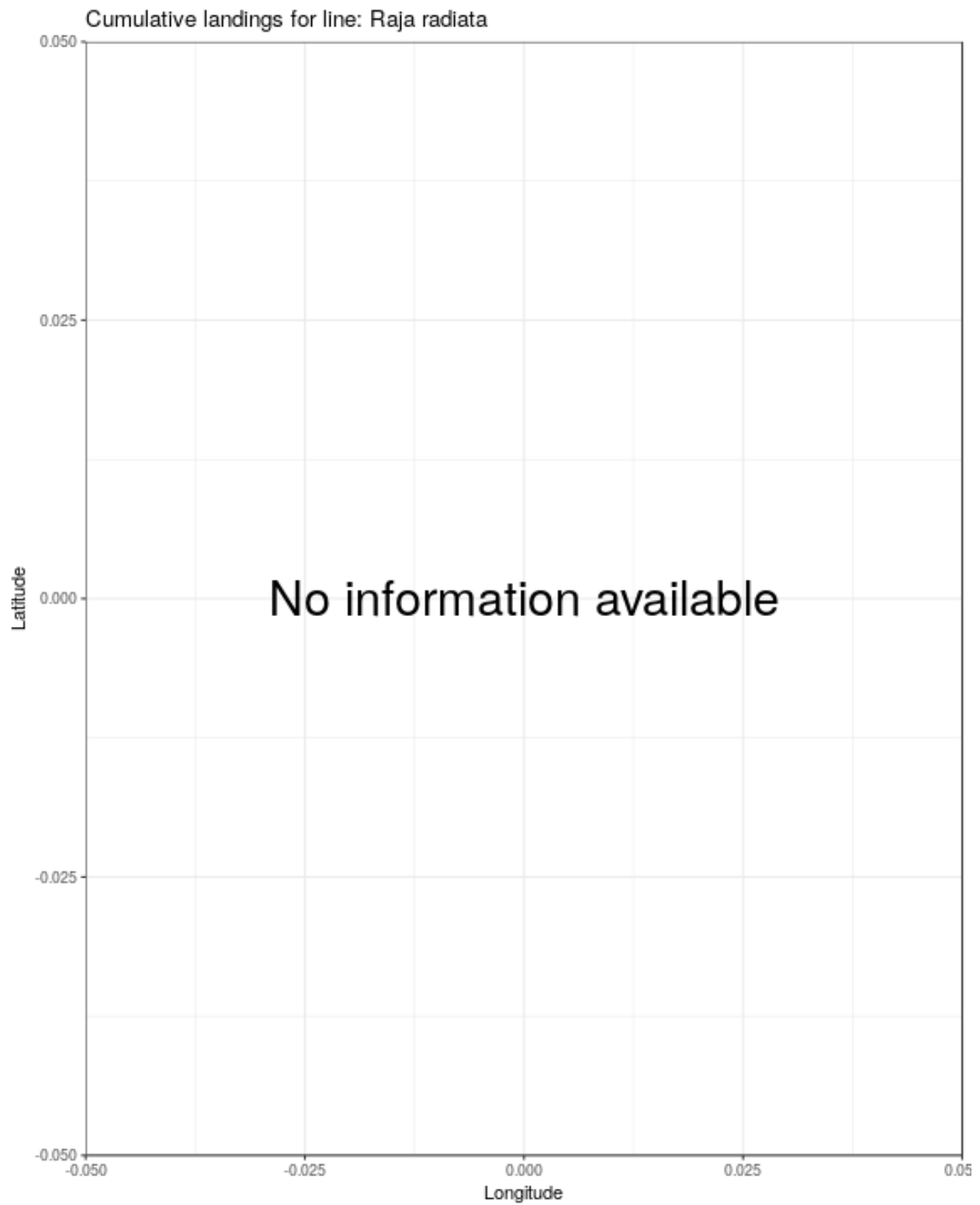


Figure 16.10: Sum of landings (in tons) per year. The color scale is log 10 transformed.

16.2.1.7 Annual landings for gear category other

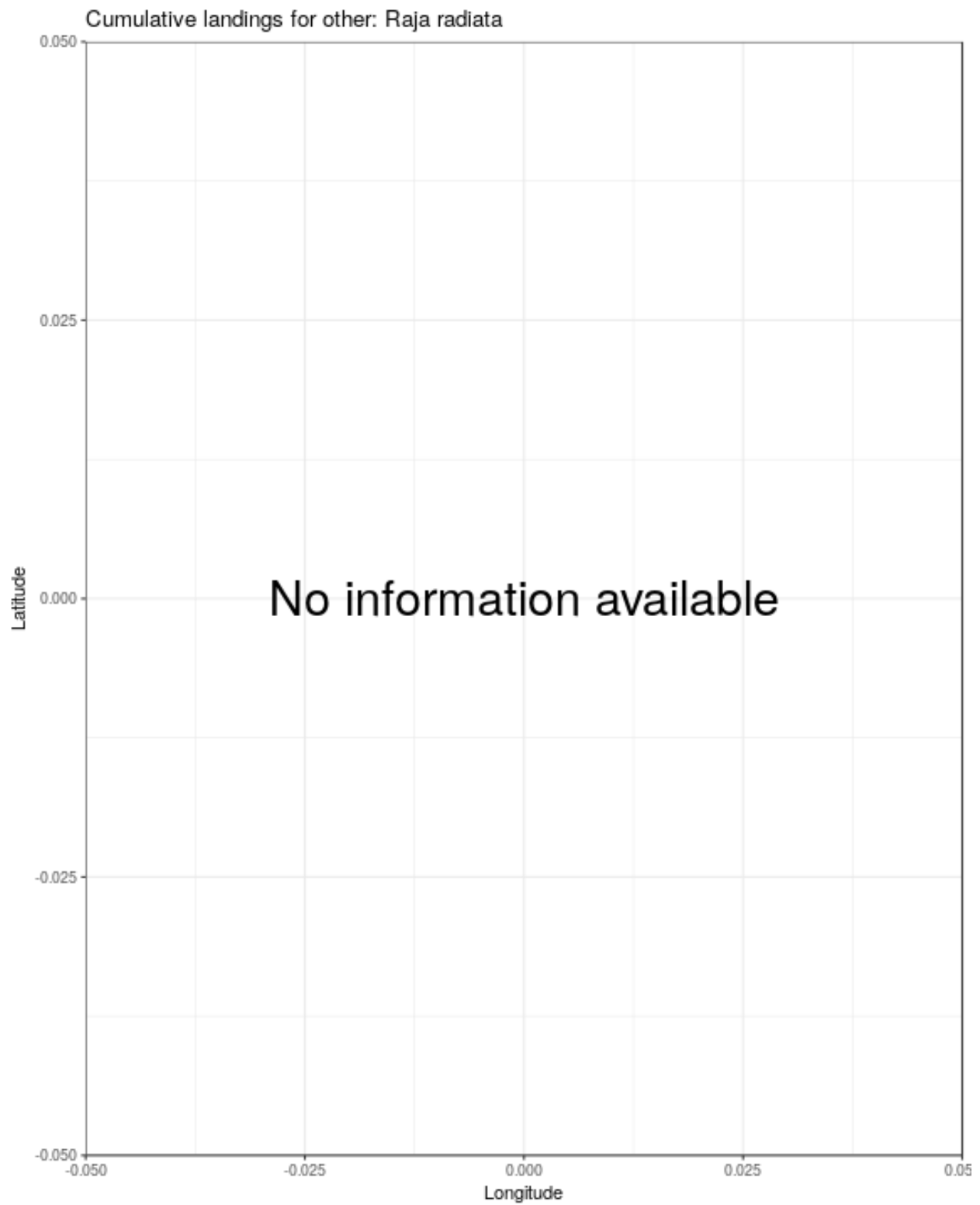


Figure 16.11: Sum of landings (in tons) per year. The color scale is log 10 transformed.

16.2.2 Commercial sampling

16.2.2.1 Landings and discards per unit effort and country

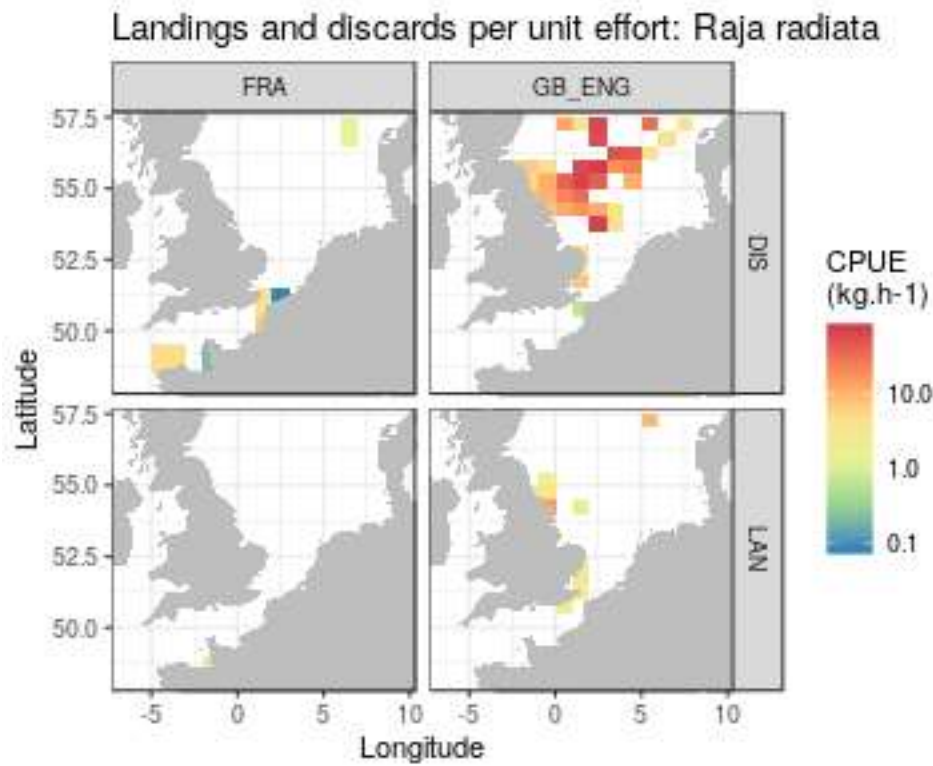


Figure 16.12: Average landing (LAN) and discard (DIS) per hour fishing by country (FRA: France, GB_ENG: England). The color scale is log 10 transformed.

16.2.2.2 Annual catch per unit effort

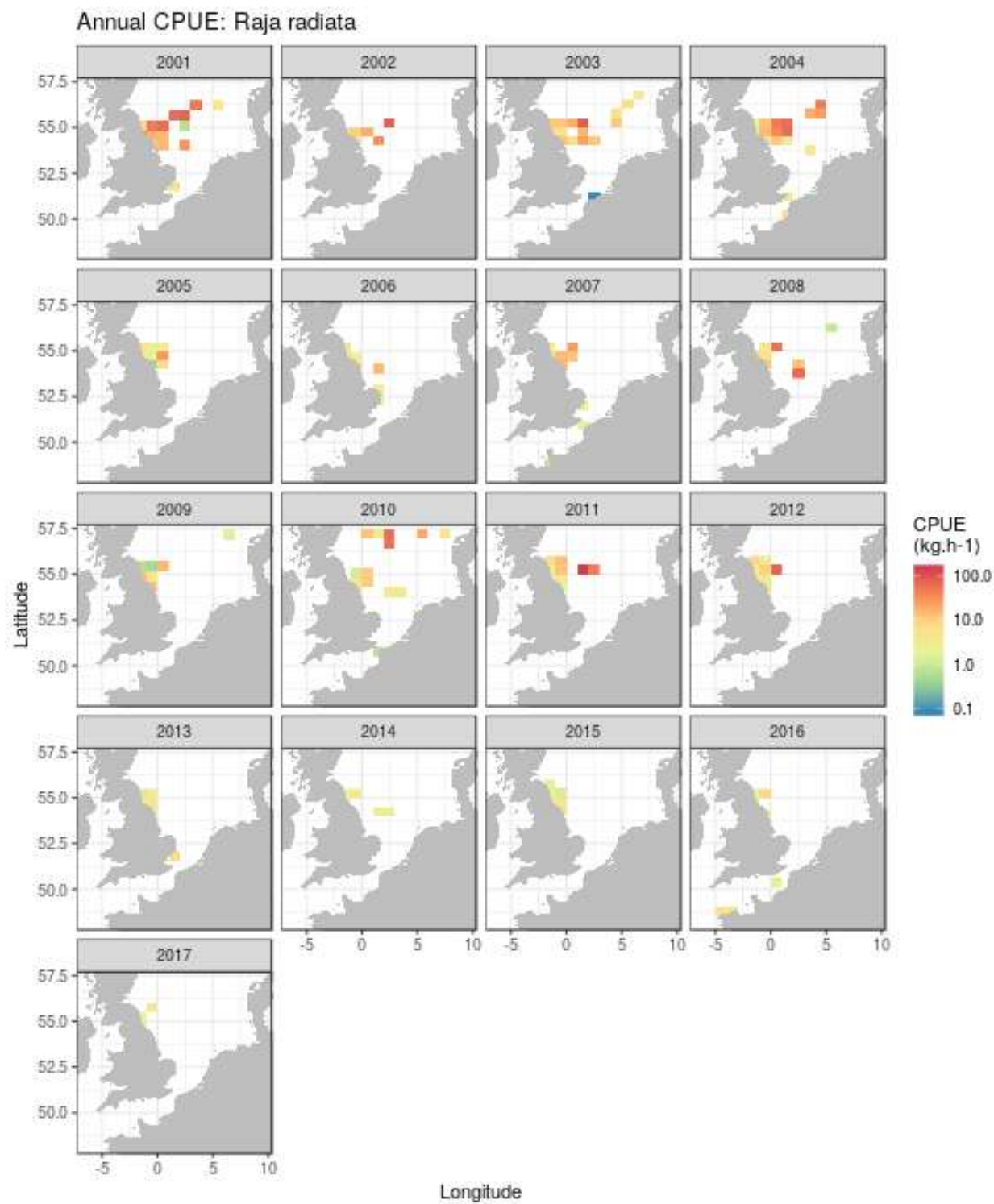


Figure 16.13: Catches per unit effort per year. The color scale is log 10 transformed.

16.2.2.3 Annual catch per unit effort for gear category trawler

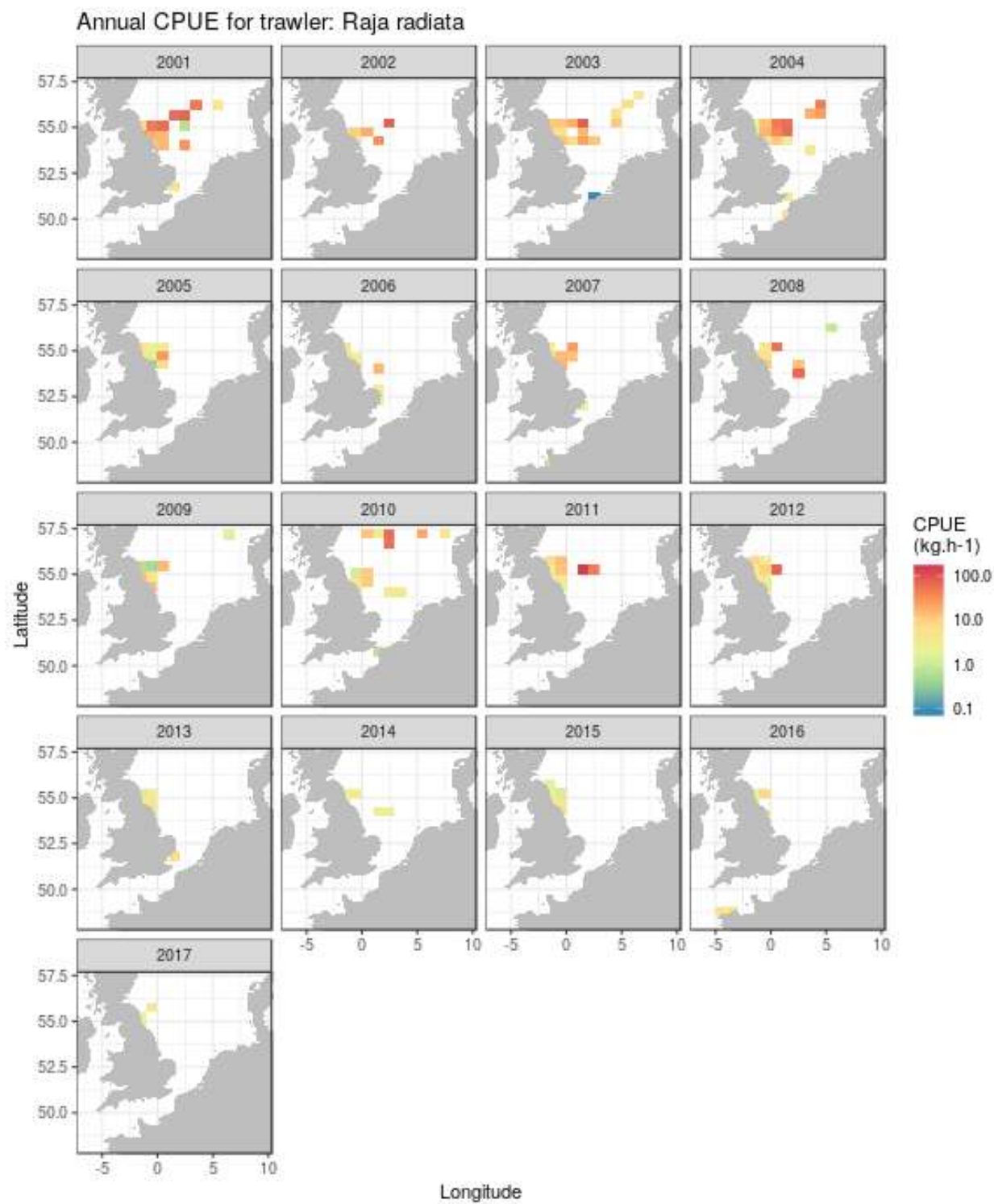


Figure 16.14: Catches per unit effort per year for trawler. The color scale is log 10 transformed.

16.2.2.4 Annual catch per unit effort for gear category net

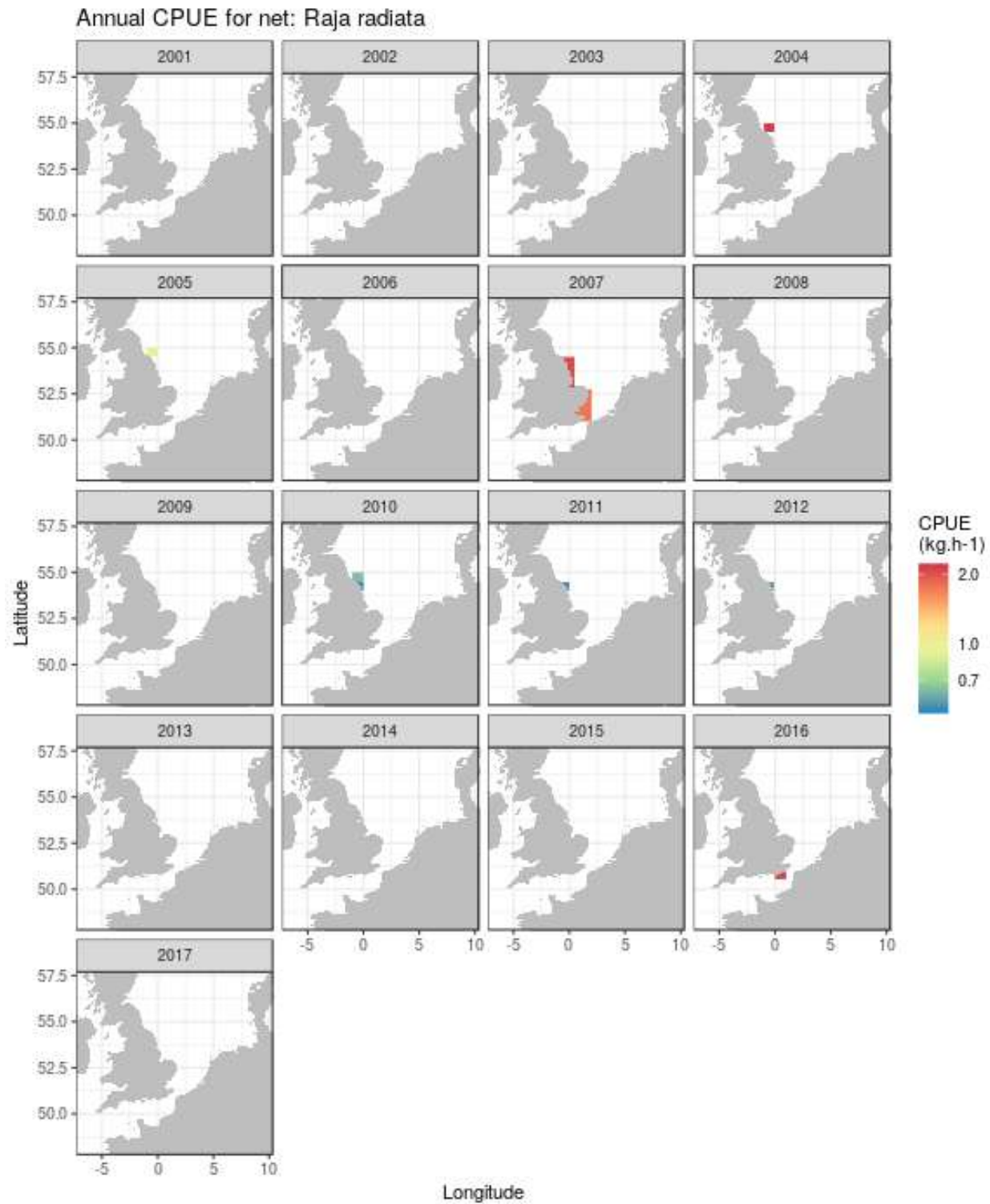


Figure 16.15: Catches per unit effort per year for net. The color scale is log 10 transformed.

16.2.2.5 Annual catch per unit effort for gear category line



Figure 16.16: Catches per unit effort per year for line. The color scale is log 10 transformed.

16.2.2.6 Annual catch per unit effort for gear category other

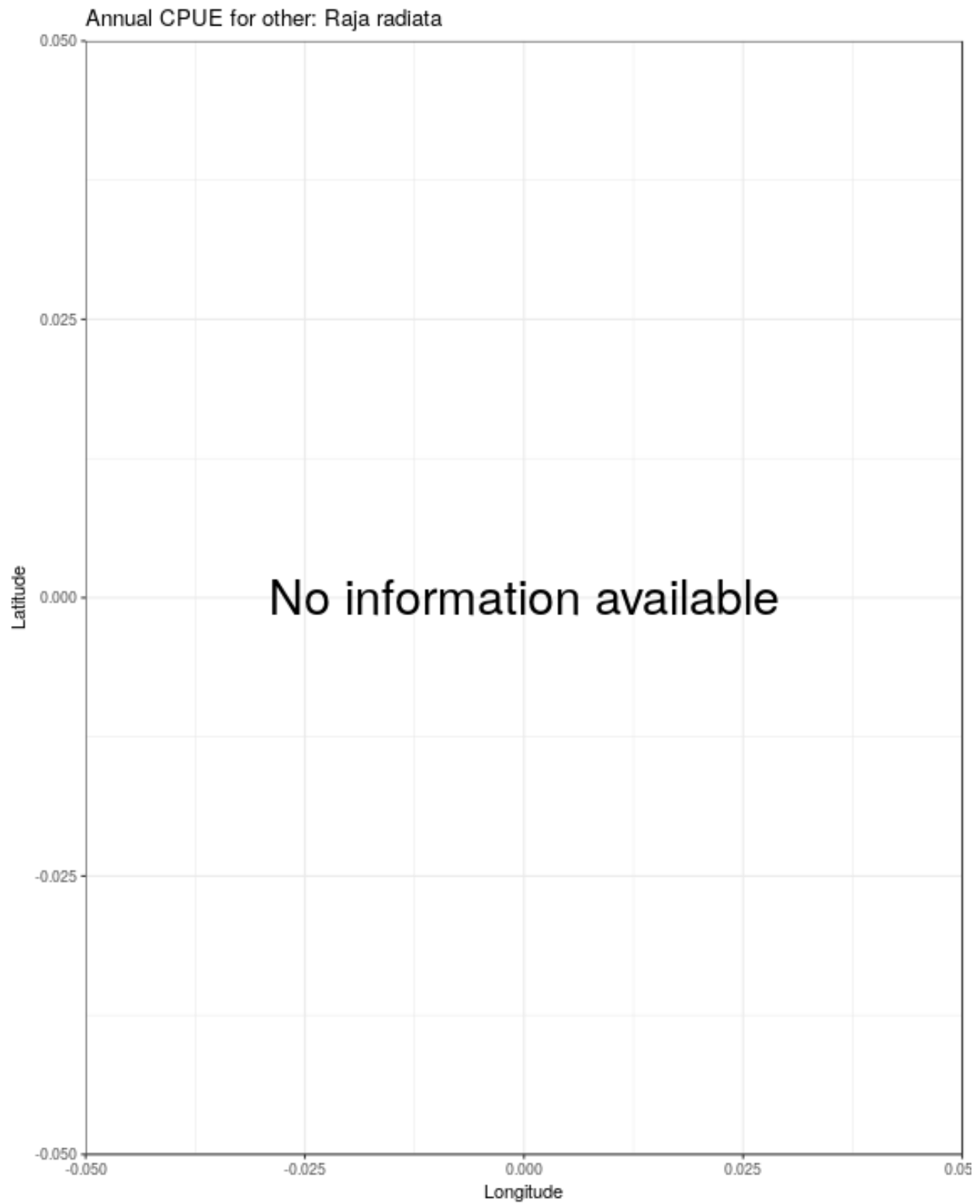


Figure 16.17: Catches per unit effort per year for other. The color scale is log 10 transformed.

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