Incentive-based rather than top-down

Fine spatio-temporal scale

Uses new technologies

Integrates commercial species targets
with ecosystem considerations

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Marine Institute and University College Cork, Ireland; University of Essex, UK

Real Time Incentives (RTI)

(… analogous to Real Time Closures…)

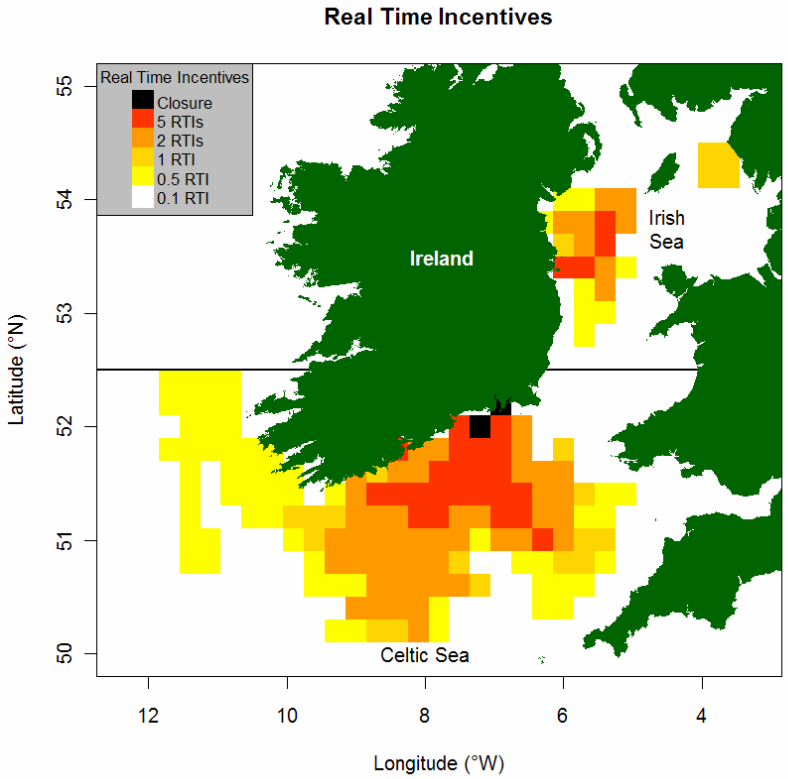
- Each vessel gets an (annual) quota of RTI credits;
  - RTI-credits or RTIs can be seen as fishing-impact equivalents

Real Time Incentives

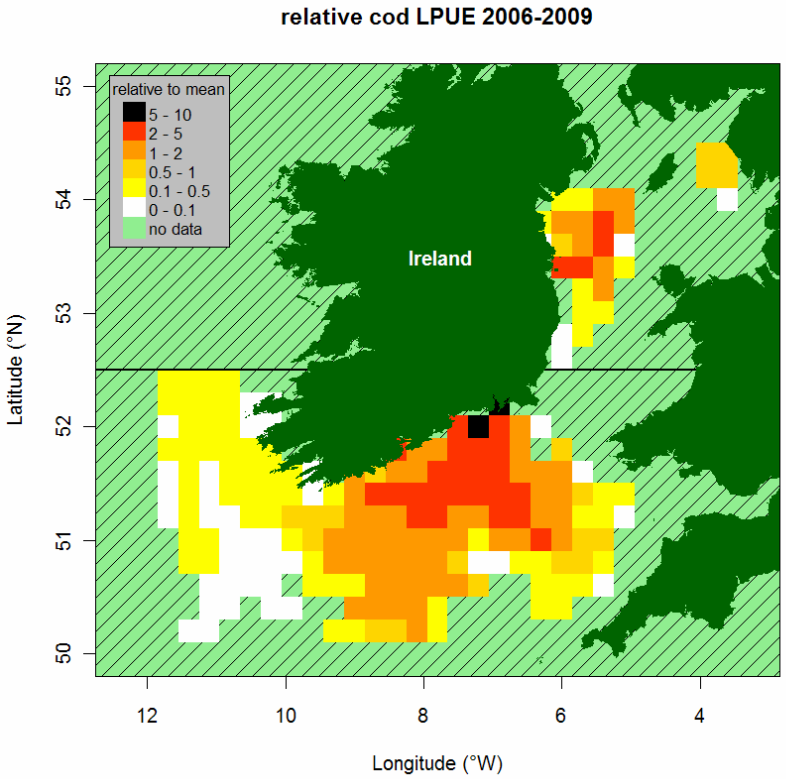
The fisher is free to fish where and when he wants, given the tariffs…

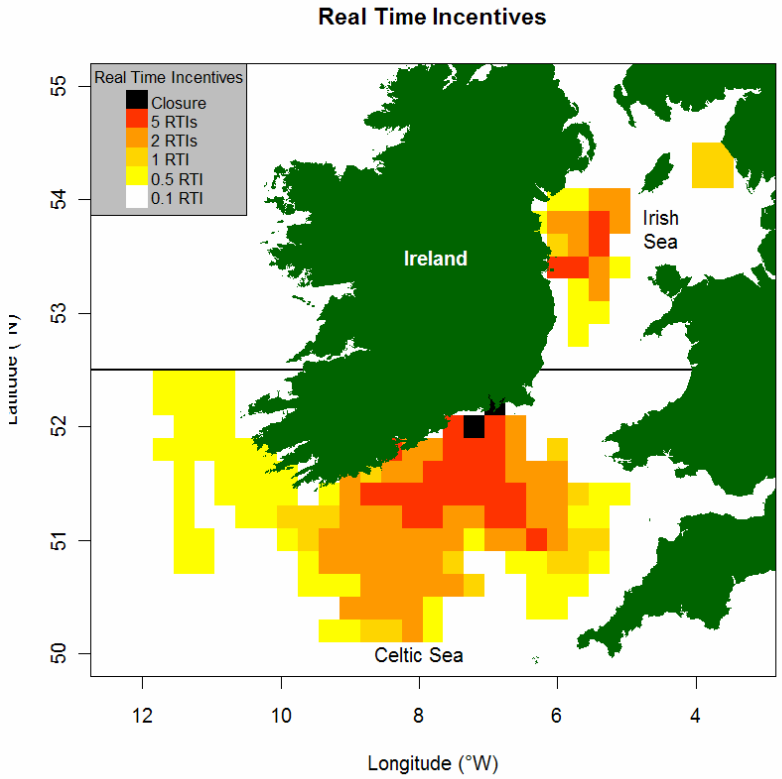
No catch/landings

QUOTA



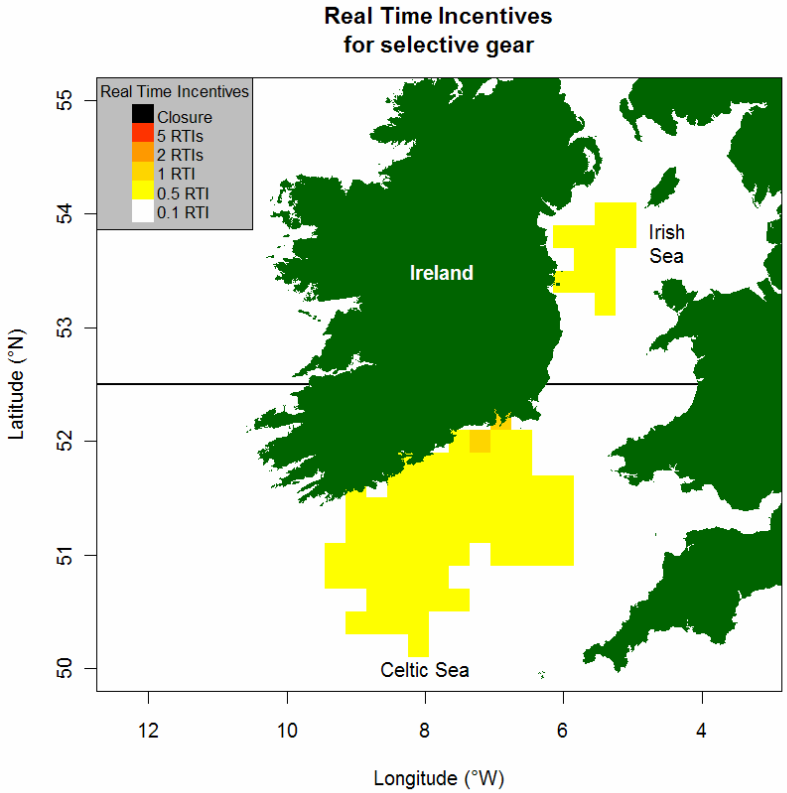
Real Time Incentives

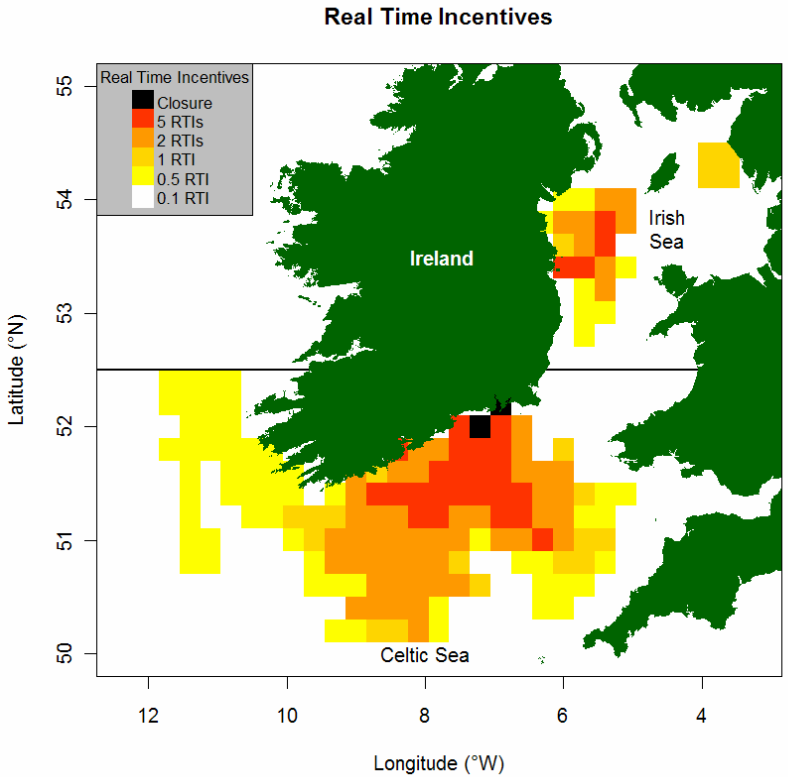




Real Time Incentives

- Different tariffs when fishing with selective gear
  - e.g. for which cod vulnerability is 10% relative to ‘default’ gear





Discards of prohibited and no-catch elasmobranchs

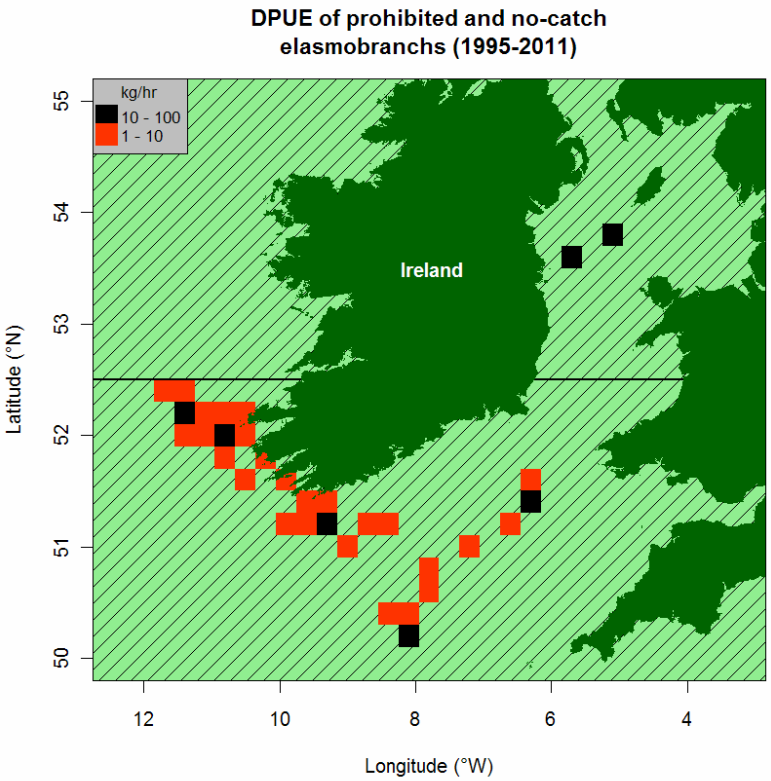
Prohibited:

- Common skate – *Dipturia batis*
- Longnose skate – *D. oxyrinchus*
- White skate – *Rostroraja alba*
- Angel shark – *Squalina squalina*

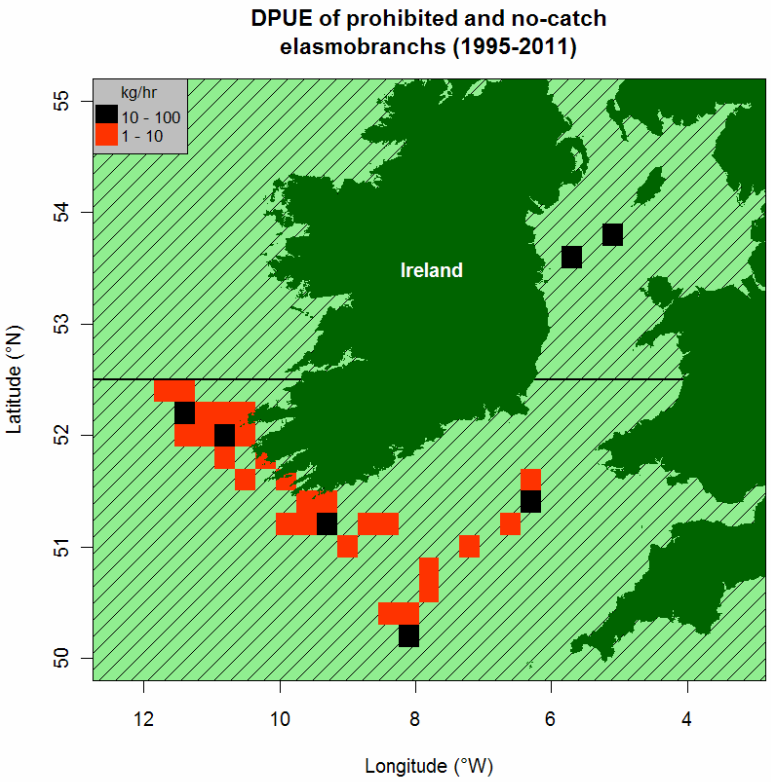
No catch species:

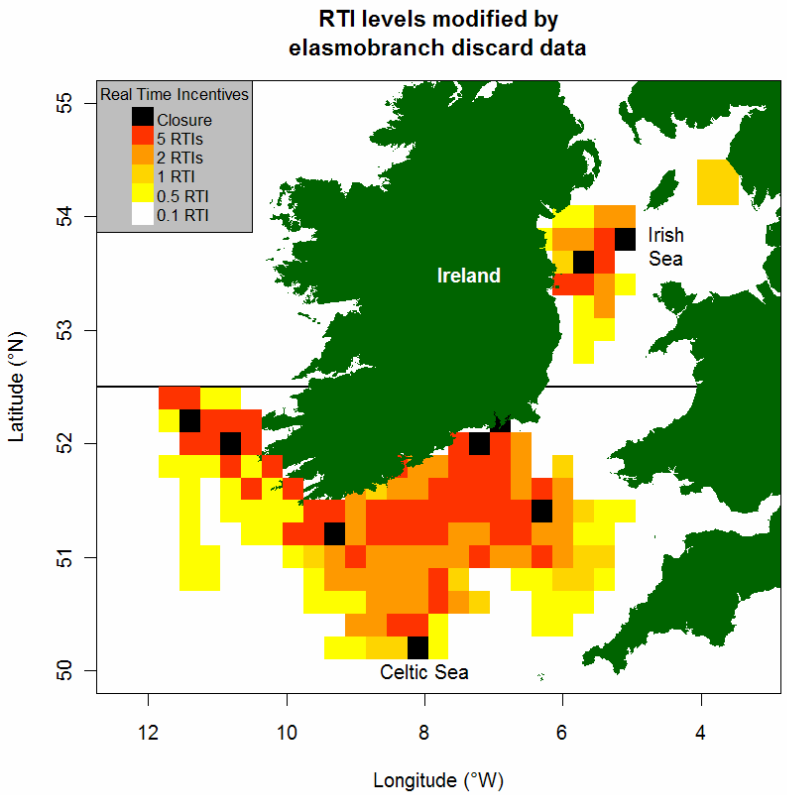
- Spurdog – *Squalus acanthias*
- Porbeagle – *Lamna nasus*
- Basking shark – *Cetorhinus maximus*

Discards of prohibited and no-catch elasmobranchs

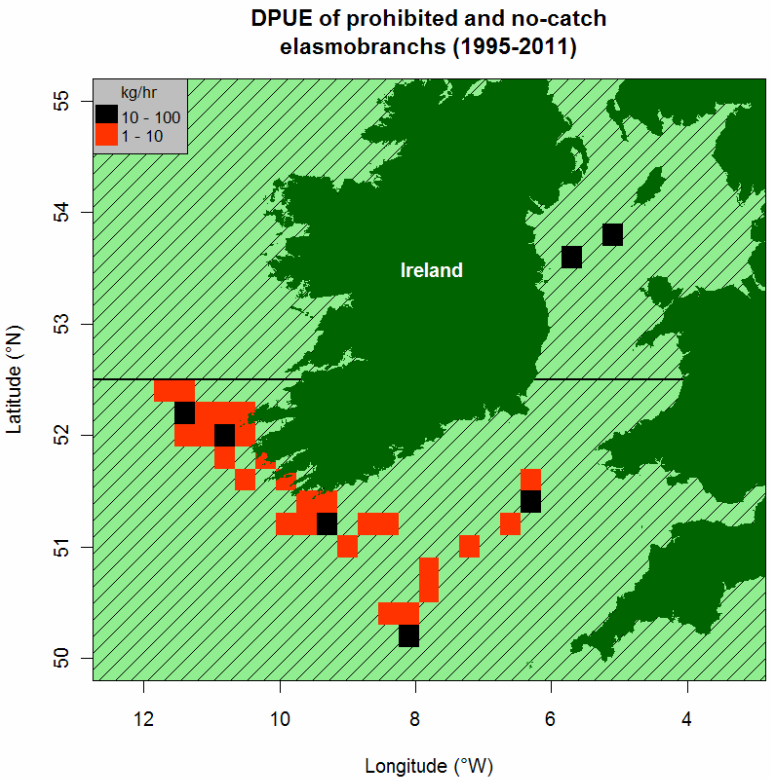


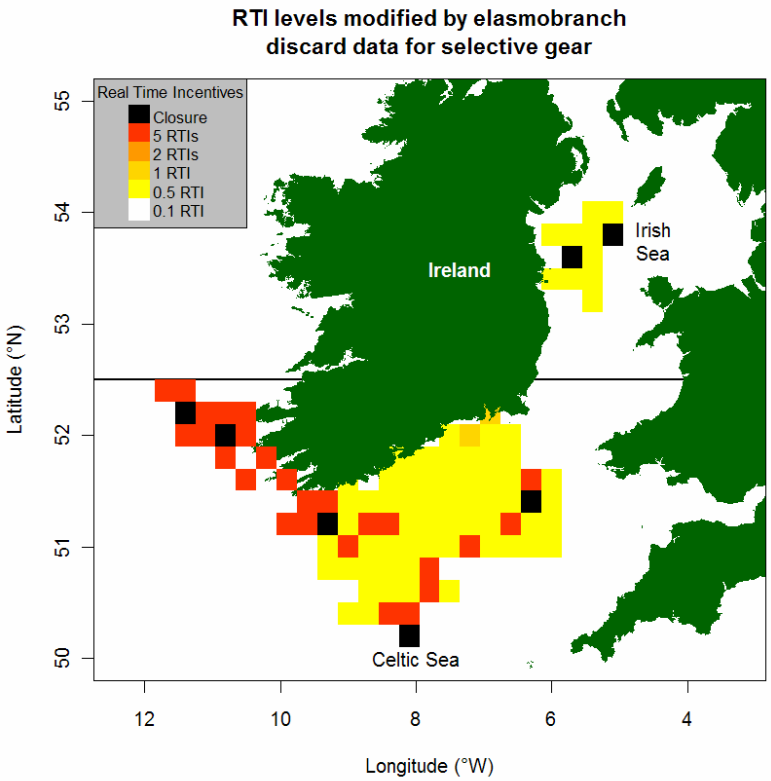
Discards of prohibited and no-catch elasmobranchs





Discards of prohibited and no-catch elasmobranchs

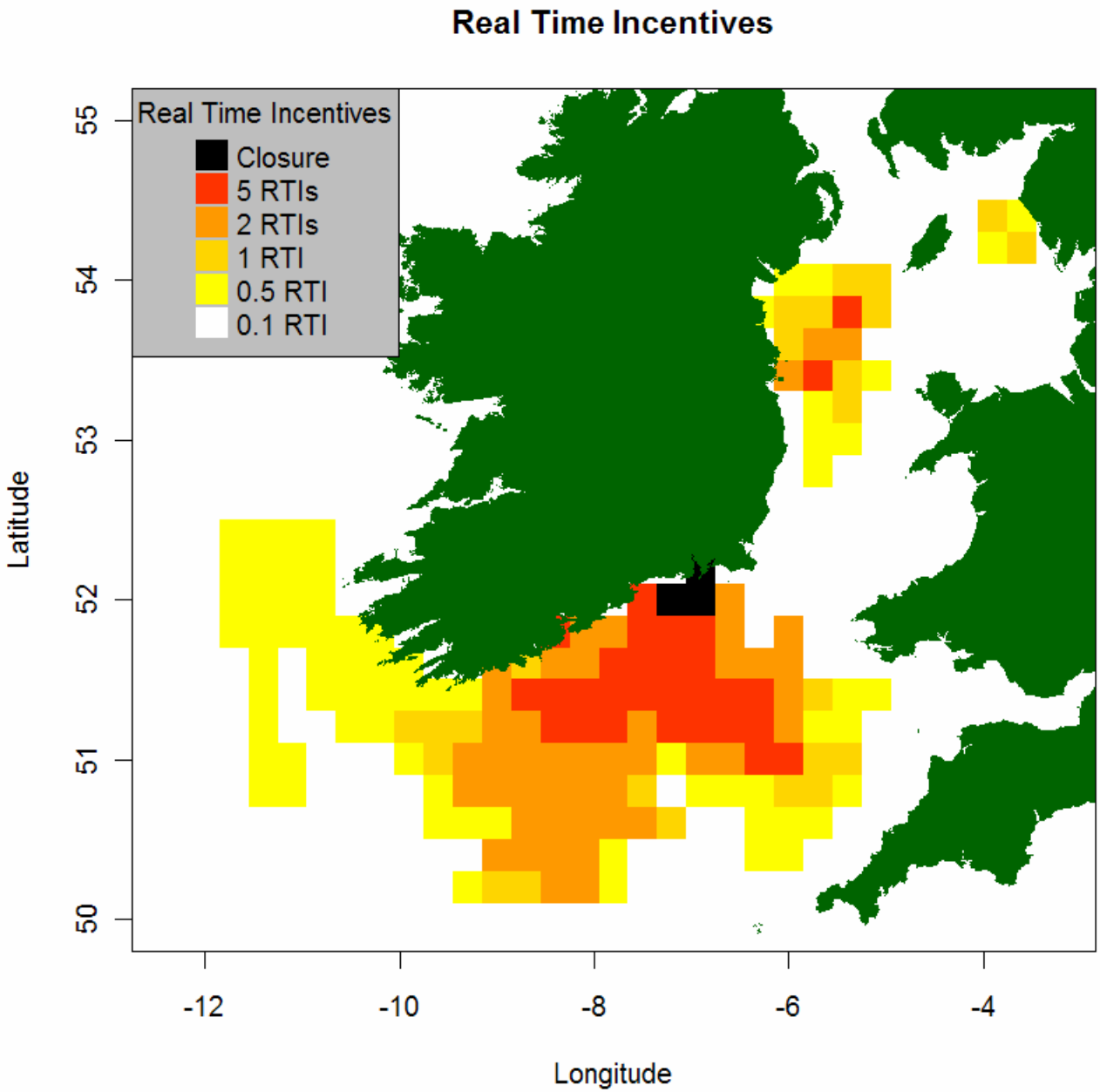




Real Time Incentives

- RTI system does not ***prescribe and forbid***
- ***allows*** fishers to fish wherever and whenever they want
- '***costs***' internalized and have to be '***paid***' by the fishers (in 'reduced fishing opportunities')

Real Time


Real Time Incentives
Real Time Incentives
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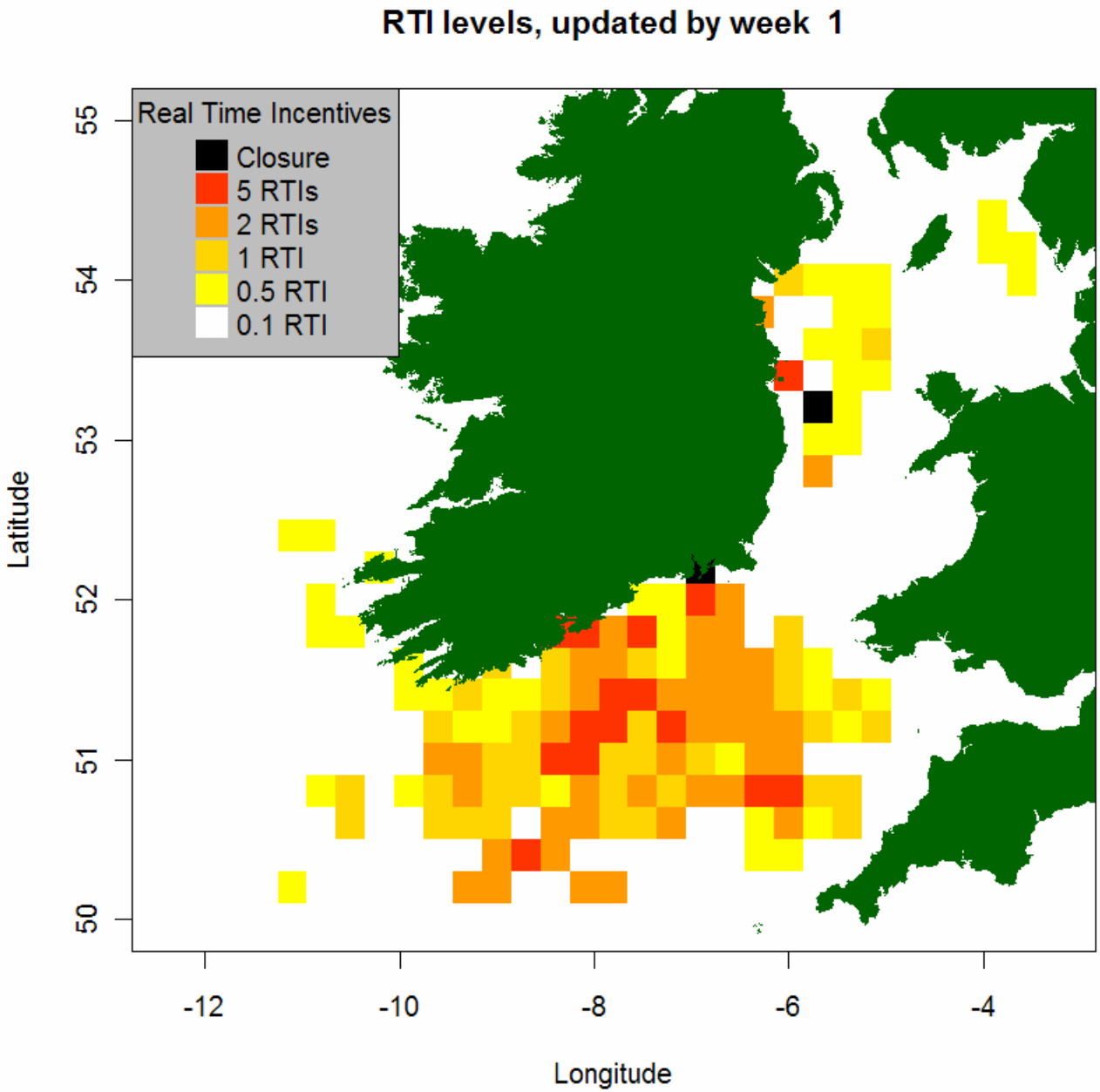
RTI levels, updated by week 1
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Closure
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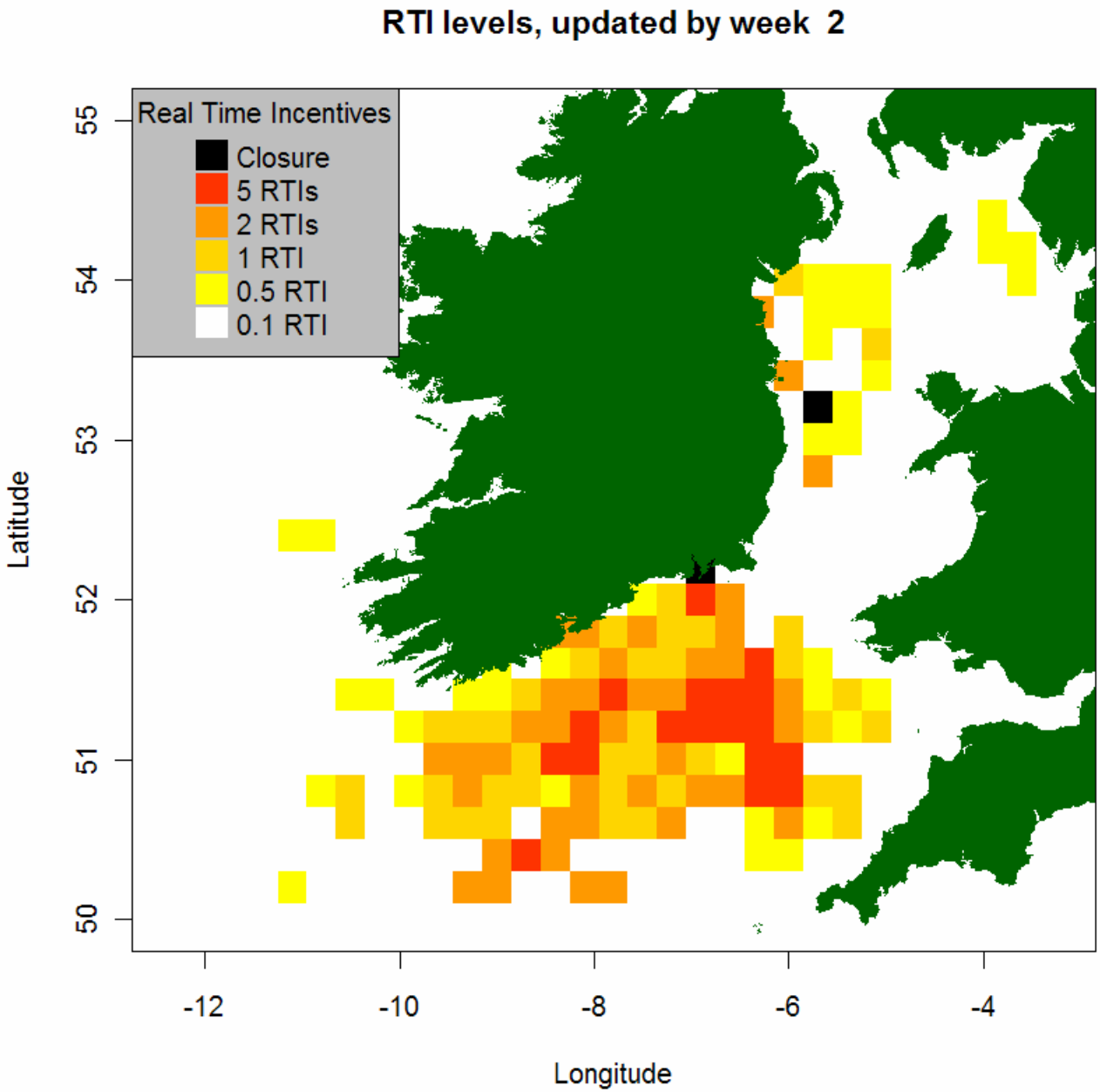
RTI levels, updated by week 2
Real Time Incentives
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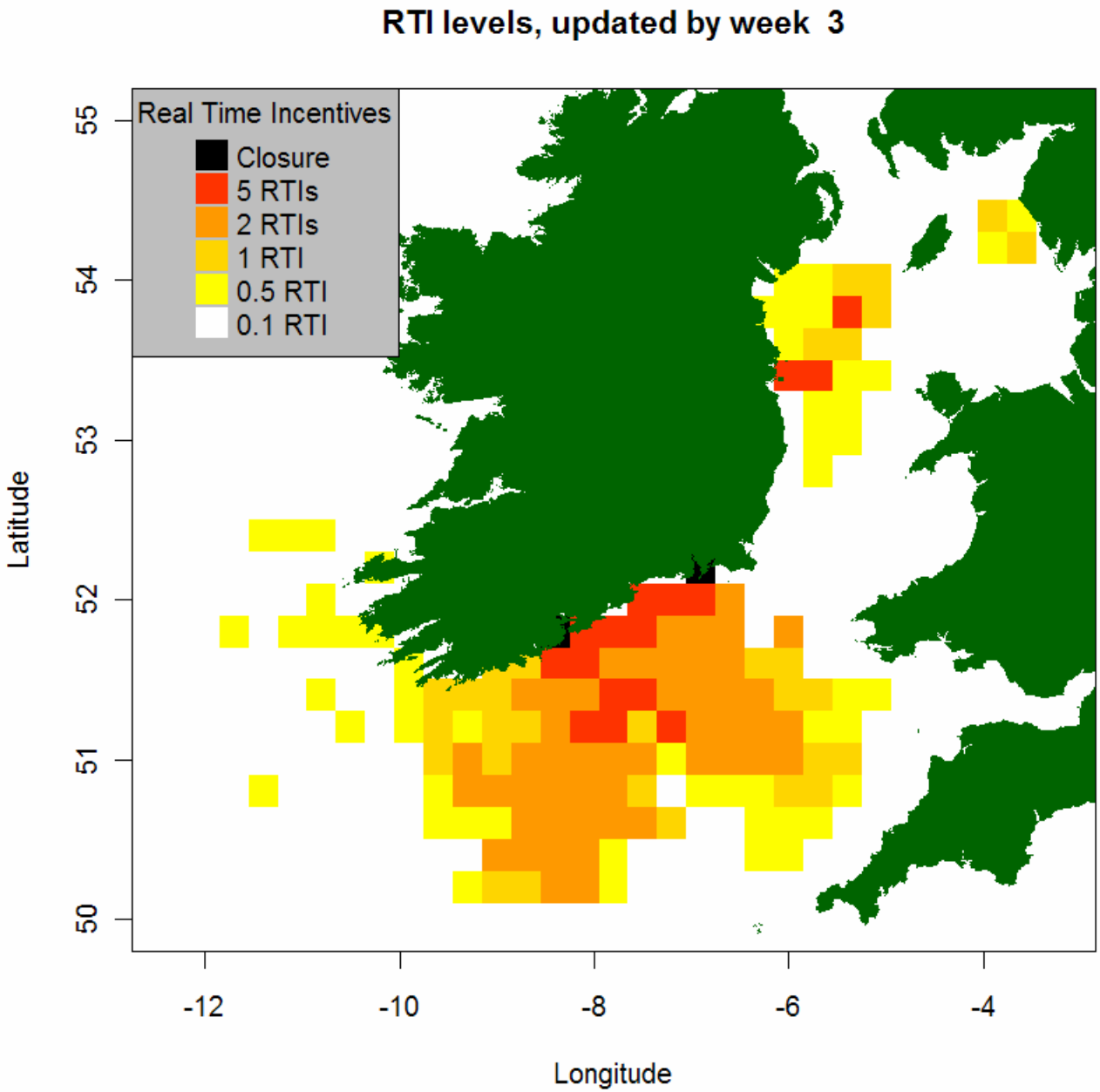
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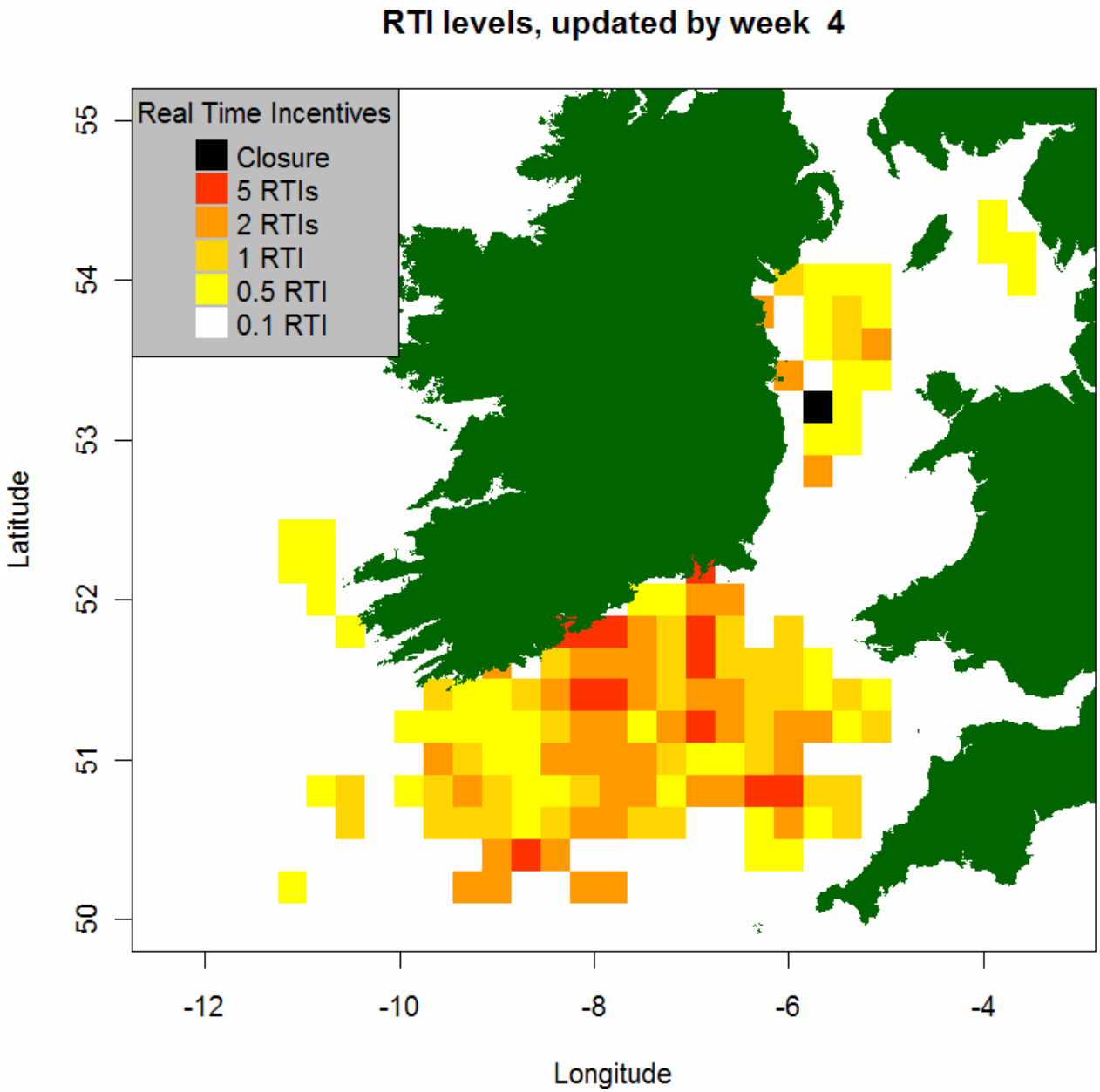
RTI levels, updated by week 4
Real Time Incentives
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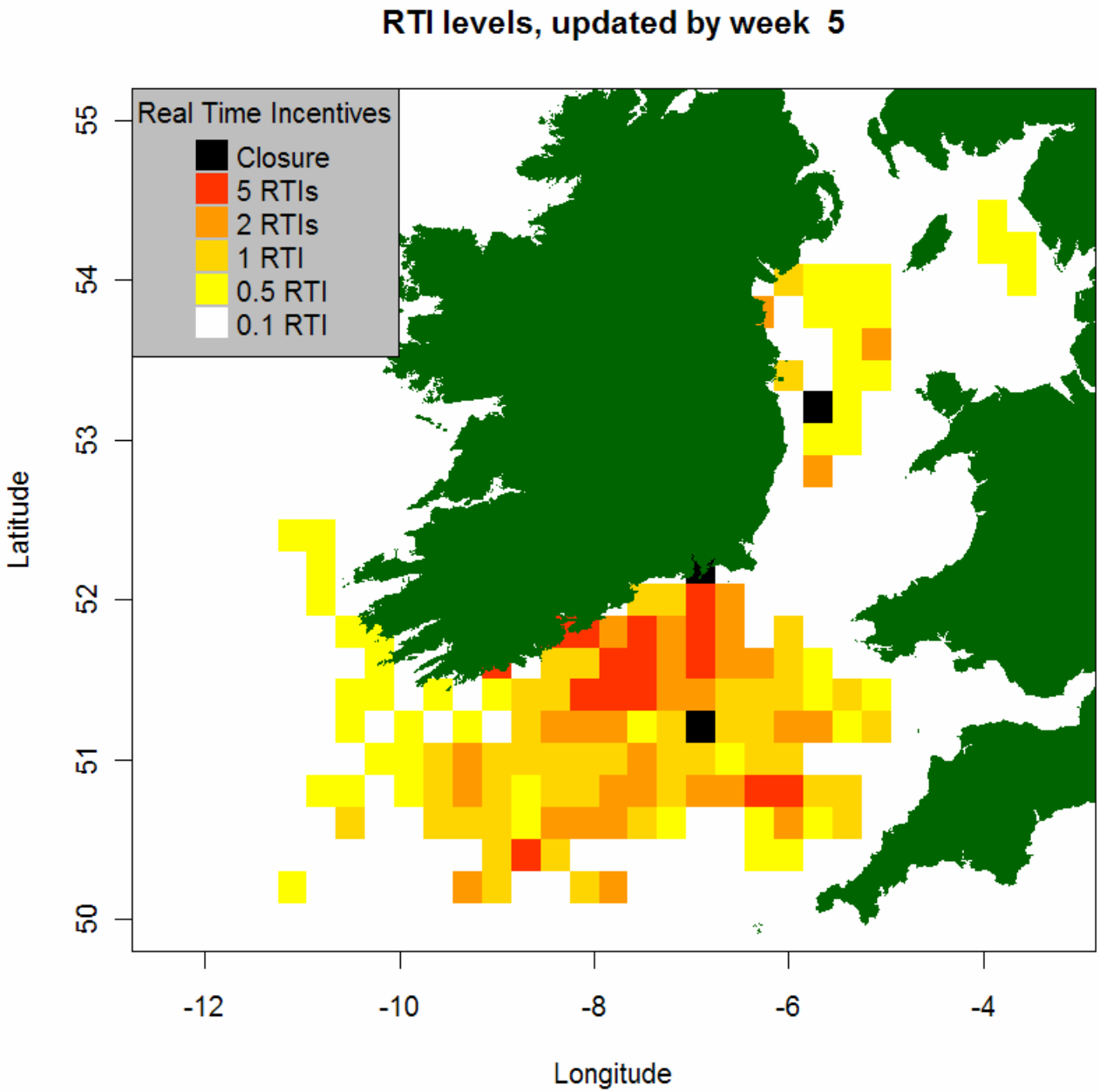
RTI levels, updated by week 5
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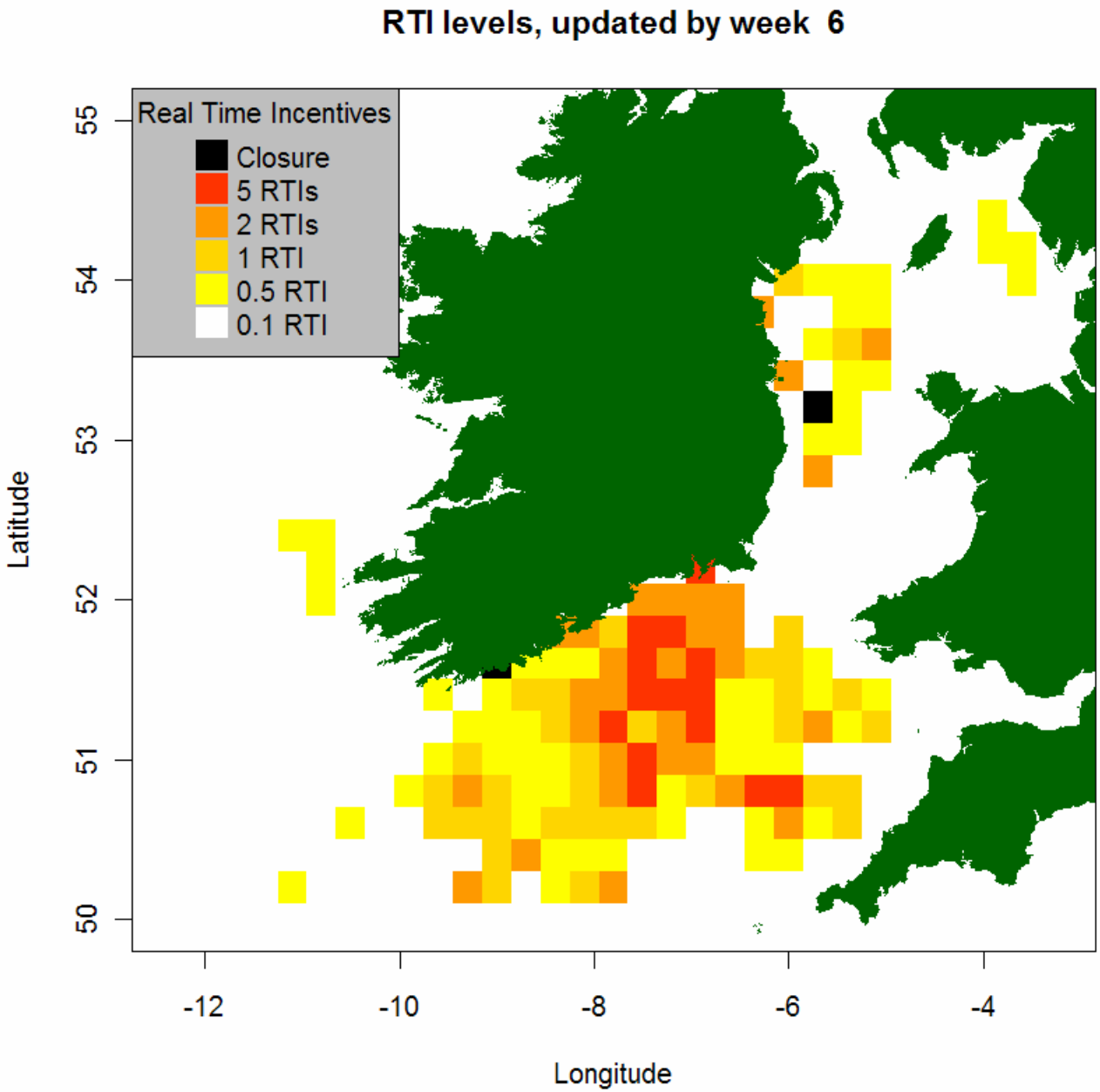
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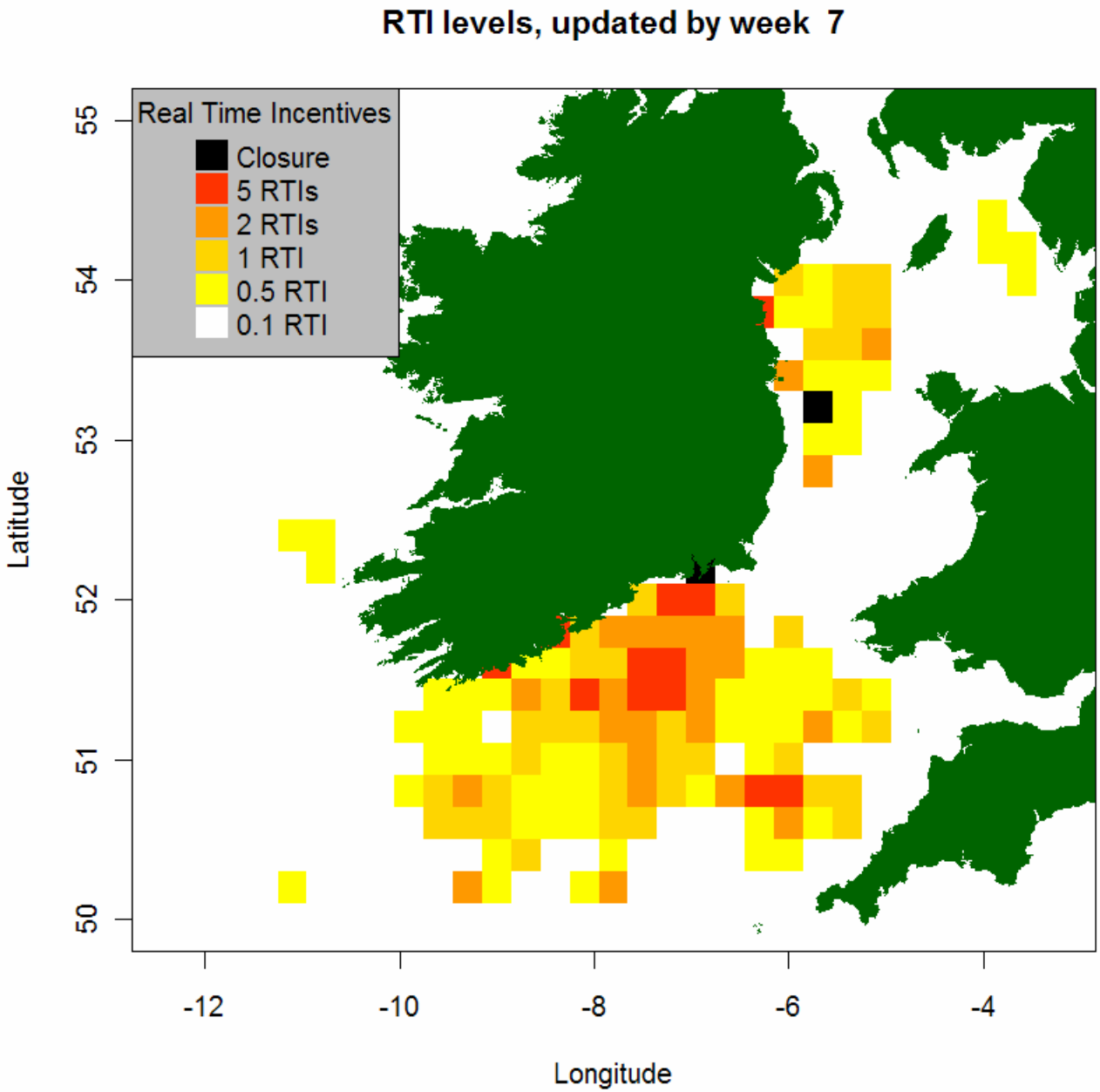
RTI levels, updated by week 7
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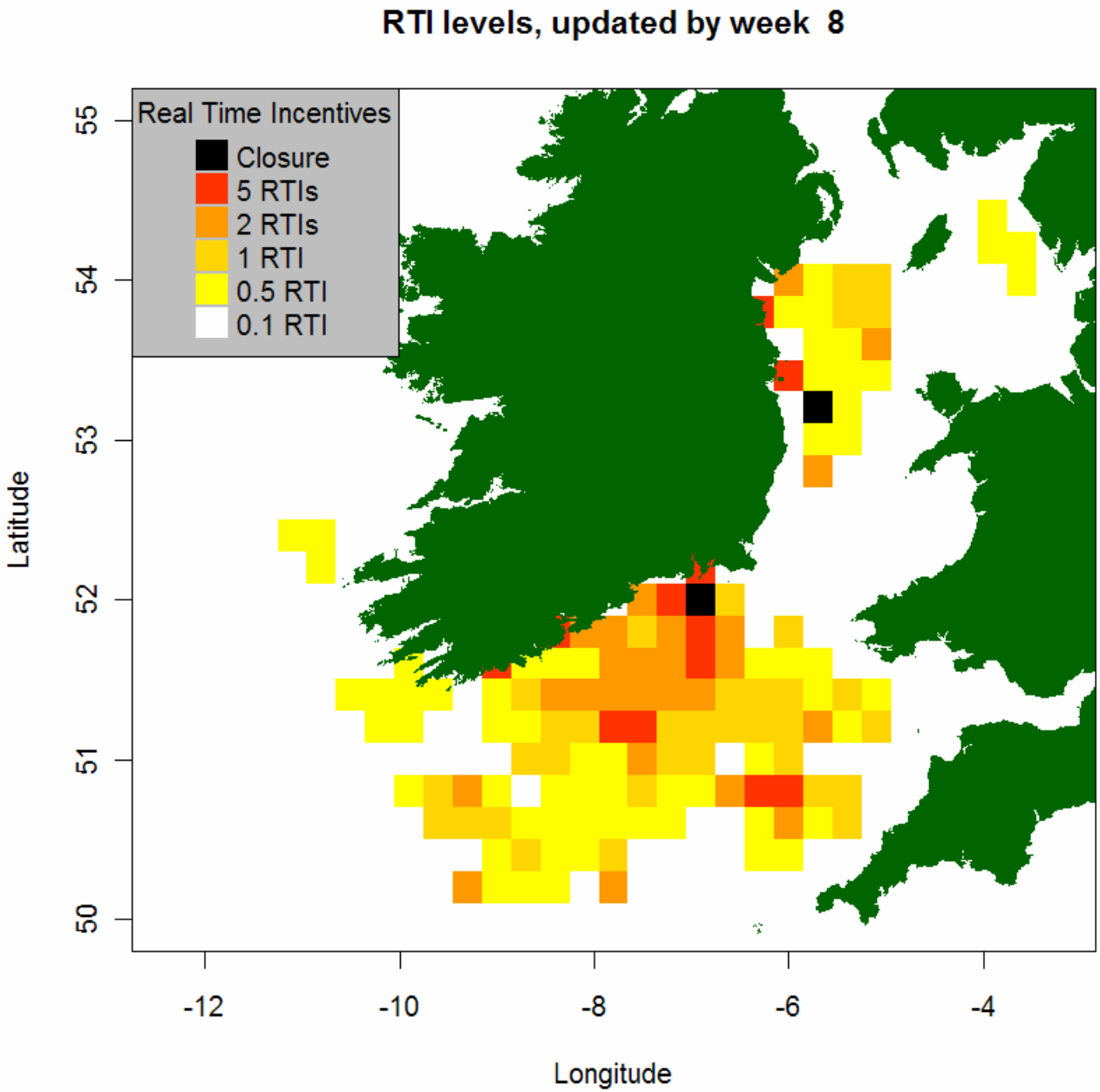
RTI levels, updated by week 8
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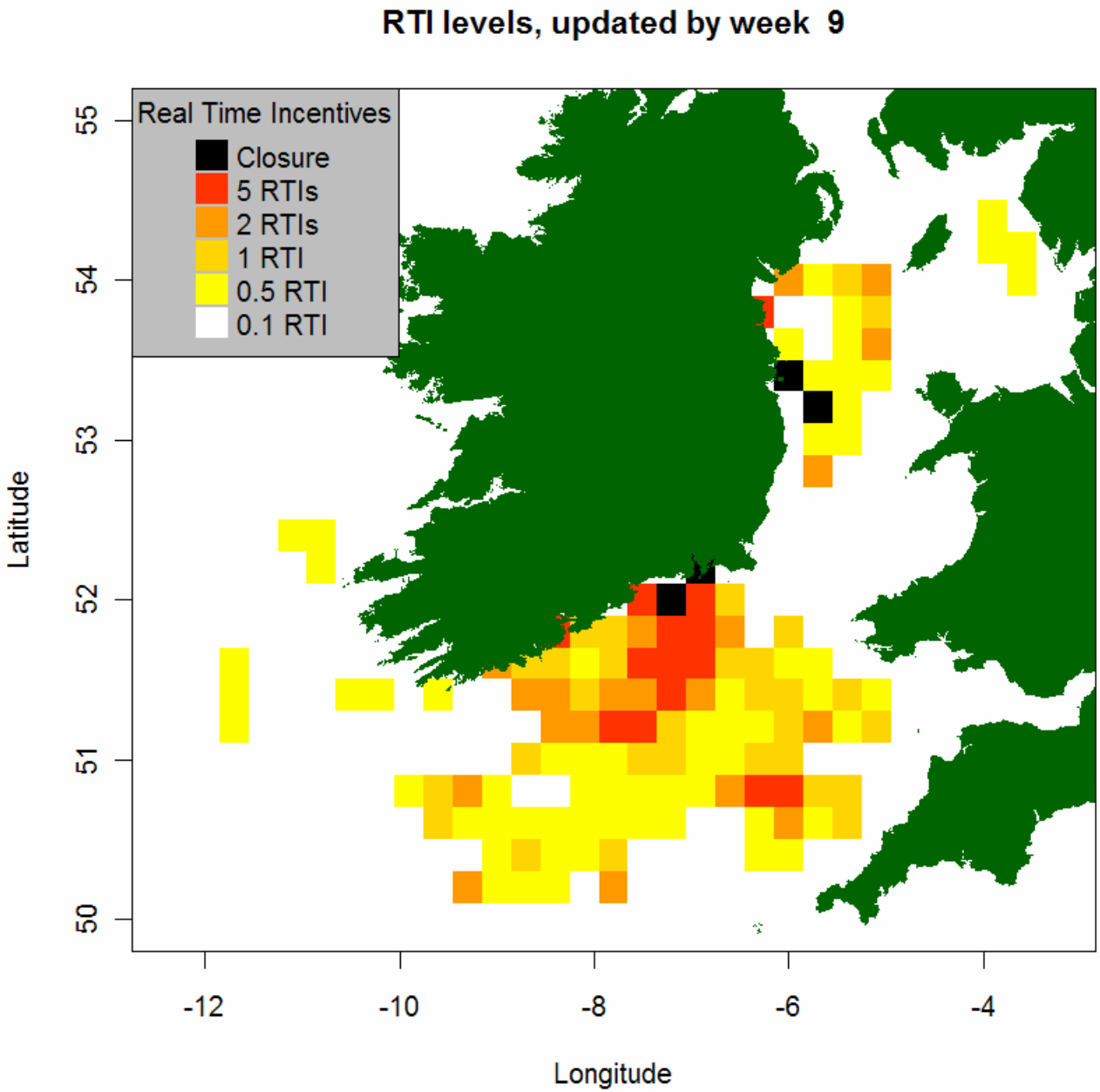
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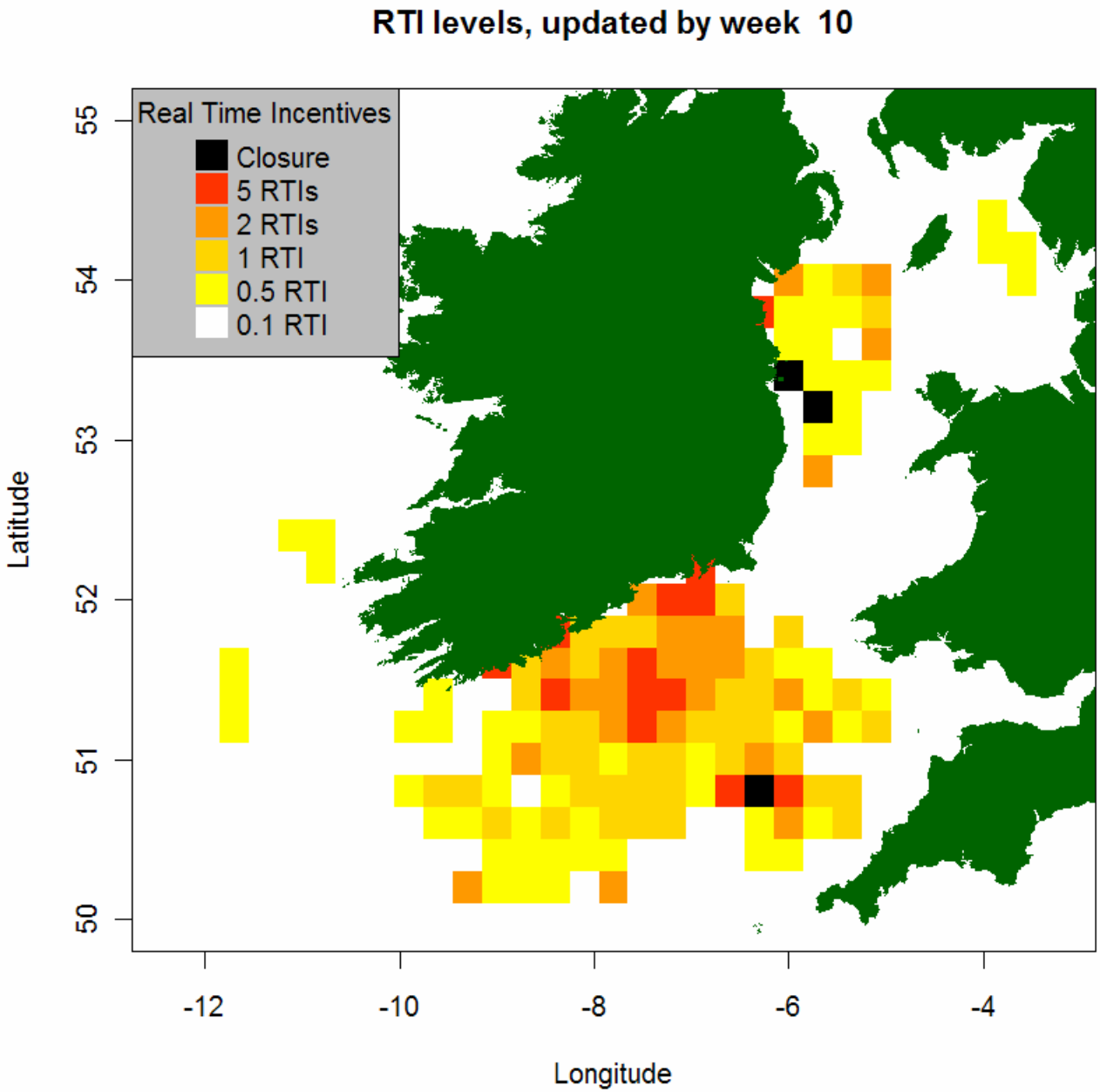
RTI levels, updated by week 10
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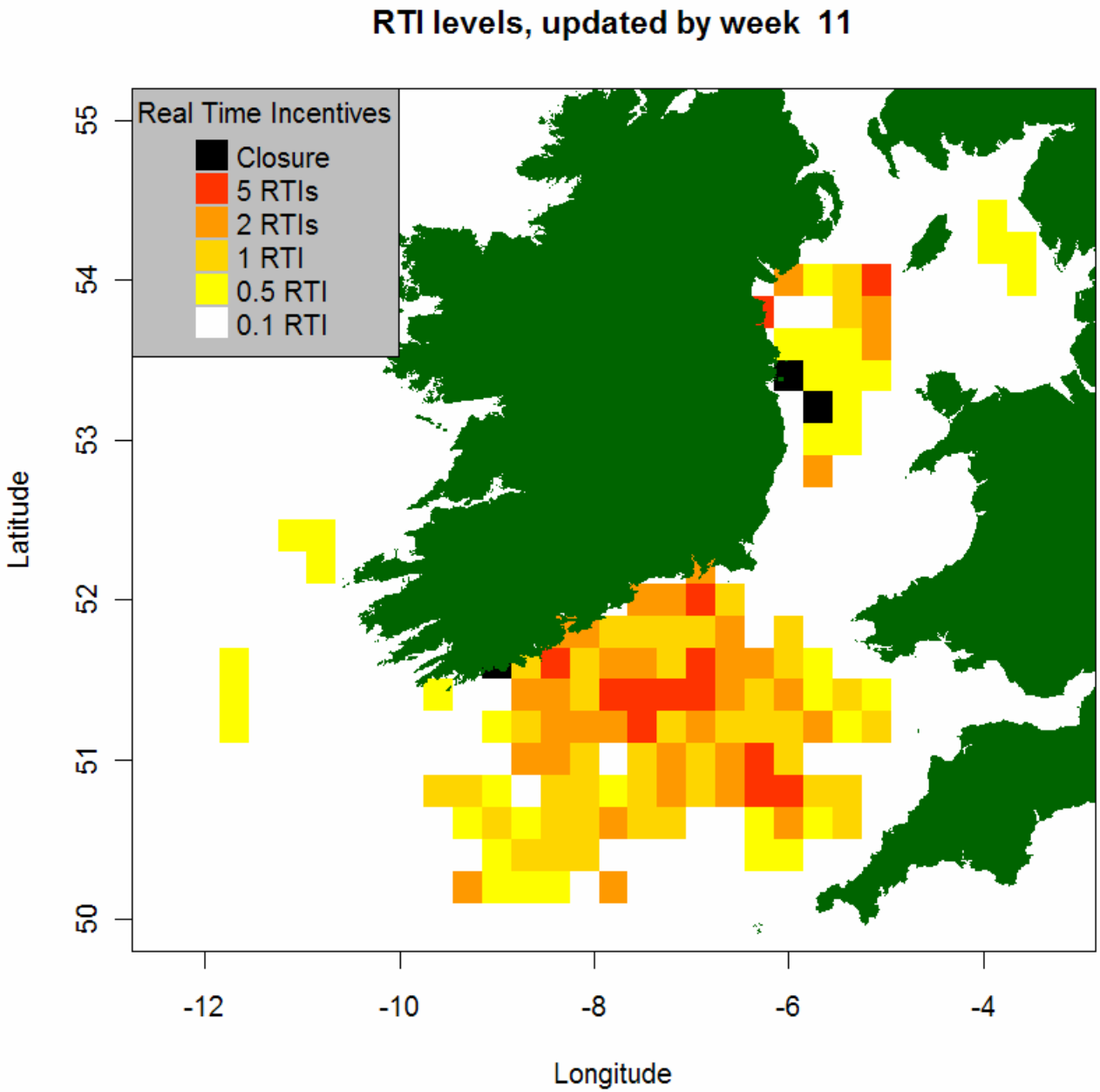
RTI levels, updated by week 11
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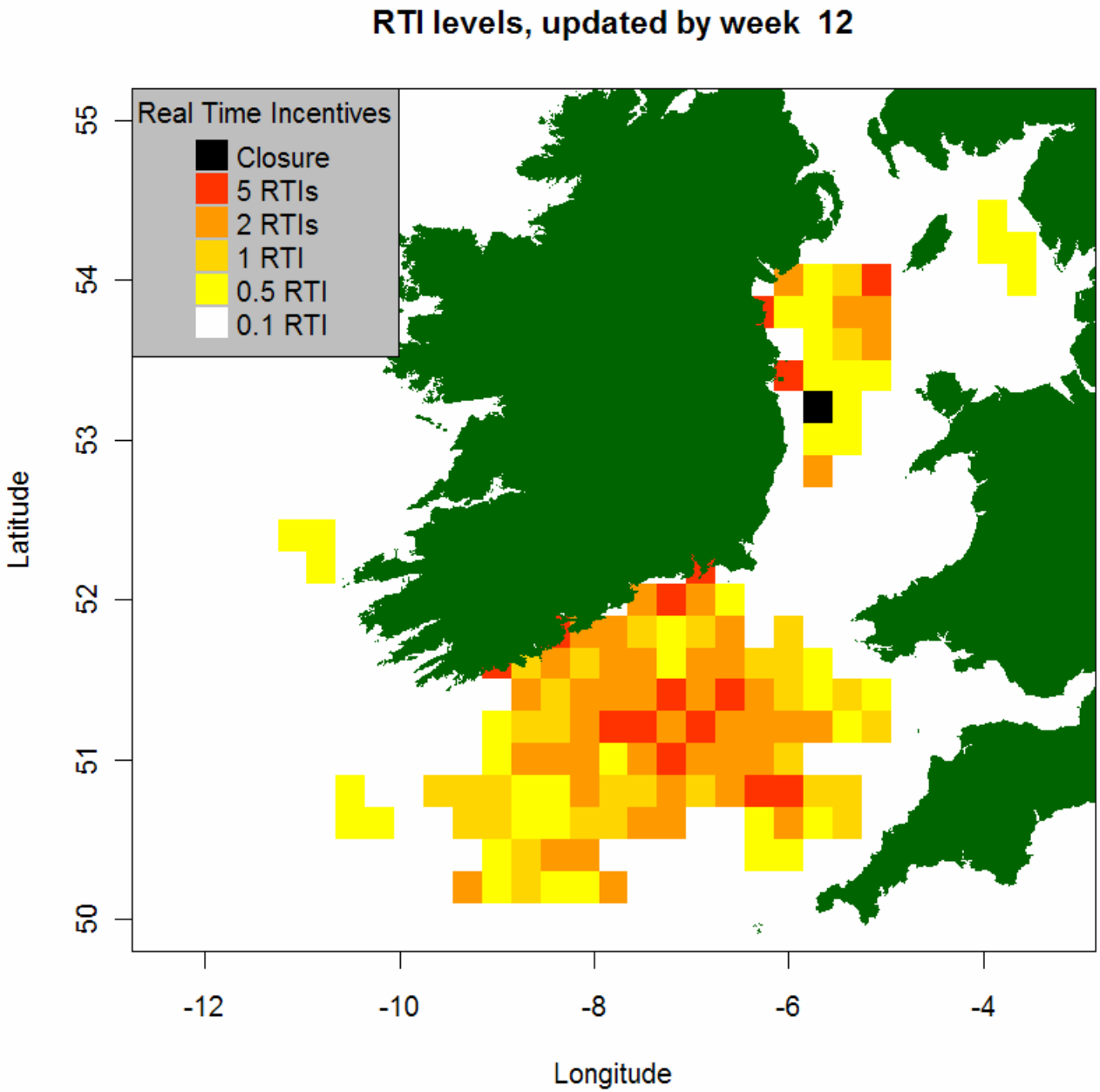
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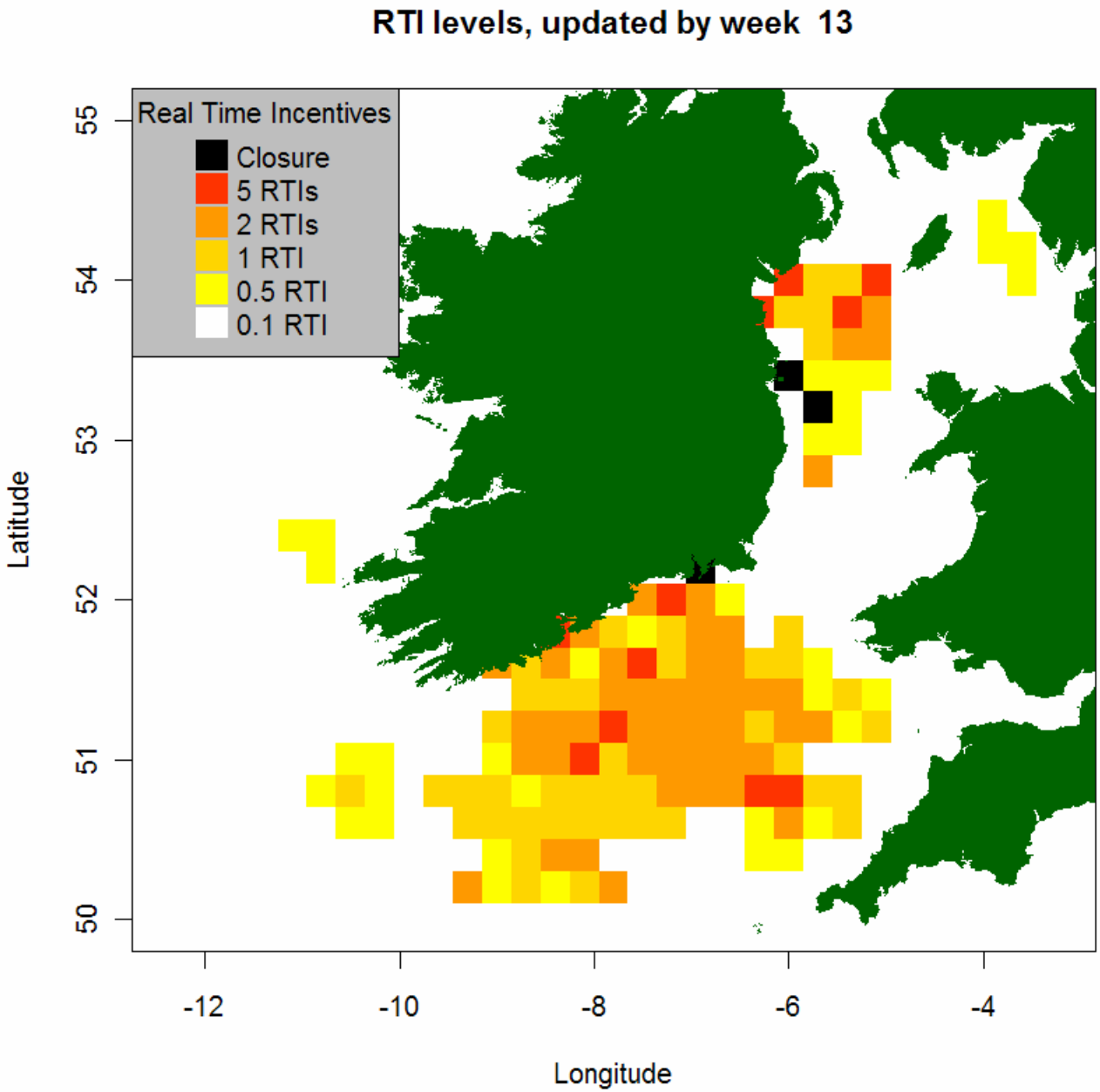
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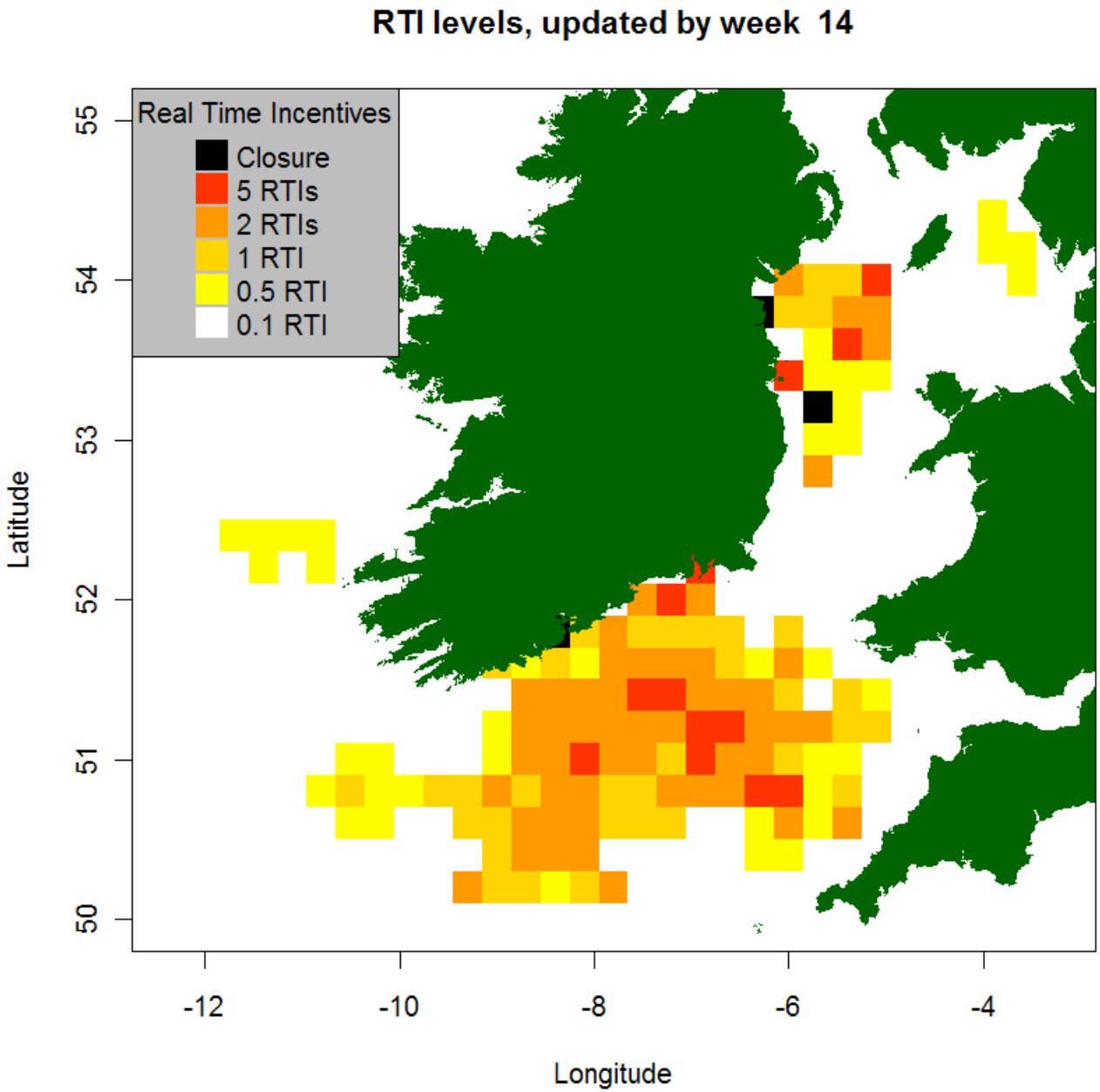
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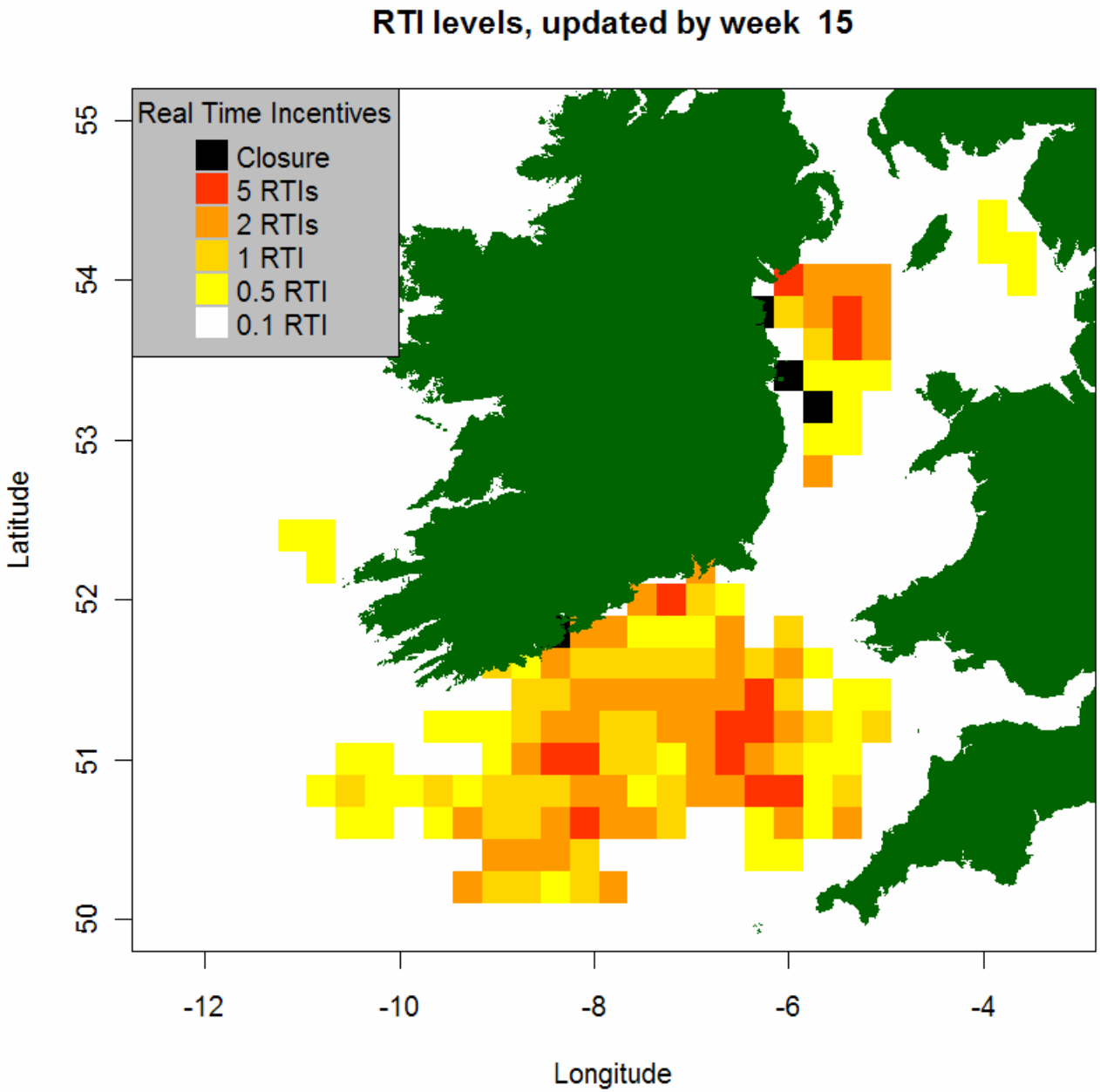
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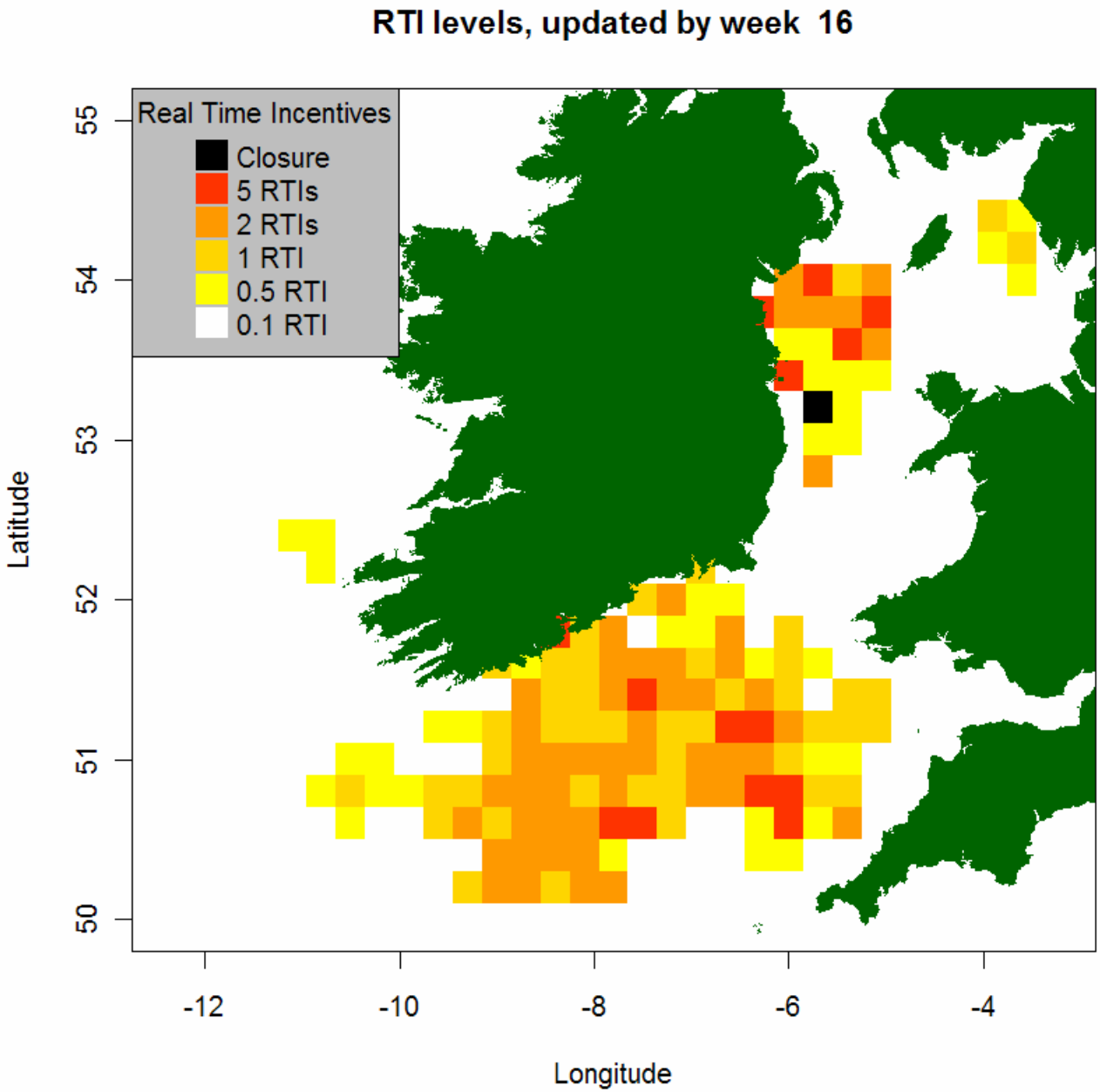
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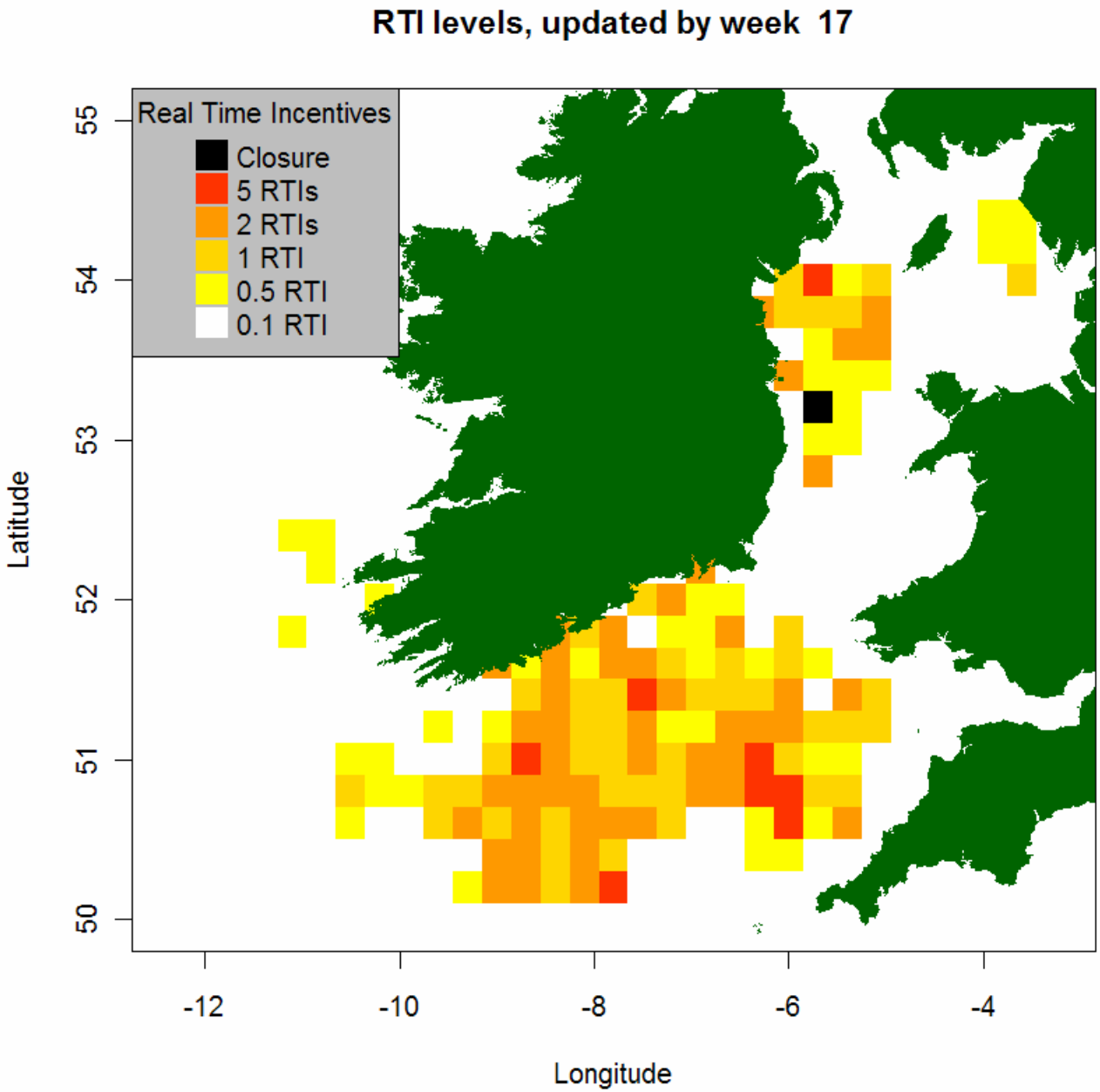
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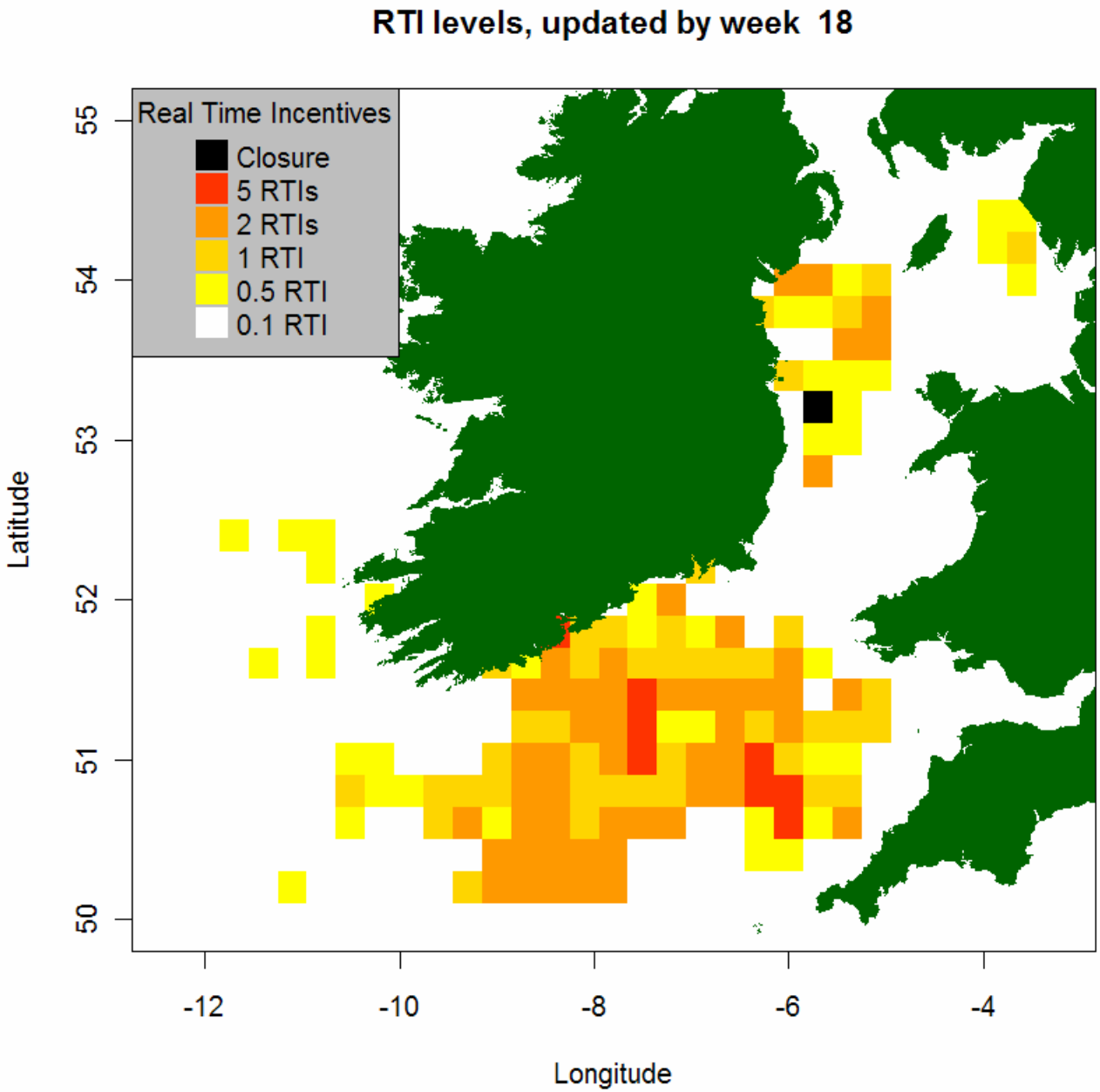
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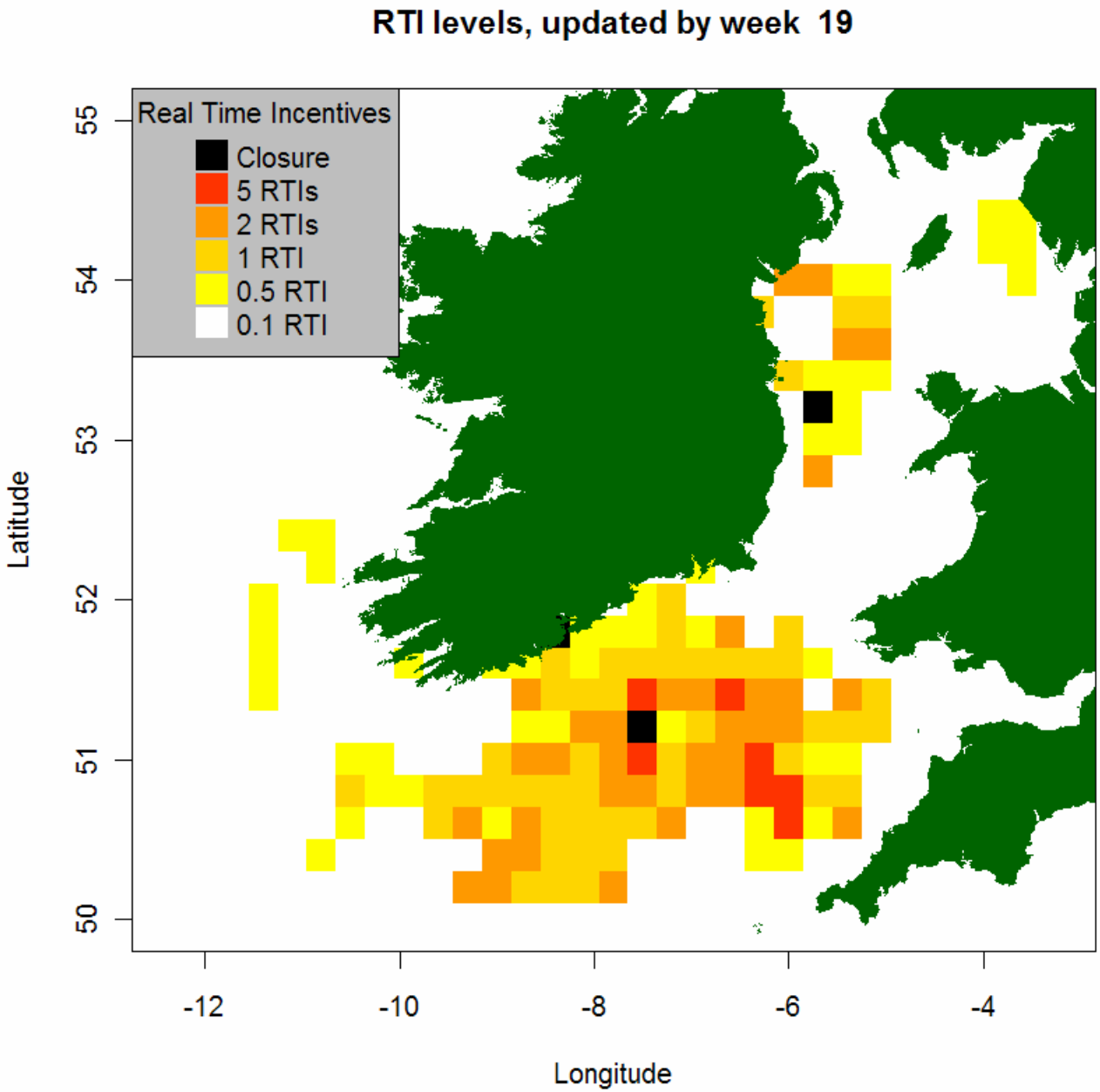
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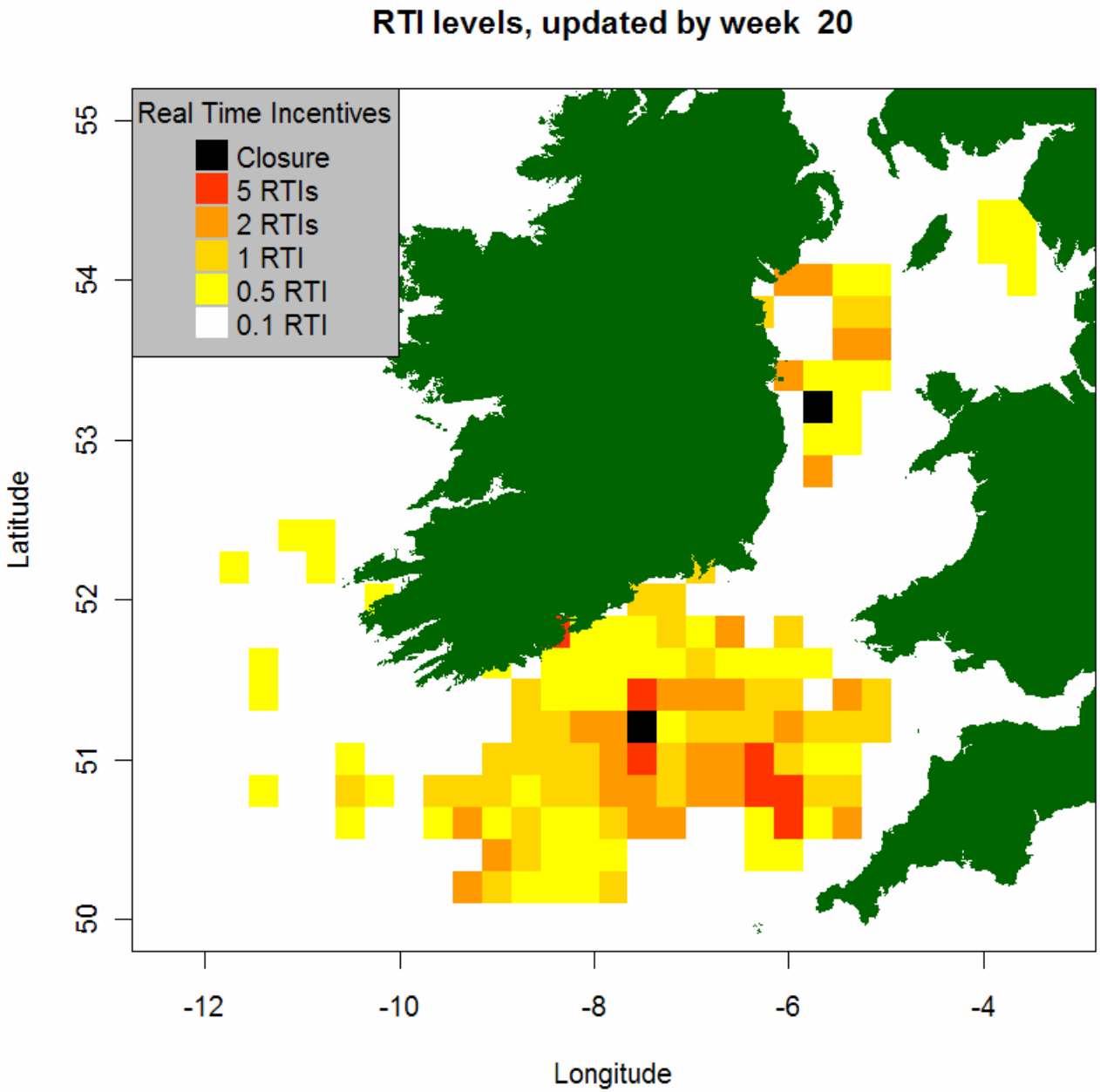
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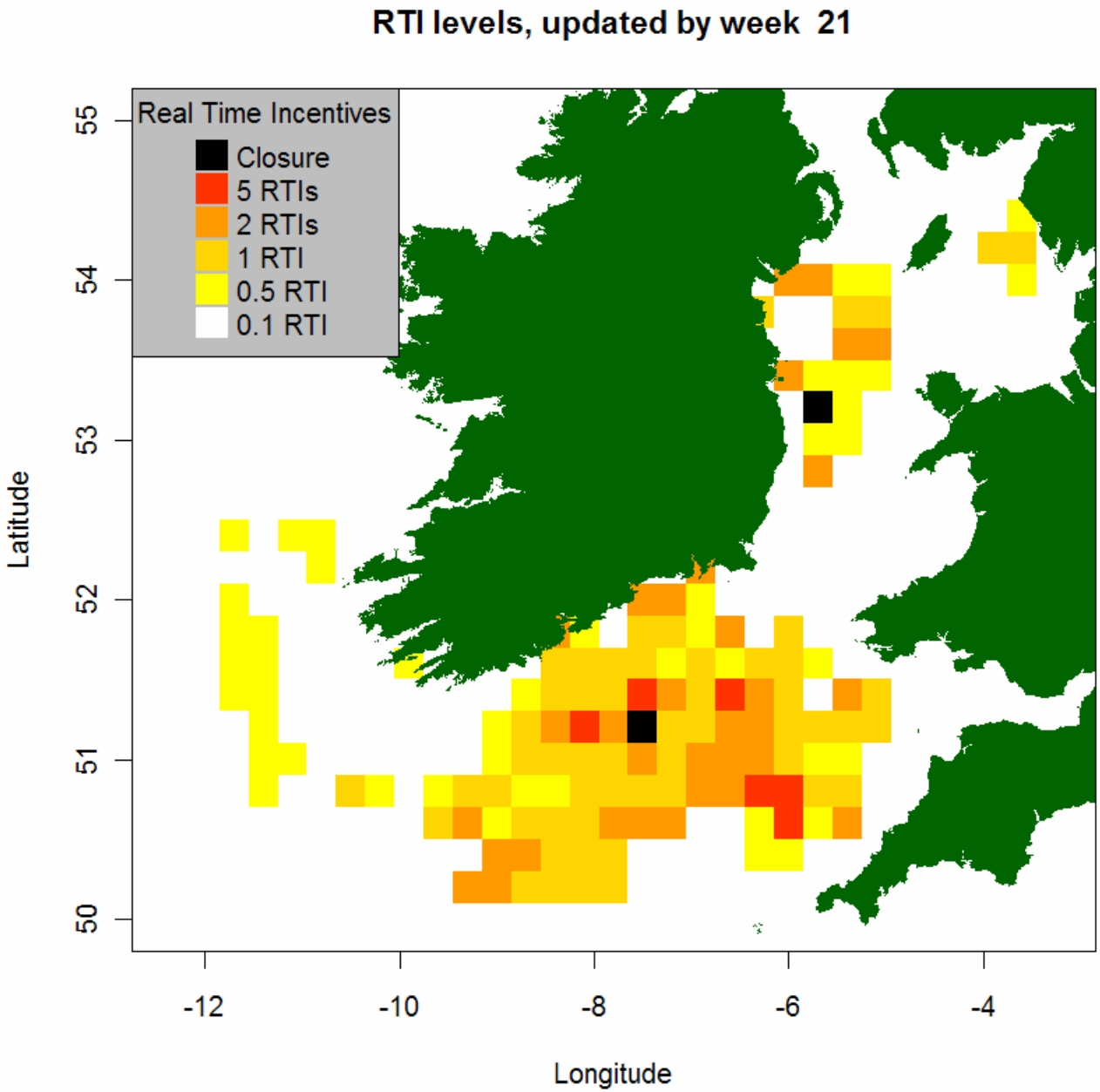
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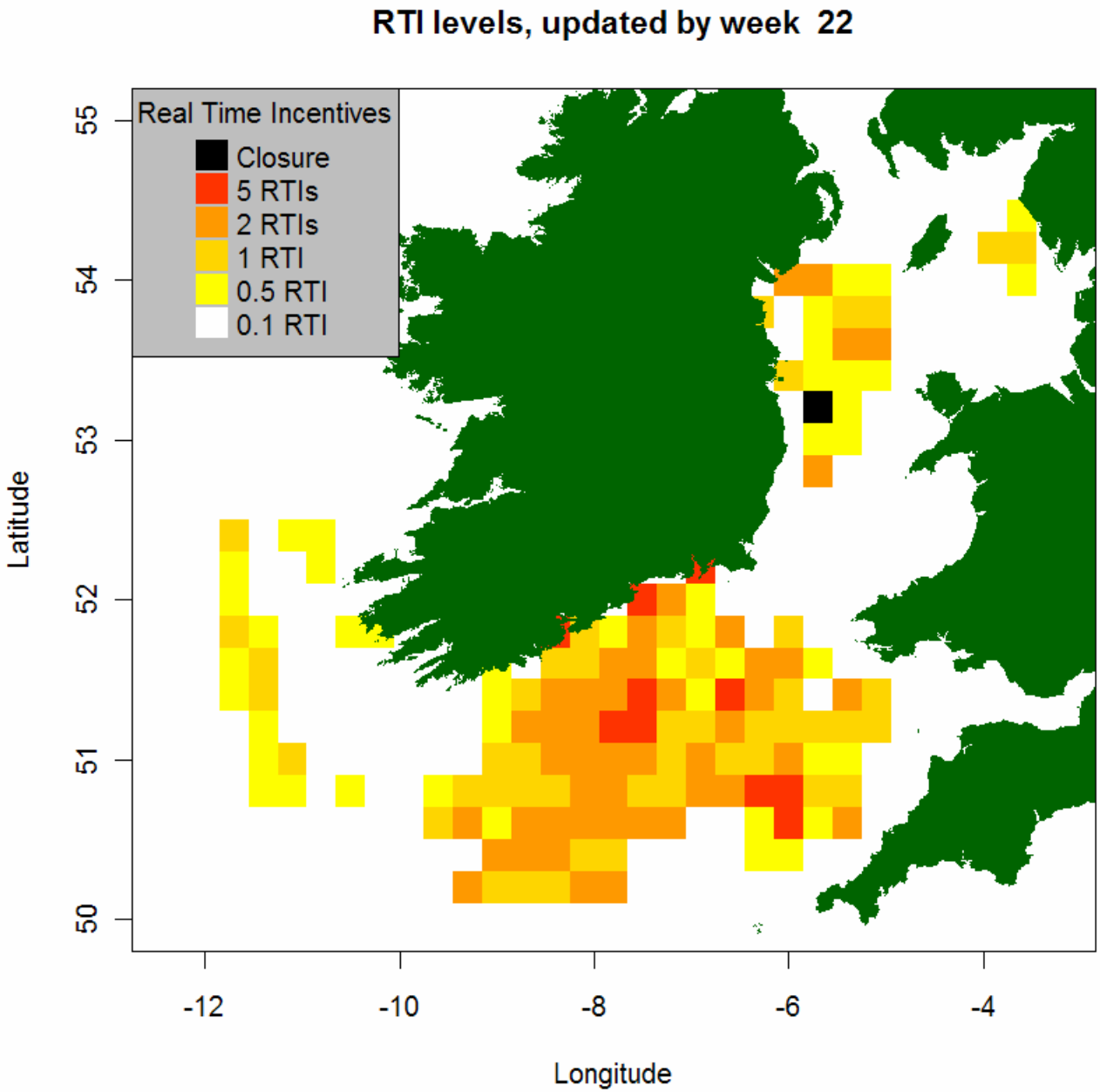
RTI levels, updated by week 22
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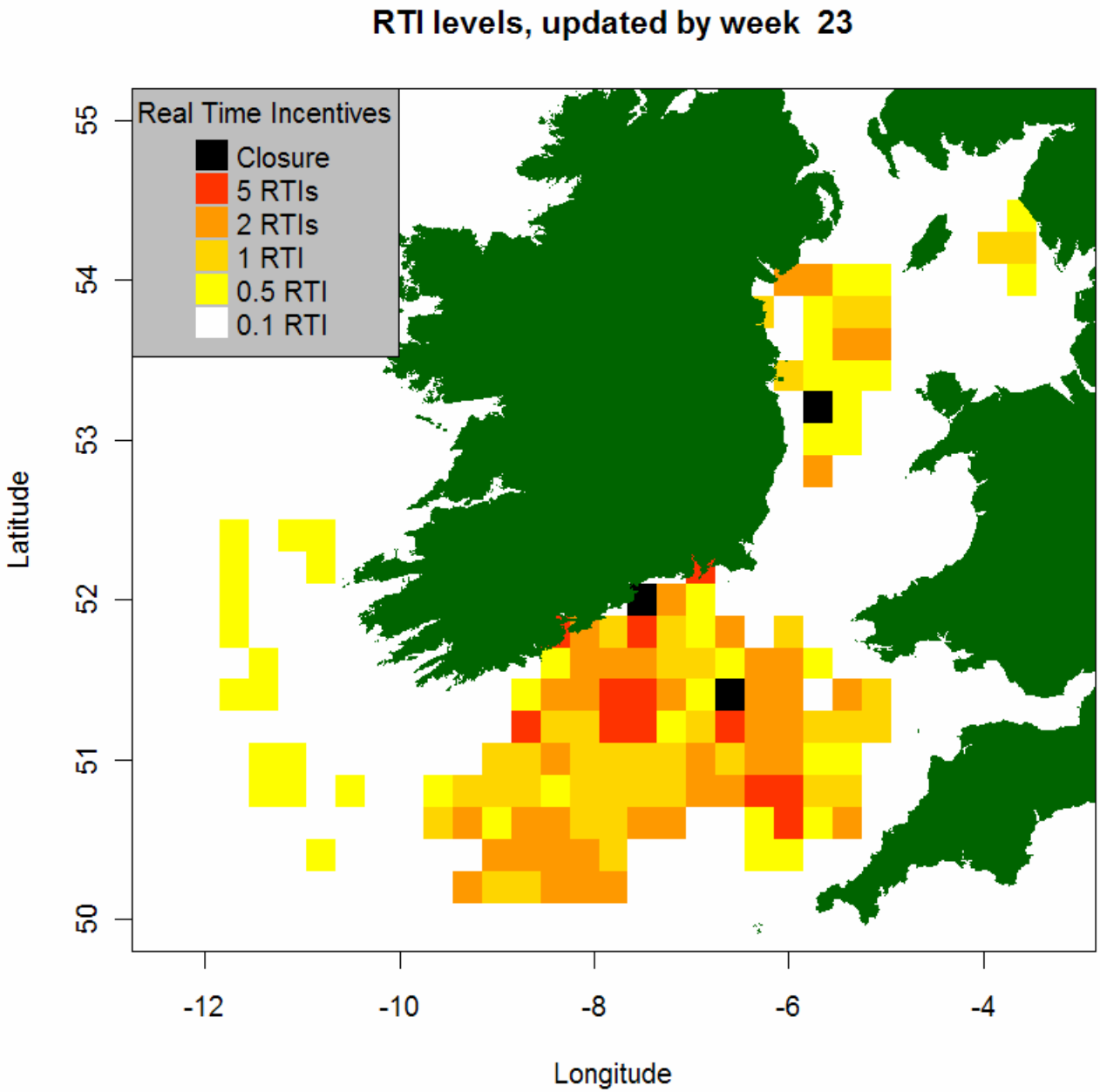
RTI levels, updated by week 23
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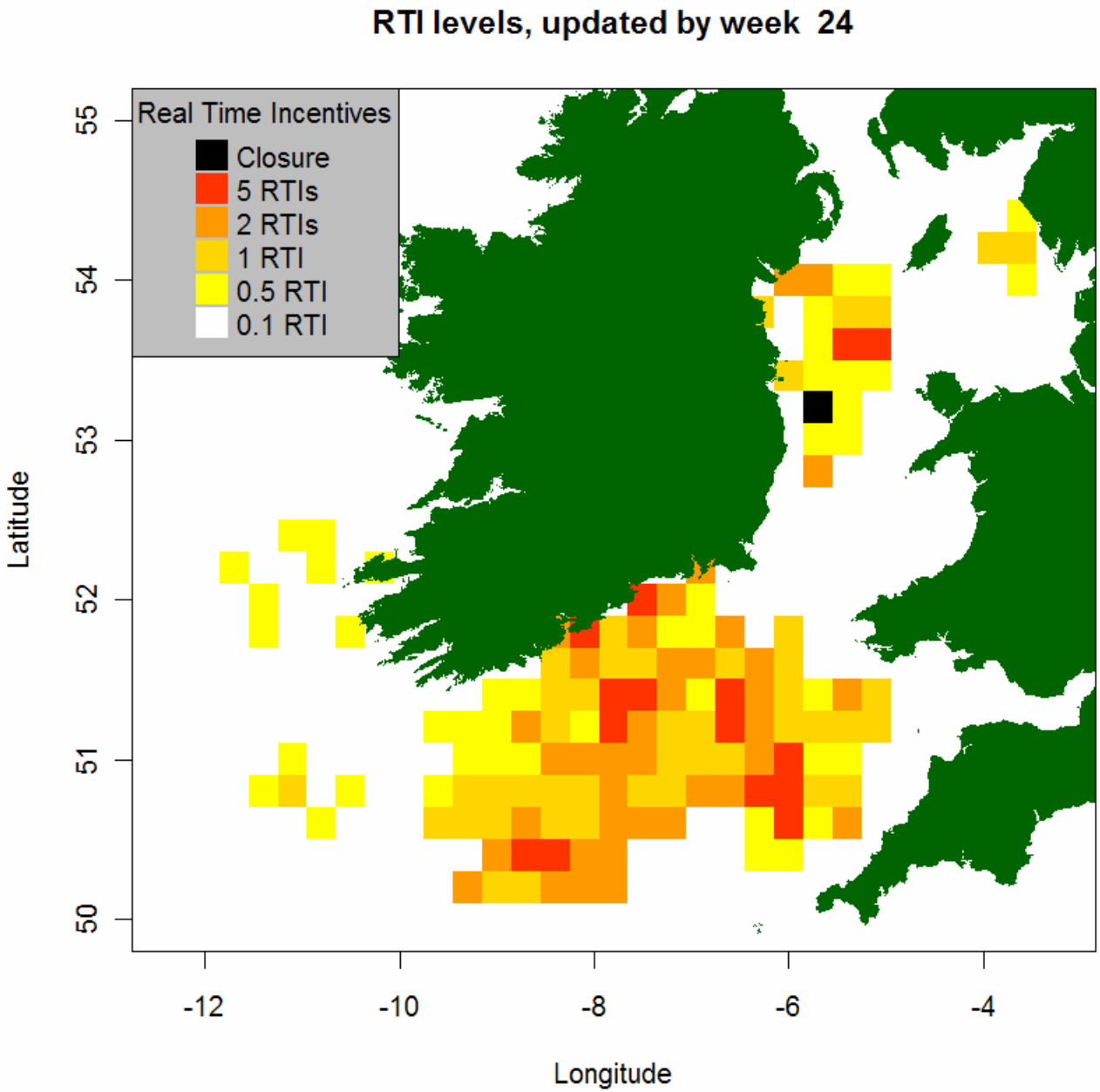
RTI levels, updated by week 24
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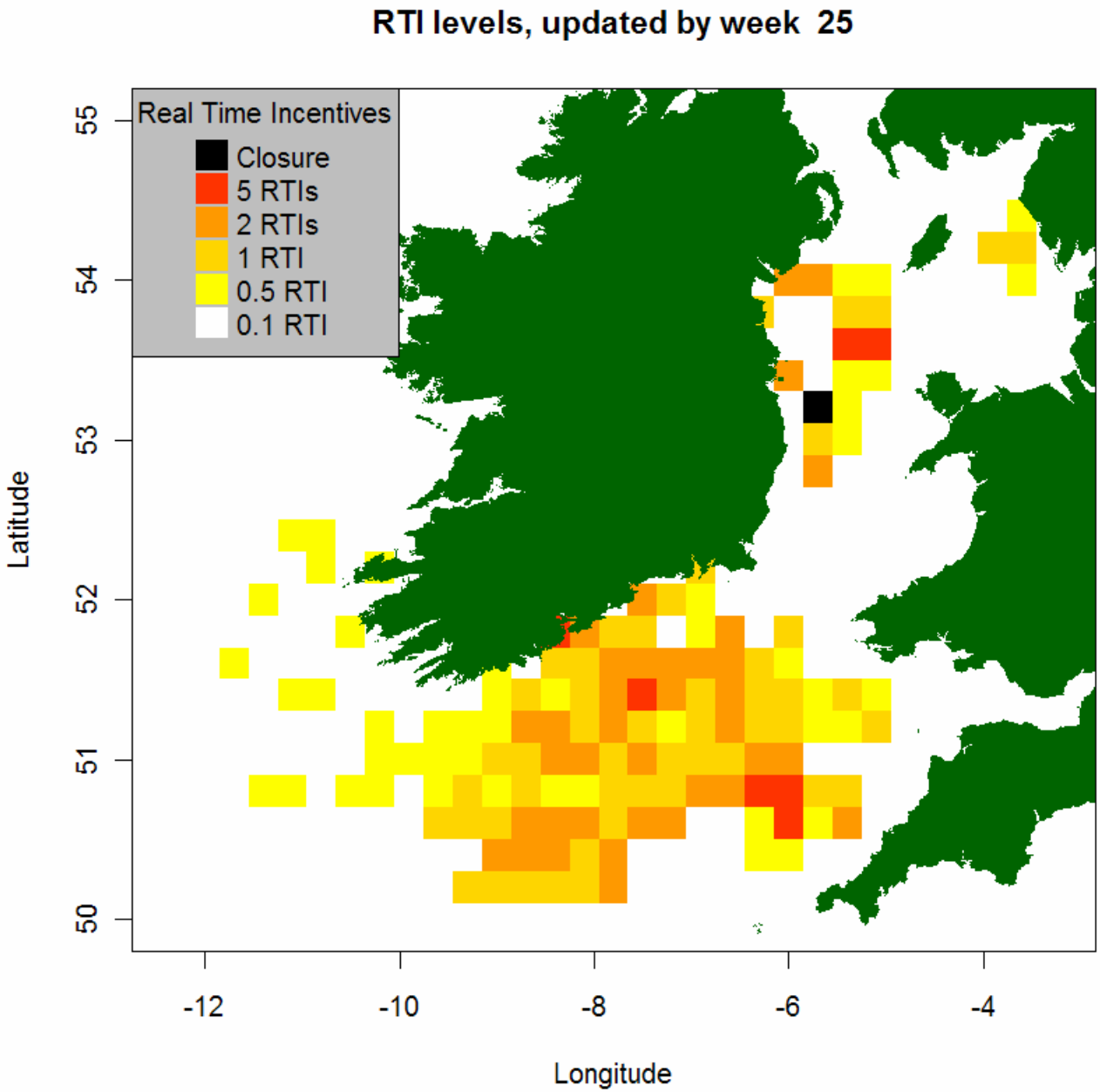
RTI levels, updated by week 25
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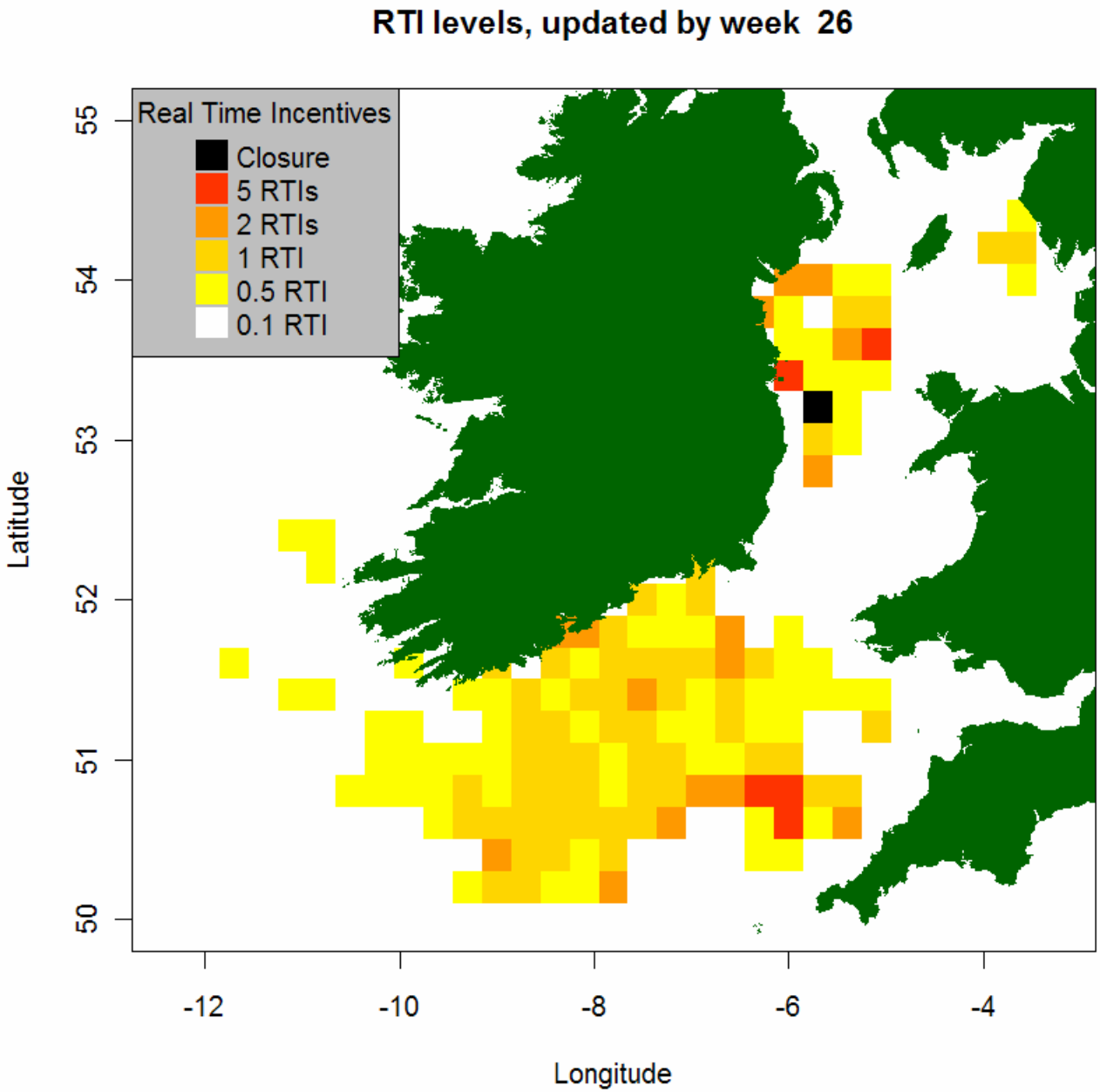
RTI levels, updated by week 26
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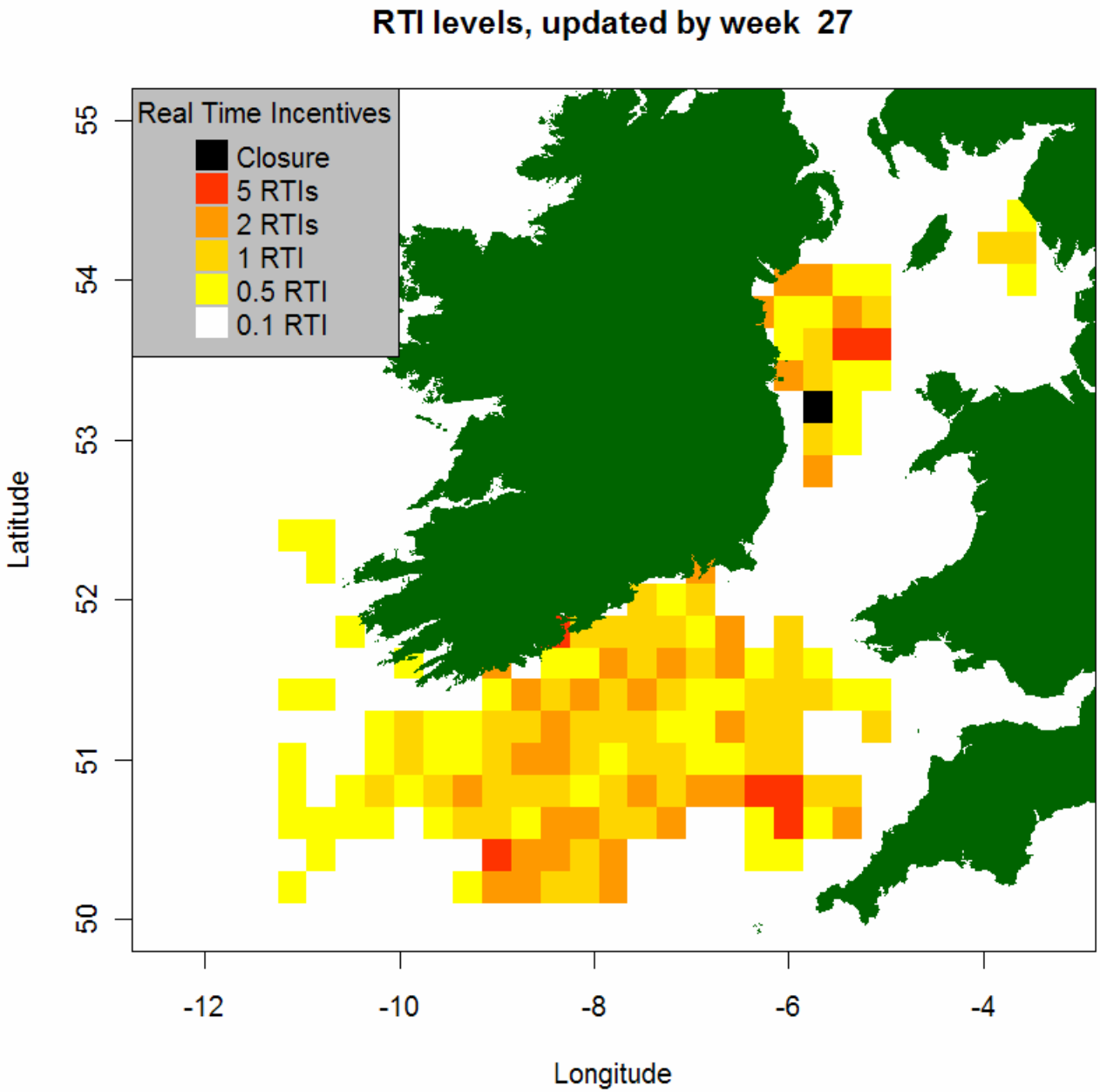
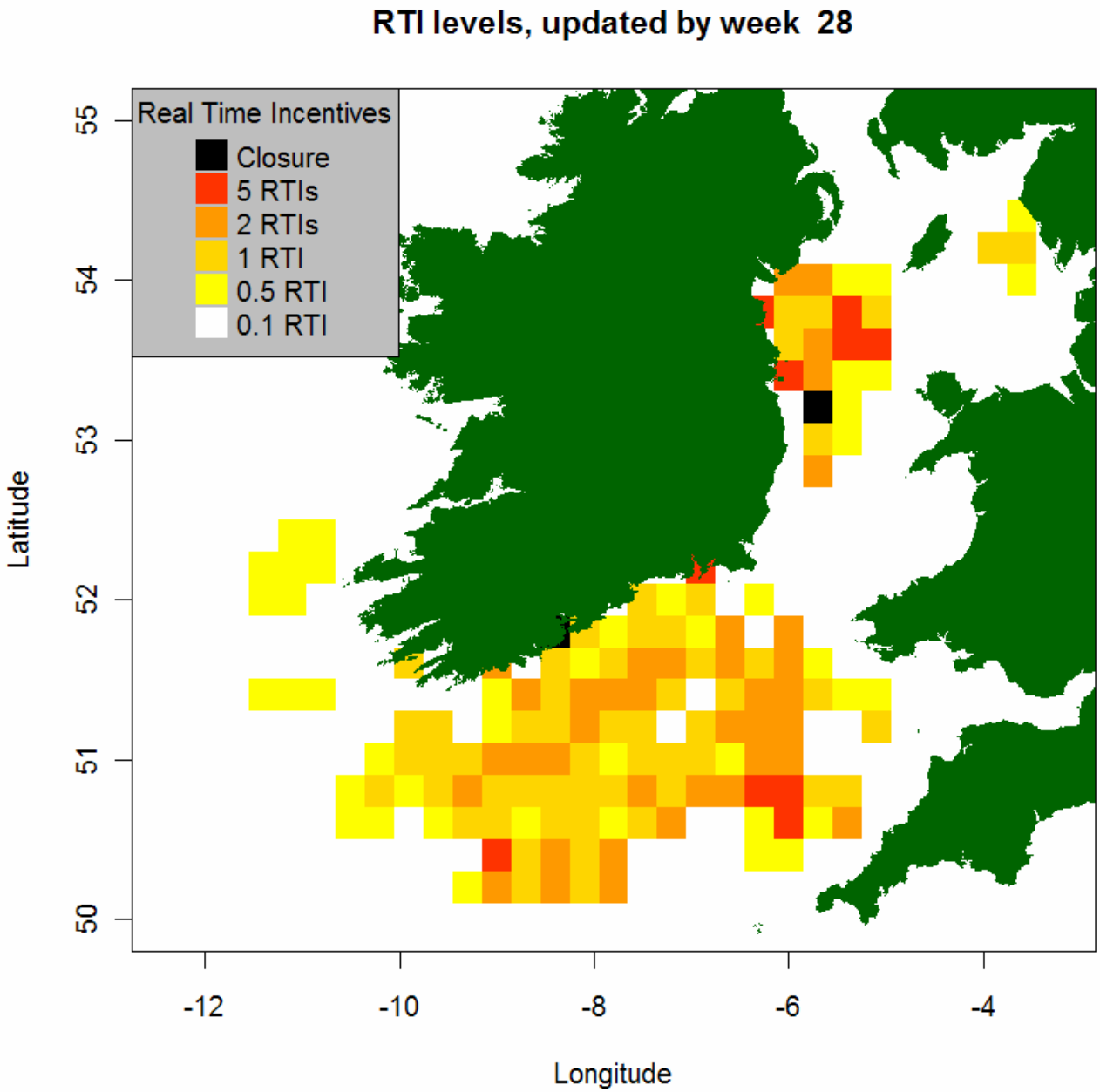
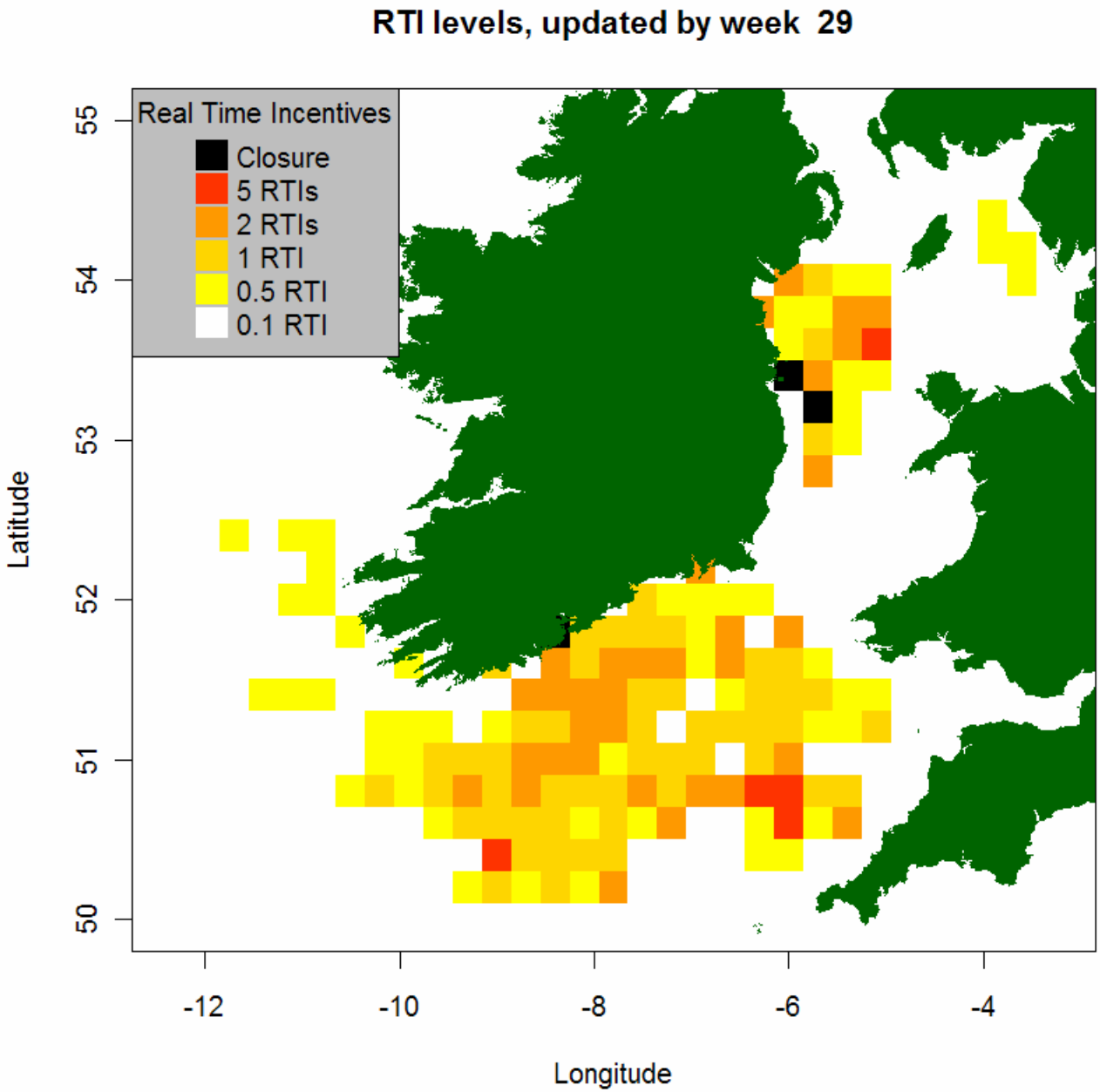
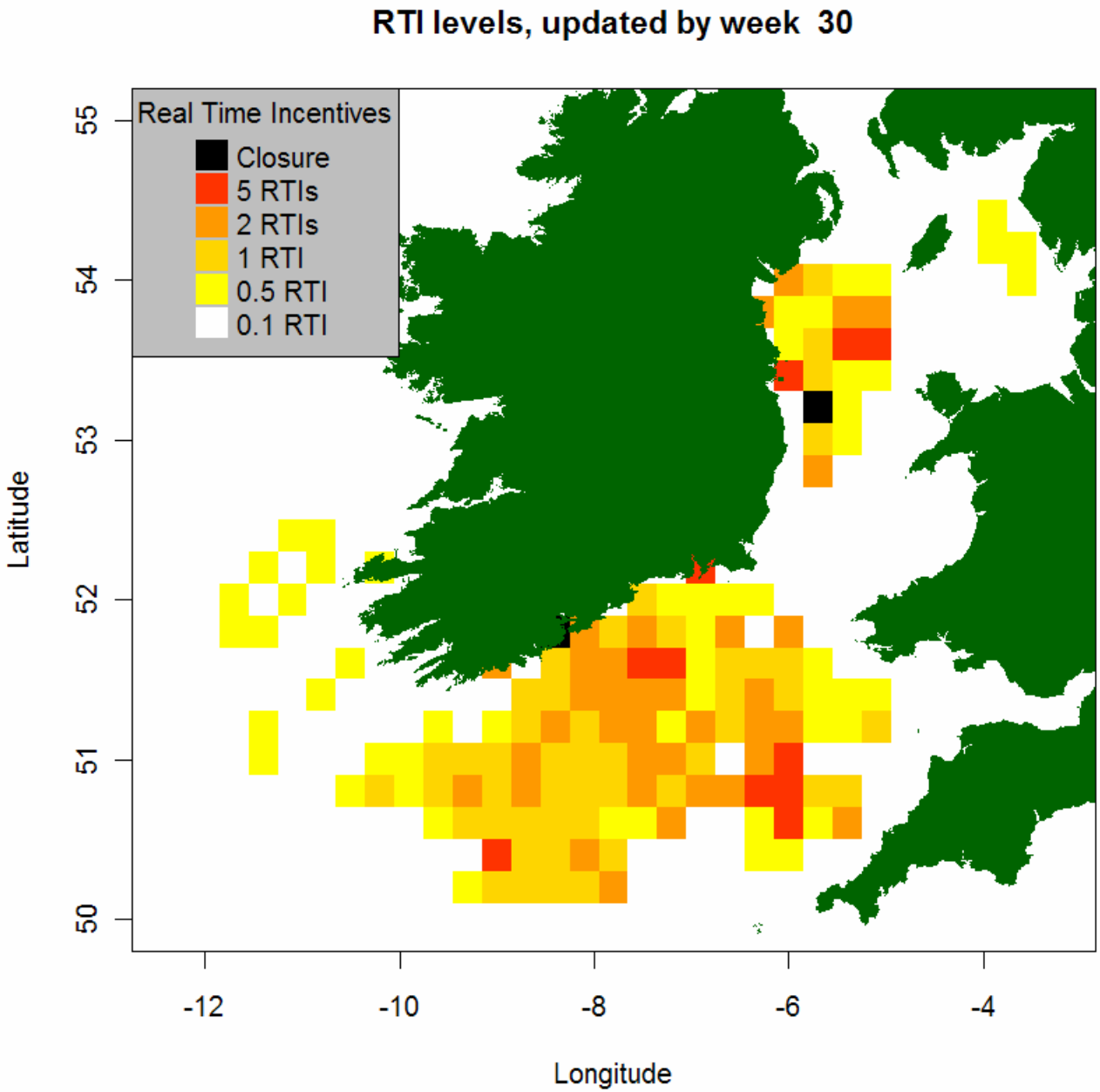
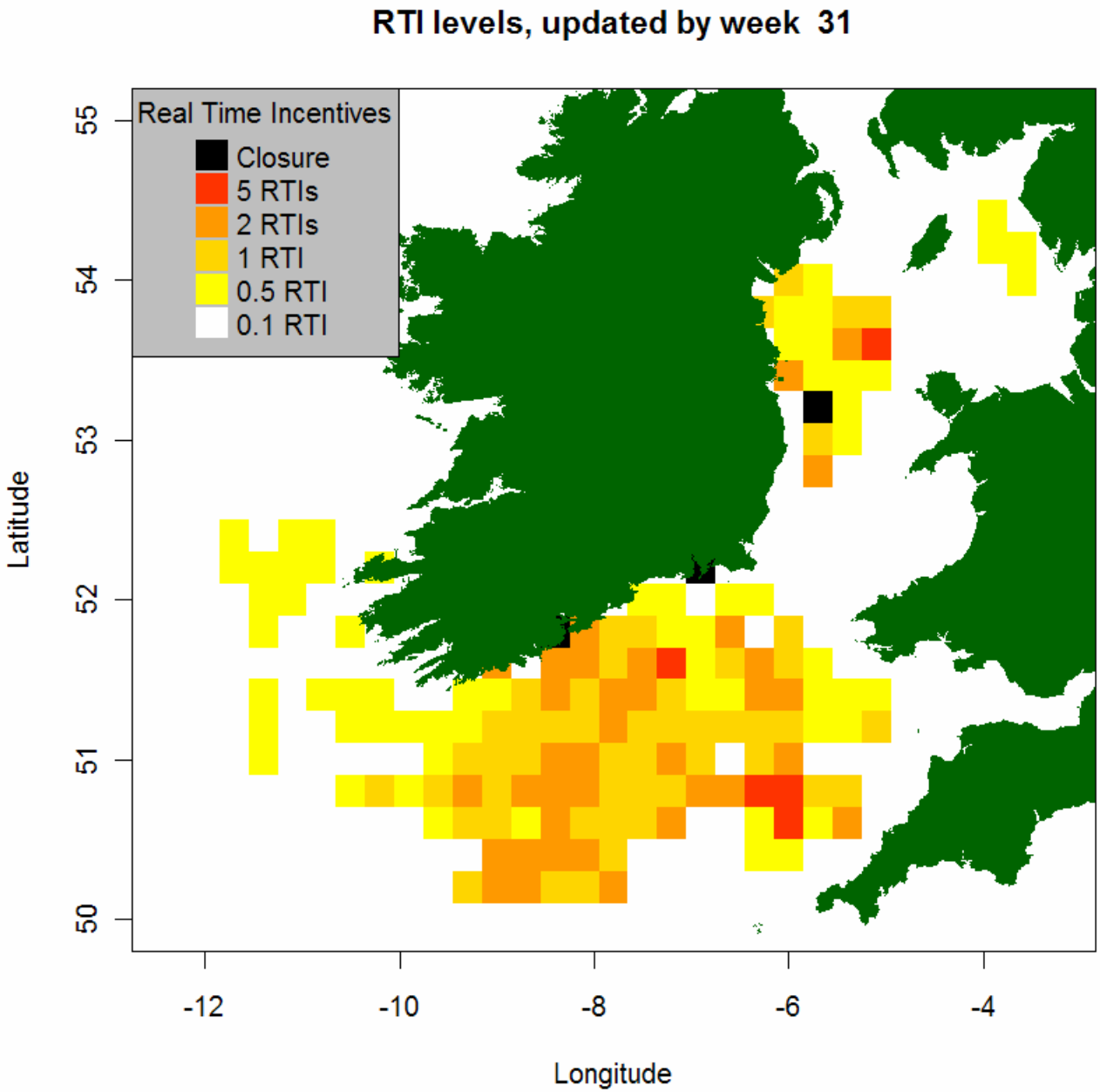
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude

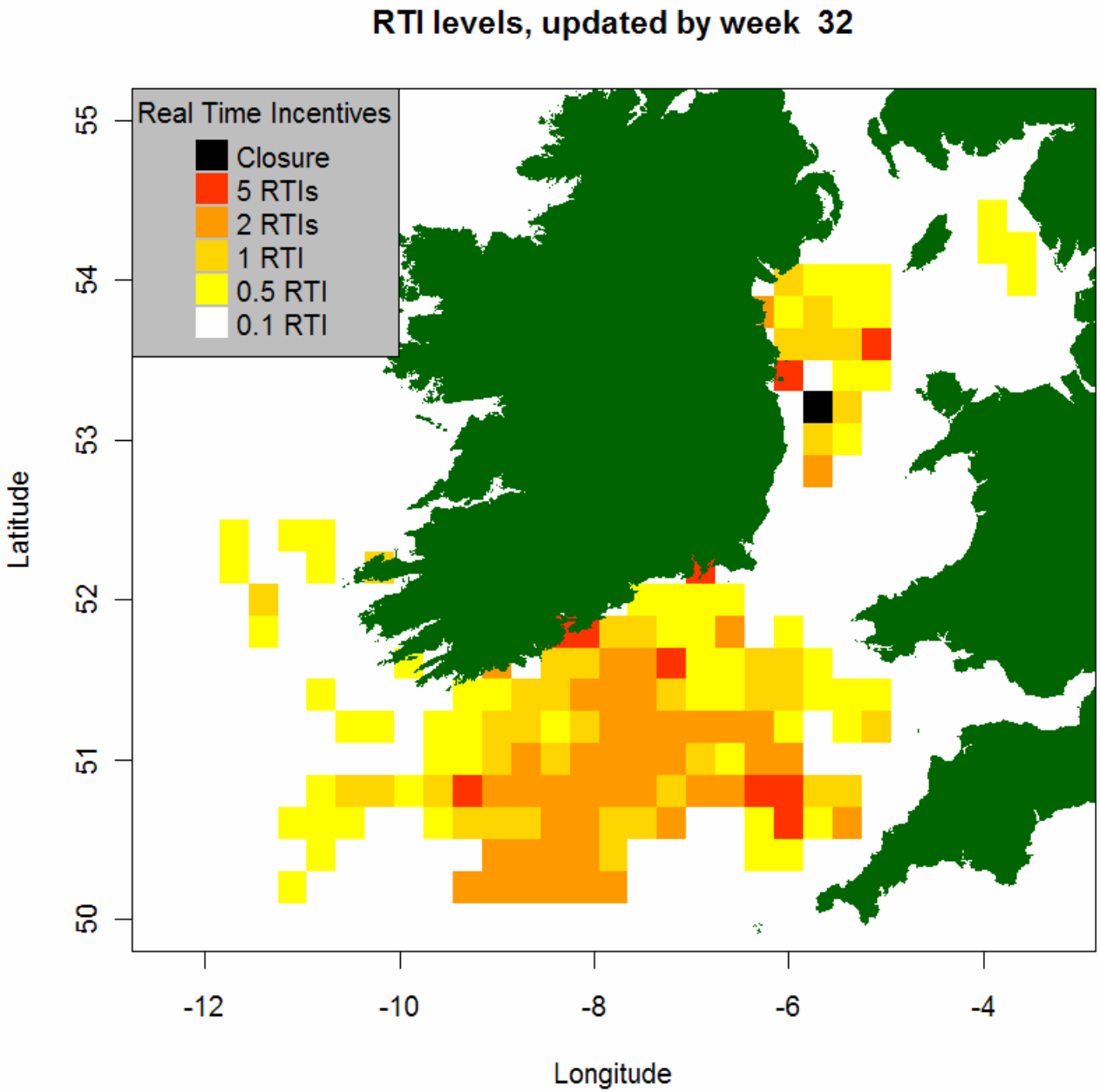

RTI levels, updated by week 27
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude

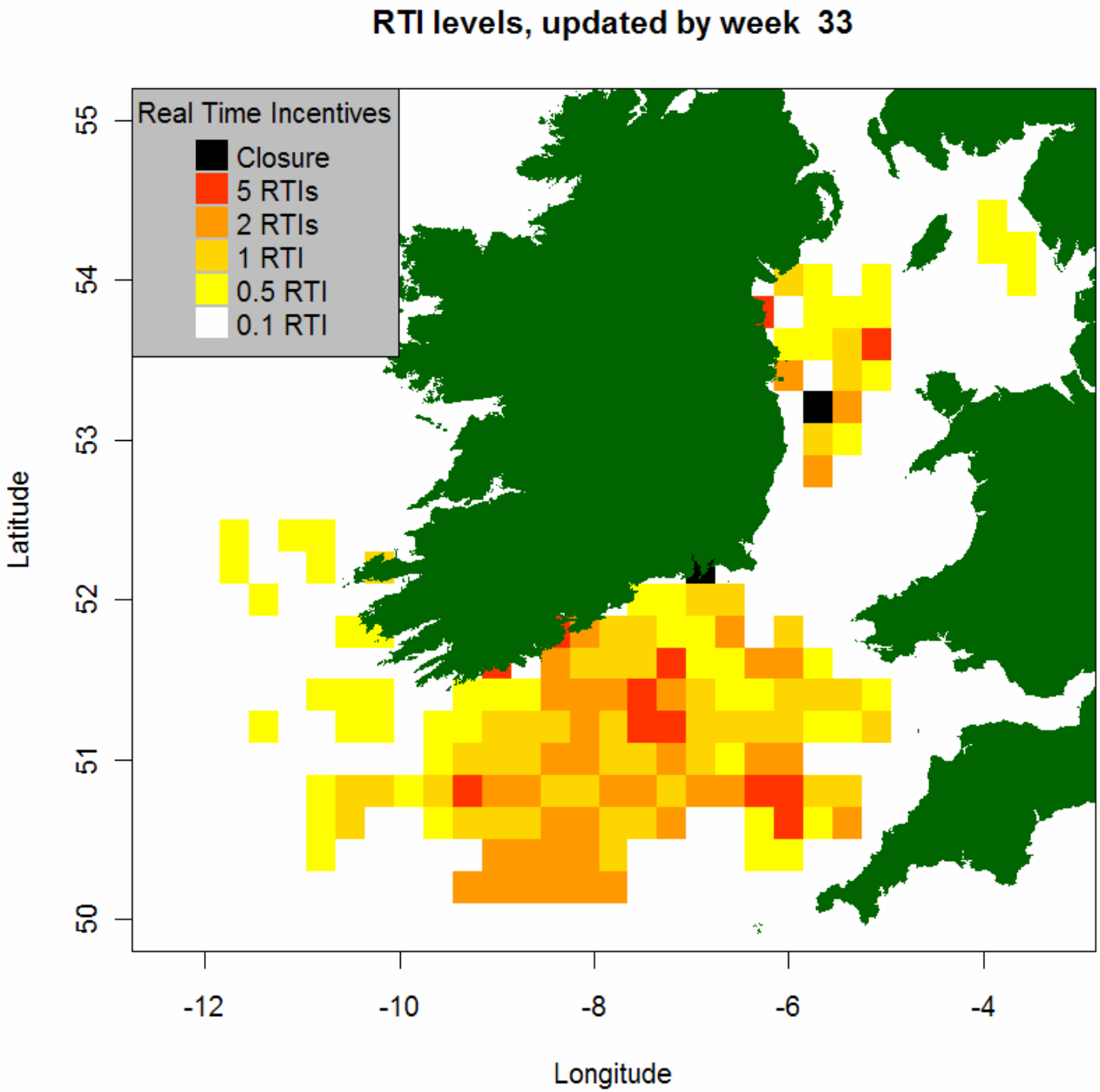

RTI levels, updated by week 28
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude

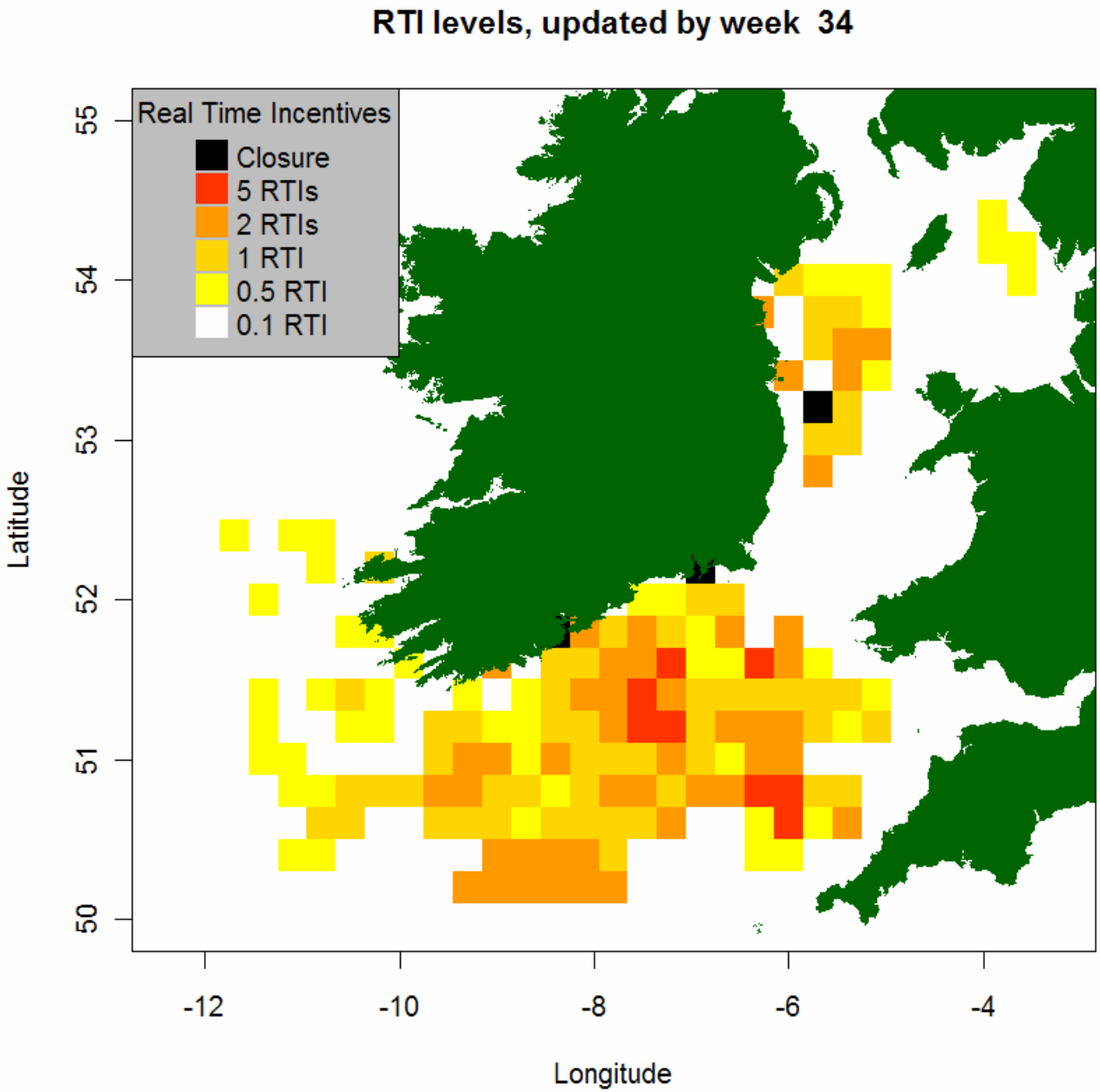

RTI levels, updated by week 29
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude

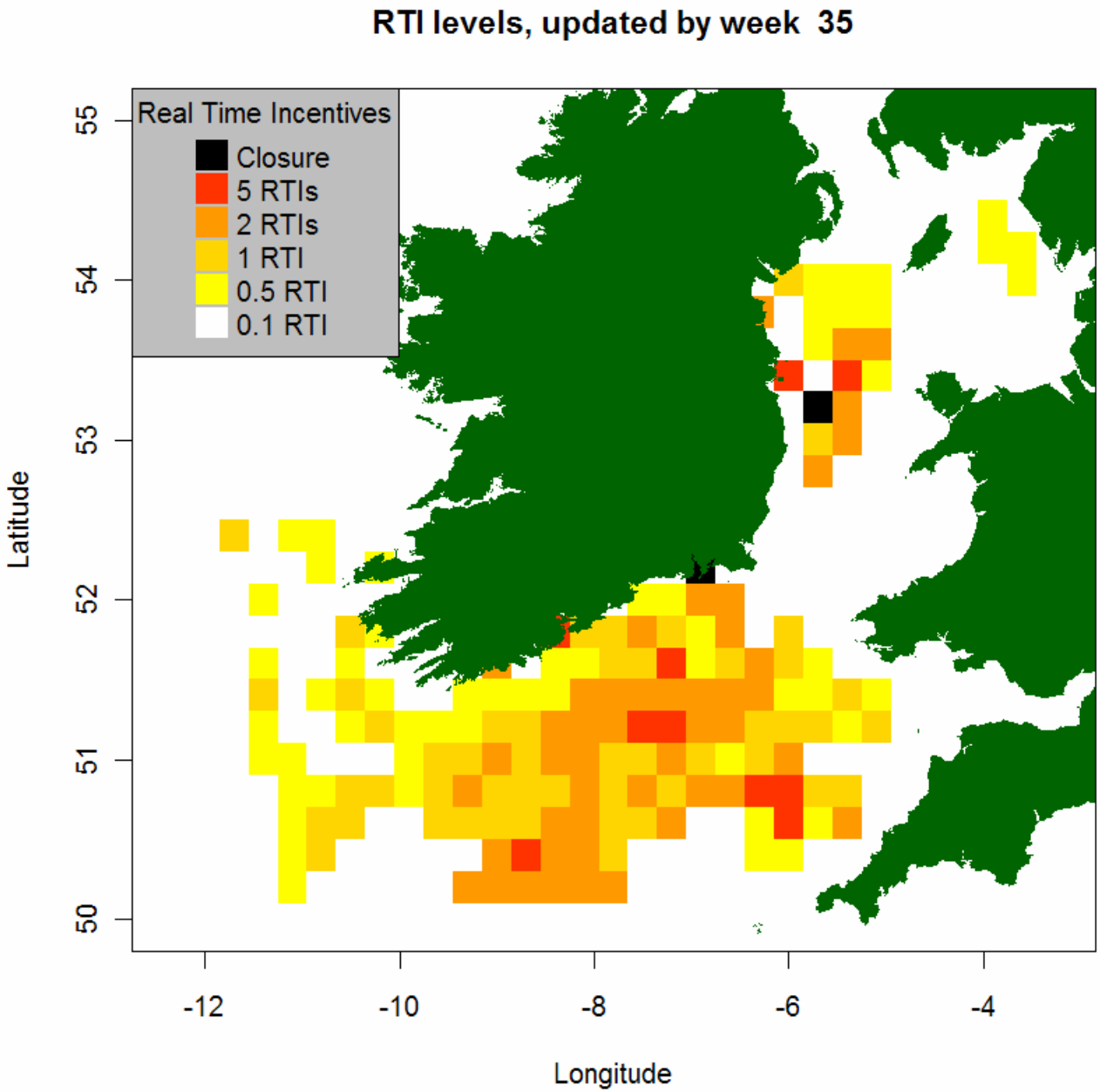

RTI levels, updated by week 30
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude


RTI levels, updated by week 31
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude


RTI levels, updated by week 32
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude


RTI levels, updated by week 33
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude


RTI levels, updated by week 34
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude


RTI levels, updated by week 35
Real Time Incentives
Closure
5 RTIs
2 RTIs
1 RTI
0.5 RTI
0.1 RTI
Latitude
55
54
53
52
51
50
-12
-10
-8
-6
-4
Longitude

Advantages

- Costs in terms of ‘overfishing’ and other costs to ecosystem are internalized: fishers have to take them into account in their business decisions
  - Apart from that they are flexible in their options (no perverse incentives / opposing requirements)
- Compliance and accounting of RTI-quota can be done by VMS and e-logbooks
- Maps can be dynamically updated with any kind of information and information can be weighted according to any objectives/aims