



**SCOTTISHPOWER
RENEWABLES**

East Anglia TWO Offshore Windfarm

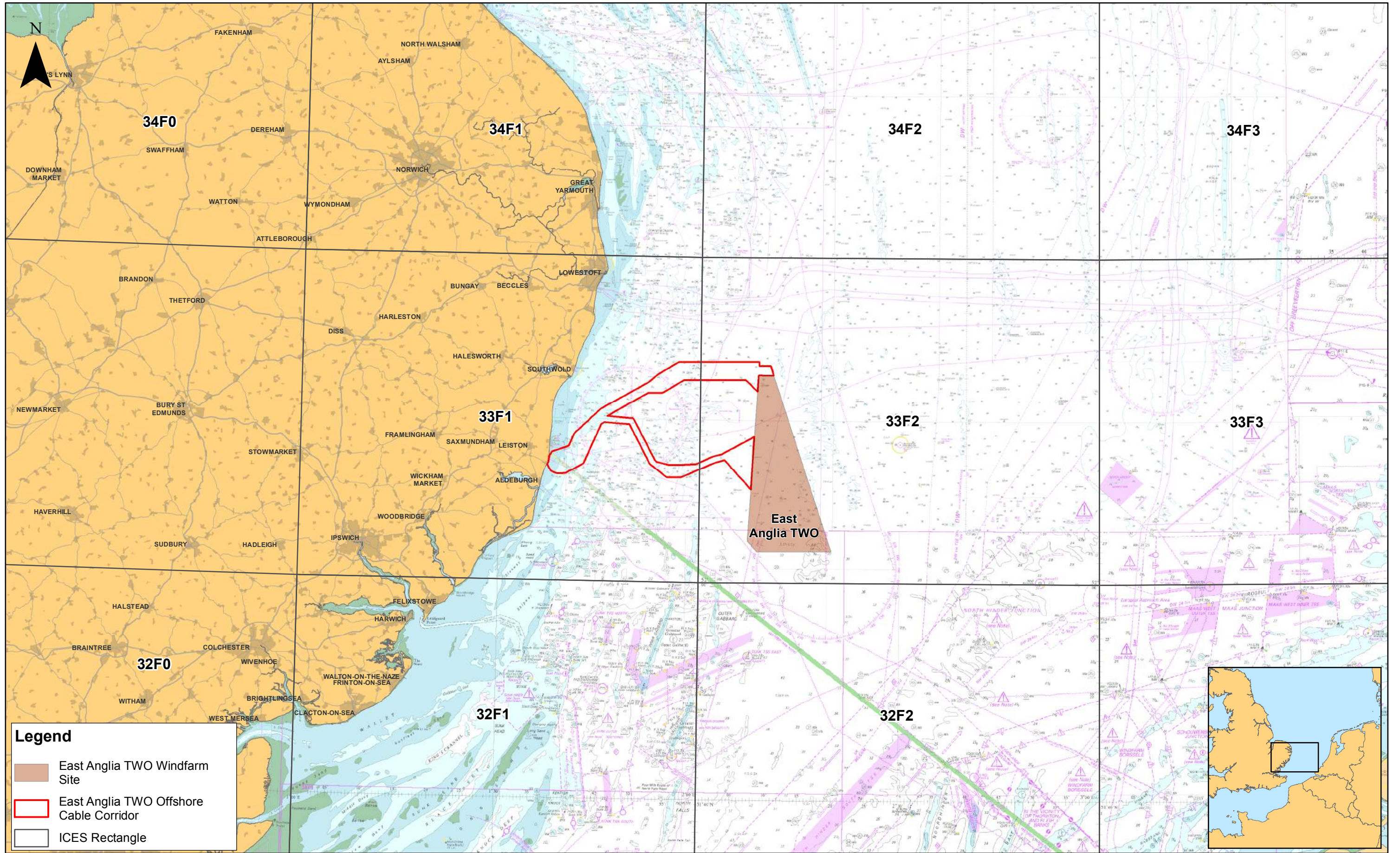
Chapter 10

Fish and Shellfish Ecology

Figures

**Preliminary Environmental Information
Volume 2**

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Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	10/09/2018	FC	First Issue.	Checked: KC
				Approved: PP

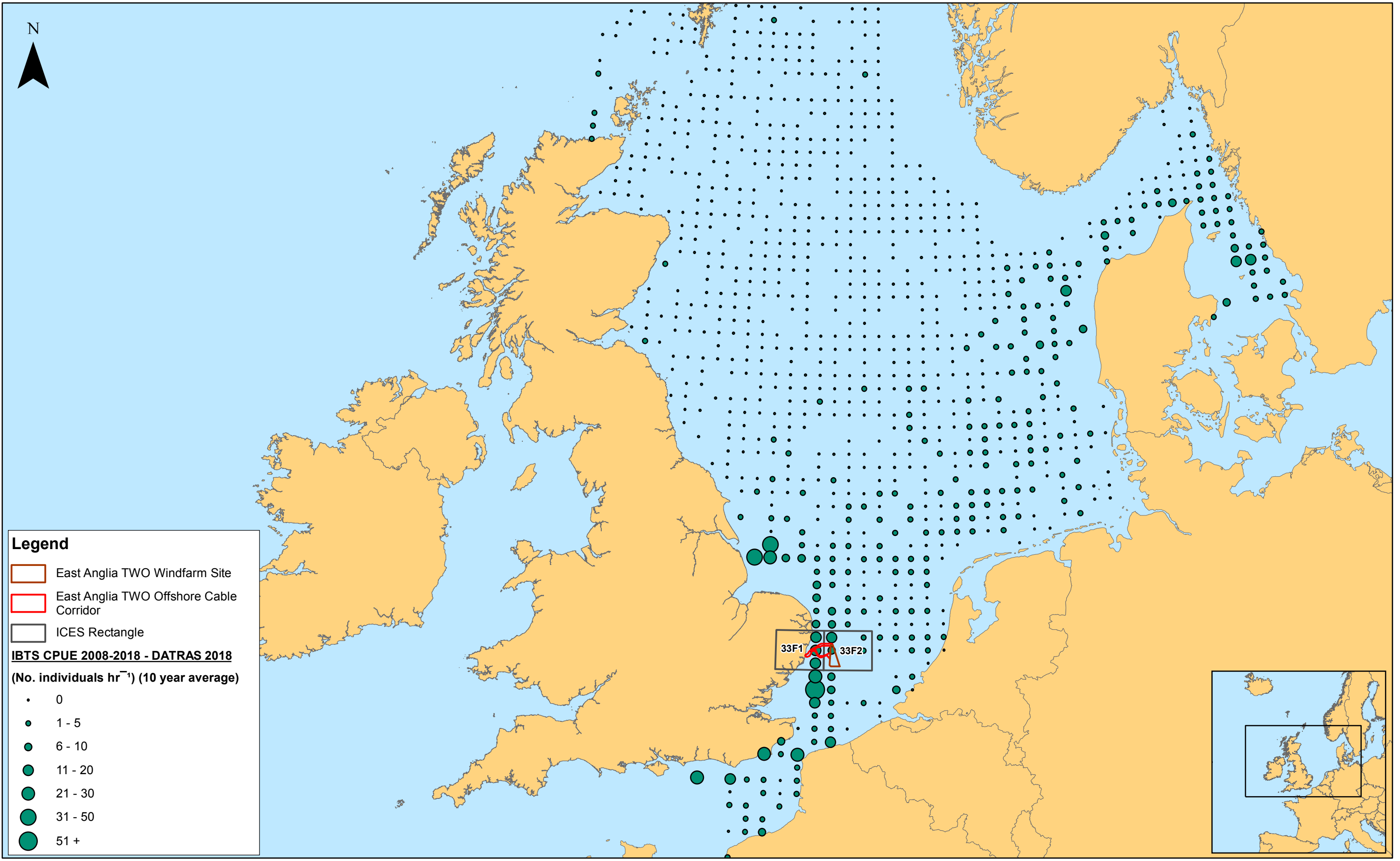
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Scale @ A3

0 5 10 20 Km

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East Anglia TWO
East Anglia TWO Offshore Windfarm and Offshore Cable Corridor Study Areas

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC190
Rev	2
Date	15/11/18
Figure	10.1
Datum:	WGS 1984
Projection:	Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018

(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 5
- 6 - 10
- 11 - 20
- 21 - 30
- 31 - 50
- 51 +

33F1 33F2



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

Scale @ A3 1:60,000,000

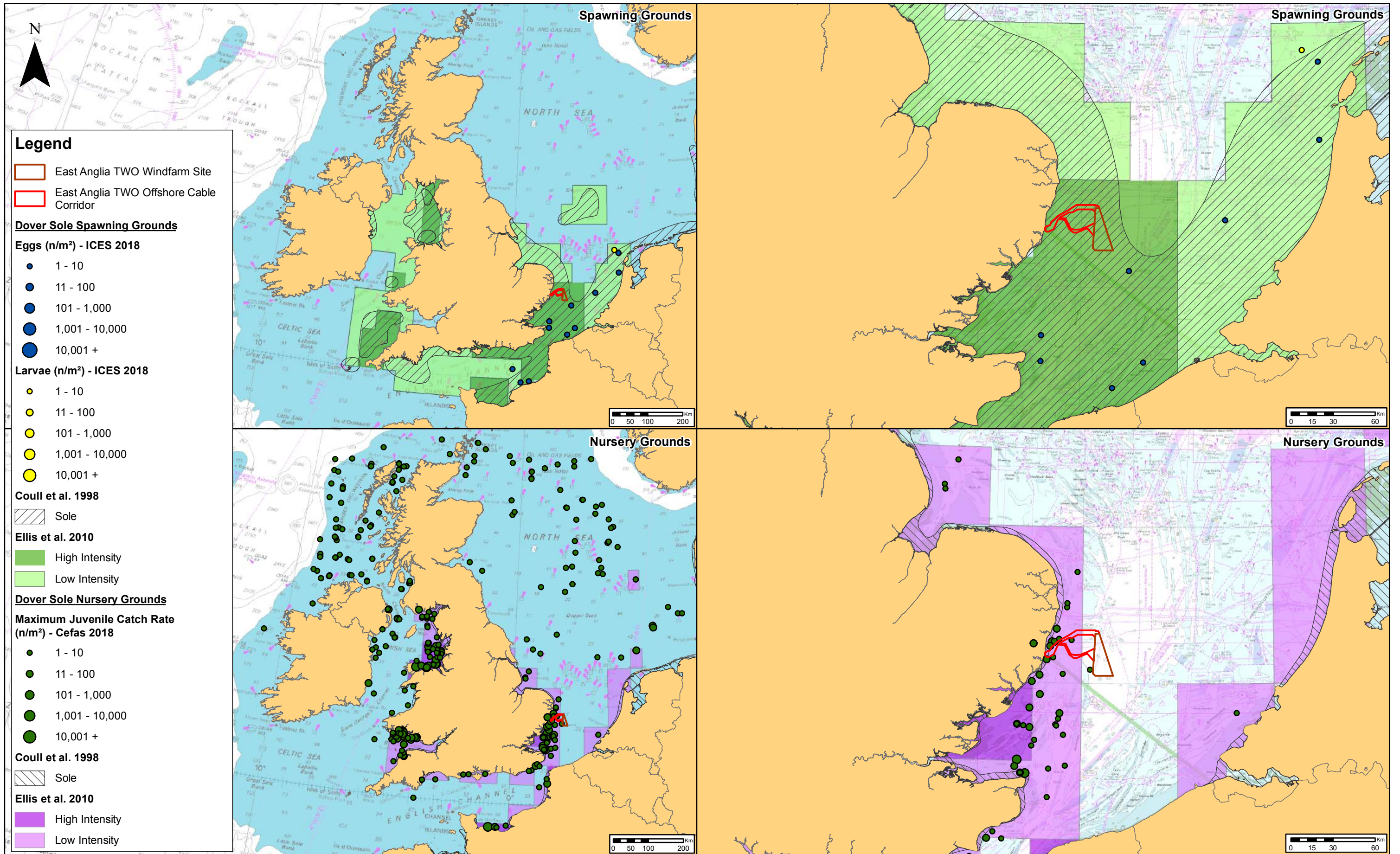
0 625 1,250 2,500 Km

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East Anglia TWO
Average Number (Catch per Standardised Haul)
of Dover Sole from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC238
Rev	2
Date	15/11/18
Figure	10.2

Datum: WGS 1984
Projection: Zone 31N



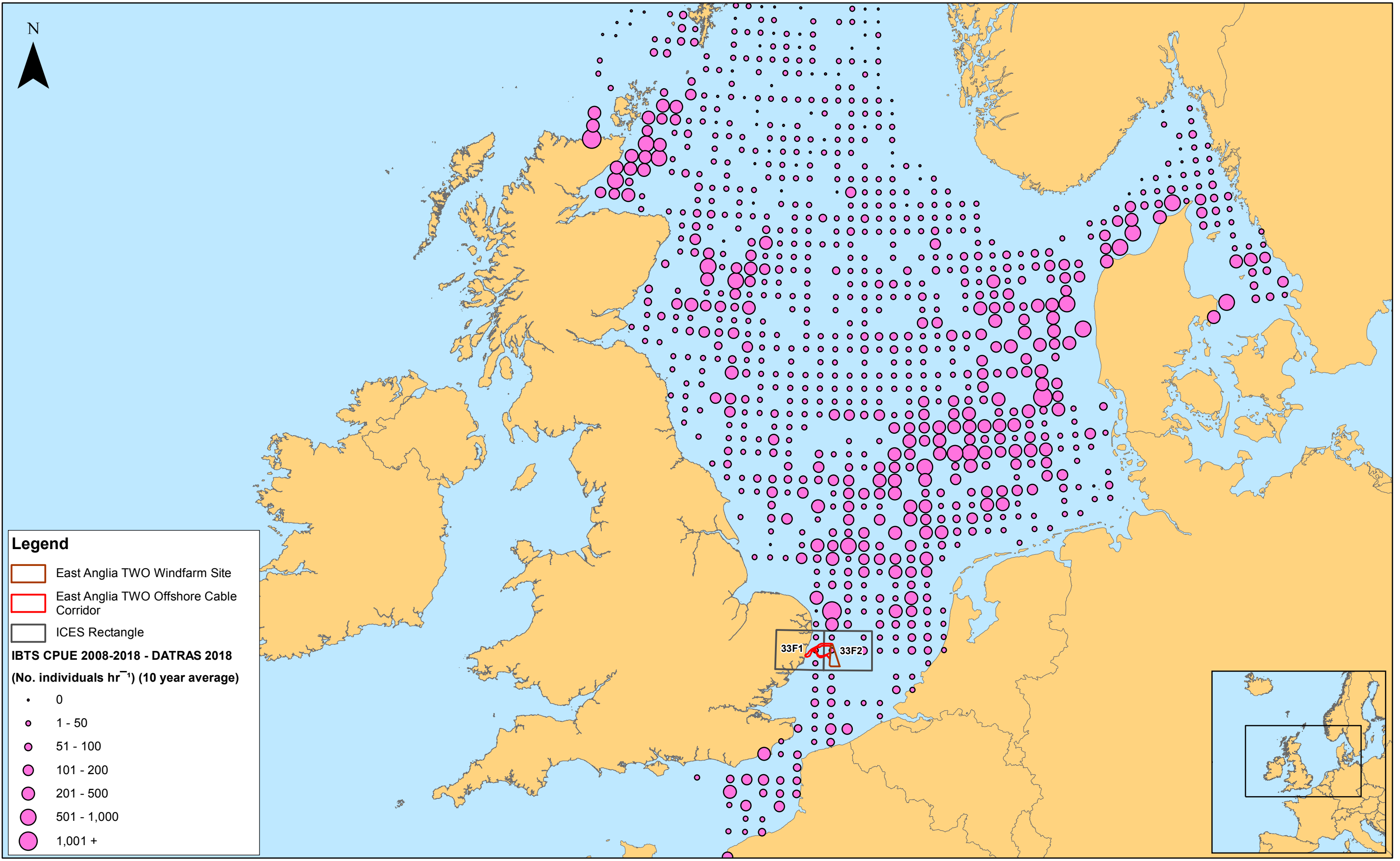
2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
1	10/09/2018	FC	First Issue.	Checked:	KC	
Rev	Date	By	Comment	Approved:	PP	

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East Anglia TWO

Dover Sole Spawning and Nursery Grounds (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC249	
Rev	2	Datum: WGS 1984
Date	15/11/18	Projection: Zone 31N
Figure	10.3	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
 (No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 50
- 51 - 100
- 101 - 200
- 201 - 500
- 501 - 1,000
- 1,001 +

33F1 33F2



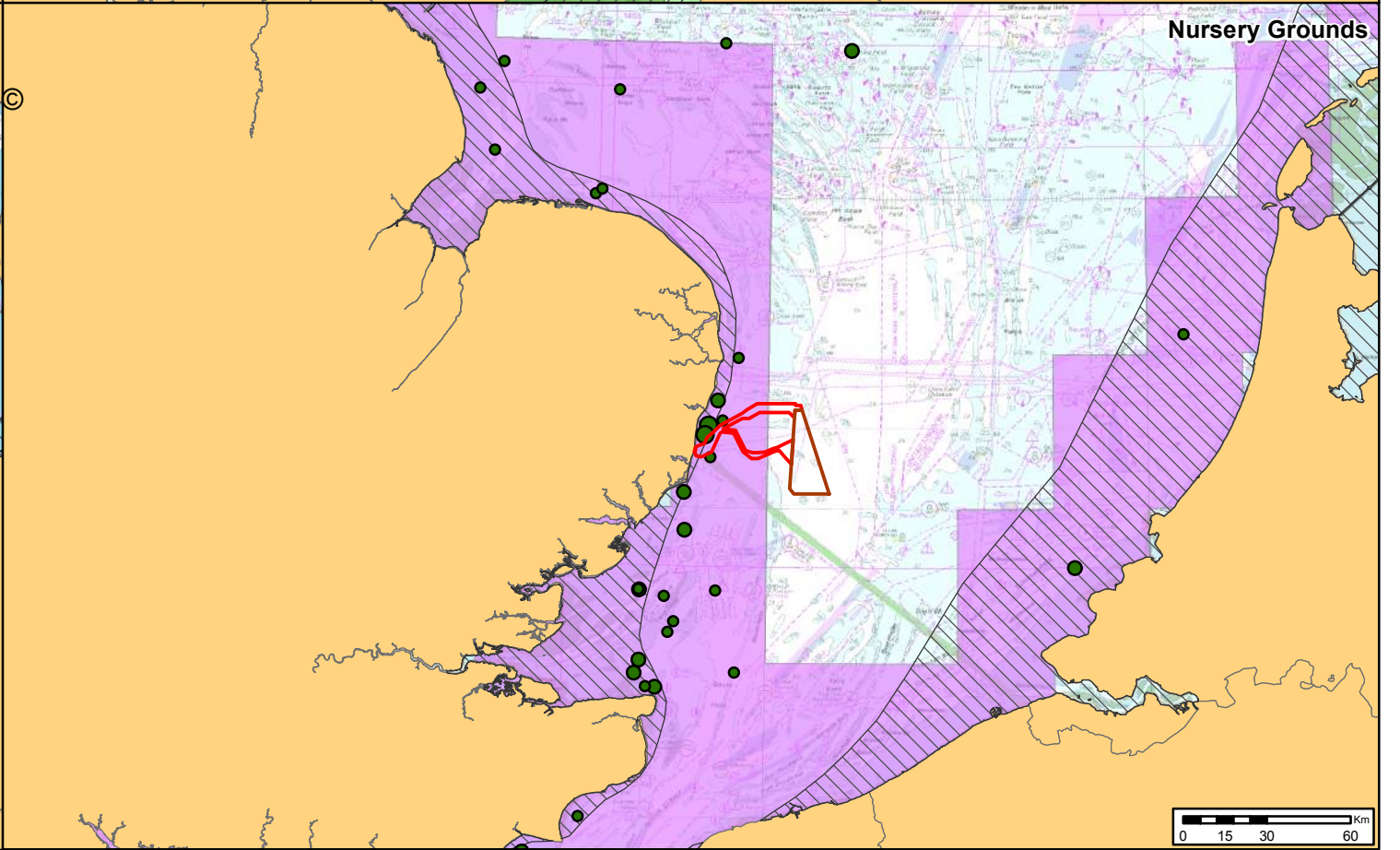
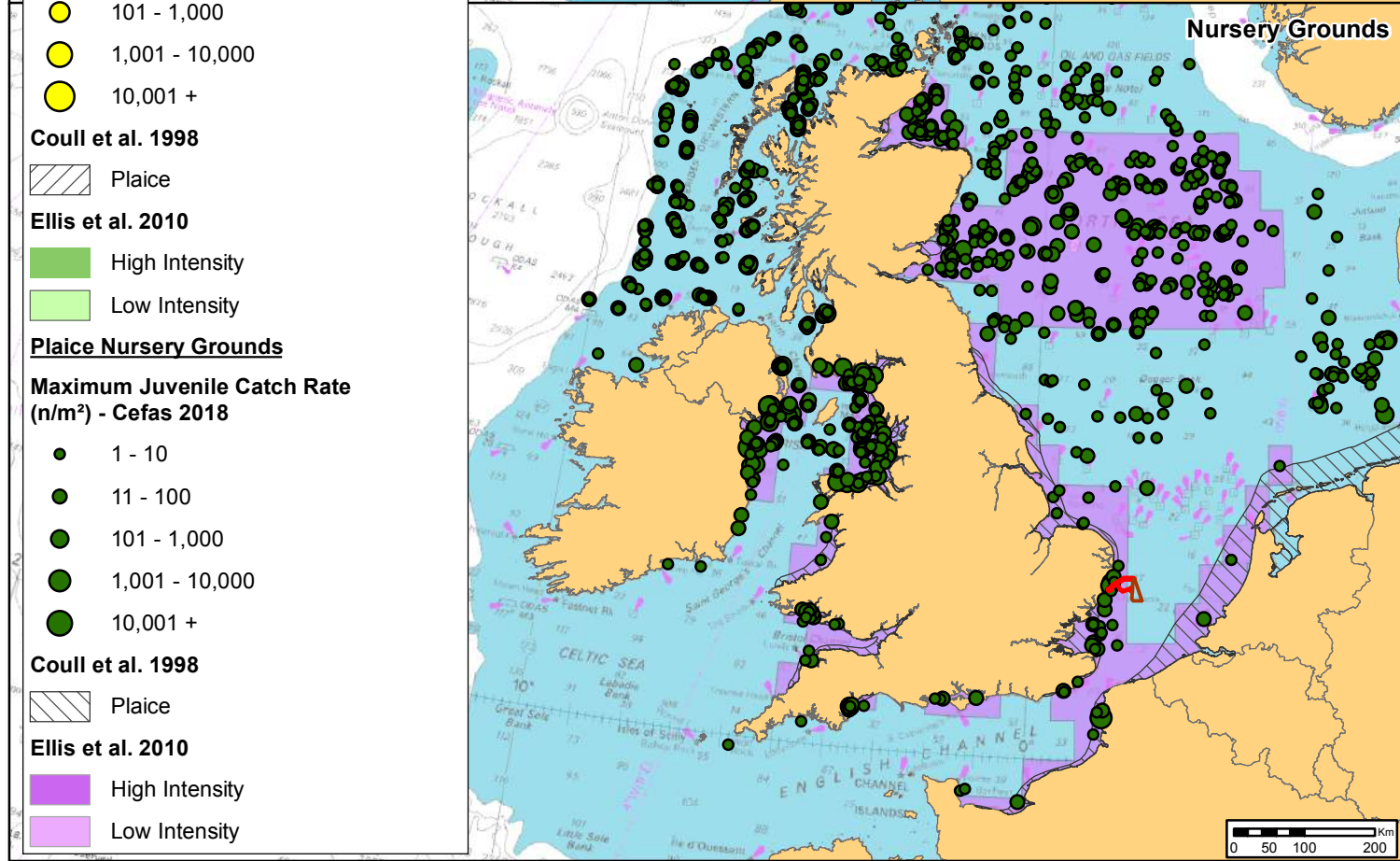
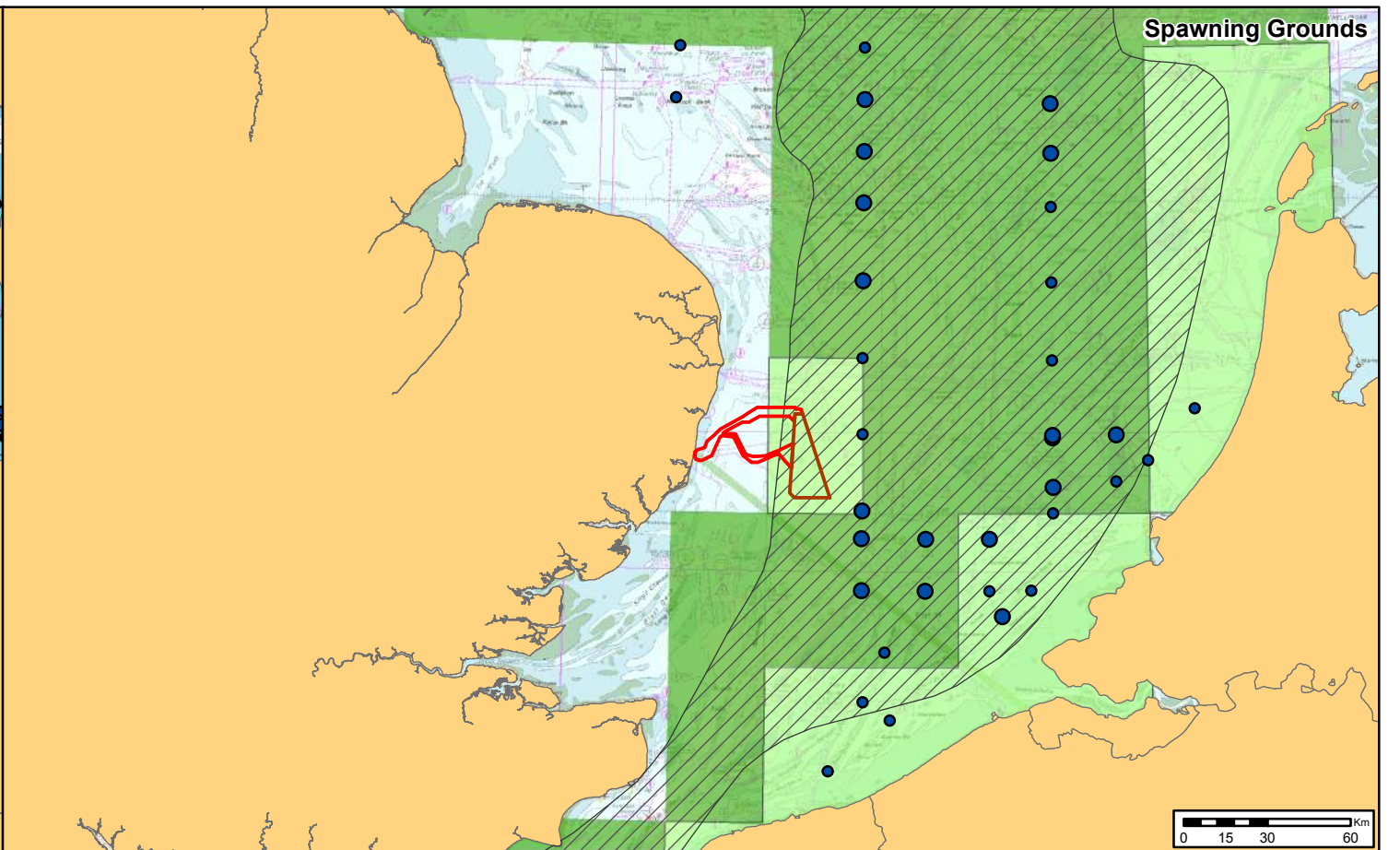
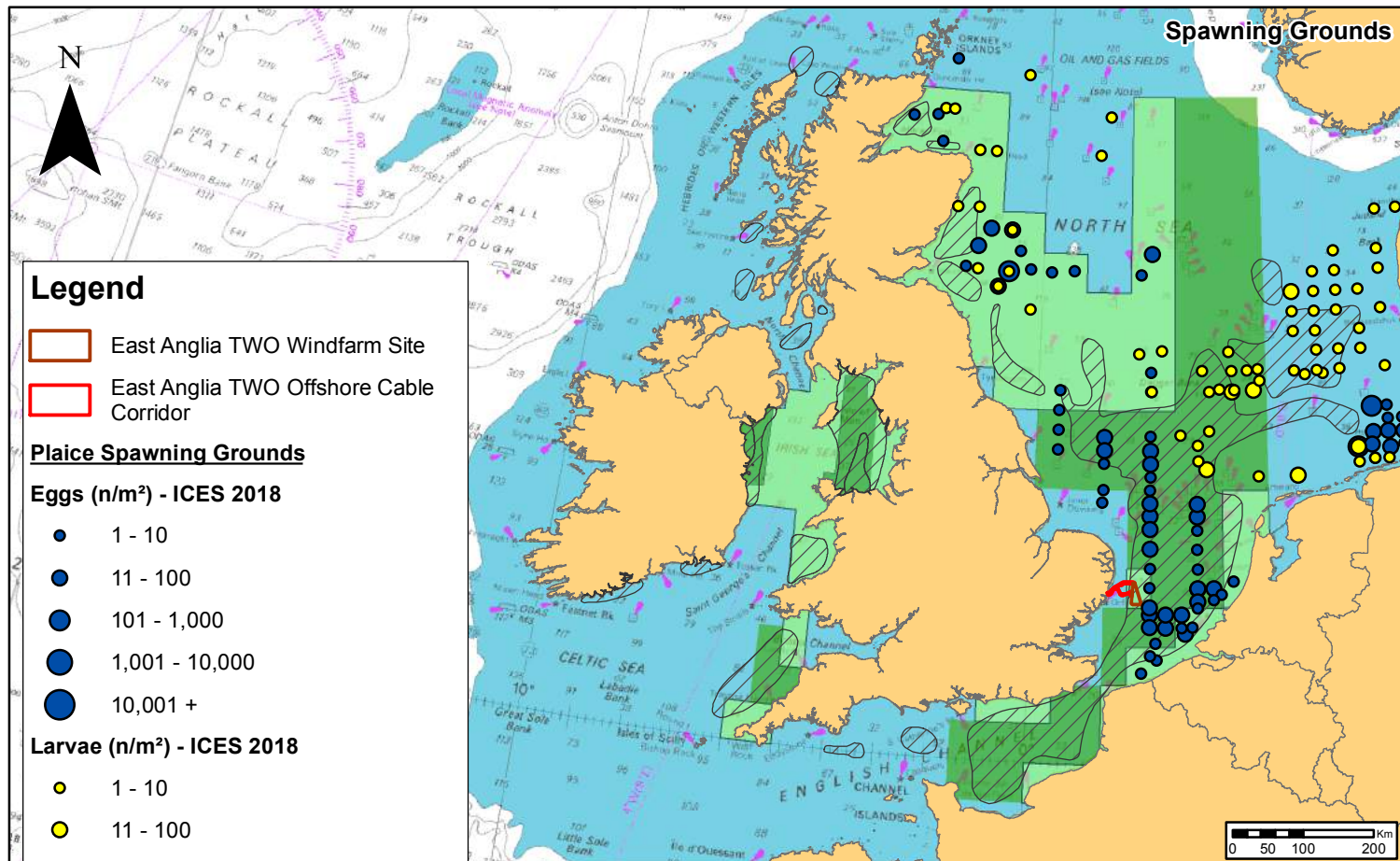
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1:5,000,000
Scale @ A3

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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Plaice from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC239
Rev	2
Date	15/11/18
Figure	10.4
Datum: WGS 1984 Projection: Zone 31N	



- Legend**
- East Anglia TWO Windfarm Site
 - East Anglia TWO Offshore Cable Corridor
- Plaice Spawning Grounds**
- Eggs (n/m²) - ICES 2018**
- 1 - 10
 - 11 - 100
 - 101 - 1,000
 - 1,001 - 10,000
 - 10,001 +
- Larvae (n/m²) - ICES 2018**
- 1 - 10
 - 11 - 100
 - 101 - 1,000
 - 1,001 - 10,000
 - 10,001 +
- Coull et al. 1998**
- Plaice
- Ellis et al. 2010**
- High Intensity
 - Low Intensity
- Plaice Nursery Grounds**
- Maximum Juvenile Catch Rate (n/m²) - Cefas 2018**
- 1 - 10
 - 11 - 100
 - 101 - 1,000
 - 1,001 - 10,000
 - 10,001 +
- Coull et al. 1998**
- Plaice
- Ellis et al. 2010**
- High Intensity
 - Low Intensity



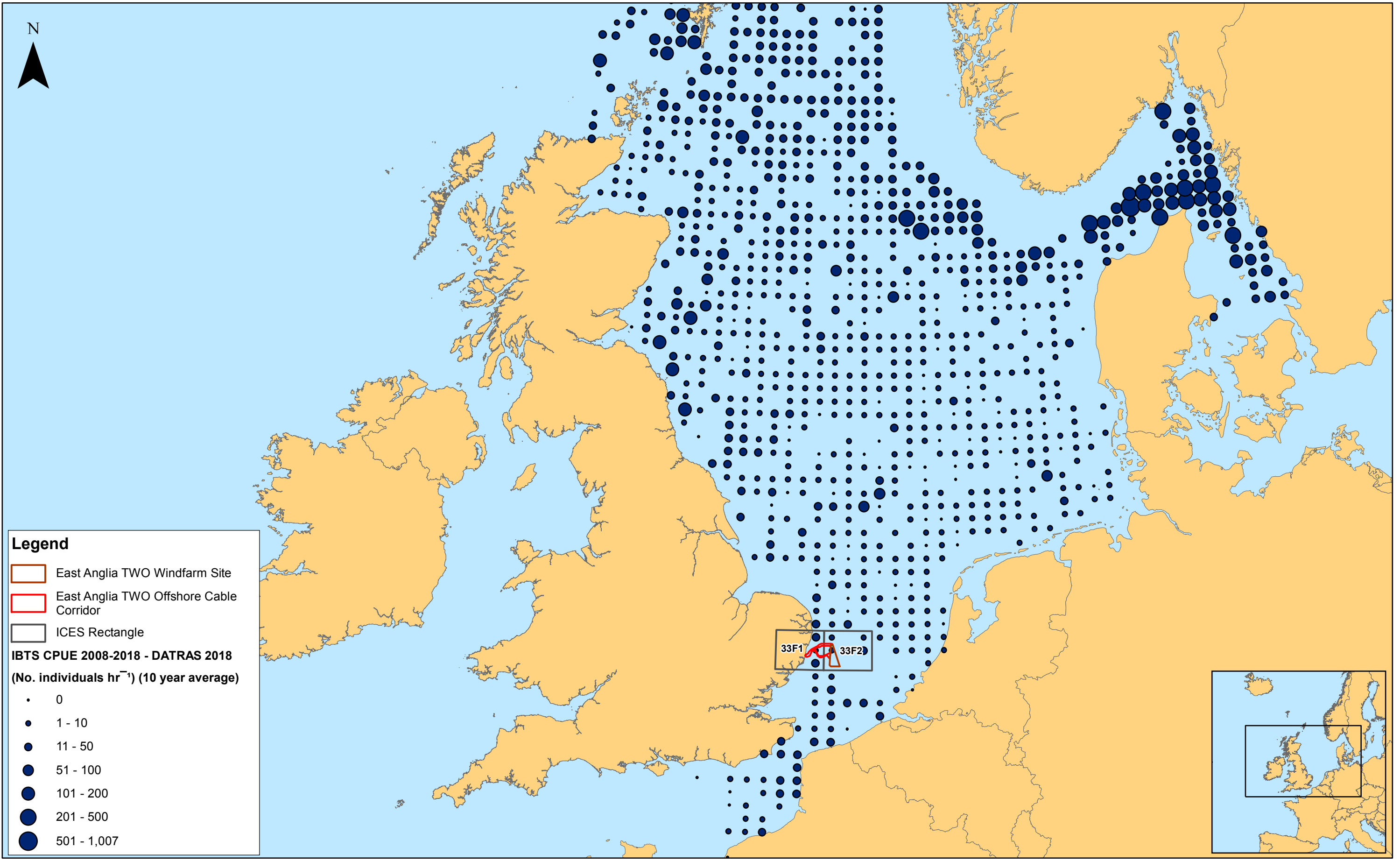
2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
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East Anglia TWO

Plaice Spawning and Nursery Grounds (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC198
Rev	2
Date	15/11/18
Figure	10.5
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 500
- 501 - 1,007



Rev	Date	By	Comment	Approved:
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1	05/10/2018	FC	First Issue.	Checked: KC

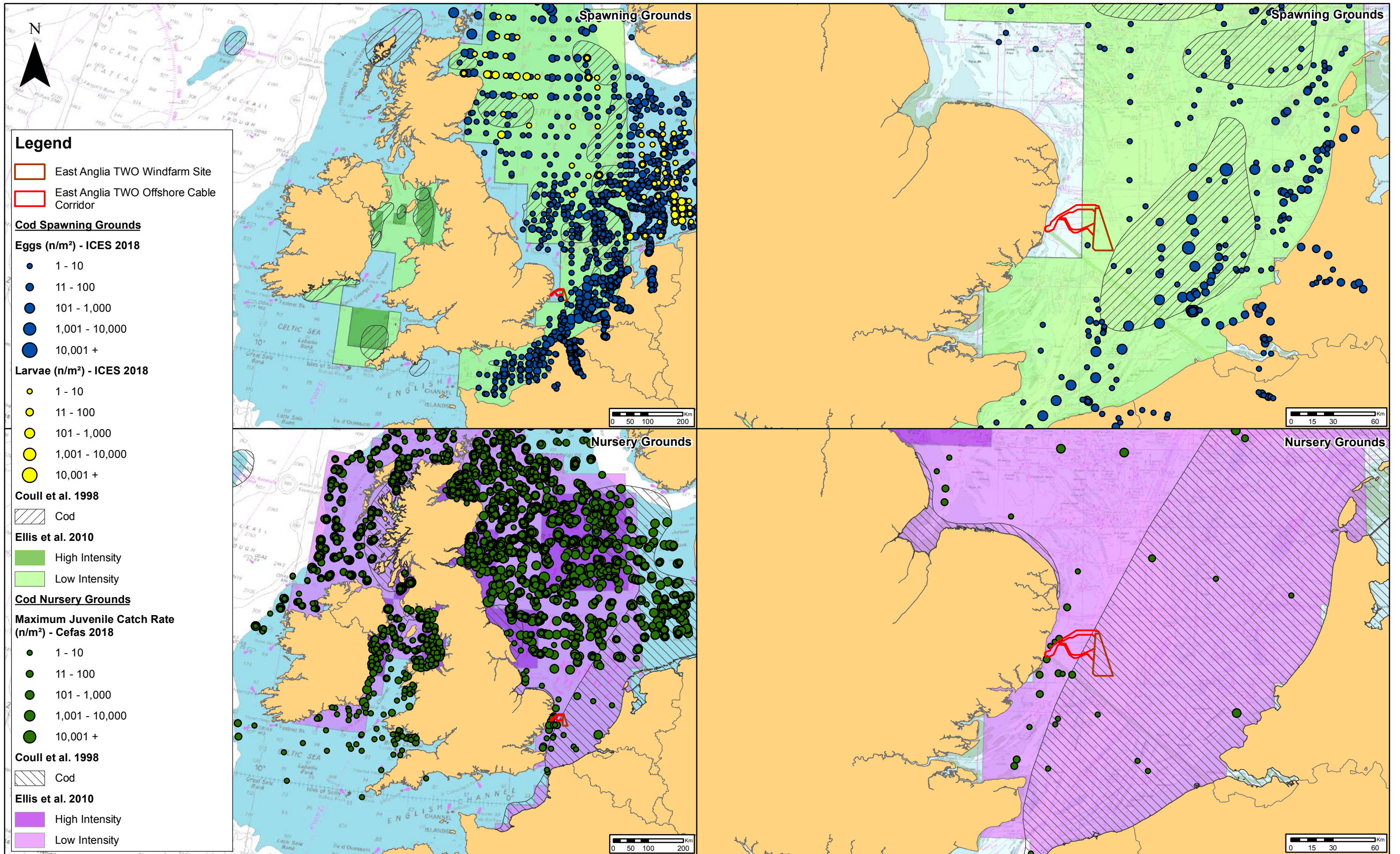
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Cod from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC240
Rev	2
Date	15/11/18
Figure	10.6

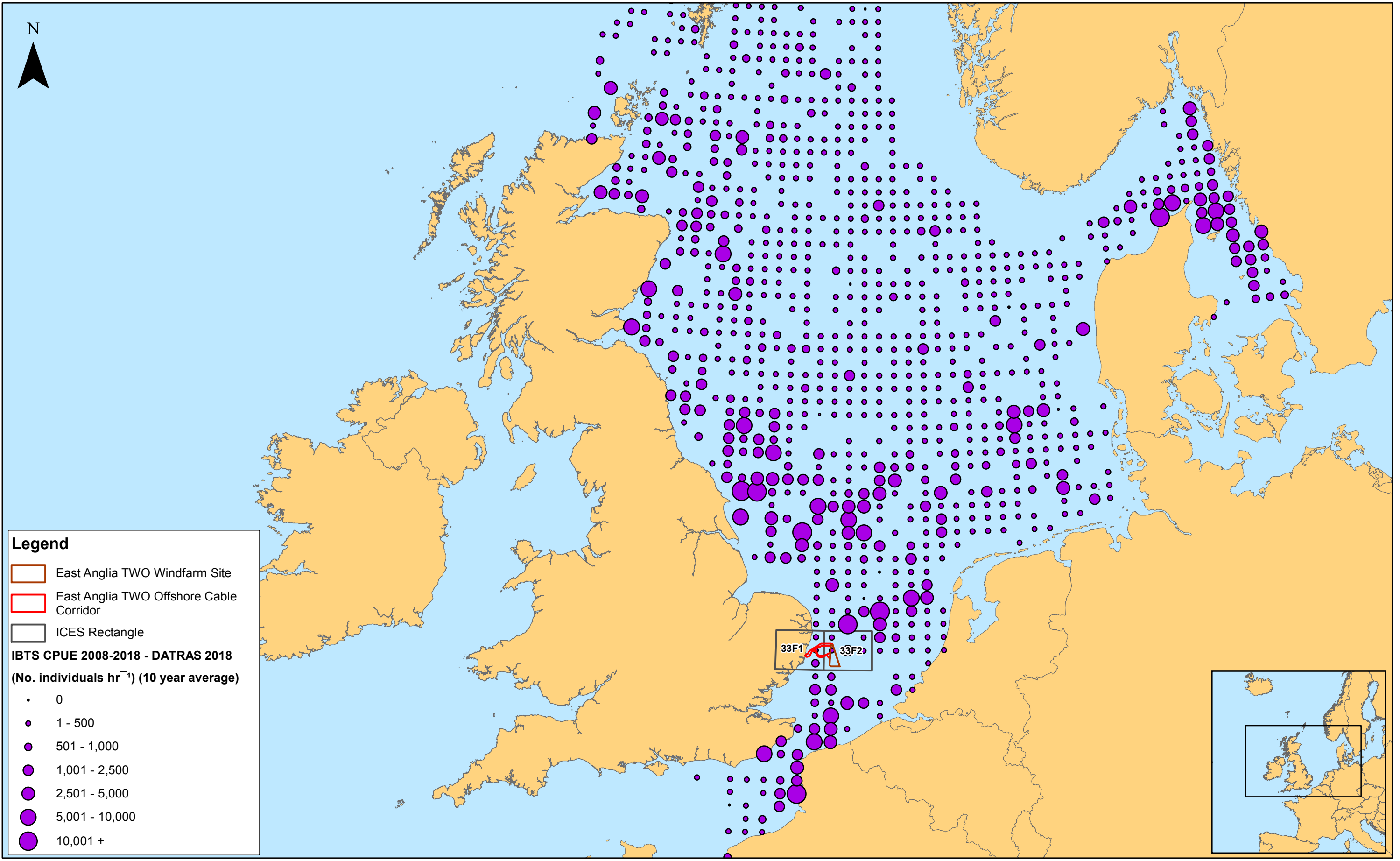
Datum: WGS 1984
 Projection: Zone 31N



2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
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East Anglia TWO
Cod Spawning and Nursery Grounds
 (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC199
Rev	2
Date	15/11/18
Figure	10.7
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 500
- 501 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 +

33F1 33F2

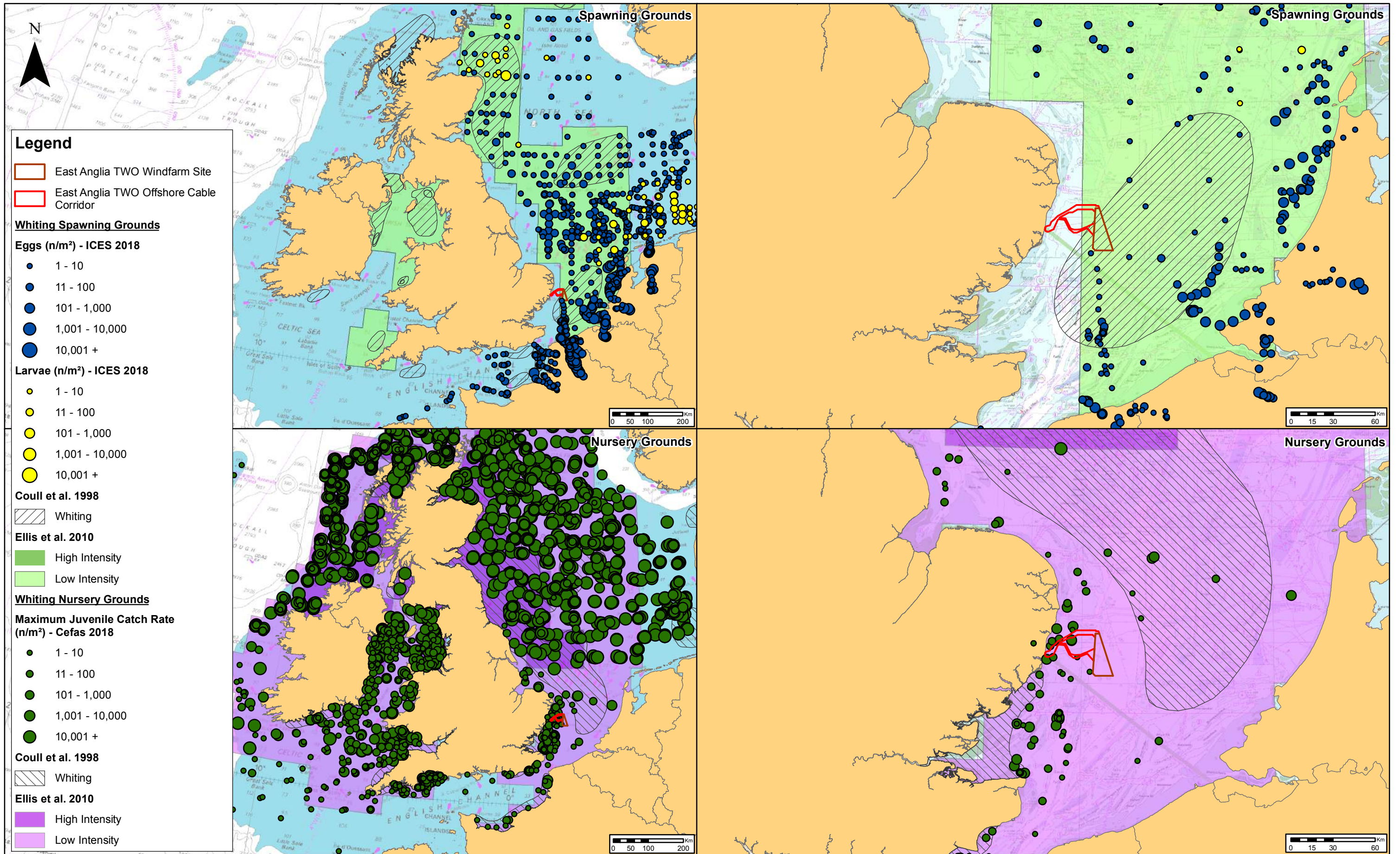


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2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

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East Anglia TWO
Average Number (Catch per Standardised Haul)
of Whiting from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC241
Rev	2
Date	15/11/18
Figure	10.8
Datum: WGS 1984 Projection: Zone 31N	



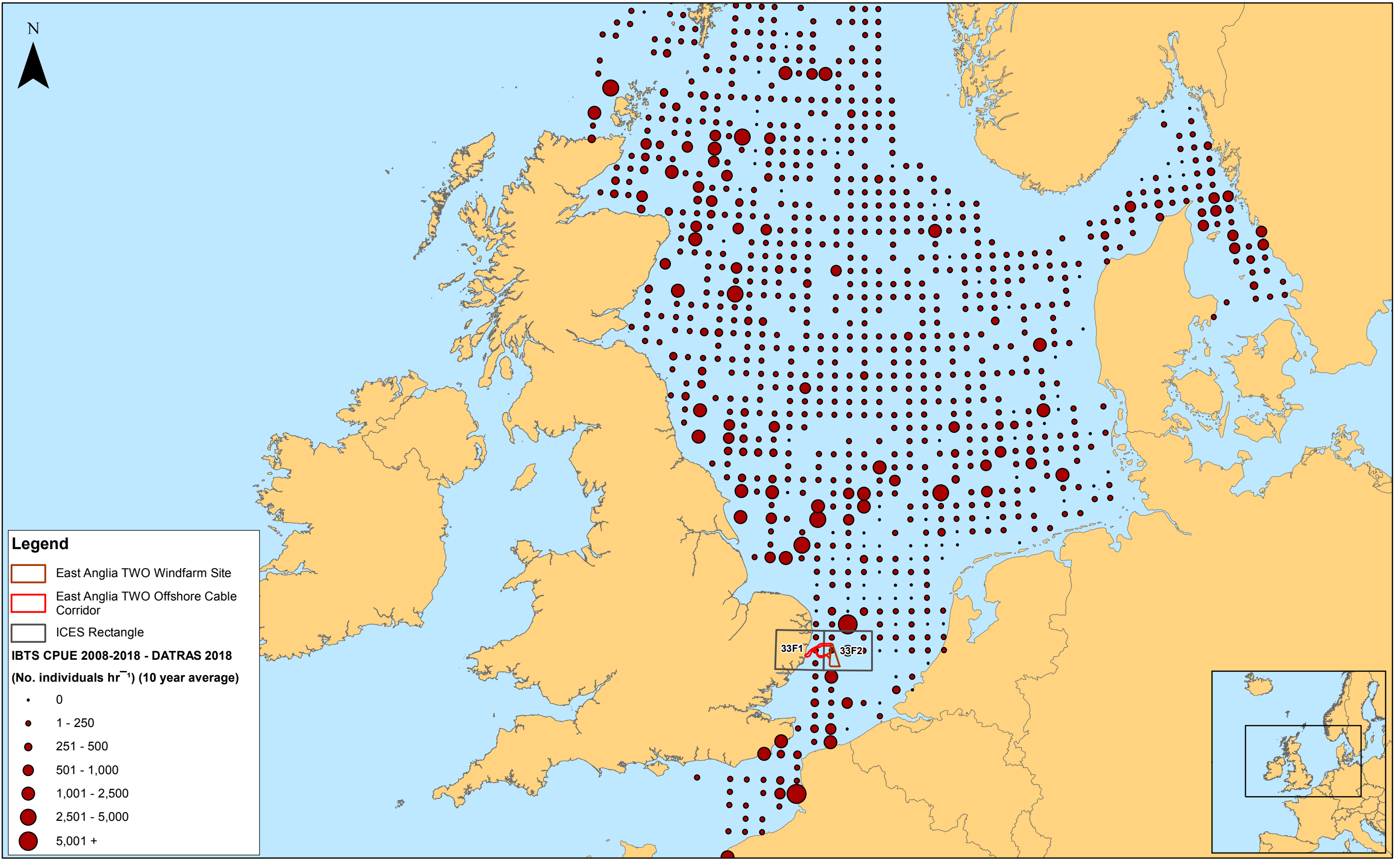
2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
1	10/09/2018	FC	First Issue.	Checked:	KC	
Rev	Date	By	Comment	Approved:	PP	

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East Anglia TWO

Whiting Spawning and Nursery Grounds (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC200
Rev	2
Date	15/11/18
Figure	10.9
	Datum: WGS 1984 Projection: Zone 31N



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Scale @ A3

0 50 100 200 Km

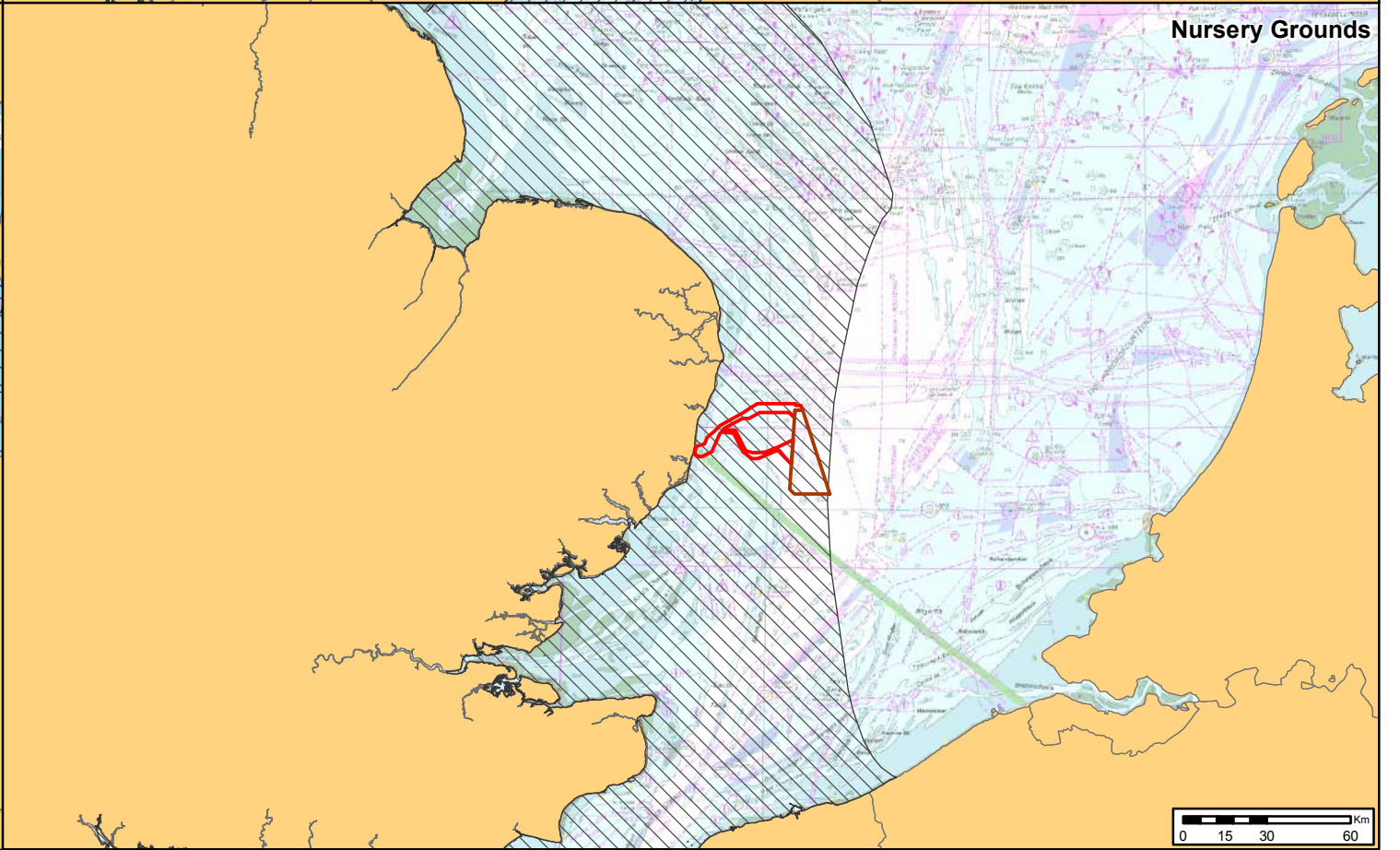
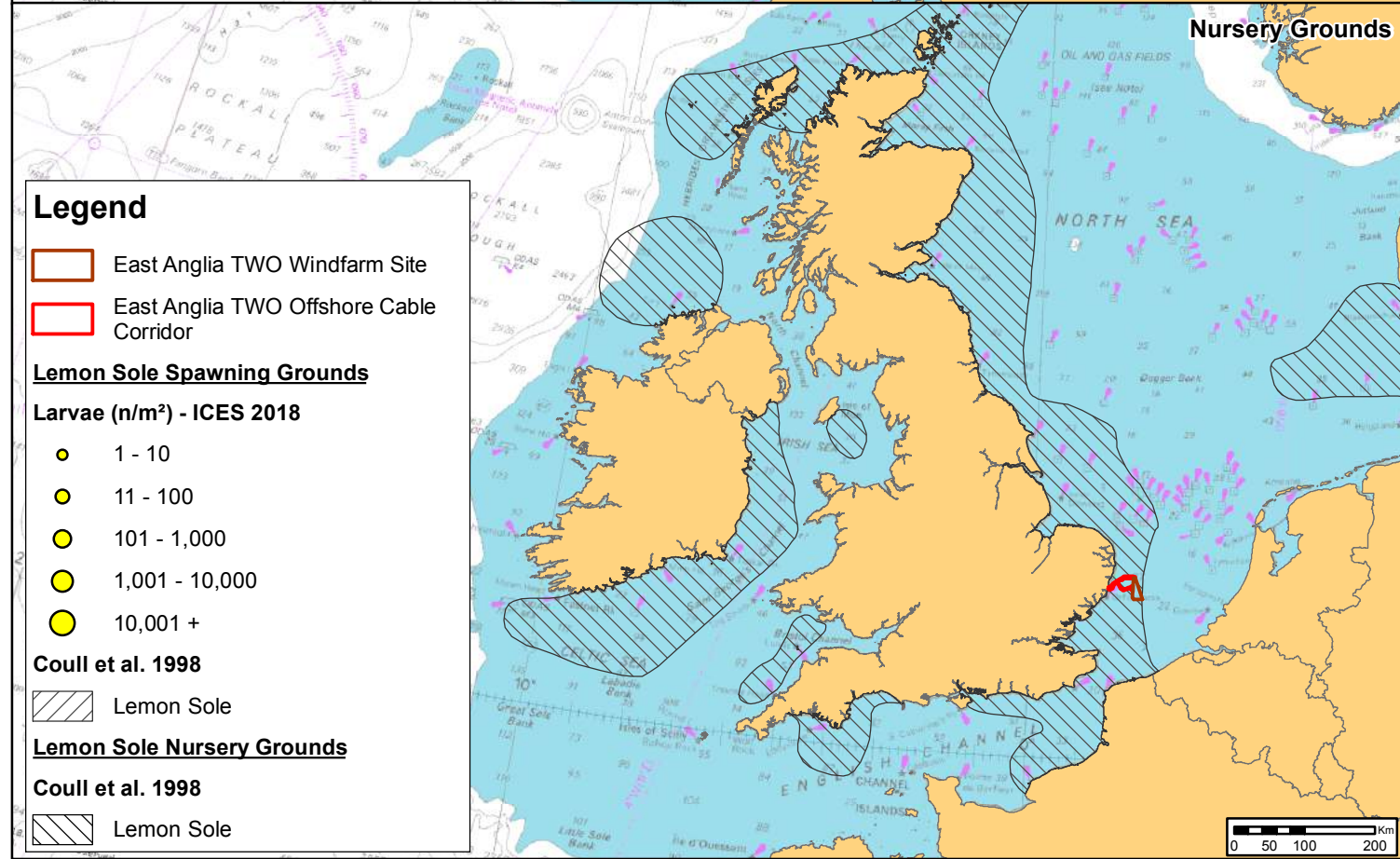
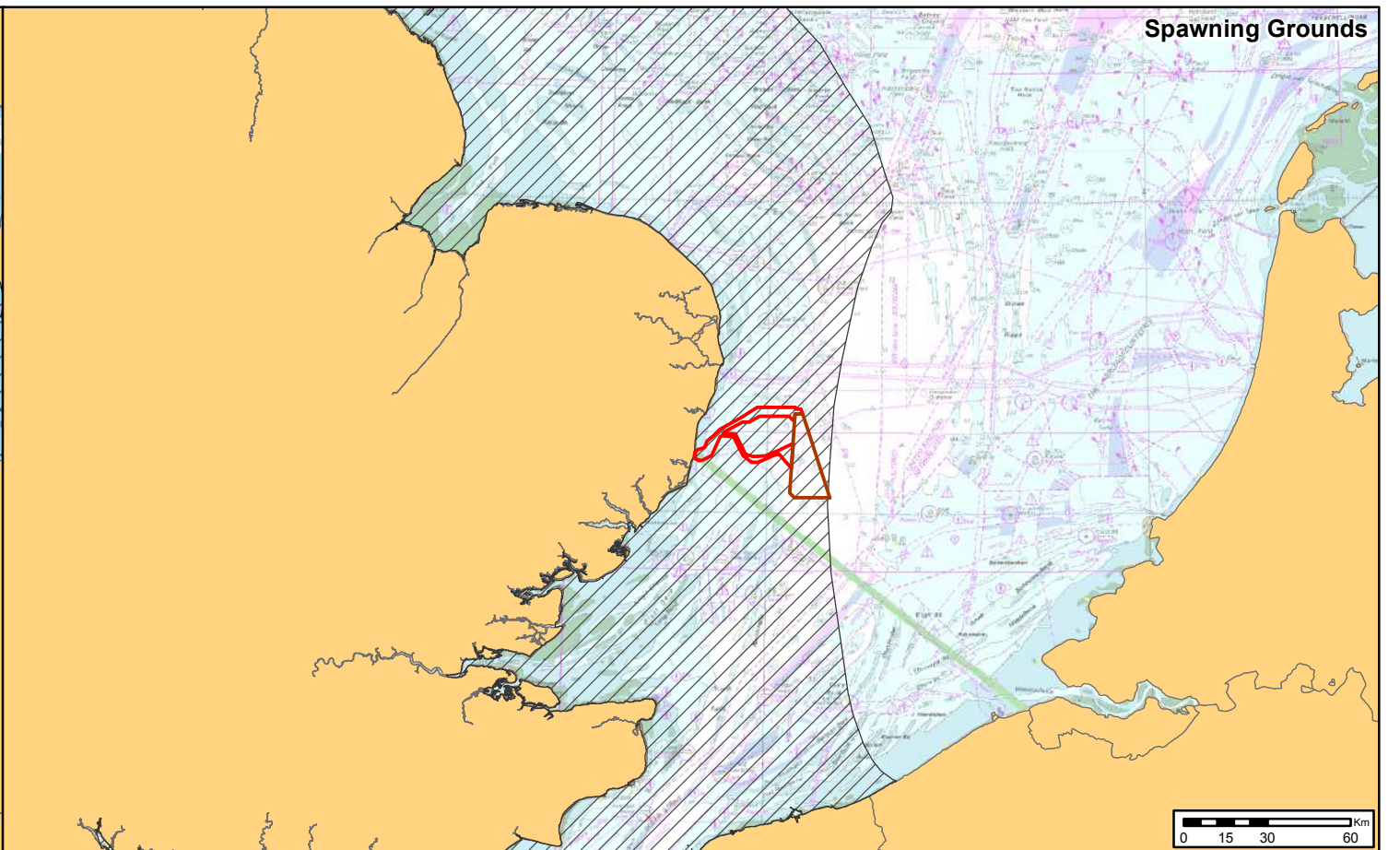
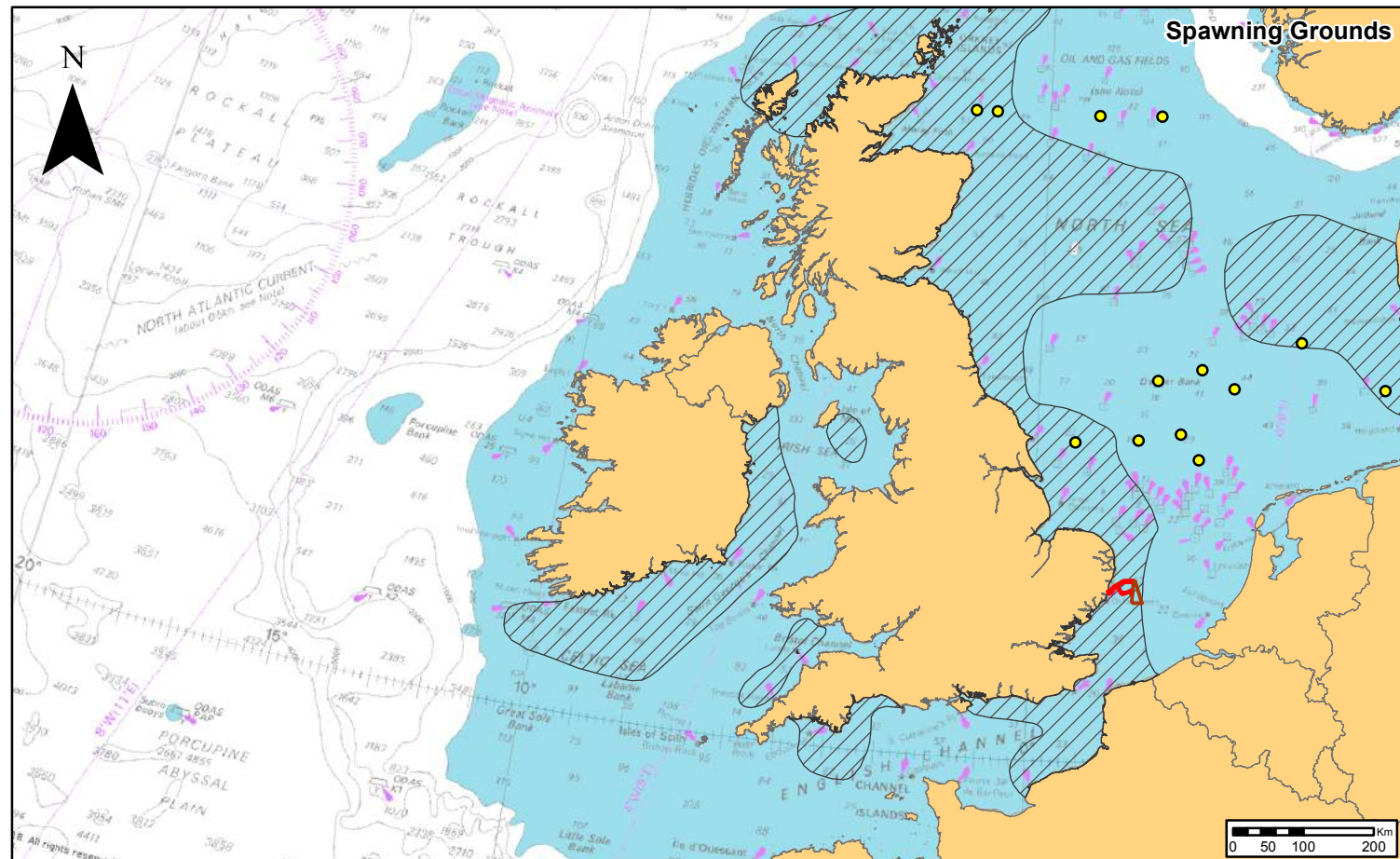
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Lemon Sole from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC242
Rev	2
Date	15/11/18
Figure	10.10

Datum: WGS 1984
Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Lemon Sole Spawning Grounds

Larvae (n/m²) - ICES 2018

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

Coull et al. 1998

- Lemon Sole

Lemon Sole Nursery Grounds

Coull et al. 1998

- Lemon Sole



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1	10/09/2018	FC	First Issue.	Checked: KC
				Approved: PP

Scale @ A3

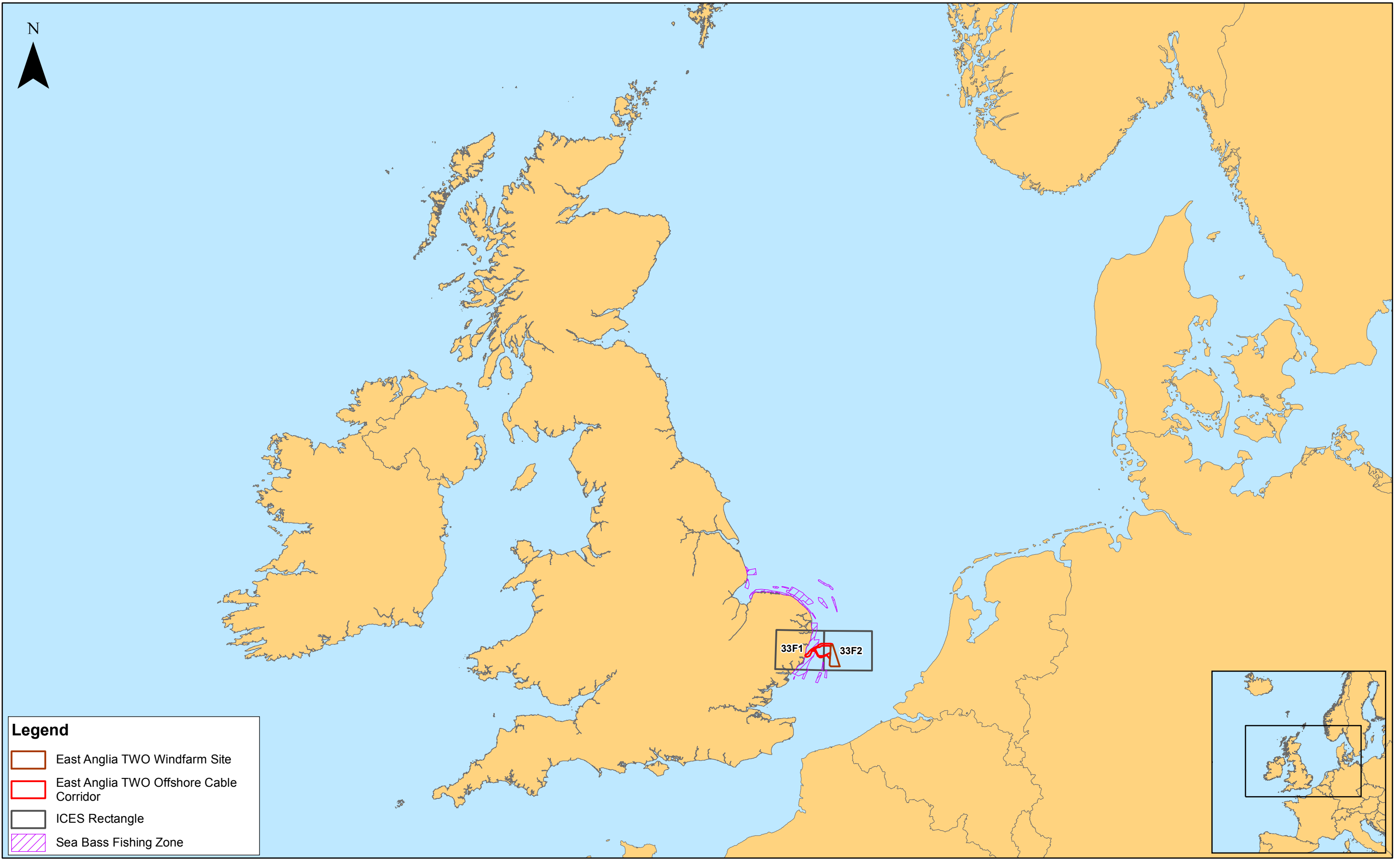
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East Anglia TWO

Lemon Sole Spawning and Nursery Grounds
(Coull et al., 1998)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC201
Rev	2
Date	15/11/18
Figure	10.11
Datum:	WGS 1984
Projection:	Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle
- Sea Bass Fishing Zone



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Scale @ A3

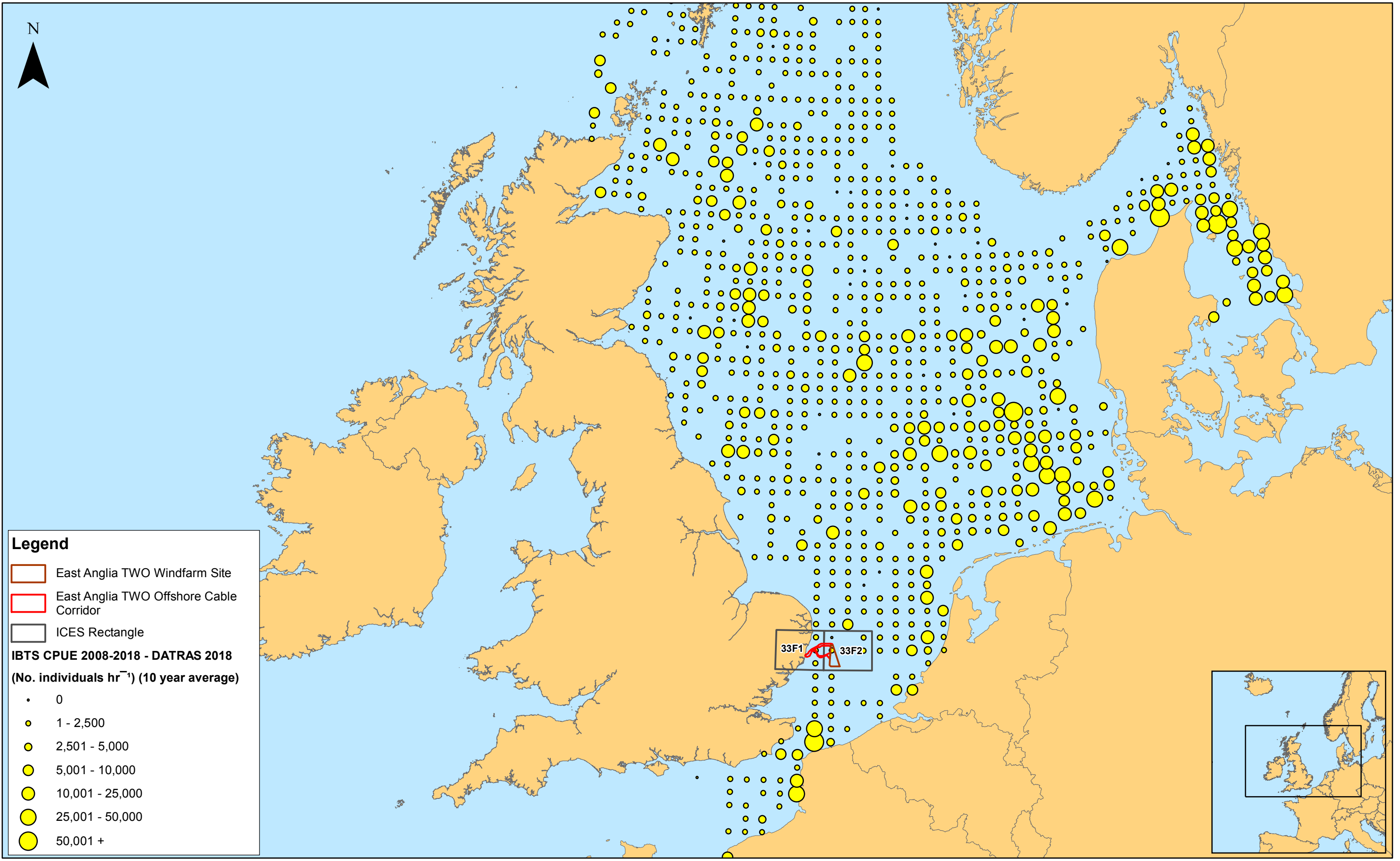
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East Anglia TWO

Sea Bass Historic Fishing Areas

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC231	
Rev	2	Datum: WGS 1984
Date	15/11/18	Projection: Zone 31N
Figure	10.12	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 - 25,000
- 25,001 - 50,000
- 50,001 +

33F1 33F2



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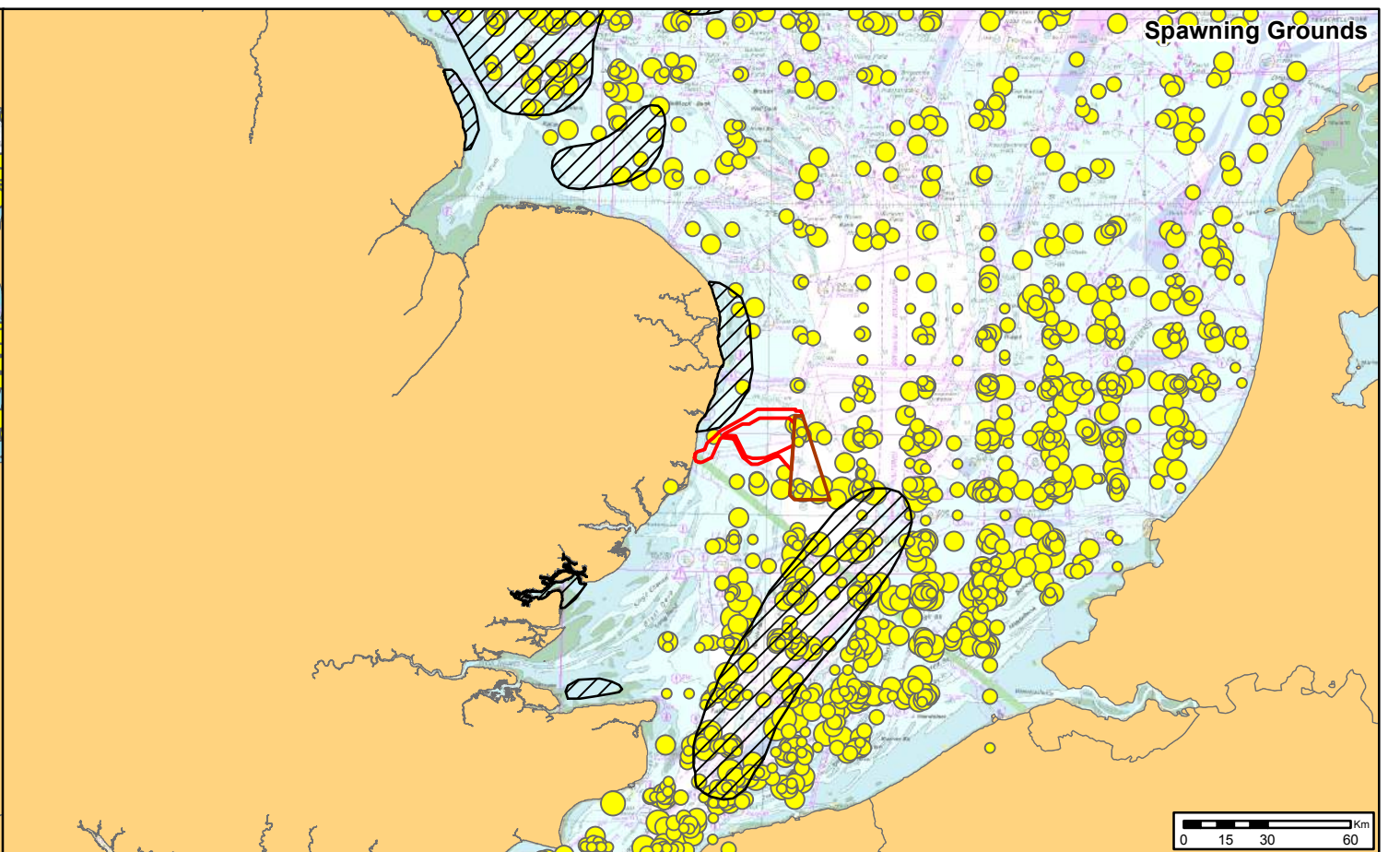
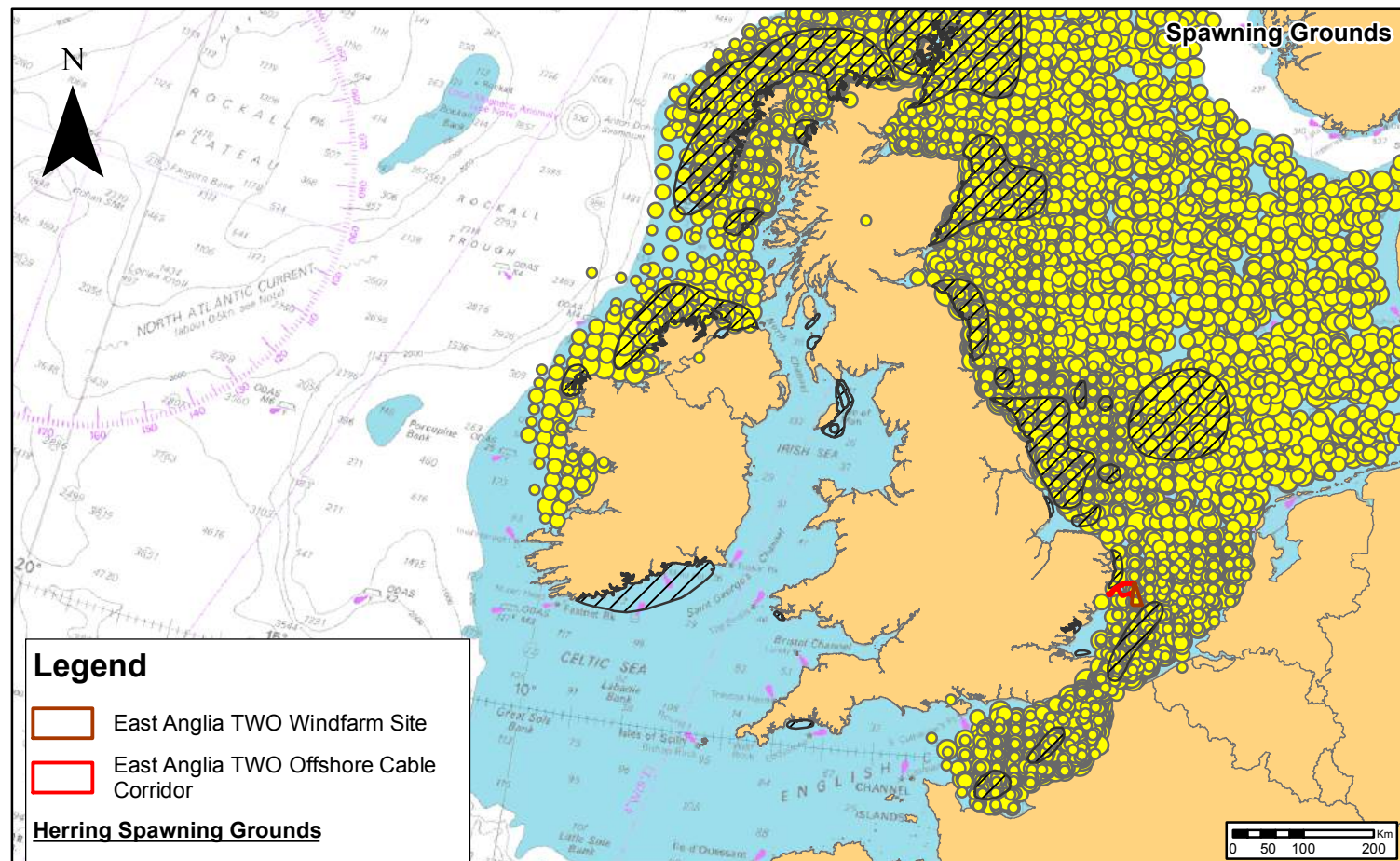
1:5,000,000
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Herring from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC243
Rev	2
Date	15/11/18
Figure	10.13

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Herring Spawning Grounds

Larvae (n/m²) - ICES 2018

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

Coull et al. 1998

- Herring

Herring Nursery Grounds

Maximum Juvenile Catch Rate (n/m²) - Cefas 2018

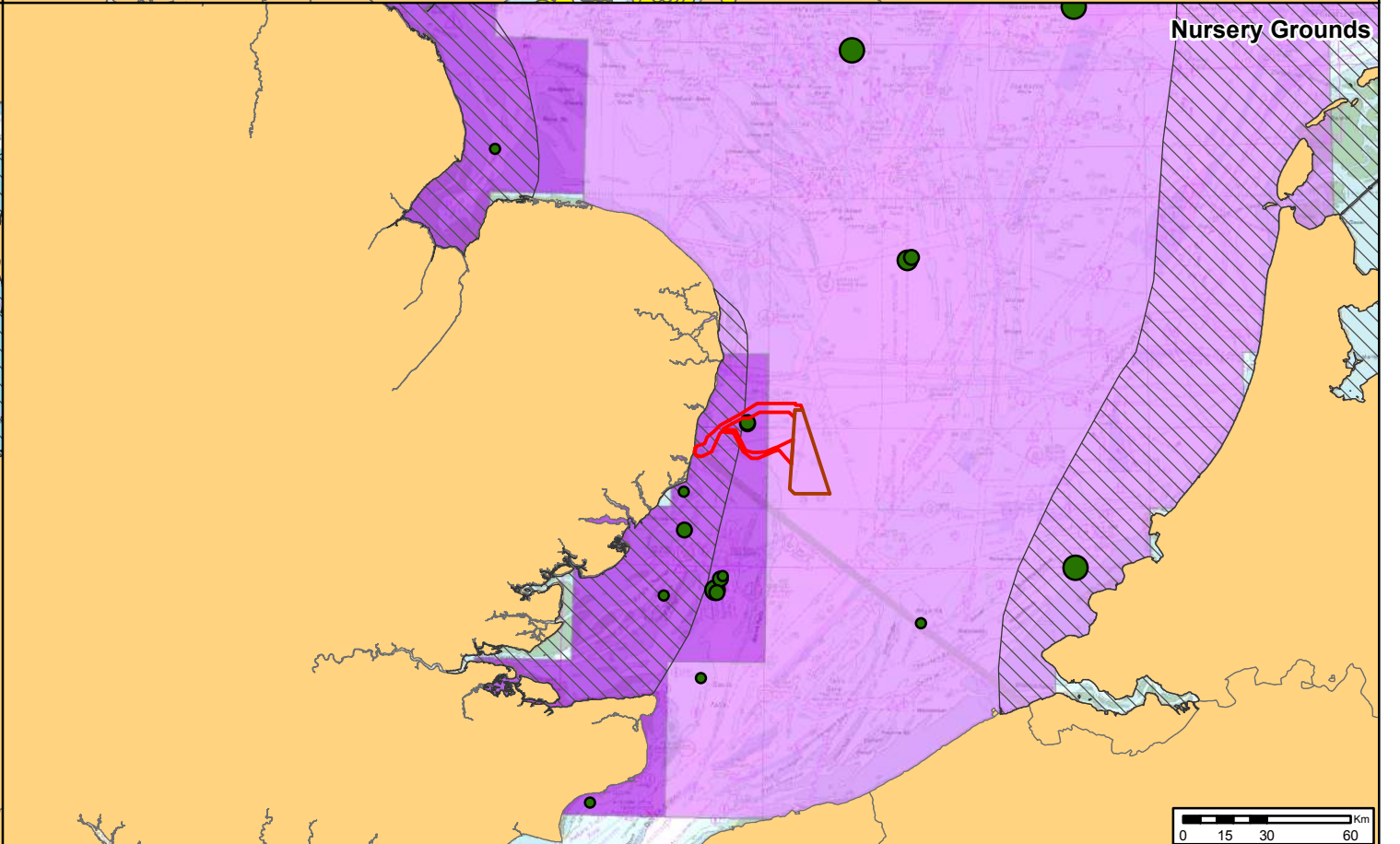
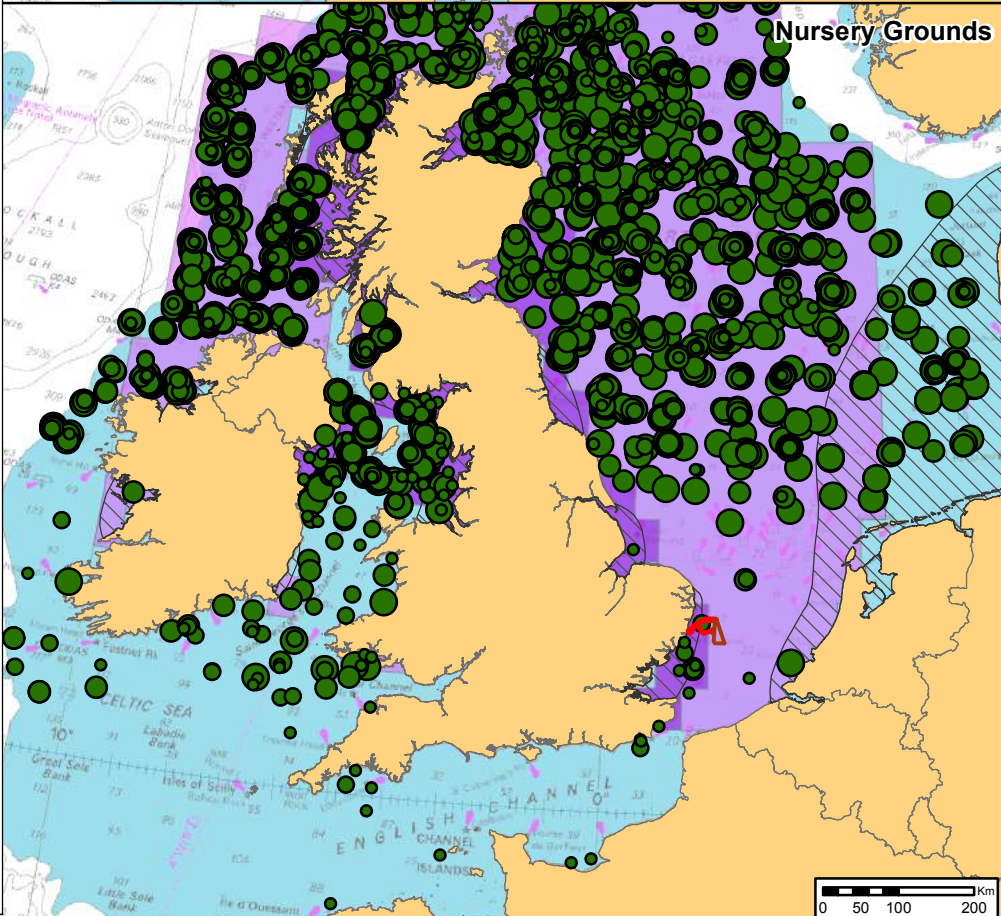
- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

Coull et al. 1998

- Herring

Ellis et al. 2010

- High Intensity
- Low Intensity

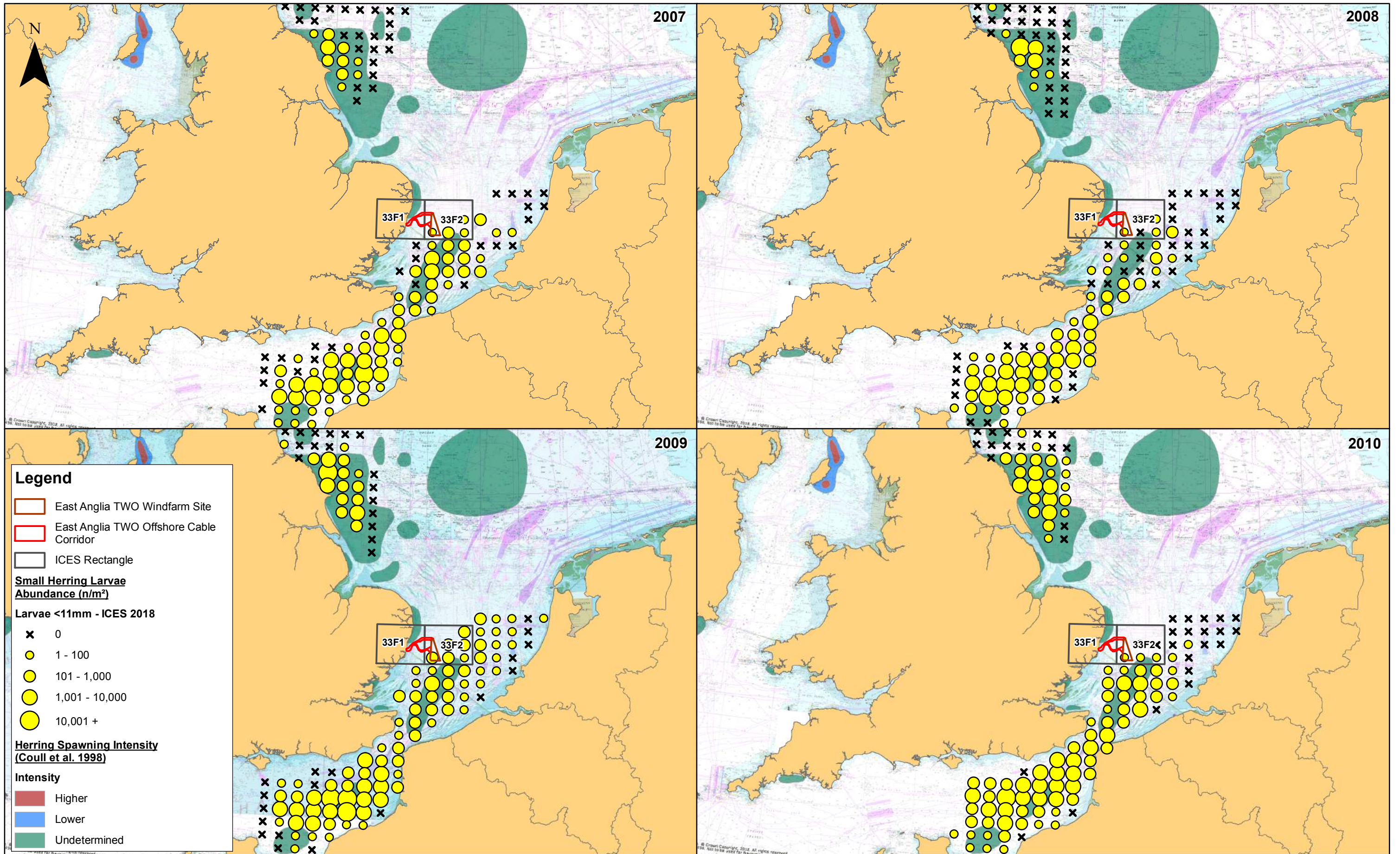


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East Anglia TWO
Herring Spawning and Nursery Grounds
(Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC202
Rev	2
Date	15/11/18
Figure	10.14
Datum:	WGS 1984
Projection:	Zone 31N



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1	10/09/2018	FC	First Issue.	Checked: KC
				Approved: PP

1:2,000,000
Scale @ A3

0 25 50 100 Km

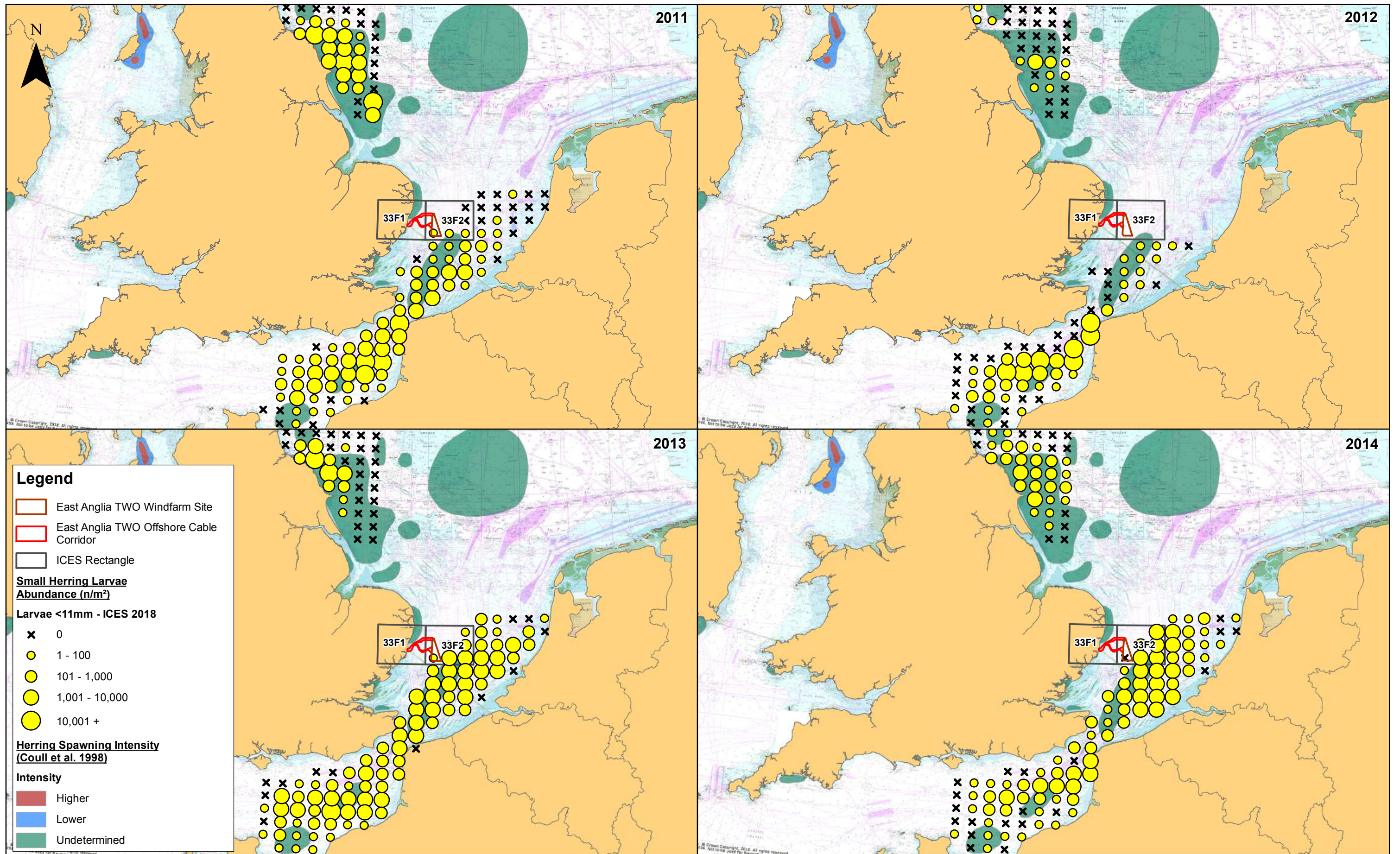
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East Anglia TWO

IHLS Herring Small Larvae Abundance (2007 - 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC208	
Rev	2	Datum: WGS 1984
Date	15/11/18	Projection: Zone 31N
Figure	10.15	



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	10/09/2018	FC	First Issue.	Checked: KC
				Approved: PP

1:2,000,000
Scale @ A3

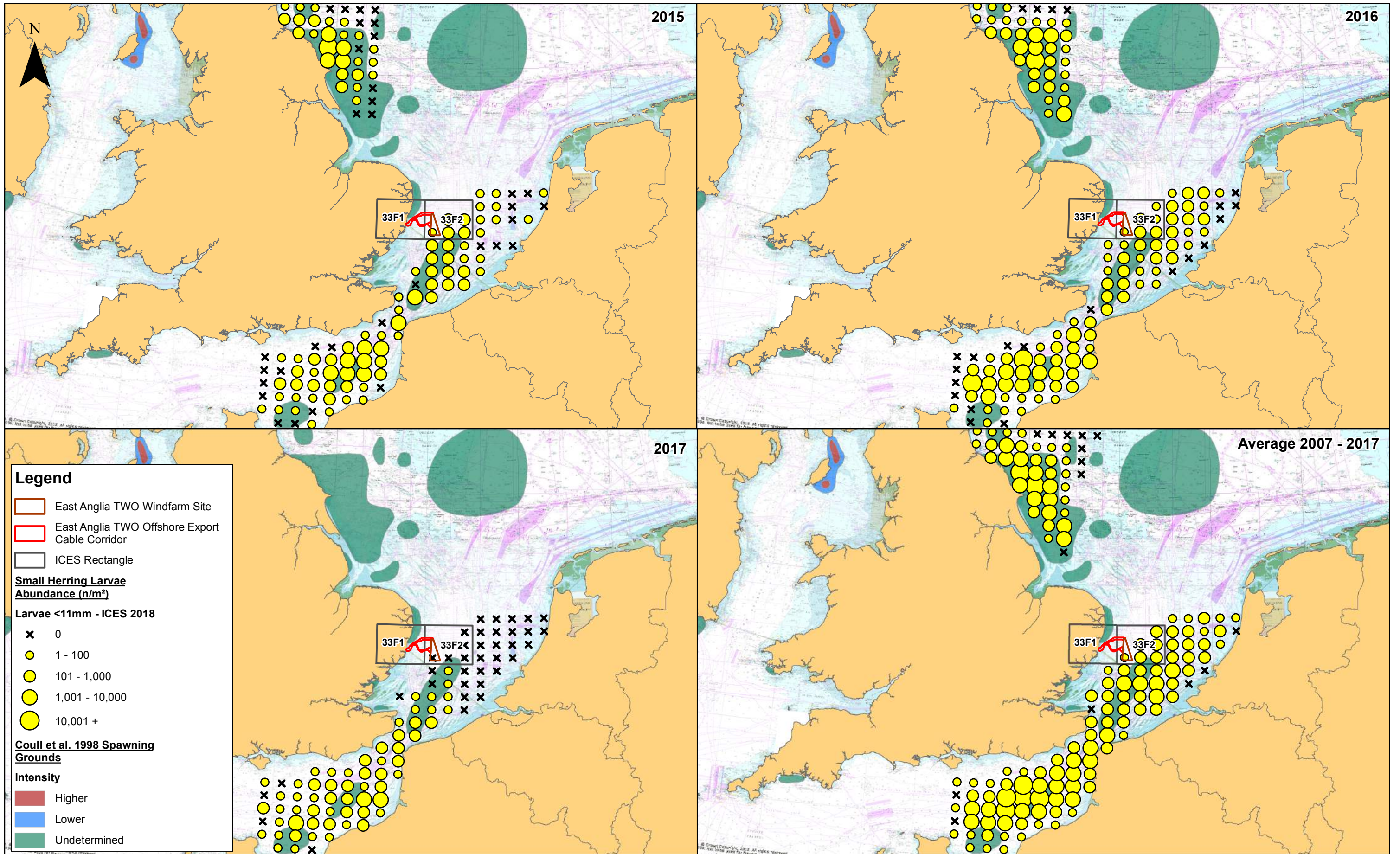
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East Anglia TWO

IHLS Herring Small Larvae Abundance (2011 - 2014)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC209	
Rev	2	Datum: WGS 1984
Date	15/11/18	Projection: Zone 31N
Figure	10.16	



2	15/11/2018	FC	Second Issue.	Prepared:	FC
1	10/09/2018	FC	First Issue.	Checked:	KC
Rev	Date	By	Comment	Approved:	PP

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Scale @ A3

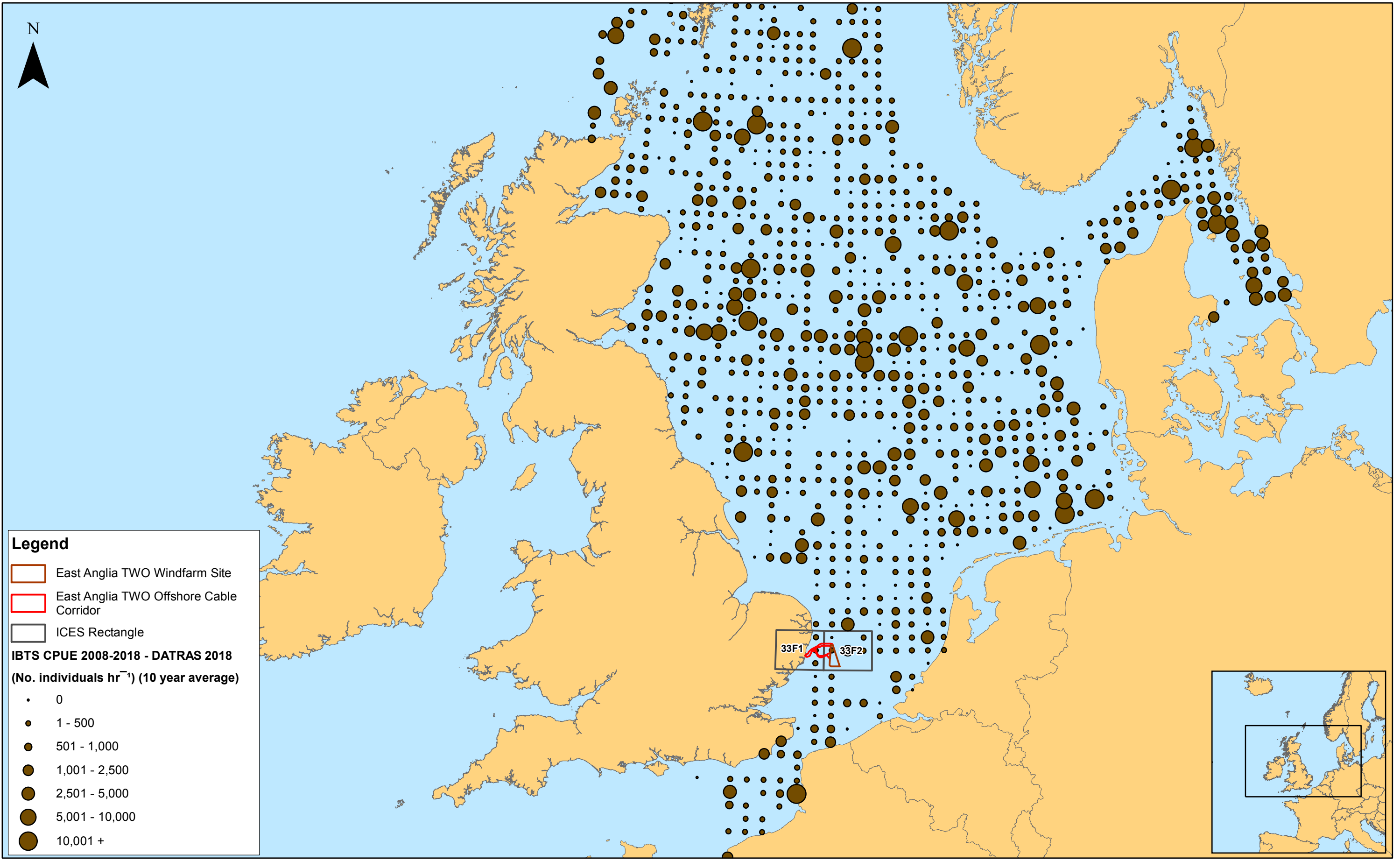
0 25 50 100 Km

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East Anglia TWO

IHLS Herring Small Larvae Abundance (2015-2017) and all Herring Larvae (2007-2017)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC215	
Rev	2	Datum: WGS 1984
Date	15/11/18	Projection: Zone 31N
Figure	10.17	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 500
- 501 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 +

33F1 33F2

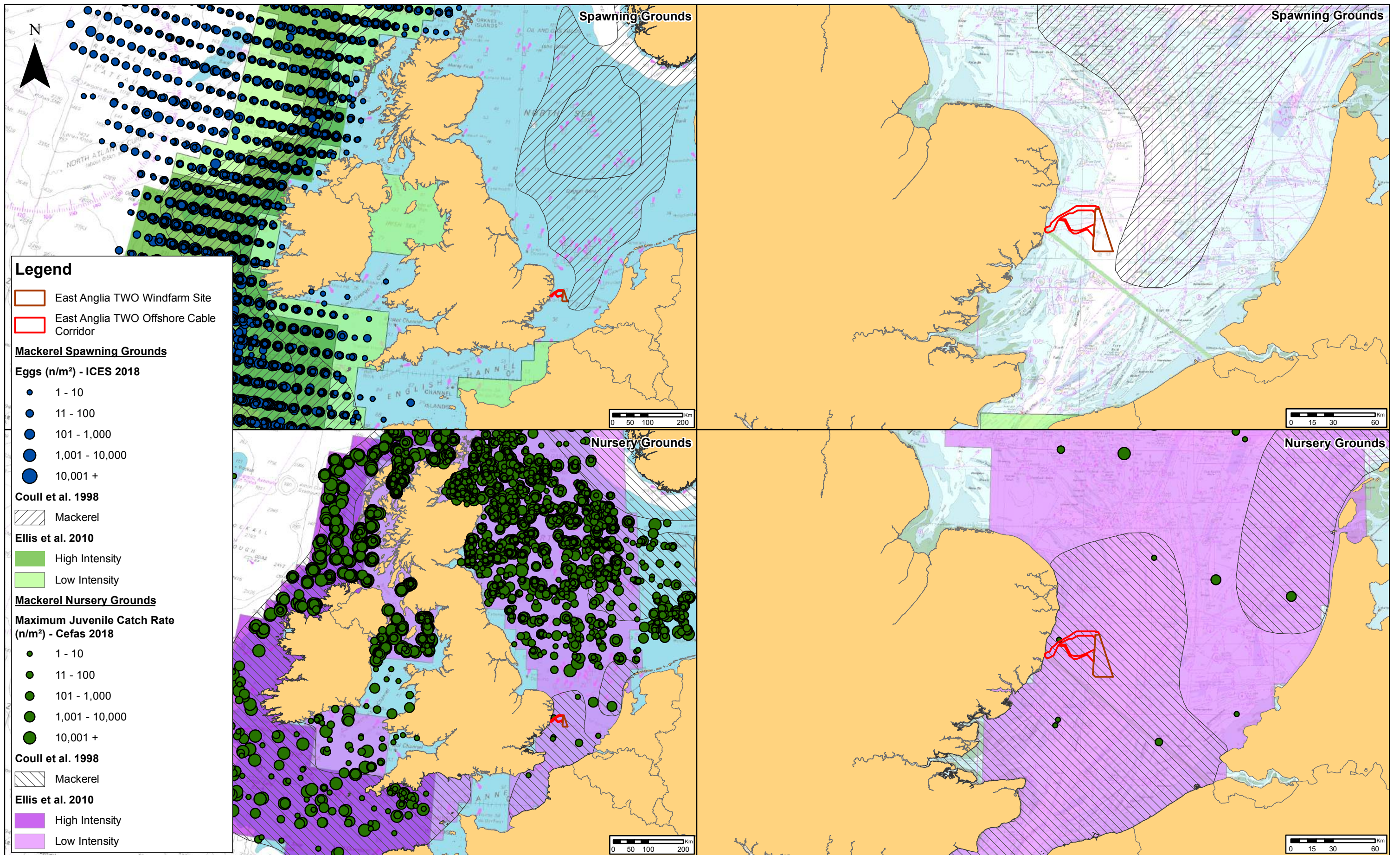


Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

1:5,000,000	Scale @ A3	0 50 100 200 Km
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Mackerel from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC244
Rev	2
Date	15/11/18
Figure	10.18
Datum: WGS 1984 Projection: Zone 31N	



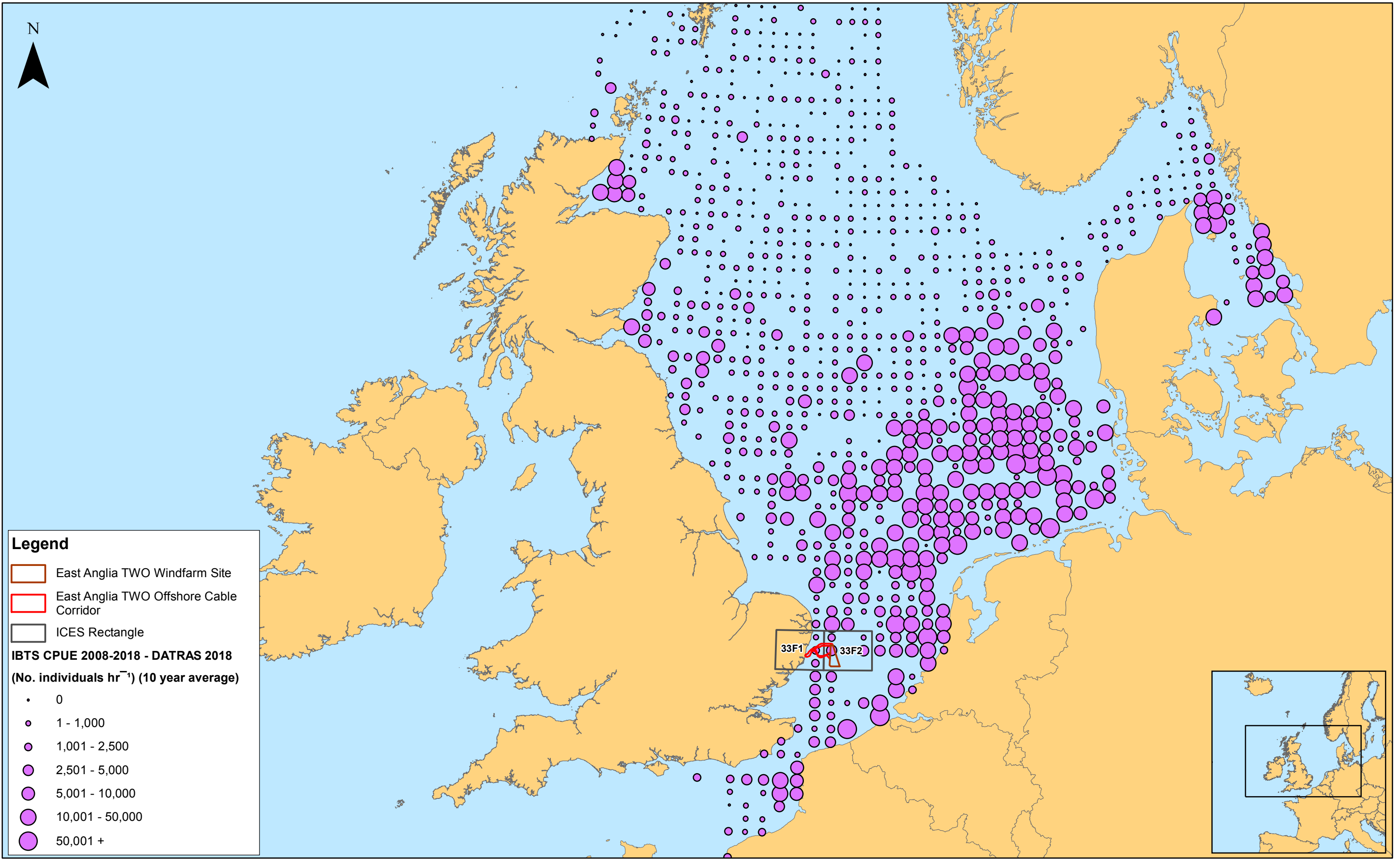
2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
1	10/09/2018	FC	First Issue.	Checked:	KC	
Rev	Date	By	Comment	Approved:	PP	

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East Anglia TWO

Mackerel Spawning and Nursery Grounds (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC203
Rev	2
Date	15/11/18
Figure	10.19
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 - 50,000
- 50,001 +

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Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

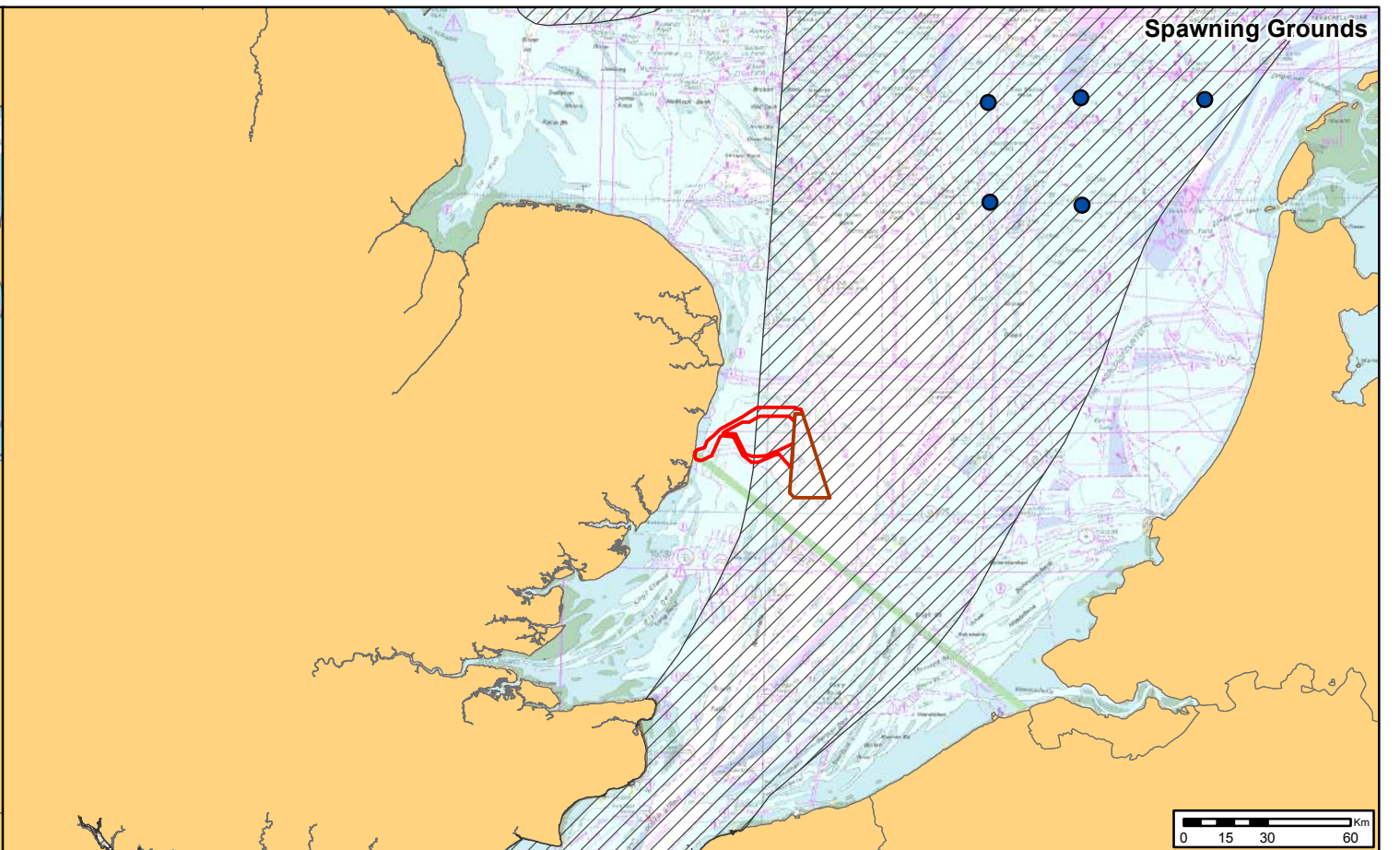
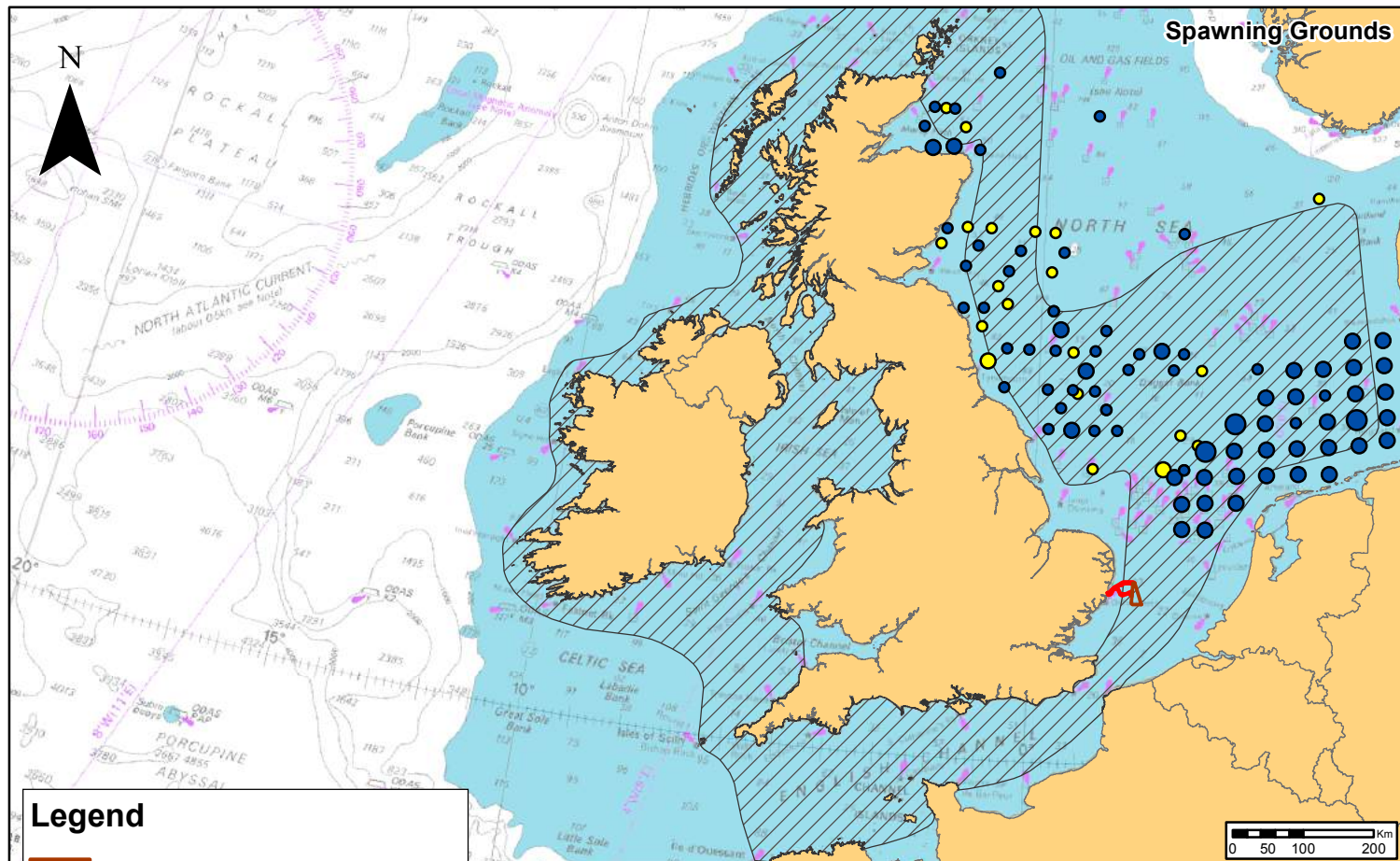
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Sprat from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC245
Rev	2
Date	15/11/18
Figure	10.20

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Sprat Spawning Grounds

Eggs (n/m²) - ICES 2018

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

Larvae (n/m²) - ICES 2018

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

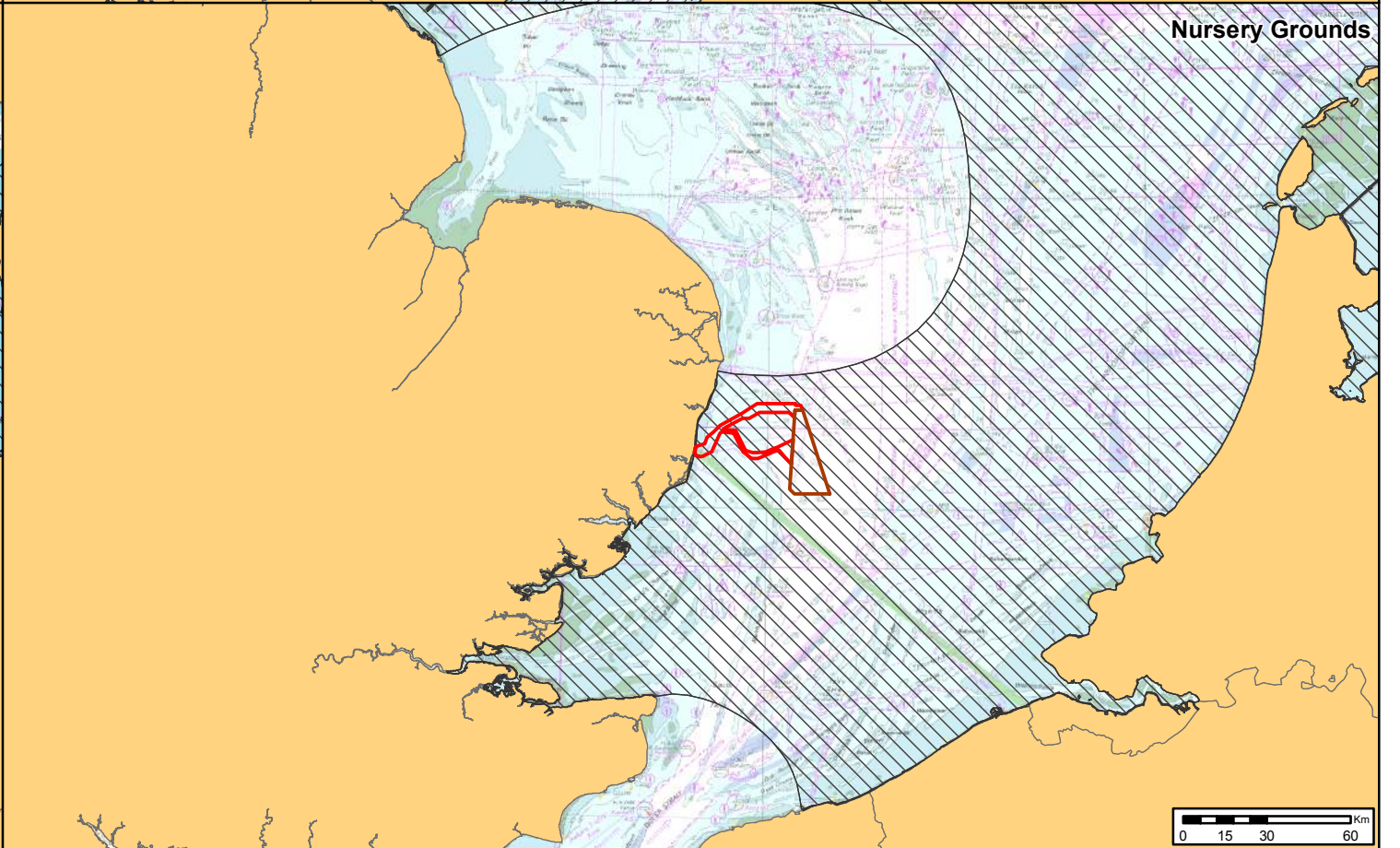
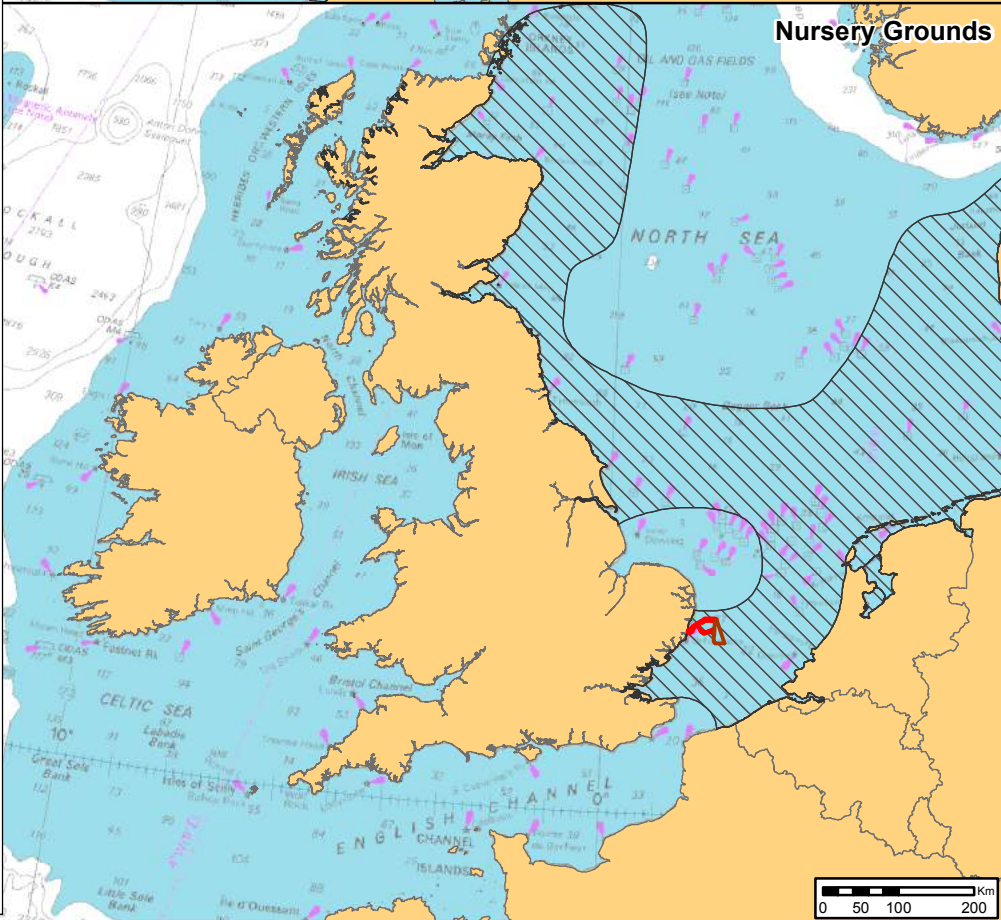
Coull et al. 1998

- Sprat

Sprat Nursery Grounds

Coull et al. 1998

- Sprat



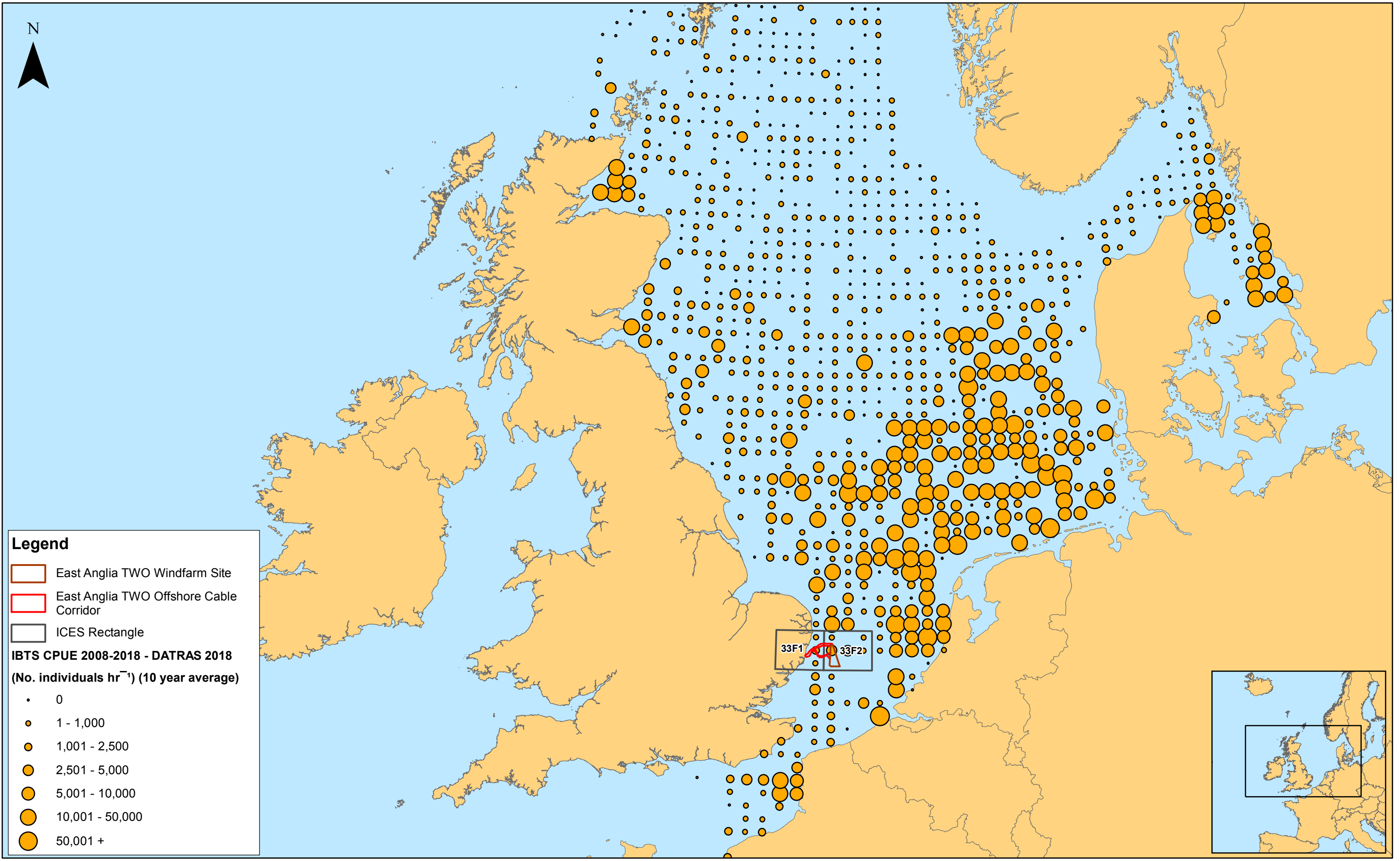
2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
1	10/09/2018	FC	First Issue.	Checked:	KC	
Rev	Date	By	Comment	Approved:	PP	

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East Anglia TWO

Sprat Spawning and Nursery Grounds (Coull et al., 1998)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC204
Rev	2
Date	15/11/18
Figure	10.21
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
 (No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 - 50,000
- 50,001 +



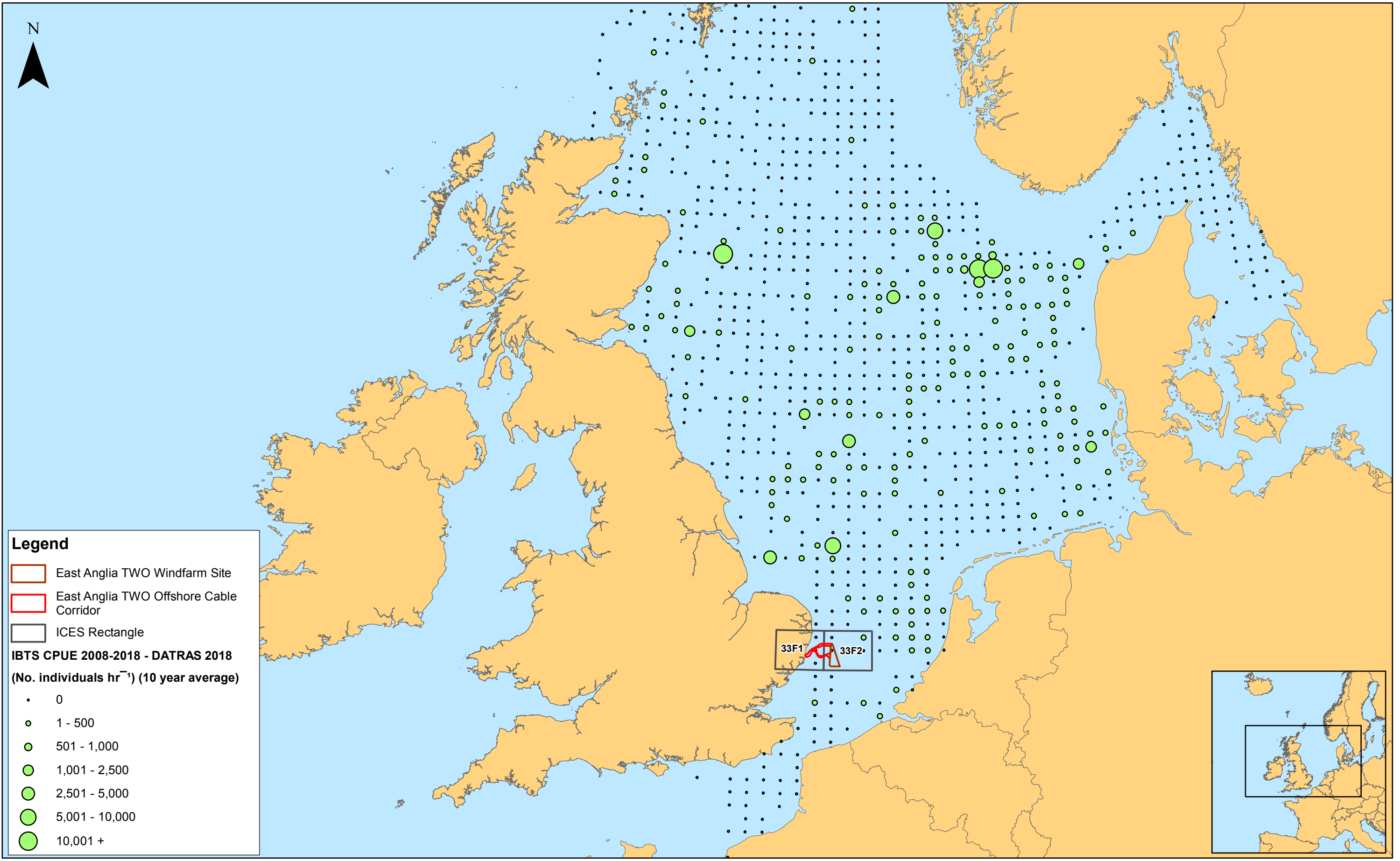
2	15/11/2018	FC	Second Issue.	Prepared:	FC
1	05/10/2018	FC	First Issue.	Checked:	KC
Rev	Date	By	Comment	Approved:	PP

1:5,000,000
 Scale @ A3

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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Greater Sandeel from IBTS Survey
 (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC213
Rev	2
Date	15/11/18
Figure	10.22
Datum: WGS 1984 Projection: Zone 31N	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 500
- 501 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000
- 10,001 +



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
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				Approved: PP

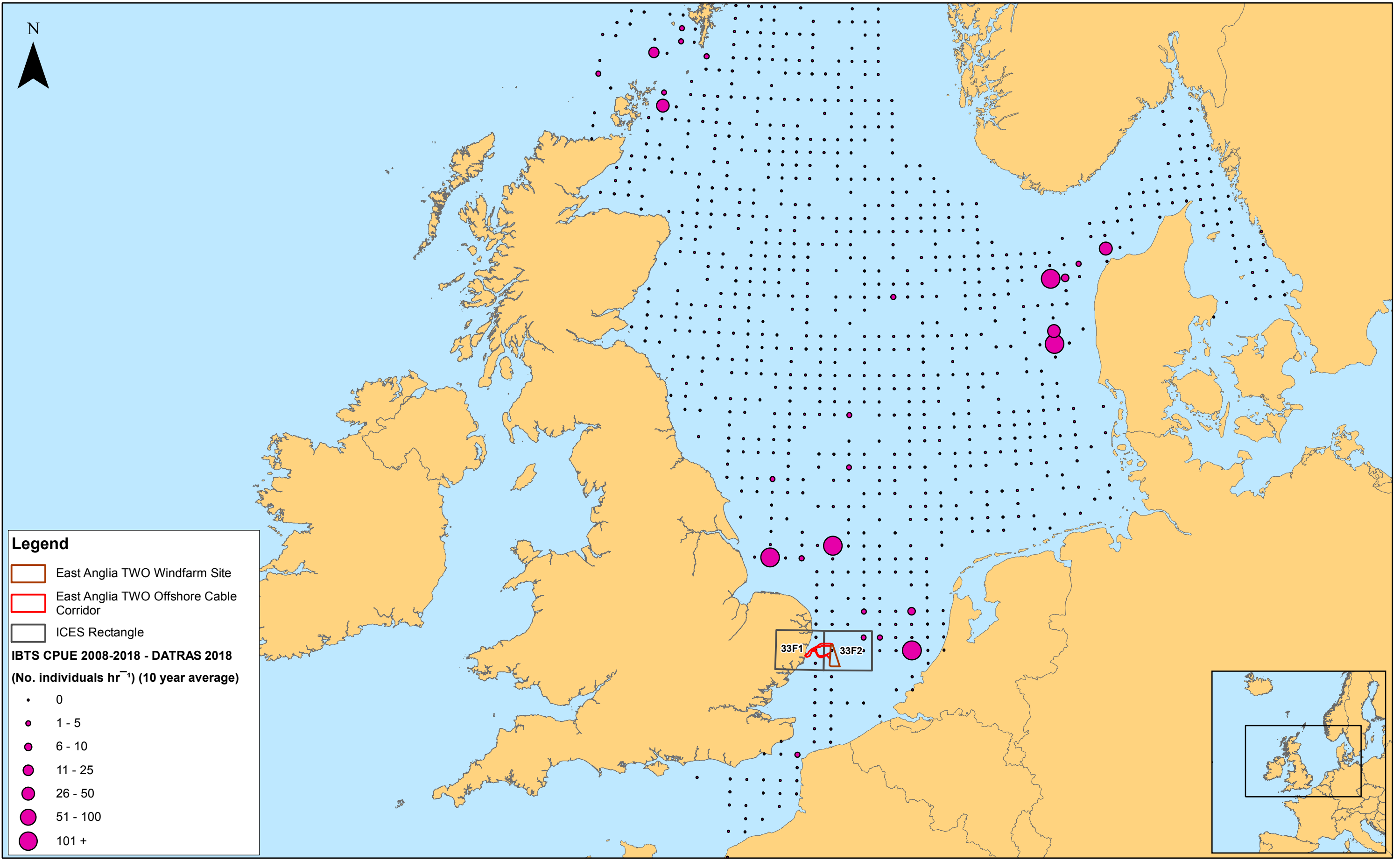
1:5,000,000
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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Lesser Sandeel from IBTS Survey
 (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC217
Rev	2
Date	15/11/18
Figure	10.23

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
 (No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 5
- 6 - 10
- 11 - 25
- 26 - 50
- 51 - 100
- 101 +



Rev	Date	By	Comment	Approved:
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				Approved: PP

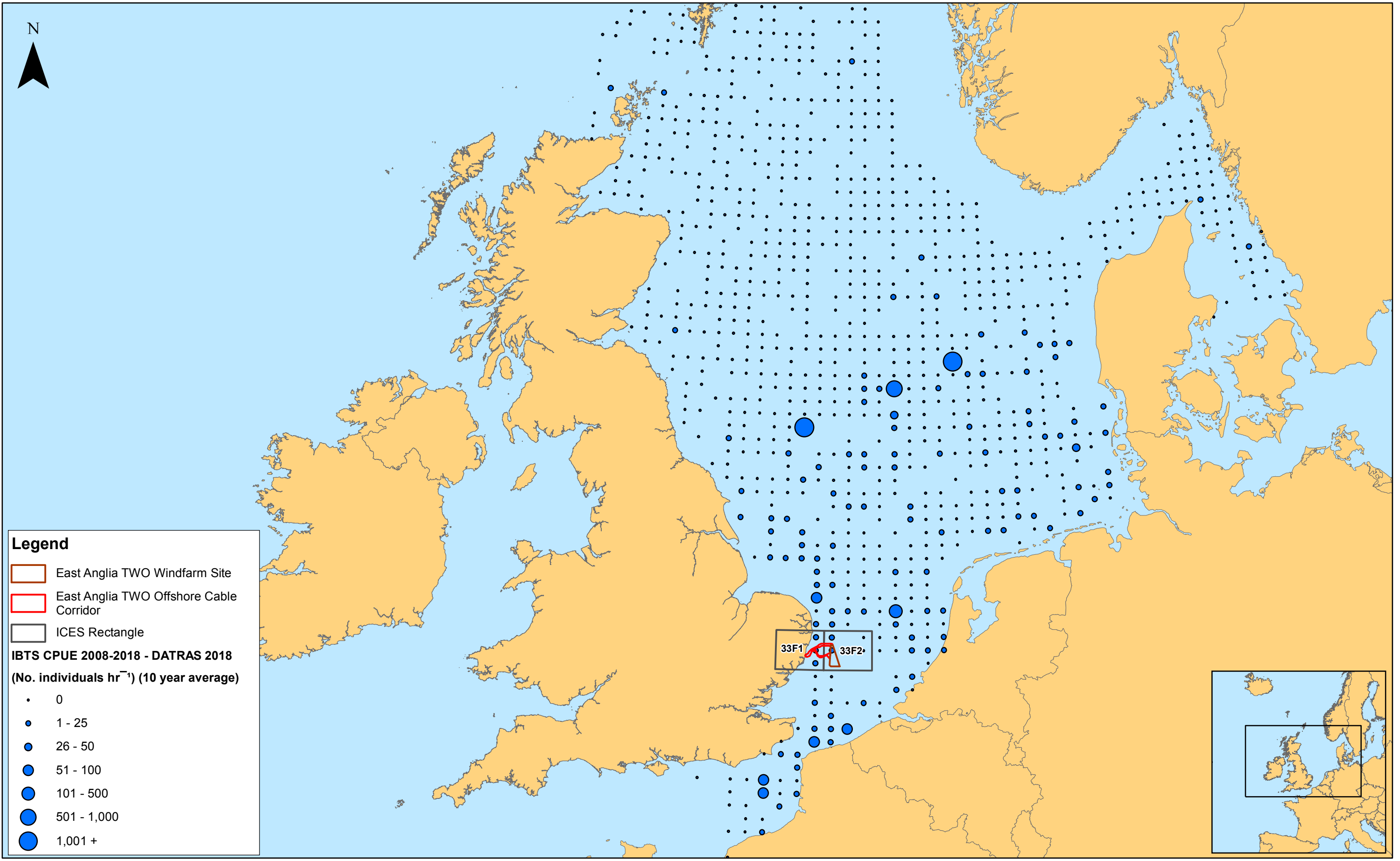
1:5,000,000
Scale @ A3

0 50 100 200 Km

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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Smooth Sandeel from IBTS Survey
 (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC216
Rev	2
Date	15/11/18
Figure	10.24
Datum: WGS 1984 Projection: Zone 31N	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 25
- 26 - 50
- 51 - 100
- 101 - 500
- 501 - 1,000
- 1,001 +



Rev	Date	By	Comment	Approved:
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1	05/10/2018	FC	First Issue.	Checked: KC
				Approved: PP

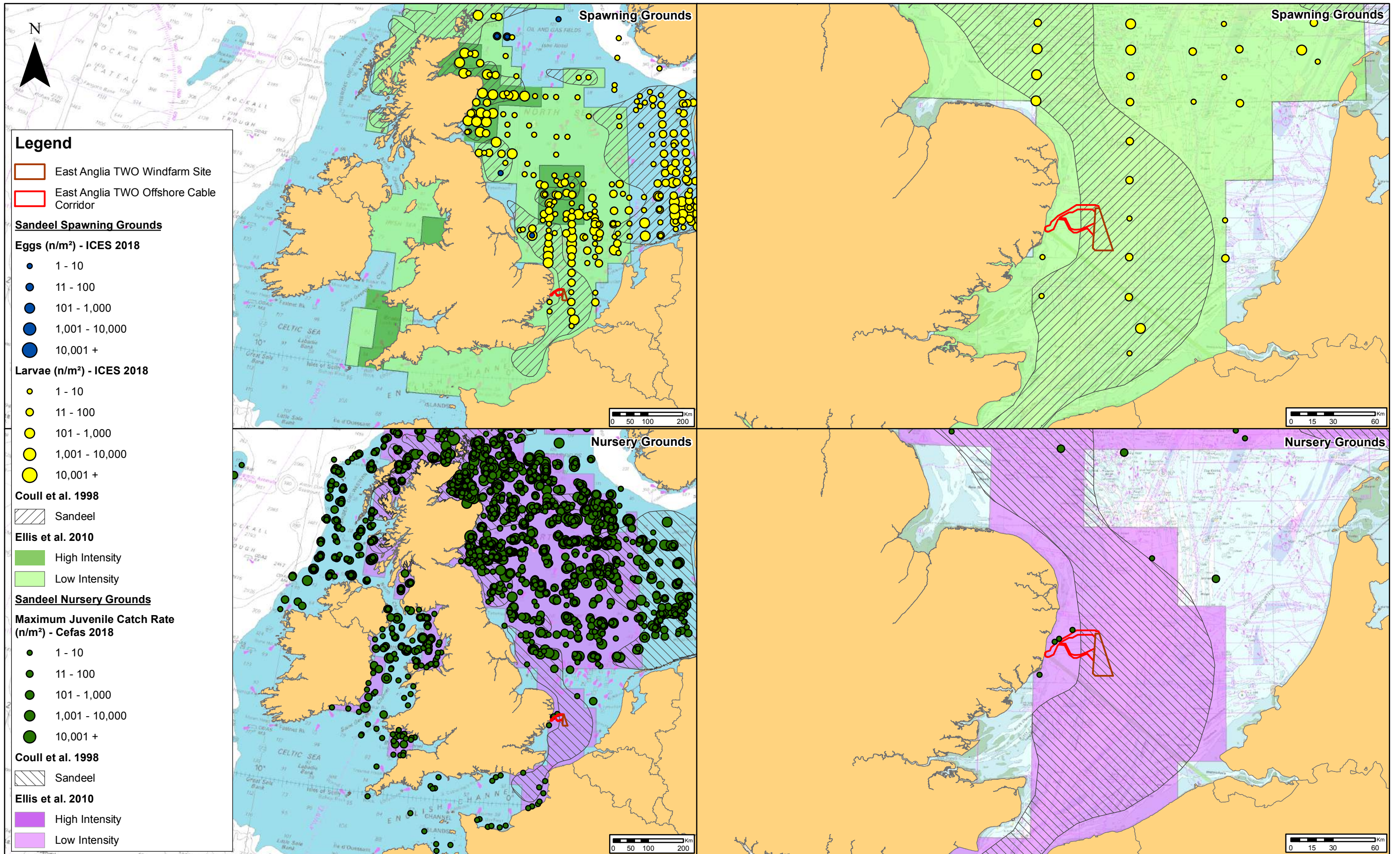
1:5,000,000
 Scale @ A3

0 50 100 200 Km

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East Anglia TWO
 Average Number (Catch per Standardised Haul)
 of Small Sandeel from IBTS Survey
 (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC214
Rev	2
Date	15/11/18
Figure	10.25
Datum: WGS 1984 Projection: Zone 31N	



2	15/11/2018	FC	Second Issue.	Prepared:	FC	Scale @ A3
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Rev	Date	By	Comment	Approved:	PP	

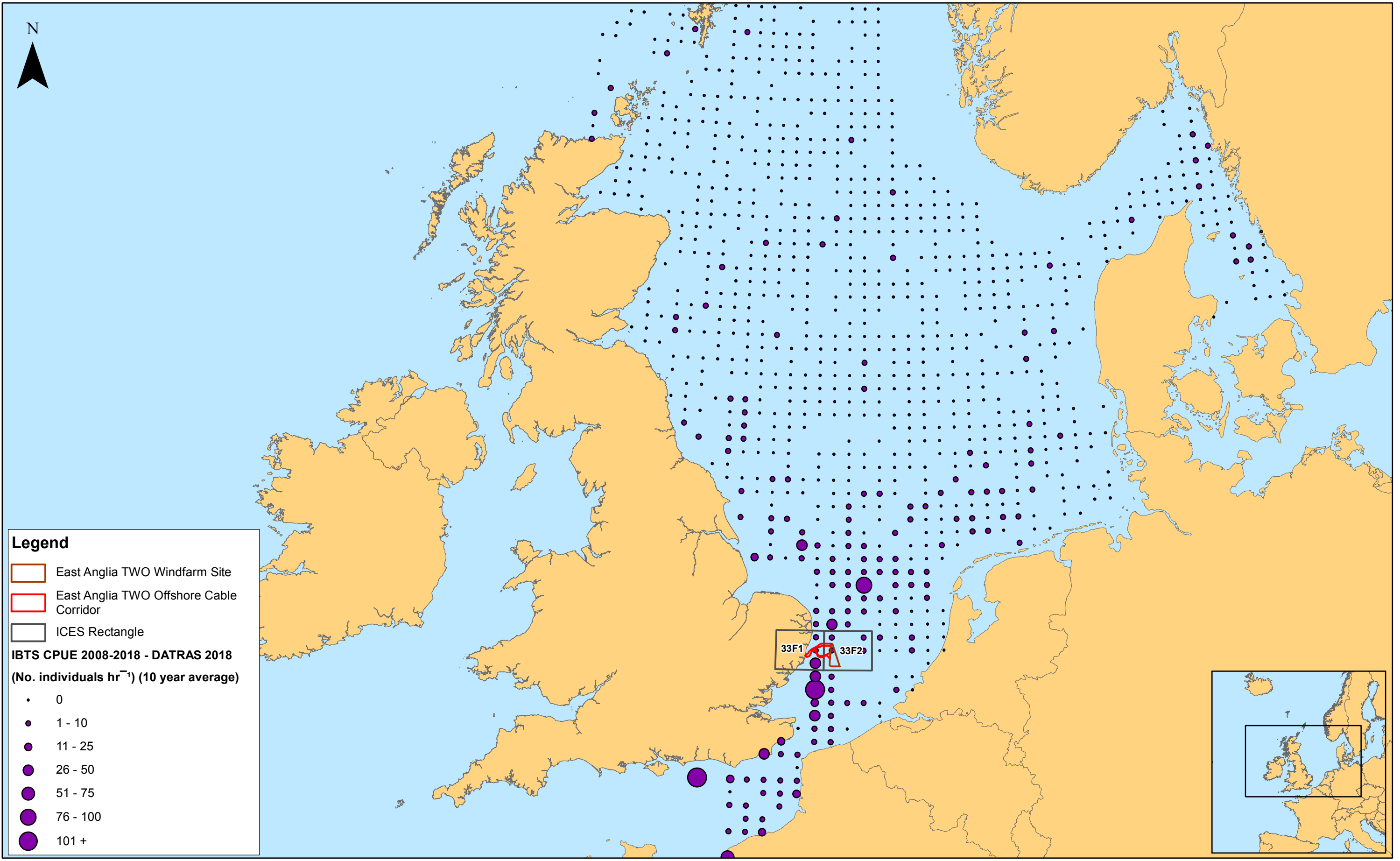
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East Anglia TWO

Sandeel Spawning and Nursery Grounds (Coull et al., 1998 and Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC205
Rev	2
Date	15/11/18
Figure	10.26
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia T2O Windfarm Site
- East Anglia T2O Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
 (No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- 101 +



Rev	Date	By	Comment	Approved:
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1	05/10/2018	FC	First Issue.	Checked: KC

1:5,000,000
 Scale @ A3

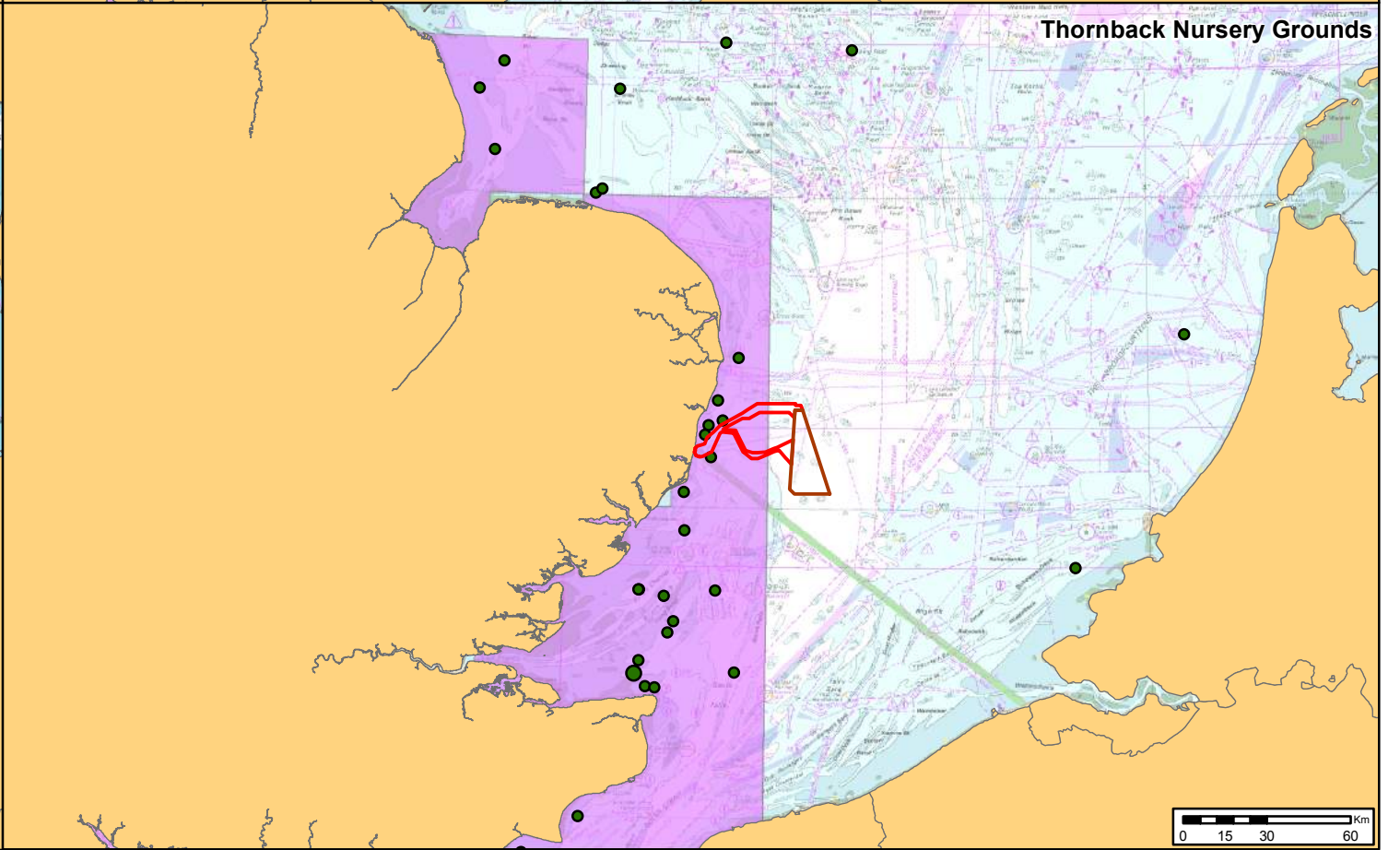
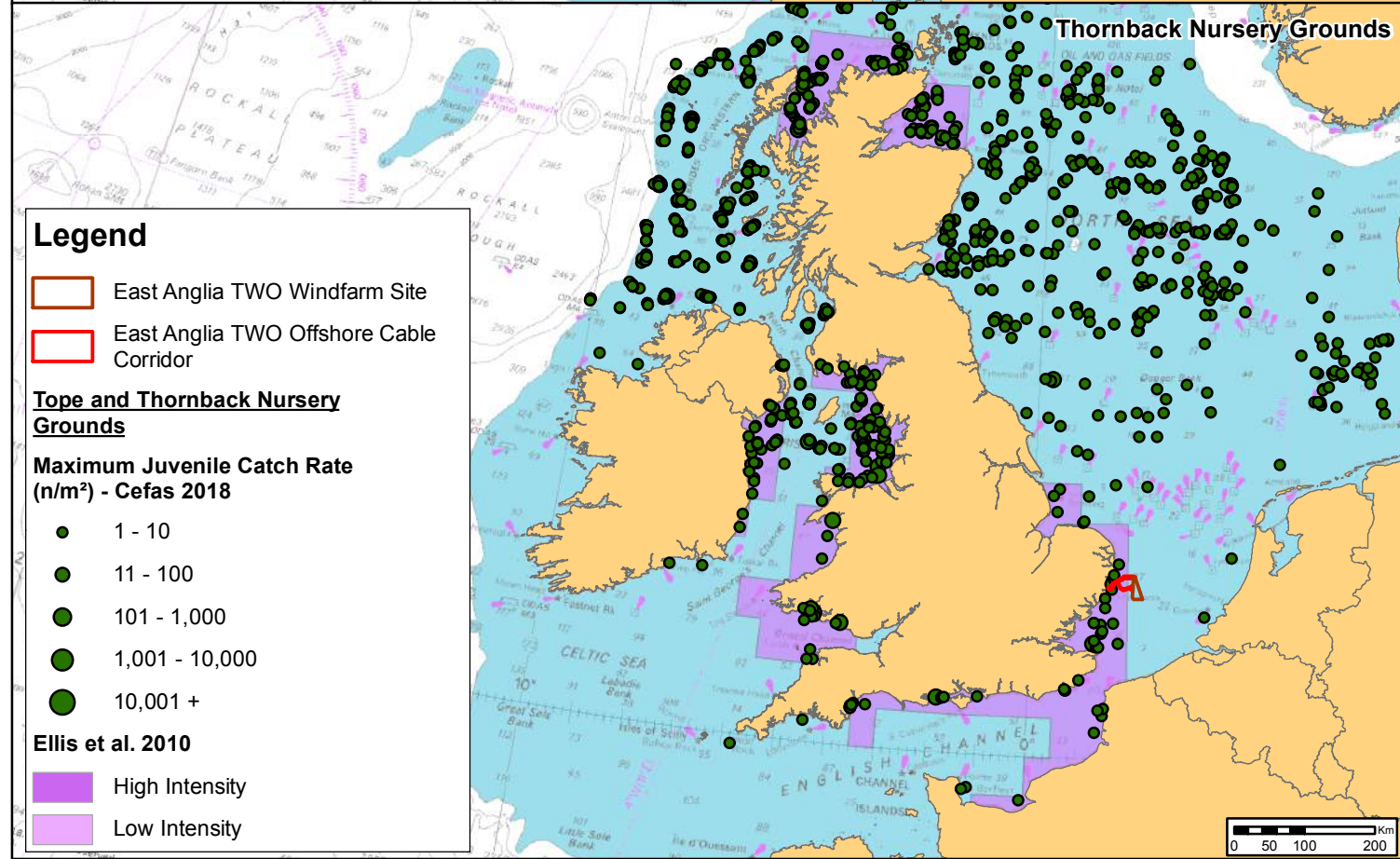
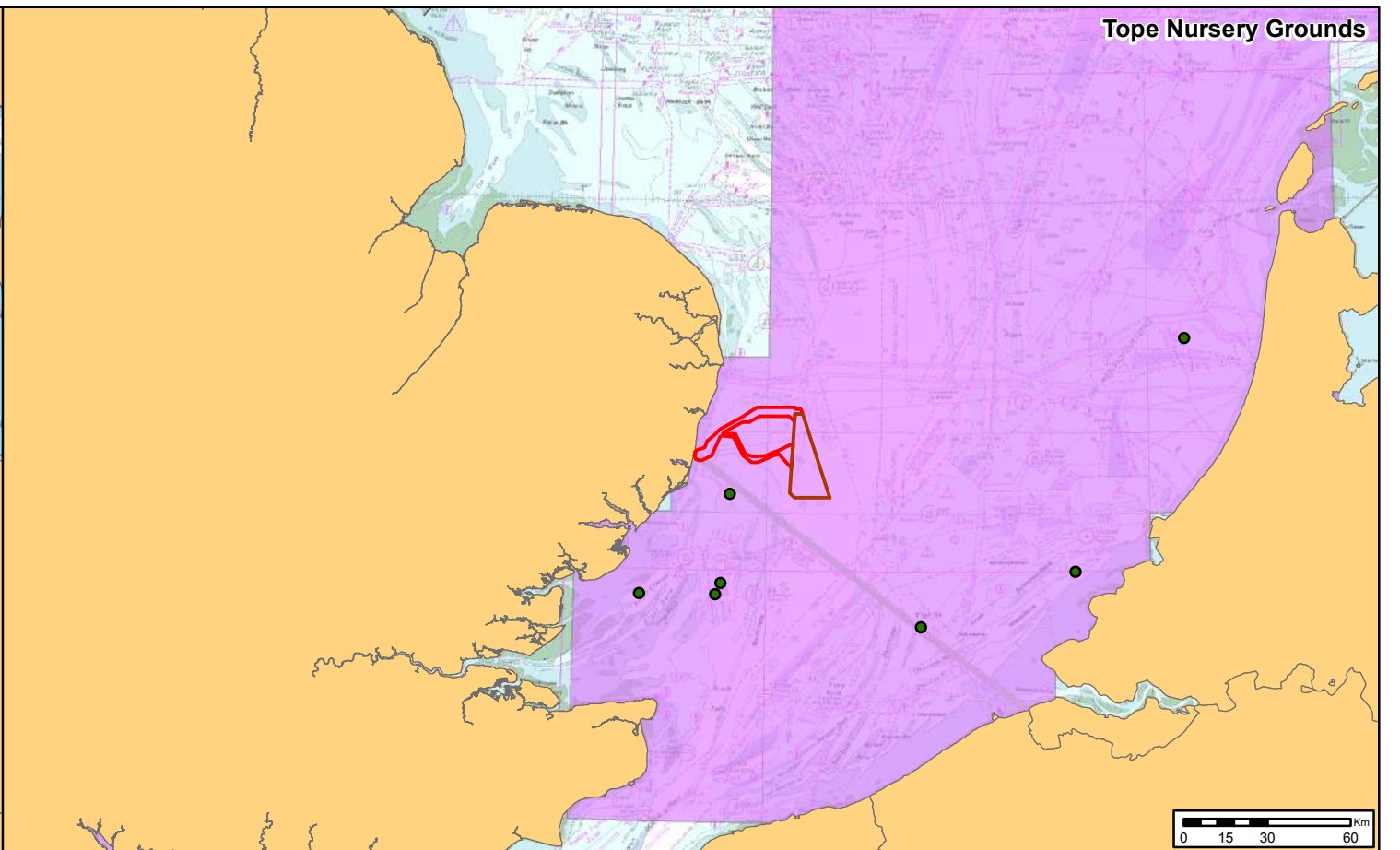
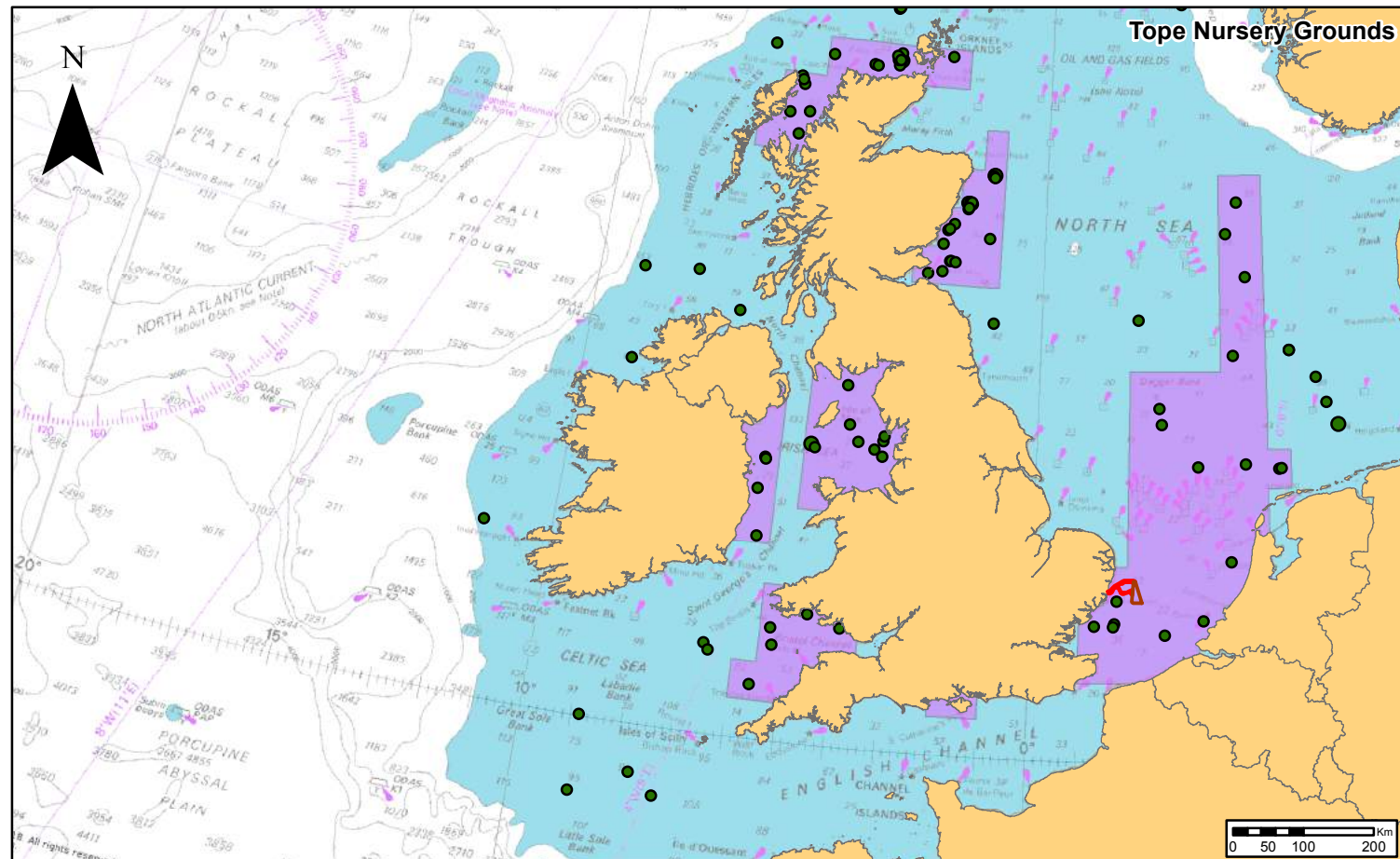
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East Anglia T2O
 Average Number (Catch per Standardised Haul)
 of Thornback Ray from IBTS Survey
 (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC246
Rev	2
Date	15/11/18
Figure	10.27

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Topo and Thornback Nursery Grounds

Maximum Juvenile Catch Rate (n/m²) - Cefas 2018

- 1 - 10
- 11 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 +

Ellis et al. 2010

- High Intensity
- Low Intensity



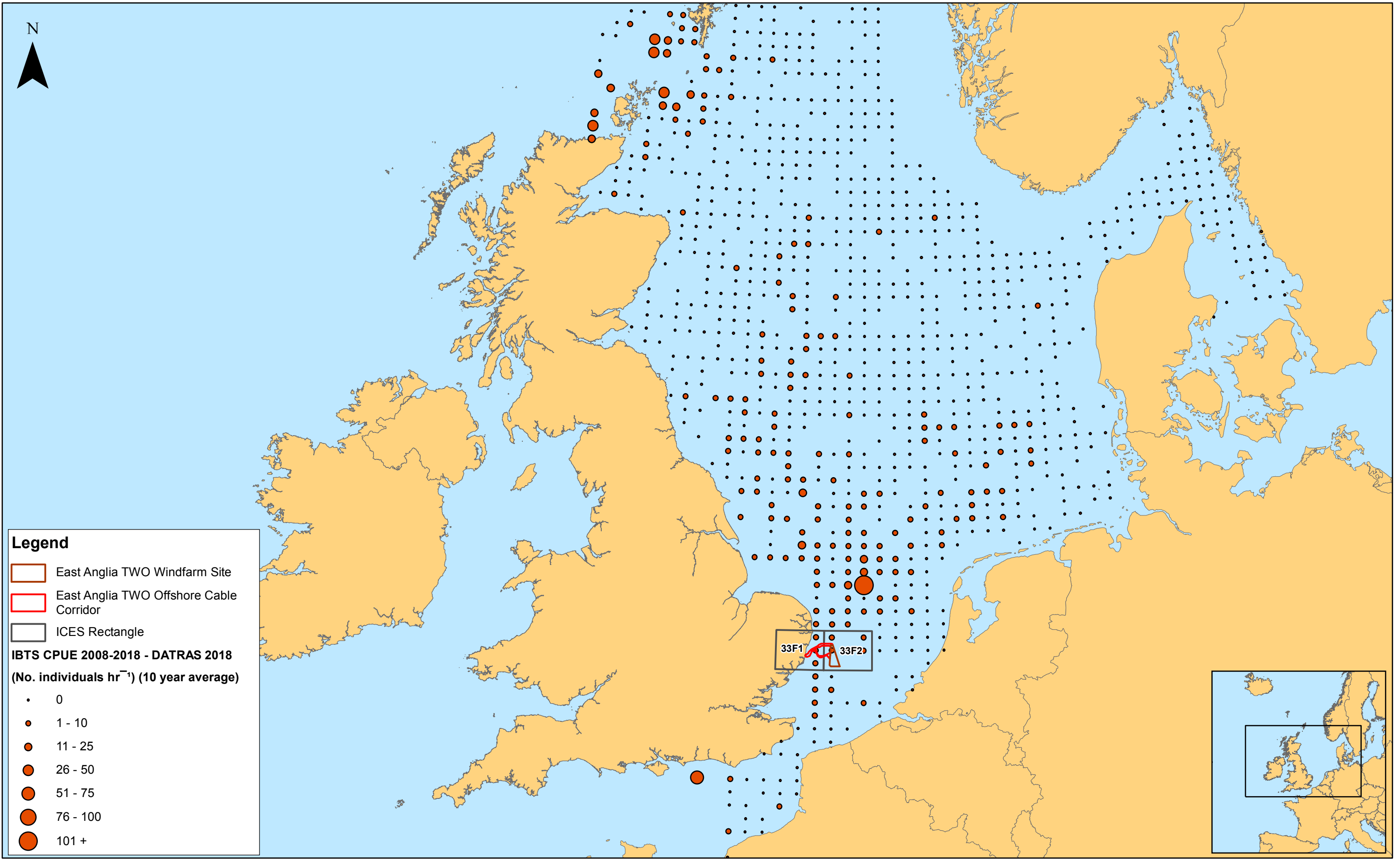
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Rev	Date	By	Comment	Approved:	PP	

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East Anglia TWO

Topo and Thornback Ray Nursery Grounds (Ellis et al., 2010)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC206
Rev	2
Date	15/11/18
Figure	10.28
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TOW Windfarm Site
- East Anglia TOW Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
 (No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- 101 +

33F1 33F2



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

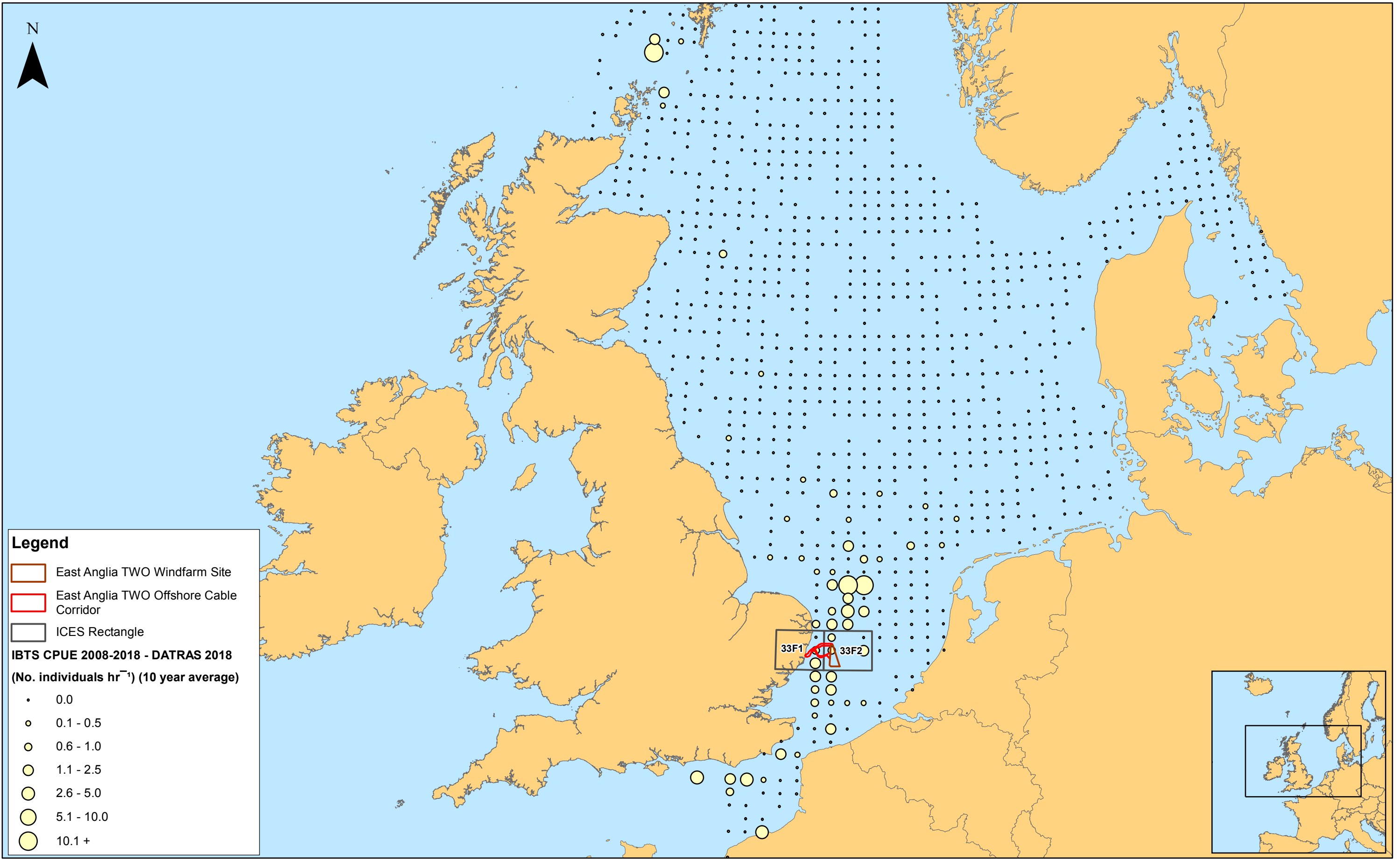
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East Anglia TOW
 Average Number (Catch per Standardised Haul)
 of Spotted Ray from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC247
Rev	2
Date	15/11/18
Figure	10.29

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TOW Windfarm Site
- East Anglia TOW Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0.0
- 0.1 - 0.5
- 0.6 - 1.0
- 1.1 - 2.5
- 2.6 - 5.0
- 5.1 - 10.0
- 10.1 +

33F1 33F2



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

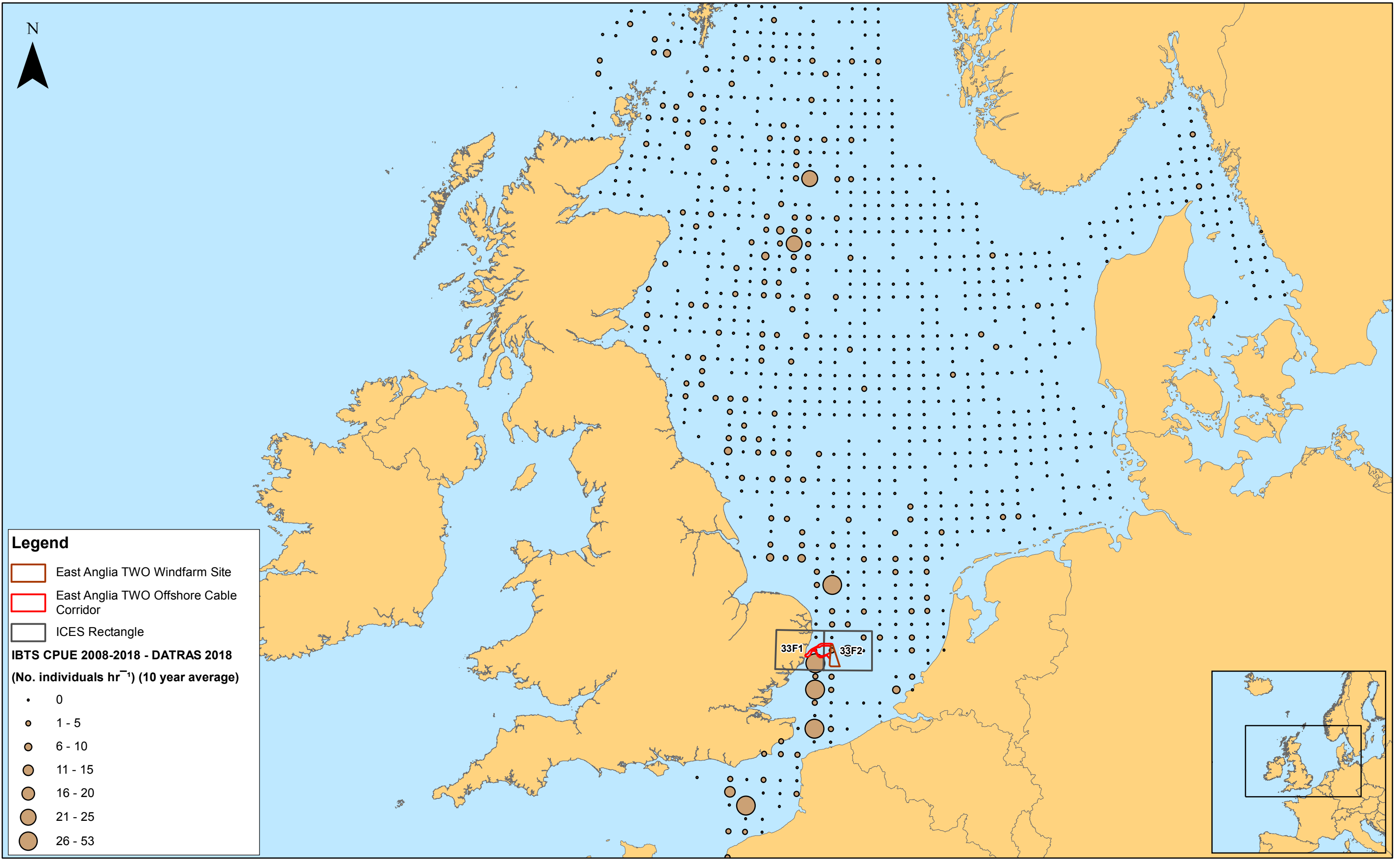
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 Scale @ A3

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East Anglia TOW
 Average Number (Catch per Standardised Haul)
 of Blonde Ray from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC248
Rev	2
Date	15/11/18
Figure	10.30

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TOW Windfarm Site
- East Anglia TOW Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 25
- 26 - 53

33F1 33F2



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

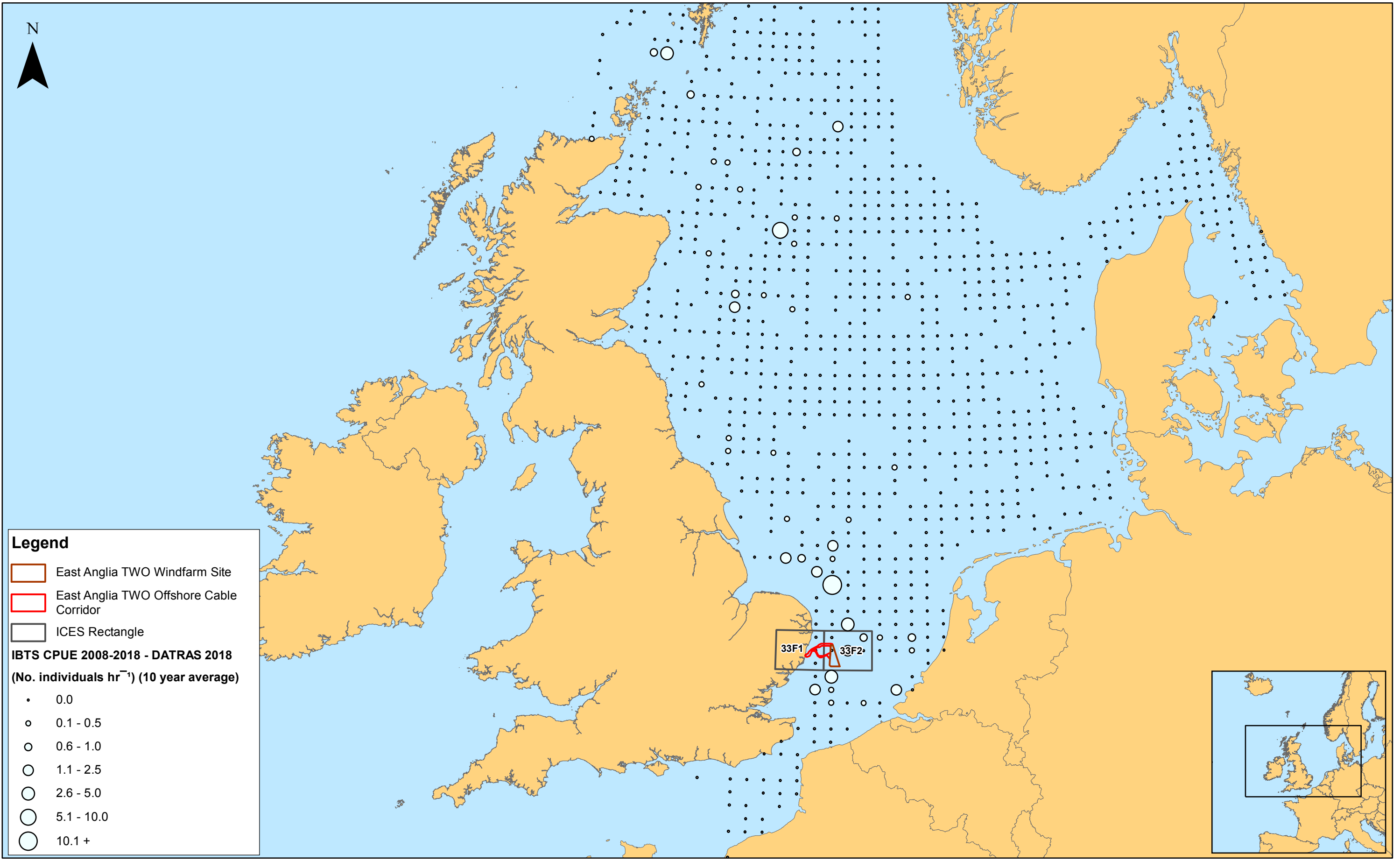
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East Anglia TOW
Average Number (Catch per Standardised Haul)
of Starry Smoothound from IBTS Survey
(2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC250
Rev	2
Date	15/11/18
Figure	10.31

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TOW Windfarm Site
- East Anglia TOW Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0.0
- 0.1 - 0.5
- 0.6 - 1.0
- 1.1 - 2.5
- 2.6 - 5.0
- 5.1 - 10.0
- 10.1 +

33F1 33F2



Rev	Date	By	Comment	Approved:
2	15/11/2018	FC	Second Issue.	Prepared: FC
1	05/10/2018	FC	First Issue.	Checked: KC

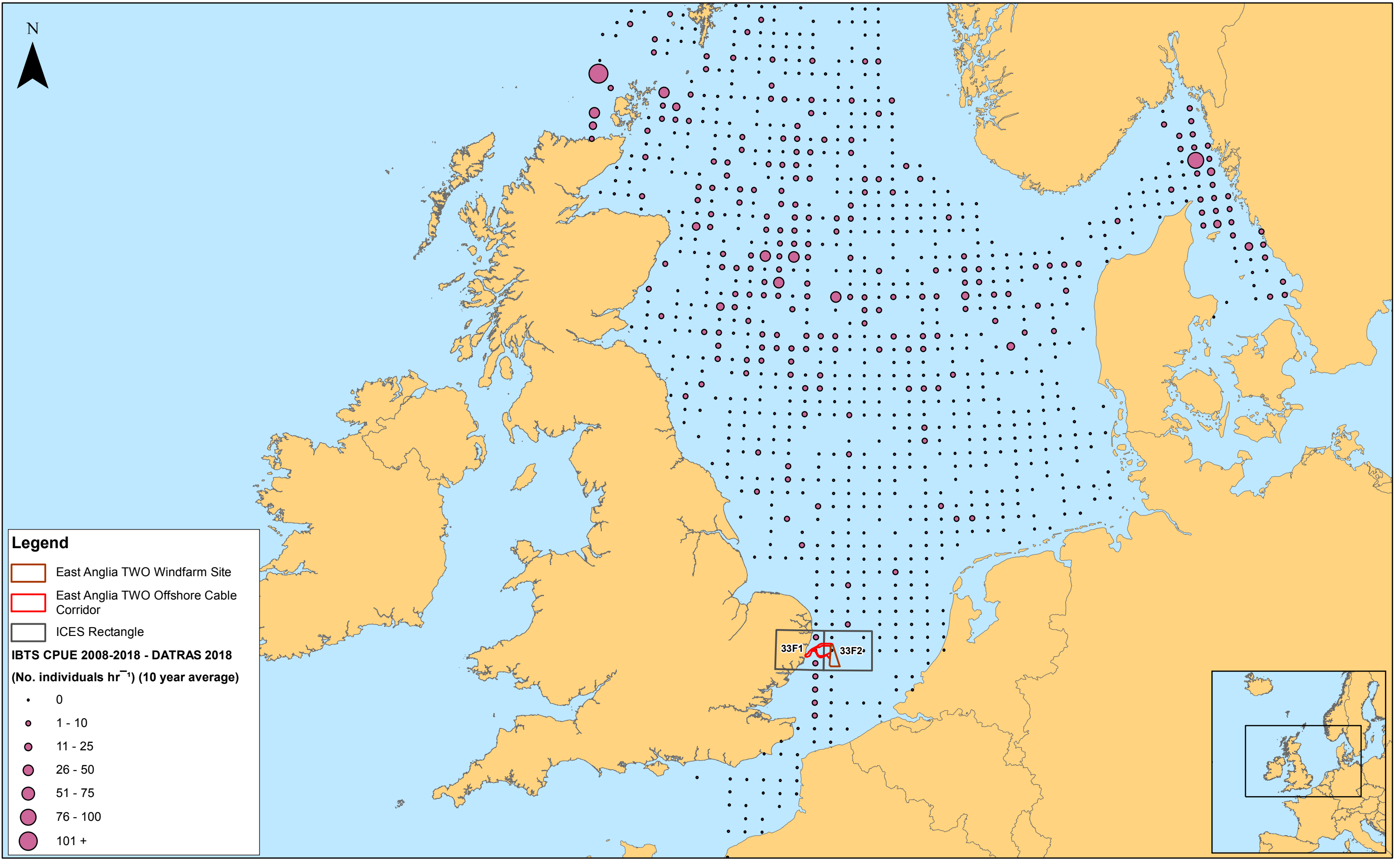
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 Scale @ A3

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East Anglia TOW
 Average Number (Catch per Standardised Haul) of Smoothound from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC251
Rev	2
Date	15/11/18
Figure	10.32

Datum: WGS 1984
 Projection: Zone 31N



Legend

- East Anglia TOW Windfarm Site
- East Anglia TOW Offshore Cable Corridor
- ICES Rectangle

IBTS CPUE 2008-2018 - DATRAS 2018
(No. individuals hr⁻¹) (10 year average)

- 0
- 1 - 10
- 11 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- 101 +

33F1 33F2



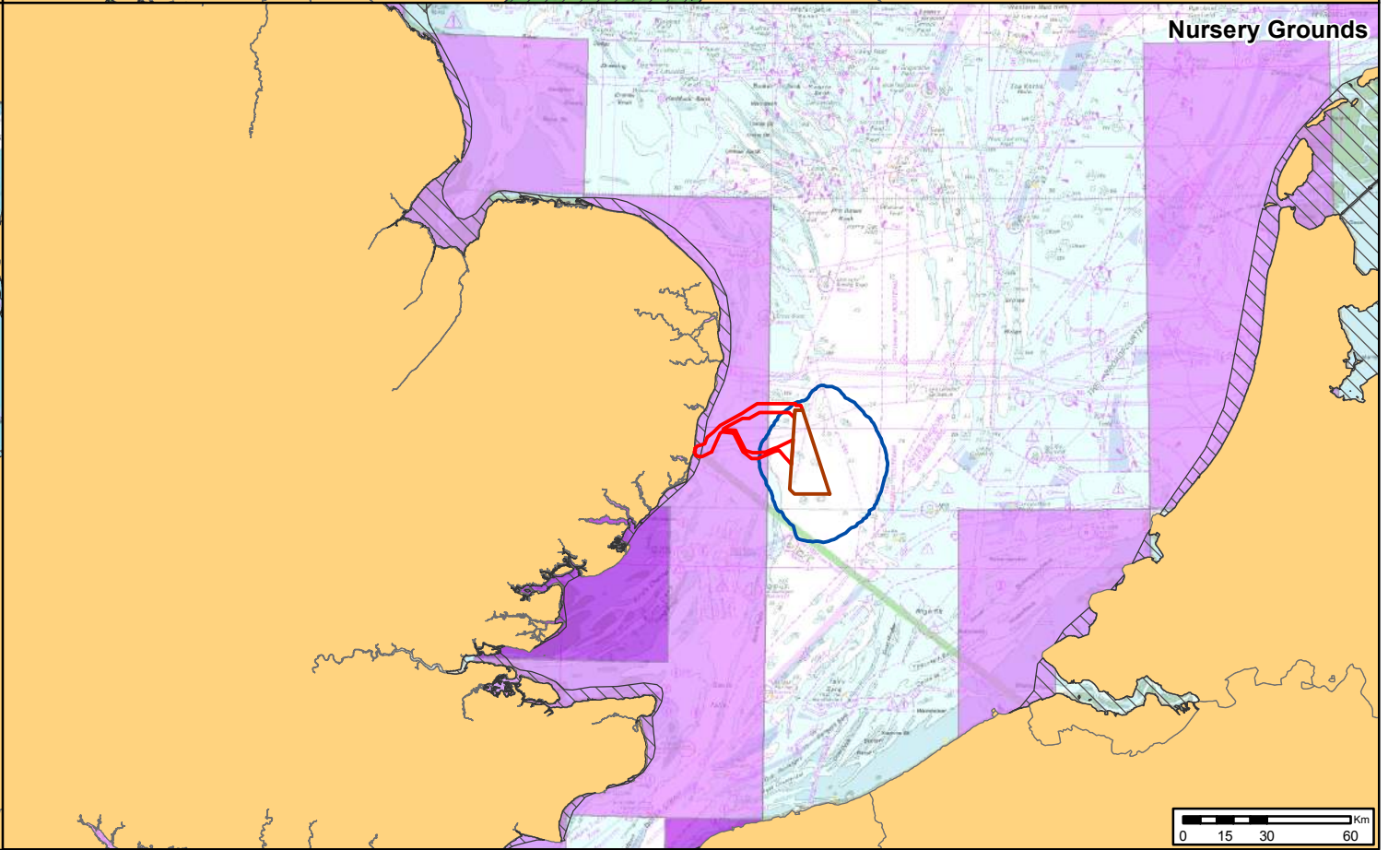
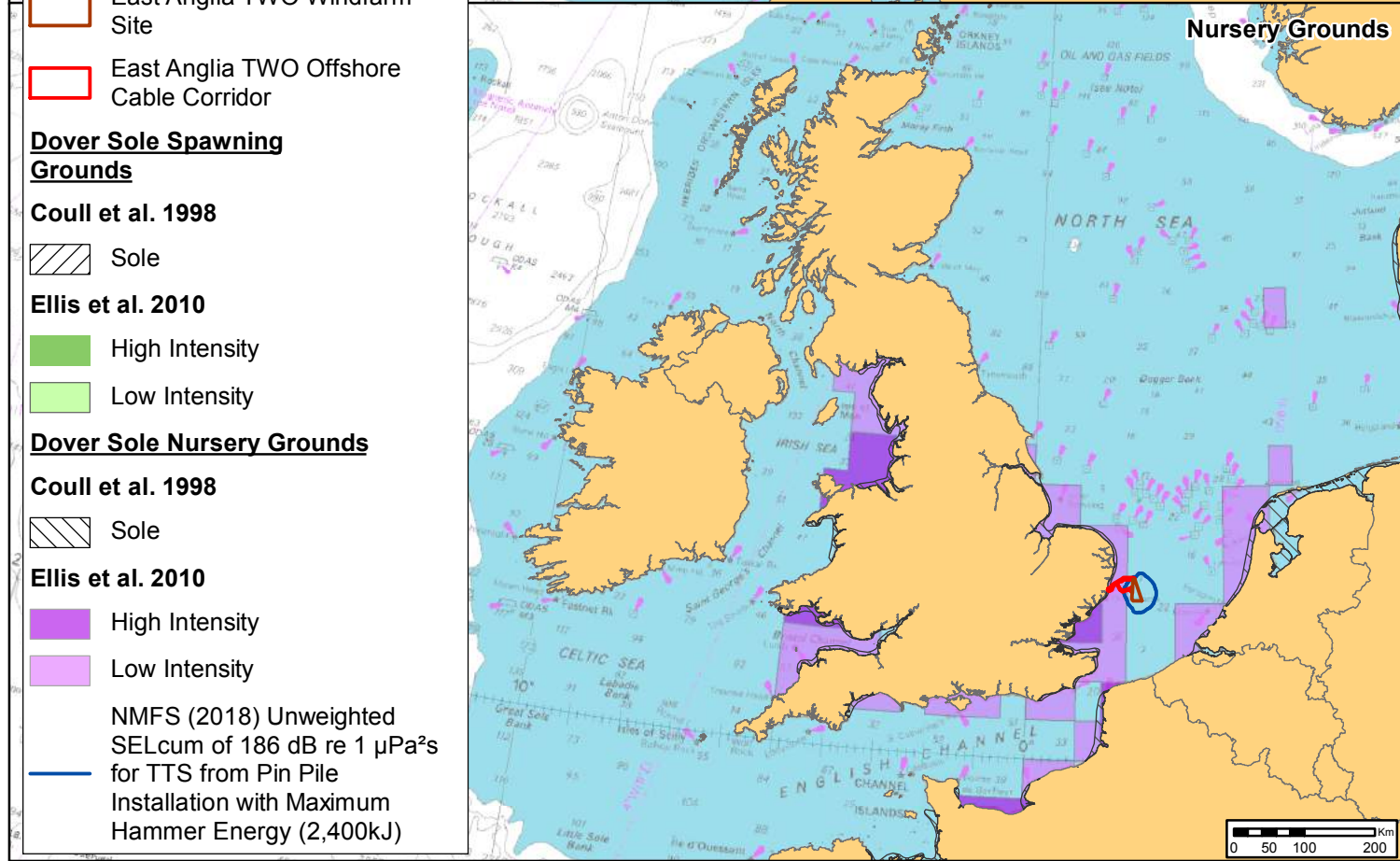
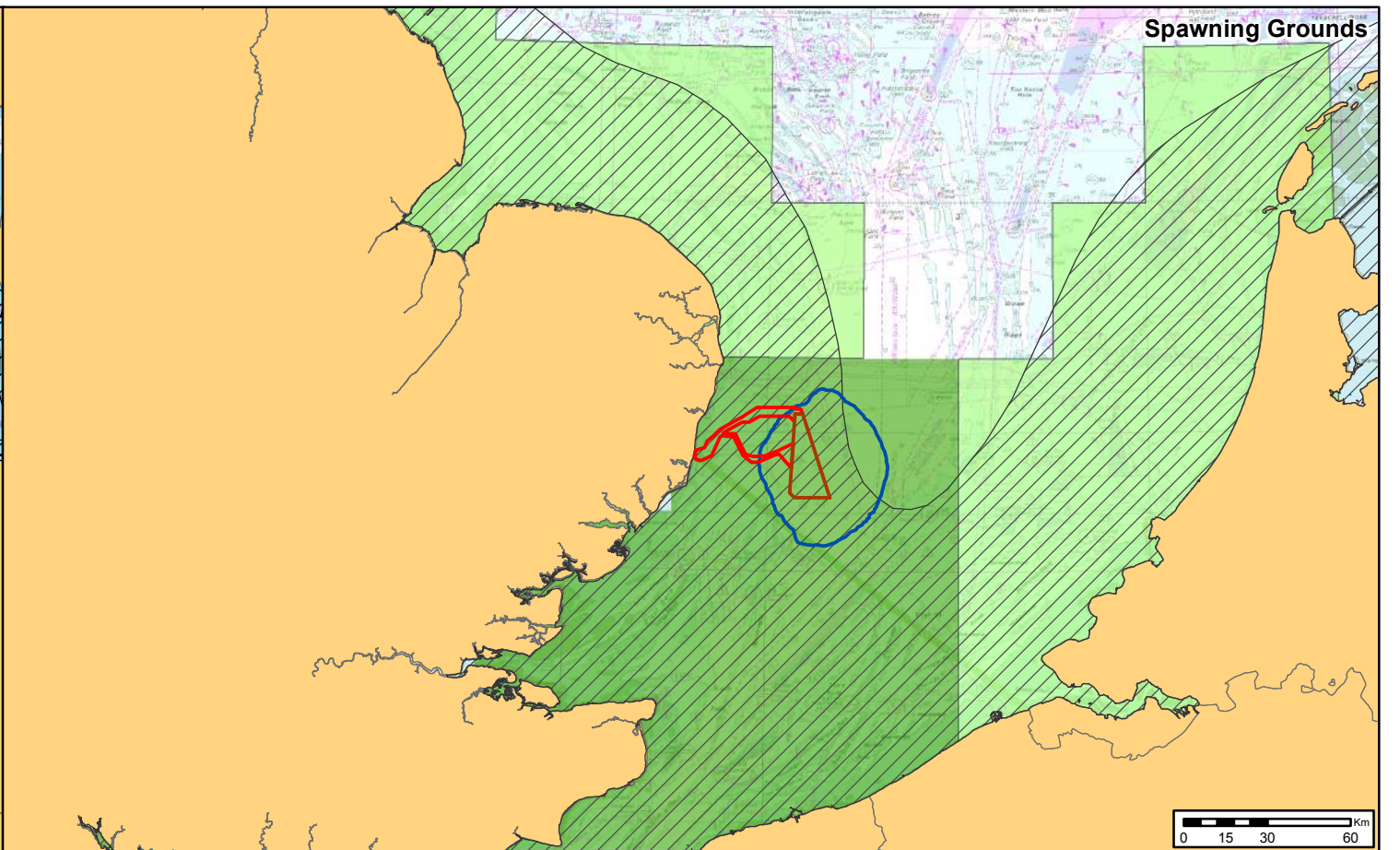
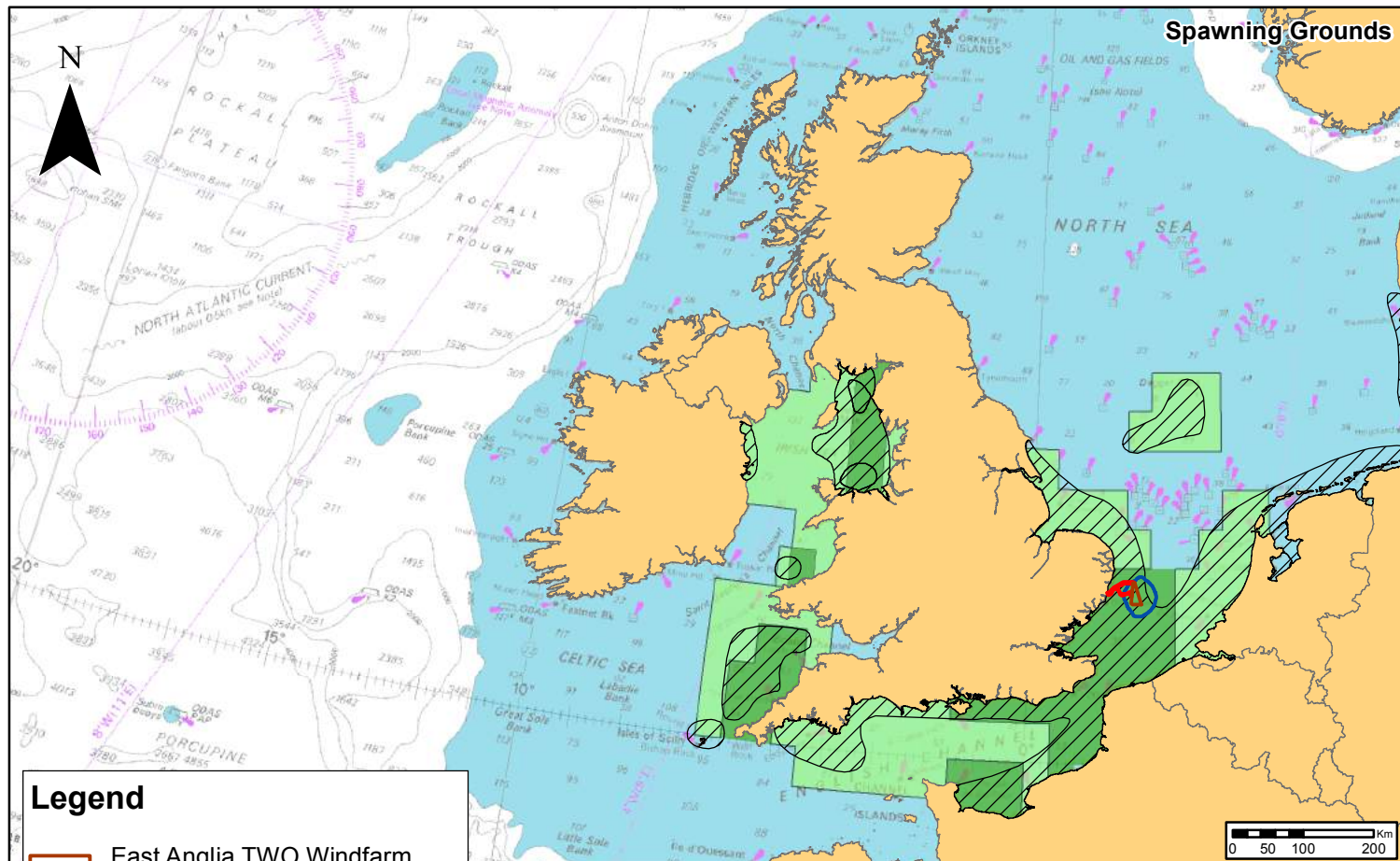
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East Anglia TOW
 Average Number (Catch per Standardised Haul)
 of Spurdog from IBTS Survey (2008 - 2018)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC252
Rev	2
Date	15/11/18
Figure	10.33
Datum: WGS 1984 Projection: Zone 31N	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Dover Sole Spawning Grounds

Coull et al. 1998

- Sole

Ellis et al. 2010

- High Intensity
- Low Intensity

Dover Sole Nursery Grounds

Coull et al. 1998

- Sole

Ellis et al. 2010

- High Intensity
- Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)

-



Rev	Date	By	Comment
1	22/11/2018	FC	First Issue.

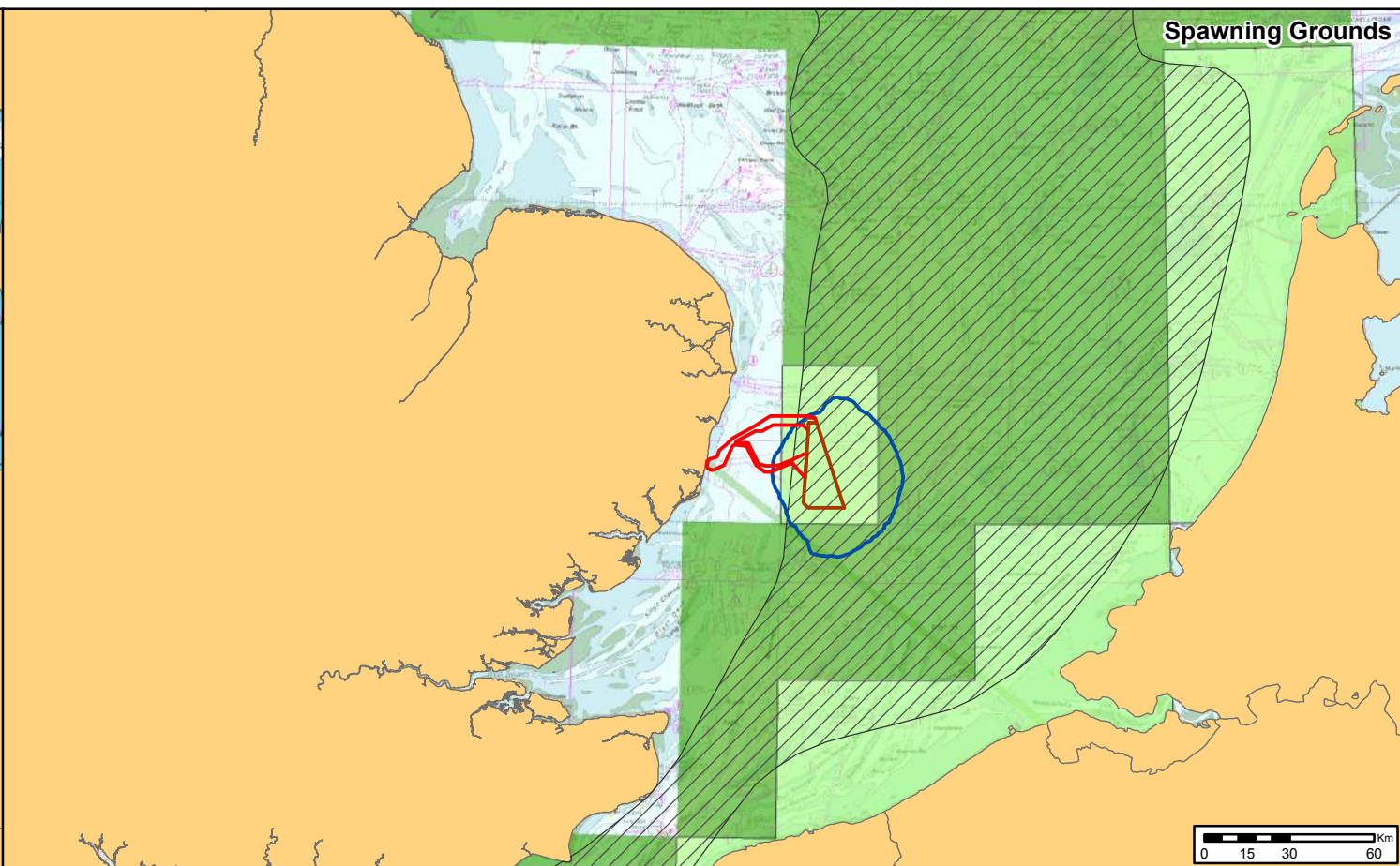
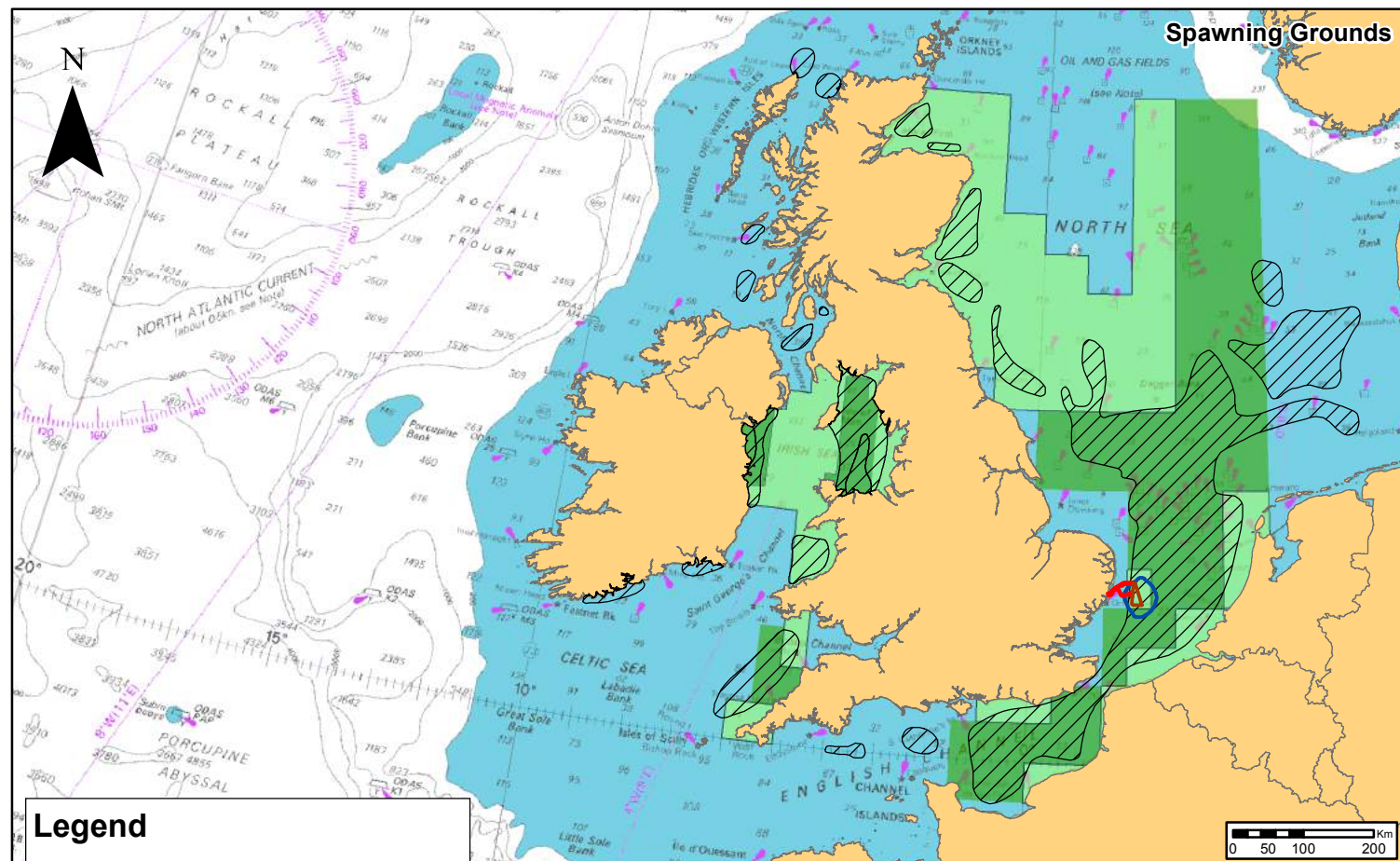
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Approved:	PP	

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East Anglia TWO
 Dover Sole Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC402
Rev	1
Date	22/11/18
Figure	10.34

Datum: WGS 1984
Projection: Zone 31N



Legend

East Anglia TWO Windfarm Site

East Anglia TWO Offshore Cable Corridor

Plaice Spawning Grounds

Coull et al. 1998

Plaice

Ellis et al. 2010

High Intensity

Low Intensity

Plaice Nursery Grounds

Coull et al. 1998

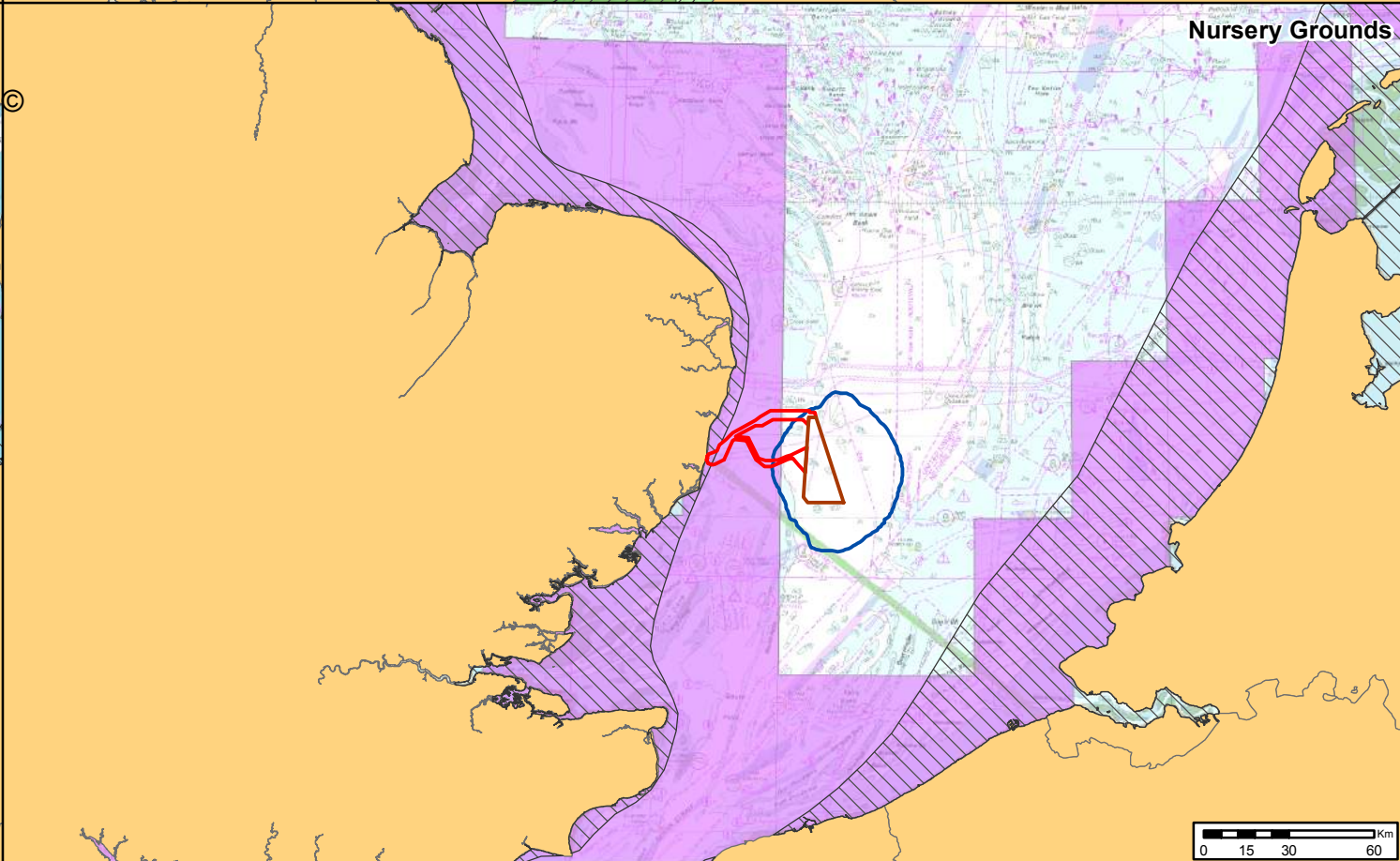
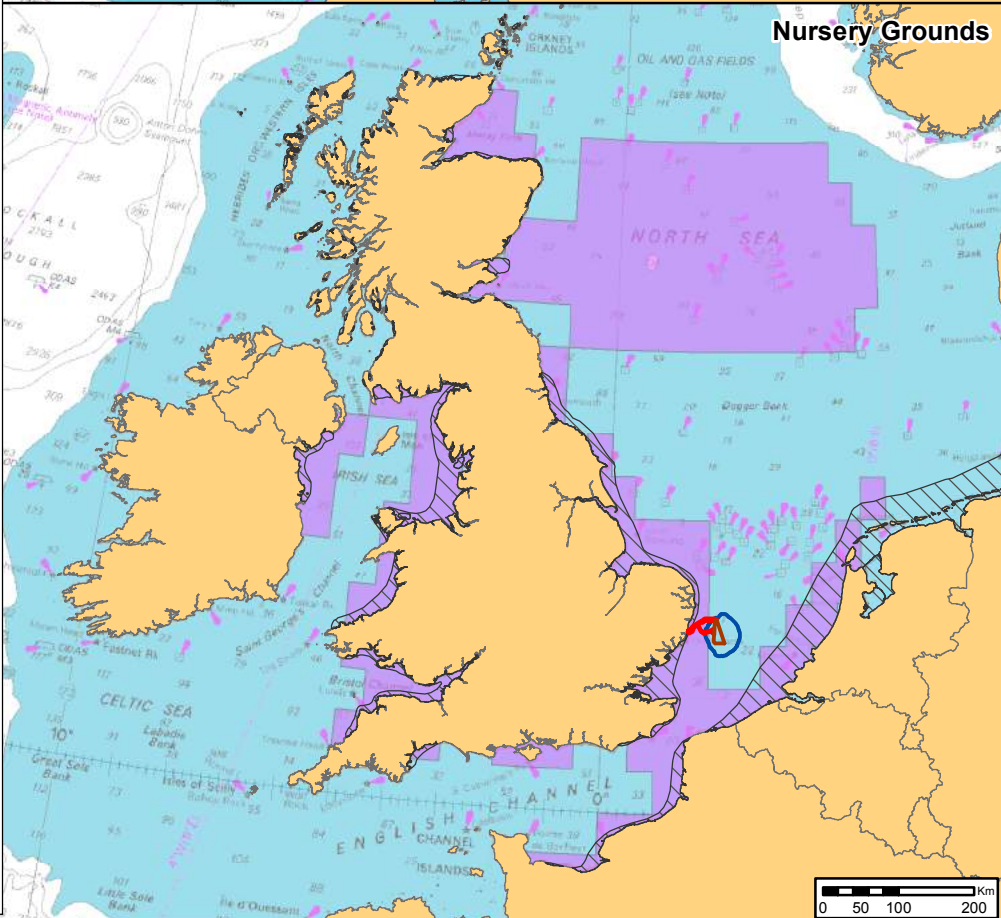
Plaice

Ellis et al. 2010

High Intensity

Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	22/11/2018	FC	First Issue.

Prepared:	FC
Checked:	KC
Approved:	PP

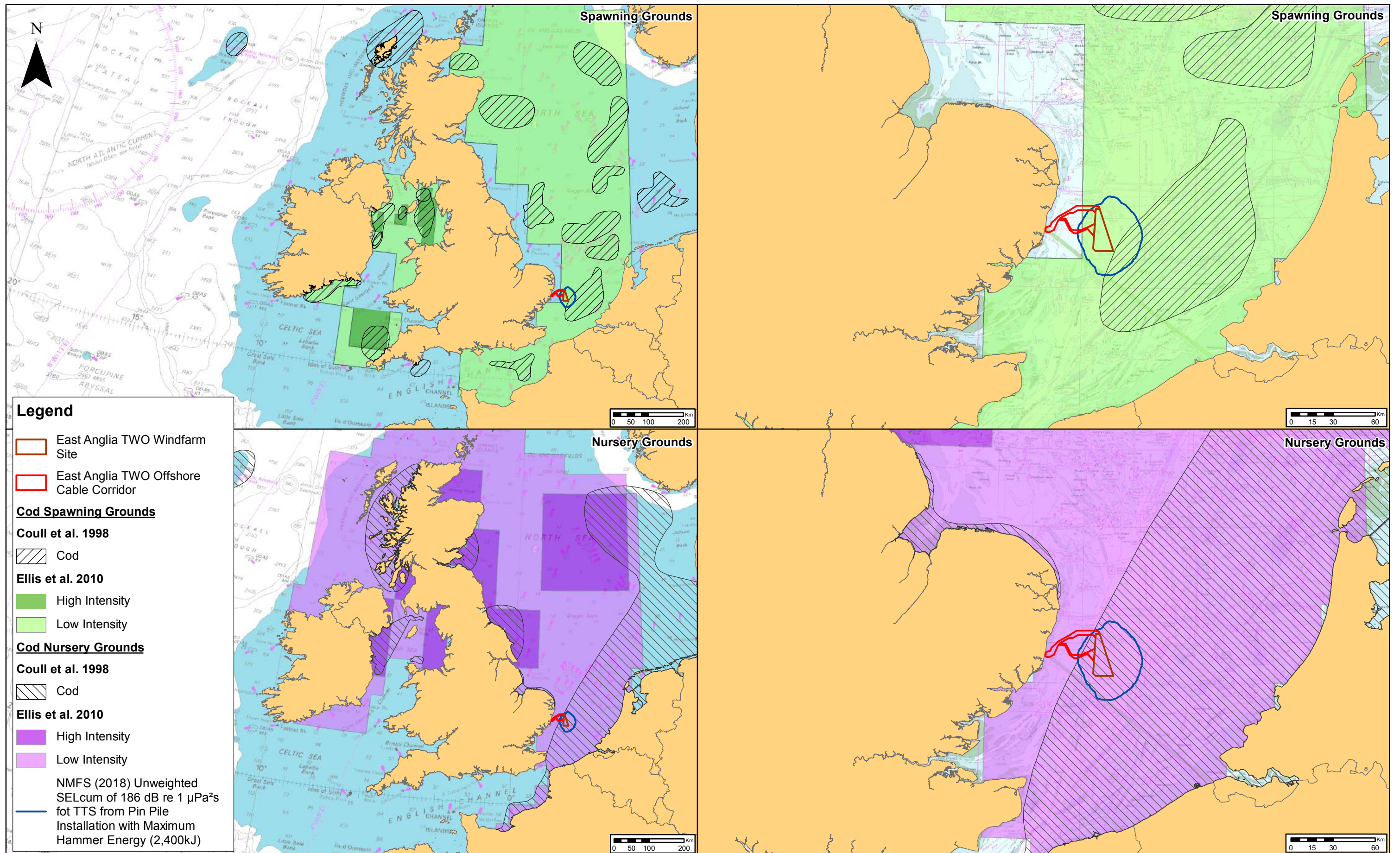
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East Anglia TWO
Plaice Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC403	
Rev	1	Datum: WGS 1984
Date	22/11/18	Projection: Zone 31N
Figure	10.35	



Legend

East Anglia TWO Windfarm Site

East Anglia TWO Offshore Cable Corridor

Cod Spawning Grounds

Coull et al. 1998

Cod

Ellis et al. 2010

High Intensity

Low Intensity

Cod Nursery Grounds

Coull et al. 1998

Cod

Ellis et al. 2010

High Intensity

Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	23/11/2018	FC	First Issue.

Prepared:	FC
Checked:	KC
Approved:	PP

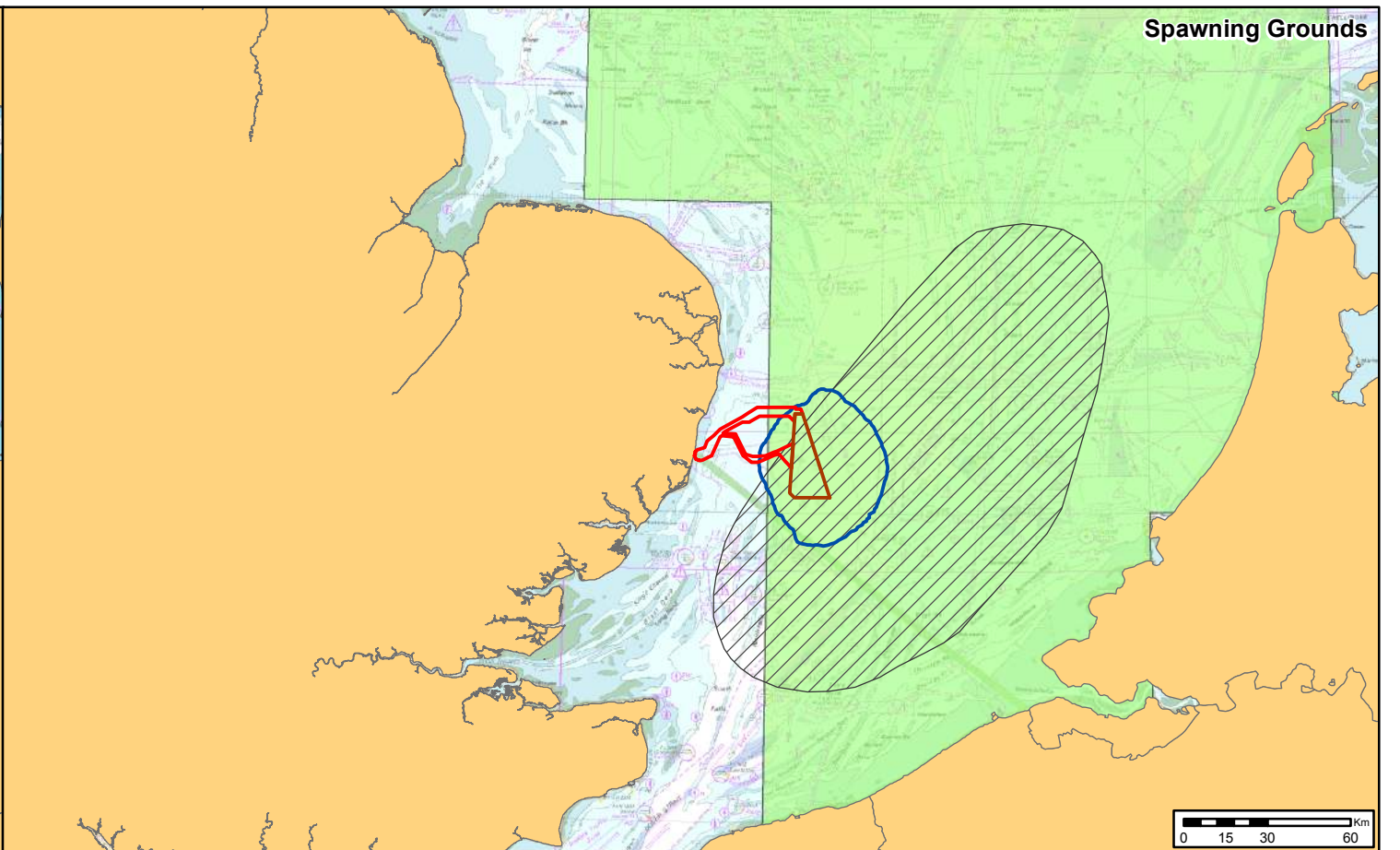
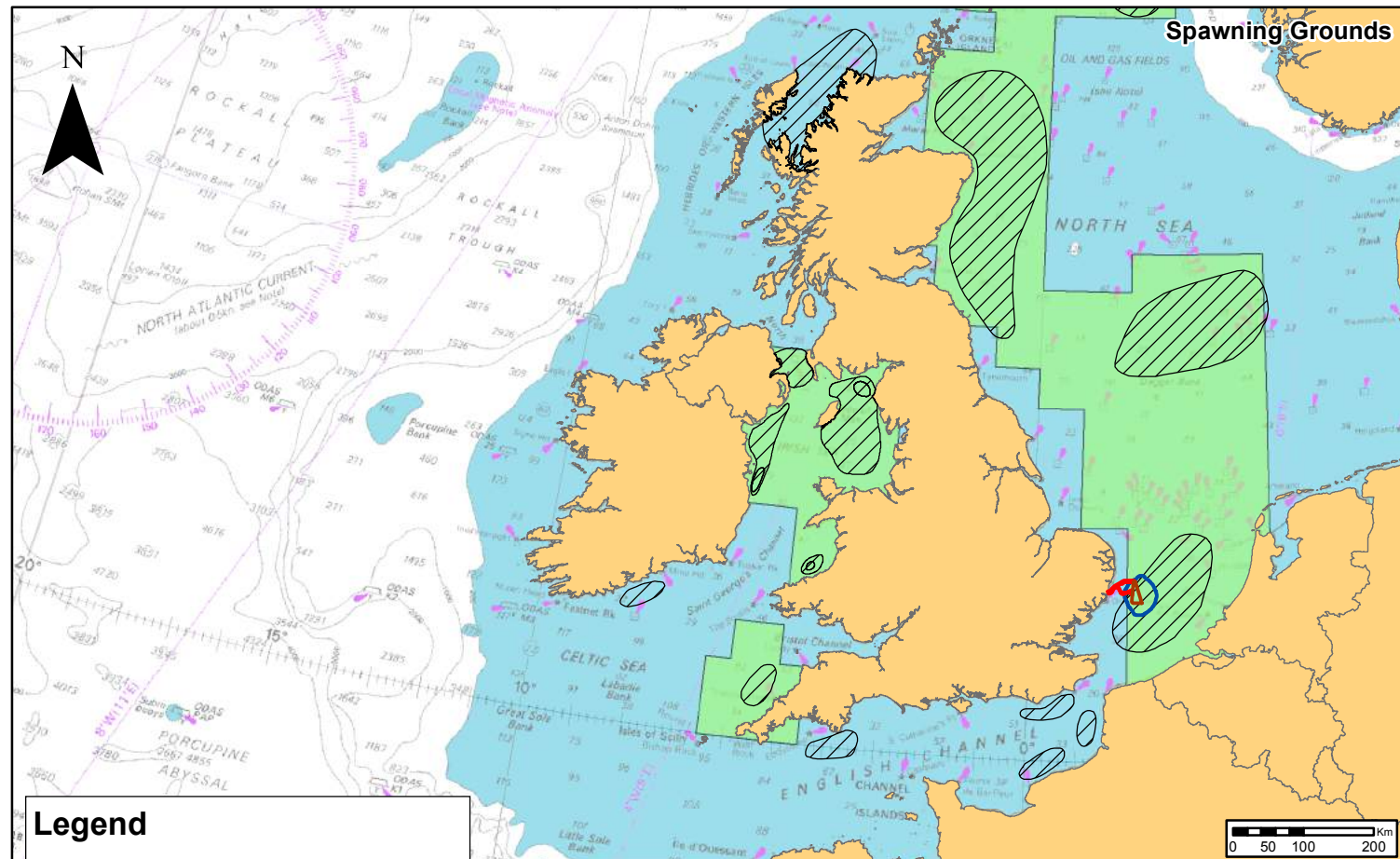
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East Anglia TWO
 Cod Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC407	
Rev	1	Datum: WGS 1984
Date	23/11/18	Projection: Zone 31N
Figure	10.36	



Legend

East Anglia TWO Windfarm Site

East Anglia TWO Offshore Cable Corridor

Whiting Spawning Grounds

Coull et al. 1998

Whiting

Ellis et al. 2010

High Intensity

Low Intensity

Whiting Nursery Grounds

Coull et al. 1998

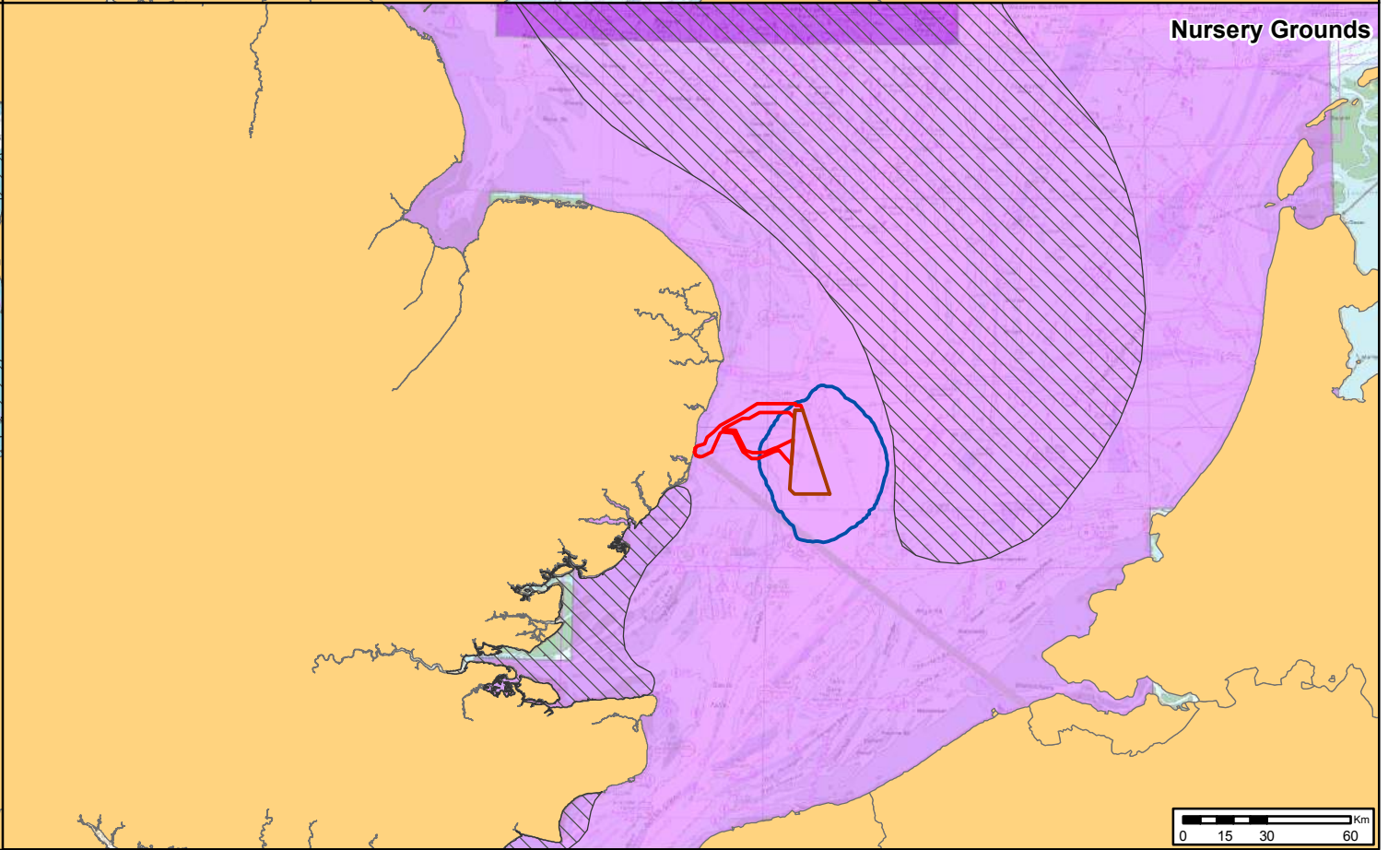
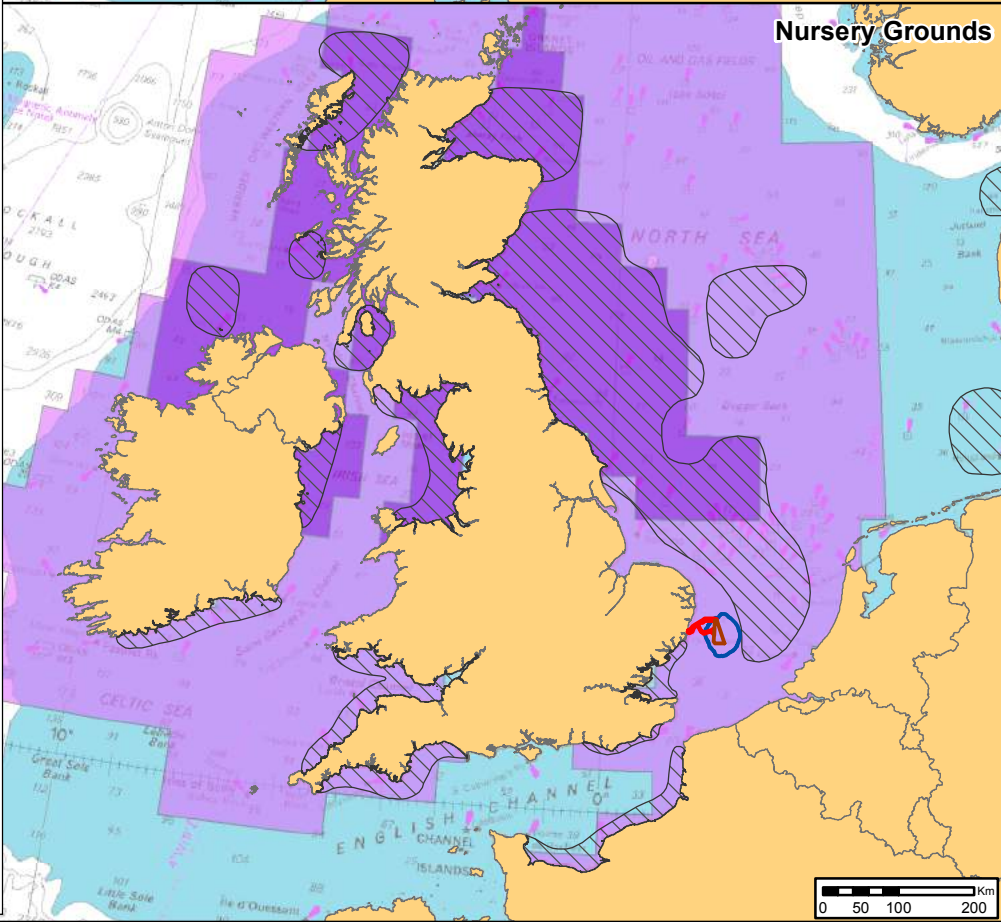
Whiting

Ellis et al. 2010

High Intensity

Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	23/11/2018	FC	First Issue.

Prepared:	FC
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Approved:	PP

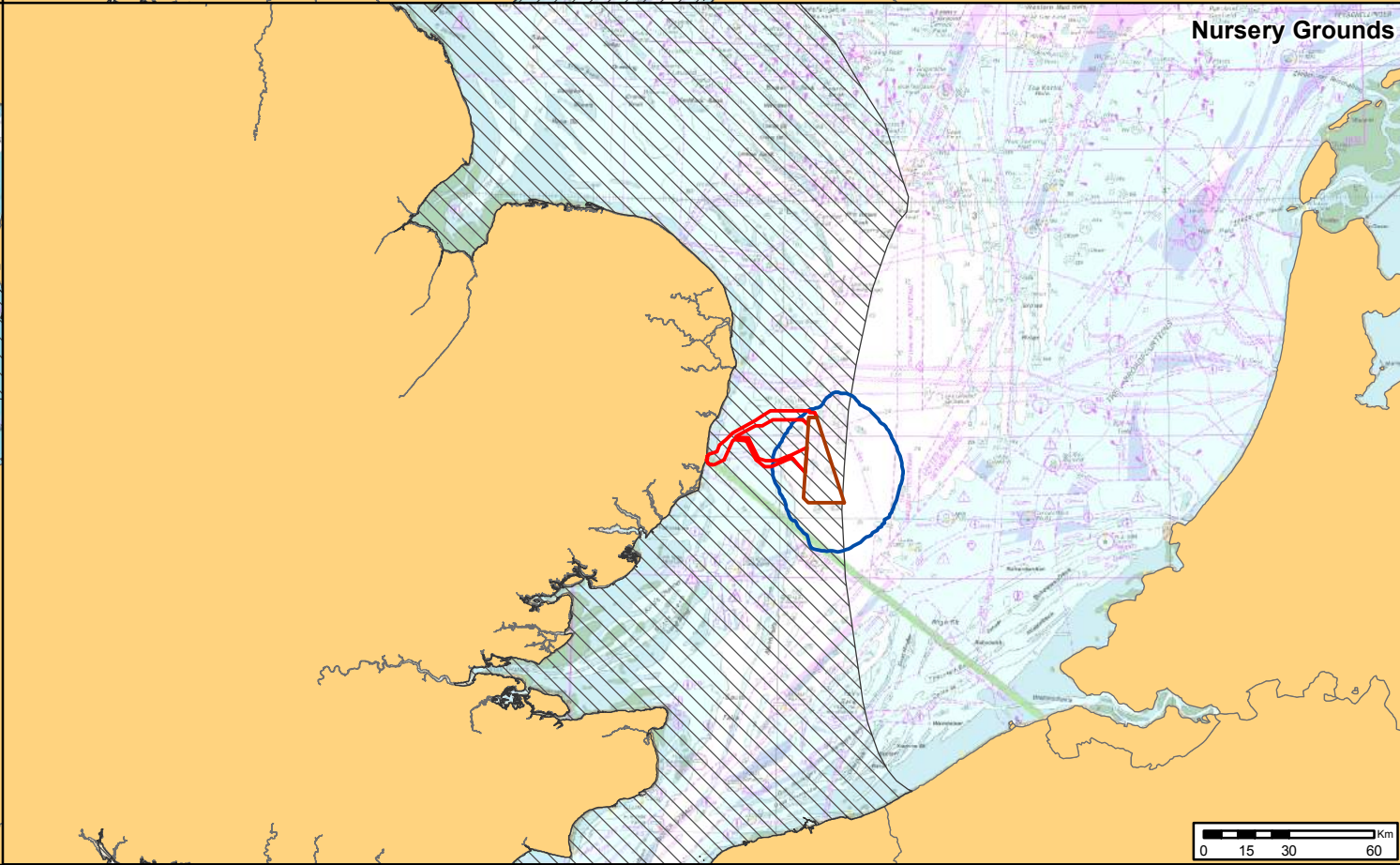
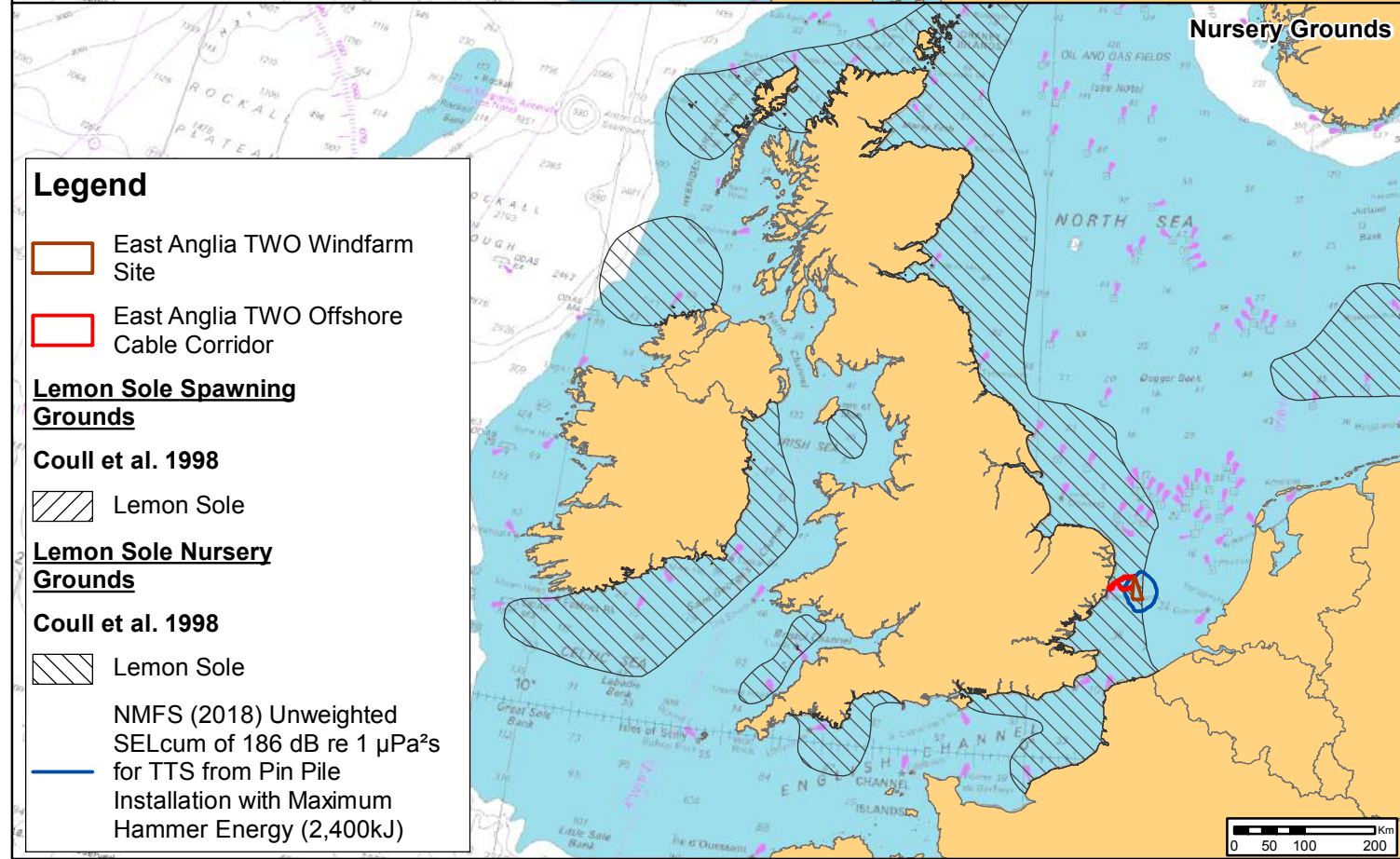
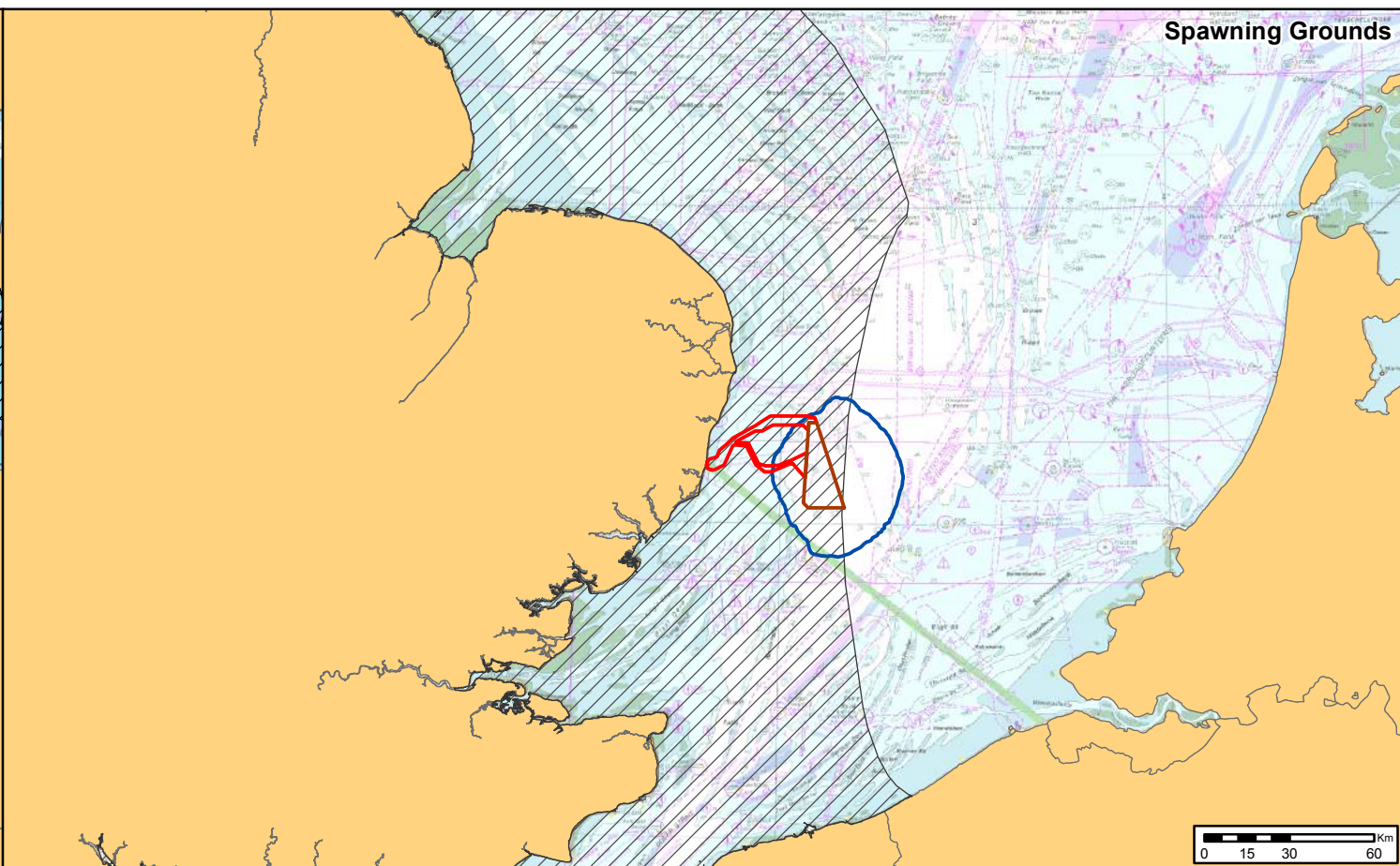
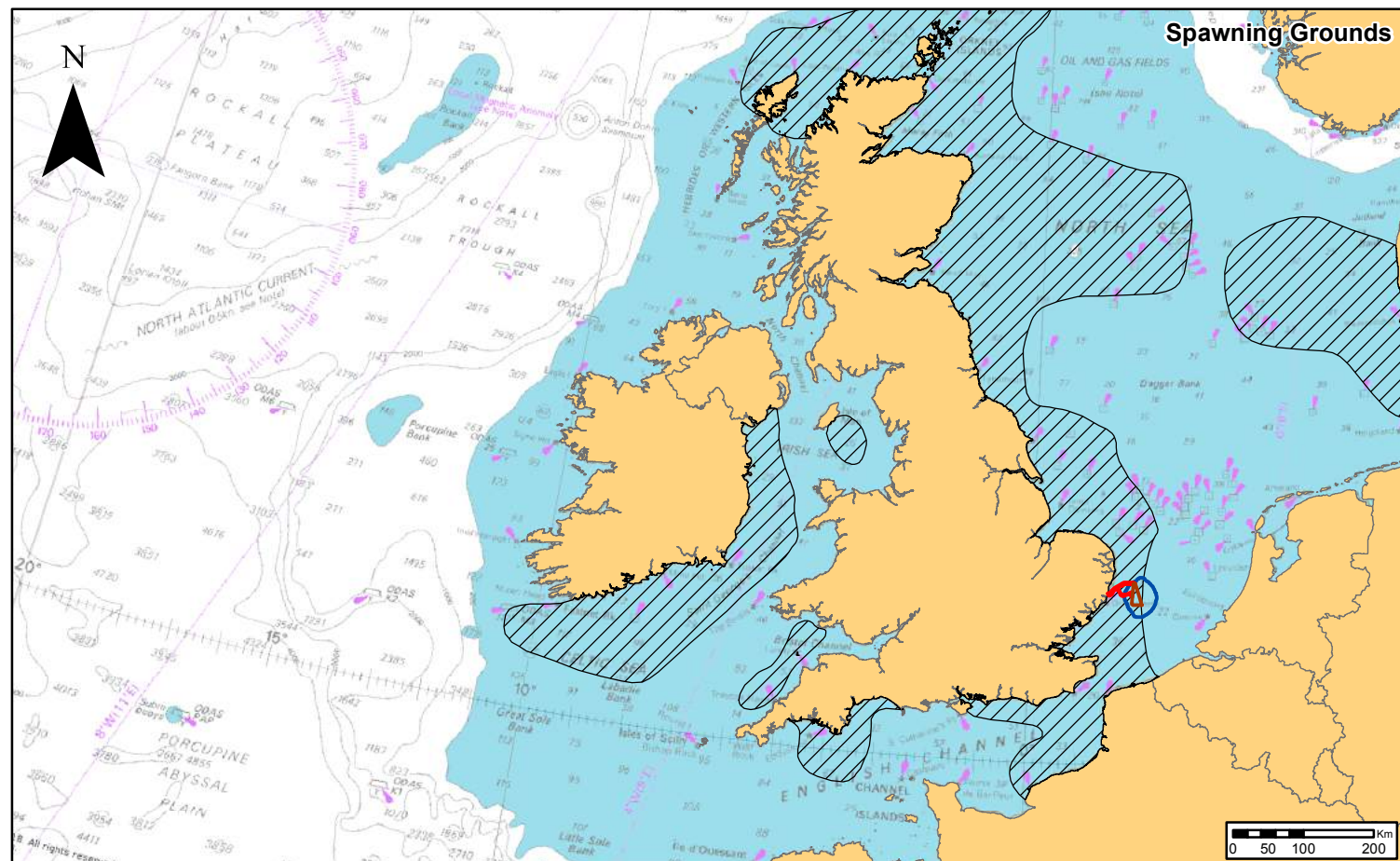
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East Anglia TWO
Whiting Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC408	
Rev	1	Datum: WGS 1984
Date	23/11/18	Projection: Zone 31N
Figure	10.37	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Lemon Sole Spawning Grounds

Coull et al. 1998

- Lemon Sole

Lemon Sole Nursery Grounds

Coull et al. 1998

- Lemon Sole

NMFS (2018) Unweighted SELcum of 186 dB re 1 $\mu\text{Pa}^2\text{s}$ for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



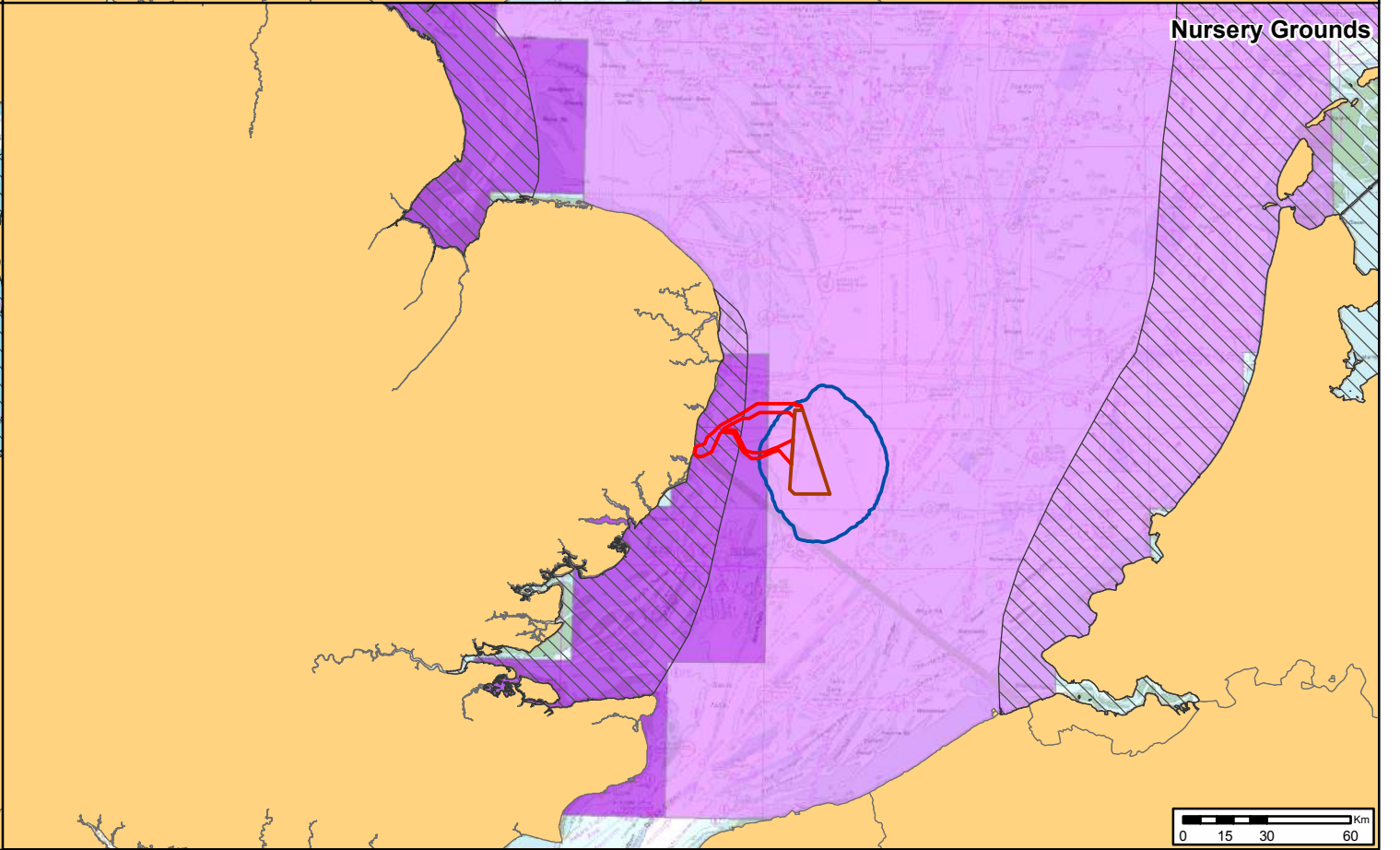
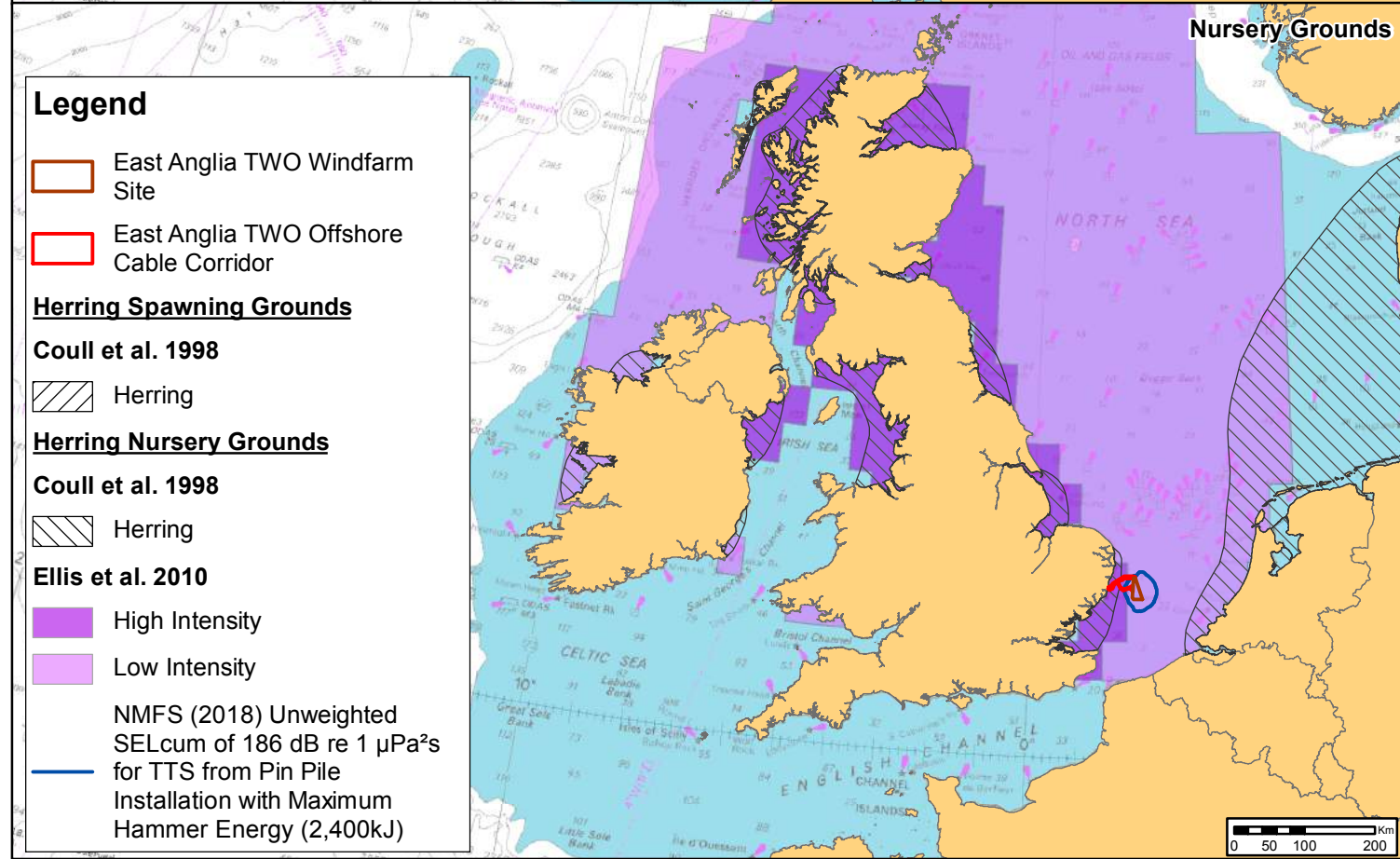
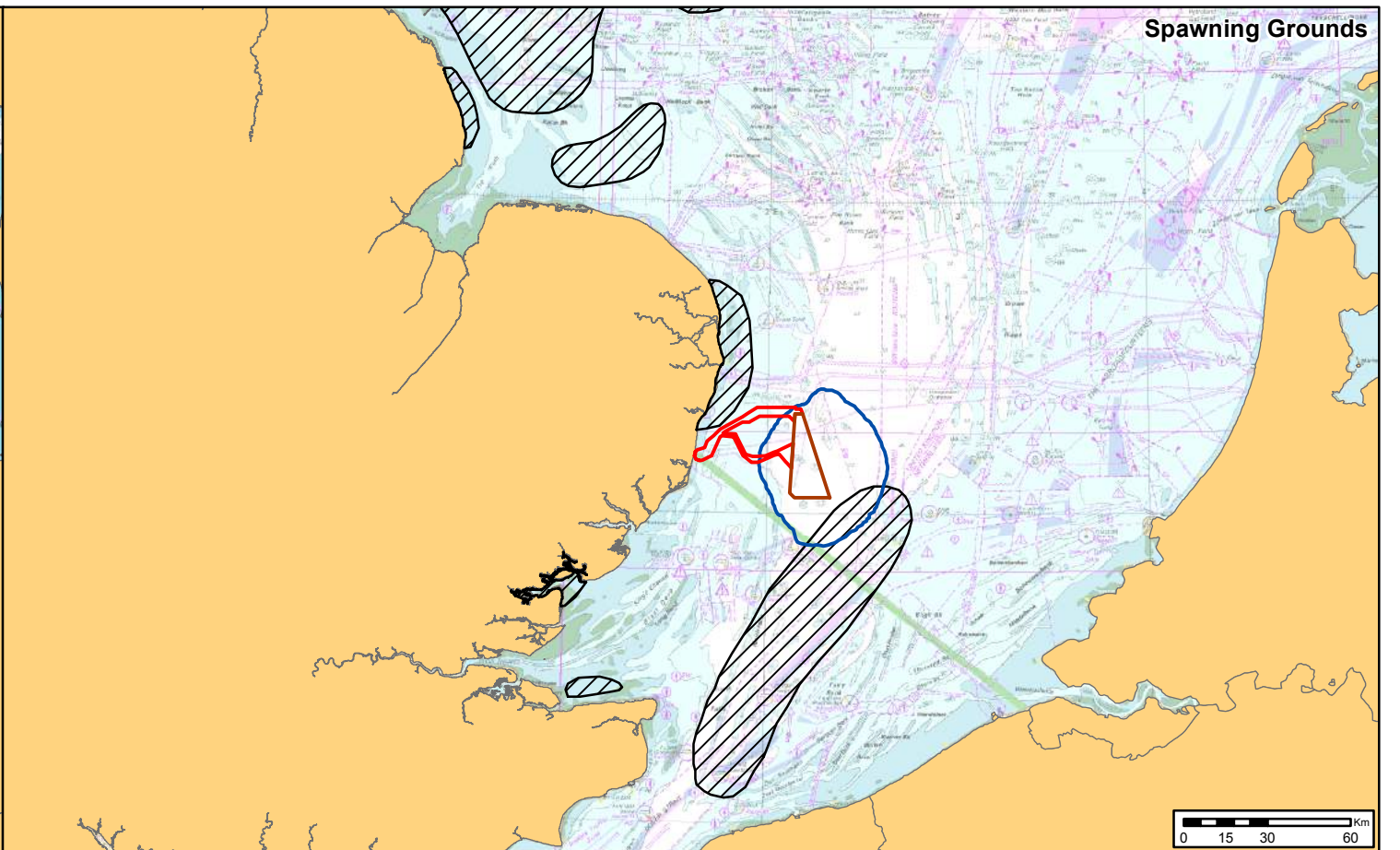
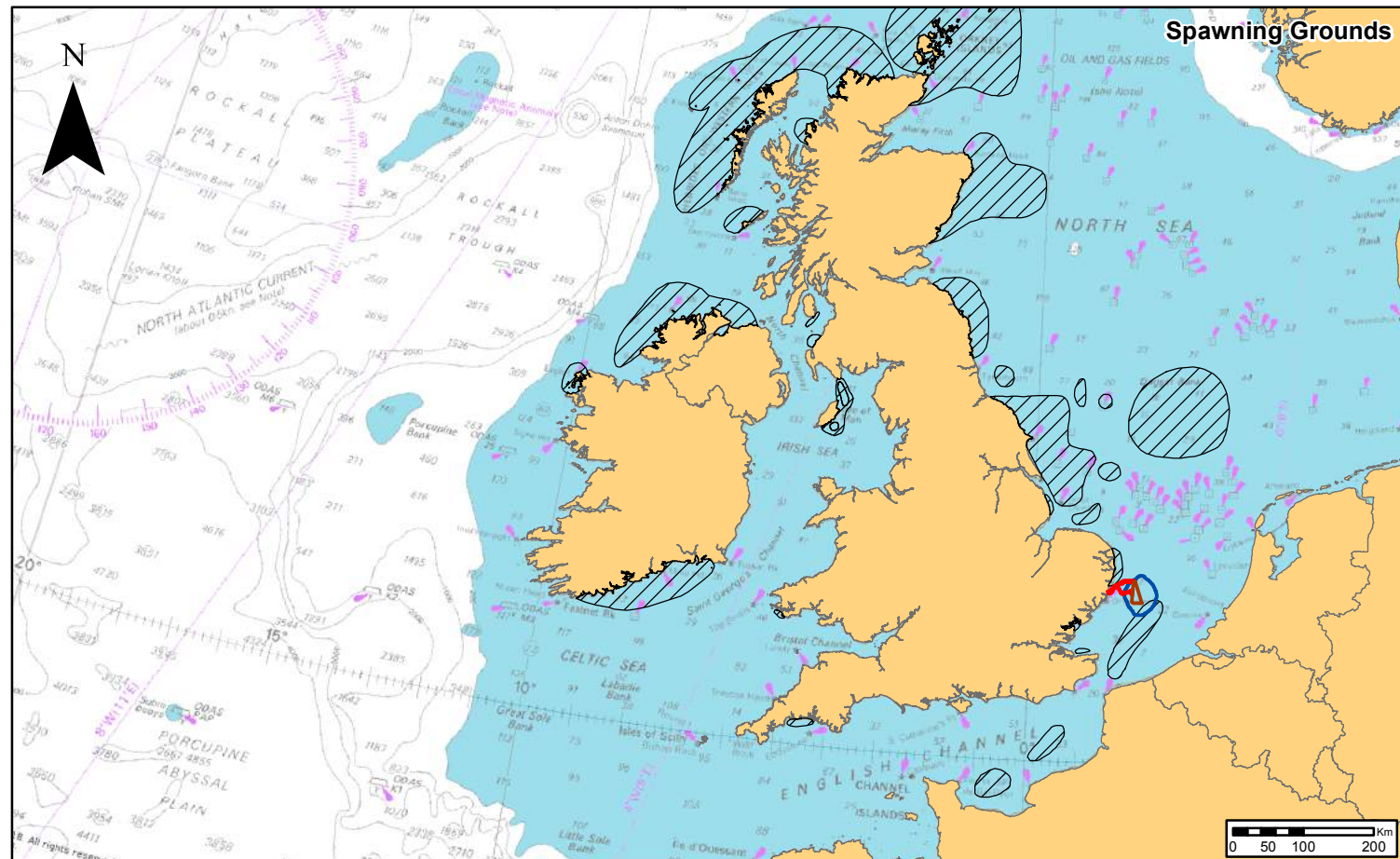
Rev	Date	By	Comment
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Approved:	PP	

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East Anglia TWO
Lemon Sole Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC404
Rev	1
Date	22/11/18
Figure	10.38
	Datum: WGS 1984 Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Herring Spawning Grounds

Coull et al. 1998

- Herring

Herring Nursery Grounds

Coull et al. 1998

- Herring

Ellis et al. 2010

- High Intensity
- Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)

-

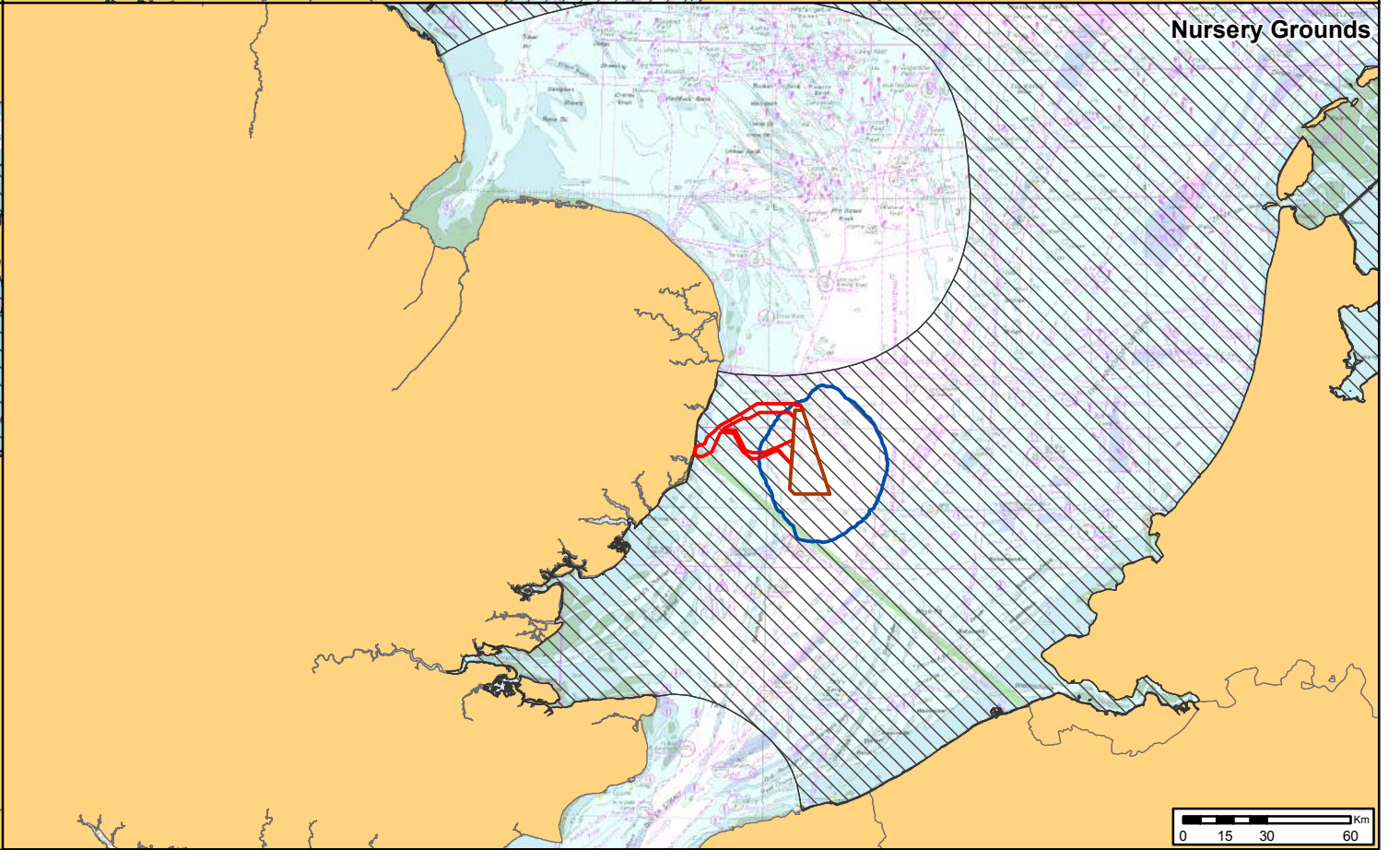
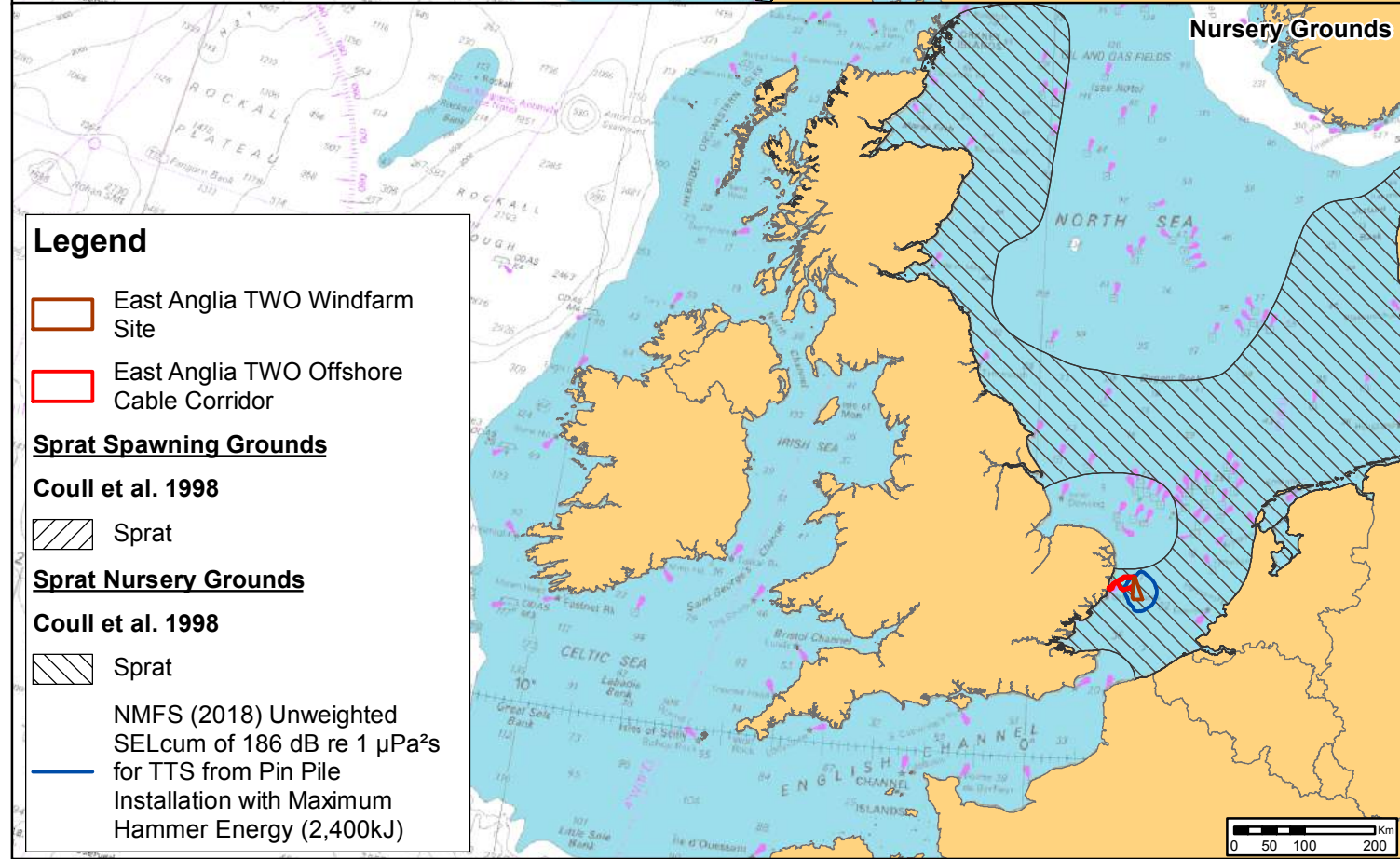
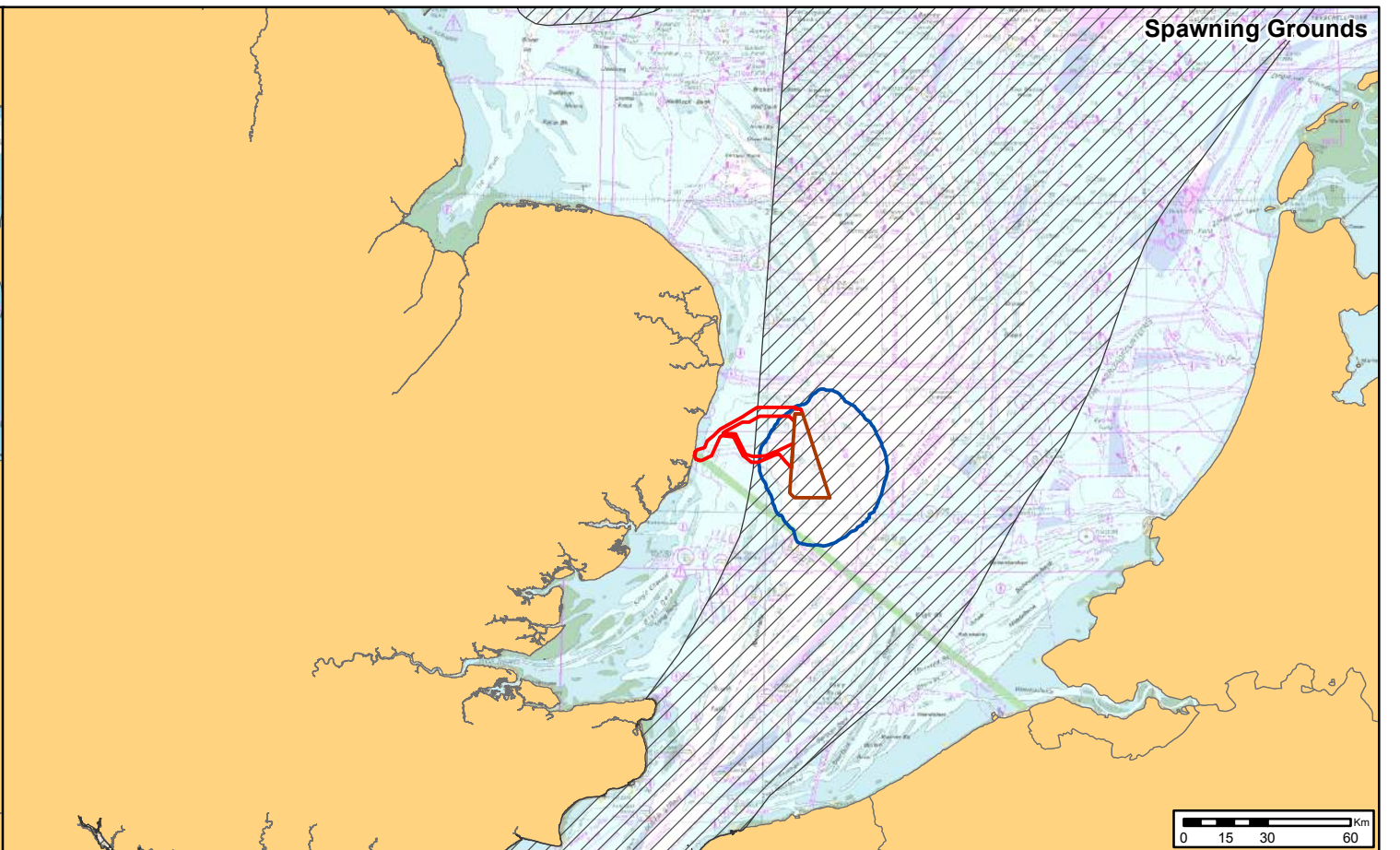
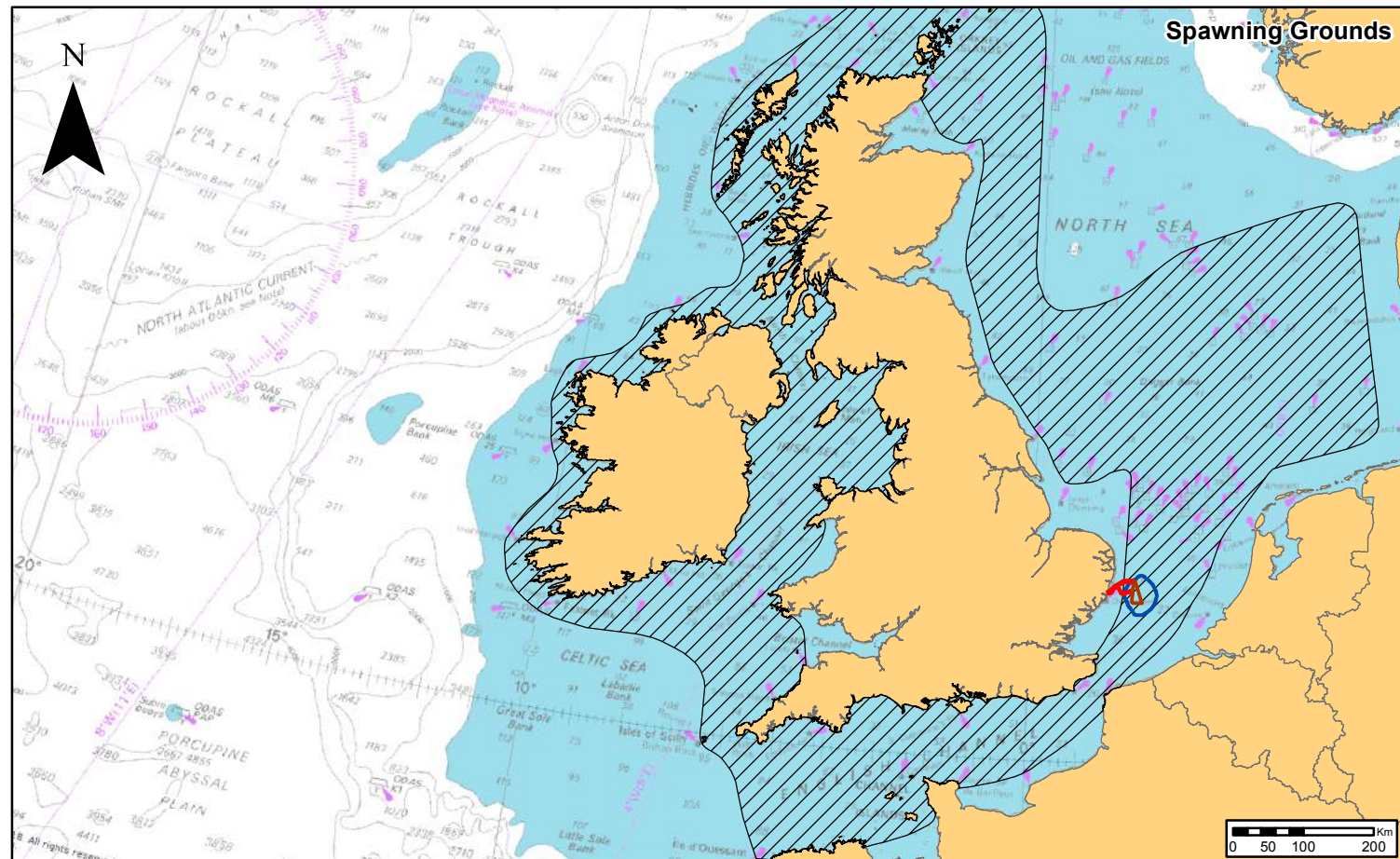


Rev	Date	By	Comment
1	23/11/2018	FC	First Issue.

Prepared:	FC	Scale @ A3
Checked:	KC	
Approved:	PP	

East Anglia TWO
 Herring Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC410	
Rev	1	Datum: WGS 1984
Date	23/11/18	Projection: Zone 31N
Figure	10.39	



Legend

- East Anglia T2O Windfarm Site
- East Anglia T2O Offshore Cable Corridor

Sprat Spawning Grounds

Coull et al. 1998

- Sprat

Sprat Nursery Grounds

Coull et al. 1998

- Sprat

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)

- Contour



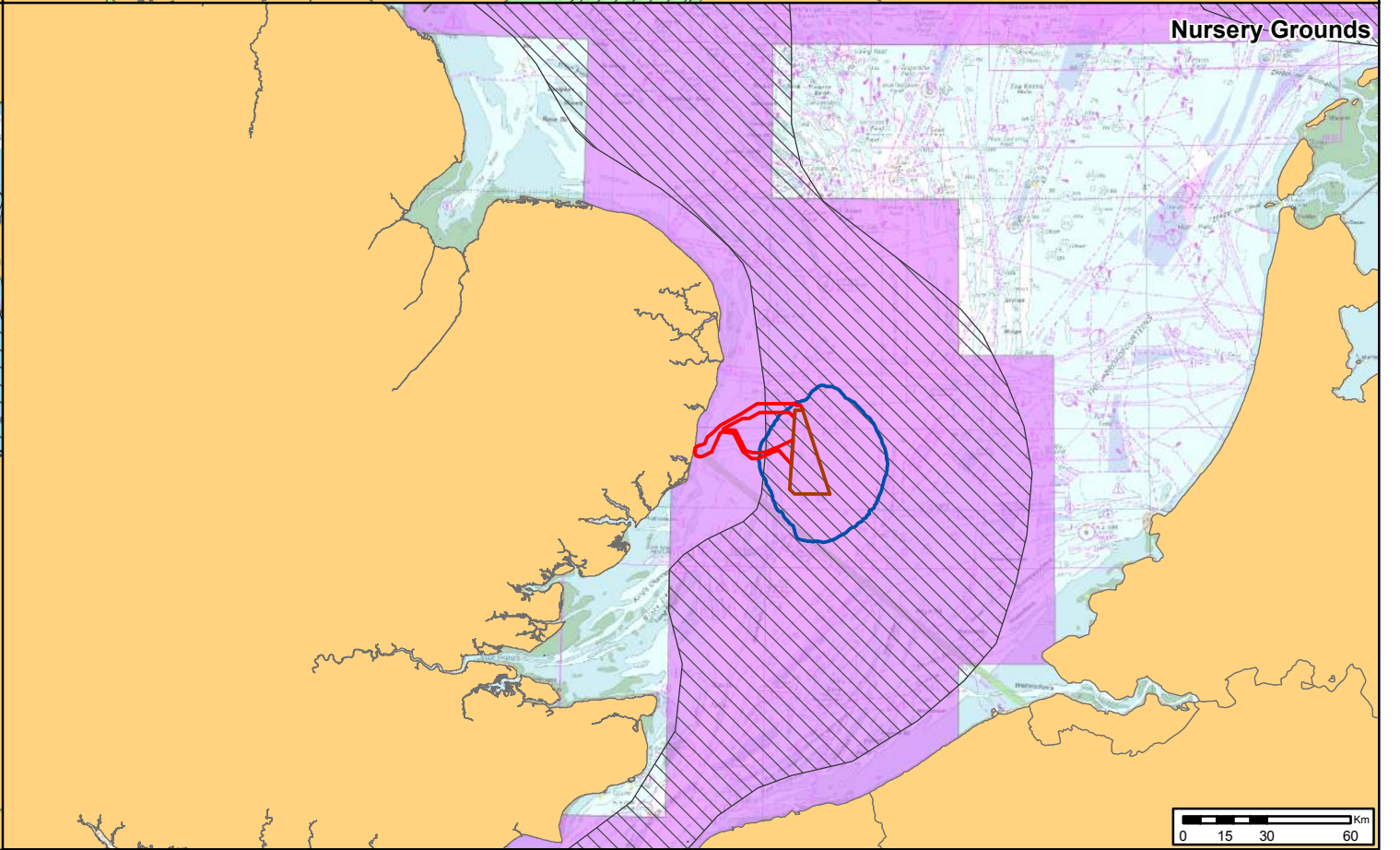
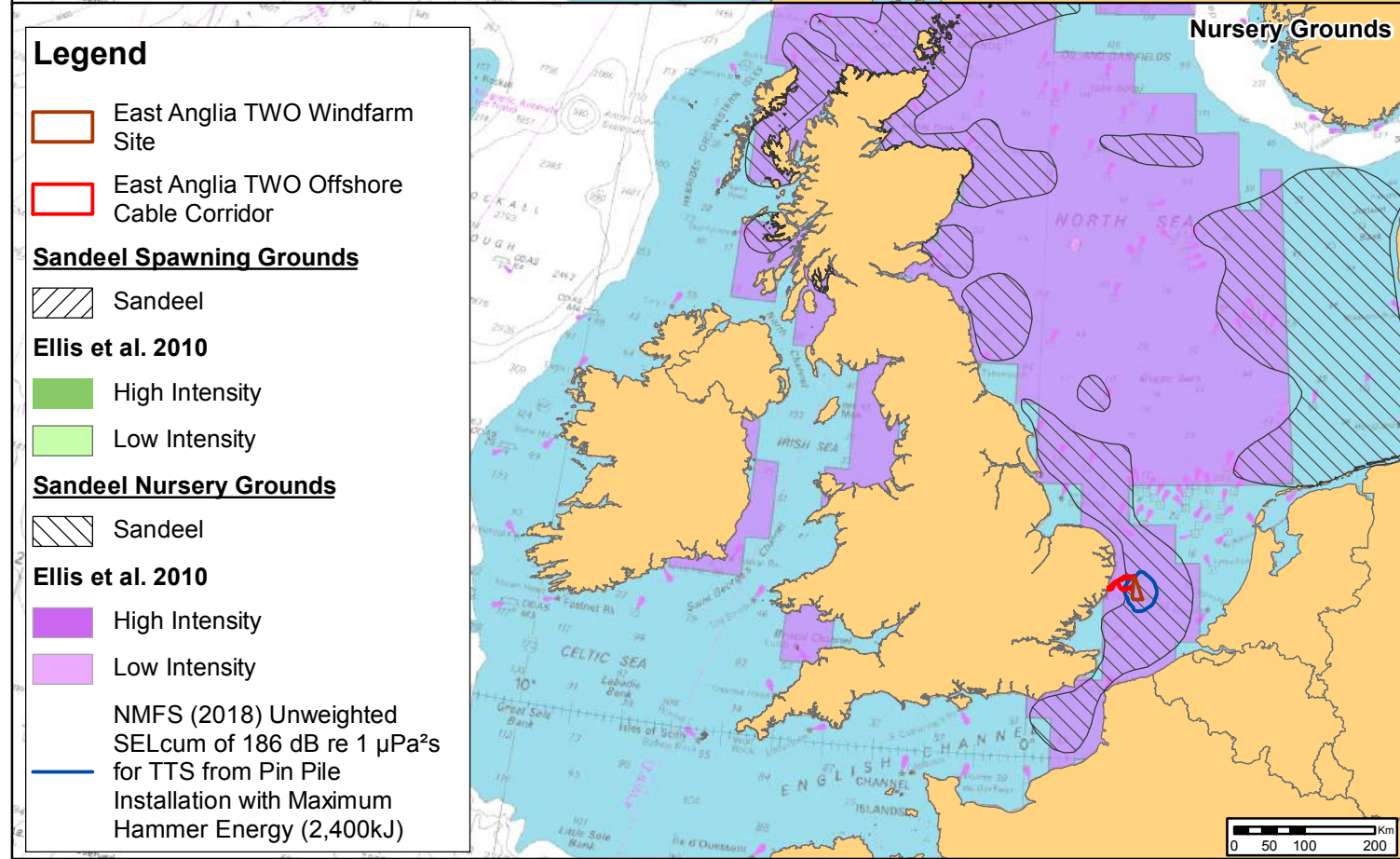
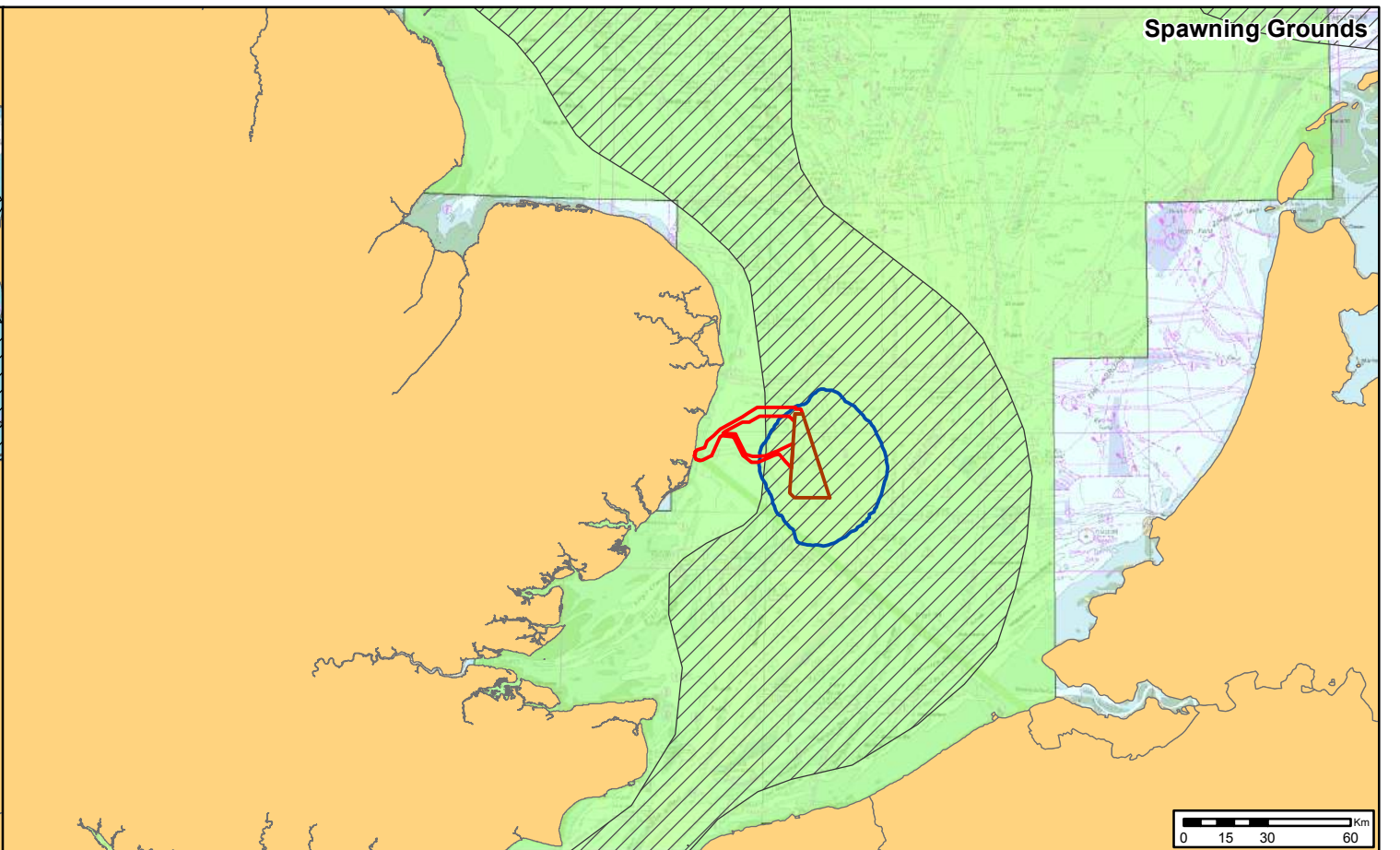
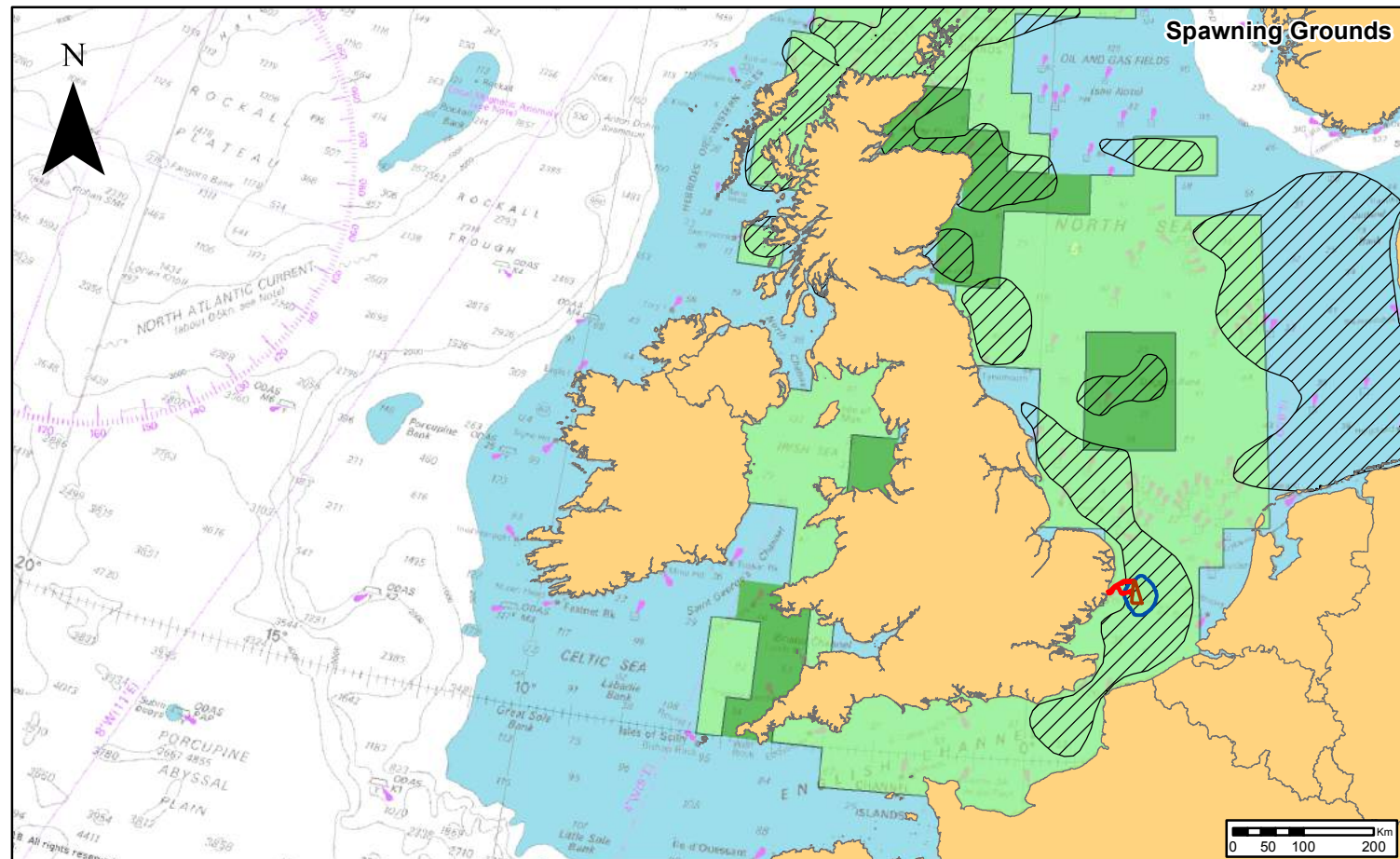
Rev	Date	By	Comment
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Prepared:	FC	Scale @ A3
Checked:	KC	
Approved:	PP	

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East Anglia T2O Sprat Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC409	
Rev	1	Datum: WGS 1984
Date	23/11/18	Projection: Zone 31N
Figure	10.40	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Sandeel Spawning Grounds

- Sandeel

Ellis et al. 2010

- High Intensity
- Low Intensity

Sandeel Nursery Grounds

- Sandeel

Ellis et al. 2010

- High Intensity
- Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 μ Pa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	22/11/2018	FC	First Issue.

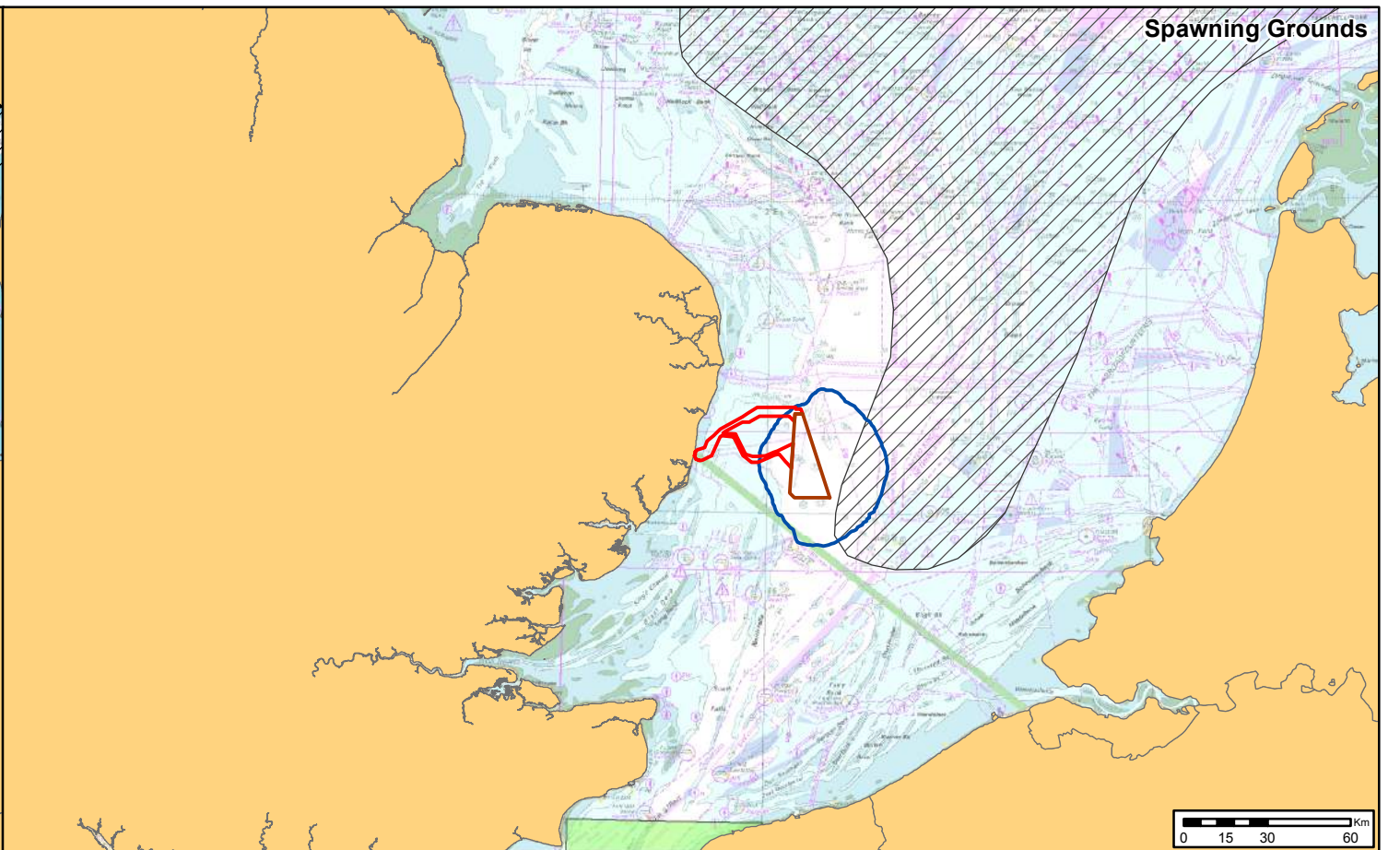
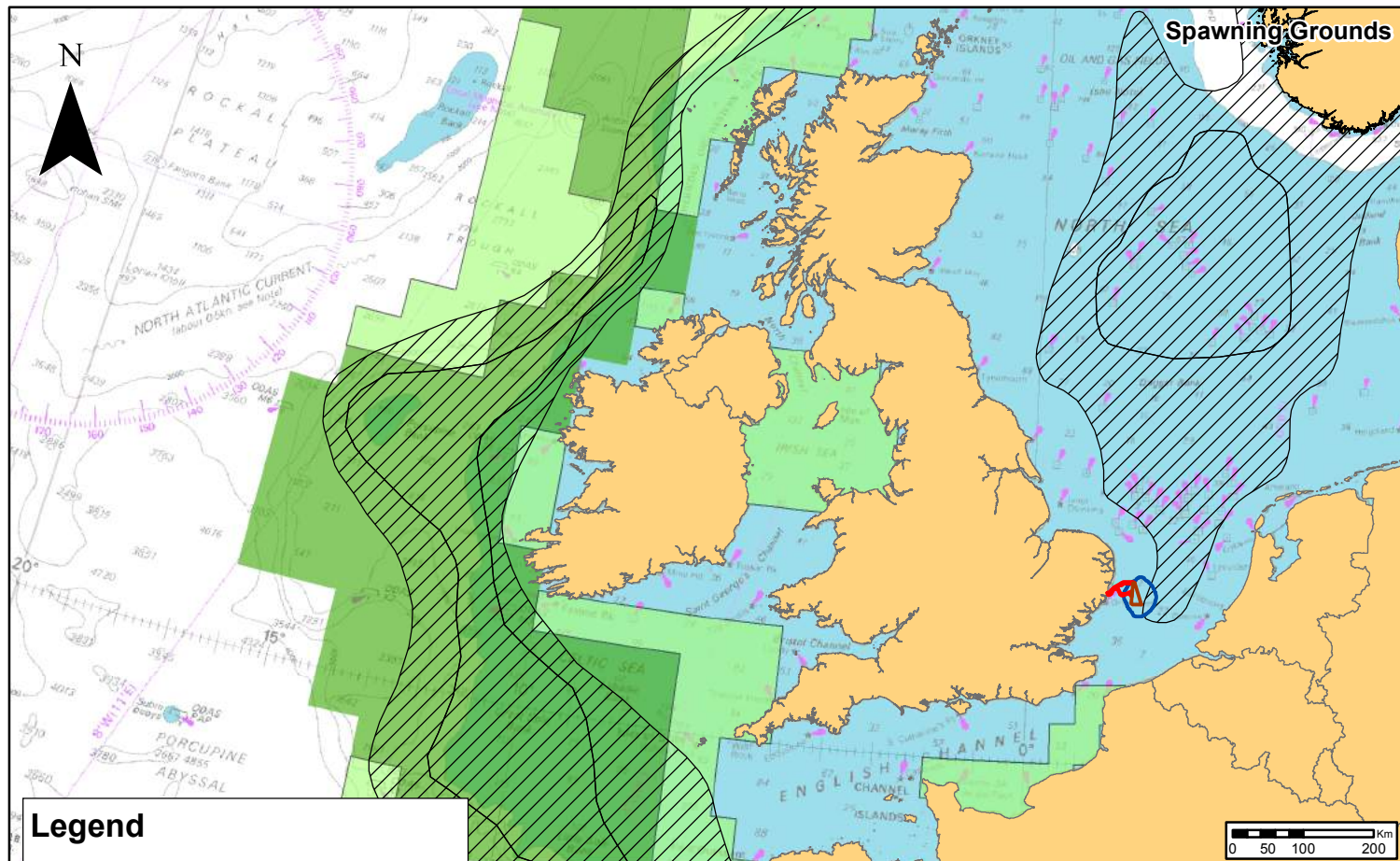
Prepared:	FC	Scale @ A3
Checked:	KC	
Approved:	PP	

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East Anglia TWO
Sandeel Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC406
Rev	1
Date	22/11/18
Figure	10.41

Datum: WGS 1984
Projection: Zone 31N



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Mackerel Spawning Grounds

Coull et al. 1998

- Mackerel

Ellis et al. 2010

- High Intensity
- Low Intensity

Mackerel Nursery Grounds

Coull et al. 1998

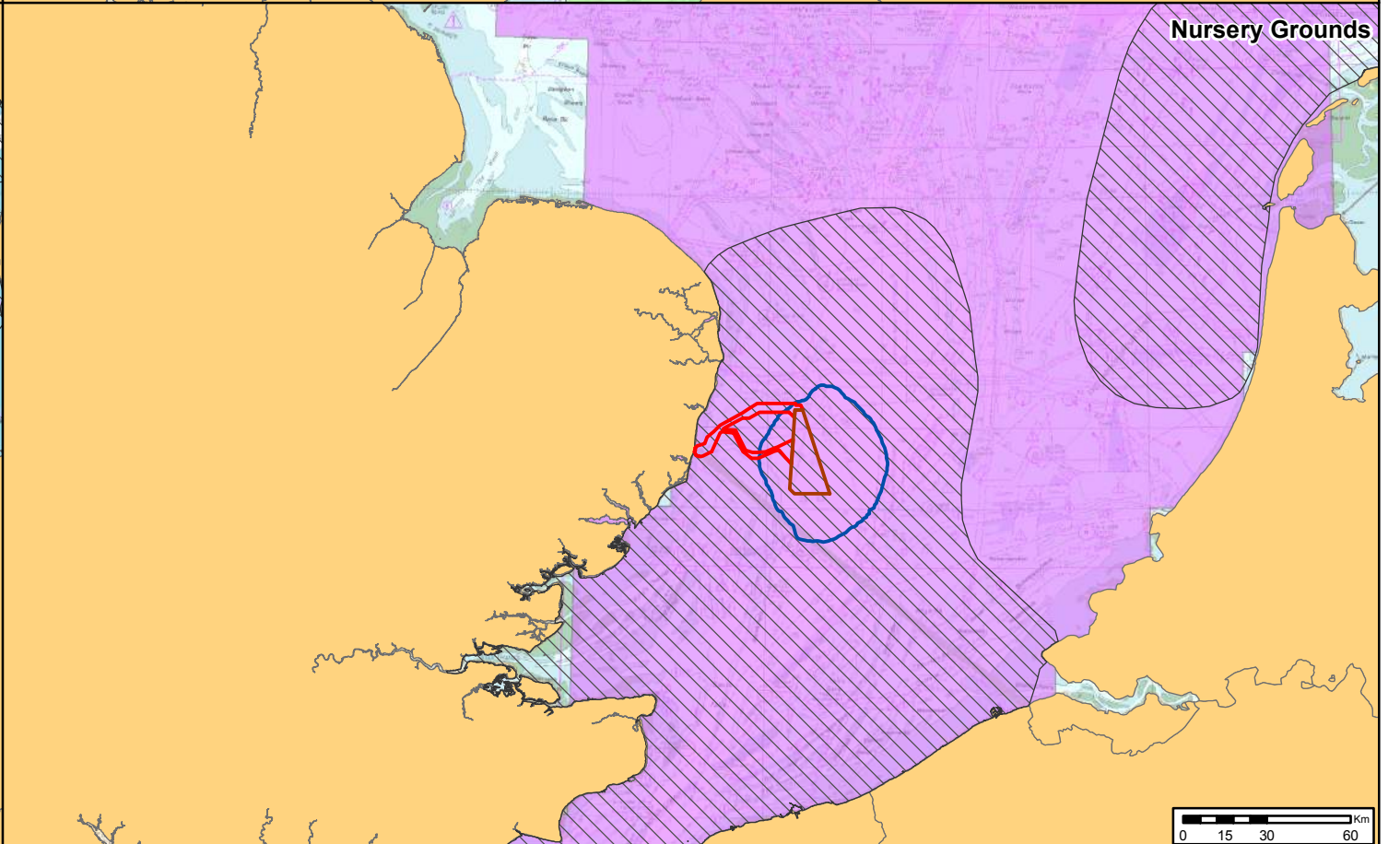
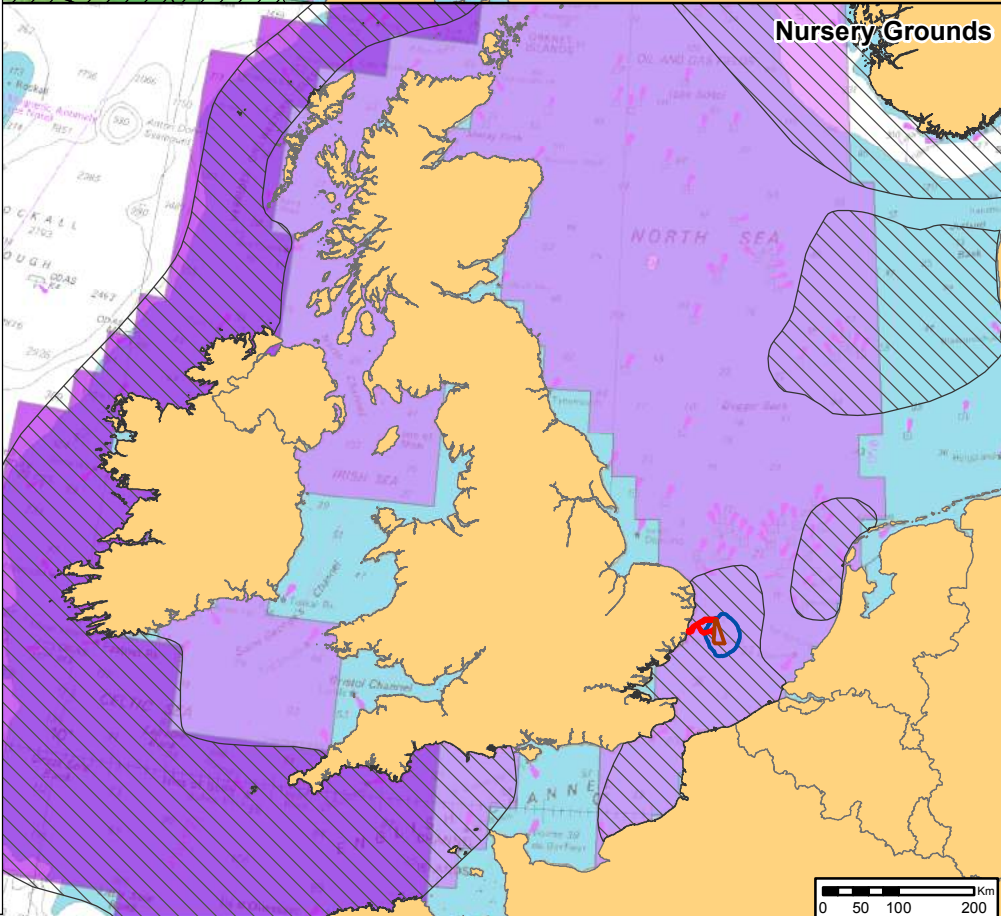
- Mackerel

Ellis et al. 2010

- High Intensity
- Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 $\mu\text{Pa}^2\text{s}$ for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)

- Contour

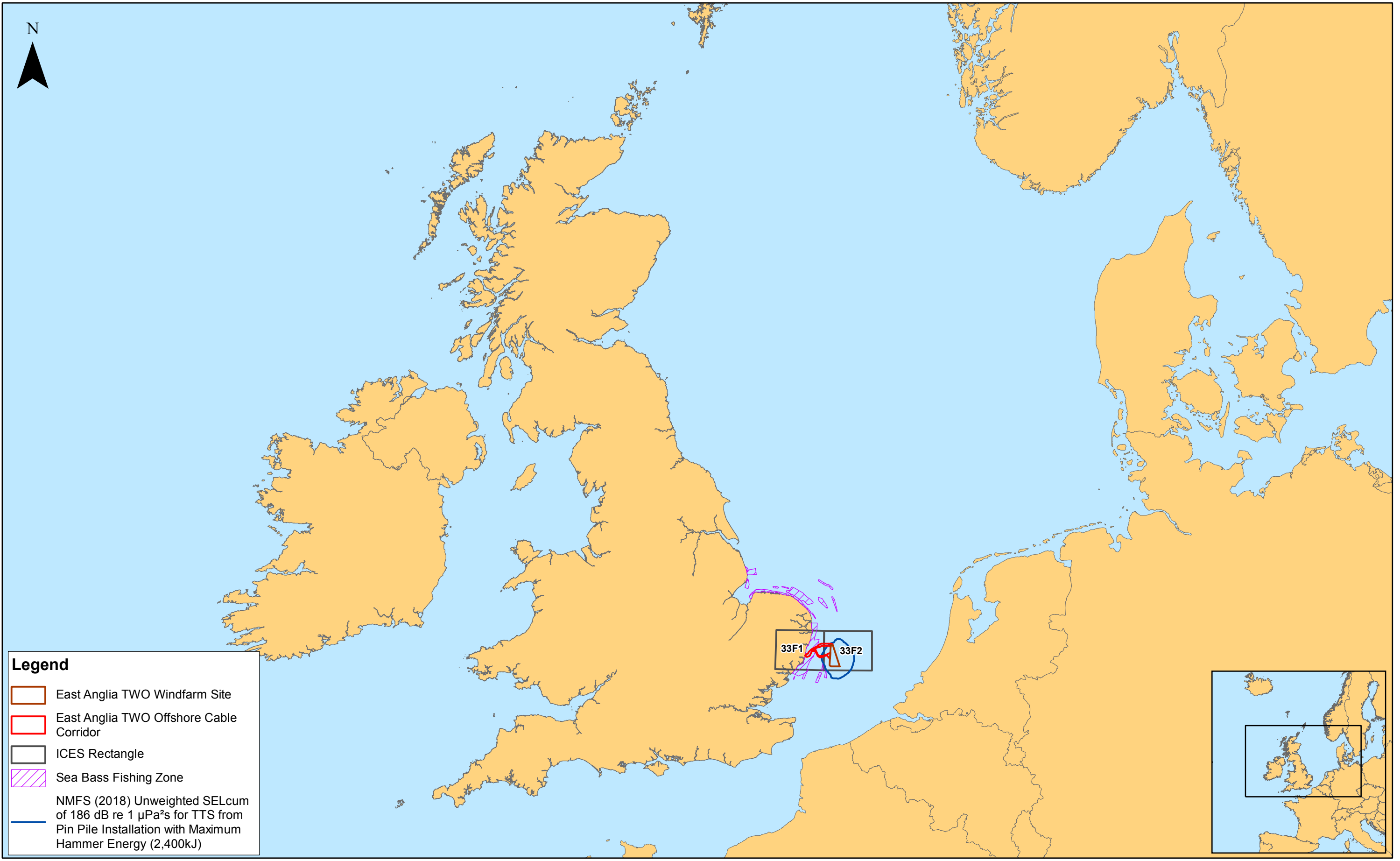


Rev	Date	By	Comment
1	22/11/2018	FC	First Issue.

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Checked:	KC	Source: © Subacoustech, 2018. © Cefas, 2018. © ICES International Herring Larvae Survey, 2018. © The Crown Estate, 2018. Charts from MarineFIND.co.uk Licence No EK001-0645-MP0095. Not to be used for navigation.
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East Anglia TWO
 Mackerel Spawning and Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC405	
Rev	1	Datum: WGS 1984
Date	22/11/18	Projection: Zone 31N
Figure	10.42	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor
- ICES Rectangle
- Sea Bass Fishing Zone
- NMFS (2018) Unweighted SELcum of 186 dB re 1 μPa²s for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	04/12/2018	FC	First Issue.

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Scale @ A3

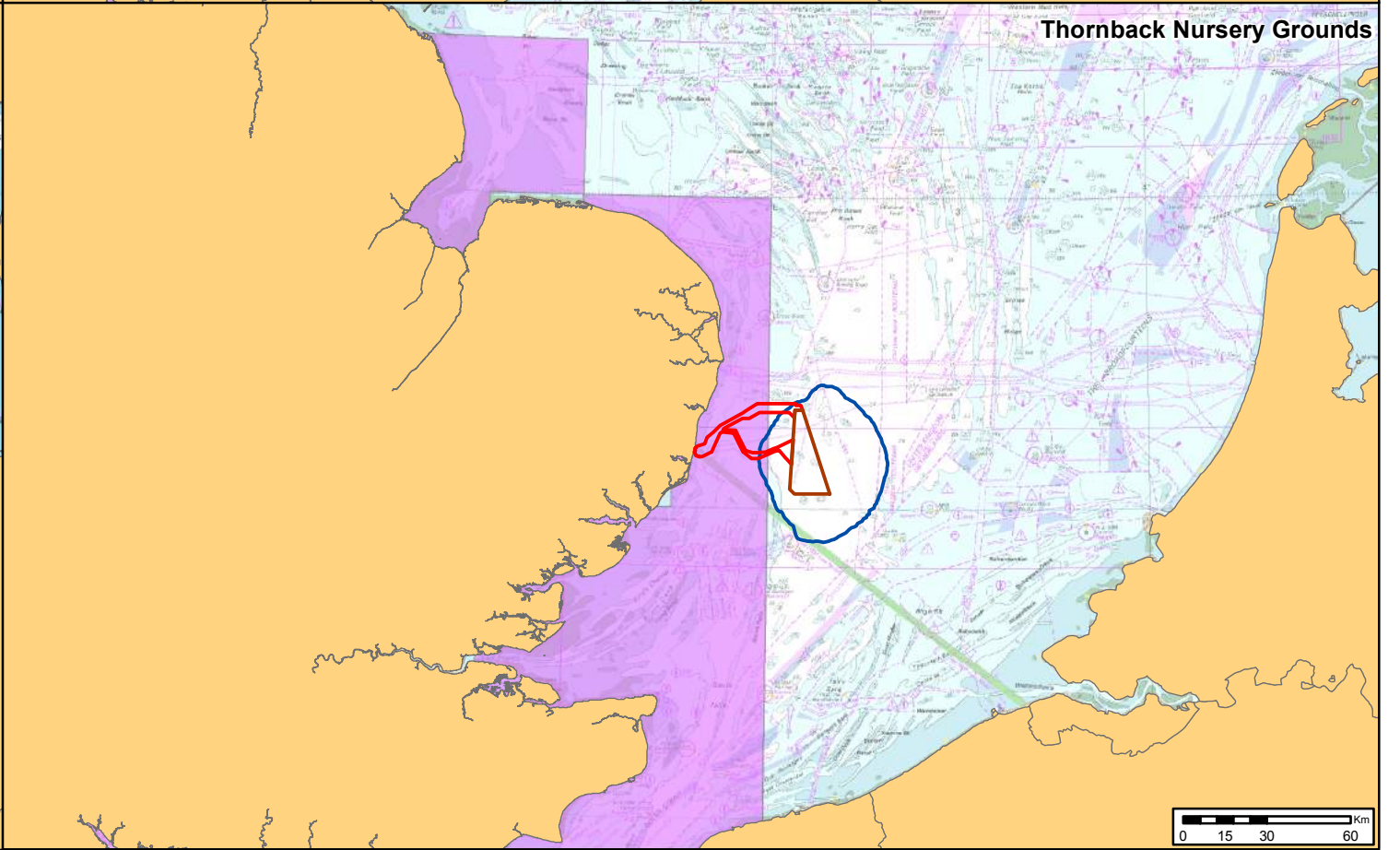
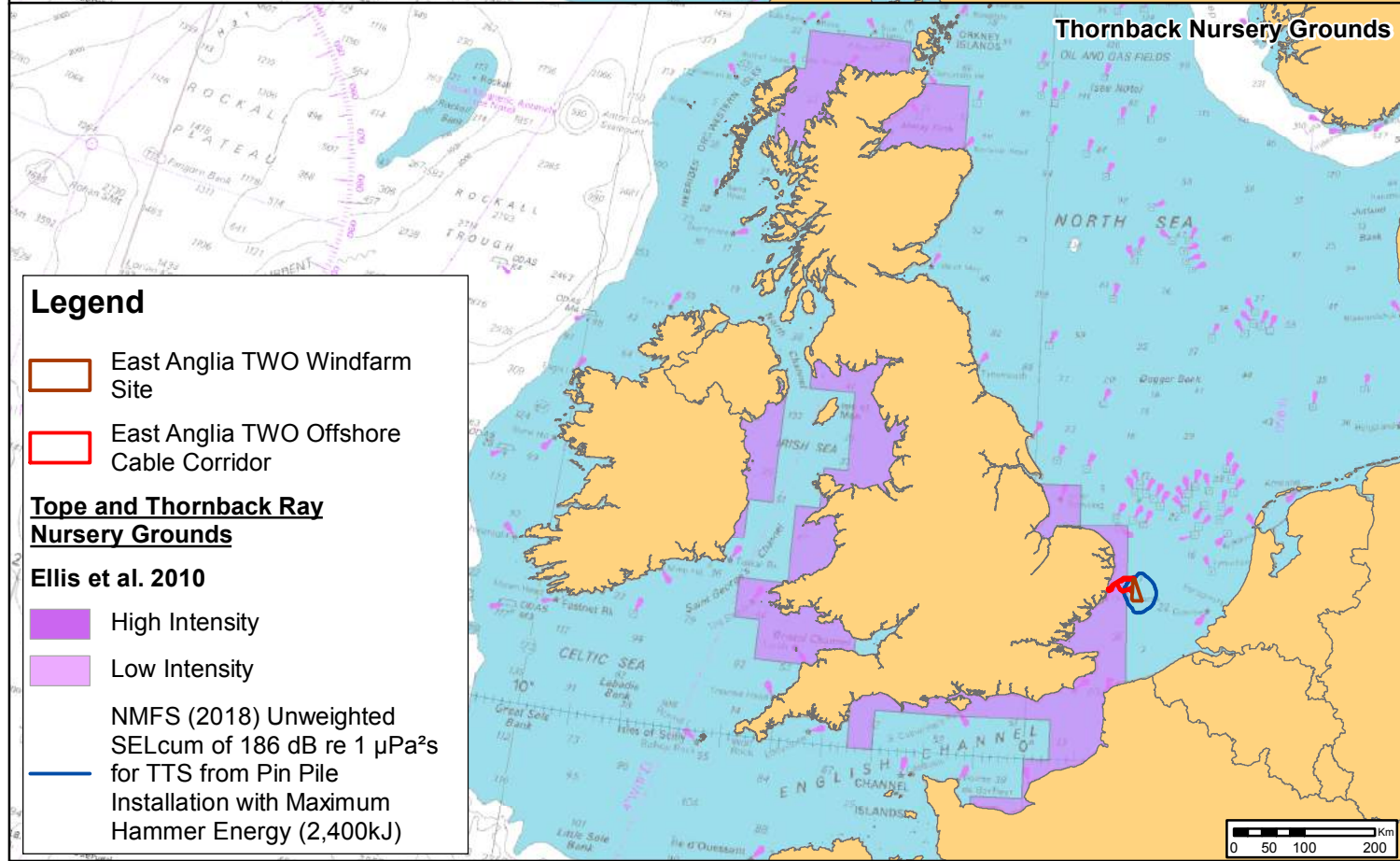
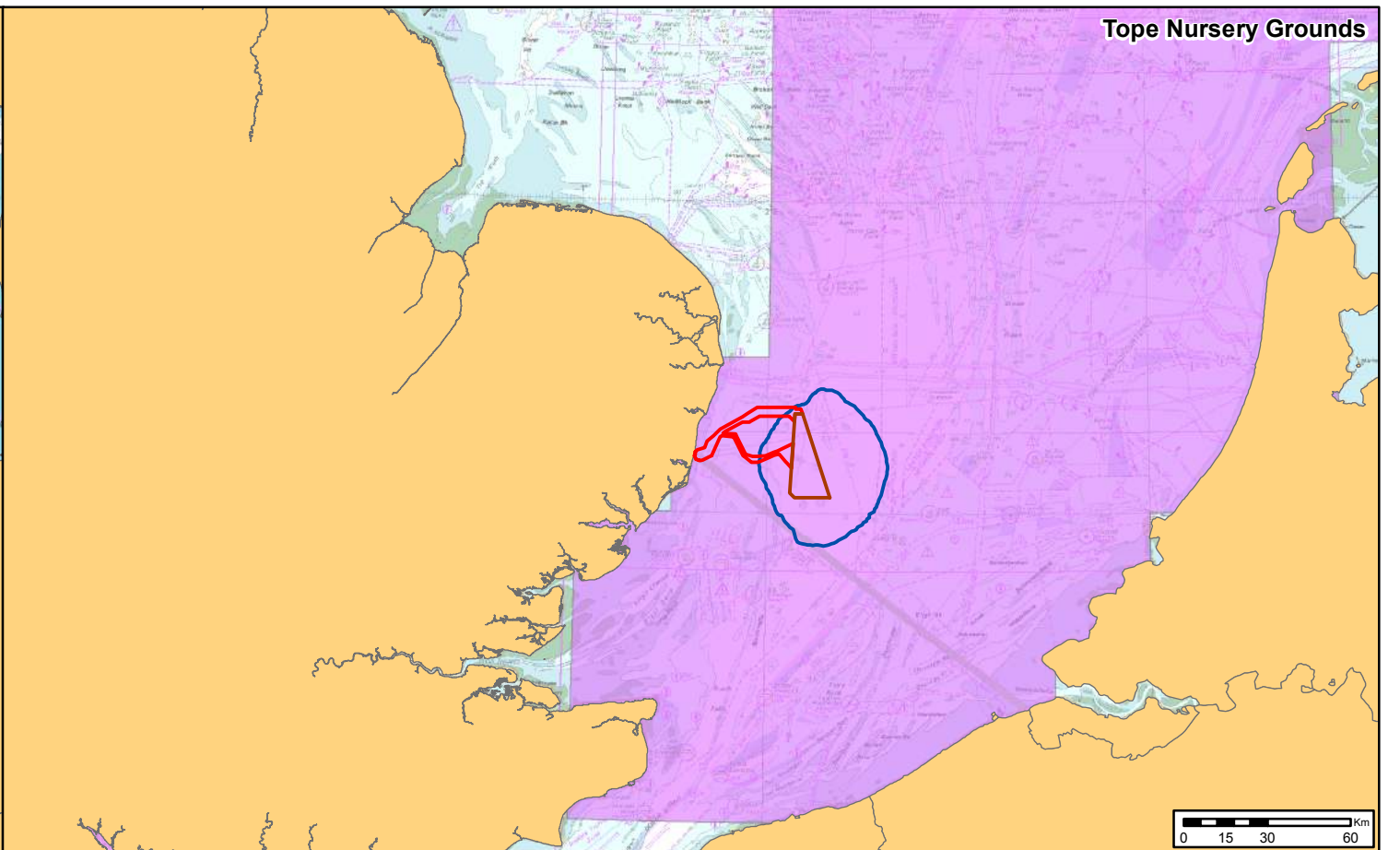
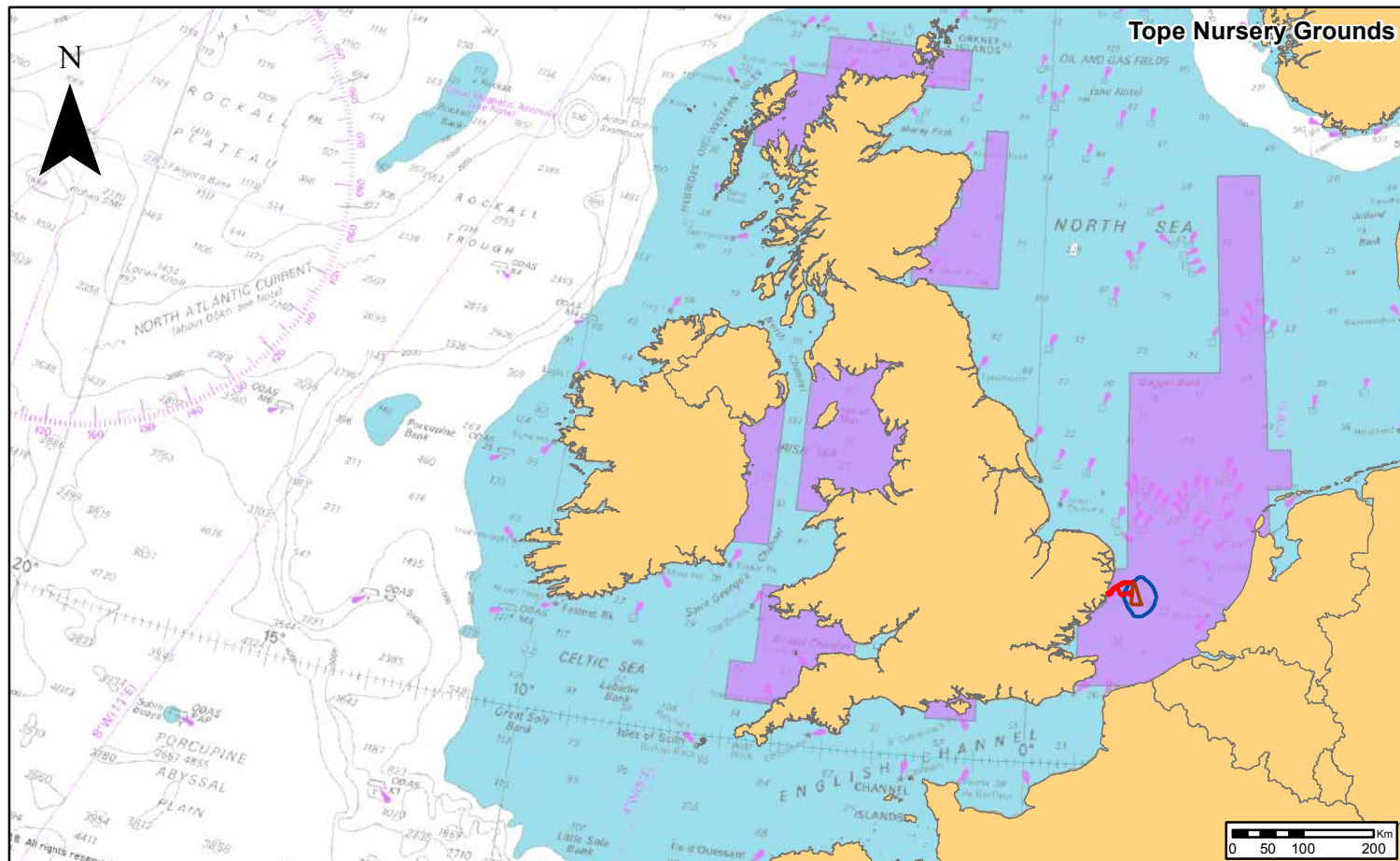
0 75 150 300 Km

Prepared: FC
Checked: KC
Approved: PP

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East Anglia TWO
Sea Bass Historic Fishing Areas in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC412	
Rev	1	Datum: WGS 1984
Date	04/12/18	Projection: Zone 31N
Figure	10.43	



Legend

- East Anglia TWO Windfarm Site
- East Anglia TWO Offshore Cable Corridor

Topo and Thornback Ray Nursery Grounds

Ellis et al. 2010

- High Intensity
- Low Intensity

NMFS (2018) Unweighted SELcum of 186 dB re 1 $\mu\text{Pa}^2\text{s}$ for TTS from Pin Pile Installation with Maximum Hammer Energy (2,400kJ)



Rev	Date	By	Comment
1	23/11/2018	FC	First Issue.

Prepared:	FC
Checked:	KC
Approved:	PP

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East Anglia TWO
 Topo and Thornback Ray Nursery Grounds in Relation to Pin Pile Noise Impact Contour (2,400kJ)

Drg No	EA1N-EA2-DEV-DRG-IBR-00TBC411
Rev	1
Date	23/11/18
Figure	10.44

Datum: WGS 1984
 Projection: Zone 31N