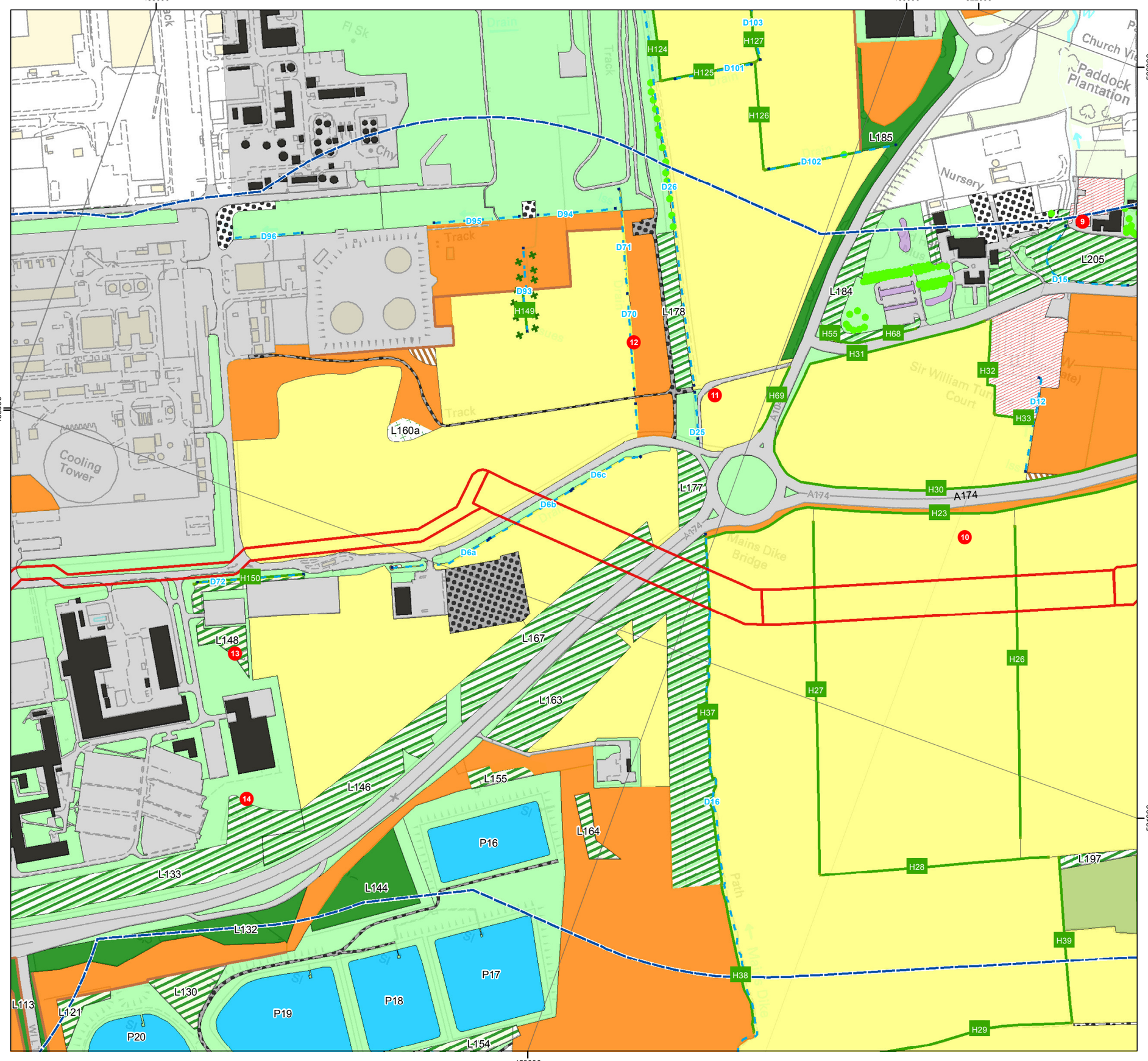

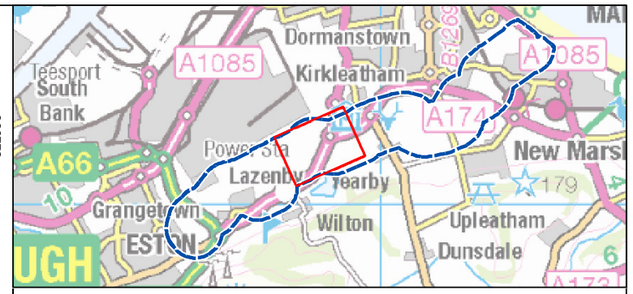

LEGEND

- Onshore cable corridor
- Onshore cable route - 500m buffer
- Converter site

Woodland & Scrub

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub

Grassland Marsh

- Grassland - poor semi-improved
- Neutral grassland - semi-improved
- Marsh/marshy grassland
- Improved grassland
- Coastal grassland

Tall Herb & Fen

- Tall herb and fen - tall ruderal
- Marginal vegetation

- Water
- Hedgerow
- Fence
- Scrub
- Tree
- Target note

Swamp & Open Water

- Standing water - eutrophic
- Running water

Miscellaneous

- Ornamental planting
- Arable
- Allotment
- Amenity grassland
- Manure pile
- Bare ground/ hardstanding
- Bare ground
- Building
- Hardstanding
- Railway
- No access
- Private - residential/industrial

N

0 50 100
Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 2e - Extended Phase 1 Habitat Survey - Section 5

VER	DATE	REMARKS	Drawn	Checked
2.3	15/01/14	Extended Phase 1 Habitat Survey [CPD 6]	MP	MW

DRAWING NUMBER:

PECOLOGY/Teesside/Ecology_Phase1/2

SCALE	1:5,300	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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ECOLOGICAL CONSULTANTS

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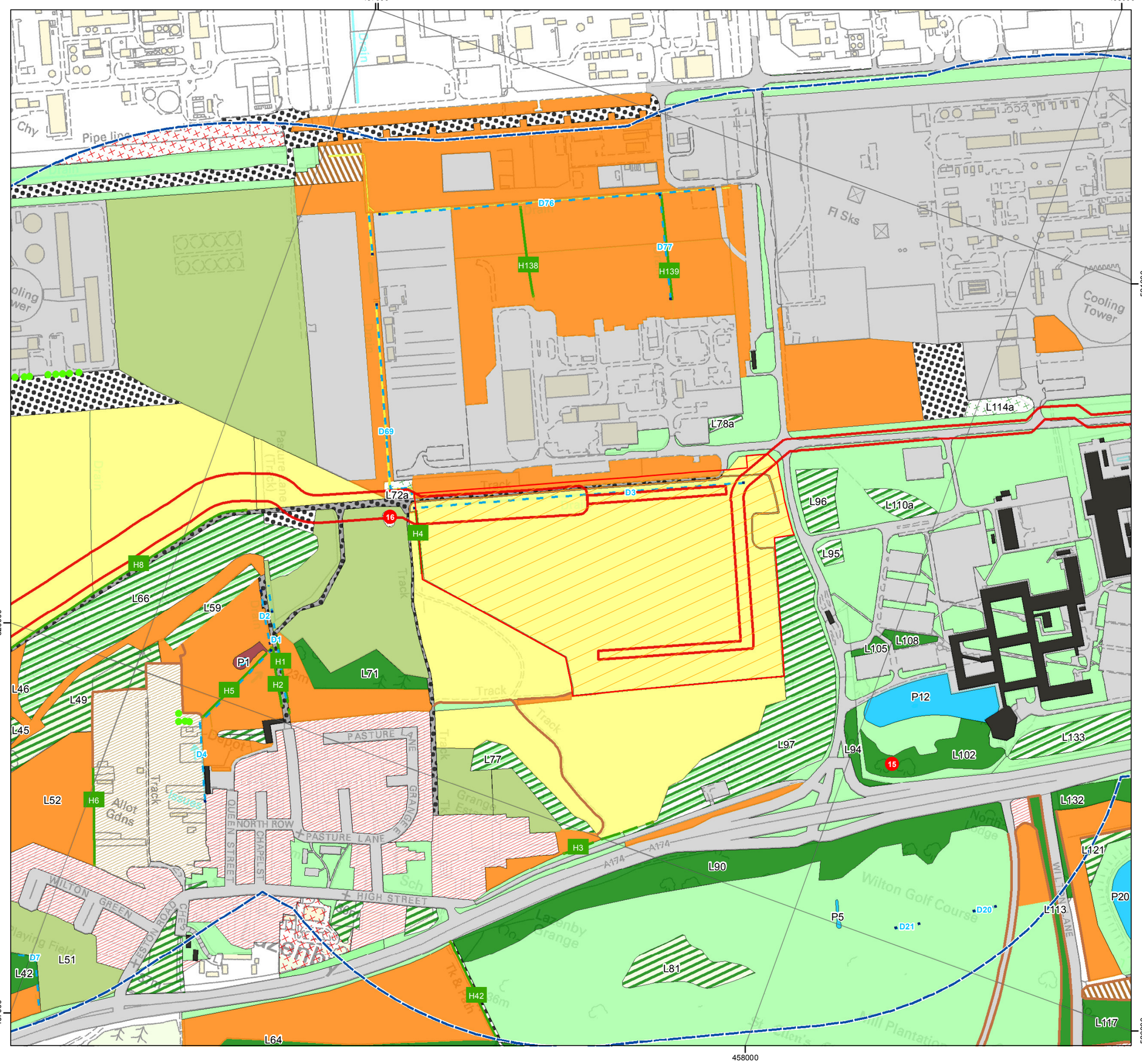

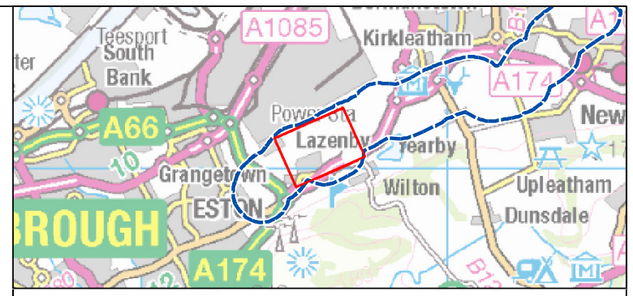

LEGEND

- Onshore cable corridor
- Onshore cable route - 500m buffer
- Converter site

Woodland & Scrub

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub

Grassland Marsh

- Grassland - poor semi-improved
- Neutral grassland - semi-improved
- Marsh/marshy grassland
- Improved grassland
- Coastal grassland

Tall Herb & Fen

- Tall herb and fen - tall ruderal
- Marginal vegetation

- Water
- Hedgerow
- Fence
- Scrub
- Tree
- Target note

Swamp & Open Water

- Standing water - eutrophic
- Running water

Miscellaneous

- Ornamental planting
- Arable
- Allotment
- Amenity grassland
- Manure pile
- Bare ground/ hardstanding
- Bare ground
- Building
- Hardstanding
- Railway
- No access
- Private - residential/industrial

N

0 50 100
Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 2f - Extended Phase 1 Habitat Survey - Section 6

VER	DATE	REMARKS	Drawn	Checked
2.3	15/01/14	Extended Phase 1 Habitat Survey [CPD 6]	MP	MW

DRAWING NUMBER:

PECOLOGY/Teesside/Ecology_Phase1/2

SCALE	1:5,300	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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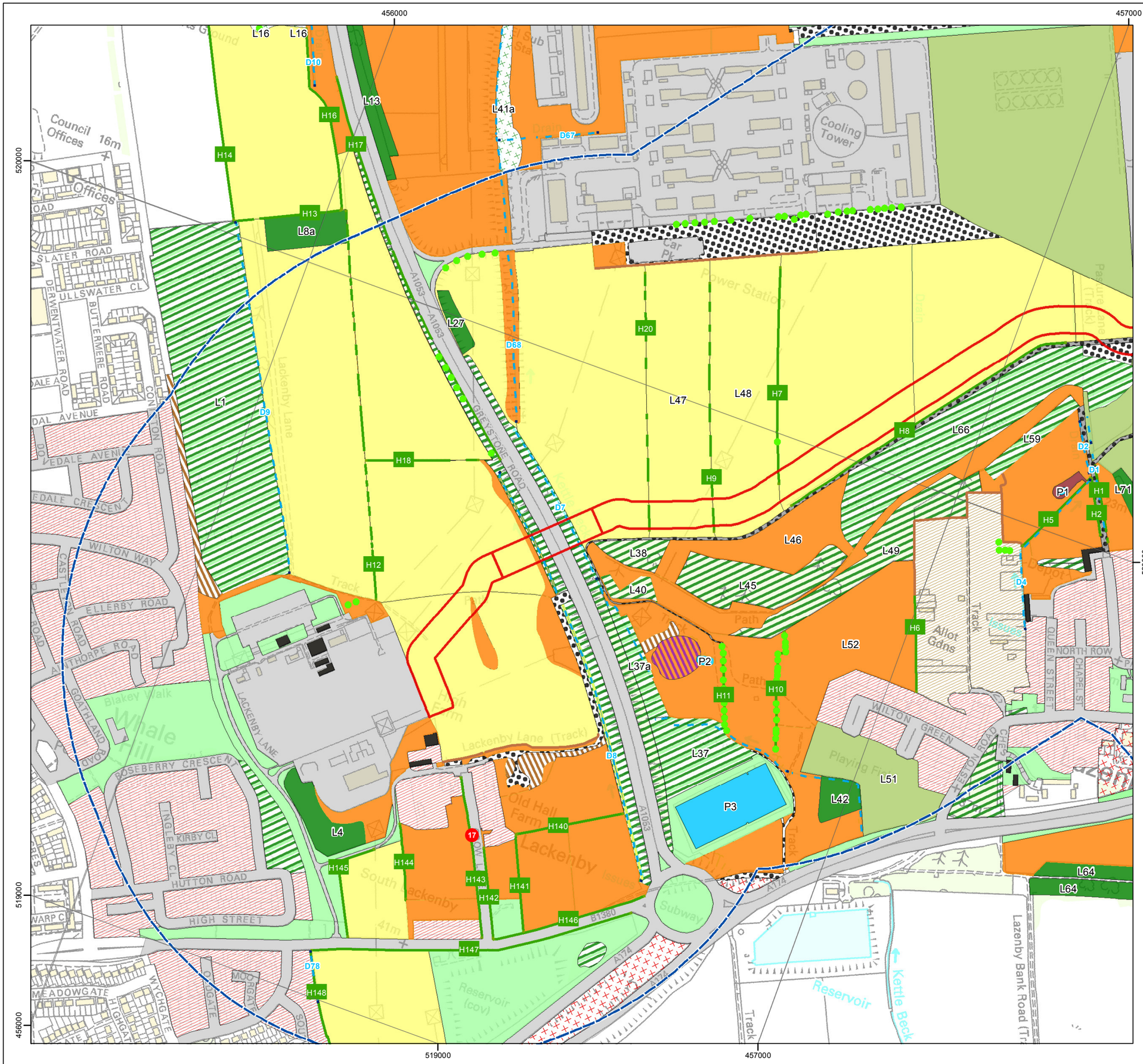

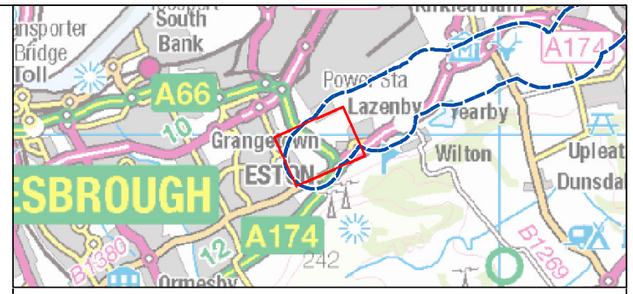

LEGEND

- Onshore cable corridor
- Onshore cable route - 500m buffer
- Converter site

Woodland & Scrub

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub

Grassland Marsh

- Grassland - poor semi-improved
- Neutral grassland - semi-improved
- Marsh/marshy grassland
- Improved grassland
- Coastal grassland

Tall Herb & Fen

- Tall herb and fen - tall ruderal
- Marginal vegetation

- Water
- Hedgerow
- Fence
- Scrub
- Tree
- Target note

Swamp & Open Water

- Standing water - eutrophic
- Running water

Miscellaneous

- Ornamental planting
- Arable
- Allotment
- Amenity grassland
- Manure pile
- Bare ground/ hardstanding
- Bare ground
- Building
- Hardstanding
- Railway
- No access
- Private - residential/industrial

N 0 50 100 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 2g - Extended Phase 1 Habitat Survey - Section 7

VER	DATE	REMARKS	Drawn	Checked
2.3	15/01/14	Extended Phase 1 Habitat Survey [CPD 6]	MP	MW

DRAWING NUMBER:

PECOLOGY/Teesside/Ecology_Phase1/2

SCALE	1:5,300	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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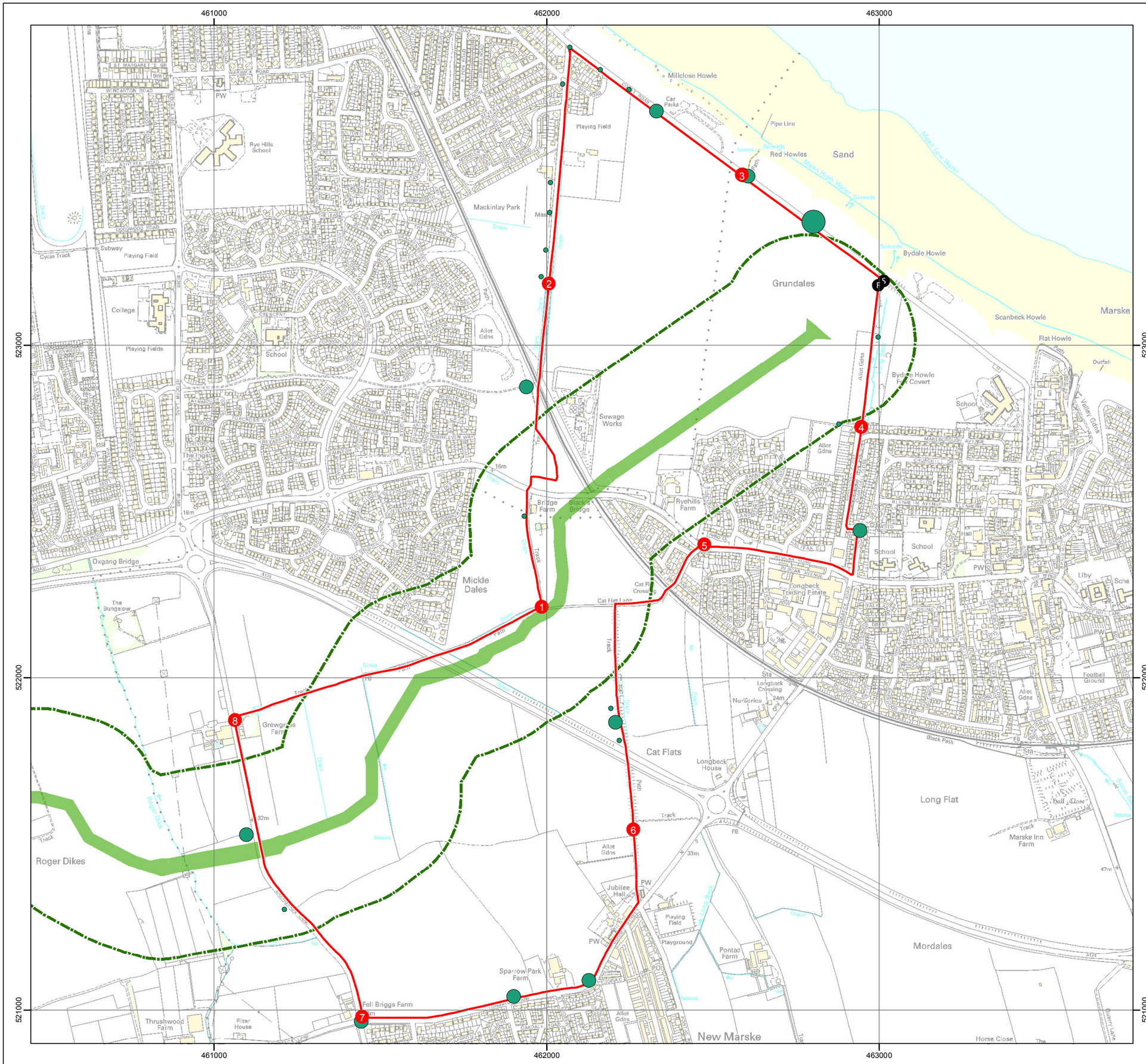
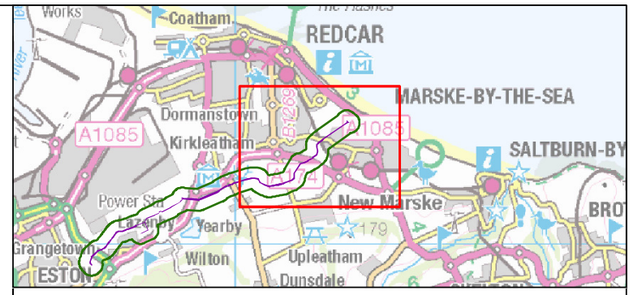
7.1.3 Figure 3a to 3l Bat transect data, 2012 and 2013





VISIT	DATE	PERIOD
1	25/07/2012	Dusk

Period	21:30 - 00:21

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Transect - start
- Point count
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Myotis sp.
- Noctule
- Common pipistrelle
- 1 bat pass
- 2 - 5 bat passes
- > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3a - Bat Survey Transect 1 - Visit 1

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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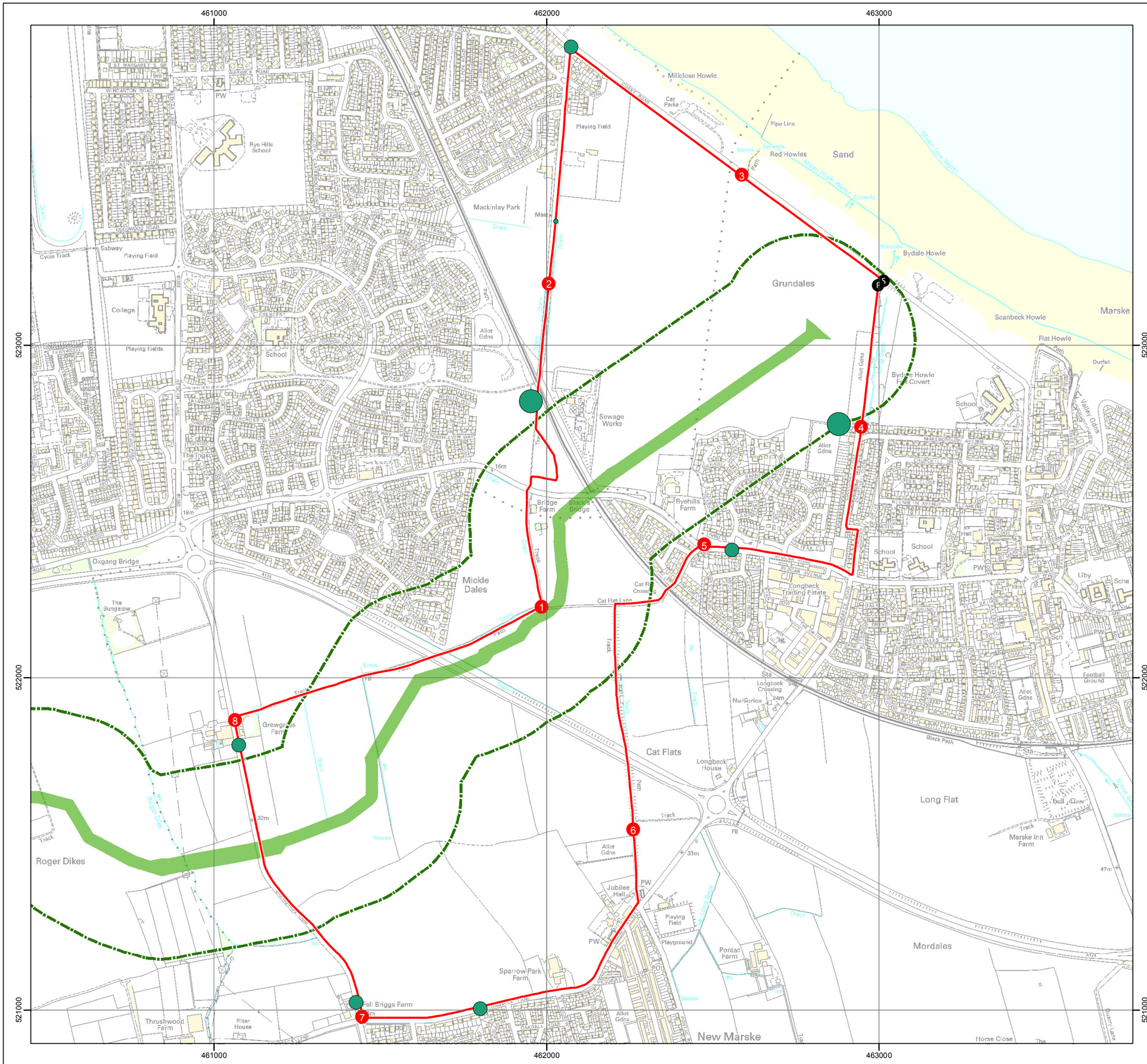

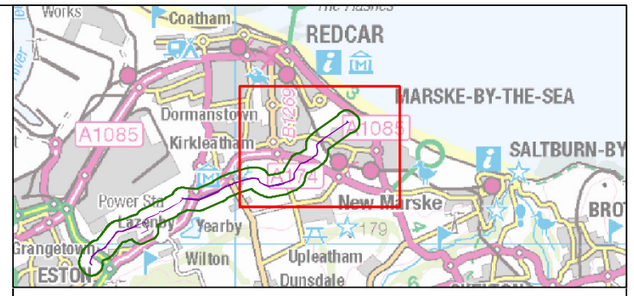

VISIT	DATE	PERIOD
2	19/09/2012	Dusk
Period	21:01 - 23:43	

LEGEND

Cable corridor

Onshore cable route - 250m buffer

BAT TRANSECT

Surveyed

Point count

Transect - start

Transect - finish

BAT OBSERVATIONS

Pipistrelle species

Noctule

Myotis sp.

Common pipistrelle

1 bat pass

2 - 5 bat passes

> 5 bat passes

BAT ROOST RECORDS

Environmental Records Information Centre - North East

Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

Source:
Ordnance Survey © Crown copyright 2014, All rights reserved. License Number 0100031673.

N

0 200 400
Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3b - Bat Survey Transect 1 - Visit 2

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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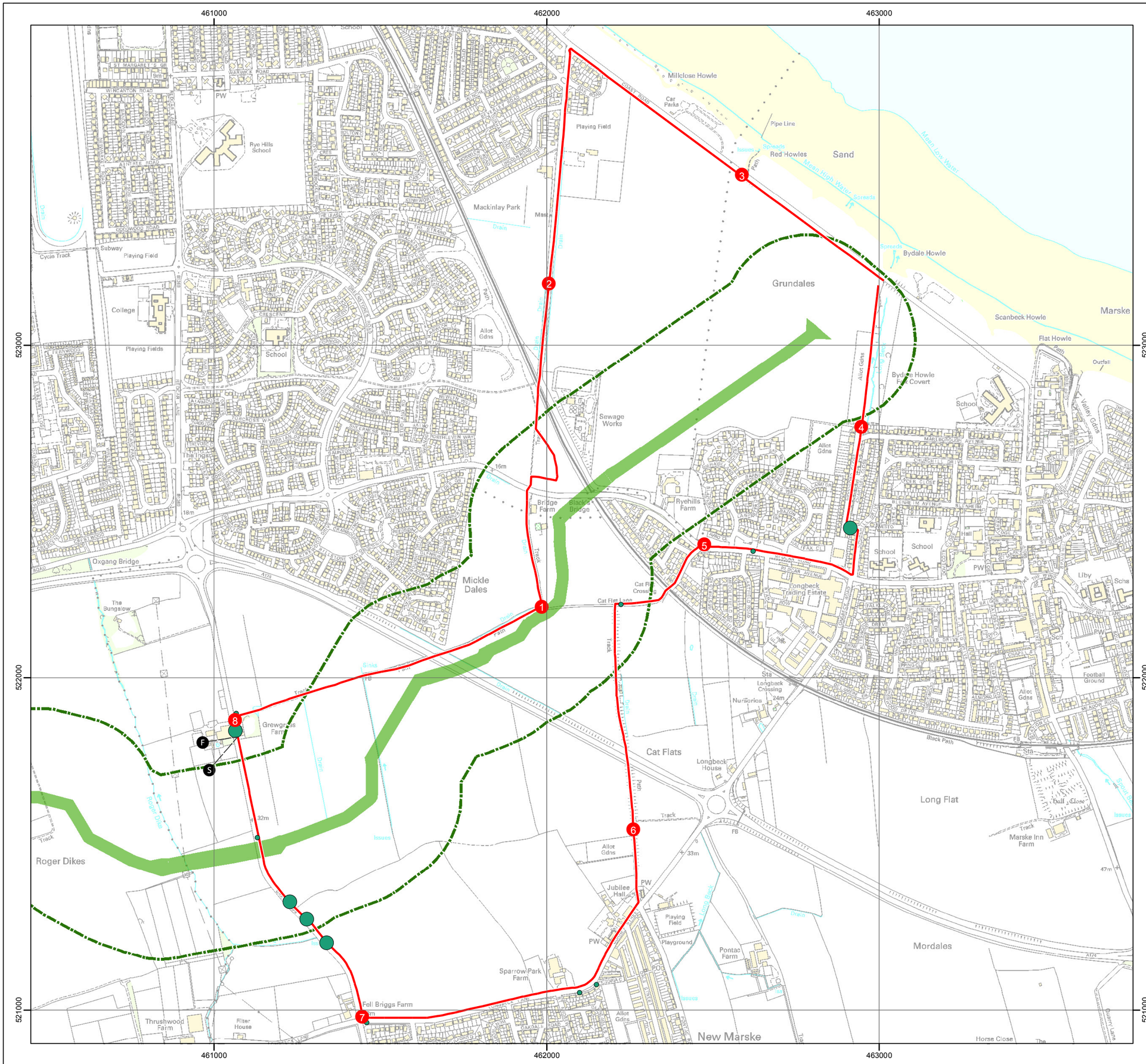

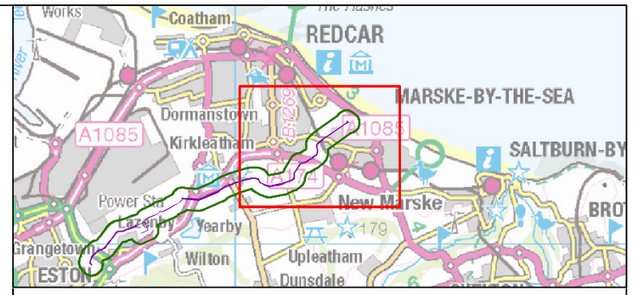

VISIT	DATE	PERIOD
3	28/05/2013	Dusk
Period	21:26 - 23:53	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

Source:
Ordnance Survey © Crown copyright 2014, All rights reserved. License Number 0100031673.

N
0 200 400
Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3c - Bat Survey Transect 1 - Visit 3

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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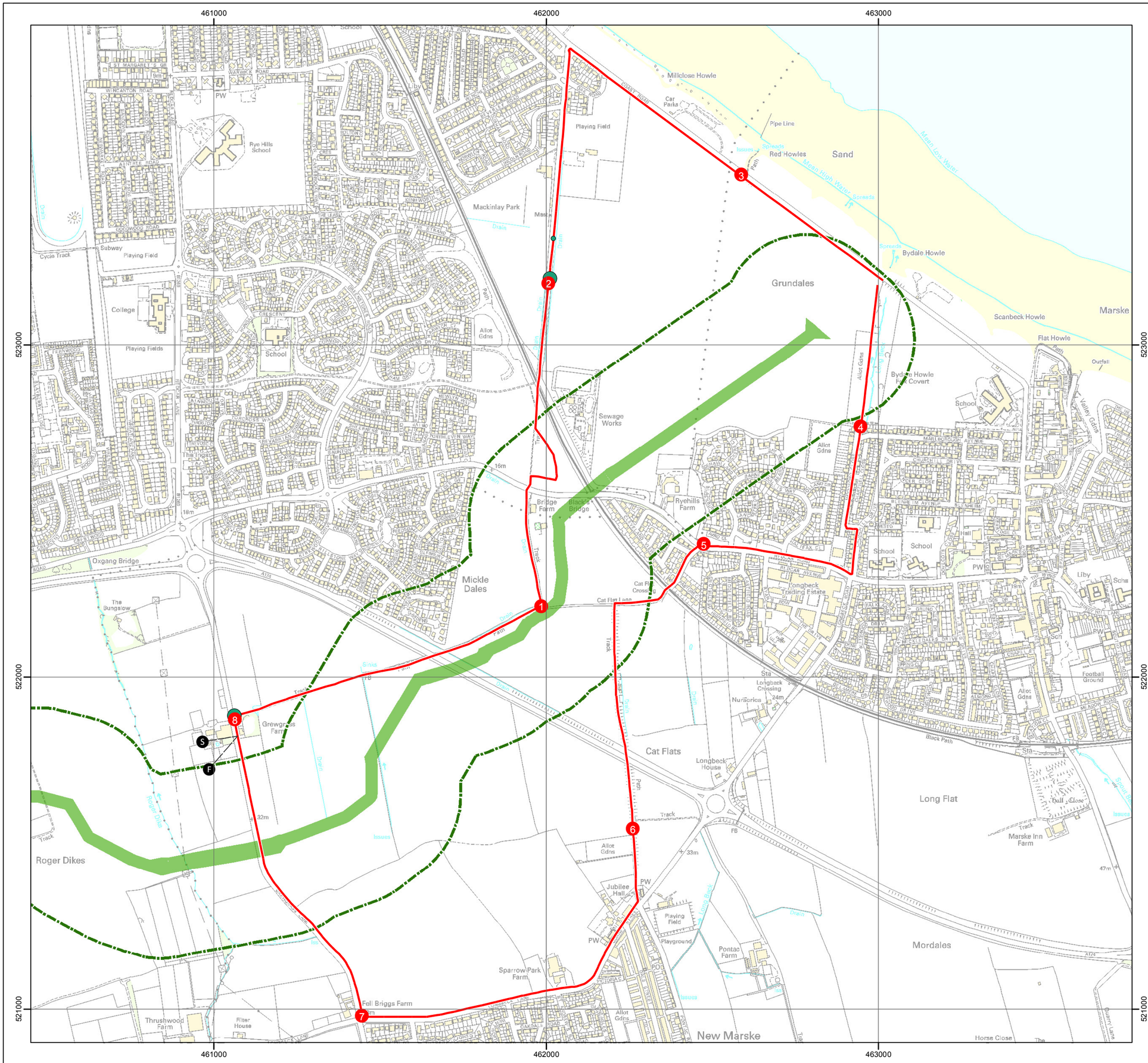

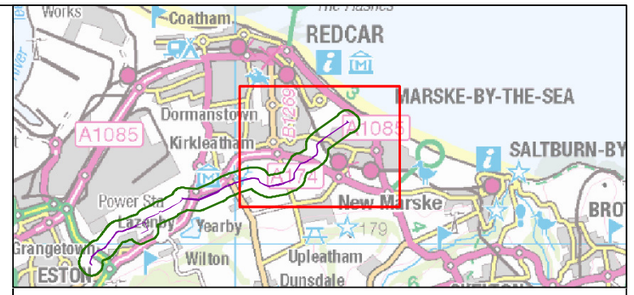

VISIT	DATE	PERIOD
4	29/05/2013	Dawn
Period	02:05 - 03:53	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3d - Bat Survey Transect 1 - Visit 4

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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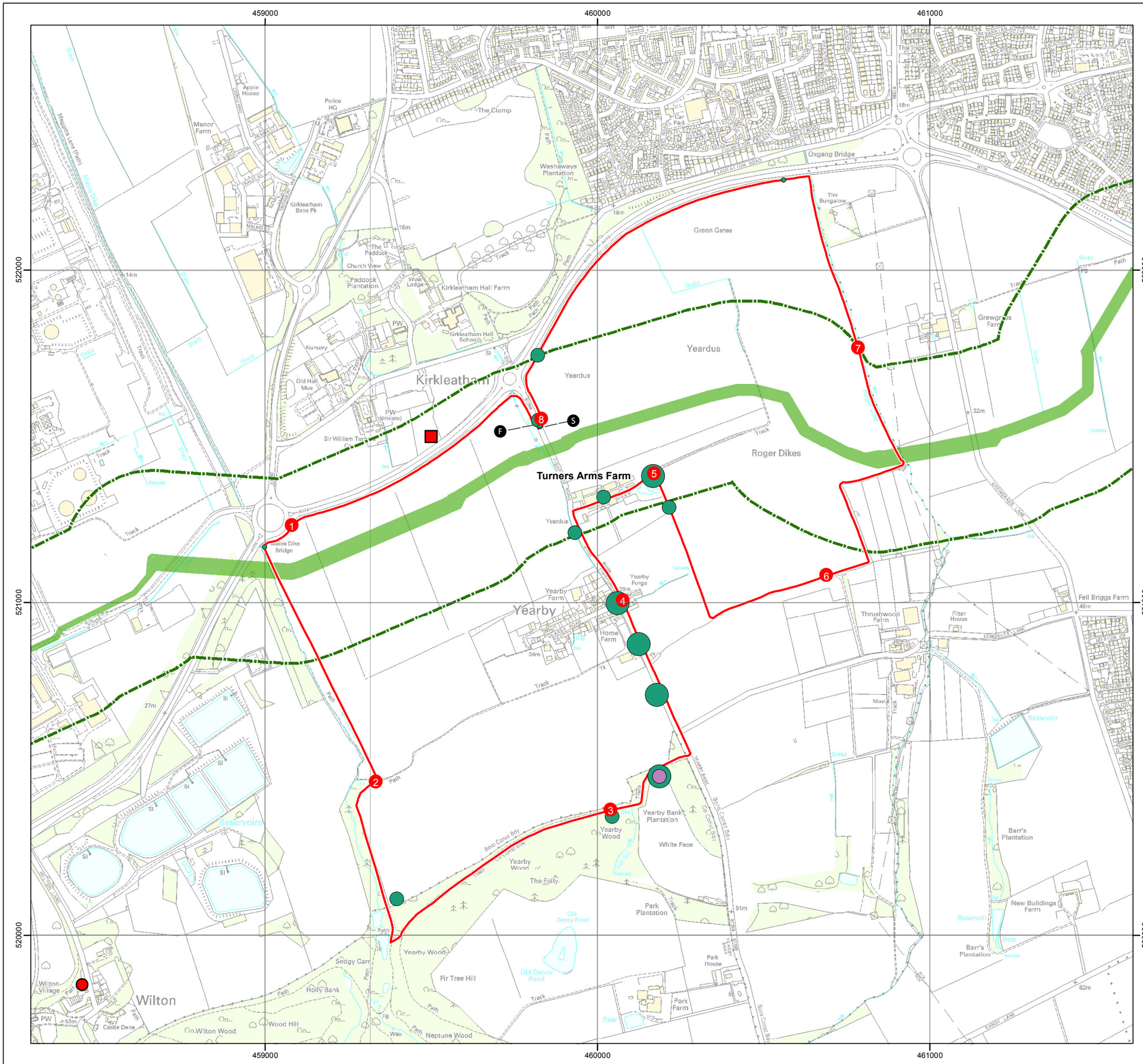

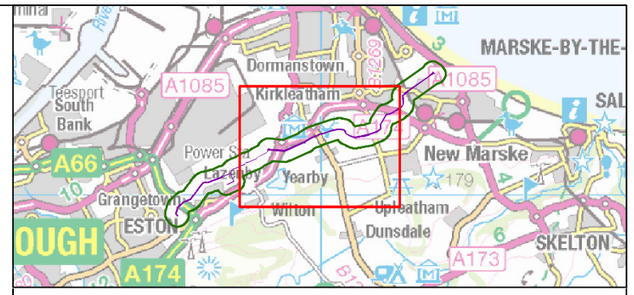

VISIT	DATE	PERIOD
1	25/07/2012	Dusk
Period	21:26 - 00:09	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information

All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N

0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3e - Bat Survey Transect 2 - Visit 1

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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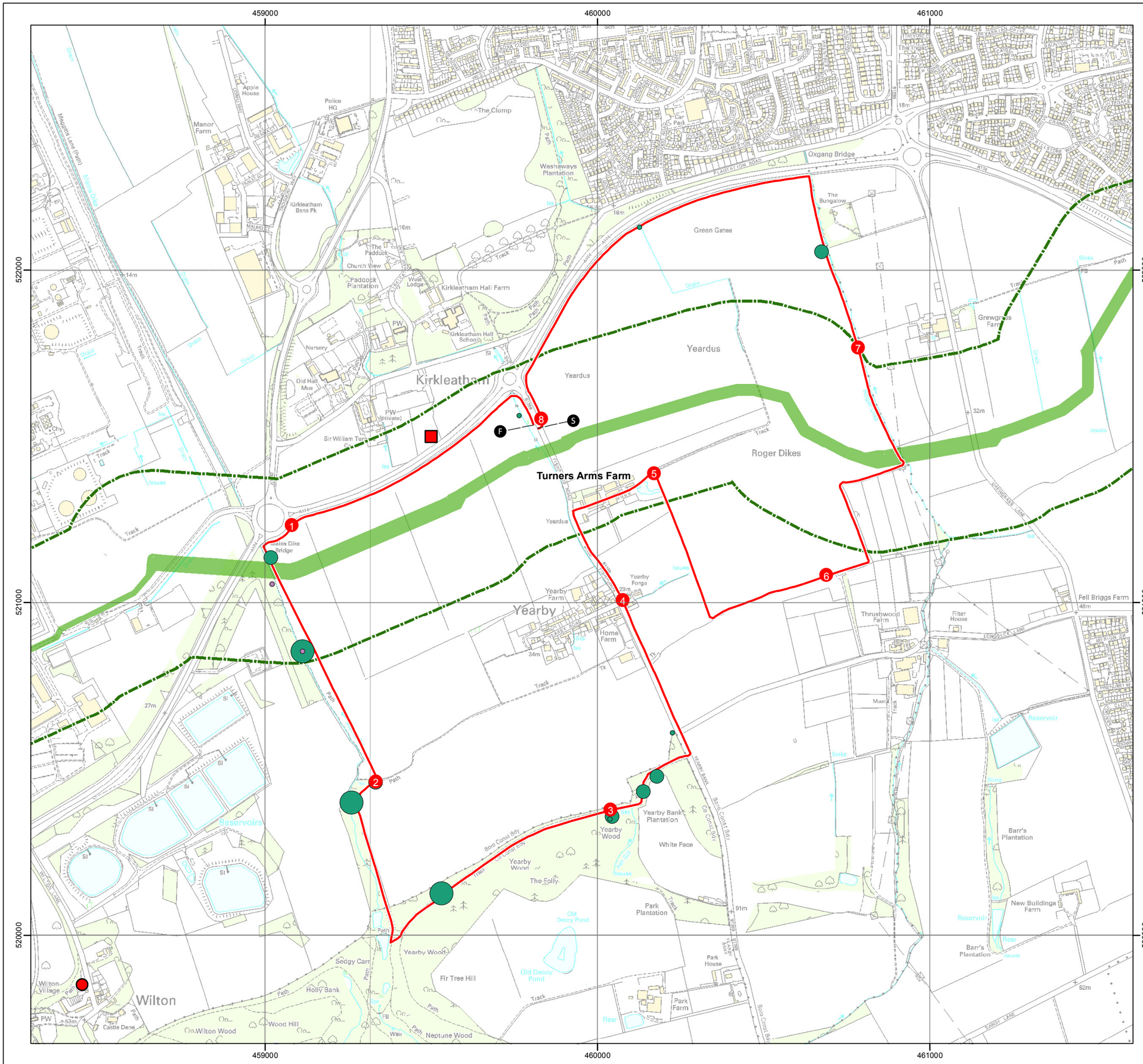

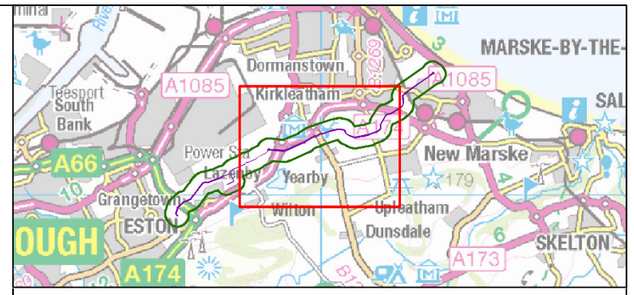

VISIT	DATE	PERIOD
2	19/09/2012	Dusk
Period	21:00 - 23:46	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3f - Bat Survey Transect 2 - Visit 2

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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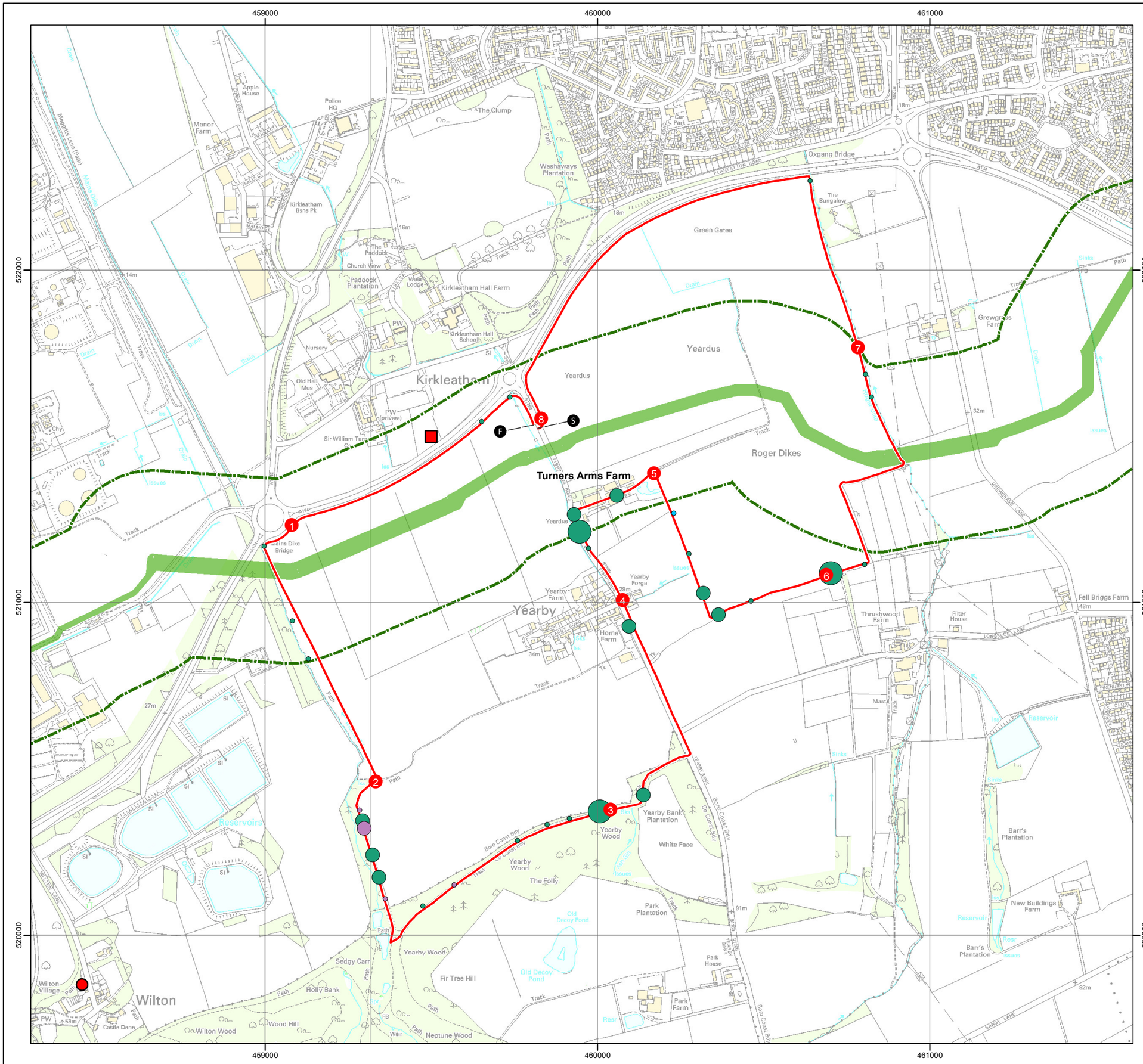

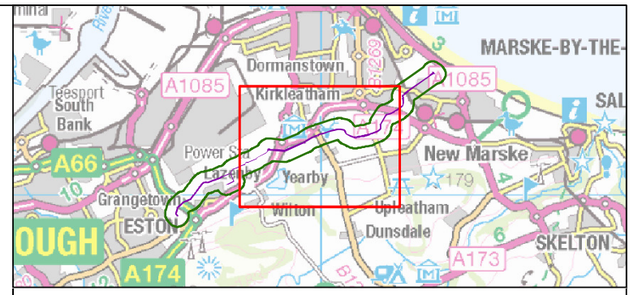

VISIT	DATE	PERIOD
3	28/05/2013	Dusk
Period	21:19 - 00:17	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information

All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3g - Bat Survey Transect 2 - Visit 3

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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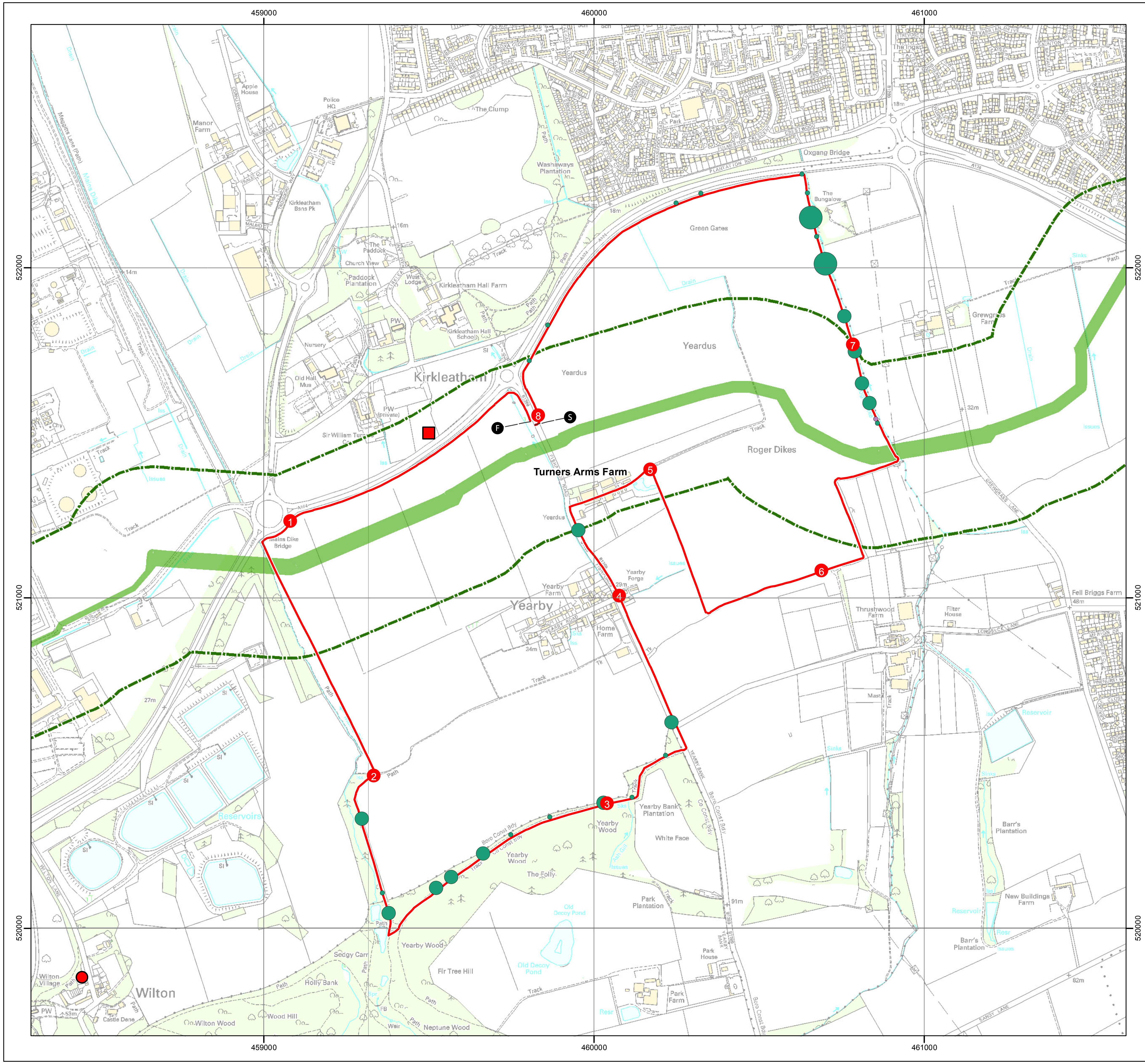

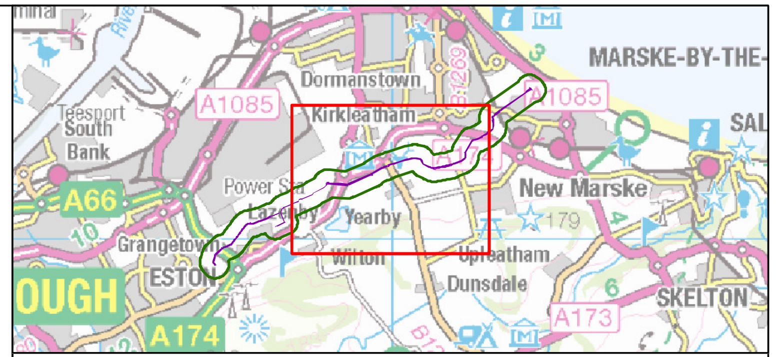

VISIT	DATE	PERIOD
4	29/05/2013	Dawn
Period	02:00 - 04:36	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle
- 1 bat pass
- 2 - 5 bat passes
- > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information

All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3h - Bat Survey Transect 2 - Visit 4

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	PLOT SIZE	DATUM	PROJECTION
1:11,000	A3	OSGB	BNG

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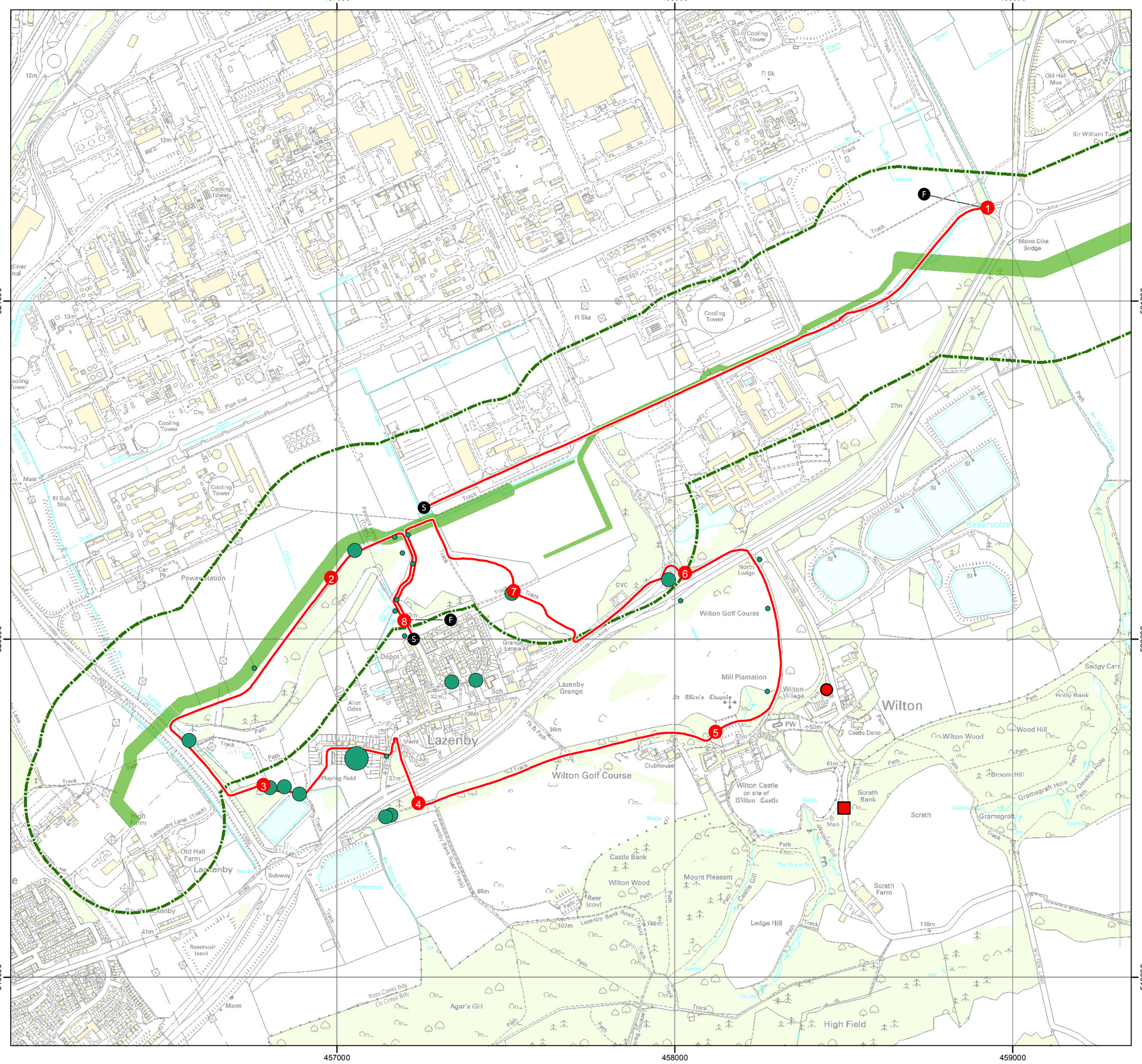
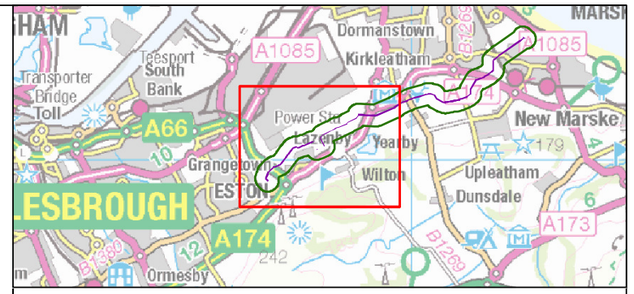




VISIT	DATE	PERIOD
1	26/07/2012	Dusk

Period	21:25 - 23:50

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N | 0 | 200 | 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3i - Bat Survey Transect 3 - Visit 1

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

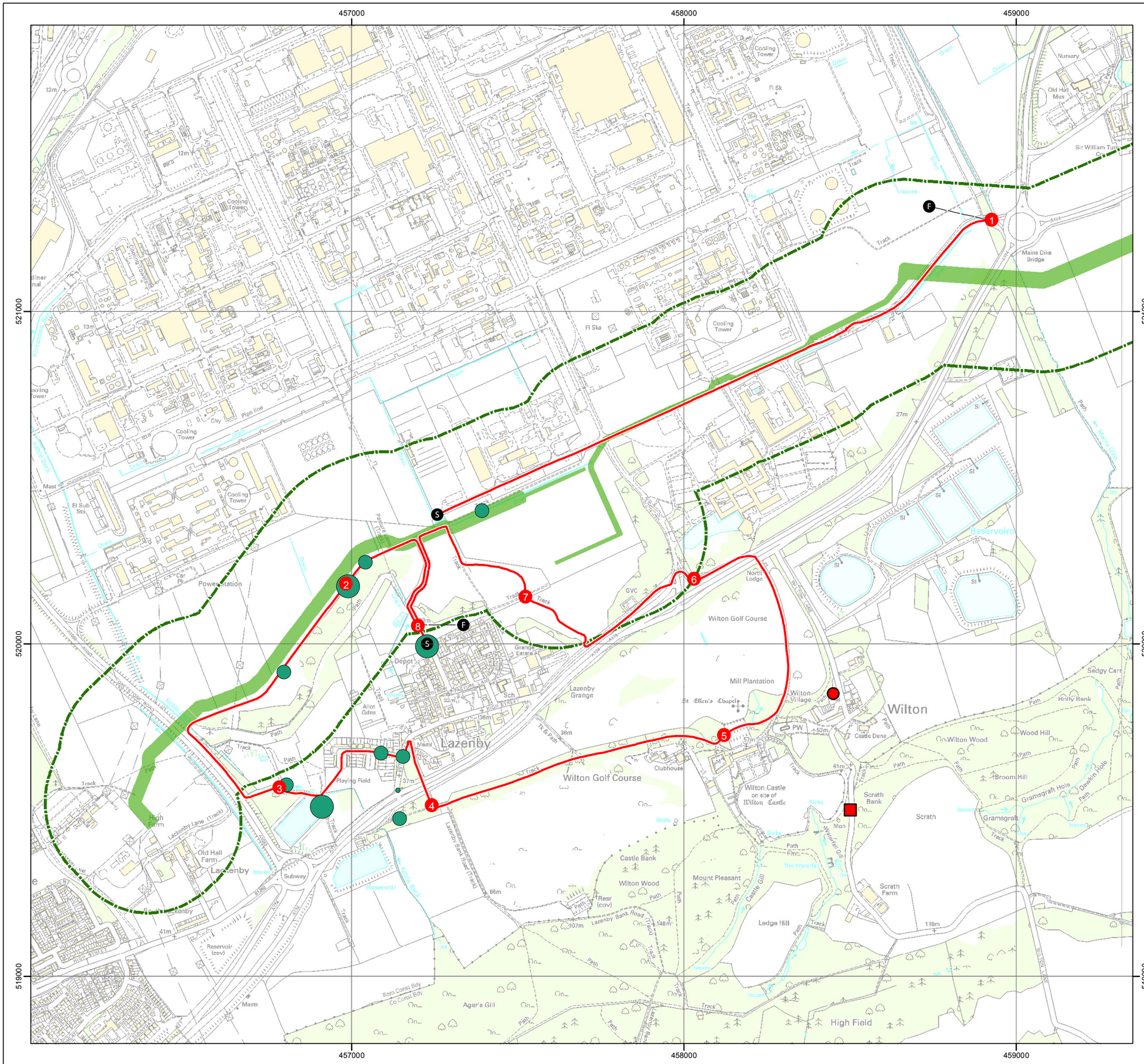
PECOLOGY/Teesside/Bat_Survey/3

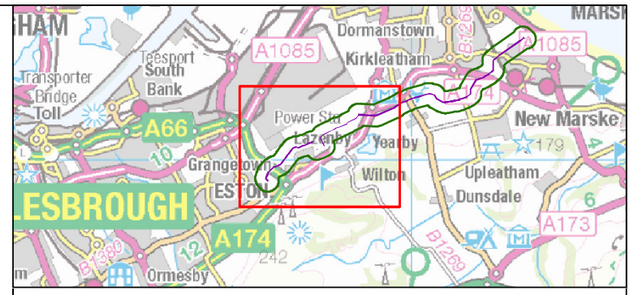
SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

peakecology LIMITED
ECOLOGICAL CONSULTANTS

Peak Ecology Ltd are the technical lead on the onshore ecology of the proposed cable route at East Yorkshire.

Peak Ecology
Arden House, Deepdale Business Park, Bakewell, Derbyshire. DE45 1GT.
T: 01629 812511.
www.peakecology.co.uk





VISIT	DATE	PERIOD
2	18/09/2012	Dusk
Period	19:56 - 22:10	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3j - Bat Survey Transect 3 - Visit 2

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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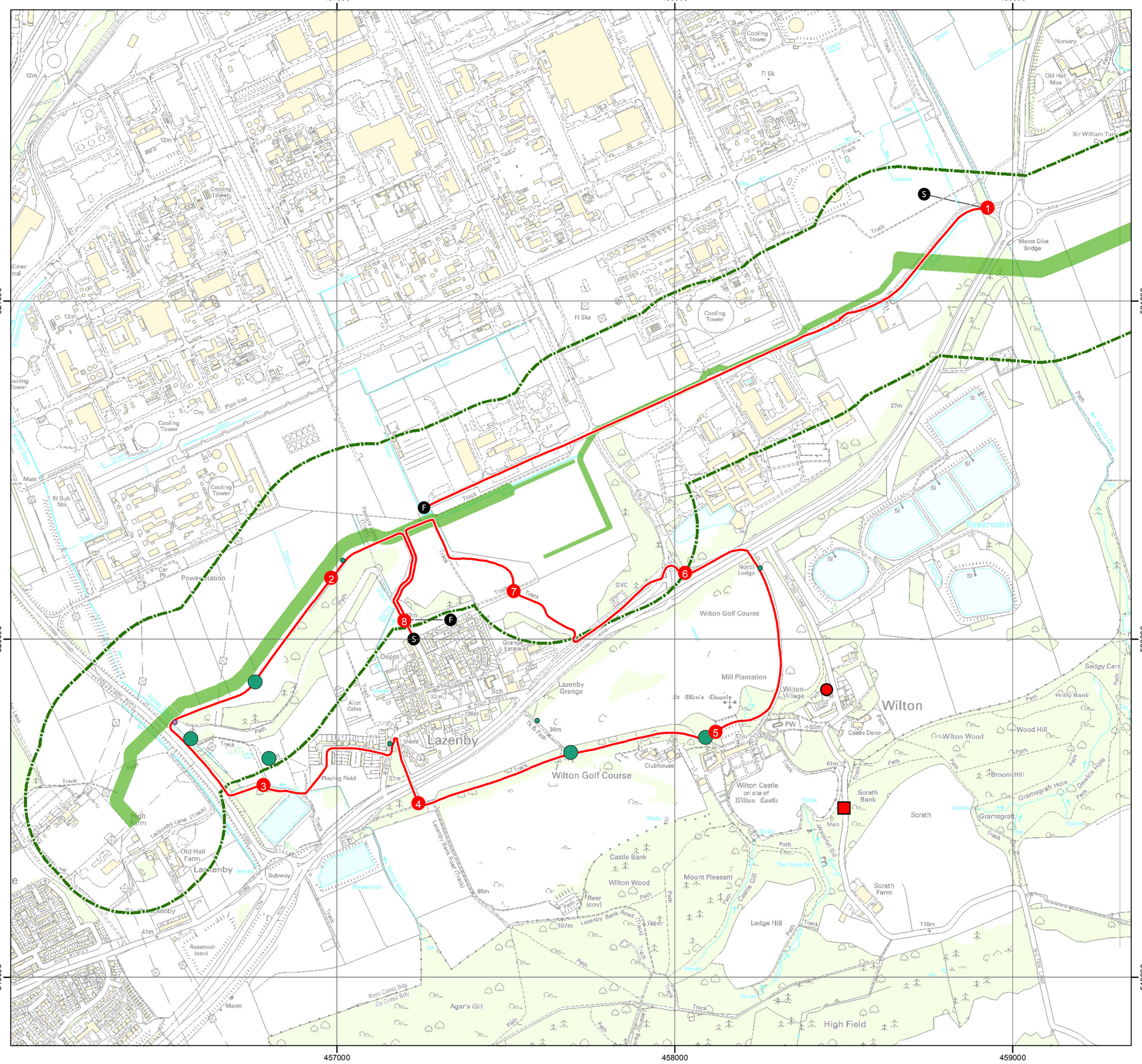

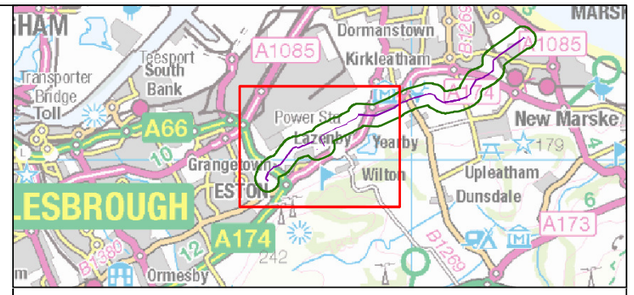

VISIT	DATE	PERIOD
3	06/06/2013	Dusk
Period	21:26 - 23:07	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Point count
- Transect - start
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Noctule
- Myotis sp.
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

Source:

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3k - Bat Survey Transect 3 - Visit 3

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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Arden House, Deepdale Business Park, Bakewell, Derbyshire. DE45 1GT.
T: 01629 812511.
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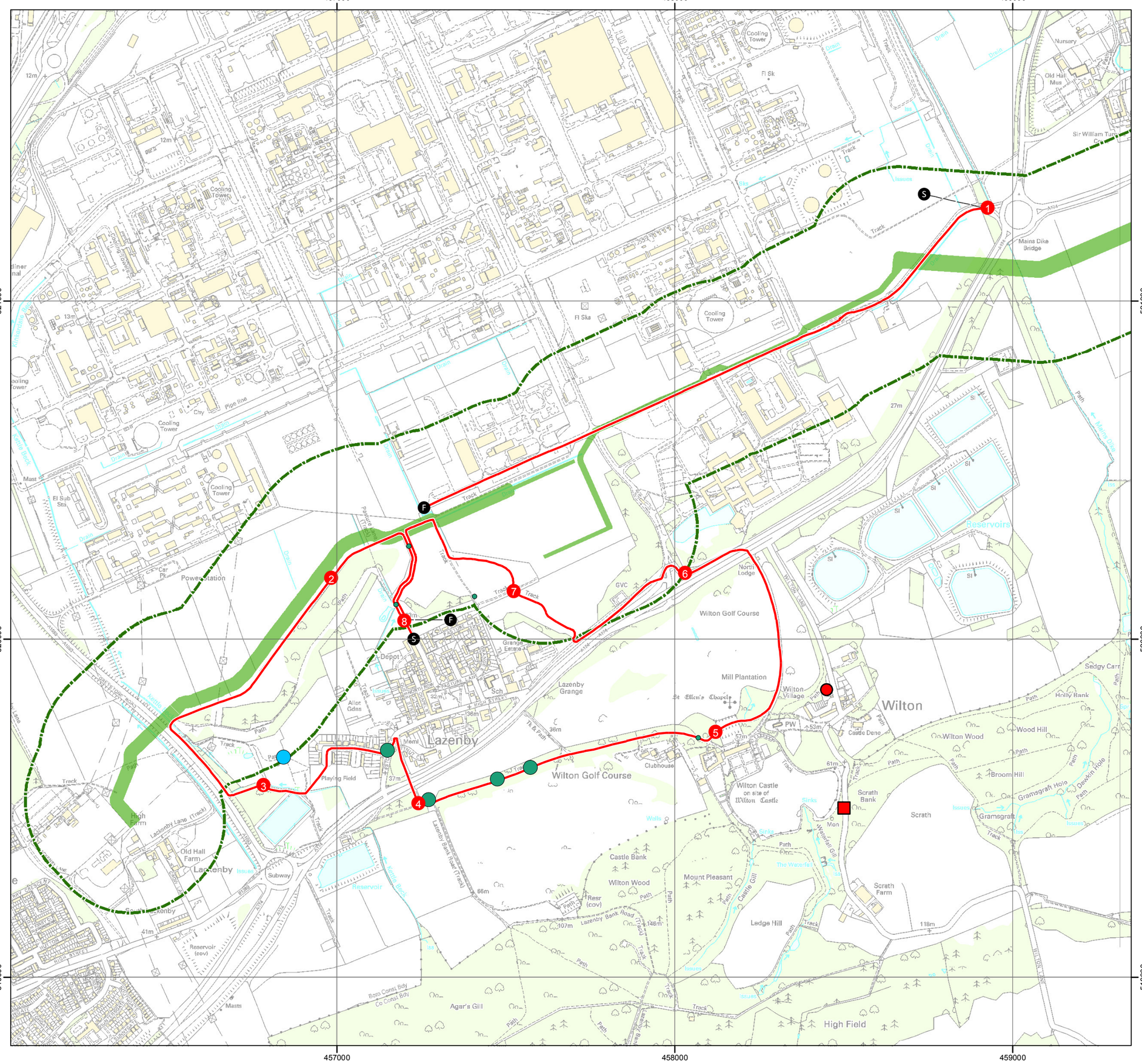

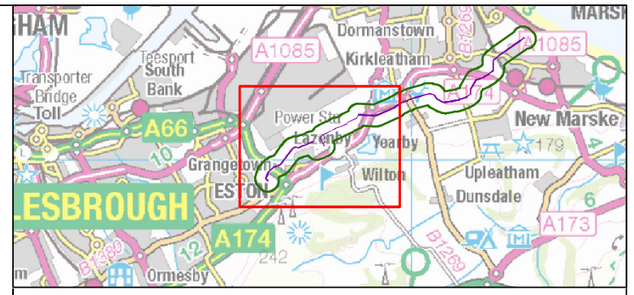

VISIT	DATE	PERIOD
4	07/06/2013	Dusk
Period	02:39 - 04:37	

LEGEND

- Cable corridor
- Onshore cable route - 250m buffer

BAT TRANSECT

- Surveyed
- Transect - start
- Point count
- Transect - finish

BAT OBSERVATIONS

- Pipistrelle species
- Myotis sp.
- Noctule
- Common pipistrelle

1 bat pass | 2 - 5 bat passes | > 5 bat passes

BAT ROOST RECORDS

- Environmental Records Information Centre - North East
- Local Bat Group

Additional Information
All records taken from 2002 - 2012 and bat roosts have been recorded to the nearest 1km grid cell.

Legend

N 0 200 400 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 3l - Bat Survey Transect 3 - Visit 4

VER	DATE	REMARKS	Drawn	Checked
1.9	15/01/14	Bat Survey 2012 & 2013 [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Bat_Survey/3

SCALE	1:11,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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7.1.4 Figure 4a Wintering birds survey areas 2011 – 2014

455000
460000
465000
530000
525000
520000

Teesport (Fig 74 - 88)

Warrenby (Fig 50 - 73)

Marske to Redcar (Fig 26 - 49)

Saltburn to Marske (Fig 2 - 25)

VP

LEGEND

Onshore scoping study area

N

0 500 1,000

Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 4a - Winter Bird Survey Study Sites

VER	DATE	REMARKS	Drawn	Checked
1.5	24/02/14	Winter Bird Survey - Study Sites [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/WBS_SS/5

SCALE	1:50,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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T: 01629 812511.
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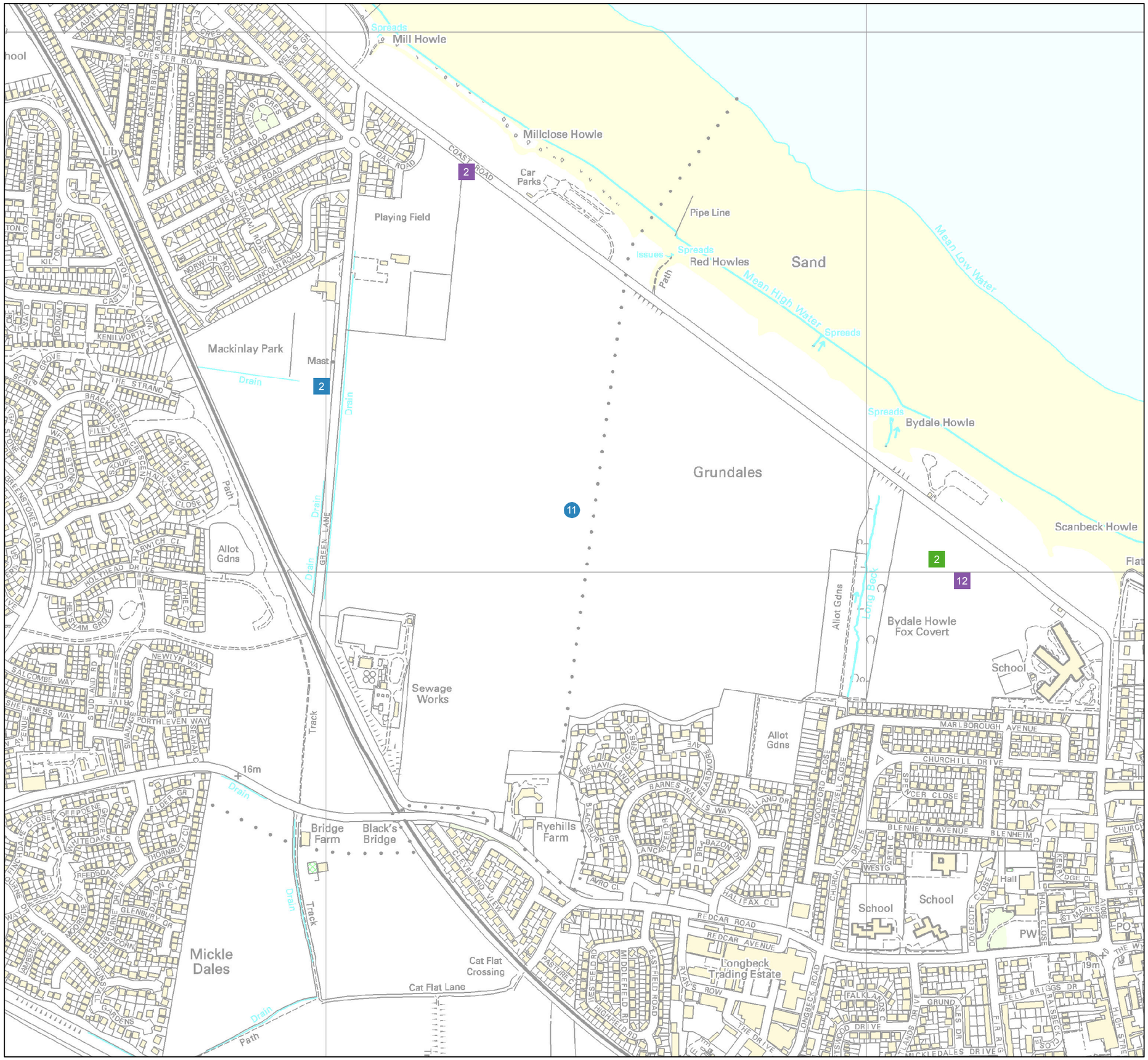
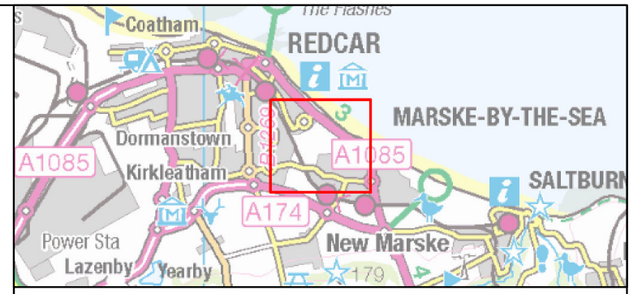
7.1.5 Figure 4b Wintering birds survey 2014





LEGEND

- Visit 1 - Lapwing
- Visit 2 - Lapwing
- Visit 3 - Lapwing
- Visit 4 - Lapwing
- Visit 1 - Golden plover
- Visit 2 - Golden plover
- Visit 3 - Golden plover
- Visit 4 - Golden plover

Additional Information:
Numbers associated with each recrord refer to the number observed.

Weather:
Please see table below for information relating to the survey dates and weather conditions.

Visit	Date	Start Time	Temperature	Wind (Beaufort)	Cloud	Visibility
1	15/01/2014	08:00	7°C	S (2-3)	8	>2km
2	27/01/2014	08:15	5°C	NE (2-3)	4	>2km
3	03/02/2014	08:00	5°C	NE (2-3)	6	>2km
4	12/02/2014	08:30	2°C	S (5)	8	>2km

Tide:
Please see table below for information relating to the survey dates and tide state.

Visit	High tide	Low tide
1	15:24 AM 5.12 m	09:17 PM 1.50 m
2	12:09 AM 4.61 m	06:05 AM 1.72 m
3	04:51 AM 5.64 m	11:06 AM 0.52 m
4	02:08 AM 4.55 m	08:21 AM 1.75 m

N 0 100 200 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 4b - Additional Golden Plover and Lapwing Surveys on Arable Fields at the Landfall (2014)

VER	DATE	REMARKS	Drawn	Checked
1.0	25/02/14	GP and L. Survey 2014	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/GP_L_Survey_2014

SCALE	1:7,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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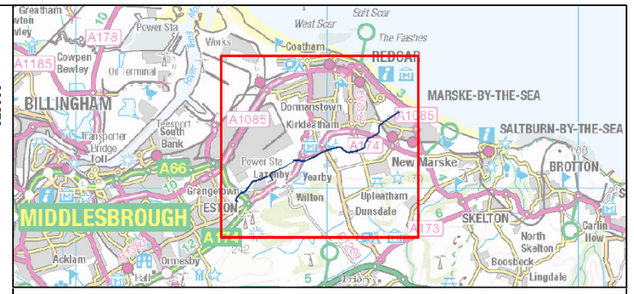
*Peak Ecology
Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT.
T: 01629 812511.
www.peakecology.co.uk*

7.1.6 Figure 5 Reptile study sites

460000

525000

520000



LEGEND

- Onshore cable corridor
- Onshore cable route - 500m buffer
- Reptile survey area

N 0 300 600 Metres

PROJECT TITLE

DOGGER BANK TEESSIDE A & B

DRAWING TITLE

Figure 5 - Reptile Survey - Study Sites

VER	DATE	REMARKS	Drawn	Checked
1.4	15/01/14	Reptile Survey - Study Sites [CPD 6]	MP	JE

DRAWING NUMBER:

PECOLOGY/Teesside/Reptile_SS/5

SCALE	1:26,000	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

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7.2 Appendix 2: Audit of relevant planning policies and action plans

Policy	Policy content
National Planning Policy Framework	
9. Protecting Green Belt land	91. When located in the Green Belt, elements of many renewable energy projects will comprise inappropriate development. In such cases developers will need to demonstrate very special circumstances if projects are to proceed. Such very special circumstances may include the wider environmental benefits associated with increased production of energy from renewable sources. 92. Community Forests offer valuable opportunities for improving the environment around towns, by upgrading the landscape and providing for recreation and wildlife. An approved Community Forest plan may be a material consideration in preparing development plans and in deciding planning applications. Any development proposals within Community Forests in the Green Belt should be subject to the normal policies controlling development in Green Belts.
11. Conserving and enhancing the natural environment	109. The planning system should contribute to and enhance the natural and local environment by: • Recognising the wider benefits of ecosystem services; and • Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures. 113. Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks. 114. Local planning authorities should: ● Set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure; and ● Maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast. 117. To minimise impacts on biodiversity and geodiversity, planning policies should: ● Plan for biodiversity at a landscape-scale across local authority boundaries; ● Identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation; ● Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan;

	● Aim to prevent harm to geological conservation interests; and ● Where Nature Improvement Areas are identified in Local Plans, consider specifying. 118. When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles: ● If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; ● Proposed development on land within or outside a SSSI likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs; ● Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted; ● Opportunities to incorporate biodiversity in and around developments should be encouraged; ● Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and ● The following wildlife sites should be given the same protection as European sites: – Potential SPA and possible Special Areas of Conservation; – Listed or proposed Ramsar sites; – Sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
Redcar & Cleveland Adopted Local Development Framework Policies	
Policy CS22 Protecting and Enhancing the Borough's Landscape	The overall approach will be to protect and enhance the Borough's landscape based on the character areas identified through the Landscape Character Assessment. Priority will be given to the protection and enhancement of the landscape character and natural beauty of the North Yorkshire and Cleveland Heritage Coast. Development will not be allowed if this would lead to the loss of features important to the character of the landscape unless the need for the development outweighs the landscape considerations. Where development is justified, proposals will include measures to enhance, restore or create the special features of the landscape. In such circumstances, priority will be given to the creation of habitats to support local and regional biodiversity targets and the planting of new hedgerows, trees and woodlands to support the Tees Forest Strategy will be encouraged.
Policy CS23 Green Infrastructure	The following green areas will be protected and, where appropriate, enhanced to improve their quality, value, multi-functionality and accessibility: a) strategic gaps between Marske and New Marske; Marske and Saltburn; b) the green wedges in the conurbation:

	i. the open area between Marske and Redcar; ii. the open area between the Wilton Complex and Redcar, extending north to the coast; iii. west of the A1053, Greystones Road, between Grangetown and Wilton; iv. the Spencer Beck Valley between East Middlesbrough and Eston, and Ormesby and Normanby; v. the Hambleton Hill area between Nunthorpe and Ormesby; c) open spaces in urban areas where they benefit local communities and have been identified for retention through the Green Space Strategy; and d) strategic landscape areas, particularly along key transport corridors, between residential and employment areas and on the edge of settlements.
Policy CS24 Biodiversity and Geological Conservation	The Borough's biodiversity and geological resource will be protected and enhanced. Priority will be given to: a) protection of the integrity of the European sites in and near the Borough. b) conserving and enhancing protected biodiversity and geodiversity sites and features in line with PPS9; c) improving the integrity and biodiversity value of wildlife corridors particularly along the coast, around the Tees Estuary and linking with the North York Moors; d) meeting the objectives and targets in the UK and Tees Valley Biodiversity Action Plan; e) encouraging management of landscape belts for nature conservation; f) protecting ancient woodland and veteran trees; g) strengthening populations of protected and target species; and h) improving site management and increasing public access to wildlife sites. Development will be encouraged to include measures to contribute positively to the overall biodiversity in the Borough.

7.3 Appendix 3: Review of consultation

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Natural England	06/02/2012	Meeting	Introduction to the project	1. Scoping opinion and PEI1 will be a combined document for the Teesside projects – Natural England are happy for both to go 'hand in hand' 2. Natural England requested a Scope of Survey works to be undertaken in 2012 3.Natural England is not aware of any of National Grids grid reinforcement plans.	Peak Ecology to submit scope of works to Natural England by end of February Natural England to respond to Peak Ecology's scope of works by end of March Natural England to provide list of local ecological contacts Natural England to circulate Coatham Sands report Forewind to forward details of National Grid's work on Teesside	Natural England received methodologies for survey work on the 6th June 2012 and 25th October 2012. Confirmation received from Natural England that they are happy with the methodologies – email dated 12th November 2012. Natural England provided list of local wildlife trusts which were added to the consultation list. Coatham Sands report received
Natural England	20/02/2012	Email	Potential consultees	Recommendation for consultation to be undertaken with the Royal Society for the Protection of Birds (RSPB), British Trust for Ornithology (BTO) and the Tees Valley Wildlife Trust.	Recommendation for contacting RSPB, BTO, the local authority Coastal Engineers, Industry Nature Conservation Association (INCA), RWE for information regarding the Breagh Pipeline Project, Redcar and Cleveland Council Planners for any other information on the data or a project contact, and also about any other project details and survey data in the area.	RSPB attended first ecological workshop 3rd April 2012, and invited to the second, on the 15th May 2013 which they did not attend.

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
North York Moors National Park	14/05/2012	Email	Response from North York Moors National Park	The EIA should address the issue of whether the wind farm is likely to affect the feeding patterns of seabirds which nest along the coastal cliffs and makeup part of the diverse ecology of the National Park natural environment		Planning Inspectorate confirmed on 25/6/2012 that they had received NYMNP's response to Scoping.
Durham Bat Group	09/05/2012	Email	Response from Durham Bat group	Generic comment on bat legislation and the possibility of migratory bats across the North Sea. Requested a copy of the EIA and expected all surveys to be undertaken following the Bat Conservation Trust (BCT) guidelines and by suitably qualified and licensed ecologists		Durham Bat Group invited to the Ecology Workshop, but declined. Bat surveys undertaken to inform EIA process.
North Yorkshire County Council	13/06/2012	Email	Scoping Response	Cumulative impacts require consideration for onshore and offshore and thorough assessment of both the onshore and offshore ecological impacts (in particular the impacts upon marine ecology, including nationally important sea bird populations).		Consultation has been undertaken with English Heritage. CIA will be carried out for all elements of the ES. Offshore bird issues are discussed in Chapter 11 - Marine and Coastal Ornithology.

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Tees Valley Wildlife Trust	22/06/2012	Email	Tees Valley Wildlife Trust Response	Satisfied with the approach taken and the options presented (landfall and converter station). Beach in this area is locally important (and designated as a Local Wildlife Site (LWS)), (also known as Grundales) are designated as locally important coastal grasslands.		Offshore export cable route chosen to avoid potential MCZs. Onshore coastal area is avoided through the deployment of HDD.
Natural England	06/06/2012	Email	Response to Scope of Ecology Surveys	Scope of Spring and Summer ecological surveys request to Natural England		Summary of all proposed surveys sent to Natural England
Joint Nature Conservation Committee / Natural England	19/06/2012	Report	Scoping Response	Consider the likelihood that the proposal will have a significant effect on internationally designated sites and therefore will require assessment under the Habitats Regulations. Full consideration of impacts on habitats and species, including: Historical survey data; Status of habitats and species; Development effects; and Mitigation or compensation details. Ornithological studies should include surveys of		1. Habitats Regulations Assessment has been undertaken. 2. This is reflected in the ES 3. This is considered in the ES 4. This is considered in the ES 5. Principles incorporated into the methodology

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
				wintering, breeding and passage species which are qualifying features of the Special Protection Area (SPA), and impacts including direct habitat loss, displacement and disturbance should be considered. Inter-relationships - to take an ecosystem approach and consider inter-relationships when looking at impacts.		
North York Moors National Park	11/06/2012	Report	Scoping Response	The EIA should address the issue of whether the wind farm is likely to affect the feeding patterns of seabirds which nest along the coastal cliffs and makeup part of the diverse ecology of the National Park natural environment.		Full suite of ecological surveys have been undertaken. Landfall location chosen minimises impact on cliff nesting birds as does use of HDD.
Natural England	12/11/2012	Email	Acceptance of Ecology Surveys	Natural England provided written acceptance of the 'Ecological Scope of Works' outlining the proposed survey methodologies and extents for Dogger Bank Teesside.		
Tees Valley Wildlife Trust	12/10/2012	Telephone Call	Reptile Discussions	The decision to split the development into two different applications was made after the submission of the scope of works. More details can be found in Chapter 7 Consultation	Hartlepool Borough Council attended ecological workshop on 15th May 2013 – aware of some records of common lizard from the South Gare, which the Records office did not have.	All surveys undertaken have shown no reptiles, all data records are from outside the study area. Given the relative immobility of reptiles

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
					This location is outside of the study area.	especially in a predominantly urban and industrial landscape, confident that there are no reptiles within proposed development area.
Natural England	13/02/2013	Email	Validity of Survey Work	Confirmed that survey data for ecological surveys is valid for up to 3 years barring any significant landscape changes. They also confirmed that Wintering Bird surveys are valid for up to 5 years, excluding significant landscape changes.		Surveys undertaken to date are adequate for the ES. It is likely that further ecological surveys will be part of the preconstruction consent conditions.
Natural England	21/01/2013	Telephone Call	Scope of Wintering Bird Surveys	Natural England would prefer for work to be carried out in the breeding bird season or the end of winter and open trenching should take place between July and September. Consider that the golden plover population recorded during surveys is likely to be a separate population and not associated with those recorded at Teesmouth NNR	Agreed that site compounds should be positioned at the edges of the fields, as close to existing infrastructure as possible.	Mitigation options have been designed to minimise impacts on wintering and breeding birds.

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Natural England	12/04/2013	Email	Response to Spring Summer Ecology Scope	Two reports with detailed survey methodologies forwarded to Natural England – Report 1 sent 6th June 2012, further report sent 25th October 2012, covering autumn 2012 and spring and summer 2013. Methodologies proposed follow the guidance recommended by IEEM, and were undertaken during the optimum survey seasons.	Confirmation from Natural England on 2nd report received 12th November 2012, that they do not have an objection to the revised timetable and have no further comments to make.	
INCA (Industry and Nature Conservation Association)	10/04/2013	Telephone Call	Badger Sett	INCA confirmed they knew about the sett but had not done studies on it as they do not conduct many night time surveys. They have motion cameras that they may be able to place on the set. INCA added that they had attempted to introduce an artificial badger set in the north of the site that never took. They also mentioned that there are a pair of Peregrine nesting in the northern part of the complex		Meeting with INCA on 7th May. Artificial sett does not appear to be in use. Breeding peregrine falcons on Wilton Complex (if present this year) are not close to study area and therefore no impacts anticipated.
INCA (Industry and Nature Conservation Association)	15/05/2013	Workshop	External Ecology Workshop	Terrestrial Ecology Workshop held on 15th May 2013. The purpose of the meeting was to introduce Forewind Ltd to consultees and update them on the ecological surveys and	INCA was unable to attend the workshop.	Separate meeting held on 7th May 2013

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
				results to date, and to gain input from consultees into the ongoing project design. The meeting highlighted a number of key points for terrestrial ecology including that the landfall field (known as 'Grundales') is a key area of importance wintering birds; key wintering bird mitigation will be avoidance of construction activities over the wintering period; an active badger sett is present in the Wilton Complex, (which was deemed to be sufficiently far away not to be impacted by Dogger Bank Teesside A & B); and the consideration of geographical scales to define levels of impacts. General consensus reached as a result of the meeting was that a sensible approach had been employed to ensure appropriate coverage of all potential ecology issues at the site.		
Environment Agency - North East Office	15/05/2013	Workshop	External Ecology Workshop	An external meeting with key stakeholders to discuss current ecology survey results, mitigation and stakeholder inputs	EA not able to attend and no issues to raise.	Outputs from meeting forwarded to the EA.

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
INCA (Industry and Nature Conservation Association)	07/05/2013	Meeting	Meeting concerning Sembcorp ecological issues	A meeting with INCA to discuss the ecological issues on the Sembcorp and Tata Steel Complex. Discussions covered ponds within the Wilton Complex that need surveying by Peak, the badger set within the site, breeding birds, riparian mammals and other ecological species of note. Bats were also discussed. INCA responded to the email with some changes to the minutes, recommending contacts at TVWT and confirming that they would not be able to attend the ecology meeting on 15052013		
Natural England	13/06/2013	Email	GCN ponds within Wilton	An email to NE covering the methodology for surveying of GCN ponds on Teesside C & D HVAC route. The ponds could not be accessed by Forewind but recent INCA surveys had been carried out on the ponds so these were used. Maps and the surveys were attached in the email		Natural England replied the same day to agree that the ponds did not need to be surveyed given the recent surveys by INCA. However, they ask that the ponds be assessed for their suitability for GCN as part of the Phase 1 surveys. It was confirmed that this had been done for both ponds already and would be included in the C & D reports later in 2013

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Tata Steel UK Limited	12/06/2012	Email	Ecological works on Wilton	Two emails from Forewind to Tata, one on 05022013 and the other on 12062013. The former email highlight's Forewind's need to carry out environmental surveys on Tata land and that Forewind has selected sites within the Wilton Complex. The second email informs Tata that Forewind have identified a preferred cable route through their land and would like to meet to discuss the plans and requirements		
Natural England	18/05/2012	Email	Response to scope of spring and summer ecology surveys	Natural England provided written acceptance of the 'Ecological Scope of Works' outlining the proposed survey methodologies and extents for Dogger Bank Teesside. The decision to split the development into two different applications was made after the submission of the scope of works. More details can be found in Chapter 7 Consultation		Forewind noted the comments from Natural England regarding terrestrial ecology. Methodologies have been implemented to gather baseline data (Section 4 of Chapter 25). Mitigation for birds and bats has been outlined within Section 6.4 and Section 7.2 of Chapter 25.
Tees Valley Wildlife Trust	02/08/2013	Email	Onshore chapter summary	Onshore EIA chapter summary sent to stakeholder for comment as part of PEI2 non-statutory consultation		

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Teesmouth Bird Club	02/08/2013	Email	Onshore chapter summary	Onshore EIA chapter summary sent to stakeholder for comment as part of PEI2 non-statutory consultation		
Royal Society for the Protection of Birds (RSPB)	30/08/2013	Letter	Response to pre-phase 2 chapter summary	The RSPB is in support of the mitigation proposals and would like consultation with the Tees Valley Wildlife Trust in advance of works taking place and supervision by an ECW of key areas of works. The exclusion zone for active nest (if found during clearance) will depend on species sensitivity.		
Teesmouth Bird Club	26/08/2013	Email	Response to pre-phase 2 chapter summary	The club is in agreement with the anticipated impacts on ornithology. They assume that planting failures will be replaced in the following season and that appropriate construction practices will be followed in relation to minimising the risk of spreading invasive weed species.		
Joint Nature Conservation Committee / Natural England	13/12/2013	Email	Phase 2 Response Summary	Designated sites: Natural England are in agreement with the assessment of impacts on designated sites and would advise the use of HDD to avoid impacts on the Redcar to Saltburn		Information on designated sites within the study area is provided in Section 4.1 with impacts considered in Section 6.2. Mitigation measures for

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
				Coast LWS. Protected species: Natural England consider that the mitigation measures with regard to bats, breeding birds, otter and badger are appropriate. Wintering birds: Natural England has concerns over wintering birds on the coastal fields at the landfall and notes that large numbers of golden plover were using the coastal fields in November and December. Concerns remain regarding the number of golden plover (and lapwing) remaining during January to March since numbers fluctuate between survey years. Further information is required to support mitigation proposals.		protected species have been committed to (see Section 6.4 & 6.5). Forewind has noted the comments on wintering birds and the concern over numbers during winter months. Forewind will undertake additional winter surveys and desk top studies to monitor the levels of wintering birds and report back to Natural England. Further information on wintering birds can be found in Section 4.6
Redcar & Cleveland Borough Council	23/12/2013	Email	Phase 2 Response Summary	RCBC have no further comments to add on terrestrial ecology		Forewind noted that there are no further comments

Stakeholder Group Name	Communication Date	Communication Method	Communication Subject	Communication Summary	Stakeholder Comment	Actions and Outcomes
Natural England, RSPB, Teesmouth Bird Club, INCA & Tees Valley Wildlife Trust	03/04/2012	workshop		Ecology Workshop held on 3 April 2012 to introduce proposed approach to ecological studies. Consultees approved the ecological methodologies		
Natural England	05/02/2014	telecon		Discussion with Natural England regarding wintering bird survey results from 2014 and proposed impacts and mitigation, in response to draft ES comments.		
Natural England February 2014		Email		Response from Natural England following submission of wintering bird desk study and 2014 survey results. Natural England advised that, in the interests of best practice and minimising the risk of disturbance, works to the landfall, in the coastal fields are avoided from October to February inclusive. Work should also be avoided during March in the event of prolonged periods of freezing weather.		Forewind acknowledge response received from Natural England regarding timing of landfall works at the coastal fields. Forewind propose proportionate mitigation measures will be implemented during the autumn/winter months at this location, and these are listed in the ES.

7.4 Appendix 4: Ecology Workshop Information

Appendix 4a: Meeting record from April 2012 birds workshop.

Meeting title	Dogger Bank – Teesside Projects Terrestrial Birds			
Location	Tees Valley Wildlife Trust's Offices – Margrove Park, Boosbeck, Saltburn			
Date/ time	3rd April 2012, 09.30 – 13.00			
Originator	Alastair Mackay			
Attendees	Sue Antrobus - Tees Valley Wildlife Trust, Ted Parker - Teesmouth Bird Club, Geoff Barber – INCA, Nick Adams – RSPB, Elizabeth Charmin – RSPB, Kelly Rose – Natural England, James Walsh – Natural England, David Pedlow – Redcar and Cleveland Borough Council, Mark Webb – Peak Ecology, Tamsyn Rowe – Forewind Limited, Alastair Mackay – Forewind Limited			
Apologies				
Purpose of meeting	Inaugural meeting with key ornithological stakeholders for the onshore aspects of the Dogger Bank Teesside Projects			
Agenda	Item:		Owner	Timing (from – to)
	1	Introductions	All	
	2	Dogger Bank – offshore development – Strategic overview	AM	
	3	IPC consents process and stakeholder engagement (aims of this workshop)	TR	
	4	Teesside Projects – onshore site selection (Converter Station, Cable Corridor and Landfall Location)	TR	
	5	Survey Locations – Wintering Birds	MW	
	6	Proposed methodologies breeding birds / other protected species	MW	
	7	Use of GIS and Technical Reporting – Creyke Beck Project Experience	MW	
	8	Open Forum – Birds	All	
	9	Open Forum – Other Protected Species	All	
	10	Actions and Close	All	
	11	Lunch	All	
Inputs to meeting	Input Mark Webb – presentation Forewind - presentation		From Alastair Mackay	
Outputs from meeting	Output Actions and agreements		From Alastair Mackay	
Date of next meeting	To be confirmed, likely around October 2012			

Forewind Meeting Protocol	
Distribute agenda before meeting	Fix responsibilities for each item
Start on time	Finish on time
Set out your ground rules	Publish minutes / actions

Stick to the agenda	Continuous improvement
KEY DECISIONS/NOTES	

Forewind gave a presentation on the site selection work undertaken to date, and Peak Ecology gave a presentation which reviewed project experience from Creyke Beck in East Yorkshire and the proposed approach to ecological studies on Teesside. The following notes represent the key issues discussed and questions raised.

1. There are three potential landfall areas:
    - Landfall 1 north of Redcar has significant engineering constraints – existing gas pipelines that would have to be crossed, and ecological designations. Forewind were advised that providing HDD is deployed underneath ecological features in the Coatham area (including dunes and marshes) ecology shouldn't be much of an issue. FW were advised that maintaining the hydrological balance of the ponds in the area (including those in Coatham Mashes) was an important consideration.
    - Landfall 2 is situated between Redcar and Marske. The onshore cable route will pass inland through a field known locally as 'the strays'. This landfall option would be the most favoured from an ecological point of view because it lies out with nature conservation designated sites and makes use of what appears to be a relatively unremarkable coastal area and together with intensively farmed arable land.
    - Landfall 3 between Marske and Saltburn is less preferred by Forewind due to the height of the cliffs making an engineering solution to the landfall HDD difficult.
2. At Landfall 2, the Strays is predominantly of winter interest for birds although there are Grey Partridge and occasional Quail breeding in these fields.
3. Ringed Plover and Sand Martin nest (or attempt to nest) on the beach and cliff respectively in the Landfall 2 area, but are not likely to be impacted by HDD.
4. The indicative cable corridor to be shown in Scoping, from Landfall 2 to the Wilton complex was shown to the consultees. No significant issues were raised relating to it.
5. The Wilton complex does have breeding Peregrine Falcons and Little Ringed Plovers although not in the areas that FWL has shortlisted for converter station site development.
6. Natural England was asked how many years of bird survey data would be expected for the Teesside project. NE responded that they would normally expect two years, however if the winter period was to be avoided in the sensitive areas, a case could be made for just one year. This would require further discussion with NE.
7. NE would like notice of any consultation reports so they can forecast future time requirements for the project, and ensure resourcing is adequate.
8. Coatham Marshes LWS has a population of water voles, and otters are present on the Tees and its tributaries. Tees Valley WT is trying to mink trap in the area once they have secured funding.
9. Pipistrelle bats are known to be present on the Wilton complex and are attracted by the lighting. Other species of bats are not known to be present. It is thought that the *Pipistrelle sp*. roost in nearby residential development areas.
10. Badgers are scarce in the area and seem to be confined to the semi natural ancient woodlands.
11. Harvest mice are a local BAP species and although distribution is not fully understood they are potentially present in the reed beds at Coatham Marsh.
12. Dingy Skipper and Grayling butterfly are present on the Wilton site but confined to brown field areas, i.e. overgrown vacant lots.
13. Hazel dormice are not present in the area.
14. Nearest known population of GCN is Lovell Hill Pools SSSI and its immediate surroundings near to Dunsdale.
15. Common lizards are present west of Redcar and are therefore potentially present in other areas with suitable habitat in this area.

16. Purple milk vetch *Astragalus darnicis* is a BAP species and is found on the coastal area – TVWT has been mapping this species and can provide detailed distribution and abundance data.
17. TVWT have good data on hedgerows in the area; probably not within our actual study area but providing very good contextual data.
18. Teesmouth Bird Club have a published bird atlas, but can also provide more detailed data on request.
19. The Corus land was surveyed for GCN approximately five years ago, and none were found.

KEY ACTIONS

For standing meetings, CLOSED items greyed out will be deleted on next iteration of actions log

Action No	Action description	Owner	Date set	Target date
Update	**Update details**			
	Peak Ecology to provide Natural England with methodologies for the 2012 surveys.	MW		
Update				
	Peak Ecology to add TVWT, TBC, Durham Bat Group and INCA to desk study search	MW		
Update				
	FWL to arrange another meeting in October, and to have wider focus to include other protected species - bats	AM		
Update				
	FWL to provide Natural England with a schedule of up and coming consultations for Creyke Beck and Teesside	AM		
Update				

Appendix 4b: Workshop outcomes report from May 2013 ecological workshop.

peakecology LIMITED
ECOLOGICAL CONSULTANTS

Dogger Bank Teesside Projects A and B

Ecology Workshop on 15th May 2013

Peak Ecology Limited
Arden House
Deepdale Business Park
Bakewell
Derbyshire
DE45 1GT
01629 812511

www.peakecology.co.uk

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1. INTRODUCTION

This report has been prepared by Peak Ecology Ltd on behalf of Forewind and represents a summary of the findings from the Dogger Bank Teesside A & B Ecology Workshop held on Wednesday 15 May 2013. The workshop was part of the first round of formal consultation on Dogger Bank Teesside A & B and followed the production of the Dogger Bank Teesside Preliminary Environmental Information 1 (PEI1) produced by Forewind as part of the consultation process.

Project Summary

Dogger Bank Teesside A & B is the second wind farm development in the Dogger Bank Zone and together with Dogger Bank Teesside C & D comprises up to four offshore wind farms each with a generating capacity of up to 1.2GW and associated offshore and onshore infrastructure. Dogger Bank Teesside A & B will connect into the existing NGET substation at Lackenby.

The cable corridor is a study area 1km wide and approximately 8.5km long, within which the buried cable system between the converter station and the transition pit at the landfall will be located. This study area as includes the proposed converter station located within the Wilton Centre. The preferred landfall is located between Redcar and Marske-by-the-Sea.

An indicative buried cable route has been identified within the 1km wide corridor and it is expected that this cable route will have a construction working width of up to 50m, with additional land required for construction and drilling compounds. It is anticipated that the cabling working method will be open trenching for the majority of the route, with horizontal directional drilling (HDD) used to cross major obstacles such as roads, railways and major watercourses, or particularly sensitive areas.

Further details about the onshore infrastructure can be found in the Project Description which forms Appendix A of Preliminary Environmental Information 1 (PEI1).

Aims and Content of the Workshop

The aims of the workshop were as follows:

1. Introduce Dogger Bank Teesside;
2. Provide an ecological overview and present the survey findings to date;
3. Gain input into the project from the consultees; and
4. Inform the EcIA process.

To this end the workshop was split into three elements as follows:

1. Introductory, plenary presentations from Forewind;
2. Peak Ecology presented summary information of the survey findings to date; and
3. Peak Ecology presented an introduction into the EcIA process, how it relates to Dogger Bank Teesside and proposed mitigation measures.

Attendees

Various ecological organisations and groups were invited to the workshop to gain ecological input into the project. Of those invited only three individuals representing Redcar & Cleveland Borough Council (RCBC),

Hartlepool Borough Council and Teesmouth Bird Club ultimately attended the workshop and they are recorded in **Table 1**. Representatives from Forewind (Alastair Mackay, Chris Nunn and Chris Gibbs) and Peak Ecology (Mark Webb and Jessica Eades) were at the workshop to present and facilitate. Discussions were held prior to the workshop with the Tees Valley Wildlife Trust who could not attend on the day.

Table 20: List of attendees for the Ecology Workshop for Dogger Bank Teesside

Attendee	Organisation
David Pedlow	RCBC
Ian Bond	Hartlepool Borough Council, North East Amphibian and Reptile Group and Durham Bat Group
Alistair McLee	Teesmouth Bird Club

A key aim of the workshop was to get input on the scope of the project as it stands and potential other constraints given 'local knowledge' and local recording. Given the small number of attendees to the workshop, attendees were requested to ask any questions throughout the presentations delivered during the workshop.

The agenda and minutes from the ecology workshop are attached within **Appendix A**.

It should be noted that Forewind and Peak Ecology held a meeting with Geoff Barber from Industry Nature Conservation Association (INCA) to discuss several ecological matters including great crested newts, reptiles, breeding birds, badgers and bats within the Wilton Complex. This meeting was held on 7 May 2012 with minutes of that meeting attached as **Appendix B** of this document. Findings from that meeting are included within the findings section of the workshop detailed below.

It should also be noted that whilst several other organisations were invited to attend the ecology workshop, many were unable to attend, or did not attend on the day. No comments or questions were directed towards either Peak Ecology or Forewind prior to, or subsequently after the workshop was held, with the exception of Liz Charman from RSPB who requested a copy of all the bird reports to review and comment on as she was unable to attend at short notice.

2. FINDINGS

The findings of the workshop are summarised in **Table 2**. In general the questions were covered by the two groups. However, the questions were not always formally followed but the general discussions of the two groups did relate to the question format. Findings are therefore presented in relation to the subject of the questions. Other elements of discussion not specifically relevant to any question are presented as such in the summary table.

Table 21: Findings of the discussion in the ecology workshop - Dogger Bank Teesside

Consultee comments/questions	Actions
In general, and given the presentations the consensus view was that consultees were satisfied that a sensible process had been employed to develop the scope of ecology works for the project.	
RCBC expressed satisfaction with the mitigation options presented to date, the final comprehensive mitigation package would be reviewed and refined post-consent and pre-construction.	

Birds: Alistair McLee was pleased to see that two years of wintering bird data had been gathered at the landfall. He felt that an appropriate level of survey had been conducted throughout the survey area. It was suggested (by Alistair McLee) that in general there should be few issues for birds given the survey effort and that appropriate avoidance measures are planned. Golden plover at the arable fields at the landfall warrant special consideration owing to the size of the wintering population. However it was recognized that the wintering population has fluctuated widely between the two years of survey, likely due to the food availability to support large numbers of birds. Options for mitigation were discussed and it was agreed that they were appropriate. Mitigation measures under consideration include seasonal and/or spatial works constraints, minimising the number of seasons works are conducted and locating construction compounds at the edges of the field to maximize the field available to birds. Sand martins were discussed. Colonies are known along the coast (landfall). In particular it was thought that there may be potential for noise and vibration to disturb the colonies. However, it was felt they were dynamic and highly mobile from year to year, particularly as the cliffs erode each year. In addition, the cable will be drilled here, not trenched, so no direct impact is expected. There is potential along the Dogger Bank Teesside C & D cable route (the sister project to the Dogger Bank Teesside A & B cable route) for little ringed plover to be recorded within the bare ground areas within the Wilton Complex.	To consider the approach to mitigating impacts on birds very carefully and in consultation with the RSPB and local farmers, with a view to facilitating the development of farmland habitat management plans where possible. Peak Ecology to ensure sand martin colonies are assessed and that potential impact will be avoided. Peak Ecology are conducting an additional breeding bird survey using a single transect through the eastern side of the Wilton Complex to supplement the original breeding bird survey.
Reptiles: Ian Bond mentioned that there were additional records of common lizard at South Gare to the north of Redcar which did not appear on the desk study map.	The Peak Ecology reptile desk study records map only indicated records which were within the past five years; however the South Gare records have been described within the text of the Reptiles Technical Report.
Invertebrates: Geoff Barber mentioned that there are records from the Sembcorp complex of both grayling and dingy skipper however both are away from our intended cable route and not present on the arable fields where the converter stations are likely to be constructed.	Peak Ecology to be mindful of potential impacts on grayling and dingy skipper and to highlight any potential areas of suitable habitat when conducting the Extended Phase 1 Habitat surveys in the Wilton Complex for the Dogger Bank Teesside C & D cable route.
Great crested newts: Peak Ecology have conducted adequate survey for great crested newts along the Dogger Bank Teesside A & B cable route. Two ponds along the Dogger Bank Teesside C & D cable route have not currently been granted access to conduct the GCN surveys; however INCA have surveyed both of these ponds in the past during 2011 and 2007. INCA have kindly provided Peak Ecology with these reports.	Peak Ecology shall produce a document for submission to Natural England with regards to GCN surveys along the Dogger Bank Teesside C & D cable route. Once access is available to these two ponds, Peak Ecology to consider a GCN survey outside of the desired survey timings to ensure a survey is conducted during 2013.

No GCN have been recorded at any point throughout the survey area either by Peak Ecology or by INCA	
Water Vole: It was noted that water vole records are limited within the area, but have been present on Kettle Beck and Coatham Marshes (which may increase the likelihood of field surveys finding watervole when surveying ditches for the Dogger Bank Teesside C & D cable route). In general, it was considered that potential issues relating to water voles are being managed acceptably, given the level of survey and potential approaches to mitigation presented. However, it was noted that water voles are mobile and their populations are dynamic and responsive, so that their distribution and abundance can change, particularly in relation to wet and dry years.	Pre-construction surveys are to be carried out to ensure up to date information on water vole distribution and status.
Otters: Again, it was considered that potential issues relating to otters are being managed acceptably, given the level of survey and potential approaches to mitigation presented.	Peak Ecology to ensure pre-construction surveys are carried out on directly impacted ditches for both the converter station footprint and cable route.
Bats: The fact that bats can and will fly across temporary gaps in hedgerows was discussed, and in this context, potential impacts on bat commuting corridors were not seen as a key issue. Only common species of bat have been identified throughout the cable route which was to be anticipated and no buildings or mature trees with bat potential are to be impacted by the cable route. Geoff Barber from INCA mentioned that bat activity surveys INCA have conducted throughout the Wilton Complex showed that bats were entering the site from the adjacent residential areas and used the site to forage, but no roosts had ever been recorded within the Wilton Complex itself. Peak Ecology's mitigation proposal to replant hedgerows which have been identified as being important to bats be replanted as soon as possible with more mature plants to provide a more substantial hedgerow structure for bats to use to navigate.	Peak Ecology has conducted activity surveys during summer and autumn 2012 and shall conduct spring surveys during 2013.
Badgers: Peak Ecology has identified a main badger sett within the Wilton Complex. Geoff Barber mentioned that this badger sett was dug after badgers were introduced to an artificial badger sett created in close proximity in the 1990s. The badgers abandoned the artificial sett and dug their own (which is the one Peak Ecology has recorded). It was felt that appropriate mitigation was being implemented for the Dogger Bank Teesside A & B cable route given the distance of works from the badger sett.	Peak Ecology are conducting monitoring of the badger sett by way of sand traps and hair traps in each of the sett entrances to ascertain activity levels of the sett to inform proposed works for the Dogger Bank Teesside C & D cable route.
Ditches: In terms of the cable route, the overall impact on ditches (as general habitat) was considered not to be a major issue, as it is a temporary impact. In addition, many of the ditches will be	Impact on ditches will be considered as part of the overall EcIA process.

avoided through the use of HDD. Only one ditch will be directly impacted by open trenching and as long as correct procedures with regard to protected species and pollution are followed then few issues are foreseen.	
Hedgerows: It was suggested that the replanting of hedgerows ensure local species are used, and fit with locality. The group asked that if landowners were agreeable to filling gaps in the hedgerows, could this be done.	Peak Ecology to include hedgerow specifications within the overall ecology assessment for the project. Landscape/mitigation plan to include hedgerow options. Peak Ecology responded saying that it was a possibility to fill in gaps within hedgerows but it depends on the access and be limited to the area within Forewind's red line planning boundary.

3. SUMMARY

Overall there was general agreement that the scope of ecology work being carried out was commensurate with the level of potential associated with the project as a whole (converter station, cable route and landfall). In summary, ecology is being fully considered and the work being done will be sufficient for the Environment Statement such that appropriate mitigation will be addressed given the development.

Key outputs from the workshop were as follows:

- Attendees found that having all the Ecological Mitigation Measures being detailed in one place within the EcIA document very useful, rather than having to pull them out individually from the text.
- Ensure data sharing – records to be sent to biological records center.
- Avoidance mitigation is preferable for bird species, particularly wintering birds at the arable fields at the landfall, and Forewind are to consider the feasibility of working under seasonal works constraints.
- Ensure species planting such as landscaping and hedgerows fit within the local landscape, reflect what is found already and are of local provenance.
- Hedgerows will always be replaced on a like for like basis and opportunities for biodiversity gain will be explored, for example by planting additional hedgerow at the converter stations site.
- Inclusion of additional recent reptile and water vole desk study records provided by INCA and North East Reptile and Amphibian Group into the relevant Peak Ecology technical reports.

4. APPENDIX A – AGENDA AND MINUTES FROM THE ECOLOGY WORKSHOP

Agenda and Minutes from the Ecology Workshop

Meeting title	**Dogger Bank Teesside Projects:** **Terrestrial Ecology Workshop, 15th May 2013**			
Location	**Tees Valley Wildlife Trust** **Margrove Heritage Centre** **Margrove Park** **Boosbeck** **Saltburn by the Sea** **TS12 3BZ** T: 01287 636382 Margrove Heritage Centre is situated on Margrove Road, approx. 500m from the A171 (between Guisborough and Whitby) at the Charltons. Turn off the A171 at the Charltons on to Margrove Road, which is signed posted Margrove Park and Boosbeck. The Margrove Heritage Centre is situated about 500m on the right. If you pass the caravan park and skip hire you have gone too far.			
Date/ time	**15th May 2013; 09.30 – 15.45**			
Originator	Alastair Mackay (Forewind) and Jessica Eades (Peak Ecology)			
Attendees	Alistair McLee – Teesmouth Bird Club Ian Bond – Hartlepool Borough Council David Pedlow – RCBC Mark Webb - Peak Ecology Jessica Eades - Peak Ecology Alastair Mackay - Forewind Ltd Chris Nunn – Forewind Ltd Chris Gibbs – Forewind Ltd			
Apologies	Deidre Murphy – Environment Agency Liz Charman - RSPB Mike Leakey – Natural England - **Absent** Rebecca Herdson - Natural England James Walsh - Natural England Geoff Barber – INCA Sue Antrobus – Tees Valley Wildlife Trust Jeremy Garside – Tees Valley Wildlife Trust Noel Jackson – Durham Bat Group John Drewett – North Yorkshire Bat Group Ted Parker – Teesmouth Bird Club David Britton – Independent Bird Expert Fiona McGloin – RCBC			
Purpose of meeting	The purpose of the meeting is to introduce Forewind Ltd to consultees and update them on the ecological surveys and results to date, and to gain input from consultees into the ongoing project design.			
Agenda	Item:		Owner	Timing (from – to)
	1	Arrival and sign in(tea and coffee will be available)	All	09.30 – 09.45
	2	Welcome and Introductions	Forewind	09.45 – 10.00
	3	Introduction to Teesside Dogger Bank and the consenting process	Forewind	10.00 – 10.30

	4	Routing decisions – the planning and development of the cable route	Forewind	10.30 – 11.00
	5	Tea and coffee break	All	11.00 – 11.20
	6	Ecology work carried out, findings so far and potential mitigation	Peak Ecology	11.20 – 12.45
	7	Lunch	All	12.45 – 13.30
	8	Break-out groups to discuss ecology issues following presentations	All	13.30 – 14.45
	9	Tea and coffee break	All	14.45 – 15.00
	10	Plenary session to feedback on discussion group findings – to be recorded for reporting	All	15.00 – 15.30
	11	Summing up and end of workshop	Forewind	15.30 – 15.45
Inputs to meeting	Input Agenda		From Peak Ecology	
Outputs from meeting	Output Actions and agreements		From	

Forewind Meeting Protocol	
Distribute agenda before meeting	Fix responsibilities for each item
Start on time	Finish on time
Set out your ground rules	Publish minutes / actions
Stick to the agenda	Continuous improvement

Foreword

Despite ample notice and subsequent follow up phone calls, the workshop received disappointingly low attendance, with the majority of invited members unavailable or absent on the day. Through this, Forewind and Peak Ecology can assume that the invited delegates who did not attend do not currently have any concerns with the ecological impacts associated with the onshore Dogger Bank Teesside Projects A and B. This assumption is based on the lack of any highlighted issues sent to Forewind and Peak Ecology before the workshop as well as the absence of queries received after the event.

Forewind Introduction to the Dogger Bank, Site Selection and Consenting

Forewind presented an update on the Dogger Bank Teesside projects and the environmental surveys and work that has been done so far. The consenting and site selection processes were also presented to the group and that Dogger Bank Teesside will be submitted in two consents, with Dogger Bank Teesside A & B to be submitted next year and Dogger Bank Teesside C & D to be submitted one year after that.

Forewind confirmed the reasoning behind the siting of turbines offshore because of the improved wind speeds for generation. Forewind confirmed that all four project cables would come ashore over a protracted period of time to ensure commercial separation, so there is the potential for construction work to occur at different times for each project.

Offshore Surveys

The offshore surveys were briefly covered, including the methods used and the changes that have been made with the benefit of technological improvements. Forewind confirmed that HiDef are responsible for aerial data collection, using ultra high resolution cameras to capture images with the ability to identify birds down to species level. Baseline data collection was discussed and the results that had been seen so far. Forewind confirmed that density plots based on 1km² were modelled from the raw data. The aerial images were superior in determining marine mammals numbers particularly harbour porpoise which can be easy to overlook in rougher sea states and when submerged.

Site Selection

The site selection process for identifying converter station locations, landfall and the onshore cable routes were presented to the group. The preferred converter station location is in the south of the Wilton Complex in Teesside and the landfall will be made between Redcar and Marske-by-the-Sea. Forewind confirmed that they are aware of potential housing schemes in the area and that the cable route would sterilise a corridor of land where it is installed. Forewind also highlighted that it is aware of the York Potash Scheme's preferred pipeline location and has accommodated this on its plans.

Onshore Ecological Survey Methodologies & Findings

Peak Ecology presented the methodologies to the onshore surveys carried out for all required aspects, including Great Crested Newts (GCN), birds (breeding and wintering/ autumn passage), riparian mammals and reptiles. Phase 1 and Extended Phase 1 surveys were discussed, highlighting that the hedgerows in the area are considered species poor. The Habitat Suitability Index (HSI) for determining the suitability of a water body for GCN was explained and the fact that important ditches and dykes would be crossed using Horizontal Directional Drilling (HDD).

Peak Ecology showed the distribution maps for protected species recorded from their desk based study using data from the local records office. Ian Bond said there were some common lizard records from the South Gare that had not been included. The bat surveys in particular mainly showed common species.

It was explained by Peak Ecology that there is an active badger set in the Sembcorp site with up to 20 entrances recorded. However, this sett is sufficiently far away not to be impacted Teesside A and B. Further studies are underway to assess the impact of Teesside C and D projects. The group also added that it would sensible to ask INCA about any owl boxes they may have put up.

Overall, the works and findings to date were presented to the group and there were no concerns raised.

The bird surveys were shown to the group and the areas considered most important for birds. The landfall field (known locally as 'the Strays') was shown as the most important, particularly among wintering birds. The group highlighted that the management of crop sowing particularly in winter can affect the species and number of birds that will be seen there.

It was explained by Peak Ecology that there is an active badger set in the Wilton Complex with up to 20 entrances recorded. However, this sett is sufficiently far away not to be impacted Dogger Bank Teesside A & B. Further studies are underway to assess the impact of Dogger Bank Teesside C & D projects. The group also added that it would sensible to ask INCA about any owl boxes they may have put up.

Evaluation

The process used to evaluate data was presented by Peak Ecology, highlighting the use of geographical receptor levels and the need to use common sense when defining what level an impact there is for certain receptor. i.e., GCN are internationally important, but in an area where there is an excessive population, an effect on 50 will not be an international level impact, it will be a regional level impact. It is important to consider all effects on baselines, whether they're positive or negative.

Mitigation

Peak Ecology emphasized that mitigation needs to be deliverable, compatible and represent good value for it to be used, and that mitigation by avoidance (embedded) is more likely to be used (routing changes, timing constraints, HDDs etc.)

Peak Ecology explained that 'the Strays' could be being used by birds for breeding, and feeding and roosting in winter. The group enquired about using multiple work fronts and it was confirmed that this is an option, as well as laying ducts for future projects.

The options for hedgerows were put forward but Peak Ecology stressed that whilst sections of hedgerow removed during construction would be reinstated to the same quality or better, it was stressed that the replanting regime would be in keeping with the surrounding hedgerows in terms of species composition. The Developer would only have temporary access to these areas so that the long term maintenance of any hedgerows would remain the responsibility of the landowner, and no enhancement works could be undertaken.

Peak Ecology stated that the primary mitigation for the large populations of wintering waders on 'the Strays' – lapwing and golden plover would be achieved by avoiding construction in these areas during these periods. Forewind asked the group if they have any information on golden plover in the fields and what they do there. The feedback was that the group are unsure but would find out.

A point was raised concerning the main issue being wintering birds and whether or not the projects could utilise enhancement works to benefit them. However as a long term interest would only be held at the converter stations this was deemed impractical.

The group asked that if landowners were agreeable to filling gaps in the hedgerows, could this be done. Peak Ecology responded saying that it was a possibility but it depends on the access and be limited to the area within Forewind's red line planning boundary.

The group asked that is a tree was onsite and had to be removed, would one be replanted to replace it. Forewind responded saying that the route had been microsited to avoid trees and use existing gaps in hedgerows. However, if this were the case the tree could not be replanted due to the proximity to the cable route.

It was agreed that should anyone have any questions, they should direct them to Alastair Mackay or Jessica Eades.

5. APPENDIX B – MINUTES FROM THE MEETING WITH GEOFF BARBER FROM INCA

Minutes from the meeting with Geoff Barber from INCA

Meeting title	**INCA Meeting**			
Location	Visitor Centre, Sembcorp			
Date/ time	7th May 2013; 14.00 – 15.00			
Originator	Alastair Mackay – Forewind Ltd			
Attendees	Geoff Barber – INCA Jess Eades – Peak Ecology Katie Hadwin – Peak Ecology Alastair Mackay – Forewind			
Purpose of meeting	To discuss ecological issues on the Wilton Complex			
Agenda	Item:		Owner	Timing (from – to)
	1	GCN surveys and access issues		
	2	Badger Sett – and artificial one		
	3	Breeding birds – waders and peregrines		
	4	Water voles and mink		
	5	Other ecological species of note – grayling and dingy skipper		
	6	AOB		
Inputs to meeting	Input Agenda		From MW	
Outputs from meeting	Output Actions and agreements		From MW	

Forewind Meeting Protocol	
Distribute agenda before meeting	Fix responsibilities for each item
Start on time	Finish on time
Set out your ground rules	Publish minutes / actions
Stick to the agenda	Continuous improvement

KEY ACTIONS				
For standing meetings, CLOSED items greyed out will be archived in the archived in actions log spreadsheet saved to TBC				
Action No	**Action description**	**Owner**	**Date set**	**Target date**
Update	**Update details**			
1.1	Geoff to find out details of the Entec water vole report	GB		
Update	1 page summary of ponds surveyed and species found.			
1.2	Jess to produce short report using existing data sources for Natural England to build up a case for not having to survey next year, if we don't gain access to two ponds this month.	JE		

KEY ACTIONS				
For standing meetings, CLOSED items greyed out will be archived in the archived in actions log spreadsheet saved to TBC				
Action No	**Action description**	**Owner**	**Date set**	**Target date**
Update	**Update details**			
Update				
2.1	Geoff to find out more details – design and any photos that were taken of the artificial badger sett.	GB		
Update	Picture of badger sett received			
4.1	There are records of water voles from the 1990s that did not appear in the records office data. TVWT did some survey work. Geoff to find out who in TVWT did the work and if the data is still available. There has been a lot of evidence of mink activity in recent years so water voles are unlikely to still be present.	GB		
Update	Kenny Crooks is the water vole expert at TVWT			
6.1	Ecology Workshop – no representation at present from TVWT. Jess to see if Steve Ashton could attend	JE		
Update	No one from TVWT was able to attend on the day, but an informal meeting was held with Sue Antrobus the day before			

Notes

1. Peak ecology has identified several ponds on the Wilton Complex, where access has been granted – surveys are under way. There are two ponds however where access has not been granted and surveys cannot commence. This is an issue particularly for GCN where the survey season is so seasonally constrained. INCA has surveyed one of these ponds (paper mill development) in 2011 and the pond next to Steel House in 2007. Neither survey found GCN. Geoff said there was a recent Entec survey which should be available

2. Badger Sett. The sett discovered by Peak Ecology is adjacent to the artificial sett created by INCA in 1992.

3. Breeding birds – these are considered to be a non- issue, if measures are taken to avoid work in sensitive areas during the breeding bird season.

4. There are records from the Wilton Complex of both grayling and dingy skipper – both are away from our intended cable route and not present on the arable fields where the converter stations are likely to be constructed.

5. There is evidence of bats being attracted into the site by the lighting at night. The evidence suggests that these bats of are the commoner *Pipestrellus* species. Geoff believes the bats travel into the site from the west and there are no roosts in the immediate locality.

Appendix 5: Priority habitats and species in the Tees Valley

NB: The following text is reproduced exactly from the original Tees Valley BAP document

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
Arable field margins	Arable field margins refers to strips of land lying between arable crops and the field boundary, and extending for a limited distance into the crop, which are deliberately managed to create conditions which benefit key farmland species. In the Tees Valley, cereal field margins and arable fields provide important habitats for the following key bird and mammal species: brown hare, grey partridge, song thrush, linnet, corn bunting, tree sparrow, turtle dove, bullfinch, barn owl and skylark. Corn buttercup is a rare arable weed that occurs on a few arable field sites in the Tees Valley.	Arable field margins
Semi-natural broadleaved lowland woodland	This includes a broad range of woodland in the Tees Valley, ranging from lowland mixed deciduous woodland includes woodland, to wet woodland and upland oak woodland. The most important is Ancient woodlands, defined as land that has had continuous woodland cover since at least 1600AD, is considered to be the most valuable and irreplaceable woodland. It includes semi-natural woodland (ASNW), and sites which have been felled and replanted (usually with a conifer crop) known as planted ancient woodland sites (PAWS). Broadleaved woodland in the Tees Valley is unevenly distributed, with most being concentrated in the beck valleys of eastern Cleveland and other clusters around Wynyard in Stockton and the River Leven in the south. The Tees plain and the Hartlepool area are largely devoid of woodland, and those patches that exist are small and isolated. In eastern Cleveland, many of the steep sided beck valleys are wooded with a mix of broadleaved mixed lowland woodland and conifer plantations. Most of these ancient woodland sites are on some of the steeper terrain and have probably had continuous woodland cover since the retreat of the last ice age.	Lowland mixed deciduous woodland Wet woodland Upland oak woodland Lowland beech and yew woodland
Brownfields	Brownfields is a term given to describe sites that have, in the recent past, been used for some development purpose, but now exist without any formal use. They include abandoned quarries, slag and spoil heaps, disused railways and landfill sites plus other land where industrial or commercial activities have taken place. Cycles of disturbance and abandonment, artificial structures, uneven ground, wet and dry areas and poor soils often result in a mosaic of habitats that support high levels of biodiversity and are especially important for many invertebrate species, reptiles and amphibians. The industrial history and current industrial activities of the Tees Valley provide a large number of sites that are rich in biodiversity. Of particular interest are the “slag grasslands” which were created by infilling with lime-based blast furnace waste. A specialised flora has developed on these low nutrient calcareous grasslands which is unique. The grayling and dingy skipper butterfly thrive on the network of brownfield sites around the Tees.	Open mosaic habitats on previously developed land
Churchyards and cemeteries	Some churchyards were originally grasslands enclosed either when the church was built or as a later extension. They range from manicured lawns and tended flower beds to neglected wildernesses. Cemeteries can also support an important range of wildlife and, in some cases, act as valuable refuges for rare and uncommon species. Churchyards are often refuges for meadow and woodland plants. Typically, older churchyards have more native species, with mature yew and exotic conifers which were often planted in Victorian times. Churchyards and cemeteries are often similar in terms of wildlife and both may attract wildlife	

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
	because of their lower disturbance and greater habitat diversity compared to surrounding areas. Many churchyards and cemeteries, especially larger sites in urban areas need to be considered as multifunctional green spaces as they can make a significant contribution to the provision of urban green space, providing a sanctuary for wildlife and people in the urban settlements. In the Tees Valley cemeteries and churchyards that provide a significant wildlife habitat are Spion Kop in Hartlepool, Linthorpe Cemetery in Middlesbrough and Thornaby Cemetery in Stockton.	
Gardens and allotments	Gardens and allotments account for a significant proportion of urban greenspace, (around 15-25% towns). Private gardens cover an estimated 3 % (485,000) of the land area of England and Wales with an estimated 13,000 ha of allotment gardens. Gardens and allotments will never act as substitutes for many semi-natural habitats; however, they can offer a variety of habitats that support a wide range of invertebrates, reptiles and amphibians, birds and mammals. They can also provide habitats, such as ponds, that may be increasingly rare elsewhere. The value of any individual garden or allotment for wildlife will depend on its size, age, location and management. Although individual sizes of gardens and allotments are usually small they can be considered on a landscape scale.	
Grazing marsh	Grazing marshes are grasslands found in low-lying coastal areas or within the flood plains of rivers that are periodically inundated with water. They usually have high water levels, which are maintained by ditches containing brackish or fresh water. These areas are traditionally managed by grazing animals or cut mechanically for hay or silage. Grazing marshes are a valuable habitat for breeding wading birds and wintering sites for waterfowl, such as lapwing, snipe and curlew. The habitat is rare in the UK. There is an estimated 200,000 ha of grazing marsh in England of which only 5,000 ha is semi-natural and supports a high diversity of native plant species. In the Tees Valley there are remaining fragments of grazing marsh habitats in the low lying areas of the Tees Estuary. Key sites include Seaton Common, Cowpen Marsh, Saltholme and Dorman's Pool.	
Hedgerows	Hedgerows, especially those that are ancient or rich in woody species, provide valuable habitats for wildlife and are a key component of our cultural and landscape heritage in Britain. They are especially important for butterflies and moths, many species of birds, bats and dormice. Ancient hedgerows are generally defined as those which were in existence before the Enclosure Acts, passed mainly between 1720 and 1840 in Britain. These tend to support the greatest diversity of plants and animals. Some ancient hedgerows are remnants of ancient woodland and act as a refuge for woodland plants and ancient trees. Species-rich hedgerows are those which contain an average of 5 or more native woody species in a 30 metre length, or 4 or more in northern England and upland Wales. Hedgerows are found throughout the countryside areas of the Tees Valley. East Cleveland has a particularly large number of ancient/species-rich hedgerows, many of which are of high interest for wildlife and as landscape features.	Hedgerows
Lowland heath	Lowland heathland generally occurs below 300m in altitude. It is a highly diverse habitat characterized by ericaceous dwarf-shrubs such as heather, with associated areas of freshwater pools and bogs, scattered trees and shrubs, bare ground and acid grasslands. This varied mosaic of habitats encourages a	

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
	wide variety of birds, reptiles, invertebrates, bryophytes and lichens. It is a rare and threatened habitat, with around 80% of lowland heaths being lost to agricultural improvements, development or lack of management in the last 200 years. In the Tees Valley, Eston Moor is the only extensive area of Lowland heath.	
Lowland meadows	Lowland meadows are characterized by a high diversity of plant species with a high ratio of broadleaved plants to grasses. Most grassland in the UK has been modified by the addition of fertilizers or reseeding to produce a more productive sward for grazing livestock or hay and silage crops. Unimproved lowland meadows are an increasingly rare and threatened habitat in the UK. Many have been, and continue to be, lost by agricultural intensification or scrub encroachment. It is estimated that Britain has lost more than 97% of its unimproved grassland since 1939. In the Tees Valley, most lowland meadows are a fragmented habitat managed as pastures. These occur as small scattered fragments throughout the Tees Valley area, with some of the steep sided valleys in East Cleveland being a stronghold locally.	Lowland meadows
Maritime cliffs and slopes	Maritime cliffs and slopes form through land slippages or coastal erosion. Slopes can vary between 15 degrees to vertical. Coastal habitats less steeply sloping than this are included in the sand dunes and coastal grassland habitat action plan. The vegetation of maritime cliffs can vary widely depending upon the geology, degree of slope, exposure to wind and salt spray. These cliffs support a variety of plants and are important breeding grounds for many birds. Ledges on maritime cliffs are important nesting sites for sea birds such as kittiwake, fulmar, shag and cormorant. The UK coastline contains about 4000km of cliffs. In the Tees Valley, parts of the coast have been affected by industrial and urban developments. However, there are still extensive areas of semi-natural cliff habitats. Maritime cliffs rise to the east of Saltburn and continue to the Tees Valley border. These cliffs are of local and national importance for wildlife and heritage, being part of the North Yorkshire and Cleveland Heritage Coast.	Maritime cliffs and slopes
Mudflats and saltmarsh	Sand, mud and gravels are the most common habitat found at the intertidal zone around the coasts of the UK. They occur in a wide range of coastal environments, from sheltered bays and estuaries to exposed open coast. These habitats support a diversity of marine life including molluscs, polychaete worms, and crustaceans. They are also important breeding grounds for species of tern. The Tees Estuary has significant areas of mud and sandflats, which are of international importance for wading birds. Saltmarsh occurs on soft, shallow shores in sheltered coastal areas and estuaries. It generally occupies the upper, vegetated portions of intertidal mudflats, lying approximately between the mean high water neap tides and mean high water spring tides. Characteristic species include glasswort, sea aster and common saltmarsh grass. Saltmarshes are important feeding ground for migrating and wintering bird species, including widgeon, redshank and teal.. In the Tees Valley Saltmarsh is a rare habitat, occurring in fragmented areas around Teesmouth. The extent of land reclamation on the Tees Estuary has reduced this habitat to a narrow belt in most areas. Key sites include patches along Greatham Creek, Seal Sands and Greenabella Marsh.	Coastal saltmarshes Intertidal mudflats

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
Parks and recreation grounds	Parks and amenity areas in towns and cities are often intensively managed as amenity grassland and have a low value for nature conservation because of their limited variety of plant species and structure. However, urban green spaces are becoming a significant habitat for species which were once common in the wider countryside but which have suffered a dramatic decline in rural areas such as song thrush, sparrow species and hedgehogs. For most people the most regular experience of wildlife and the natural environment comes from public open spaces and there is increasing recognition of the wildlife value of parks and for management that incorporates practices that promote wildlife to make these areas more attractive for wildlife and people. In the Tees Valley there are many urban parks which are sympathetically managed for wildlife.	
Ponds, lakes and reservoirs	Ponds provide rich and complex habitats for wildlife supporting a vast array of freshwater plants and animals. Collectively our ponds are home to a third of our native plants and over 1,200 species of invertebrates such as mayflies, pond skaters, bugs and snails. All our amphibian species (frogs, toads, newts) depend on ponds in which to breed. Some three-quarters (more than a million) of Britain's ponds have been lost over the last hundred years and due to their size and familiarity they are consistently undervalued. Ponds of all sizes occur throughout the Tees Valley. These include ponds in rural areas, ponds created in industrial areas, civic ponds in urban areas and garden ponds. "Lakes and reservoirs" include both natural and man-made water bodies, such as lakes, reservoirs, flooded quarries and gravel pits that are over 2ha in size. Water bodies smaller than this are described as 'ponds'. The plant and animal communities depend on the nutrient status of the water. Many of the standing open waters in the Tees Valley are man-made and eutrophic, resulting from industry, and include flooded quarries, clay pits and reservoirs.	Ponds Mesotrophic lakes Eutrophic standing water
Reedbeds	Reedbeds are wetlands dominated by stands of common reed *Phragmites australis*. Other plant species may also occur but at a significantly lower level of abundance. In reedbeds, the water table is at or above ground level for most of the year. Stands of reeds occur in open water transitions around lakes and ponds, in floodplain mires and in estuaries, along dykes, canals and sluggish lowland rivers, in peat cuttings and on saltmarshes. Reedbeds are important habitats for birds in the UK. They can support a distinctive assemblage of birds, which include rare and endangered species such as bittern, marsh harrier, crane, Cetti's warbler, Savi's warbler and bearded tit. Reedbeds also provide roosting and feeding sites for migratory bird species, winter roost sites for birds of prey and support rare specialised species of invertebrates. In the UK there are estimated to be around 5000ha of reed bed scattered in small sites with only about 50 sites being greater than 20ha in extent. In the Tees Valley most sites are smaller than 10ha. Key sites include Coatham Marsh, Haverton Hole, Fleet Pond and Dorman's Pool.	Reedbeds
Rivers and streams	This encompasses any flowing water such as major rivers and their tributaries and coastal gills. Rivers and streams are dynamic systems, which exhibit a mosaic of features such as riffles, pools, shingle beds and sandbars that support a diverse range of plants, animals, fish and invertebrates. There are few rivers which have not been physically altered by humans. Many larger water courses have been canalised or otherwise modified to reduce flood risk. These processes have resulted in degraded	Rivers

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
	habitats supporting fewer species. This trend is now being reversed with opportunities to recreate naturally functioning systems being implemented. Watercourses also act as important corridors that link together other wildlife features and provide safe routes for species to move between sites. The River Tees is the only major river in the Tees Valley. The water quality of the River Tees suffered in the 19th and 20th century from pollution associating with industrial and urban developments. Since the 1970's, the water quality has improved, with salmon returning in recent years. Small becks, especially those tributaries in Middlesbrough, support thriving populations of water vole.	
Roadside verges	Grassy roadside verges may be associated with other features, such a hedgerows, ditches, dry stone walls and old trees. Motorways, bypasses and main trunk roads usually have wide verges and banks, often with young trees, the result of tree planting programmes carried out over the past 40 years. In most cases roadside verge areas consist of closely mown, single sward grasslands. However, some roadside verges have remnants of un-improved species rich grasslands and have the potential to be very diverse habitats for wildlife with changes in management resulting in less intensive mowing regimes. There are currently approximately 207,000ha of roadside in the UK, with an estimated 2% managed for their wildlife interest. In the Tees Valley, there are four roadside verges in Stockton that have t Local Wildlife Site status.	
Saline lagoons	These are bodies (natural or artificial) of saline water that are partially separated from the adjacent sea. They retain a proportion of their seawater at low tide and may develop as brackish, full saline or hyper-saline water bodies. Saline lagoons are an important and relatively scarce habitat due to the special conditions that are required for their formation. They support unique invertebrates, such as the lagoon cockle and ostracods, and are important for waterfowl, marshland birds and seabirds. The presence of certain indigenous and specialist plants and animals make this habitat important to the UK"s overall biodiversity and has led to the listing of saline lagoons as a priority habitat under the EU Habitats Directive as well as being a priority UK biodiversity habitat. In the Tees Valley saline lagoons are a rare habitat. A complex of saline lagoons exists as a result of surface salt mining of the North Tees area known as the Brinefields.	Saline lagoons
Sand dunes	Sand dunes develop behind large sandy beaches, which dry out at low tide allowing sand grains to be blown landward. Sand dunes are a dynamic habitat between coast and dry land. They range from embryonic and mobile dunes on the seaward side of the dune system to fixed or "grey" dunes that have been stabilised by plant roots. Marram grass plays a vital role in the colonisation and stabilisation of sand dunes. Grey dunes are then colonised by a range of drought-tolerant species. On older dunes, calcium may be leached out of the soils, leading to the development of acid dune grassland or dune heath. In wet depressions between dune ridges, dune slacks may develop which are often characterised by creeping willow and species of moss. Coastal grasslands occur to the leeward side of sand dunes and have a specialised calcareous and salt-tolerant species. In the Tees Valley, many of the sand dune systems are of national conservation importance, with approximately 88% of the 262ha total designated as SSSI. The species rich coastal grassland is of local conservation importance. Key sites include	Coastal sand dunes

Habitat name	Brief habitat description and extent in Tees Valley	UK Bap Priority Habitat
	Hart Warren Dunes, North Gare and Seaton Sands, South Gare and Coatham Sands.	
School grounds	It is estimated that, nationally, school grounds make up 5% of all built up areas. These grounds are usually intensively managed for sport and recreation and are often impoverished habitats for wildlife, consisting mainly of hard surfacing, closely grown amenity grassland and sports fields with small standard trees and well trimmed hedges. However, many schools have small nature areas or gardens which may include a pond or small meadow, native shrubs and trees, compost heaps and vegetable beds. In the Tees Valley, School Grounds is a Habitat Action Plan because they are the green spaces where most children spend the majority of their outdoor experiences and there is great potential for both enhancing the biodiversity of school grounds and creating outdoor classrooms where children can learn about their natural environment. Programmes such as Eco Schools involve pupils in educational projects to increase the biodiversity of their school grounds.	
New – Traditional Orchards	Traditional orchards are structurally and ecologically similar to wood-pasture and parkland, with open-grown trees set in herbaceous vegetation, but are generally distinguished from these priority habitat complexes by the following characteristics: the species composition of the trees, these being primarily in the family *Rosaceae*; the usually denser arrangement of the trees; the small scale of individual habitat patches; the wider dispersion and greater frequency of occurrence of habitat patches in the countryside. Management of the trees is the other main feature distinguishing traditional orchards and wood-pasture and parkland. Orchards are hotspots for biodiversity in the countryside, supporting a wide range of wildlife and containing UK BAP priority habitats and species, as well as an array of Nationally Rare and Nationally Scarce species. The wildlife of orchard sites depends on the mosaic of habitats they encompass, including fruit trees, scrub, hedgerows, hedgerow trees, non-fruit trees within the orchard, the orchard floor habitats, fallen dead wood and associated features such as ponds and streams. A feature of the biodiversity of traditional orchards is the great variety of fruit cultivars that they contain.	Traditional Orchards

Species name	Scientific name	Description/rational
Barn owl	*Tyto alba*	Barn owl population of the UK fell by 70% in the 50 years between 1932 and 1982. However, by 1997 Project Barn Owl revealed that the national population had stabilised at about 4000 pairs. The main reasons for population decline are the loss of rough grassland as feeding habitat, loss of nest and roost site and road casualties.-verges are good for hunting but 60% of all barn owl deaths occur on the roads. In the Tees Valley the barn owl has been on the edge of local extinction since the 1970s. In the mid 1970"s there were believed to be 8 breeding pairs, and 3-4 pairs in the mid 1980s. Since then it

Species name	Scientific name	Description/rational
		remains an uncommon resident with only 4-8 breeding pairs in most years. The rather scarce records included a high proportion of dead or dying birds by the roadside
Ringed plover	*Charadrius hiaticula*	The species is declining in the UK (with winter populations down by 26% between 197/8-2007/8. In the Tees Valley there has been a significant reduction in breeding habitat range since the 1980‟s. A breeding bird survey by the Teesmouth Bird Club from 1999-2006 shows 32 pairs holding territories, mainly at coastal sites. In the mid 1980's observers recorded breeding pairs (a maximum of 32 recorded) on the north side of the Tees Estuary, on industrial sites, manly in the Brinefields. In 2006 no breeding territories were evident on these sites. The reasons for this loss are unclear. New open shingle areas on the Brinefields site have not been colonised and there has been no perceived disturbance of nest sites or increase in natural predators on these industrial sites.
Grey partridge	*Perdix perdix*	The species is rapidly declining in the UK (84% decline between 1970 and 1998 and has declined by a further 54% between 1995-2009). The drastic decline in this bird‟s range and abundance is a result of agricultural intensification, resulting in loss of insect food sources on farmland. In the Tees Valley there are estimated to be 300-350 breeding pairs. There are also small populations on some industrial sites on Teesside.
Tree sparrow	*Passer montanus*	In the UK there has been a huge decline in tree sparrow numbers (92% between 1970 and 2009, which is probably the result of agricultural intensification and specialisation, particularly the increased use of herbicides. A trend towards autumn-sown crops, at the expense of spring-sown crops that produce stubble fields over winter, plus the increased use of insecticides, will have reduced the amount of insect food available for nestlings. More recent data shows that the trend has since improved. In the Tees Valley, a study of tree sparrows in 1993 estimated a breeding population of about 135 pairs distributed in 10 loose breeding colonies scattered throughout the old county of Cleveland. Recent data (2011) from the Teesmouth Bird Clubs puts estimates at Breeding pairs at 261
Corn bunting	*Emberiza calandra*	In the UK its distribution is fragmented, with the bulk of the population found across southern and eastern England. Its numbers and distribution have been declining in some areas since the beginning of the twentieth century and steadily in most places since the early 1970s. The results of the Common Bird Census suggest that there was a 76% decline in the breeding population between 1968 and 1991. In addition there was a decrease in a range of 32% between the two breeding atlas periods (1968-72 and 1988-91). The Farmland Bunting Survey by the British Trust for Ornithology in 1993 recorded only around 20,000 territories remaining in Britain. The species remains common and widespread in southern Europe. In the

Species name	Scientific name	Description/rational
		Tees Valley area the corn bunting is a scarce and localised resident with an estimated population around 20 pairs. Flocks are found at different locations in different years which have included Dalton Piercy, Boulby, and Naisberry in recent years.
Shelduck	*Tadorna tadorna*	A characteristic bird of the Tees estuary and marshes with a breeding population of 64 pairs (reported in the Breeding Birds of Cleveland 2008). Despite major loss of habitat the Tees estuary is still a site of national importance for shelduck wintering in the UK.
Little tern	*Sterna albifrons*	The species is declining in the UK (13% between 1986 and 2010). It nests in small numbers in discrete colonies on the upper shore, which are very vulnerable to natural disaster and human disturbance. In the Tees Valley there are 76 pairs (2009) which is This is 4% UK breeding population, with the main colony currently at Crimdon Dene. Nesting birds are actively conserved through annual wardening and protection and the majority of fledglings are ringed each year for research purposes. Recent threats have included predation by fox, hedgehog and kestrel.
Bittern	*Botaurus stellaris*	This red-listed species (RSPB/ BTO) is of conservation concern with a low breeding population in Britain. A few spend the winter in the Tees Valley birds are now seen annually locally but has yet to breed. The RSPB is working hard to encourage the species to breed by providing suitable habitats at Saltholme
Swift	*Apus apus*	Screaming swifts over British towns and cities are quintessential of warm summer evenings. However in the UK it declined by 31% between 1995 and 2009. In the Tees Valley the Breeding Birds of Cleveland (2008) gives a total of 673 pairs. It has been suggested that the demolition of old buildings and the design of new ones has reduced the availability of accessible roof cavities needed for nesting.
yellow wagtail	*Motacilla flava*	The species is declining in the UK, with a 55% decline between 1995 and 2009. This summer visitor is an iconic bird of wet grassland and pastures, with an increasing tendency to nest in arable crops. It is a long-distance migrant to Africa and is therefore susceptible to many hazards outside of the UK. . In the Tees Valley it is an uncommon breeding bird. The Breeding Birds of Cleveland (2008) gives a total of 36 pairs.
Purple milk-vetch	*Astragalus danicus*	National populations were stable until 1930, since when it has declined substantially on the chalk of southeast England and limestone in northeast England, largely because of agricultural improvement and a lack of grazing by stock. The 'Vascular Plant Red Data List for Great Britain' in 2005 lists it as endangered because of a reduction in population size (extent of occurrence and/or quality of habitat) of more that 50% over the last 10 years. In the Tees Valley it grows in the sand dunes and coastal grassland along the coast of the Lower Tees Valley. Past records indicate its presence at Seaton Dunes and Common, Hart Warren Dunes. South Gare, North Gare, Coatham Dunes, The Stray Redcar and Coatham Marsh

Species name	Scientific name	Description/rational
		Nature Reserve.
Water-violet	*Hottonia palustris*	This distinctive member of the primrose family is found in shallow ponds and ditches with good water quality. In the UK it is uncommon, with a localised distribution with evidence of considerable decline. It favours mineral-rich water and will tolerate some shade but is vulnerable to pollution In the Tees Valley it is on the northern edge of its natural range and is found at two sites and has been introduced into a third
Green-winged orchid	*Anacamptis morio formerly Orchis morio*	This orchid grows in old unimproved meadows and pastures on base-rich to mildly acidic soil, mainly in southern part of the UK. Decline is due to habitat loss following agricultural intensification. In the Tees Valley/ Durham area it is at the edge of its range with less than 5 sites in the Tees Valley, mainly on coastal grassland sites.
Globeflower	*Trollius europaeus*	A perennial herb of cool damp habitats, preferring basic soils and sensitive to grazing. We are at the southern end of its range. Declining nationally due to improvement of hill land by drainage and fertiliser application. It occurs at one site in the Tees Valley but through as reintroduction programme by the Wildflower Ark, it has been introduced from local seed into 4 sites in Wynyard Woodland Park.
Pepper saxifrage	*Silaum silaus*	This tall late-flowering herbaceous perennial found in damp, unimproved neutral grassland, usually on clay soils. Although it is fairly common nationally it is included here as an indicator of damp meadows as it is often associated with interesting and declining species rich grassland plant communities.
Yellow Star-of-bethlehem	*Gagea lutea*	A bulbous perennial herb that grows in moist, base-rich, shady habitats. It is nationally scarce but is also possibly under-recorded. It is rare in the Tees Valle, growing at a few locations near the River Leven.
Burnt orchid	*Neotinea ustulata formerly Orchis ustulata*	This perennial orchid requires warm, dry conditions and is often found in tightly grazed chalk and limestone grassland on south-facing slopes. It occurs on sandy and gravelly soils in river meadows and on sand dunes. Nationally occurs in only 55 10km2. It is found on the SSSI at Hart Warren.
Tufted sedge	*Carex elata*	A tussock-forming perennial sedge of oligotrophic or mesotrophic marshy habitats. The Tees Valley is at the northern most end of its distribution. and is recorded at a SSSI site in Dunsdale in East Cleveland and in sites in Darlington

Species name	Scientific name	Description/rational
Knotted hedge-parsley	*Torilis nodosa*	An annual member of the umbellifer family which is found on a wide range of dry, sparsely vegetated habitats. In the Tees Valley it is rare at the northern most end of its range , and is recorded on the grassy sea banks of Greatham Creek,
Flat sedge	*Blysmus compressus*	This sedge is widespread in Britain but it is a localized and rapidly declining species. It is found in open, sedge-rich areas in calcareous flushes, marshes, fens and damp grassland and pond and stream borders which are subject to flooding. It also occurs in brackish ditches at the head of salt marshes. Its decline is believed to be due to a variety of causes related to grassland drainage and improvement as well as eutrophication and the cessation of grazing. In the Tees Valley it was recorded at two coastal ponds near Redcar, including the TVWT reserve at Coatham.
Strawberry clover	*Trifolium fragiferum*	A creeping perennial herb that grows on the coast behind salt marshes, on earthern sea-walls and grazing marshes. Inland it occurs on pastures on damp alluvial or calcareous clay soils. In the Tees Valley it is locally and sparsely distrusted in wet grassy places around the Tees Estuary
Black poplar	*Populus nigra ssp Betulifolia*	Black popular is one of the UK‟s rarest trees. It is a tree of rivers and floodplains and the River Tees in on the northern edge of its natural range, but only with a scattering of records, mainly from the Darlington area. The species is often confused with hybrid poplars which have been widely planted.
Small leaved lime	*Tilia cordata*	A tree species that is associated with ancient woodlands with a patchy distribution in Britain, mainly in southern England and the midlands. Small ancient colonies occur in East Cleveland in the Kilton Beck woodlands and associated hedgerows. In the north the tree is dependent on clonal propagation as temperatures are too low to allow successful seed production.
Scarlet Wax cap	*Hygrocybe punicea*	Wax caps (genus Hygrocybe) are distinctive fungi of unimproved pastures, old lawns and churchyards. They are restricted to grasslands with low nutrient input and a short turf. They are of conservation concern due to loss and degradation of habitat. They are also unrecorded due to a lack of experienced mycologists and the ephemeral nature of the fruiting bodies. The scarlet wax cap has been selected as a “flagship” species as, in grasslands where it is found, there are usually several other species of the genus.
Water vole	*Arvicola amphibius*	Once a familiar sight in lowland Britain water vole populations have been plummeting. It is believed to be our most declining mammal with the Mammal Society estimating that it is now absent from over 90% of sites occupied in the 1900′s. The reasons for its decline are complex but involve a combination of loss and fragmentation of beckside habitats, changes in watercourse management, and predation by mink which have spread through our countryside. In the Tees Valley local declines have mirrored the national pattern; however water voles do thrive in parts of the Tees Valley. One example is the urban Becks of Middlesbrough.

Species name	Scientific name	Description/rational
Brown hare	*Lepus capensis*	This once common mammal has had substantial population declines in Britain the twentieth century especially since the 1960‟s. The National Hare survey in 2001 has estimated the current British population to be between 800,000 and 1,250,000 which is believed to be an 80% reduction since 1880. The decline in abundance is related to the simplification of the agricultural landscape in Britain. Increased intensification and farm specialisation plus changes in planting and cropping regimes. It is widespread throughout the Tees Valley and appears to be doing well in the industrial brownfield habitats around the Tees estuary.
Harbour (Common) seal	*Phoca vitulina*	Widely distributed in northern hemisphere waters, in Britain the largest populations are around the Scottish coastline and in the Wash. The species is not threatened but is prone to phocine distemper outbreaks, such as in 1988, when 3,000 Harbour seals deaths were reported in British waters. Seals have lived in the Tees estuary for centuries, declined through the nineteenth century and by the 1930s had disappeared. Disturbance by shipping, habitat loss, pollution and persecution by fishermen were contributing factors. Seals returned to the estuary in the 1980s after improvements in water quality. There is now a small but successful breeding population at Seal Sands, which also uses haul out sites at Greatham Creek and Billingham Beck.
Bats (all species except common pipistrelle)		Nine of the 16 species of bat that breed in Britain are found in the Tees Valley. Listed very approximately from what are likely to be the commonest (or most widespread) to the rarest in the Tees Valley these are: Common pipistrelle, Daubenton‟s, brown long eared, noctule, Natterer‟s, soprano pipistrelle, whiskered, Brandt‟s, Nathusius‟ pipistrelle. The Common pipistrelle probably makes up at least 90% of the total number of bats in the Tees Valley and other than Daubenton‟s the other bats are likely to be quite rare locally.
Harvest mouse	*Micromys minutus*	The species is considered by some to be declining in the UK.. A Mammal Society survey in 1997 resurveyed 250 sites nationally where the harvest mouse had been recorded in the 1970s. It was found to have disappeared from 72% of those sites. The reasons behind its decline are not fully known but habitat loss through agricultural intensification and habitat fragmentation and land drainage is thought to be a major factors. The species is on the edge of its range in north-east England and locally there have been very few records, even historically. As recently as eight years ago there were no known current records. It had apparently disappeared from its last known sites since the 1980s. More recent research has unearthed about ten sites where harvest mice are still found in the wider Tees Valley area but some of these are likely to be small, isolated populations.

Species name	Scientific name	Description/rational
Great created newt	*Triturus cristatus*	Britain is an important stronghold for the species. It is widely distributed in England but with a decline in range and abundance in recent years. The main factor for their decline is loss of suitable breeding ponds and loss and fragmentation of terrestrial habitats. They are widely distributed across most of the Tees Valley but there are no current, confirmed records from Middlesbrough and few from around the lower Tees Estuary. As much of the land in the lower Tees Estuary is reclaimed, it is possible that great crested newts were never present in these areas. There are healthy populations around the Eaglescliffe and Cowpen Bewley area but otherwise populations seem to be small and fragmented.
Common lizard	*Lacerta vivipara*	The species is widely distributed but local throughout the UK. It has a very localised distribution in the Tees Valley and historically confined to the coastal fringes of north Hartlepool and Redcar & Cleveland; though no reports from North Hartlepool in the past five years. It also occurs on the fringes of the North York Moors National Park. There are recently reported from a few sites on the industrial area of the North Tees, which may well be introductions, as might be the case for the handful of inland records.
Slow worm	*Anguis fragilis*	Slow worms are widespread throughout Britain, but most common in the south and east of England The species has a localised distribution in the Tees Valley. It is currently found exclusively in Redcar & Cleveland, where it no doubt forms an extension to its broad distribution across the North York Moors. Up to 2008 the number of locations where it had been recorded from was still in single figures. The subsequent increase in records to around 20 locations suggests that it might be widely distributed in Redcar & Cleveland, though nowhere does it appear to be common, with only two sites recording more than a single individual.
Dingy Skipper	*Erynnis tages*	The Dingy Skipper is locally distributed throughout Britain and Ireland, but has declined seriously in recent years. One of the main threats is loss of suitable habitat due to the encroachment of tall herbaceous vegetation and scrub as well as loss of brownfield sites to development. The Tees Valley is a regional stronghold for the Dingy Skipper. There are colonies throughout the brownfield sites of the Tees Estuary. Key sites include Graythorp, Greenabella Marsh, Maze Park, Portrack Marsh, Seal Sands, South Gare, and Coatham marsh / dunes.
Grayling	*Hipparchia semele*	This is a widespread species but is declining in many areas, particularly inland. In The Tees Valley Grayling colonies are mainly associated with the old industrial sites of the Tees estuary. Key sites are Greenabella Marsh, Maze Park, Seal Sands and South Gare / Coatham sand dunes.
White-letter Hairstreak	*Satyrium w-album*	This secretive woodland butterfly occurs throughout much of England and Wales. The butterfly uses elms (*Ulmus spp*.) as larval foodplants. It had been seriously threatened by the demise of elms as a result of Dutch Elm Disease, but seems to have partially recovered. It is known to use young elms in hedgerows as well as mature trees. This species spends much

Species name	Scientific name	Description/rational
		of its time in the treetops and is often difficult to see but they do occasionally come down to ground level to nectar on thistles and bramble blossom. In the Tees Valley well known sites are Hardwick Dene, Hart to Haswell Walkway, Tockett‟s Mill (Guisborough), Upleatham and in the Wynyard Woodland complex.
Blomer‟s Rivulet	*Discoloxia blomeri*	A scarce moth species which occurs sporadically throughout England and Wales in deciduous woodland, depending upon Wych Elm (Ulmus glabra) as its larval foodplant. In the Tees Valley it has a strong population in Mines Wood, Boulby and is also known from Saltburn Woods and from Thorpe Bulmer Dene near Hartlepool. Blomer‟s Rivulet has a „nationally notable‟ (Nb) conservation status.
Crescent Striped	*Apamea oblonga*	This moth is associated with saltmarsh grasses (Puccinellia spp.) and occurs sporadically along the south and east coasts of England. In the Tees Valley the species‟ distribution is limited by the extent of available habitat. Crescent Striped is highly localised but not uncommon on the Brinefields. It is likely to occur on Cowpen Marsh and on saltmarsh at Greatham Creek. Crescent Striped has a „nationally notable‟ (Nb) conservation status.
Fen Wainscot	*Arenostola phragmitidis*	This is one of five scarce „wainscot‟ moth species which are associated with reedbed containing Common Reed (Phragmites australis). Fen Wainscot is locally distributed in the south and east of England. It is rare in north east England but in the Tees Valley it has a strong population at Portrack Marsh and is also currently known to occur at reedbeds in Billingham, Greenabella Marsh and at Seal Sands. It probably occurs in other large reedbeds within the Tees Valley. Fen Wainscot has a „local‟ conservation status.
Forester	*Adscita statices*	A day flying moth species which is associated with Common sorrel (Rumex acetosa) growing in acid grassland, often, though not always, in association with lowland heath. This species has a wide distribution over much of England and Wales, although it is by no means common. It has scattered populations locally, including Dorman‟s Pool, Eston Moor and „The Whinnies‟, Darlington. The largest population of this species which is currently known in the UK was discovered in July 2011 on land owned by the Forestry Commission at Coatham Wood, Long Newton. The Forester has a „local‟ conservation status.
Large red-belted Clearwing	*Synanthedon culiciformis*	This day-flying moth species is associated with birch woodland and birch scrub growing on heathland. The larva has very specific requirements, feeding under the bark of two-year old birch stumps. It is widespread across much of Britain and in recent years the advent of pheromone lures has increased the frequency of records. The species has a „nationally notable‟ (Nb) conservation status. It is highly localised in north east England and in the Tees Valley there is a population on Eston Moor.

Species name	Scientific name	Description/rational
Lyme Grass	*Chortodes elymi*	This „nationally notable „ (Nb) moth species is restricted to coastal sandhills from Suffolk northwards to eastern Scotland. As its name suggests, it is dependent upon lyme grass (Elymus arenarius) as the larval food plant. In the Tees Valley it is established in the dunes at Bran Sands, Marske, North Gare and South Gare.
Shore Wainscot	*Mythimna litoralis*	This is a coastal species of moth which occurs in sand dunes, mainly in England and Wales. The larvae feed on marram (Ammophila arenaria). It is rare in the Tees Valley but is known from North Gare, South Gare and Spion Kop near Hartlepool. Shore Wainscot has a „nationally notable‟ (Nb) conservation status.
Eccentric Grass Snail	*Vallonia excentrica*	Species associated with calcareous grassland with a short sward. Likely to be on northern edge of range in The Tees Valley. Distribution of both species not known in the Tees Valley but recorded at Spion Kop Cemetery in Hartlepool in 2004.
Moss Chrysalis Snail	*Pupilla muscorum*	-
Bullhead	*Cottus gobio*	The bullhead is a small bottom-living fish that inhabits a variety of rivers, streams and stony lakes. It appears to favour fast-flowing, clear shallow water with a hard substrate (gravel/cobble/pebble) and is frequently found in the headwaters of upland streams. However, it also occurs in lowland situations on softer substrates so long as the water is well-oxygenated and there is sufficient cover. It is not found in badly polluted rivers. It is common throughout much of the Tees catchment but is notable by its absence in urban becks and heavily silted water bodies.
Salmon	*Salmo salar*	Once abundant in the Tees, salmon numbers declined with the growth of industry in the lower Tees to the extent that the river was considered to be devoid of this fish between the 1920s and 1983. Ironically a pollution incident in Teesdale revealed that some salmon were still managing to migrate through Teesside's 'anoxic plug' and less and cleaner industry has seen numbers gradually increase. Salmon are an important food source for a wide range of predators including otters, seals and goosander. Salmon need clean, aerated water and clean substrates to successfully spawn in. Egg survival is compromised by fine sediment smothering reeds and „spikes‟ of nutrient, such as ammonia, from field run-off. Invertebrates, the primary food source of salmon fry are similarly impacted. Salmon are an anadromous species and can complete numerous migrations in a lifetime. The Tees barrage presents a problem to the recovery of this species in the river at both inward and seaward migrations although recent modifications to the canoe slalom may improve the situation. Other barriers are being addressed through Water Framework Directive initiatives.

Species name	Scientific name	Description/rational
Brown trout	*Salmo trutta*	Brown trout require clean, aerated water and clean substrates to successfully spawn in. Egg survival is compromised by fine sediment smothering redds and „spikes" of nutrient, such as ammonia, from field run-off. Invertebrates, the primary food source of trout fry are similarly impacted. Brown trout are potentially anadromous migrating to estuarine waters and returning to freshwater to spawn. The reasons for this are as yet unknown. Numbers of brown trout in the Tees have declined as a result of degraded and fragmented habitat, barriers to migration and pollution.
European eel	*Anguilla anguilla*	Eels are a catadromous species living in fresh water and migrating to the marine environment to breed. Recruitment of the European glass eels has declined by between 95 - 99% since 1979. It is listed as critically endangered by the IUCN. Numerous factors are responsible for the decline in eel numbers and include barriers to migration, hydropower turbines, loss of wetland habitat and the introduction of the parasitic nematode Anguillicola crassus. The Tees Barrage has some opportunity for glass eel migration incorporated into its design but escapement of adult silver eels around the barrage is unknown. Very little is known about the current population and extent of eels in the Tees.
Brook lamprey	*Lampetra planeri*	The brook lamprey is a primitive, jawless fish resembling an eel, and is the smallest of the lampreys found in the UK. It is a non-migratory freshwater species, occurring in streams. The brook lamprey requires clean gravel beds for spawning and soft marginal silt or sand for the ammocoete larvae. It spawns mostly in parts of the river where the current is not too strong. It is found in the Leven and Skerne tributaries. Degraded habitat and spawning gravels are key factors in their decline.
Sea lamprey	*Petromyzon marinus*	The sea lamprey is a primitive, jawless fish resembling an eel. It is the largest of the lampreys found in the UK. It occurs in estuaries and easily accessible rivers, and is an anadromous species. Sea lampreys need clean gravel for spawning, and marginal silt or sand for the burrowing juvenile ammocoetes. Sea lampreys have a preference for warm waters in which to spawn. Features such as weirs and dams, as well as polluted sections of river, may impede migration to spawning grounds. Sea lampreys seem to be relatively poor at ascending obstacles to migration, and are frequently restricted to the lower reaches of rivers. The Tees barrage presents a considerable barrier to migrating sea lamprey.
River lamprey	*Lampetra fluviatilis*	The river lamprey is found in coastal waters, estuaries and accessible rivers. The species is normally anadromous and pollution or artificial obstacles such as weirs or dams impede migration. The UK populations are considered important for the conservation of the species at an EU level.