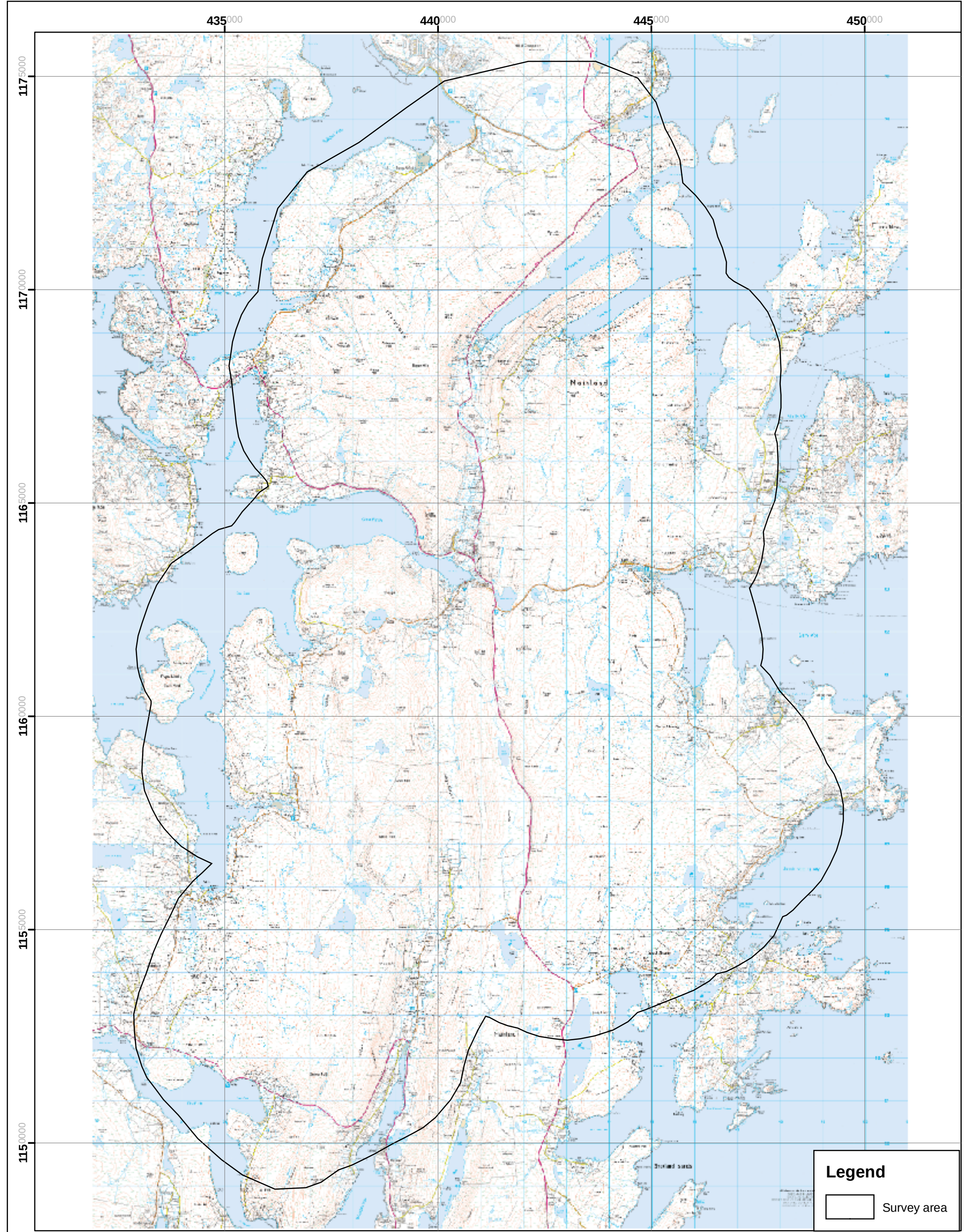




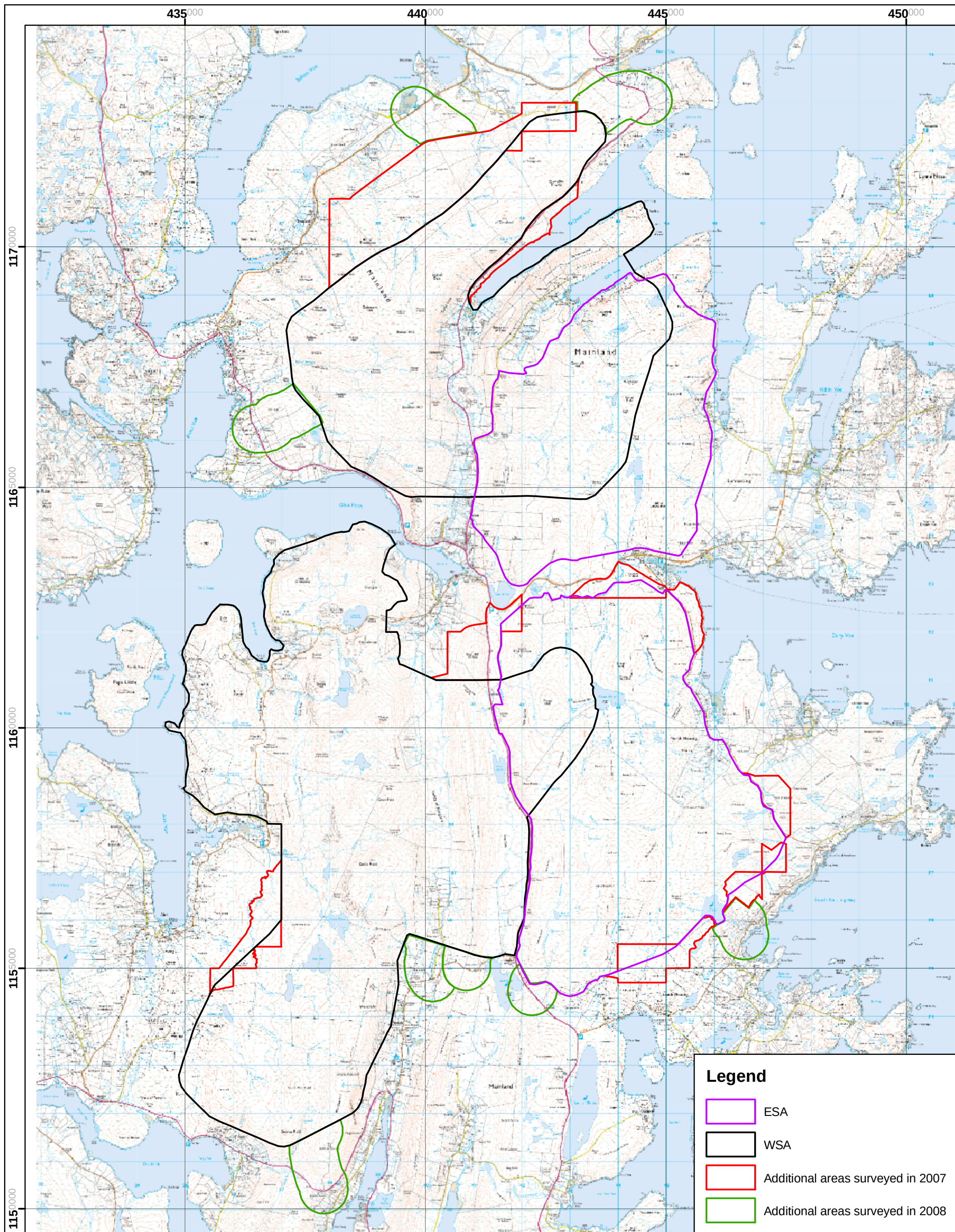
Viking
Map 90

The boundary of the area surveyed for breeding red-throated divers (VDSA) and breeding merlin (VMSA).

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Viking

Map 1

Map showing the boundaries of the WSA and ESA and the additional areas surveyed in 2007 and 2008 due to boundary changes

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435000

440000

445000

450000

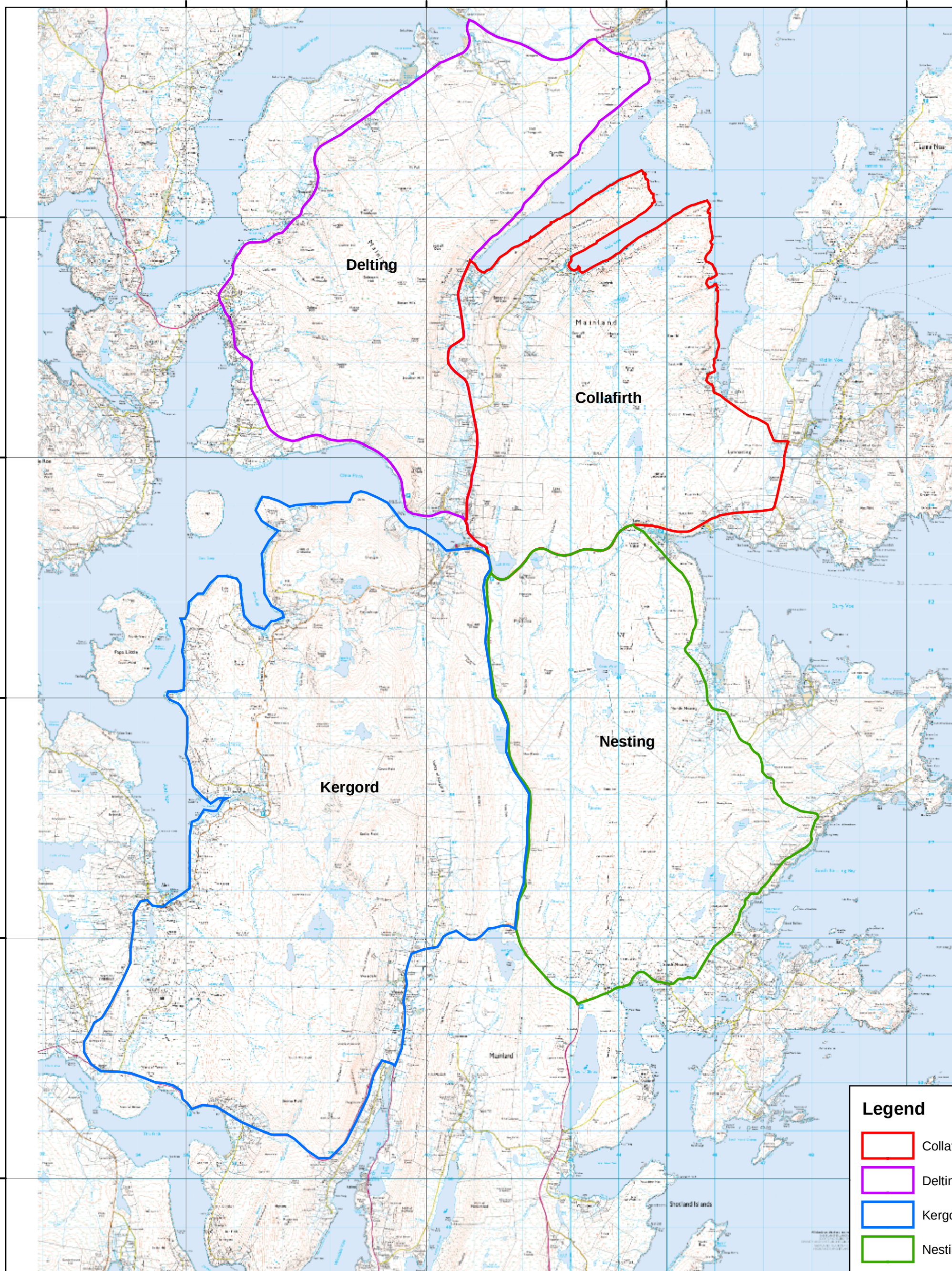
1170000

1165000

1160000

1155000

1150000



Legend

- Collafirth
- Delting
- Kergord
- Nesting

Viking

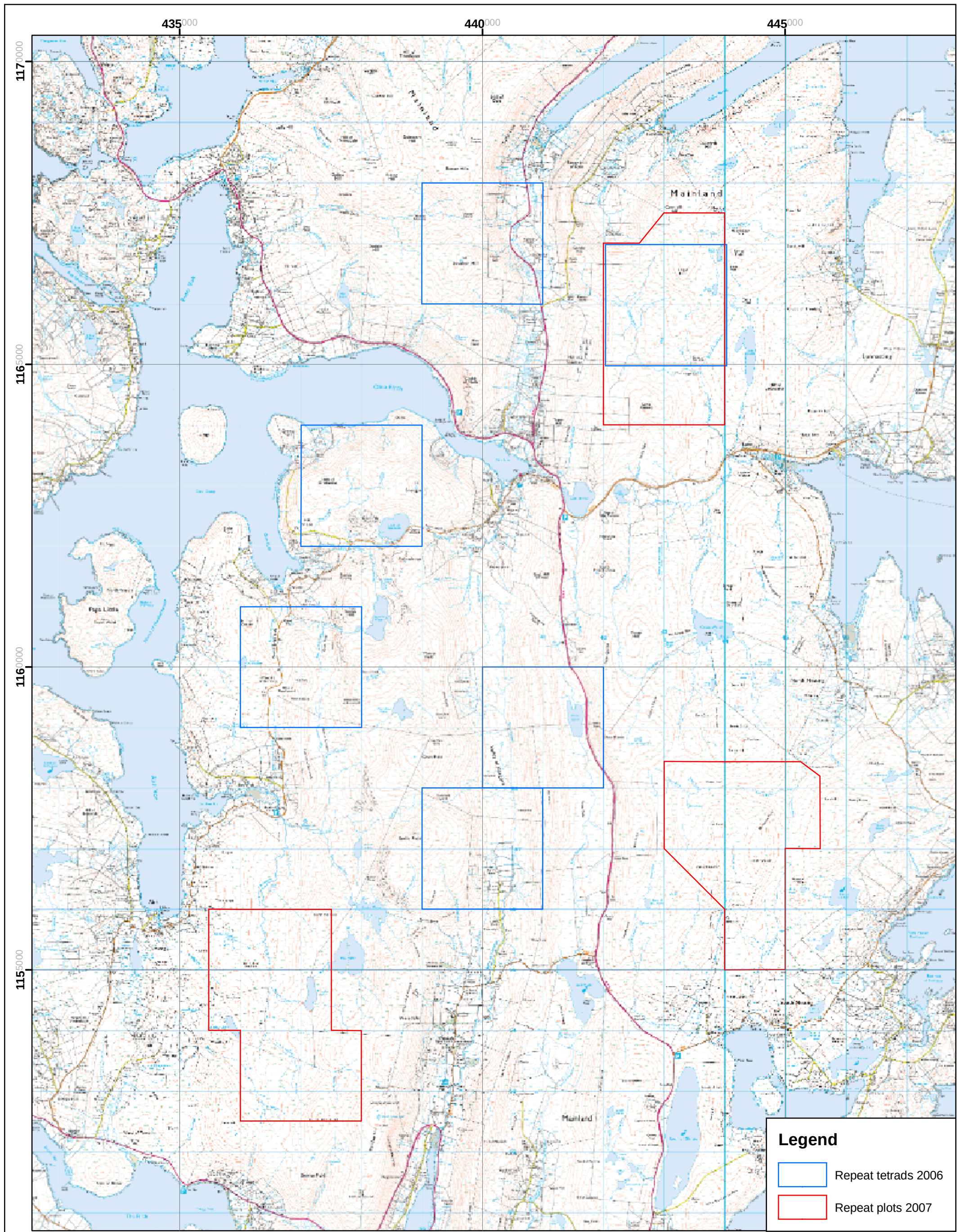
Map 2

Quadrants used in descriptions of bird distributions within the Viking Windfarm

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Viking

Map 3

The boundaries of plots where repeat moorland birds surveys were undertaken

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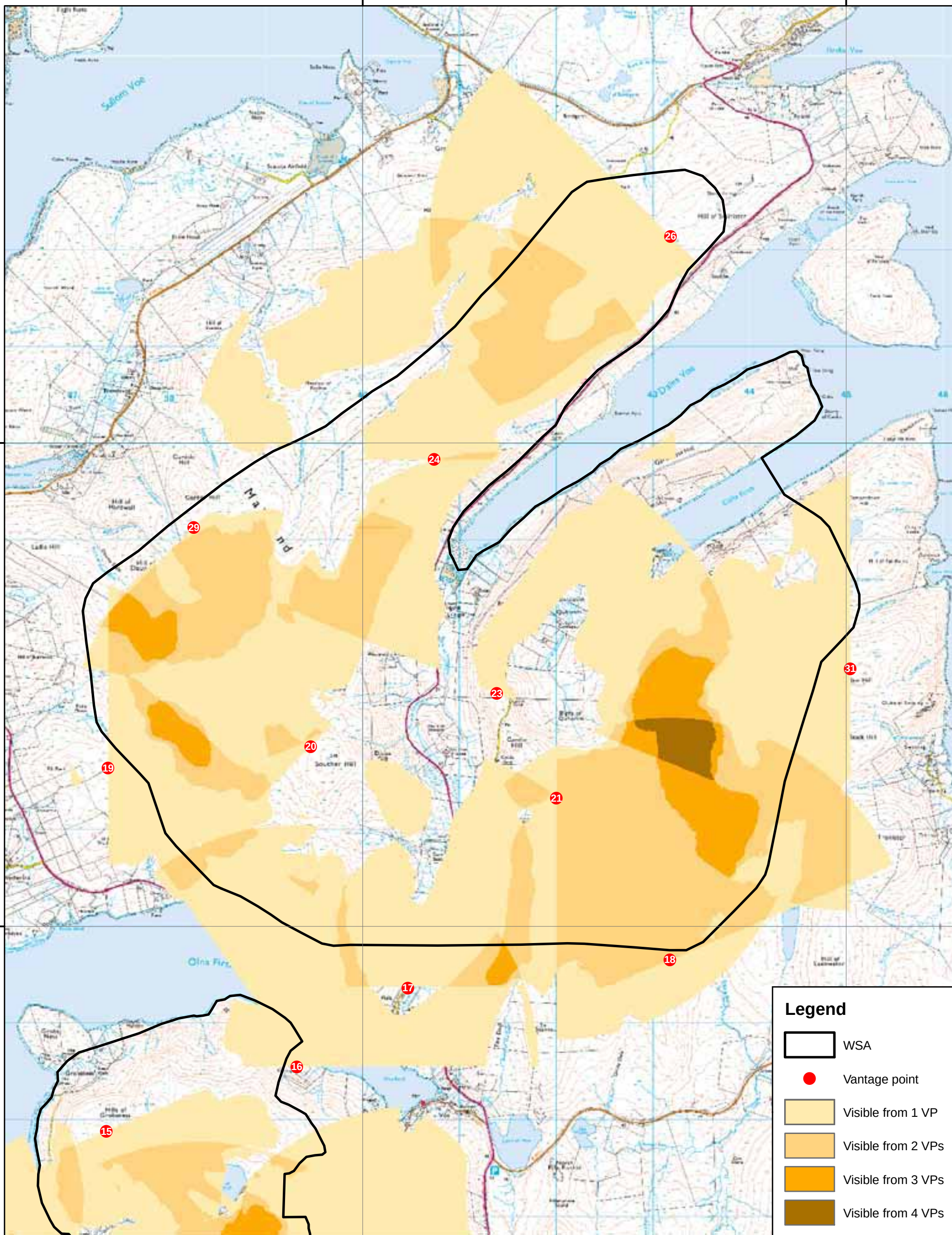
31st March 2009

440000

445000

1170000

1165000



Viking

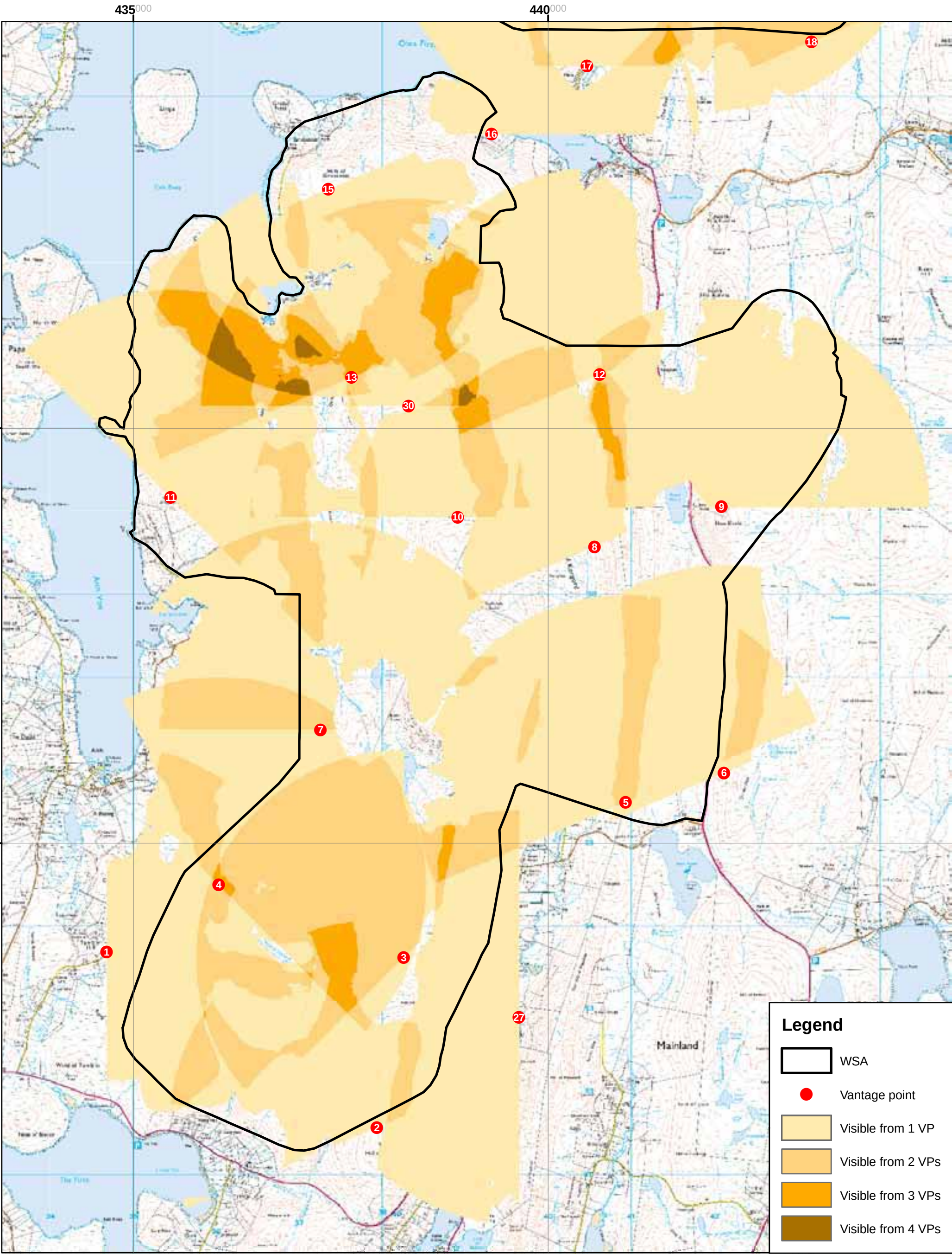
Map 31

Cumulative WSA Viewshed (North). Viewshed truncated at 2.5km

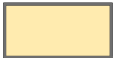
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Legend

-  WSA
-  Vantage point
-  Visible from 1 VP
-  Visible from 2 VPs
-  Visible from 3 VPs
-  Visible from 4 VPs

Viking

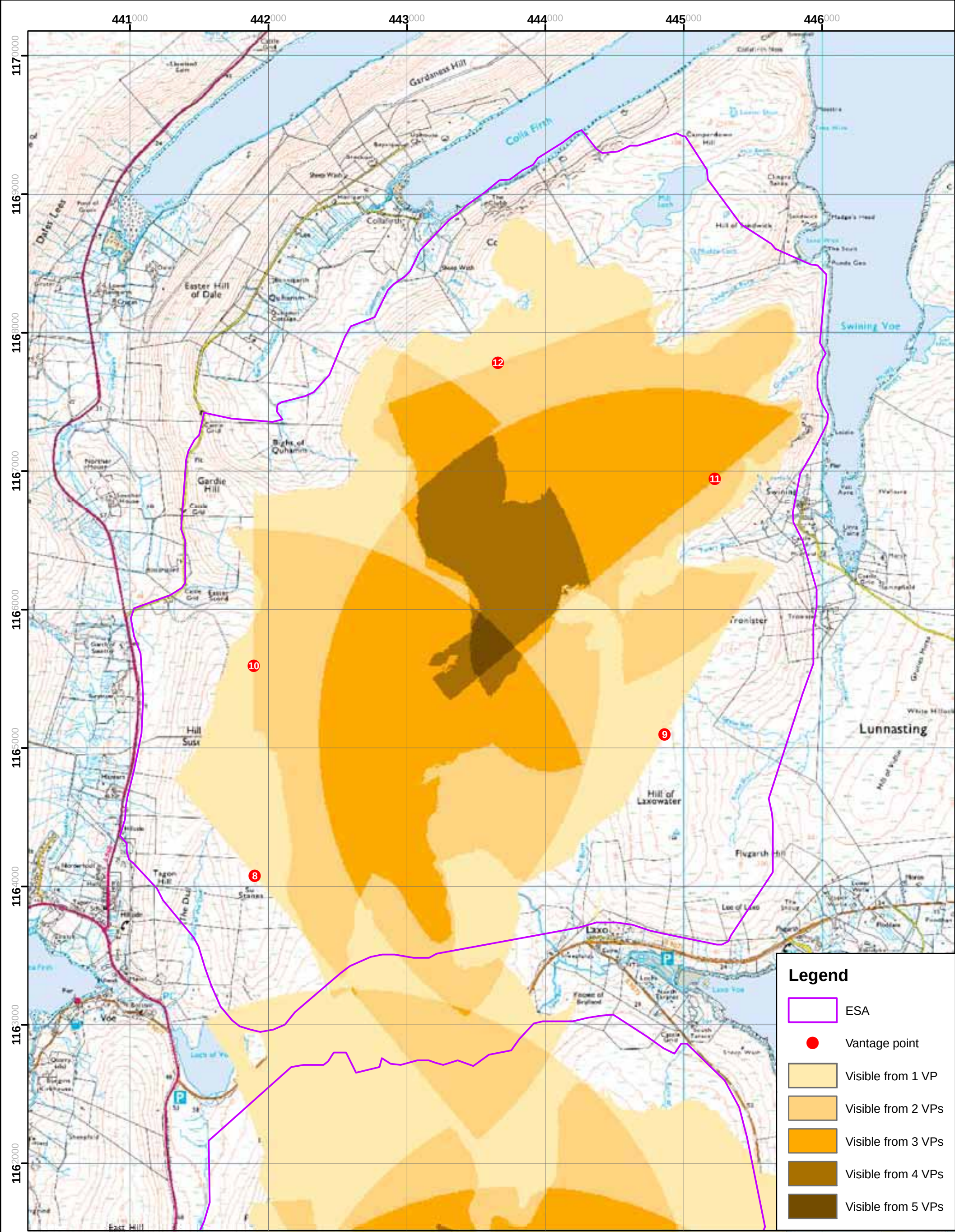
Map 32

Cumulative WSA Viewshed (South). Viewshed truncated at 2.5km

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Viking

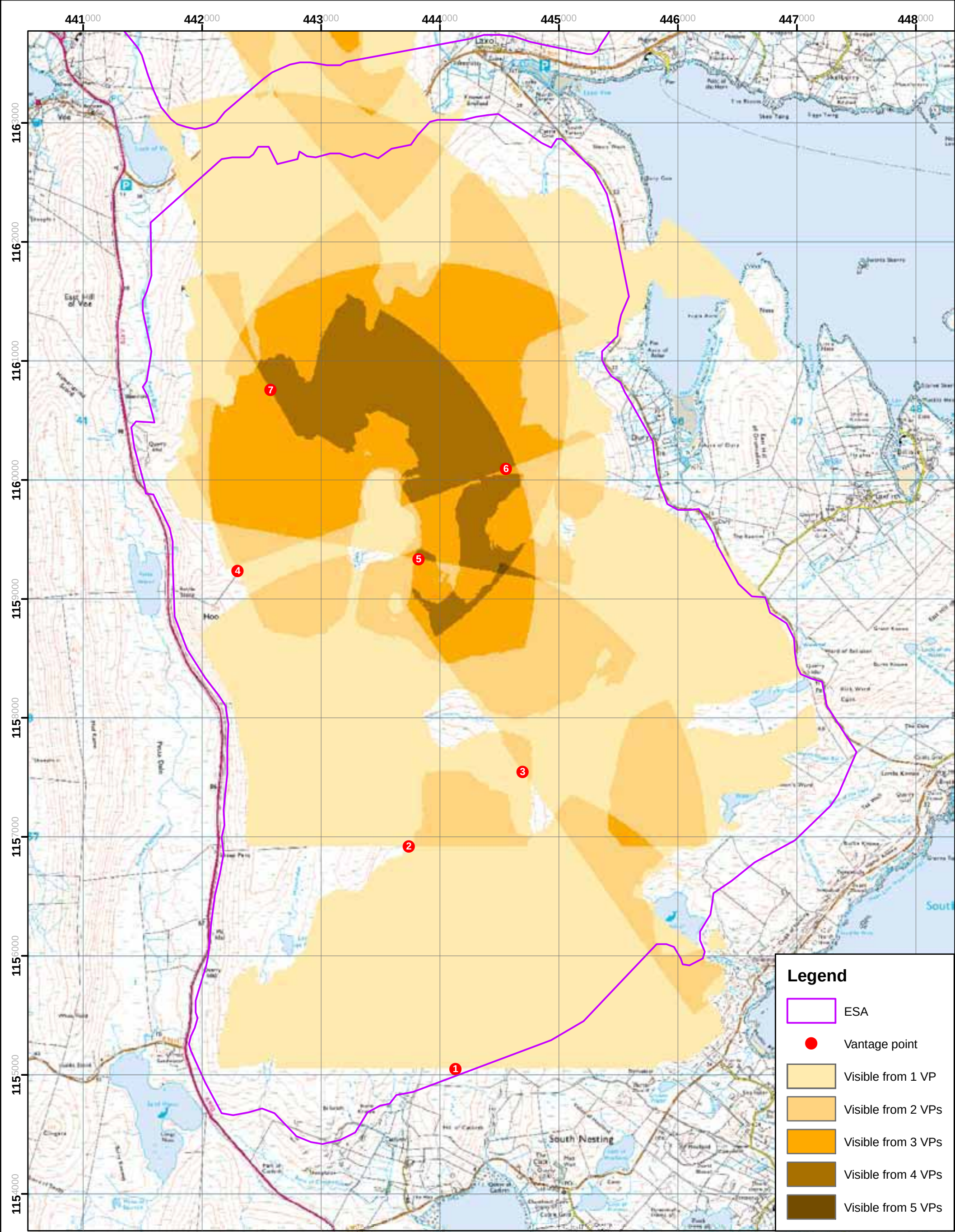
Map 45

Cumulative ESA Viewshed (North). Viewshed truncated at 2.5km

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Viking

Map 46

Cumulative ESA Viewshed (South). Viewshed truncated at 2.5km

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435⁰⁰⁰

440⁰⁰⁰

445⁰⁰⁰

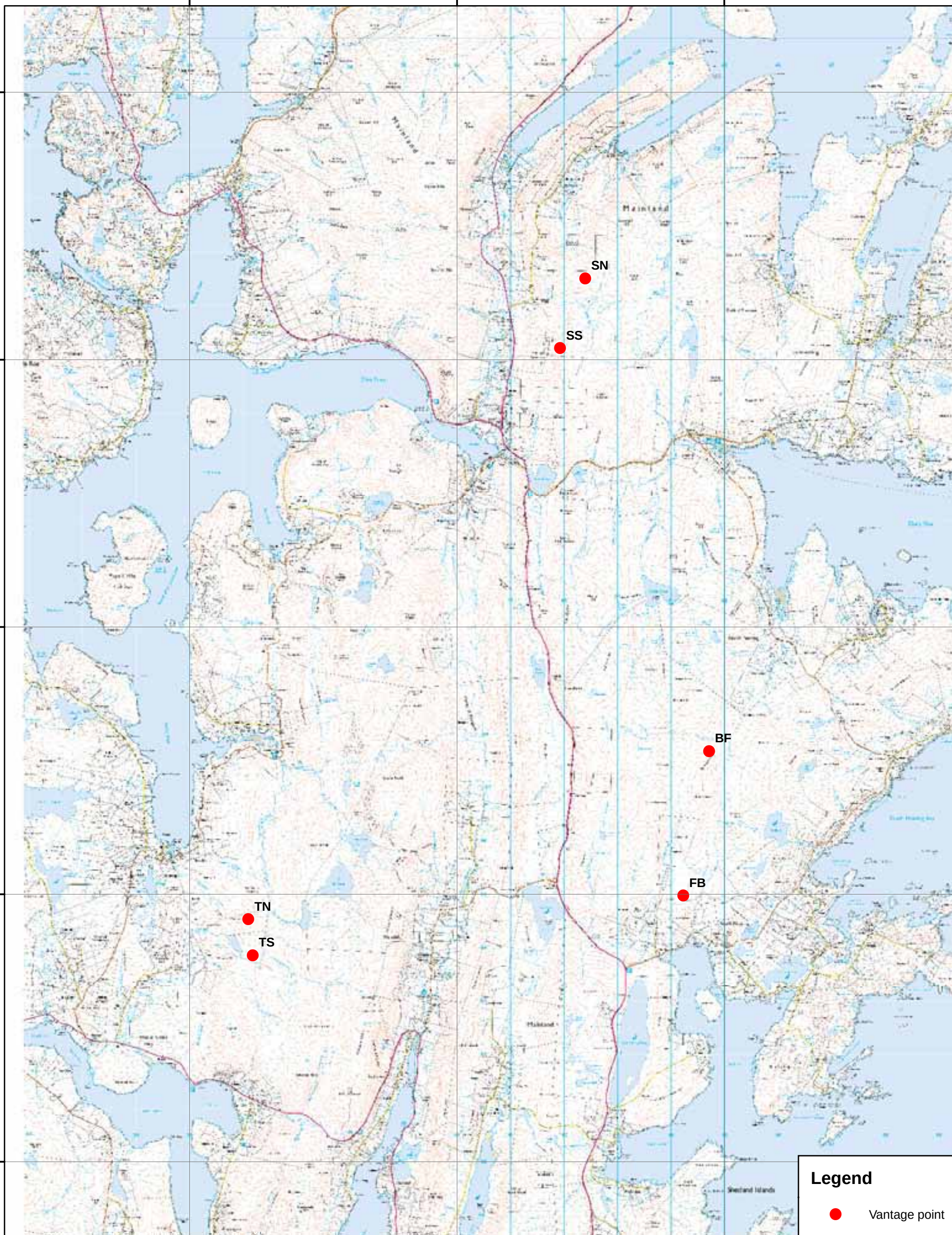
117⁰⁰⁰⁰

116⁵⁰⁰⁰

116⁰⁰⁰⁰

115⁵⁰⁰⁰

115⁰⁰⁰⁰



Legend

● Vantage point

Viking

Map 47

Vantage points used for distance detection study in 2007

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435000

440000

445000

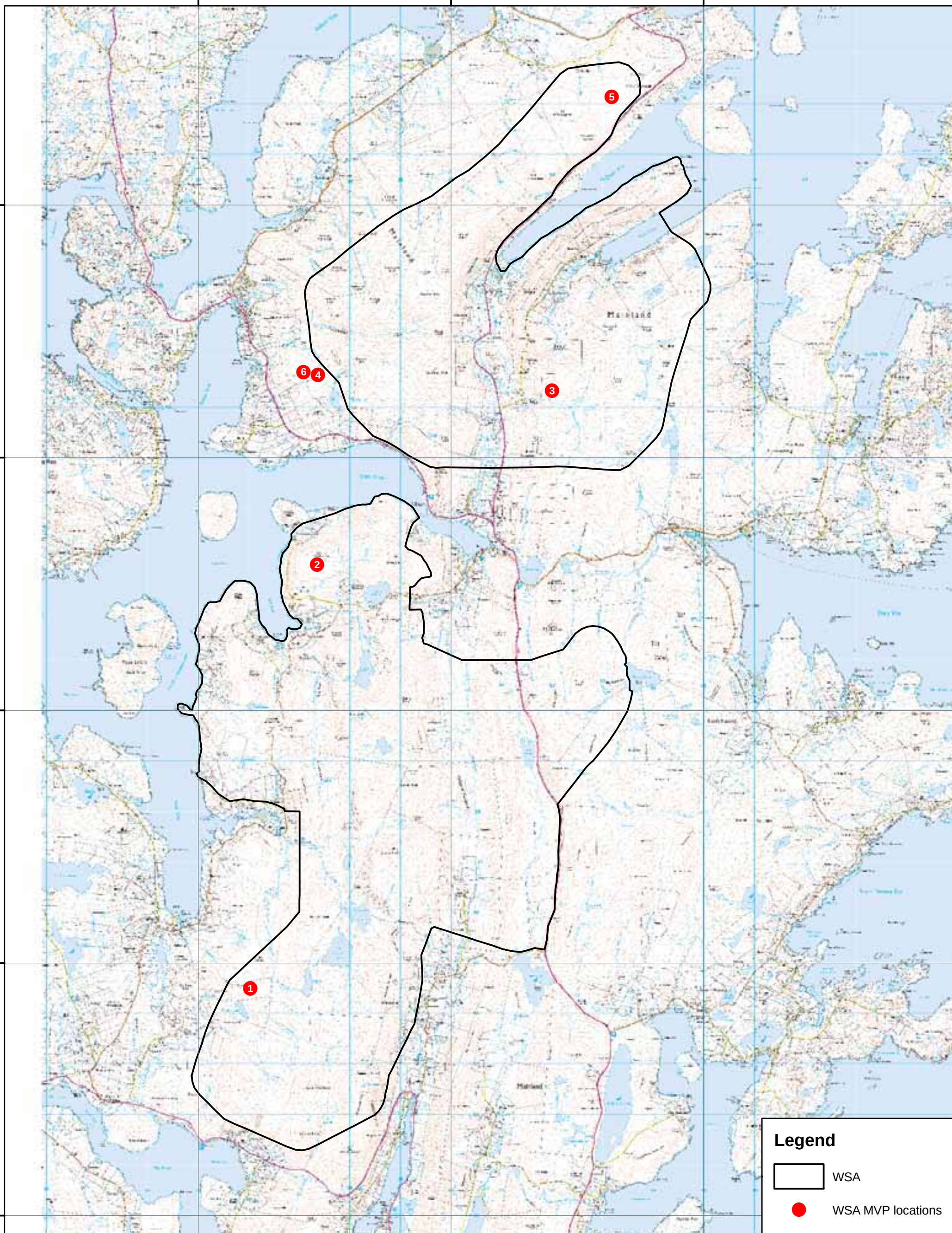
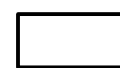
1170000

1165000

1160000

1155000

1150000

**Legend**

WSA



WSA MVP locations

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Viking**Map 48**

VPs used during migration watches in the WSA

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440000

445000

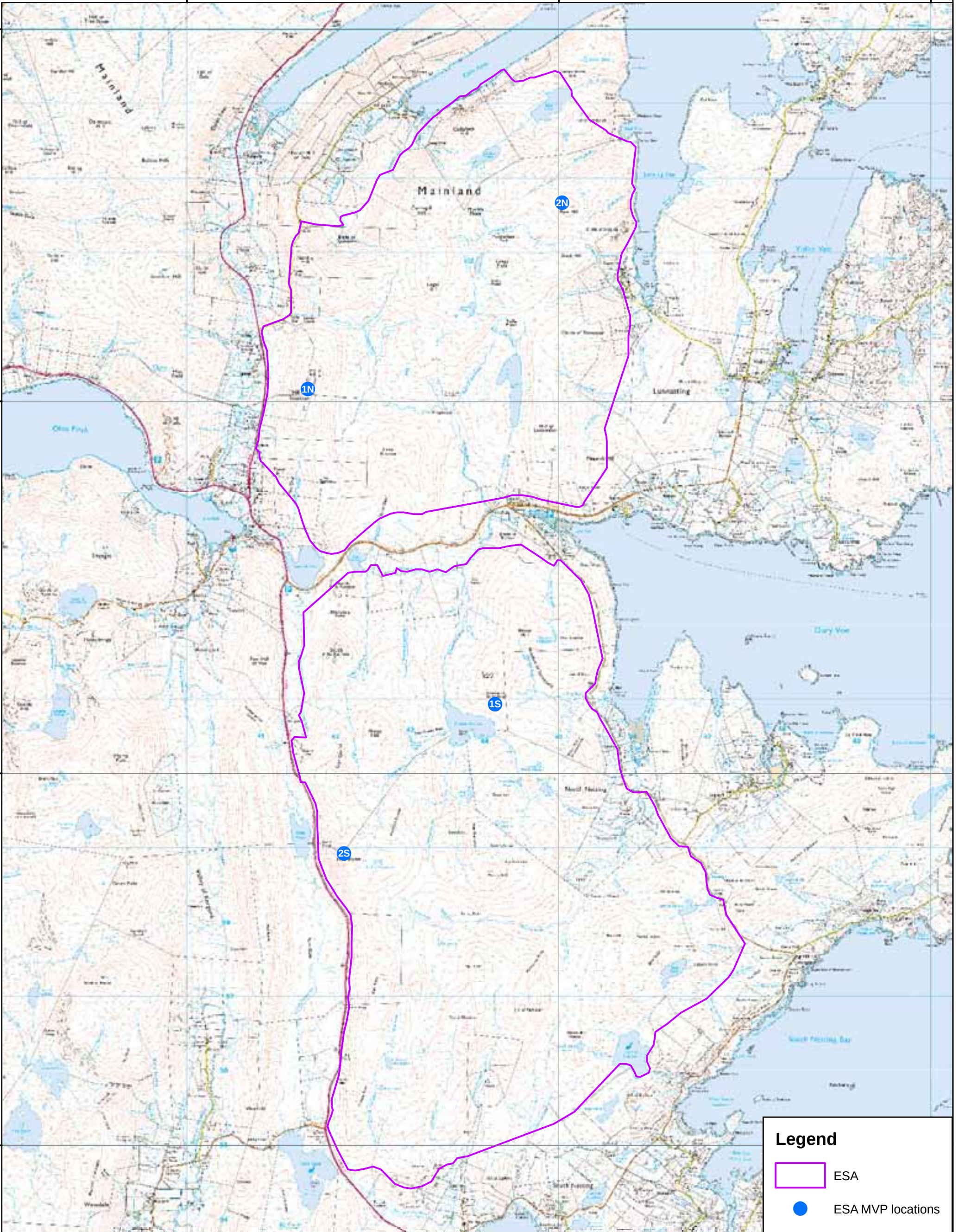
450000

1170000

1165000

1160000

1155000



Legend



ESA



ESA MVP locations

Viking

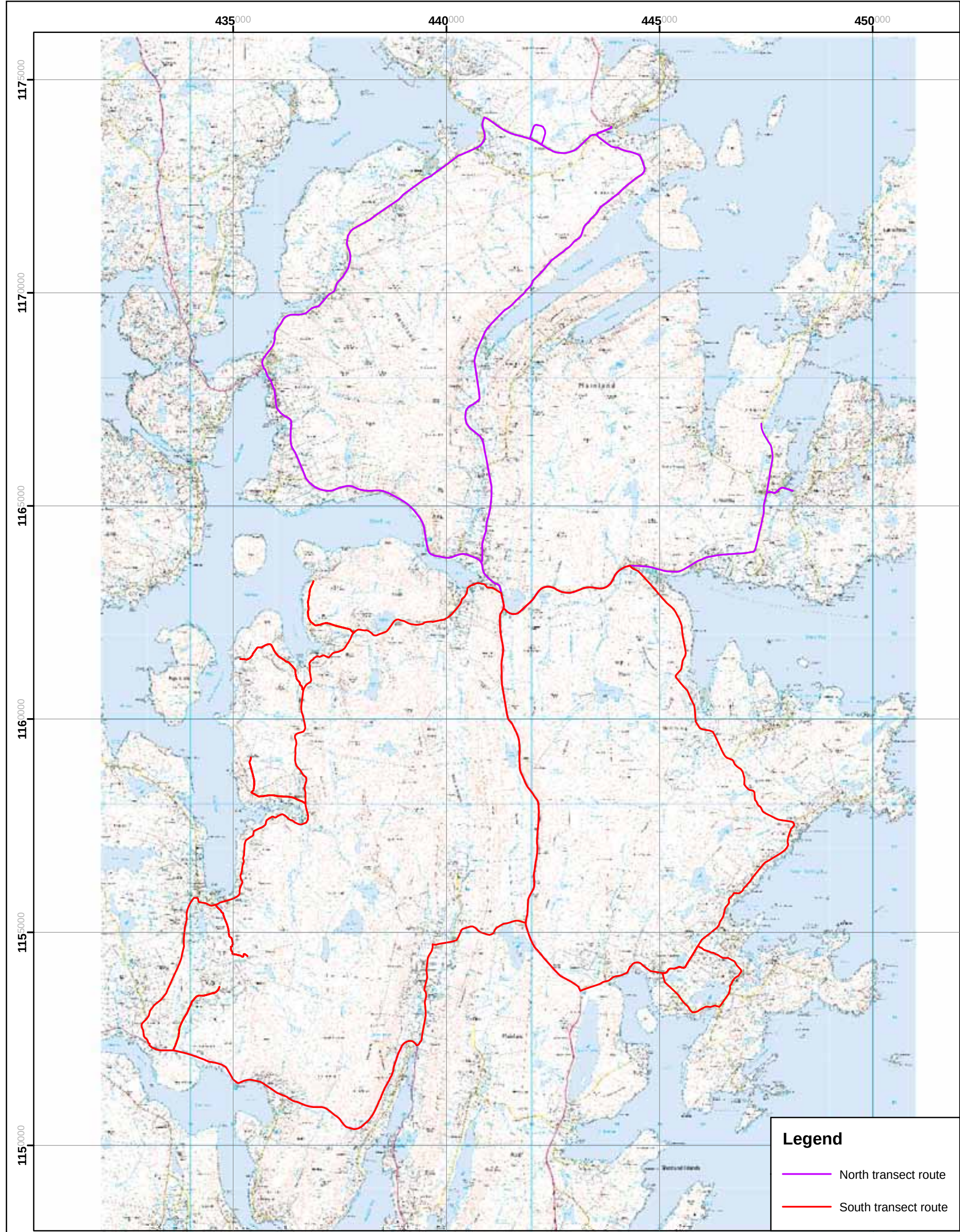
Map 49

VPs used during migration watches in the ESA

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Viking

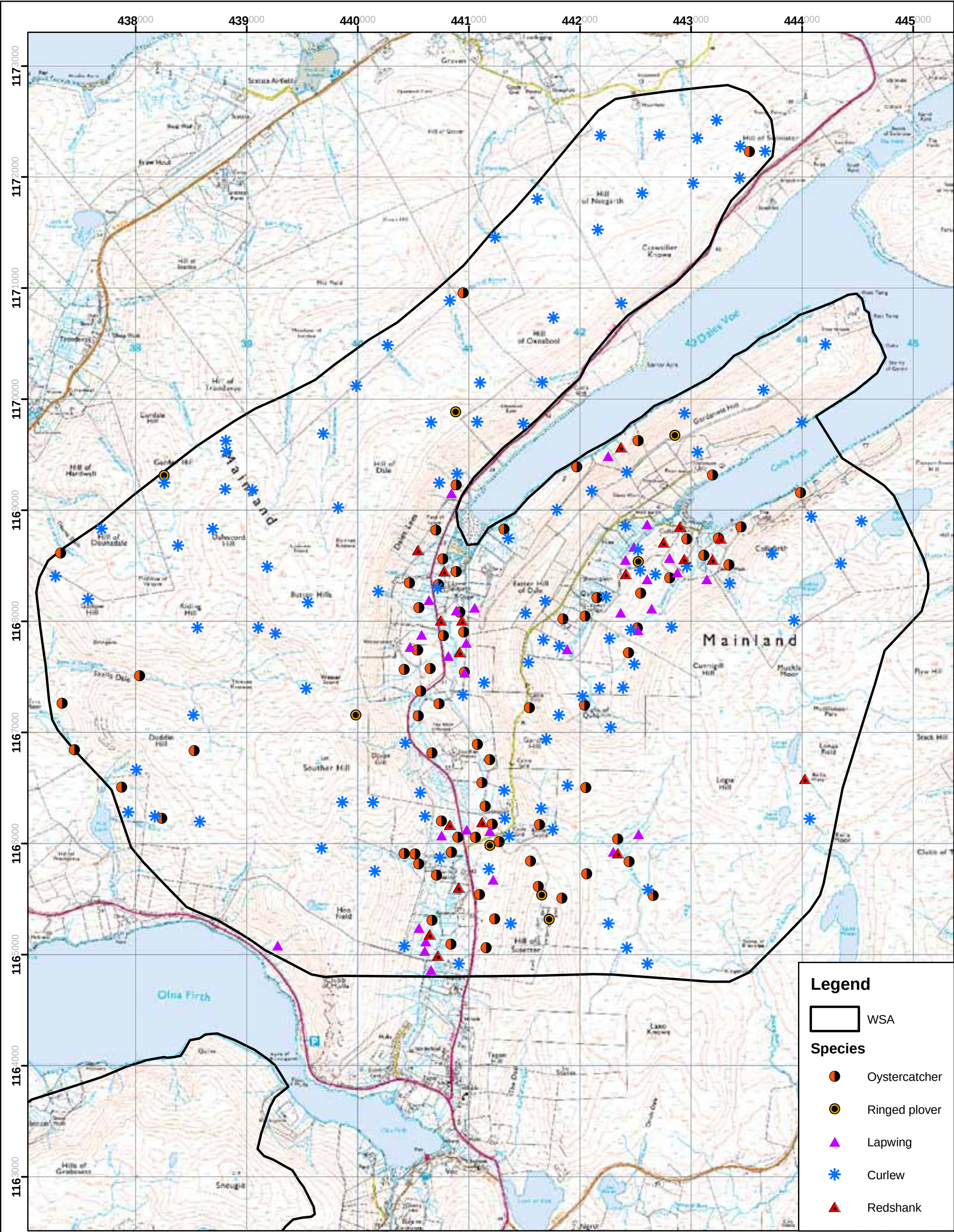
Map 50

Transect routes used to count
whooper swans in autumn / winter

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Legend

WSA

Species

- Oystercatcher
- Ringed plover
- Lapwing
- Curlew
- Redshank

Viking

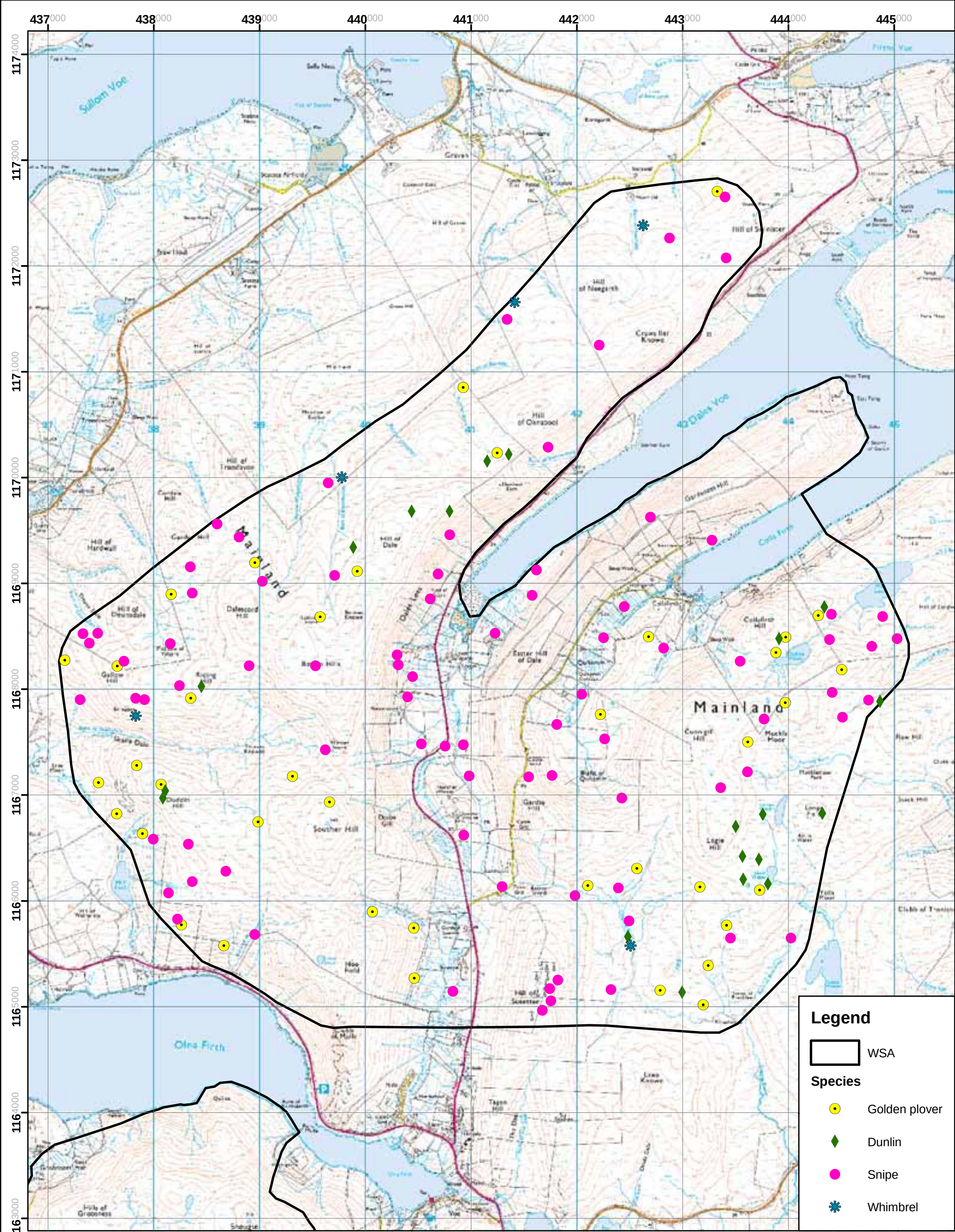
Map 52

Location of moorland breeding bird territories, WSA 2005 (North)

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31st March 2009



Viking

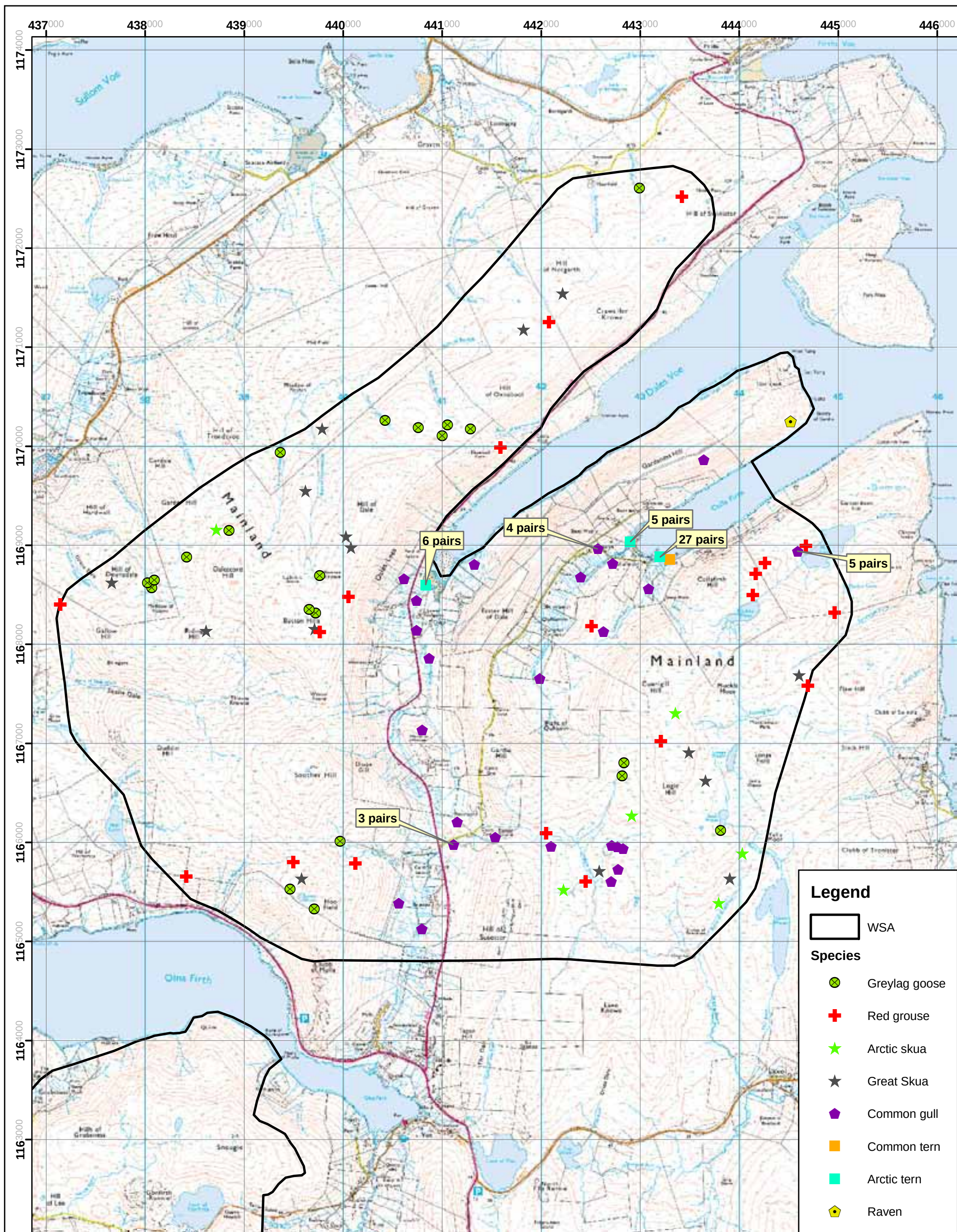
Map 53

Location of moorland breeding bird territories, WSA 2005 (North)

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Legend

WSA

Species

- Greylag goose
- Red grouse
- Arctic skua
- Great Skua
- Common gull
- Common tern
- Arctic tern
- Raven

Viking

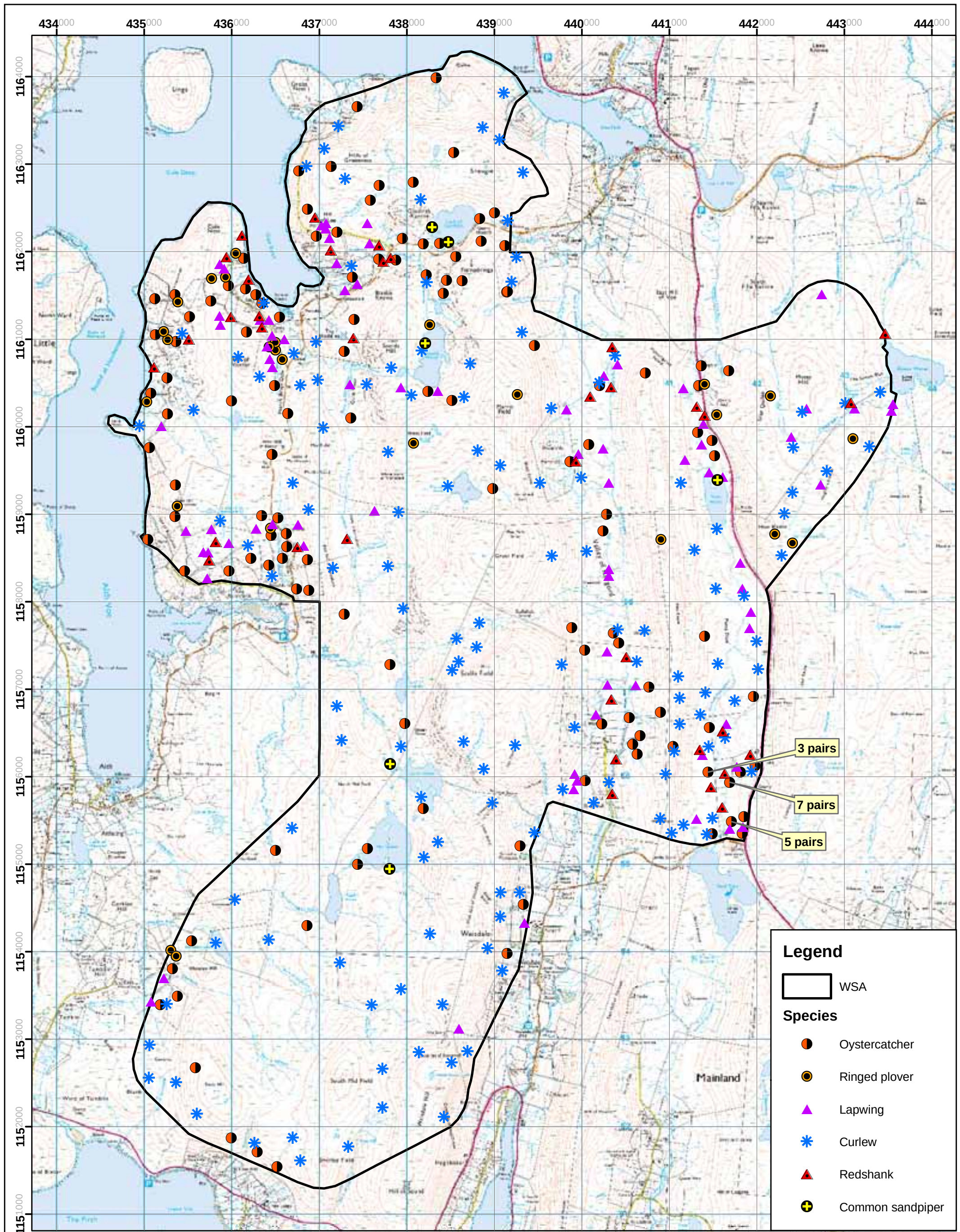
Map 54

Location of moorland breeding bird territories, WSA 2005 (North)

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31st March 2009



Legend

WSA

Species

- Oystercatcher
- Ringed plover
- Lapwing
- Curlew
- Redshank
- Common sandpiper

Viking

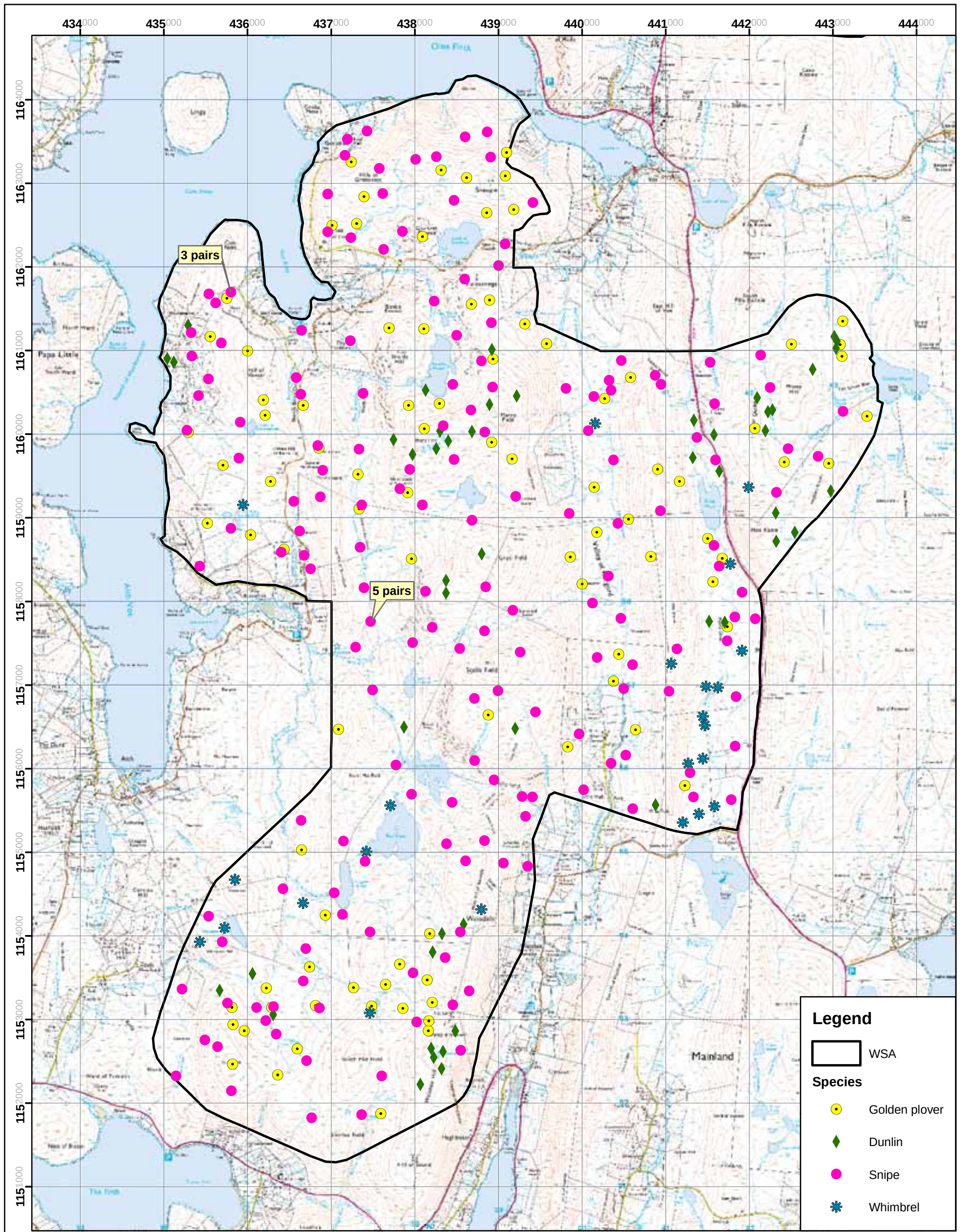
Map 55

Location of moorland breeding bird territories, WSA 2005 (South)

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31st March 2009



Viking

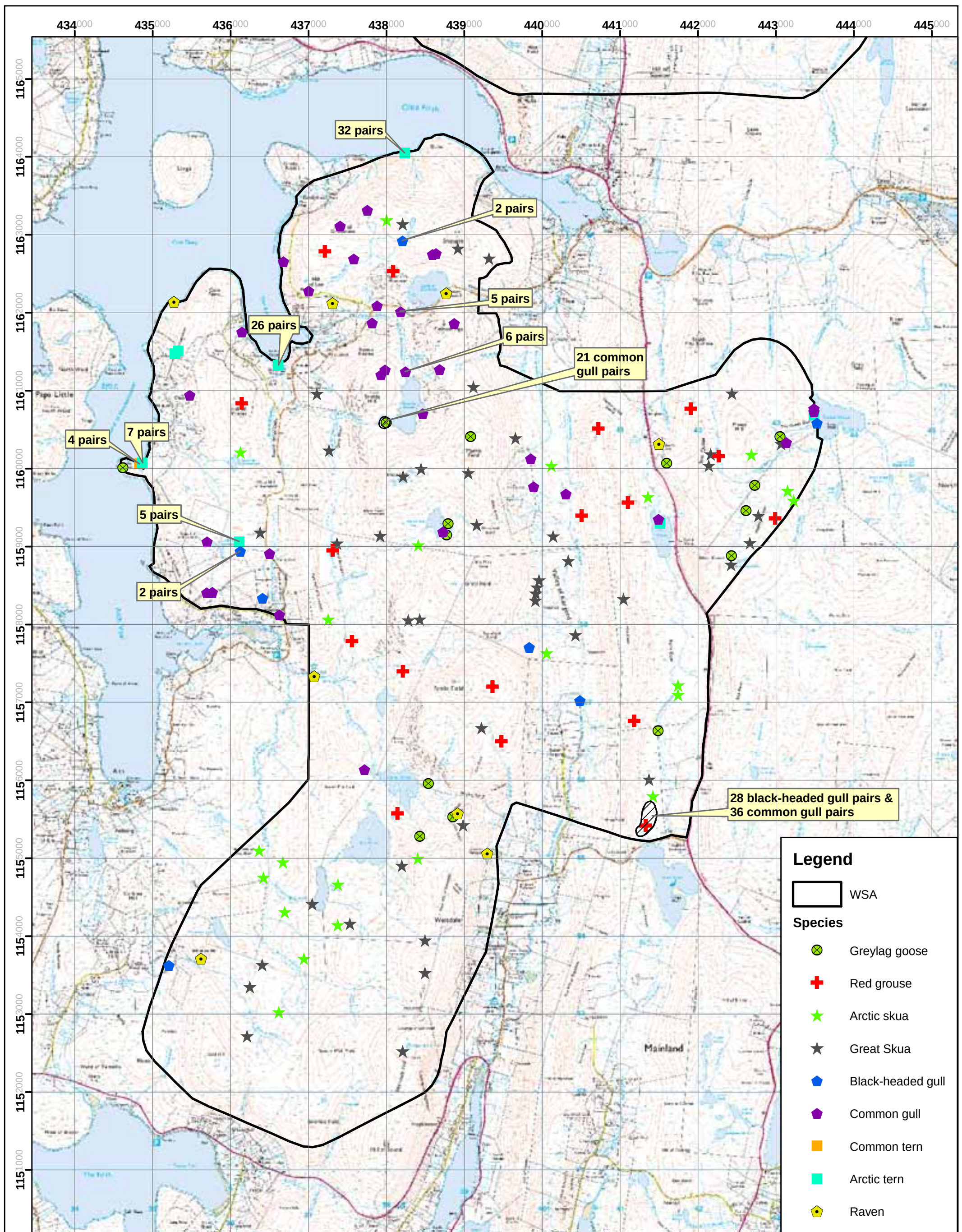
Map 56

Location of moorland breeding bird territories, WSA 2005 (South)

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Viking

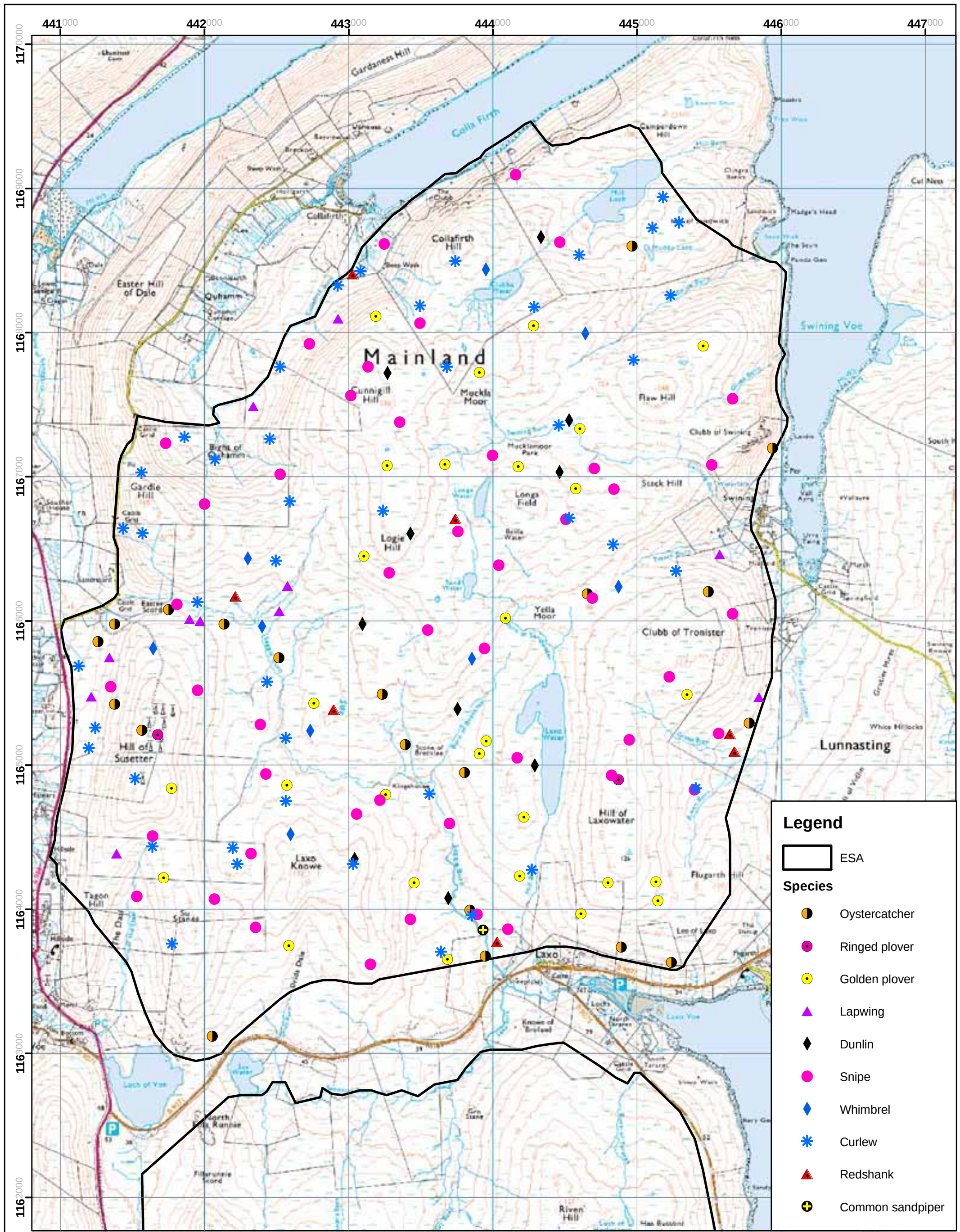
Map 57

Location of moorland breeding bird territories, WSA 2005 (South)

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Legend

ESA

Species

- Oystercatcher
- Ringed plover
- Golden plover
- Lapwing
- Dunlin
- Snipe
- Whimbrel
- Curlew
- Redshank
- Common sandpiper

Viking

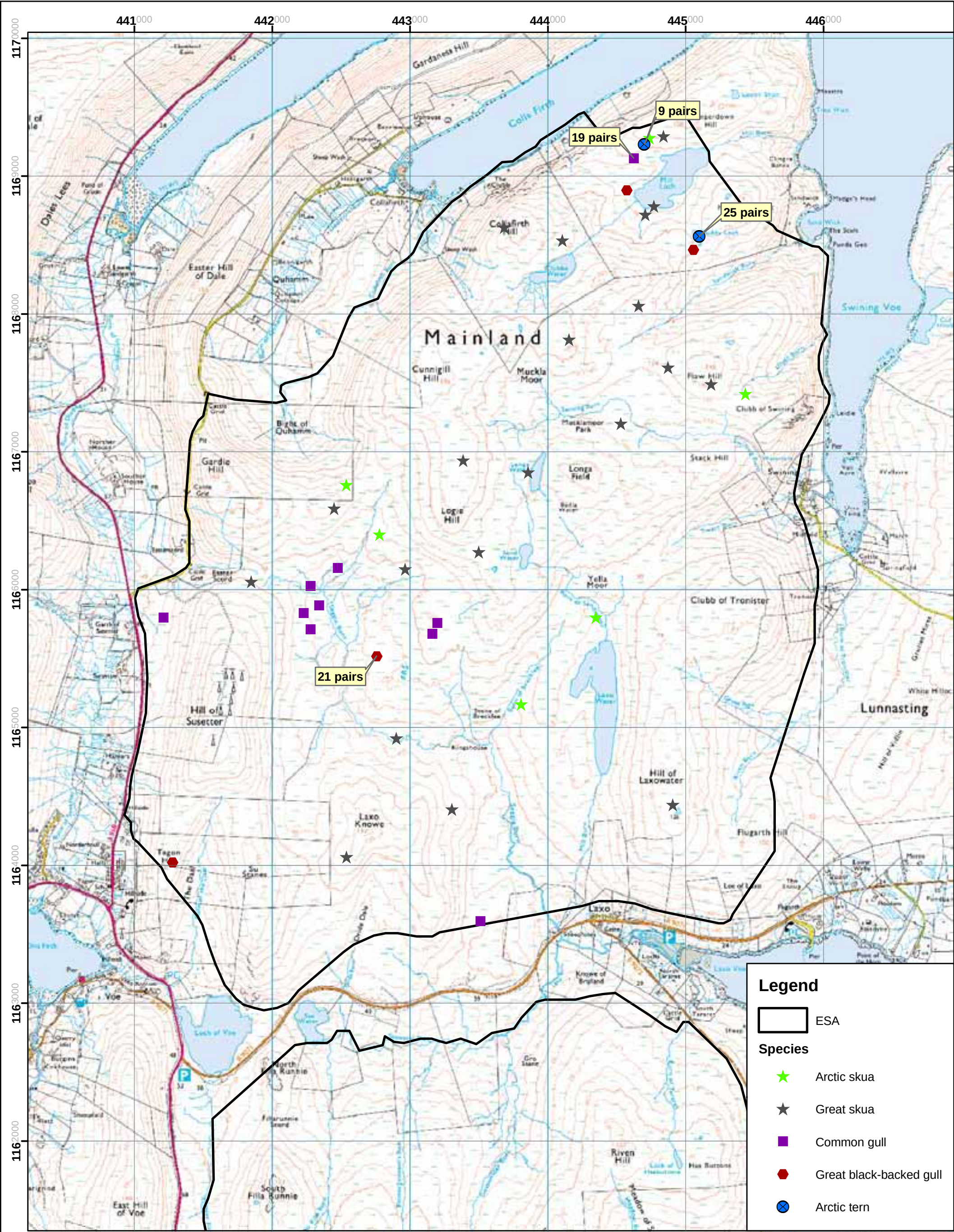
Map 58

Location of moorland breeding bird territories, ESA 2003 (North)

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31st March 2009



Viking

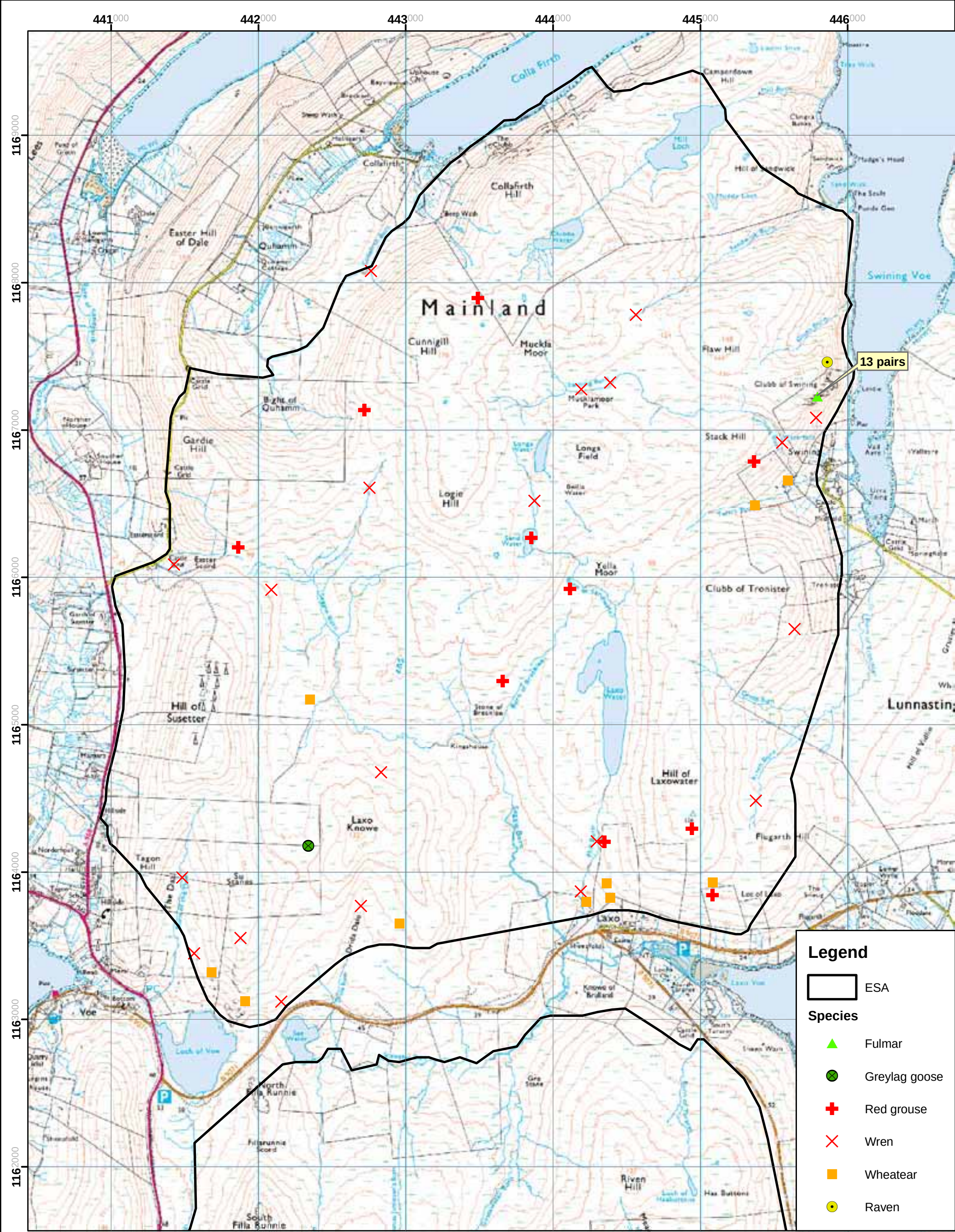
Map 59

Location of moorland breeding bird territories, ESA 2003 (North)

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Legend

ESA

Species

- Fulmar
- Greylag goose
- Red grouse
- Wren
- Wheatear
- Raven

Viking

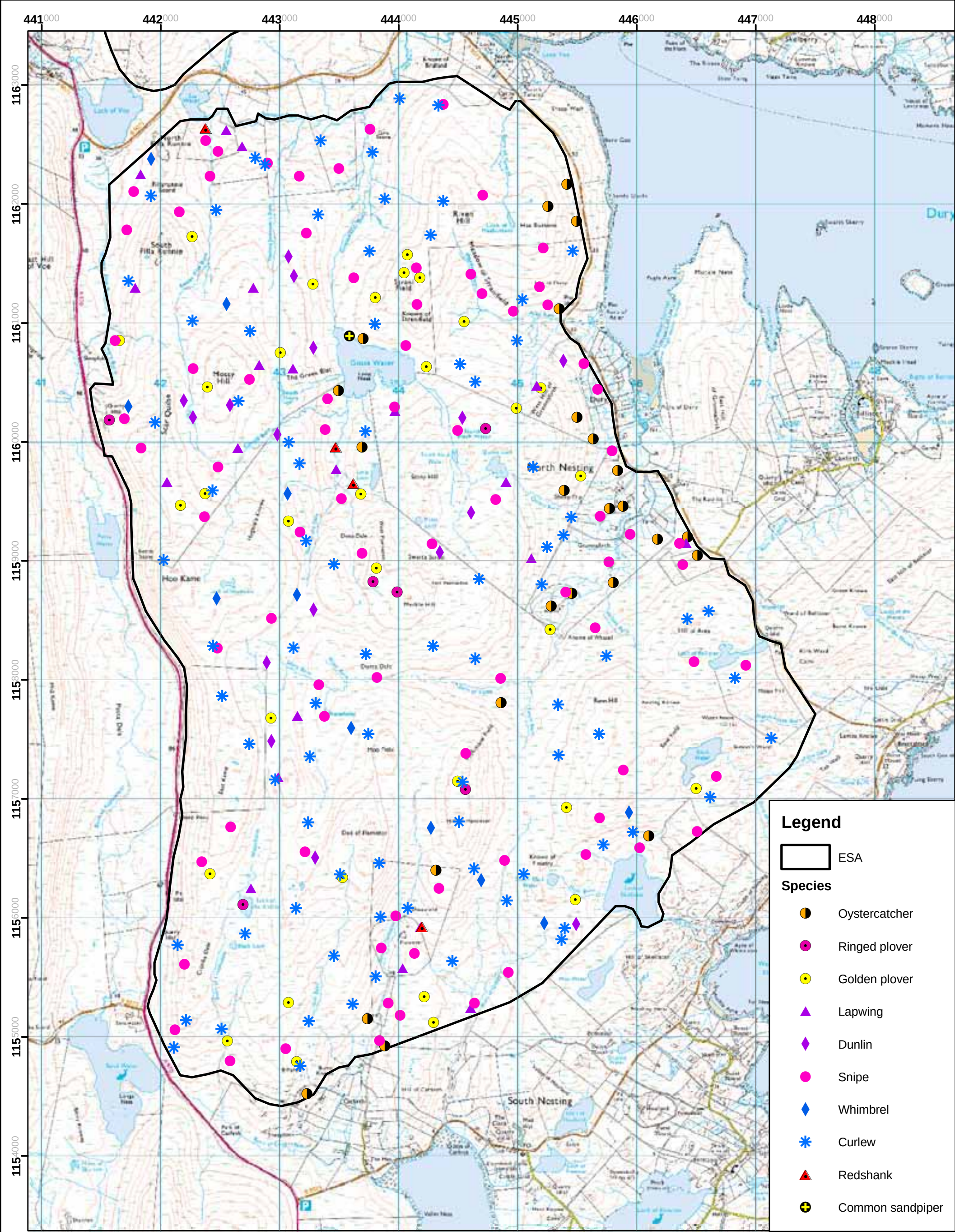
Map 60

Location of moorland breeding bird territories, ESA 2003 (North)

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Viking

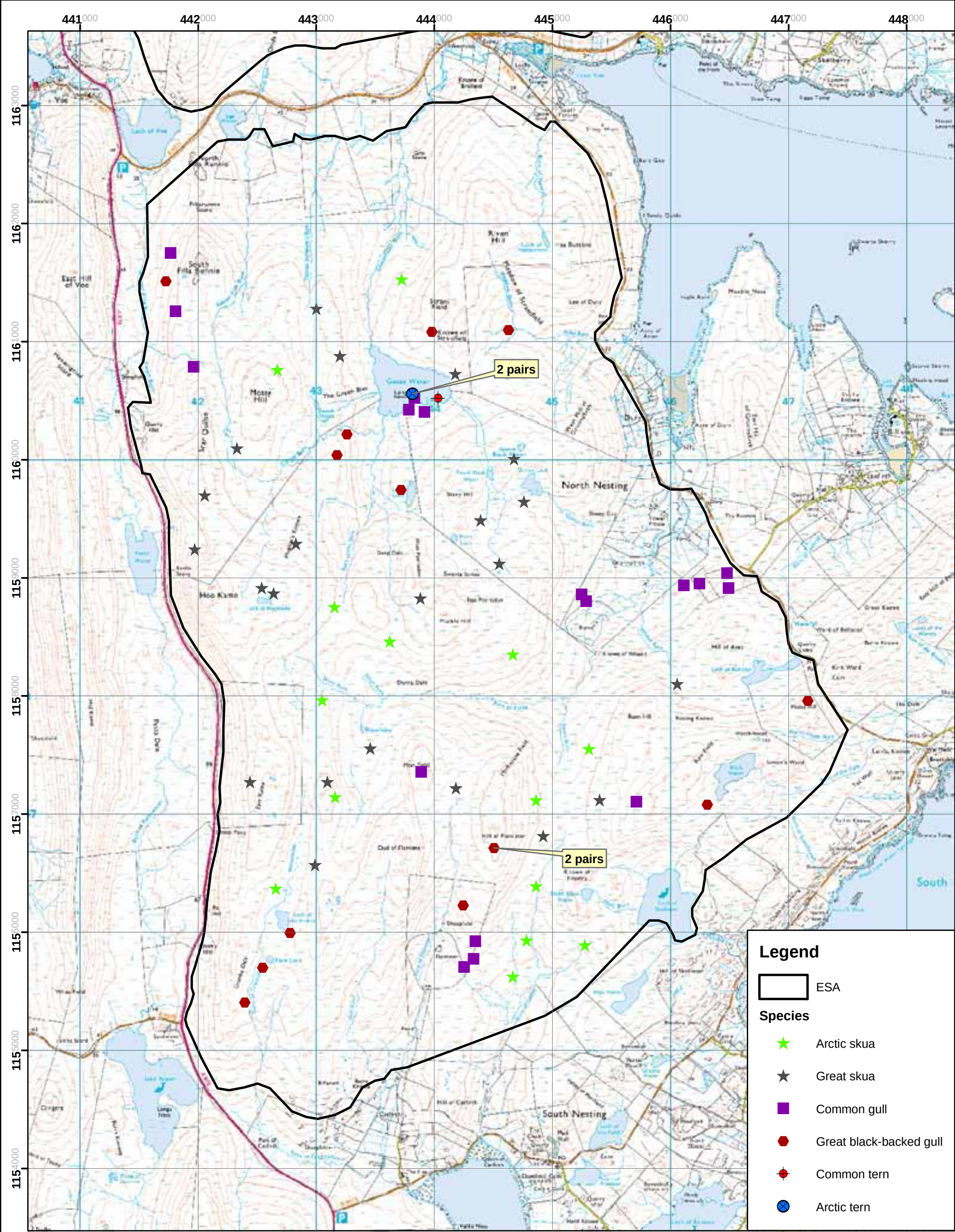
Map 61

Location of moorland breeding bird territories, ESA 2003 (South)

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Viking

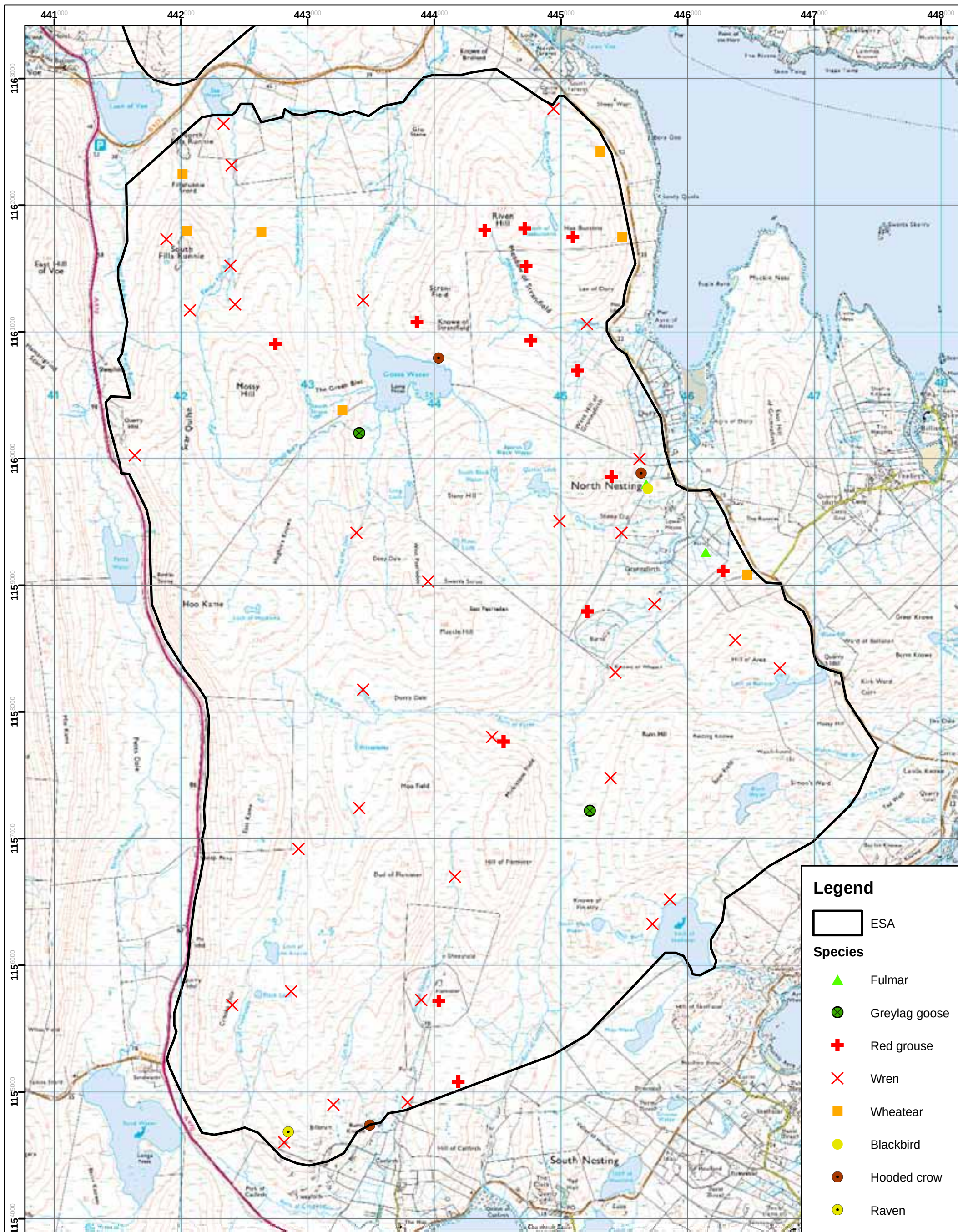
Map 62

Location of moorland breeding bird territories, ESA 2003 (South)

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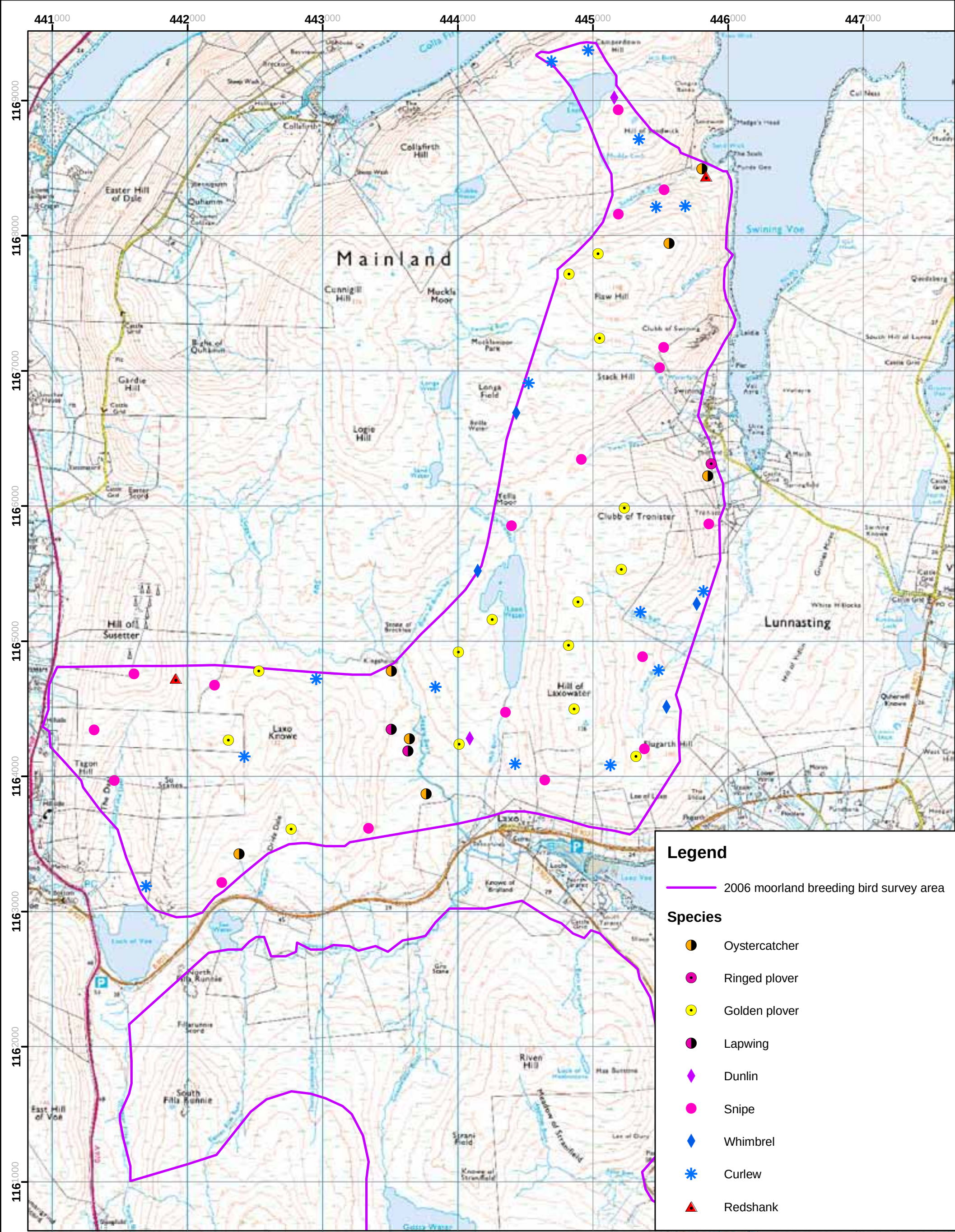


Legend

ESA

Species

- Fulmar
- Greylag goose
- Red grouse
- Wren
- Wheatear
- Blackbird
- Hooded crow
- Raven



Viking

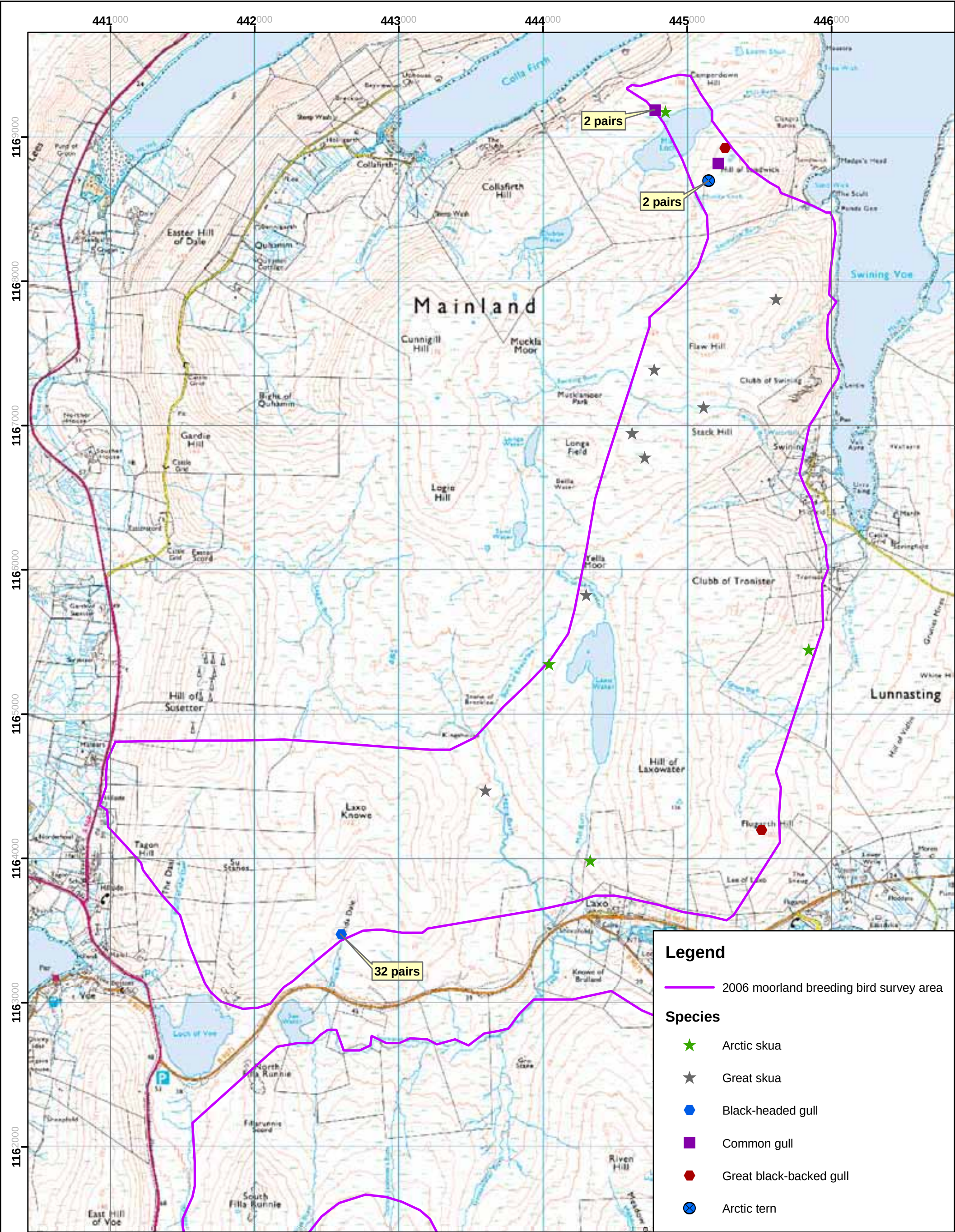
Map 64

Location of moorland breeding bird territories, ESA 2006 (North)

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Viking

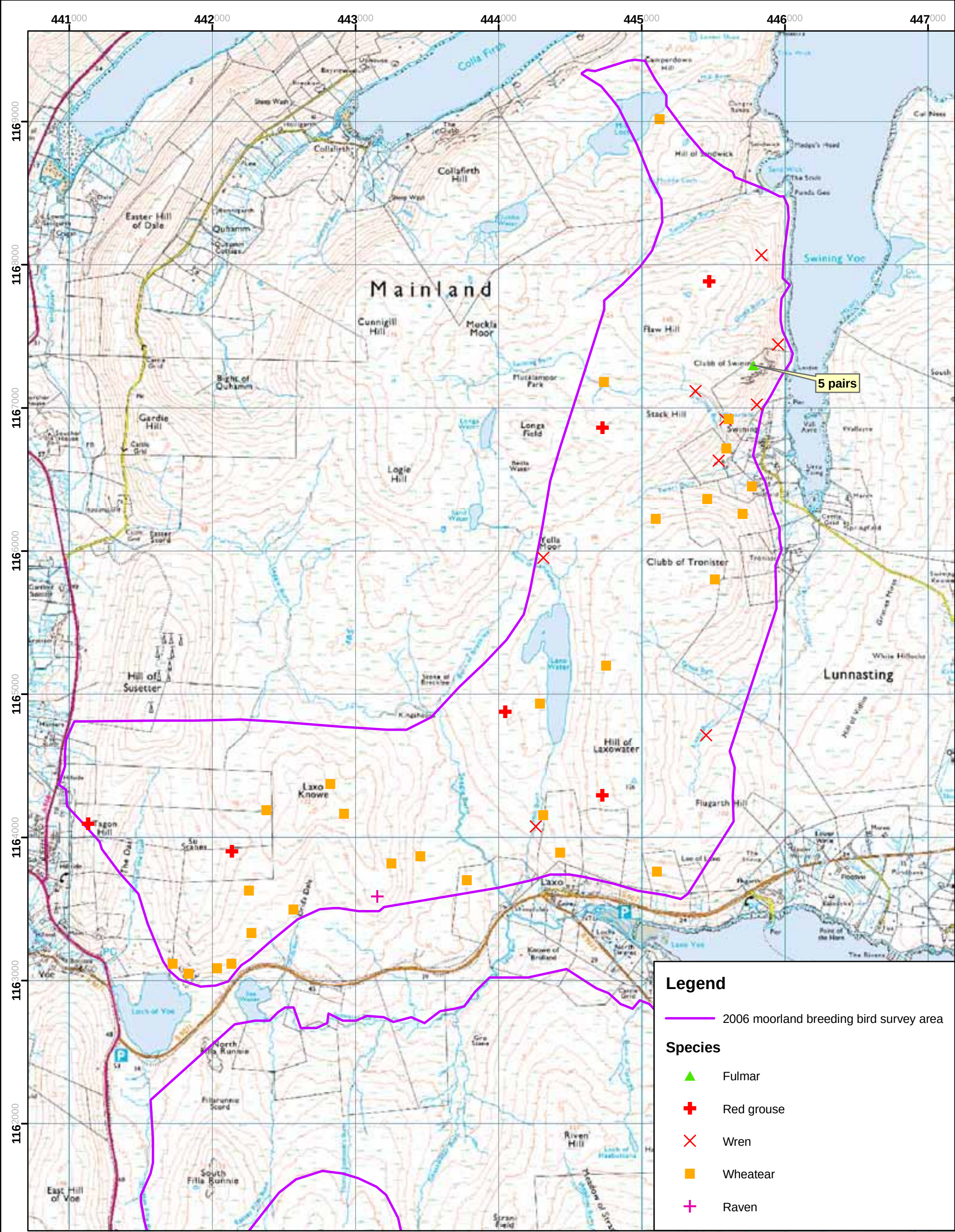
Map 65

Location of moorland breeding bird territories, ESA 2006 (North)

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Viking

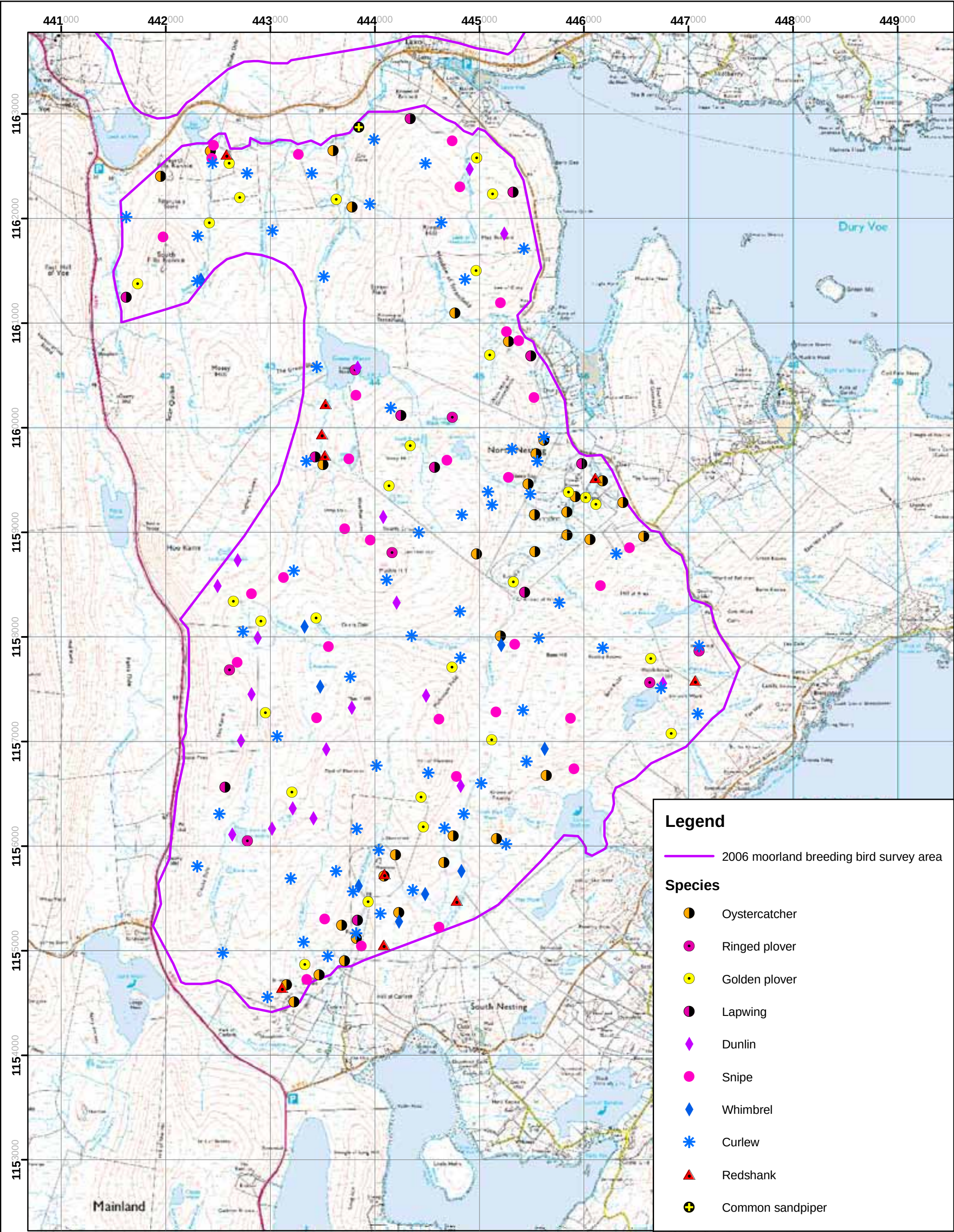
Map 66

Location of moorland breeding bird territories, ESA 2006 (North)

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Viking

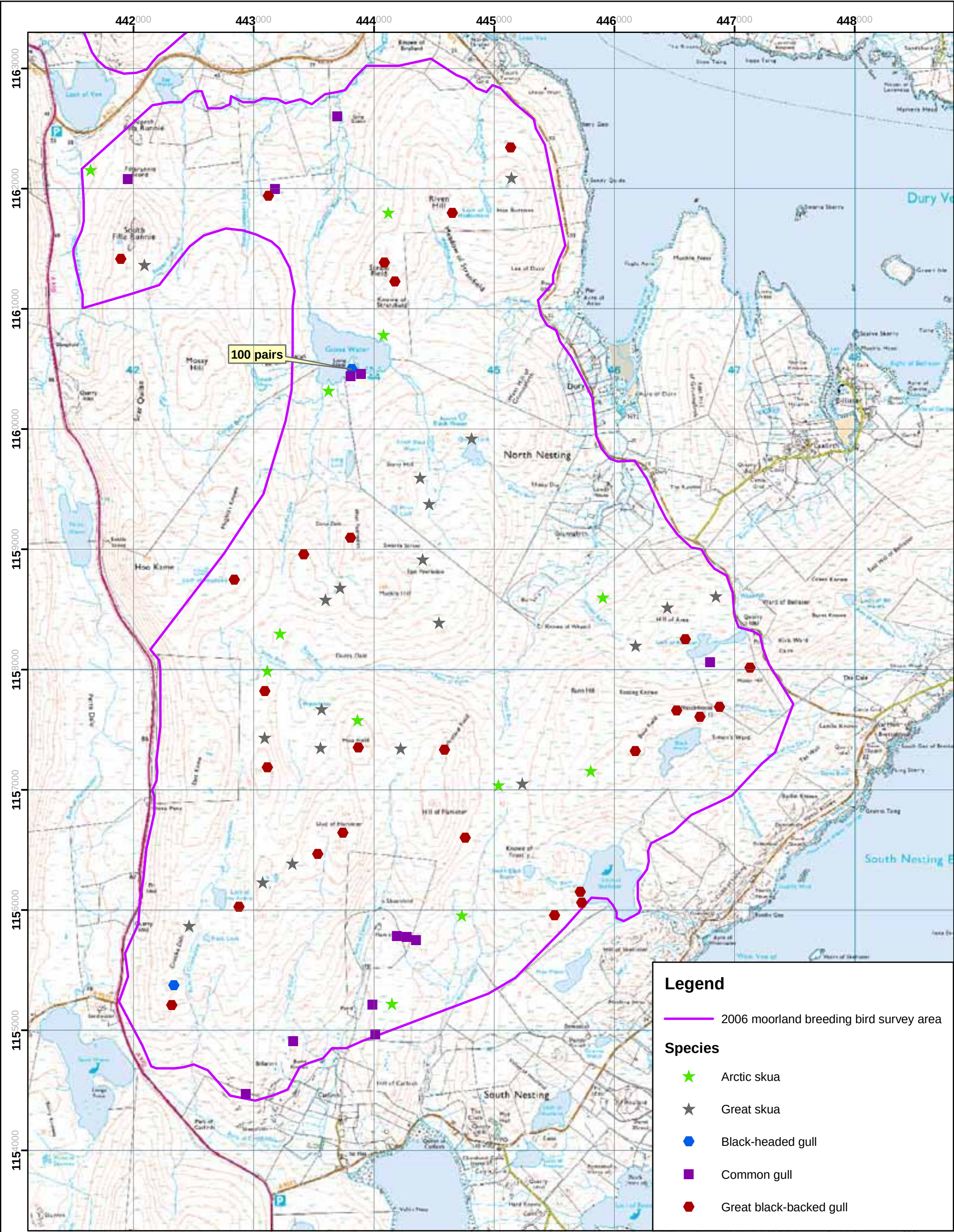
Map 67

Location of moorland breeding bird territories, ESA 2006 (South)

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Viking

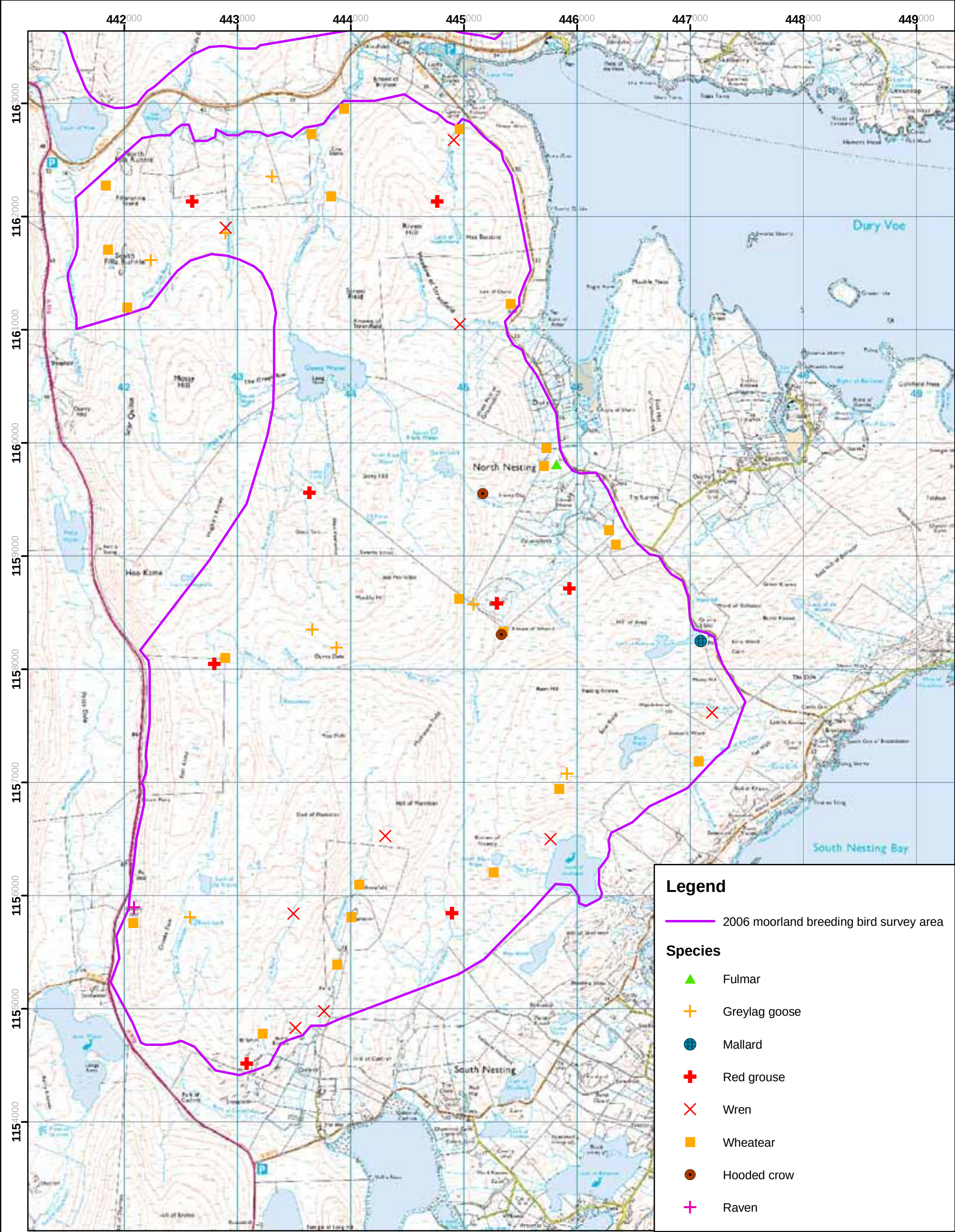
Map 68

Location of moorland breeding bird territories, ESA 2006 (South)

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Viking

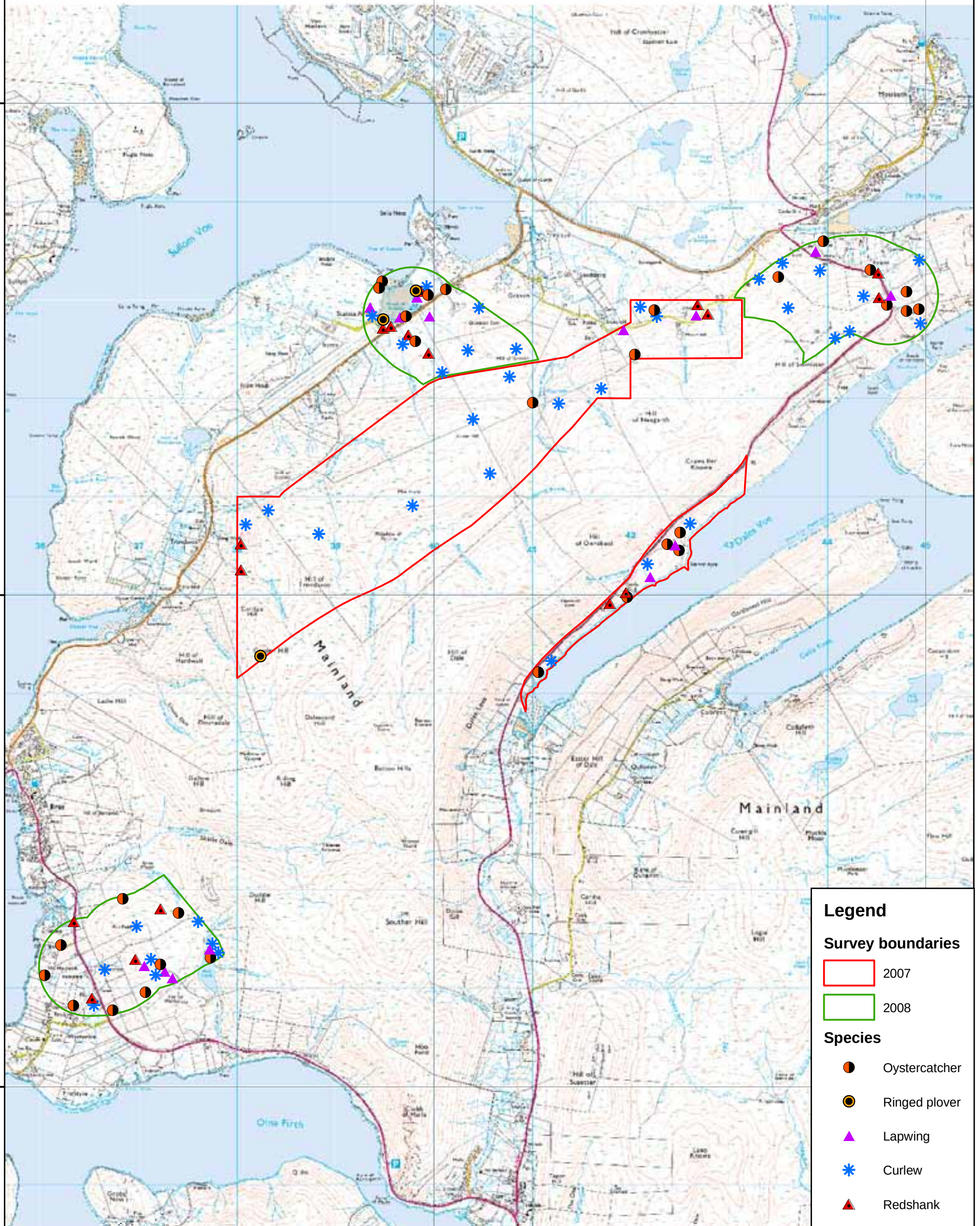
Map 69

Location of moorland breeding bird territories, ESA 2006 (South)

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Legend

Survey boundaries

- 2007
- 2008

Species

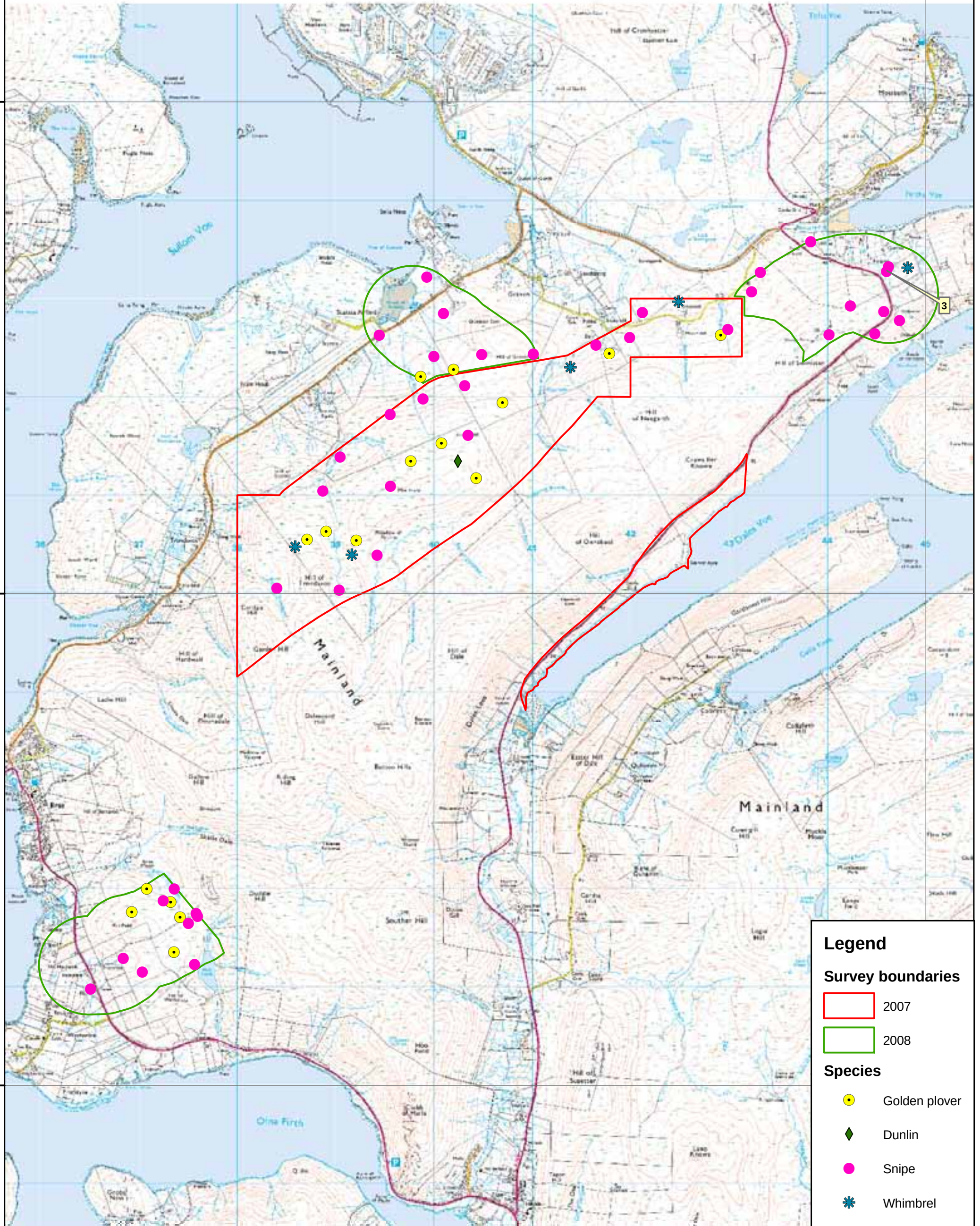
- Oystercatcher
- Ringed plover
- Lapwing
- Curlew
- Redshank

Viking

Map 70

Location of moorland breeding bird territories, extra areas 2007/2008

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Legend

Survey boundaries

2007

2008

Species

Golden plover

Dunlin

Snipe

Whimbrel

Viking

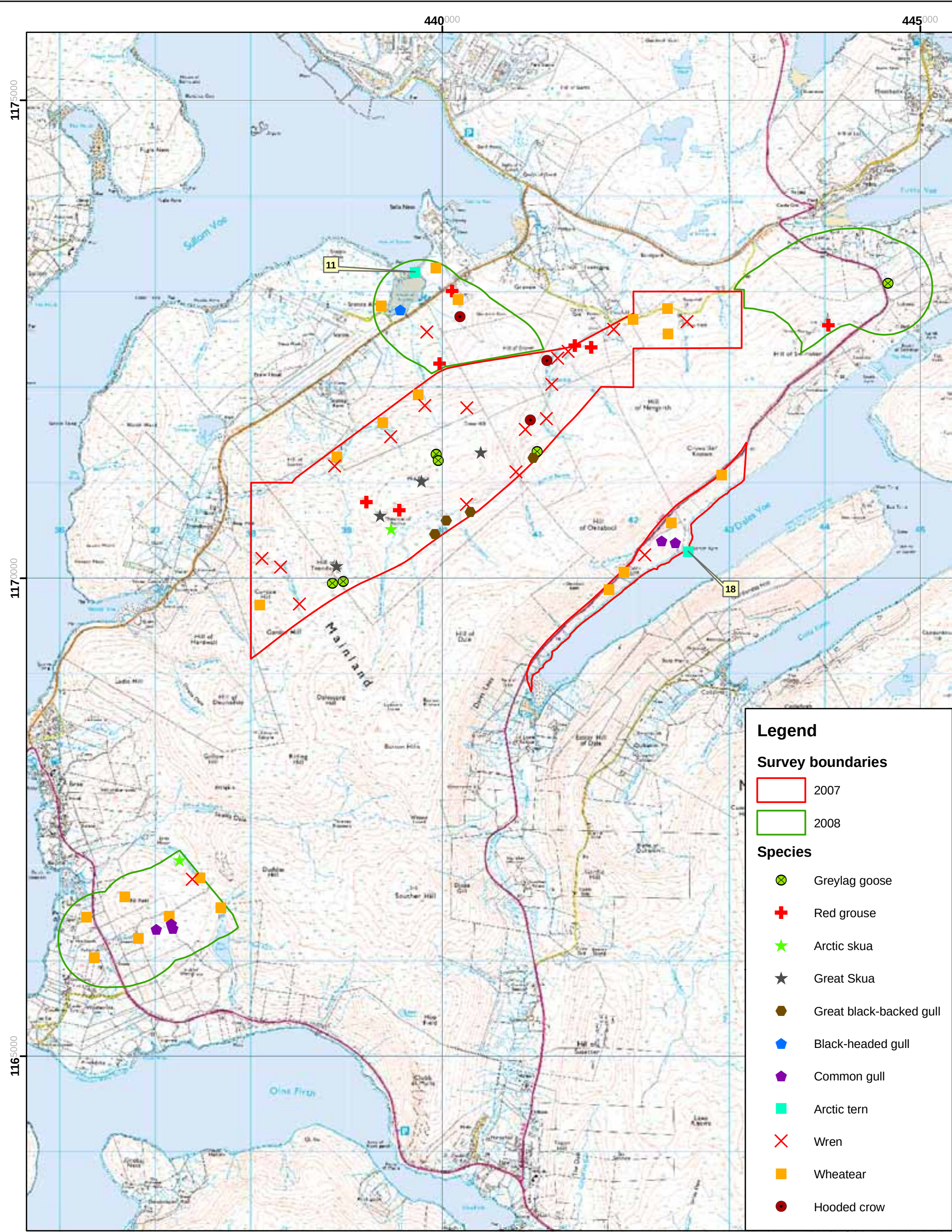
Map 71

Location of moorland breeding bird territories, extra areas 2007/2008

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Legend

Survey boundaries

- 2007
- 2008

Species

- ⊗ Greylag goose
- + Red grouse
- ★ Arctic skua
- ★ Great Skua
- ◆ Great black-backed gull
- ⬠ Black-headed gull
- ⬠ Common gull
- Arctic tern
- × Wren
- Wheatear
- Hooded crow

Viking

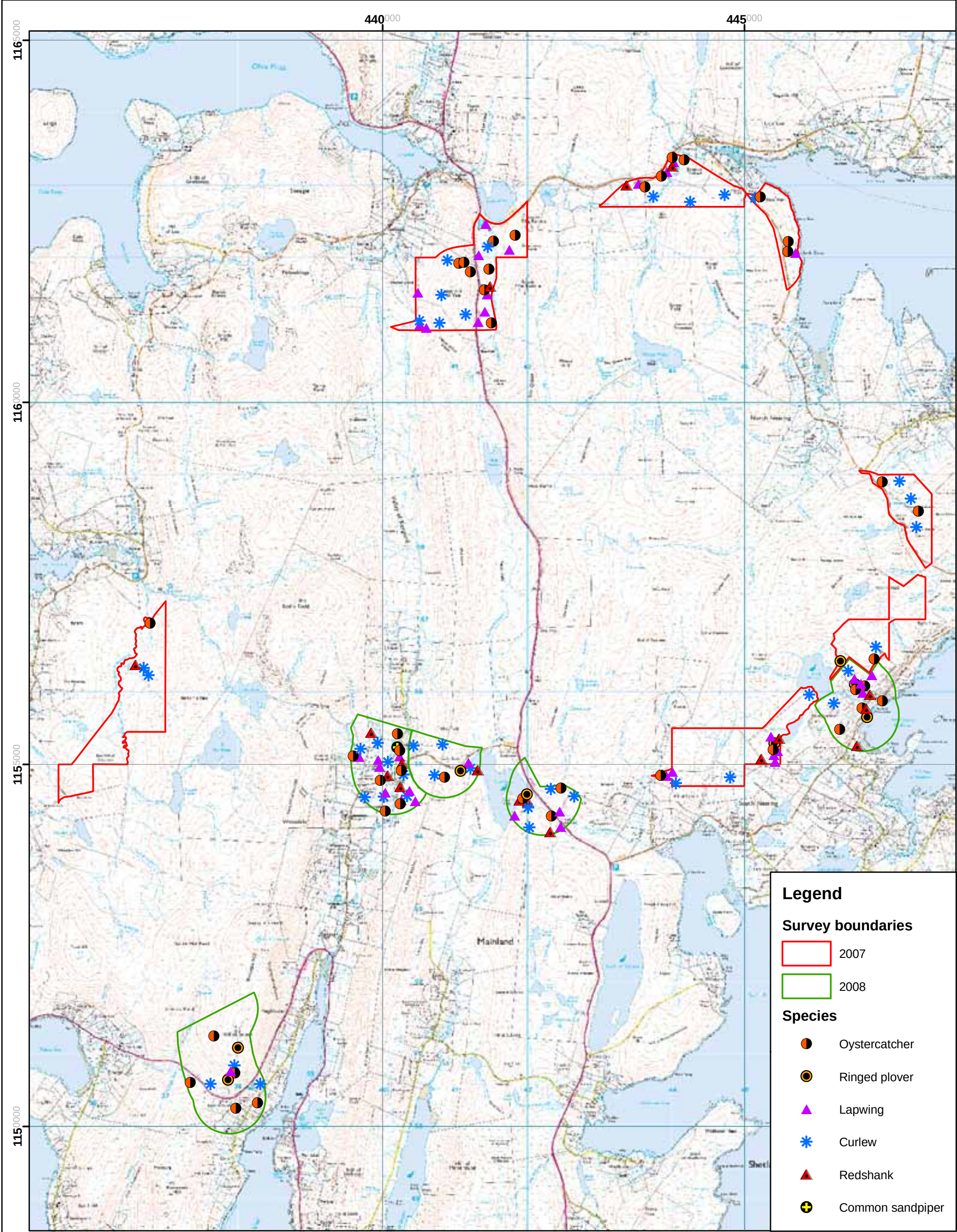
Map 72

Location of moorland breeding bird territories, extra areas 2007/2008

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Viking

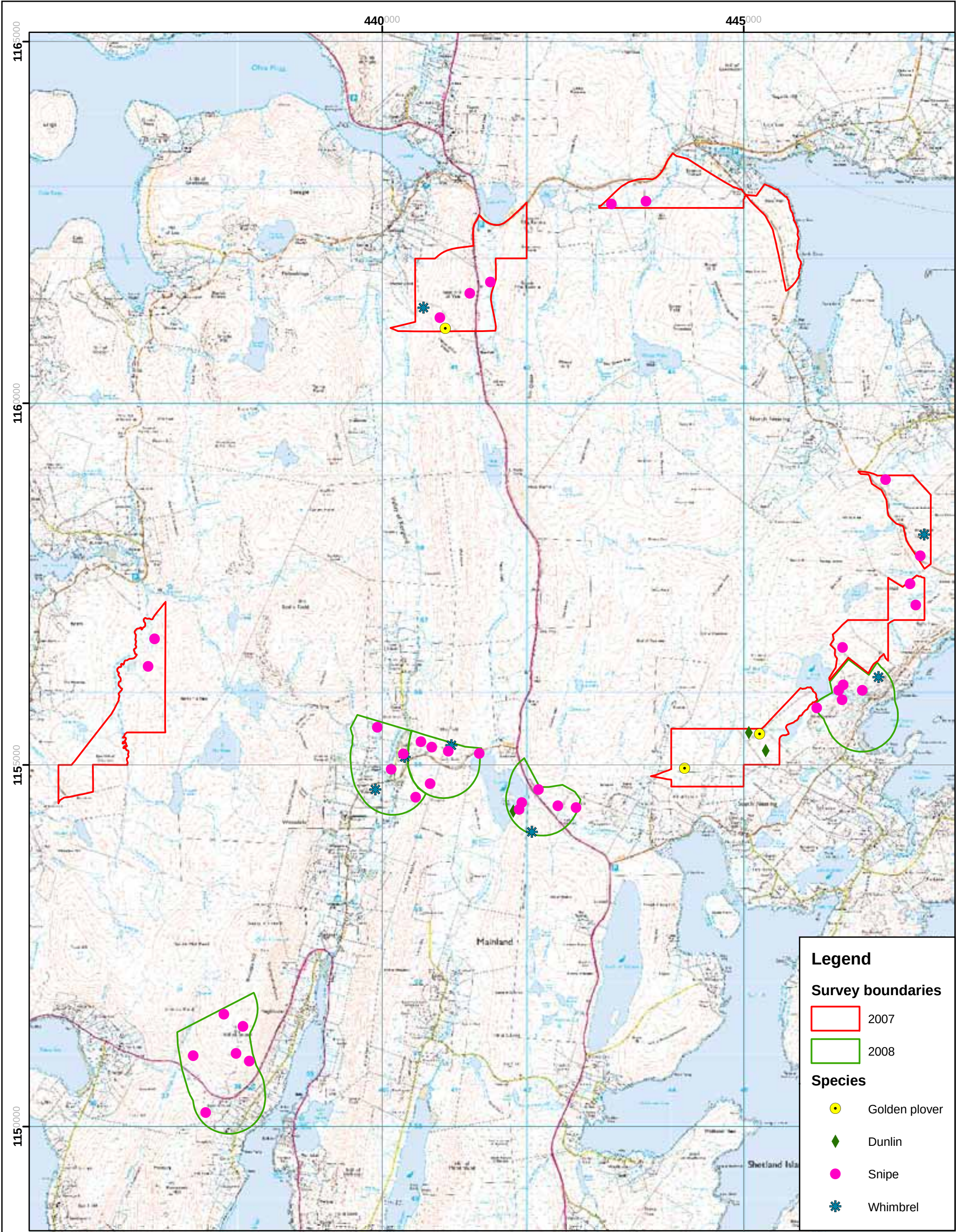
Map 73

Location of moorland breeding bird territories, extra areas 2007/2008

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Viking

Map 74

Location of moorland breeding bird territories, extra areas 2007/2008

Legend

Survey boundaries

2007

2008

Species

Golden plover

Dunlin

Snipe

Whimbrel

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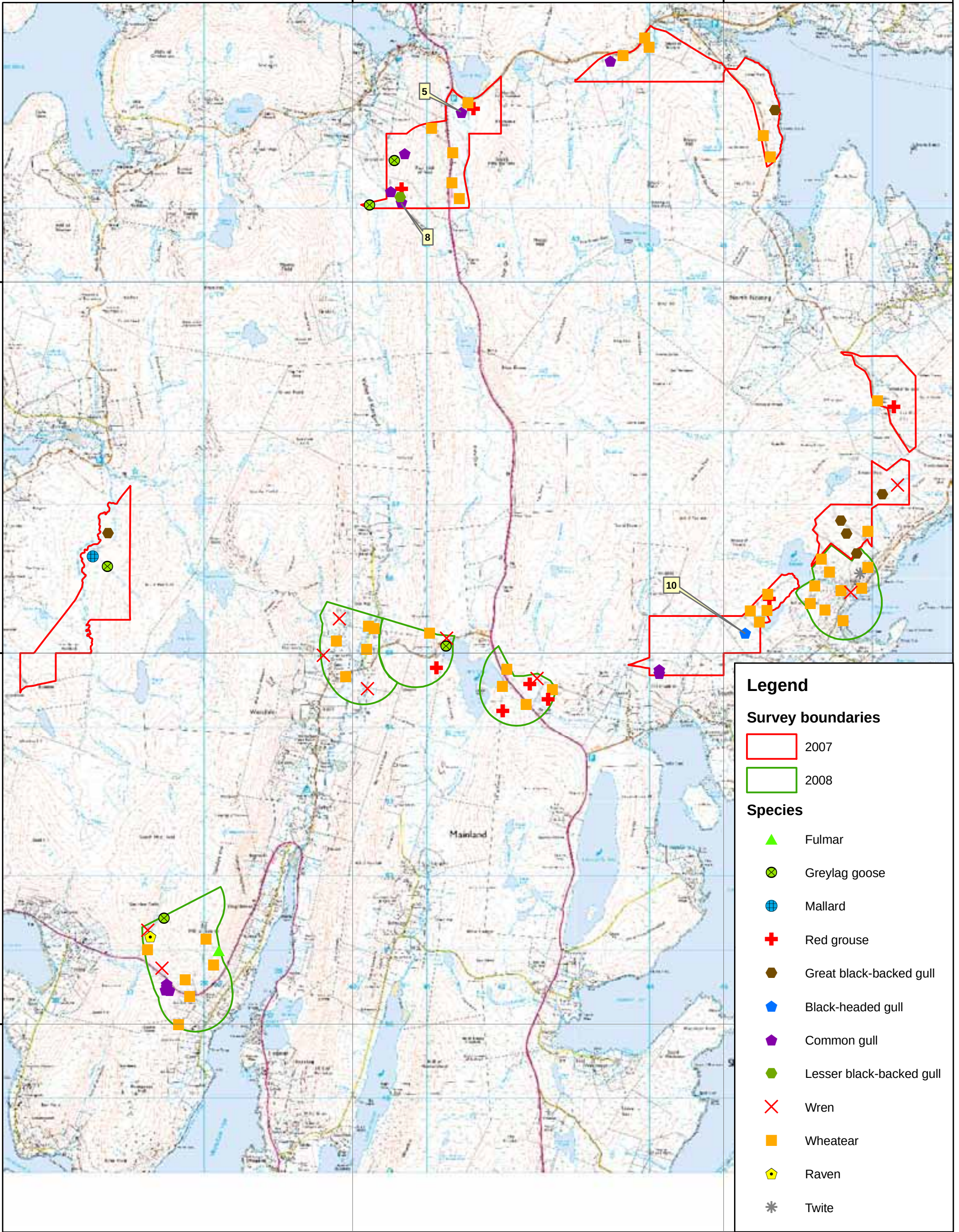
440000

445000

1160000

1155000

1150000



Legend

Survey boundaries

- 2007
- 2008

Species

- ▲ Fulmar
- ⊗ Greylag goose
- ⊗ Mallard
- + Red grouse
- ⬡ Great black-backed gull
- ⬡ Black-headed gull
- ⬡ Common gull
- ⬡ Lesser black-backed gull
- × Wren
- Wheatear
- ⬡ Raven
- ✱ Twite

Viking

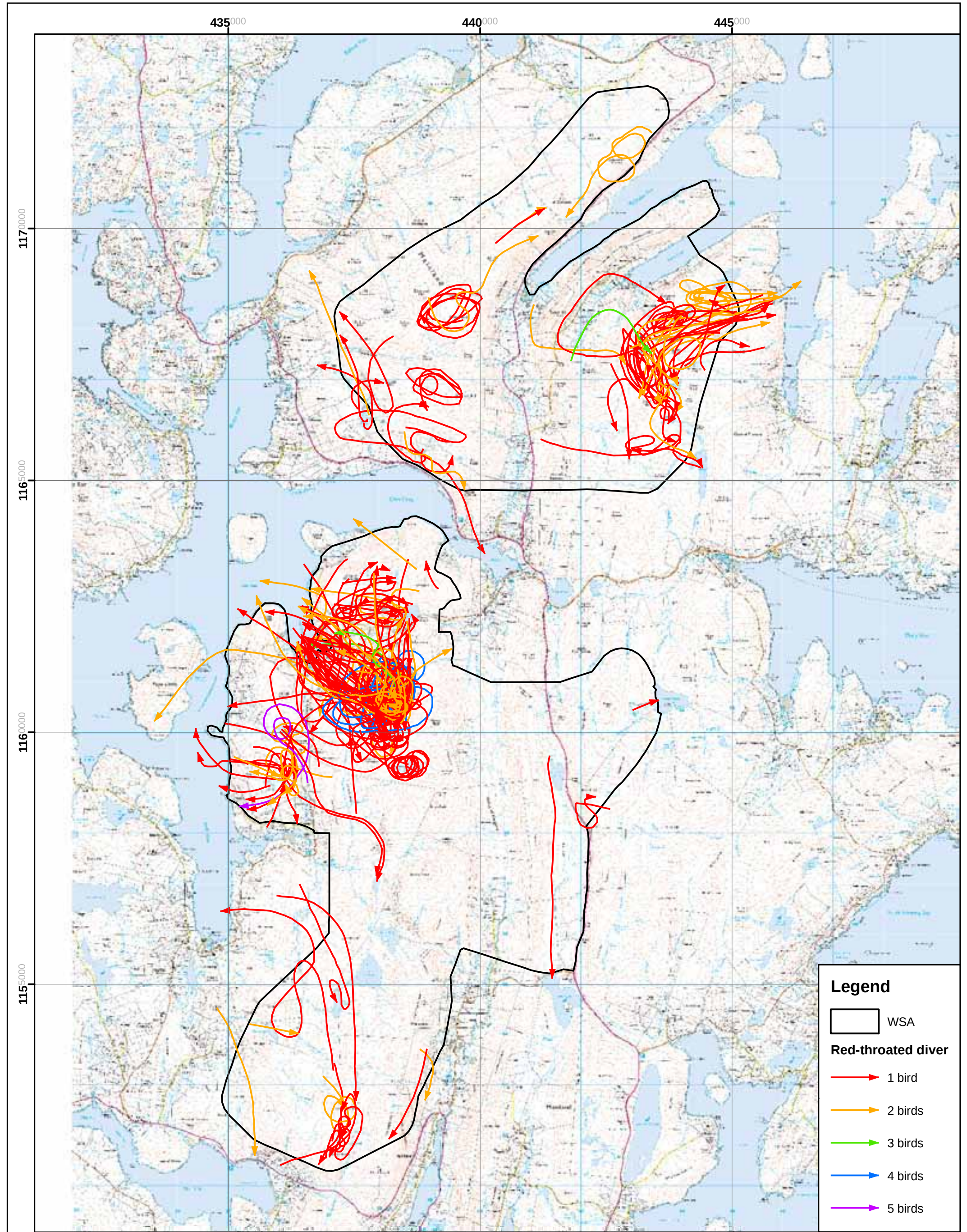
Map 75

Location of moorland breeding bird territories, extra areas 2007/2008

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Viking

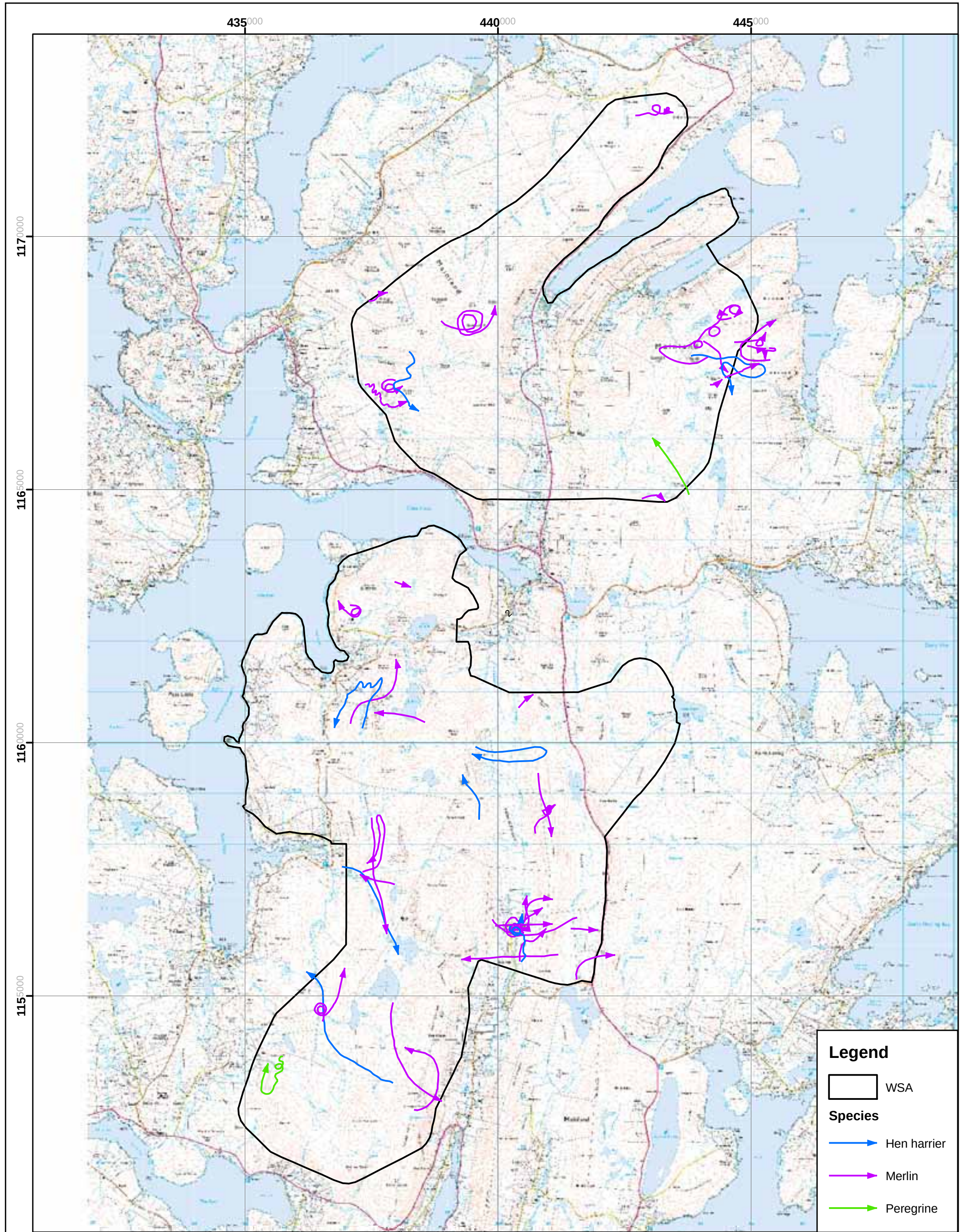
Map 76

Red-throated diver flights recorded during generic VP watches, WSA

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Viking

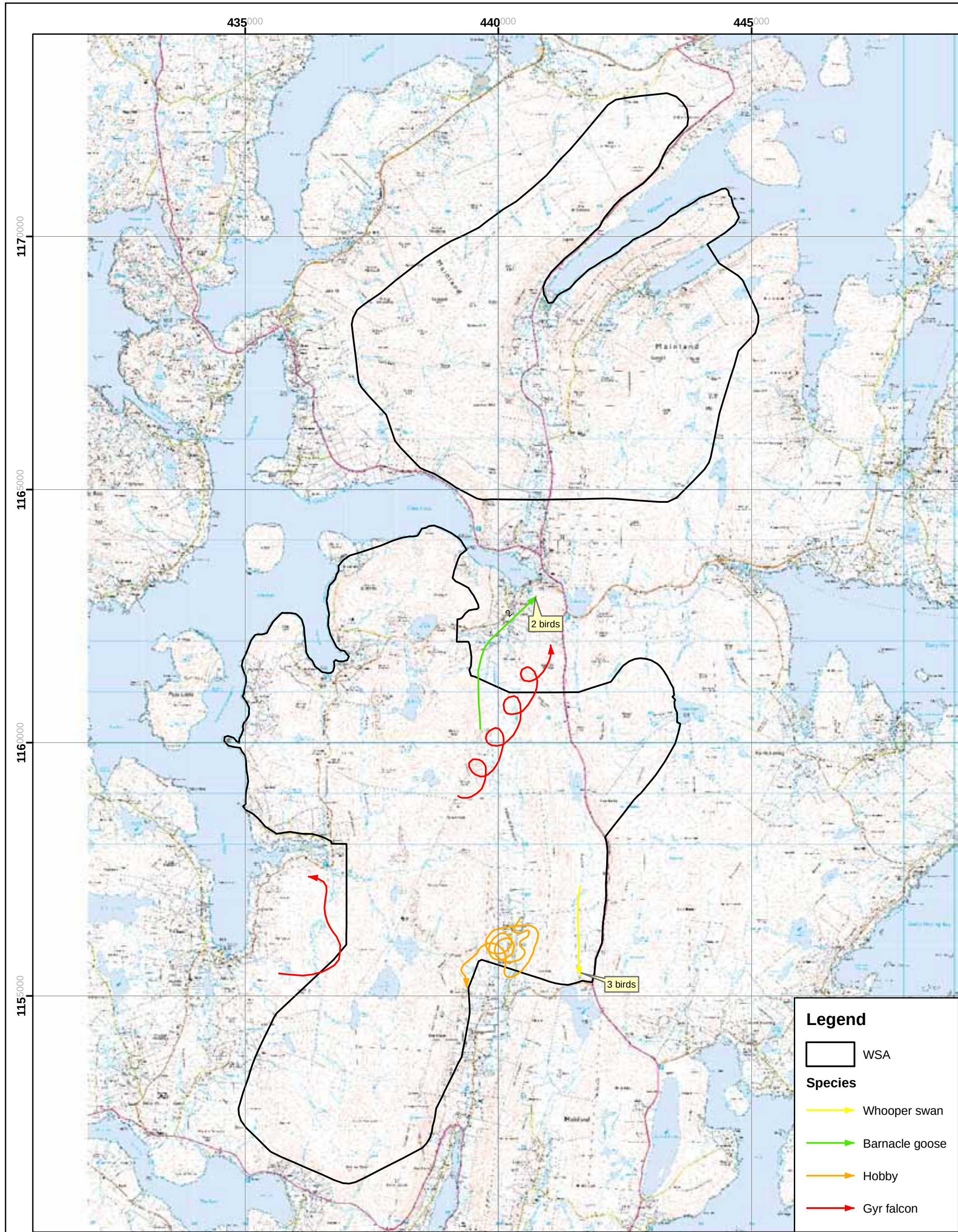
Map 77

Hen harrier, merlin and peregrine flights recorded during generic VP watches, WSA

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31st March 2009



Legend



WSA

Species



Whooper swan



Barnacle goose



Hobby



Gyr falcon

Viking

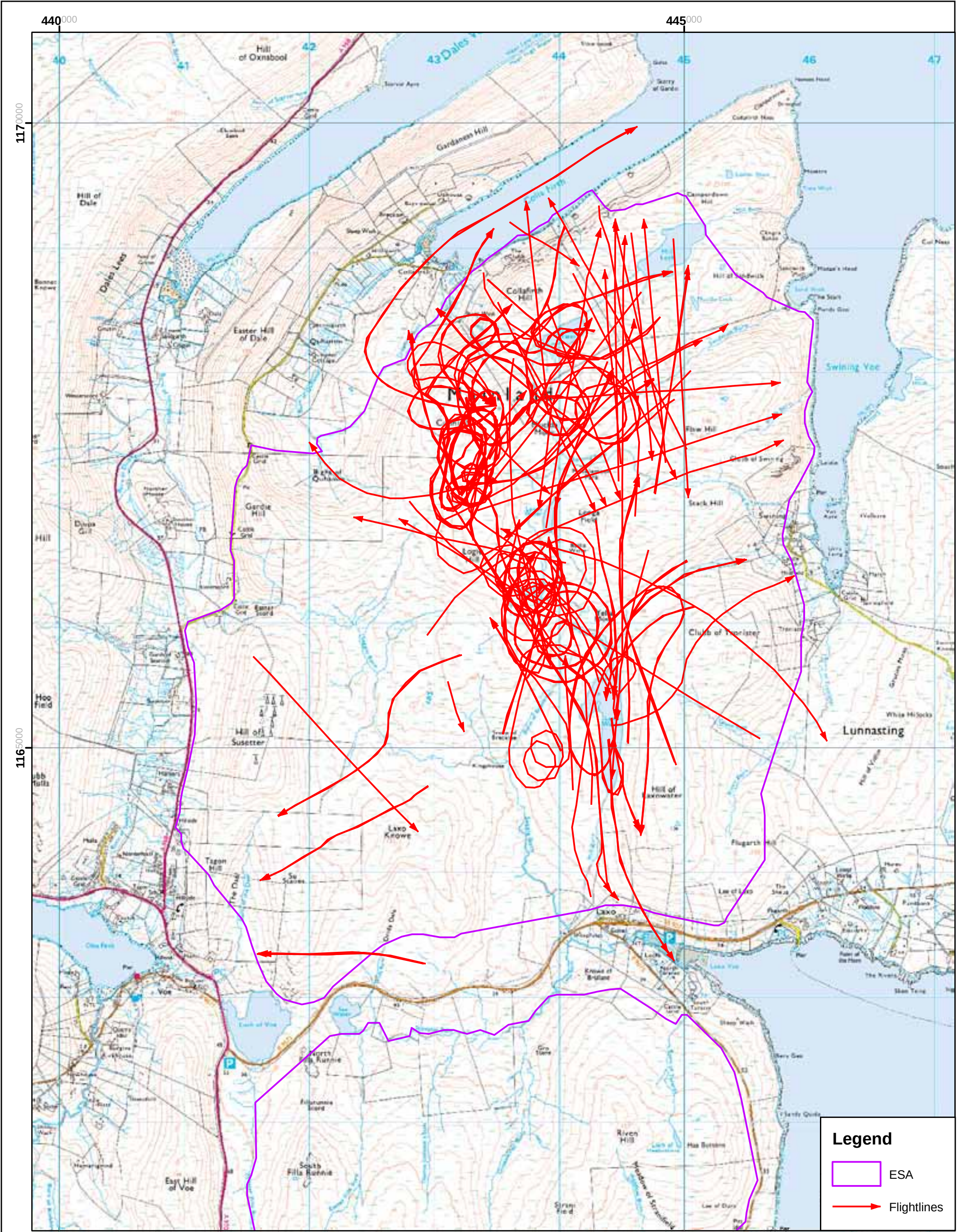
Map 78

Whooper swan, barnacle goose, hobby and gyr falcon flights recorded during generic VP watches, WSA

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Viking

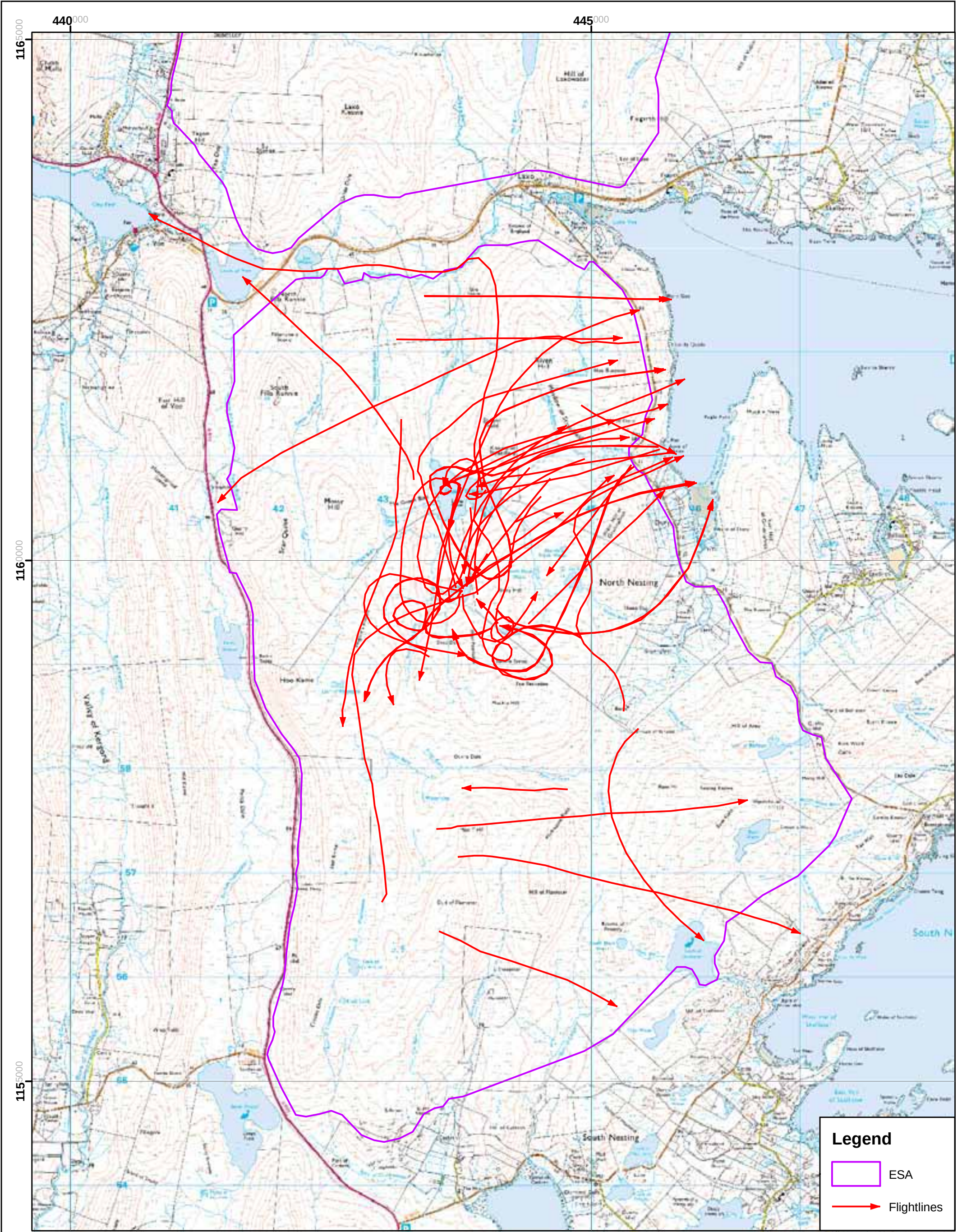
Map 79

Red-throated diver flights recorded during generic VP watches, ESA 2003 (North)

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Legend

 ESA

 Flightlines

Viking

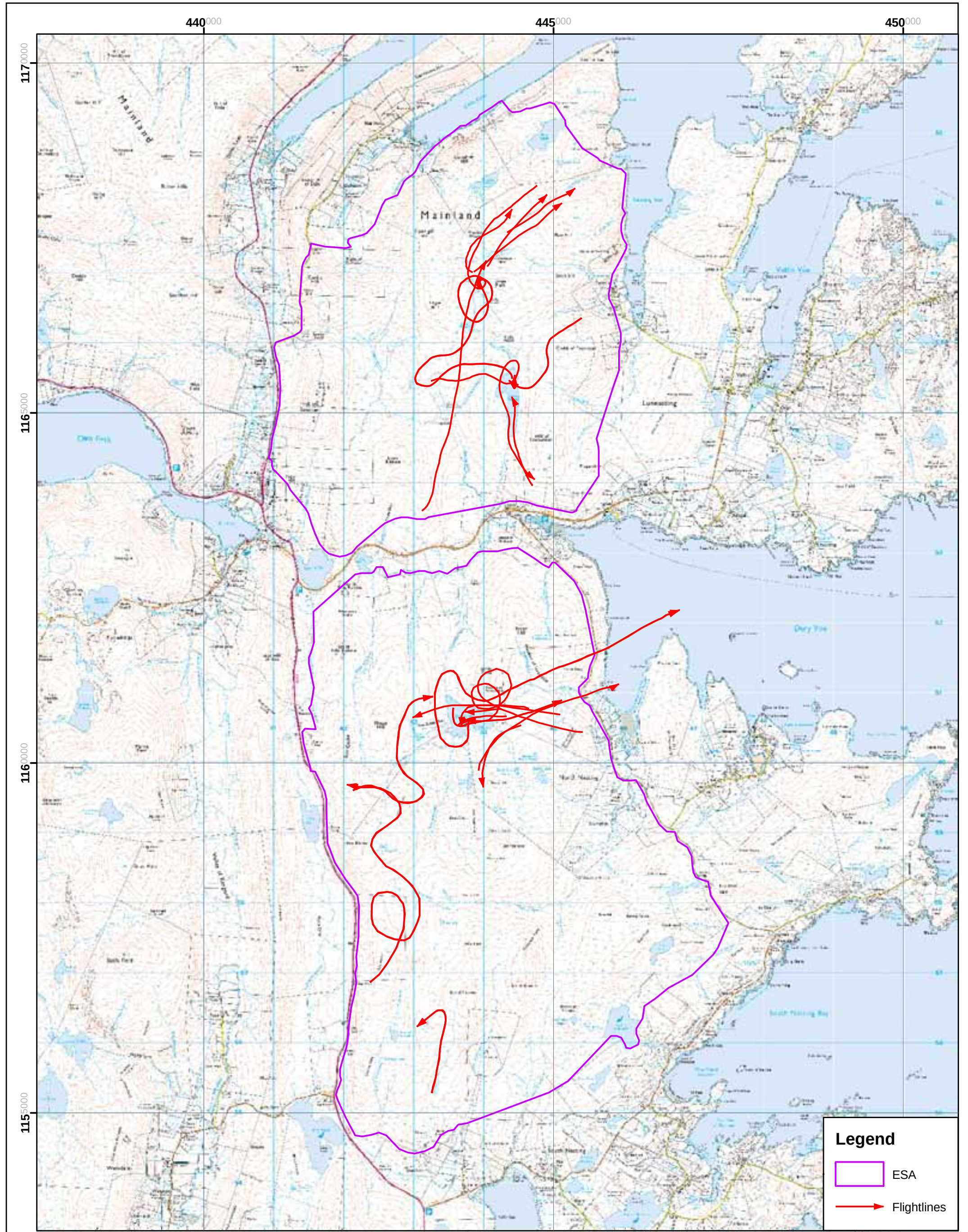
Map 80

Red-throated diver flights recorded during generic VP watches, ESA 2003 (South)

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Viking

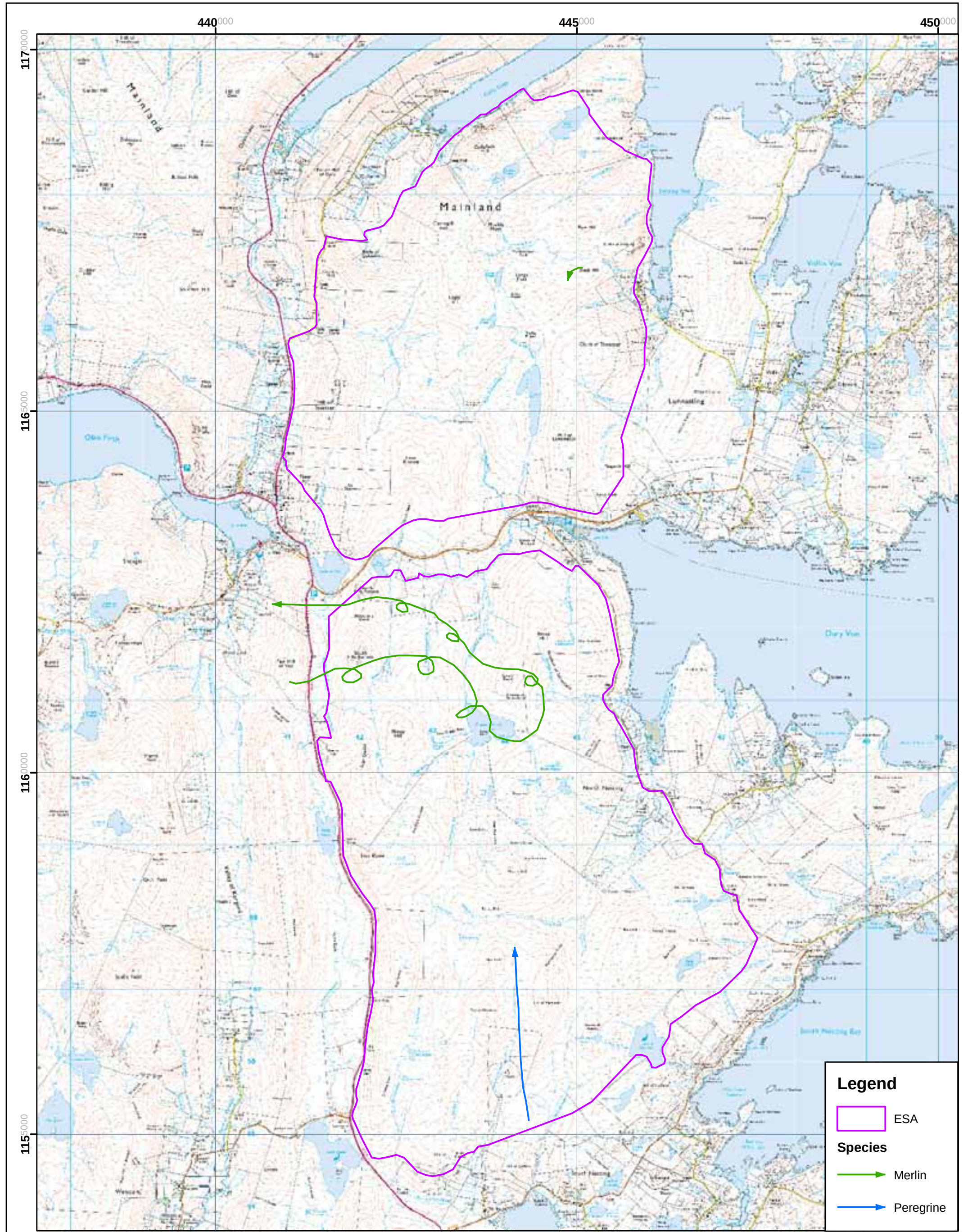
Map 81

Red-throated diver flights recorded during generic VP watches, ESA 2006-07

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31st March 2009



Legend

ESA

Species

Merlin

Peregrine

Viking

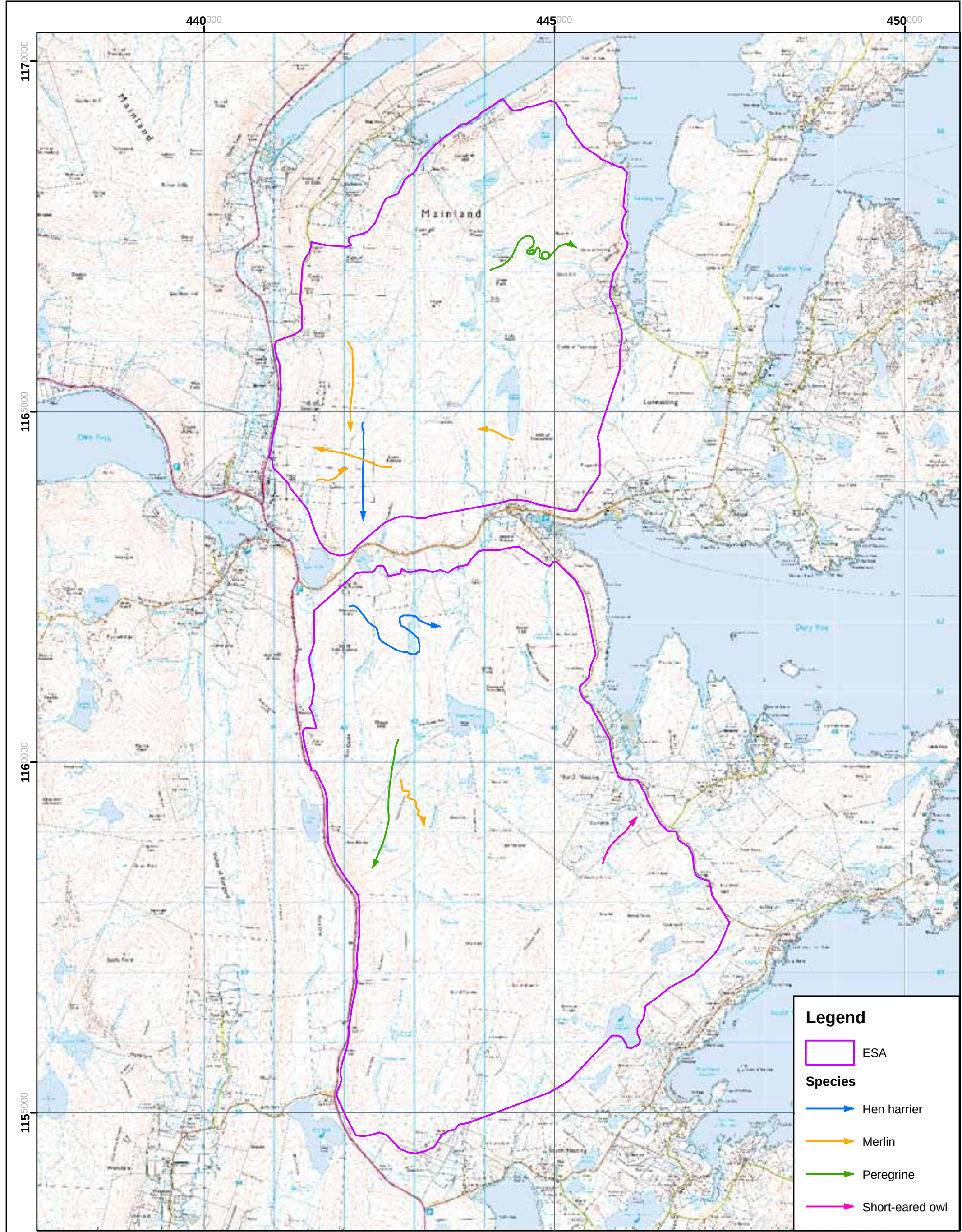
Map 82

Merlin and peregrine flights recorded during generic VP watches, ESA 2003

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Legend

ESA

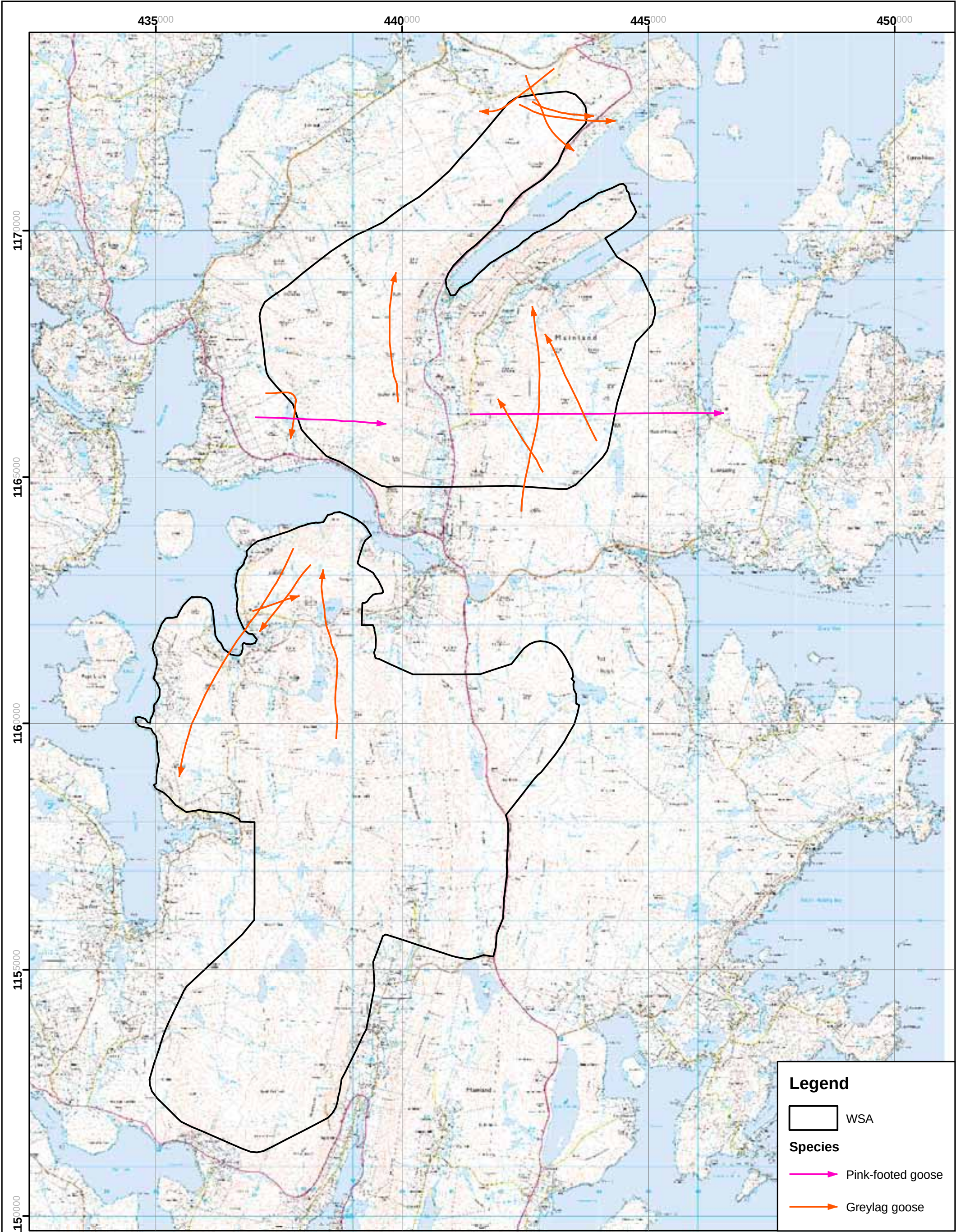
Species

- Hen harrier
- Merlin
- Peregrine
- Short-eared owl

Viking

Map 83

Hen harrier, merlin, peregrine and short-eared owl flights recorded during generic VP watches, ESA 2006-07



Viking

Map 84

Movements of wildfowl recorded during migration VP watches in the WSA, 2005-06

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Legend



WSA

Species



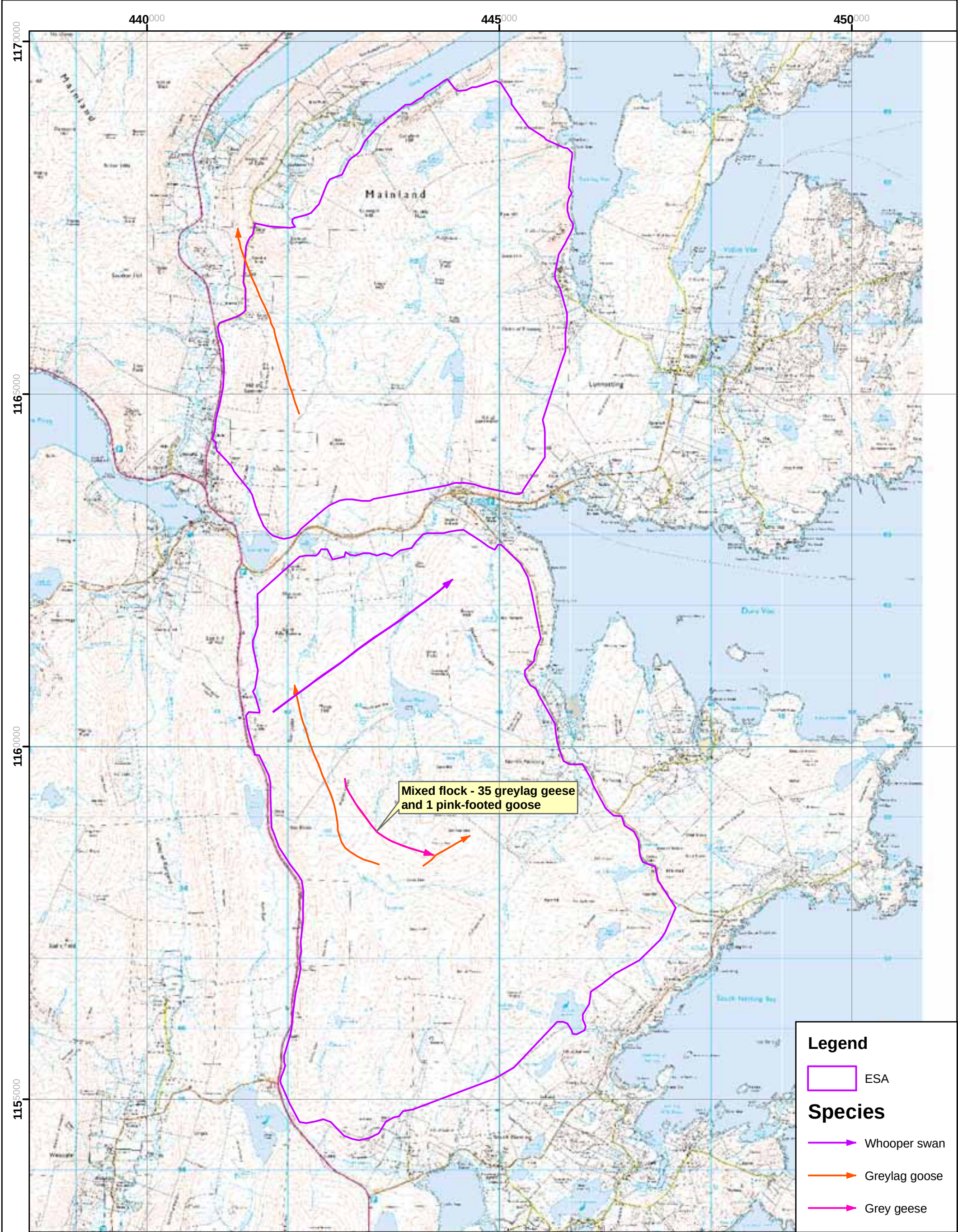
Pink-footed goose



Greylag goose



31st March 2009



Viking

Map 85

Movements of wildfowl recorded during migration VP watches in the ESA, 2006

Legend

ESA

Species

Whooper swan

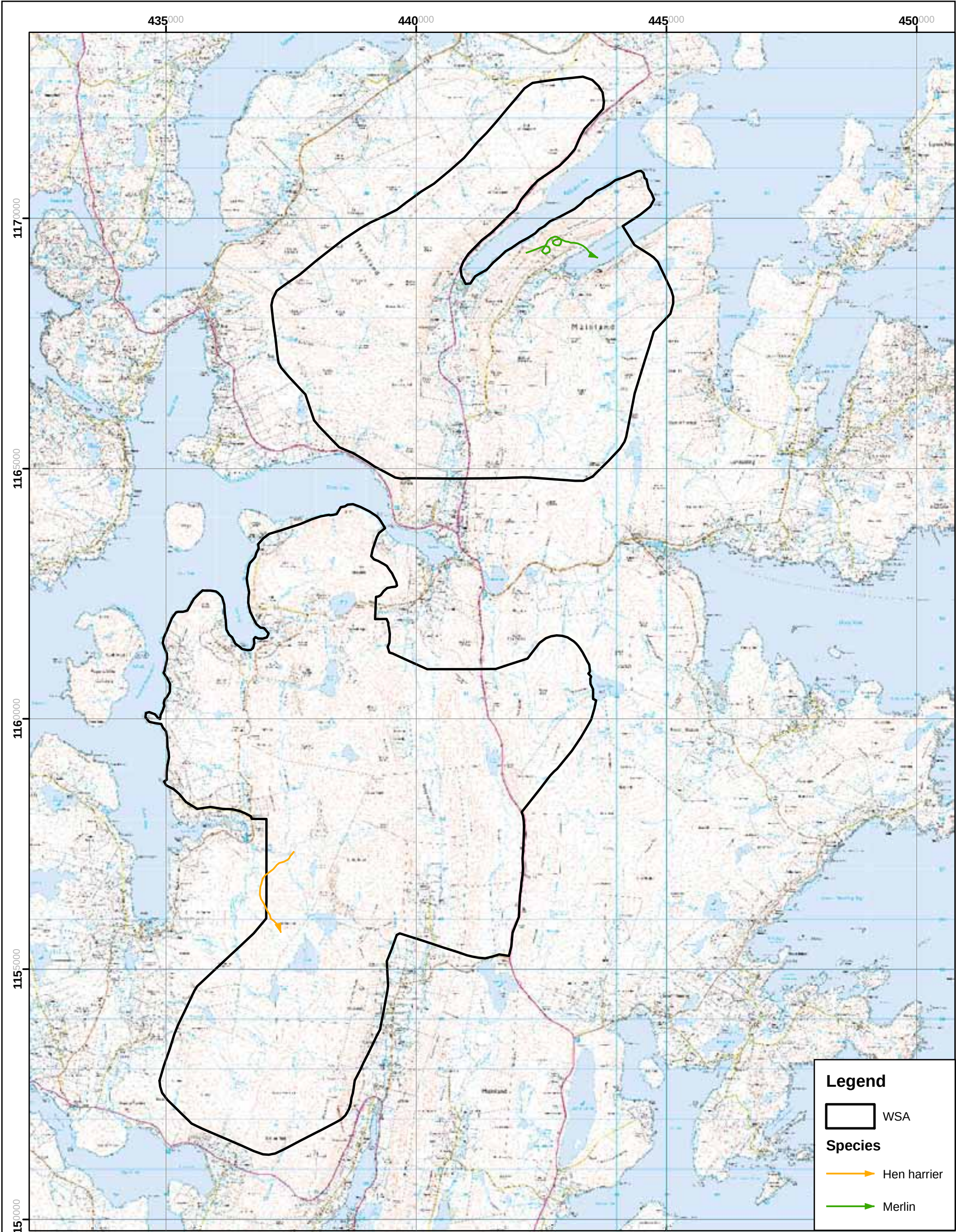
Greylag goose

Grey geese

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31st March 2009



Legend

 WSA

Species

 Hen harrier

 Merlin

Viking

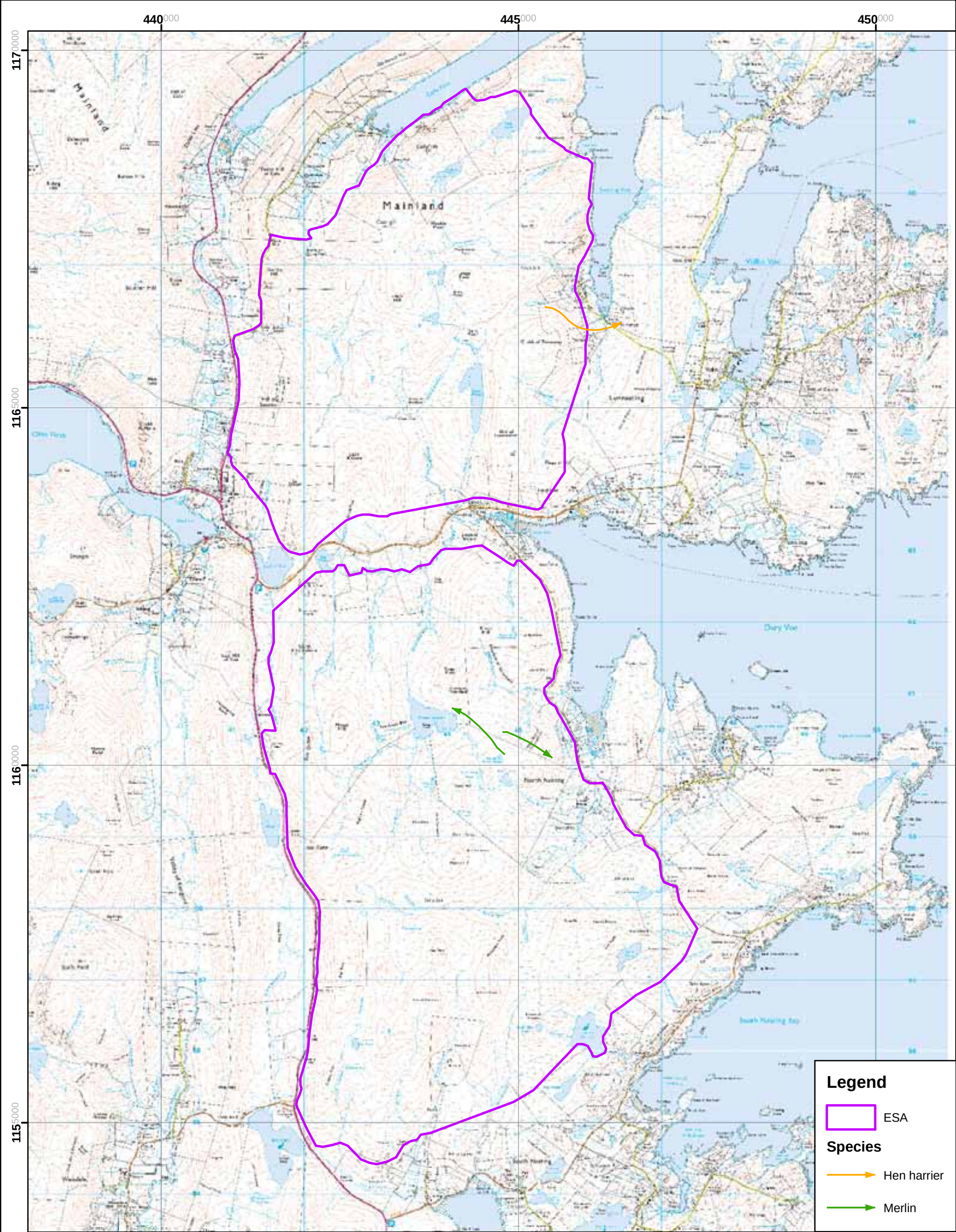
Map 86

Flights by Target Species recorded during autumn / winter walked transects in the WSA, 2005-06

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31st March 2009



Legend

ESA

Species

Hen harrier

Merlin

Viking

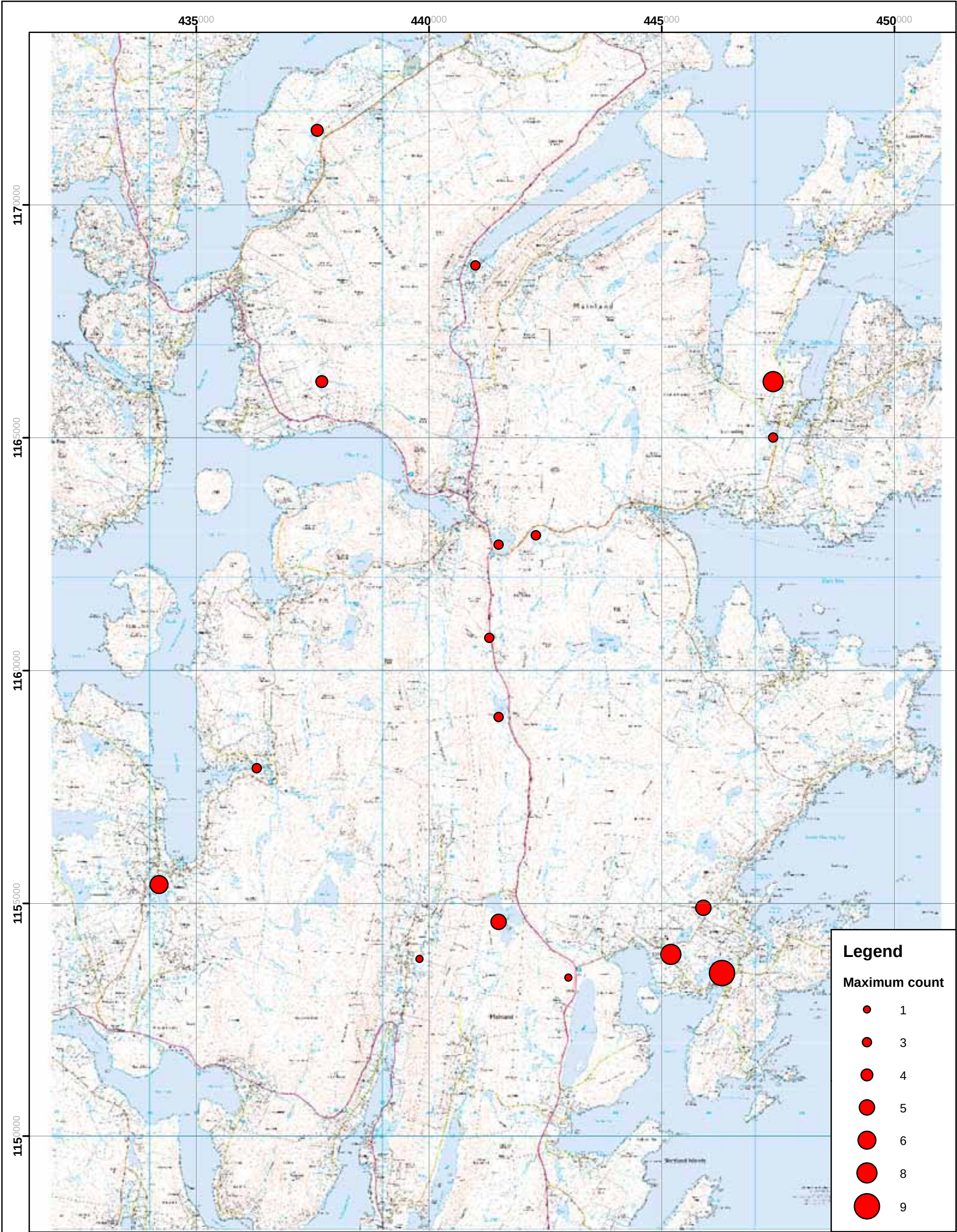
Map 87

Flights by Target Species recorded during autumn / winter walked transects in the ESA 2006-07

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Viking

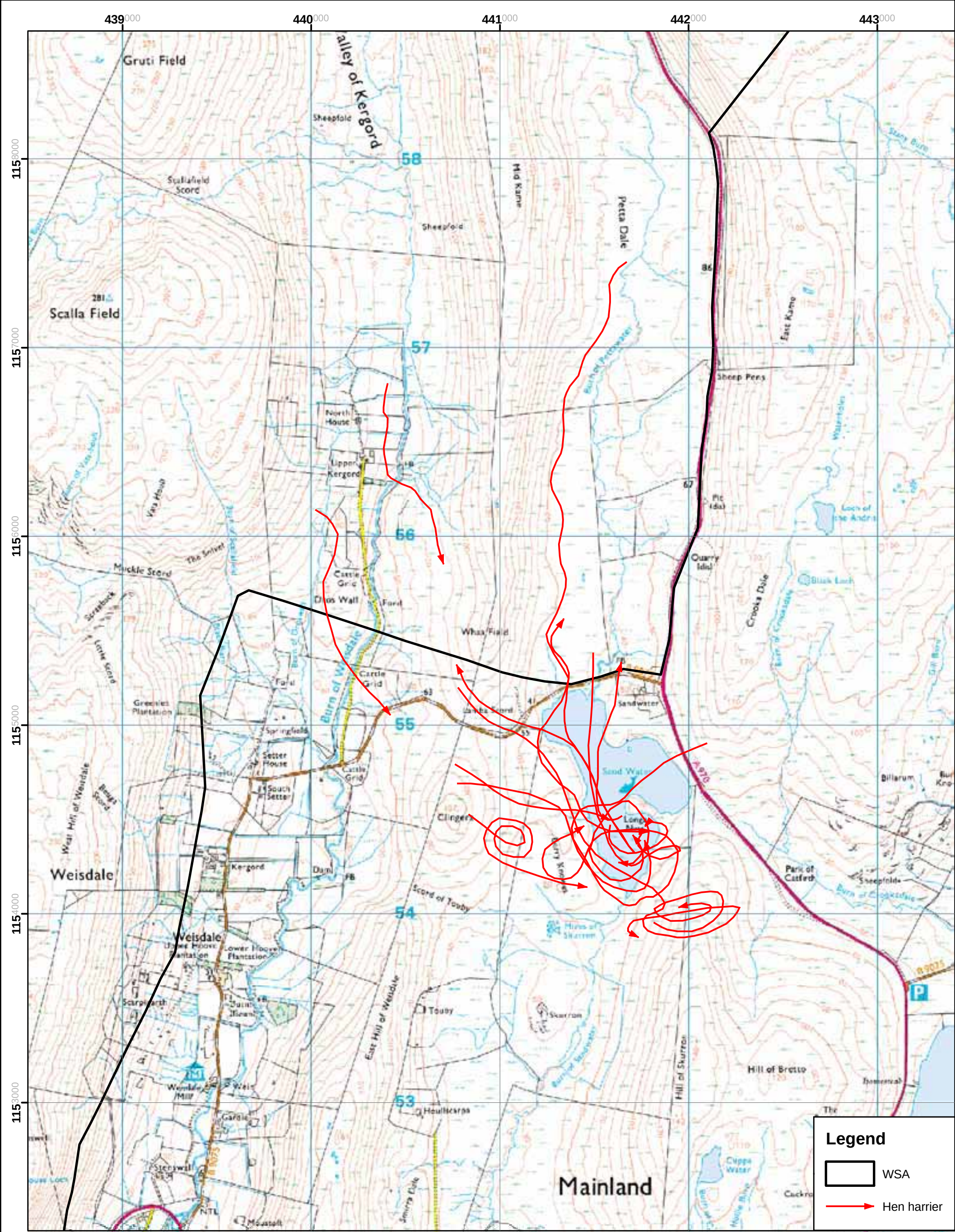
Map 88

Locations of whooper swans recorded during driven / walked transects

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Viking

Map 89

Flight lines used by hen harriers during roost observations

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