



**Sands of Forvie National Nature Reserve**

**Monitoring Report on Impact of Orienteering**  
**Event Held on 6<sup>th</sup> October 2006**

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## **Scope**

This monitoring report is to assess the impact of orienteering on the Sands of Forvie National Nature Reserve.

It is aimed at recording any damage to vegetation during an orienteering event held on the Sands of Forvie NNR, and if any damage caused, the rate of recovery.

A set of guidelines will be produced to assist orienteering event organisers and course planners at Sands of Forvie to minimize any damage to the vegetation based on the current research available and the results of the monitoring work.

As well as the impact on the vegetation as a result of the monitoring, the guidelines will also take into account the other bird and mammal interests on the site as well as recreational interests based on current literature and advice.

## **Scottish Orienteering Association**

The Scottish Orienteering Association (SOA) is the National Governing Body for the sport of orienteering in Scotland. The Association has 1,500 members in 19 affiliated clubs throughout Scotland.

The SOA promotes responsible access to the countryside for its events and other activities within the principles set out in the Scottish Outdoor Access Code.

The Association is a member of the British Orienteering Federation and adheres to the environmental guidelines laid down by them.

The Association also has many close ties with other organisations such as Scottish Natural Heritage, the RSPB, the National Farmers Union of Scotland, the Scottish Game Keepers Association and the Scottish Rural Property & Business Association.

## **Scottish Natural Heritage**

Scottish Natural Heritage was set up in 1992 as the Government's agency for natural heritage in Scotland under the Natural Heritage (Scotland) Act 1991. The organisation's main purposes are to;

- Conserve and improve Scotland's natural heritage
- Promote understanding and make it easier for people to enjoy natural heritage; and
- Help to make sure that its use and management are sustainable

SNH is funded by the Scottish Executive and is responsible to the Scottish Executive through the SNH Board and responsible minister.

## **Sands of Forvie National Nature Reserve**

Sands of Forvie NNR is one of 51 National Nature Reserves which are located throughout Scotland. The reserve consists of nearly 1,000 acres of dunes, some of which are now stabilised by heathland. The area is one the European Natura 2000 network of protected areas both for its bird life (ie a Special Protected Area) and its habitats (ie a Special Area of Conservation).

The southern section of the area consists of mobile dunes which are the home to several important species of birds, notably terns, waders, geese and Eider ducks. This section (south of the 'mine track' between Waterside Car Park and Rockend) is not being considered for orienteering due to its high nature conservation value.

The northern section between the mine track and Collieston consists of the oldest, most stable dunes and has developed into dune heath, dominated by heather, crowberry, heath mosses and lichens. This area is being considered for orienteering. See map in Appendix 1.

The estuary of the River Ythan and the sea cliffs along the coast are also part of the Sands of Forvie NNR but are not included in the orienteering area.

Forvie receives around 15 – 20,000 visitors annually with the vast majority using the car parks at Little Collieston and Waterside, to access the area on the system of tracks and paths which cross the area, some of which are waymarked, although a few do enter the wilder parts of the area. Public access is not allowed to the southern dune system between April and August to protect the ternery from disturbance.

## **The Sport of Orienteering**

The sport of orienteering consists of competitors navigating round a series of checkpoints which are marked on a specially-prepared map, and identified on the ground by a red and white marker. The winner is the competitor who completes the course, visiting all the checkpoints in the correct order, in the shortest time.

Usually various courses are set out of different standards and lengths to cater for the different abilities of the competitors. Courses can vary in length from 1.5km for young children to over 10km for senior men. Most of the courses designed for younger children are technically easy and follow existing paths and tracks. This can also help reduce the impact on an area.

Each time an area is used for orienteering a different course is set out with checkpoints in totally different locations so that competitors cannot gain any advantage from visiting checkpoint sites again. The use of alternative car parking, start and finish locations can help. This also means that the impact on a sensitive site can be minimised.

A copy of the orienteering map of Sands of Forvie with the course set out for the assessment is attached to this report. See Appendix 2.

## **The Natural Heritage of Sands of Forvie NNR**

### **Vegetation**

The southern section of Sands of Forvie is mostly mobile sand dunes with patches of Marram grass. The northern section is mostly covered by a heath dominated by heather with some crowberry, heath mosses and lichens with the lichens being of particular interest. The dry dunes do not provide ideal conditions for the mosses or liverworts but the dune slacks contain some interesting species.

Some parts of north Forvie are being slowly invaded by trees such as birch, pine and willow.

### **Birds**

The key interests are the terns, eider colony and the wintering wildfowl and waders who use the southern section of the area out-with the orienteering interest. The birds found in the northern section are Kestrel, Sparrowhawk, Osprey and Buzzards, many breeding on or close to the area. During the summer months ground nesting birds such as Skylark, Grey Partridge, Meadow Pipit and Short-eared owl are found in the heathland.

### **Mammals**

The mammals found at Forvie are typical of those found in the North-east of Scotland, including roe deer, foxes, badgers and stoats. There is a population of otters in the River Ythan, but this will not be affected by the proposed orienteering. With the exception of the badgers, none of these species are designated as species of conservation concern.

Badgers are protected by the Protection of Badgers Act 1992 making it an offence to harm the animals or interfere with a sett by damaging or destroying it, and to disturb a badger while it is occupying a sett.

Foxes are controlled on Forvie to reduce predation of protected bird species. However unwelcome disturbance of foxes can occur when dens are frequently visited by humans, causing them to desert the dens and create new ones elsewhere making managing them difficult.

The dune areas support a large population of rabbits as can be seen from the large number of burrows dug into the side of the dunes.

## **The Orienteering Event at Forvie, 6<sup>th</sup> October 2006**

The local orienteering club, Grampian Orienteers, have been interested in using the Sands of Forvie for orienteering for many years. In 2005, the SNH Reserve Manager enquired if the club would like to hold a trial event on the area to assess the impact of the sport. If the trial showed little or no damage orienteering would be allowed, with certain conditions, on the northern section of the area, between Collieston and the 'mine track'.

The existing topographic map of the area produced by the University of Glasgow was adapted to produce an orienteering map of the northern section of the area from the Collieston Visitor Centre to the 'Trig Point' ridge.

It was agreed that October would be the ideal time to hold the event due to the various nature conservation interests of the area.

A 4.1km course was planned of a reasonably high technical quality with 14 checkpoints. See Appendix 2 for the course and checkpoint locations.

A site visit with the SNH Reserve Manager to the checkpoints was then undertaken. Some checkpoints were moved to avoid sandy slopes, which were thought to be in danger of erosion from the runners, and some moved to locations with different vegetation types to assess any impact the runners may have.

## **Checkpoints**

The vegetation at the control sites reflects the vegetation found throughout the northern part of Forvie.

The checkpoints were also chosen to try and establish if there was any damage to the vegetation on the likely routes to be taken by the competitors arriving at and leaving the control sites, as well as at the control sites.

It is worth noting that due to the intricate nature of the dune areas in many places competitors arrived from different directions as a result of navigational errors, especially at checkpoint No 4 which caused particular difficulties. Also the greater the distances between the checkpoints resulted in more choice of route between them. If there was more than one obvious route choice between checkpoints then competitors would take either.

The competitors were asked to mark their route on a copy of the map after they had run round so that a check could be made of the most common routes between checkpoints for any damage to the vegetation. These routes have been marked on a copy of the orienteering map and attached as Appendix 3.

The area, particularly the dunes, is covered in animal tracks, which are commented on in the notes and photos taken at some of the checkpoints. From experience, competitors are likely to follow these as they provide easier running if the tracks are going in the same general direction that the competitor wants to go.

Particular concern was raised about the impact of the 25 runners on the areas of lichen as this was judged to be at particular risk of damage. Checkpoint 11 was specifically placed in an area consisting entirely of lichen to see if any damage was caused, and if so, how quickly it would recover.

### **Vegetation Noted at Checkpoints**

Control	Vegetation
1	Lichen rich cladonia, grey dune marram
2	Cowberry, marram
3	Heather, willow, crowberry
4	Grass, moss, crowberry
5	Lichen with short heather, crowberry
6	Marram, crowberry
7	General Mix
8	Lichen
9	General mix
10	Sandy bank
11	Lichen
12	General Mix
13	General Mix
14	Grass

### **Checkpoints Before Event**

Photographs were taken the day before the event and on the morning of the event at all checkpoints and at the likely routes to be taken by the competitors into and out of the checkpoints.

Notes regarding the presence of animal tracks and other points of interest were taken, see Appendix 4. See Disc No 1 for the photographs. The vegetation types and condition was noted.

In particular it was noted that much of the heather found at Forvie was dead, and that some of the checkpoints had existing animal tracks running through them.

## **Checkpoints the Day After the Event**

Photographs were taken at the same sites the day after the event. See Appendix 5 for the notes taken and Disc No 1 for the photographs.

Generally there were very slight signs of some flattened vegetation at some of the checkpoints. The vegetation most likely to show signs of flattening immediately after the event was the grass found at some of the checkpoints.

A trail had also appeared in the long grass between Checkpoint Nos 7 and 8 created by the runners. Otherwise no signs of the runners could be found on the routes taken between the checkpoints other than the very occasional footprint on sandy areas.

## **Checkpoints 1 Month After the Event**

Virtually no signs of the runners could be seen at any of the checkpoints, even in the lichen at No 11.

The trail through the long grass leading from Checkpoint 7 was still visible. Apart from this trail, no sign of any trampling was found on the routes taken by the runners between the checkpoints.

See Appendix 6 for the notes taken and Disc 2 for the photographs.

## **Checkpoints 3 Months After the Event**

No signs of any runners could be found at any of the Checkpoints, including No11, the lichen bed. There was also no sign of any vegetation types being replaced by others as a result of trampling.

The trail through the long grass leading from Checkpoint No 7 was still visible, but the grass generally over the whole area was showing signs of dying back.

There had been a period of very heavy rain in the few days prior to the photographs being taken and there was evidence of the areas of bare sand being eroded by the rain. See photograph 7 of CD 3.

See Appendix 7 for the notes taken and Disc 3 for the photographs.

## **Checkpoints 6 Months After the Event**

No sign of any damage was found at any of the Checkpoints.

The trail through the long grass from Checkpoint No 7 was still visible.

It was noted that some of the lichen at Checkpoint No 11 was very brittle underfoot after a dry spell of weather.

See Appendix 8 for notes taken and Disc 4 for the photographs.

## **Conclusion**

The study shows that checkpoints sited carefully in robust locations at an appropriate time of the year will not cause any damage to the vegetation at Forvie.

With the exception of the trail through the long grass between Checkpoints 7 and 8 no damage was visible at any of the control sites, nor on the routes into and out of the checkpoints.

The lichen at Checkpoint No 11, which was thought to be at particular risk of damage, shows no signs of trampling or damage.

The impact of the orienteering event on the vegetation at Forvie is considered to be minimal.

It is accepted that the study does not assess any impact on other users of the area, the mammals and birds. There is however sufficient literature available that recommendations on minimising the disturbance to birds and animals at Forvie can be formulated.

## **Recommendations**

Orienteering may take place at Sands of Forvie subject to the following conditions –

- All orienteering events taking place and associated access to Forvie should take place under the principles set out in the Land Reform (Scotland) Act 2004 and accompanying Scottish Outdoor Access Code.
- Only the area to the north of the 'mine track' between the Waterside Car park and Rockend should be used to avoid disturbing the bird interests in the southern area. The northern area is also established heathland and less likely to suffer the effects of erosion.



- The area should only be used between September and November to avoid disturbing birds during the winter, when many birds use the dunes for shelter, and the spring / summer breeding period.
- Whenever possible different sections of the area are used for events to reduce the impact.
- The Reserve Manager should be fully consulted prior to each event taking place.
- The location of badger setts and fox dens should be established prior to all events taking place and courses planned accordingly to avoid any disturbance to these sites.
- The number of courses / competitors visiting each checkpoint should be as low as possible – ie use as many checkpoints as possible.
- Different checkpoint locations should be used at each event to avoid overuse of specific locations.
- Areas of exposed sand on a slope should be avoided by runners. Course planners should take care when choosing locations for checkpoints to consider the likely routes runners will take into and leading from them.
- Areas of long grass should be avoided as the location of checkpoints and the likelihood of runners creating trails through the grass considered. Although the grass is not a sensitive species, a trail of flattened grass may attract other users and a new path may develop.
- Care should be taken to avoid conflicts with other users by keeping courses away from the waymarked trails used by the public whenever possible, although some of the courses for the younger juniors will have to use the trails. However the suggested times for orienteering events at Forvie, between September and November, means that the potential for conflicts will be reduced.
- If events were based at the visitor centre at Collieston then the potential for conflict over the available parking spaces would need to be considered. Consider using adjacent farmland for parking for some events.
- Orienteering has a good reputation as a 'litter-free' sport and all efforts should be made to ensure this is maintained, especially at Forvie given its high nature conservation interest.
- The standard BOF Risk Assessment form should be completed before each event and any issues raised acted upon.

- All events should be registered with the British Orienteering Federation to ensure the public liability insurance for the event is in place.
- These recommendations should be reviewed periodically to reflect any changes in nature conservation designations on the site, or experiences gained in orienteering events which have taken place at Forvie.

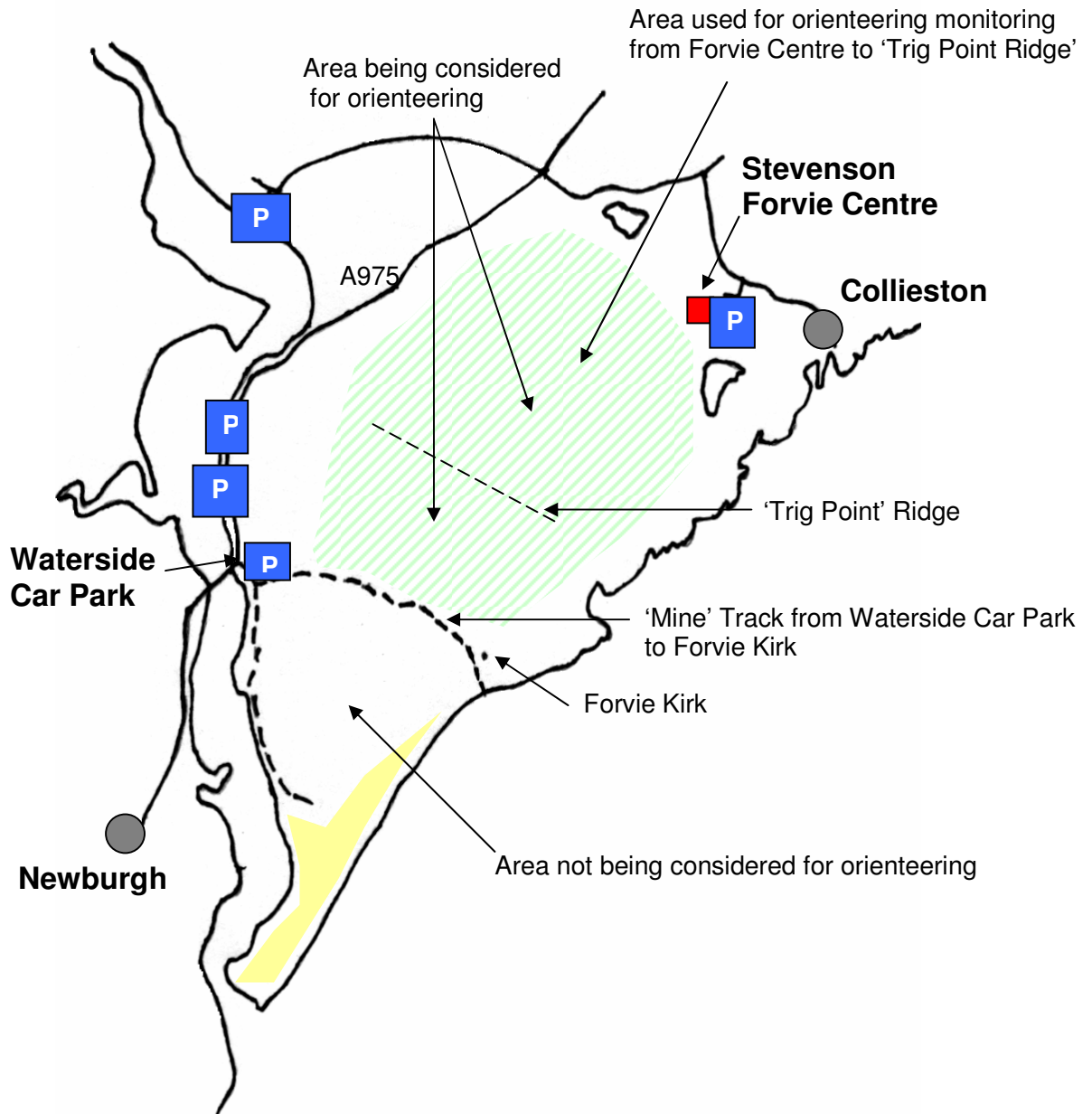
## **Appendices**

1. Map of Sands of Forvie National Nature Reserve showing extent of reserve, area used for the orienteering monitoring, and the area proposed for orienteering.
2. Orienteering Map of Sands of Forvie with orienteering course
3. Orienteering Map of Sands of Forvie with orienteering course with routes taken by the competitors
4. Notes of photographs taken at checkpoint locations before the event – see Disc 1
5. Notes of photographs taken at checkpoint locations day after the event – see Disc 1
6. Notes of photographs taken at checkpoint locations 1 month after the event – see CD 2
7. Notes of photographs taken at checkpoint locations 3 months after the event – see CD 3
8. Notes of photographs taken at checkpoint locations 3 months after the event – see CD 4

## **CD's**

- Disc 1 Photographs of checkpoints 1 day before and 1 day after event
- Disc 2 Photographs of checkpoints 1 month after event
- Disc 3 Photographs of checkpoints 3 months after event
- Disc 4 Photographs of checkpoints 6 months after the event

### Sands of Forvie NNR



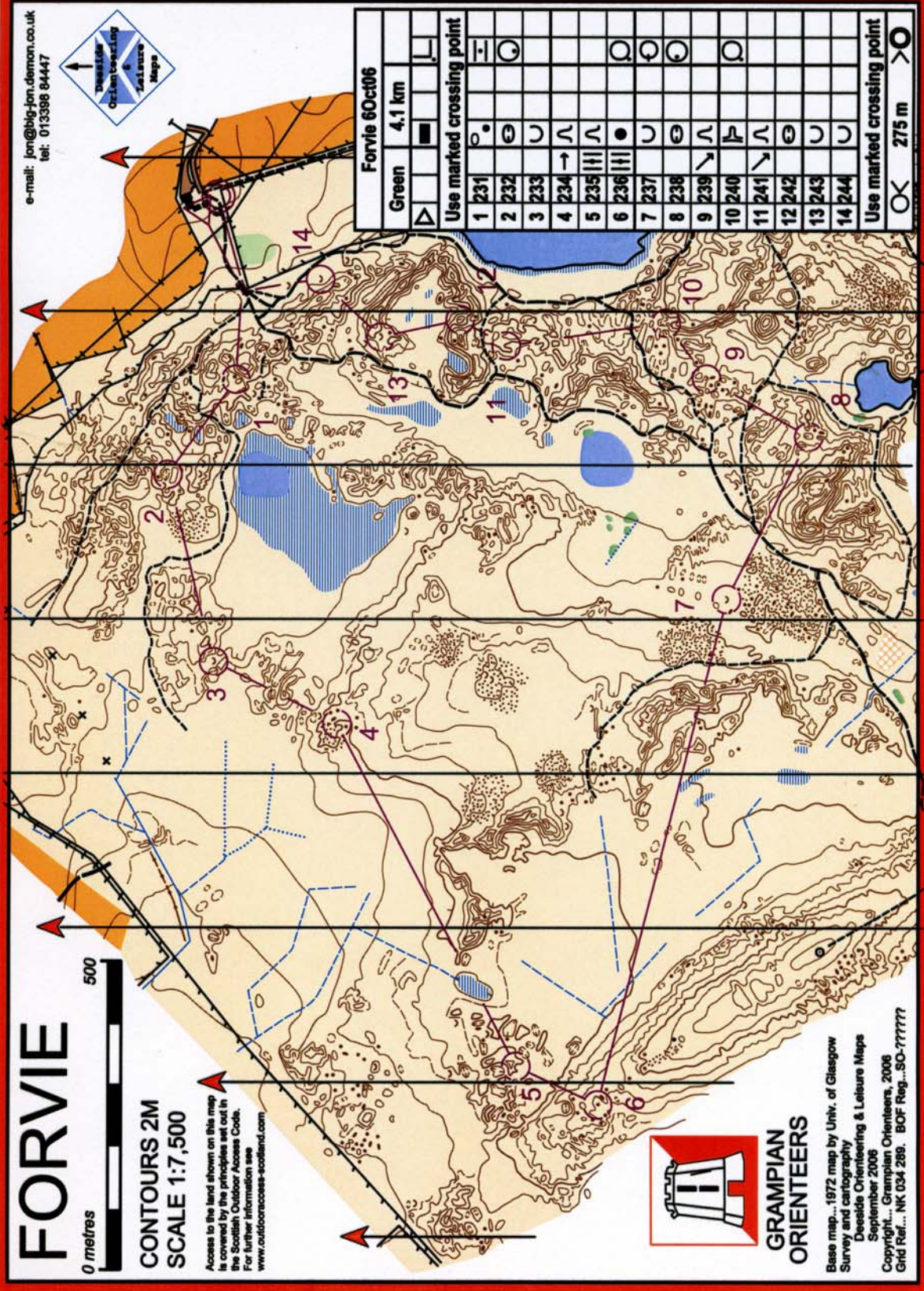
# FORVIE









0 metres  500

CONTOURS 2M  
SCALE 1:7,500

Access to the land shown on this map is covered by the principles set out in the Scottish Outdoor Access Code. For further information see [www.outdooraccess-scotland.com](http://www.outdooraccess-scotland.com)

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tel: 013398 84447



Forvie 6Oct06		Green		4.1 km			
Use marked crossing point							
1	231						
2	232						
3	233						
4	234						
5	235						
6	236						
7	237						
8	238						
9	239						
10	240						
11	241						
12	242						
13	243						
14	244						
Use marked crossing point							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							
							



**GRAMPLAN ORIENTEERS**

Base map... 1972 map by Univ. of Glasgow  
Survey and cartography  
Deeside Orienteering & Leisure Maps  
September 2006  
Copyright... Gramplan Orienteers, 2006  
Grid Ref... NK 034 289. BOF Reg...SO-777777

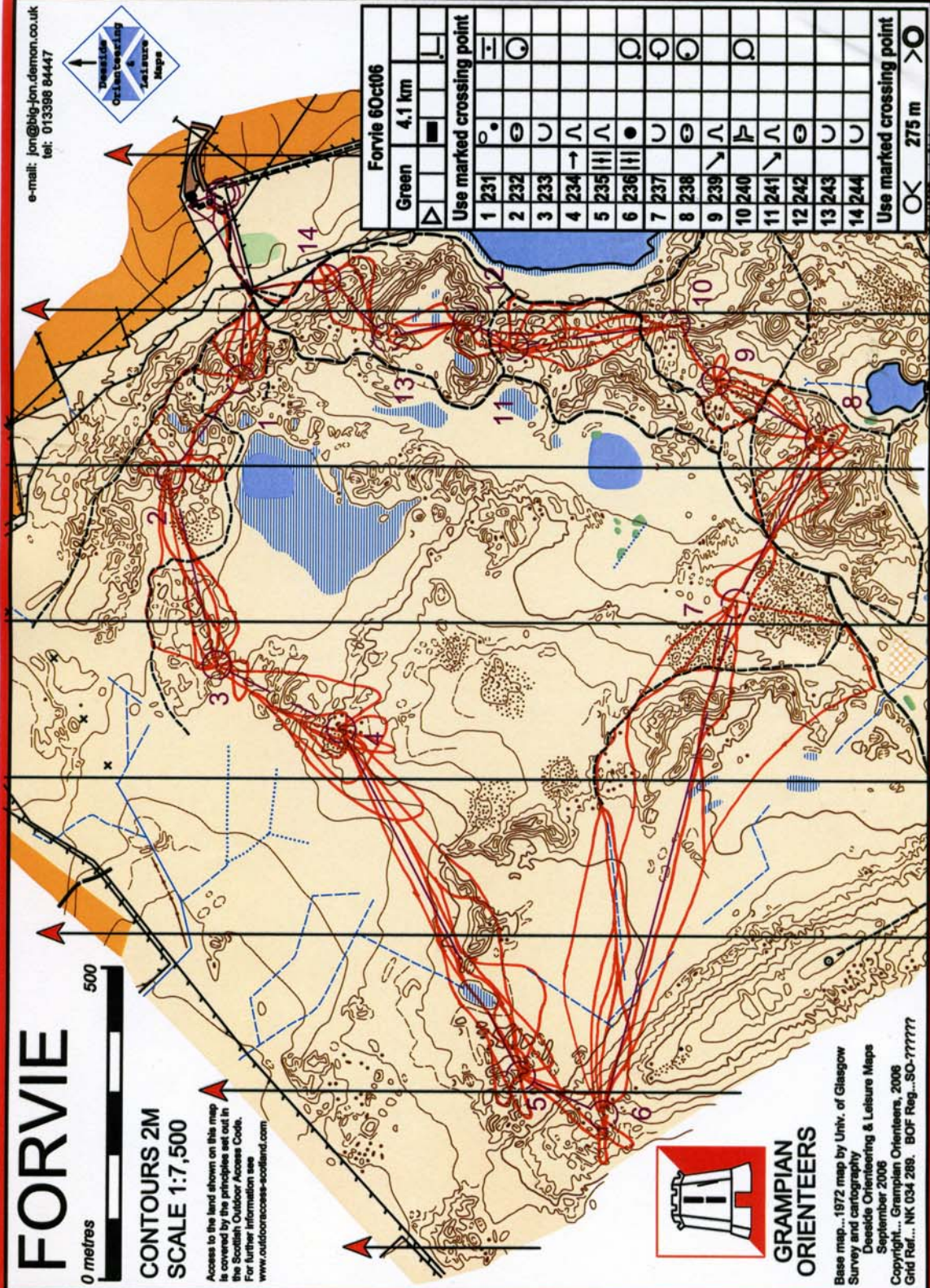
# FORVIE

0 metres  500

CONTOURS 2M  
SCALE 1:7,500

Access to the land shown on this map is covered by the principles set out in the Scottish Outdoor Access Code. For further information see [www.outdooraccess-scotland.com](http://www.outdooraccess-scotland.com)

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Forvie 6Oct06	
Green	4.1 km
Use marked crossing point	
1 231	
2 232	
3 233	
4 234	
5 235	
6 236	
7 237	
8 238	
9 239	
10 240	
11 241	
12 242	
13 243	
14 244	
Use marked crossing point	
	275 m



**GRAMPIIAN  
ORIENTEERS**

Base map... 1972 map by Univ. of Glasgow  
Survey and cartography  
Deeside Orienteering & Leisure Maps  
September 2006  
Copyright... Grampiian Orienteers, 2008  
Grid Ref... NK 034 266. BOF Reg... SO-777777

**Appendix 4 Forvie Photo Schedule - See Disc 1**

**Photos taken 5th and 6th October 2006 before event**

Photo No	Checkpoint/Location	Direction photo taken from	Notes
P1010076	5m to east of 1	S	Probable route into Checkpoint No 1
P1010077	1	S	Site of Checkpoint No 1. Note existing animal track through site
P1010078	1	S	Site of Checkpoint No 1. Note existing animal track through site
P1010079	3m to west of 1	E	Probable exit route from Checkpoint No 1
P1010080	5m to east of 2	W	Probable route into Checkpoint No 2
P1010081	2	W	Site of Checkpoint No 2
P1010082	3m to west of 2	W	Probable exit route from Checkpoint No 2
P1010083	2	W	Site of Checkpoint No 2
P1010084	5m to NE of 3	W	Probable route into Checkpoint No 3. Note loose sand
P1010085	3	W	Site of Checkpoint No 3
P1010086	3	W	Site of Checkpoint No 3
P1010087	5m to NW of 4	SE	Probable route into Checkpt No 4. Note existing animal track through site
P1010088	4	S	Site of Checkpoint No 4
P1010089	4	S	Site of Checkpoint No 4
P1010090	5m to NE of 5	SW	Probable route into Checkpoint No 5. Note loose sand
P1010091	5	S	Site of Checkpoint No 5
P1010092	5	S	Site of Checkpoint No 5
P1010093	5	S	Deer tracks at Checkpoint No 5
P1010094	6	S	Site of Checkpoint No 6. Note dead and dying heather at site
P1010095	6	S	Site of Checkpoint No 6. Note dead and dying heather at site
P1010096	7	W	Site of Checkpoint No 7
P1010097	7	W	Site of Checkpoint No 7
P1010098	8	S	Site of Checkpoint No 8
P1010099	8	S	Site of Checkpoint No 8
P1010100	10m to N of 8	S	Probable exit route from Checkpoint No 8
P1010101	9	SE	Site of Checkpoint No 9
P1010102	9	SE	Site of Checkpoint No 9
P1010103	10	S	Site of Checkpoint No 10
P1010104	10	S	Site of Checkpoint No 10

P1010105	11		S	Site of Checkpoint No 11
P1010106	11		S	Site of Checkpoint No 11
P1010108	5m N of 11		N	Likely exit route from Checkpoint No 11
P1010109	Midway between 11 and 12		S	Animal track from main path over dune to Checkpoint No 12
P1010110	12		S	Site of Checkpoint No 12
P1010111	12		S	Site of Checkpoint No 12
P1010112	5m N of 12		S	Probable exit route from Checkpoint No 12 through gap in dunes
P1010113	13		S	Site of Checkpoint No 13. Note all heather in depression dead
P1010114	13		S	Site of Checkpoint No 13. Note all heather in depression dead
P1010115	3m NW of 13		SW	Probable exit from Checkpoint No 13. Note sandy slope
P1010116	14		S	Site of Checkpoint No 14. Note animal track through site
P1010117	14		S	Site of Checkpoint No 14. Note animal track through site

### Vegetation types at Checkpoints

Checkpoint	Vegetation
1	Lichen rich cladonia, grey dune marram
2	Cowberry, marram
3	Heather, willow, crowberry
4	Grass, moss, crowberry
5	Lichen with short heather, crowberry
6	Marram, crowberry
7	General Mix
8	Lichen
9	General mix
10	Sandy bank
11	Lichen
12	General Mix
13	General Mix
14	Grass

Notes;

Roe deer were seen to the north-west of Checkpoint No 5



**Appendix 5 Forvie Photo Schedule - See Disc 1**

**Photos taken 7th October 2006, the day after the event**

Photo No	Checkpoint/Location	Direction photo taken from	Notes
P1010118	5m to east of 1	S	Probable route into Checkpoint No 1. Some slight signs of flattened grass and lichen
P1010119	1	S	Site of Checkpoint No 1. Some slight signs of flattened grass and lichen
P1010120	3m to west of 1	E	Probable exit route from Checkpoint No 1. No signs of trampling
P1010121	1	S	Existing animal track through site probably used by competitors
P1010122	5m to east of 2	W	Probable route into Checkpoint No 2. Very little signs of runners
P1010123	2	W	Site of Checkpoint No 2. Very little signs of runners
P1010124	3m to west of 2	W	Probable exit route from Checkpoint No 2. Very little signs of runners
P1010125	5m to NE of 3	W	Probable route into Checkpoint No 3. A couple of footprints in sand. No damage
P1010126	3	W	Site of Checkpoint No 3. No signs of trampling
P1010127	5m to NW of 4	SE	Probable route into Checkpoint No 4. Some flattening of grass
P1010128	4	S	Site of Checkpoint No 4. No visible signs of trampling
P1010129	5m to NE of 5	SW	Probable route into Checkpoint No 5. No signs of competitors
P1010130	5	SW	Site of Checkpoint No 5. No signs of competitors
P1010131	6	S	Site of Checkpoint No 6. Some flattening of vegetation
P1010132	7	W	Site of Checkpoint No 7. Some slight flattening of grass
P1010133	50m to SW of 7	NW	Trail through long grass from Checkpoint No 7 to main path
P1010134	8	S	Site of Checkpoint No 8. No signs of competitors
P1010135	10m to N of 8	S	Probable exit route from Checkpoint No 8. No signs of competitors
P1010136	9	SE	Site of Checkpoint No 9. Some flattening of lichen
P1010137	10	S	Site of Checkpoint No 10. No signs of competitors
P1010138	11	S	Site of Checkpoint No 11. Possible flattening of lichen
P1010139	5m N of 11	N	Likely exit route from Checkpoint No 11. No signs of trampling
P1010140	12	S	Site of Checkpoint No 12. Some slight flattening of grass
P1010141	5m N of 12	S	Probable exit route from Checkpoint No 12 through gap in dunes. Some slight flattening of grass
P1010142	13	S	Site of Checkpoint No 13. No signs of competitors
P1010143	3m NW of 13	SW	Probable exit from Checkpoint No 13. No signs of any damage
P1010144	14	S	Site of Checkpoint No 14. Slight flattening of grass

Notes;

1. In spite of signs requesting that dogs are kept on leads, 2 very aggressive dogs were encountered to the east of Checkpoint No 7. They were again seen 20 minutes later to the east of Checkpoint No 9 digging at the ground.
2. The area is covered in animal tracks - rabbits and deer. The runners tended to use them when apparent and going in the same direction as they were travelling.
3. Lichen and moss are being dug up all over the area by animals
4. Many of the dunes have extensive rabbit holes in them with resultant loose sand
5. Roe deer were seen to the west of Checkpoints 5 and 6.

**Appendix 6 Forvie Photo Schedule - See Disc 2**

**Photos taken 6th November 2006, 1 month after event**

Photo No	Checkpoint/Location	Direction photo taken from	Notes
P1010145	5m to east of 1	S	Probable route into Checkpoint No 1. Some slight signs of flattened grass and lichen
P1010146	1	S	Site of Checkpoint No 1. Some slight signs of flattened grass and lichen
P1010147	3m to west of 1	E	Probable exit route from Checkpoint No 1. No signs of trampling
P1010148	5m to east of 2	W	Probable route into Checkpoint No 2. No signs of runners
P1010149	2	W	Site of Checkpoint No 2. No signs of runners
P1010150	3m to west of 2	W	Probable exit route from Checkpoint No 2. No signs of runners
P1010151	5m to NE of 3	W	Probable route into Checkpoint No 3. No damage visible
P1010152	3	W	Site of Checkpoint No 3. No signs of trampling
P1010153	5m to NW of 4	SE	Probable route into Checkpoint No 4. Some flattening of grass - possible animal track
P1010154	4	S	Site of Checkpoint No 4. No visible signs of trampling
P1010155	5m to NE of 4	S	Animals digging at ground
P1010156	5m to NE of 5	SW	Probable route into Checkpoint No 5. No signs of competitors
P1010157	5	SW	Deer tracks in sand at control site
P1010158	5	SW	Site of Checkpoint No 5. No signs of competitors
P1010159	6	S	Site of Checkpoint No 6. No signs of damage
P1010160	7	W	Site of Checkpoint No 7. No signs of damage
P1010161	50m to SW of 7	NW	Trail through long grass from Checkpoint No 7 to main path recovering - still some flattened grass
P1010162	8	S	Site of Checkpoint No 8. No signs of competitors
P1010163	10m to N of 8	S	Probable exit route from Checkpoint No 8. No signs of competitors
P1010164	9	SE	Site of Checkpoint No 9. No signs of damage
P1010168	10	S	Site of Checkpoint No 10. No signs of damage
P1010170	11	S	Site of Checkpoint No 11. No signs of any damage to lichen
P1010171	5m N of 11	N	Likely exit route from Checkpoint No 11. No signs of trampling
P1010172	12	S	Site of Checkpoint No 12. No signs of damage
P1010173	5m N of 12	S	Probable exit route from Checkpoint No 12 through gap in dunes. No signs of damage
P1010174	13	S	Site of Checkpoint No 13. No signs of competitors
P1010175	3m NW of 13	SW	Probable exit from Checkpoint No 13. No signs of any damage

P1010176	14	S	Site of Checkpoint No 14. No signs of damage
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Notes; 2 walkers were seen on the dunes to the north of Checkpoint No 2.

**Appendix 7 Forvie Photo Schedule - See Disc 3**

**Photos taken 10th January 2007, 3 months after event**

Photo No	Checkpoint/Location	Direction photo taken from	Notes
P1010302	5m to east of 1	S	Probable route into Checkpoint No 1. No sign of damage
P1010303	1	S	Site of Checkpoint No 1. No sign of damage
P1010304	3m to west of 1	E	Probable exit route from Checkpoint No 1. No signs of trampling
P1010305	5m to east of 2	W	Probable route into Checkpoint No 2. No signs of runners
P1010306	2	W	Site of Checkpoint No 2. No signs of runners
P1010307	3m to west of 2	W	Probable exit route from Checkpoint No 2. No signs of runners
P1010308	5m to NE of 3	W	Probable route into Checkpoint No 3. No damage visible. Some erosion of sand from heavy rain
P1010309	3	W	Site of Checkpoint No 3. No signs of trampling
P1010310	5m to NW of 4	SE	Probable route into Checkpoint No 4.
P1010311	4	S	Site of Checkpoint No 4. No visible signs of trampling
P1010312	5m to NE of 4	S	Animals digging at ground
P1010313	5m to NE of 5	SW	Probable route into Checkpoint No 5. No signs of competitors. Deer tracks in sand
P1010314	5	SW	Site of Checkpoint No 5. No signs of competitors
P1010315	6	S	Site of Checkpoint No 6. No signs of damage
P1010316	7	W	Site of Checkpoint No 7. No signs of damage
P1010317	50m to SW of 7	NW	Trail through long grass from Checkpoint No 7 to main path - still some flattened grass
P1010318	8	S	Site of Checkpoint No 8. No signs of competitors
P1010319	10m to N of 8	S	Probable exit route from Checkpoint No 8. No signs of competitors
P1010320	9	SE	Site of Checkpoint No 9. No signs of damage
P1010321	10	S	Site of Checkpoint No 10. No signs of damage
P1010322	11	S	Site of Checkpoint No 11. No signs of any damage to lichen
P1010323	5m N of 11	N	Likely exit route from Checkpoint No 11. No signs of trampling
P1010324	12	S	Site of Checkpoint No 12. No signs of damage
P1010325	5m N of 12	S	Probable exit route from Checkpoint No 12 through gap in dunes. No signs of damage
P1010326	13	S	Site of Checkpoint No 13. No signs of competitors
P1010327	3m NW of 13	SW	Probable exit from Checkpoint No 13. No signs of any damage
P1010328	14	S	Site of Checkpoint No 14. No signs of damage

**Appendix 8 Forvie Photo Schedule - See Disc 4**

**Photos taken 11th April 2007, 6 months after event**

Photo No	Checkpoint/Location	Direction photo taken from	Notes
P1010343	5m to east of 1	S	Probable route into Checkpoint No 1. No sign of damage
P1010344	1	S	Site of Checkpoint No 1. No sign of damage
P1010345	3m to west of 1	E	Probable exit route from Checkpoint No 1. No signs of trampling
P1010346	5m to east of 2	W	Probable route into Checkpoint No 2. No signs of runners
P1010347	2	W	Site of Checkpoint No 2. No signs of runners
P1010348	3m to west of 2	W	Probable exit route from Checkpoint No 2. No signs of runners
P1010349	5m to NE of 3	W	Probable route into Checkpoint No 3. No damage visible.
P1010350	3	W	Site of Checkpoint No 3. No signs of trampling
P1010351	5m to NW of 4	SE	Probable route into Checkpoint No 4.
P1010352	4	S	Site of Checkpoint No 4. No visible signs of trampling
P1010353	5m to NE of 4	S	Animals digging at ground
P1010354	5m to NE of 5	SW	Probable route into Checkpoint No 5. No signs of competitors.
P1010355	5	SW	Site of Checkpoint No 5. No signs of competitors
P1010356	6	S	Site of Checkpoint No 6. No signs of damage
P1010357	7	W	Site of Checkpoint No 7. No signs of damage
P1010358	50m to SW of 7	NW	Trail through grass from Checkpoint No 7 to path - still some flattened grass. All surrounding grass dying back
P1010359	8	S	Site of Checkpoint No 8. No signs of competitors
P1010360	10m to N of 8	S	Probable exit route from Checkpoint No 8. No signs of competitors
P1010361	10m to N of 8	S	Probable exit route from Checkpoint No 8. No signs of competitors
P1010362	9	SE	Site of Checkpoint No 9. No signs of damage
P1010363	10	S	Site of Checkpoint No 10. No signs of damage
P1010364	11	S	Site of Checkpoint No 11. No signs of any damage to lichen. Dry lichen very brittle underfoot
P1010365	5m N of 11	N	Likely exit route from Checkpoint No 11. No signs of trampling
P1010366	12	S	Site of Checkpoint No 12. No signs of damage
P1010367	5m N of 12	S	Probable exit route from Checkpoint No 12 through gap in dunes. No signs of damage
P1010368	13	S	Site of Checkpoint No 13. No signs of competitors
P1010369	3m NW of 13	SW	Probable exit from Checkpoint No 13. No signs of any damage
P1010370	14	S	Site of Checkpoint No 14. No signs of damage

Note;

A fox was seen to the south-west of Checkpoint No 5