



# A1 transect surveys winter 2012/13 – protocol for fieldwork and data processing

## *Task- Systematic transects to determine the distribution of foraging geese among available habitat*

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## Background

This activity aims to collect statistically reliable data, using a systematic and repeatable methodology, to define the foraging areas of wintering geese, specifically red-breasted geese, in coastal Dobrudzha.

Feeding areas of geese can be distant from the roost sites (lakes and coastal waters) and irregularly used, so a systematic approach to searching is needed. Areas around roost sites, and up to 15 km inland will be sampled along predetermined transects. This does not provide a complete picture of the distribution, but does provide an unbiased and systematic assessment of the distribution of geese among available habitat. Observers must record data even in the absence of geese.

Information collected about the characteristics of habitats where geese are present and absent, will be modelled to identify the key factors that determine the distribution of geese among feeding areas. This model will be used to predict the suitability of other areas not sampled, and to map feeding habitats across the whole region.

The data will supplement data from systematic roost counts and remote tracking of wintering red-breasts and will aid as a tool for use in the assessment of investment proposals, and developing appropriate conservation measures for the Red-breasted Goose.

## Study area

The study will be carried out within a 15 km radius around roosting sites of wintering geese in Dobrudzha. It will focus on fields seeded with winter crops and stubble fields from previous crops, because this is where the overwhelming majority of wintering geese occur.

The plots and compartments to be monitored have been predefined. Each has a unique code to aid location when in the field and for reference during data input.

Two types of transects will be included in the surveys:

### Road-based transects:

Three main transect routes, similar to those followed in winter 2011/12, are designed for easy access, following the surfaced road network of the study area (see Annex I for map of routes). Each of these transects is approximately 150 km. The areas covered by these transects are:

1. Durankulak and northern third of study area;
2. Shabla Lake Complex and middle third of the study area;
3. Kaliakra SPA/IBA and southern third of the study area;

### Remote areas:

Additional coverage will be made in less accessible parts of the study area, following the same methodology as used on the road-based transects. This is in order to reduce the potential bias induced by counting birds solely in areas visible from surfaced roads (since these might tend to be areas where anthropogenic disturbance is relatively high). The areas covered by these transects are:

4. Remote parts of the region – a selection of remote transects in areas not covered by the road-based transects. The choice of areas was based on identified geographical gaps in coverage, as well as accessibility. They were not chosen on prior knowledge about goose distribution; and
5. C1 study area, covering plots of land located between Shabla and Durankulak lakes. Coverage of this area will form part of a four-year study on plots managed by project partner Kirilovi Ltd, and subject to the piloting of an agri-environment scheme for red-breasted geese.

A map of routes for the remote areas is provided in Annex I. These two transects will follow unsurfaced or poorly surfaced tracks and roads, and as such may not be fully accessible on all visits. While every effort will be made to cover these more remote transects at the same frequency as the main routes, it is accepted that the overall coverage may be less in such areas.

### Field teams

- Main transects – two teams of two surveyors.
- Remote transects and C1 area – one team of two surveyors.

### Field protocol

**IMPORTANT** - Any changes to the methods and schedule described below **MUST** be agreed with the conservation officer and scientific advisor in advance.

### Survey preparation

Prior to the start of surveys, individual fields and compartments visible from the transect routes have been mapped, and crop types/ fallow areas identified where possible. Each plot selected for inclusion in the surveys has been assigned a unique ID number/code, which will be used as a checklist by fieldworkers to ensure that all relevant plots are visited. A basemap of plots has been created for input into GPS units, and paper maps prepared to aid orientation in the field. The locations of the best observation points for viewing difficult plots have been added to the paper maps.

### Survey period

- Start date - to be confirmed.
- End date - mid-March 2013.

### Schedule of work

The study will be carried out daily during daylight hours - from 10.00 a.m. to 5.30 pm. This allows time for geese to leave the roosts and settle on their feeding grounds. On roost count days the transect study team takes part in the morning counts and then departs for the transect survey.

The transect routes will be alternated under the attached schedule (see Annex II) such that all transects are visited on both hunting and non-hunting days during the hunting season (January).

If the transect is particularly difficult to access, but others are more accessible, the order of transects should be changed to allow time for access to improve. The conservation officer and scientific advisor must be consulted before any changes are made.

### Checklist of field equipment

- Paper maps of transect routes including ortho-photo basemap, plot boundaries with unique codes, and observation points;
- Form 1 – one per transect day;
- Form 2 – enough for one form per plot, plus spares;
- 10x50 binoculars for each participant;

- Spotting scope and tripod (one per team);
- GPS unit with uploaded basemap (one per team);
- Spare batteries for GPS, to be carried, preferably in trouser pocket to keep them warm!
- Clip-boards for survey forms;
- Pencils for writing;
- Packed lunch, if required.

### *The survey*

The study is carried out by driving along the pre-defined transect routes. Field teams should attempt to visit/view all plots listed on the check-list provided (below).

Both the remote transects and the C1 area require a 4-wheel drive vehicle. Transects 1-3 require normal 2-wheel drive vehicles.

Survey teams should drive transect routes in opposite directions on alternate visits to avoid the same plots being visited at the same times of day. The two teams working on transects 1-3 should each follow transects in different directions *eg* team 1 = clockwise, team 2 = anti-clockwise. Further instructions will be provided to each team.

### *Orientation and recording plot location*

Observers should carry the following items to aid orientation, identification and correct assignment of plots in the field:

- GPS unit with a basemap of the plots uploaded, including coordinate grid to aid location;
- Printed ortho-photo with overlaid and numbered observation plots, and locations for best observation points (see Annex III for example map);
- A checklist of all plots to be visited (details below).

On locating the plot a waypoint should be created using the GPS, at the approximate centre of the plot. Observers should use the basemap, coordinate grid and the touch-screen on the GPS to identify the location for the waypoint. The ID number of the waypoint should be marked on the relevant survey form (Form 2 below) under 'WAYPOINT ID OF PLOT'.

### *Survey form completion*

During each transect, observers should complete TWO different forms:

**Form 1** - Transect information and checklist of plots to be visited.

**Form 2** - Data form for individual plots

***IMPORTANT*** - *It is imperative that observers complete both forms as they go through the transect, and NOT at the end of the day.*

Details of each form are as follows:

#### **Form 1 - Transect information and checklist of plots to be visited (Annex IV Table I).**

This form should be completed for every transect visit. All boxes should be completed in the transect information section and the checklist of plots should be worked through in accordance with the instructions provided in Annex V Table 3.

➤ *One form to be completed for EVERY TRANSECT VISIT.*

## Form 2 - Data form for individual plots (Annex IV Table 2)

This form must be completed for each plot visited, regardless of goose presence/absence. All parameters should be completed according to the instructions provided in Annex V Table 4.

➤ *One form to be completed for EVERY PLOT VISITED.*

### *Additional data*

Crop heights (estimate average height of plants) should be recorded for each plot at the beginning, middle and end of the field season, by filling in the crop height column of Form 1. The scientific advisor will inform observers about when they are required to do this. When recording crop height, if the field is too far away to make a reliable estimate, observers must use the category for 'not visible' (See Form 1). These plots will be checked separately, not as part of the transect survey.

Toward the end of the field season, transect teams should re-check the previously assigned crop types for each crop to account for any mis-identifications at the start of the season, and mark any changes on Form 1.

### Post-survey

On completion of each transect, completed forms should be checked for the following:

- There is one completed 'Form 2' for each plot listed as visited in Form 1;
- 'Form 2' sheets are in the same order of plots listed in Form 1;
- All sections of the forms have been filled in and there are no blanks;
- All data in the forms is comprehensible and tidy;
- For all plots with observed geese, the disturbance activities section (Form 2) is completed;

Forms should then be handed to the conservation officer/scientific advisor NO LATER than ONE WEEK after the survey date, for checking and validation. Any major errors/omissions in the forms will be identified and fed back to observers by the conservation officer/scientific advisor, with the aim of improving data quality on future visits.

Forms will then be given to the relevant person for data entry.

Fieldworkers should feed back to the conservation officer regularly about the numbers and whereabouts of geese they have observed. This information will be invaluable for other fieldwork activities such as catching/goose displacement study.

### *Data entry and validation*

Survey data should be entered into the BSPB database NO LATER than TWO WEEKS after completion of a visit. Any delays should be reported to the conservation officer/scientific advisor, who may reassign the data entry to other people, or provide further help if necessary. The database will be validated regularly so that any issues can be identified and overcome.

### Important points

#### Low numbers of geese in the area

Fieldworkers should continue with the fieldwork schedule unless told otherwise by the conservation officer/scientific advisor. They should feed back to the conservation officer **on a daily basis** about what they have seen in the area.

### Unable to access parts of transects

Reduced coverage under extreme conditions is expected and while every effort should be made to access the transects, collecting data should not be prioritised over personal safety. If parts of transects cannot be accessed, the fields not visited should be marked on the check list of transect plots, and the reasons given as to why they could not be visited.

If the transect is particularly difficult to access, but others are more accessible, the order of transects may be changed to allow time for access to improve. The conservation officer and scientific advisor should be consulted before any changes are made.

The locations of the best vantage points for viewing entire plots have been pre-determined and marked on the paper maps. However, if access is prevented to some points resulting in reduced coverage of a plot, this should be noted in Form 1 under 'Reason for no/reduced coverage'.

### If plots have to be surveyed from multiple vantage points

Sometimes the whole plot is not visible from one vantage point, and multiple locations need to be visited to see different parts of the plot. If the visible areas are distinct, the plot should be split into sub-plots *eg* BG12a and BG12b and a separate form completed for each. Where possible these have been predefined and added to the maps and checklist. However, in some circumstances observers may need to make their own judgement and ensure they do not double-count areas.

### Do I need to record the locations of flocks?

It is not necessary to mark the precise location of individual flocks within a compartment. A separate study will be conducted on how geese distribute in relation to boundaries, turbines etc. using dropping counts.

### Lunch breaks

Fieldworkers may stop for a lunch break but must ensure that they leave sufficient time to cover the entire transect.



**Annex I. Map of A1 transect routes (Orange = Transect 1, Green = Transect 2 and Pink = Transect 3). The routes are approximate – minor changes have since been made.**



## Annex II. Schedule for A1 transects and A3 fieldwork teams

			Team 1	Team 2	Team 3 AM	Team 3 PM
Date	Day (orange=hunting day)	Roost count days	Anni/Mladen	Anton/Pencho	Yana/Jifko	
01-Dec	Saturday					
02-Dec	Sunday					
03-Dec	Monday					
04-Dec	Tuesday					
05-Dec	Wednesday					
06-Dec	Thursday					
07-Dec	Friday					
08-Dec	Saturday					
09-Dec	Sunday					
10-Dec	Monday					
11-Dec	Tuesday					
12-Dec	Wednesday					
13-Dec	Thursday					
14-Dec	Friday					
15-Dec	Saturday	Roost count				
16-Dec	Sunday	Roost count		Transect 1		
17-Dec	Monday			Transect 2		
18-Dec	Tuesday			Transect 3		
19-Dec	Wednesday		Transect 2	A3		
20-Dec	Thursday		Transect 3	A3		
21-Dec	Friday		Transect 1	Transect 2	A1 remote	C1
22-Dec	Saturday		Data	Transect 3	A1 remote	A1 remote
23-Dec	Sunday			Transect 1	C1	A1 remote
24-Dec	Monday					
25-Dec	Tuesday					
26-Dec	Wednesday					
27-Dec	Thursday		Transect 3	Data	Data	
28-Dec	Friday		Transect 1	Data	C1	A1 remote
29-Dec	Saturday	Roost count	Transect 2	A3	A1 remote	A1 remote
30-Dec	Sunday	Roost count	Data	A3	A1 remote	C1
31-Dec	Monday					
01-Jan	Tuesday					
02-Jan	Wednesday		Transect 1			
03-Jan	Thursday		Transect 2		Data	
04-Jan	Friday		Transect 3		A1 remote	C1
05-Jan	Saturday		Data	Transect 1	A1 remote	A1 remote
06-Jan	Sunday			Transect 2	C1	A1 remote
07-Jan	Monday			Transect 3	Data	
08-Jan	Tuesday			Data		
09-Jan	Wednesday		Transect 2			
10-Jan	Thursday		Transect 3			
11-Jan	Friday		Transect 1		C1	A1 remote



			Team 1	Team 2	Team 3 AM	Team 3 PM
Date	Day (orange=hunting day)	Roost count days	Anni/Mladen	Anton/Pencho	Yana/Jifko	
12-Jan	Saturday	Roost count	Data	Transect 2	A1 remote	A1 remote
13-Jan	Sunday	Roost count		Transect 3	A1 remote	C1
14-Jan	Monday			Transect 1	Data	
15-Jan	Tuesday			A3		
16-Jan	Wednesday		Transect 3	A3		
17-Jan	Thursday		Transect 1	Data		
18-Jan	Friday		Transect 2			
19-Jan	Saturday		Data	Transect 3	A1 remote	C1
20-Jan	Sunday			Transect 1	A1 remote	A1 remote
21-Jan	Monday			Transect 2	C1	A1 remote
22-Jan	Tuesday			Data	Data	
23-Jan	Wednesday		Transect 1			
24-Jan	Thursday		Transect 2			
25-Jan	Friday		Transect 3		C1	A1 remote
26-Jan	Saturday	Roost count	Data	Transect 1	A1 remote	A1 remote
27-Jan	Sunday	Roost count		Transect 2	A1 remote	C1
28-Jan	Monday			Transect 3	Data	
29-Jan	Tuesday			A3		
30-Jan	Wednesday		Transect 2	A3		
31-Jan	Thursday		Transect 3	Data		
01-Feb	Friday		Transect 1		A1 remote	C1
02-Feb	Saturday		Data	Transect 2	A1 remote	A1 remote
03-Feb	Sunday			Transect 3	C1	A1 remote
04-Feb	Monday			Transect 1	Data	
05-Feb	Tuesday			Data		
06-Feb	Wednesday		Transect 3			
07-Feb	Thursday		Transect 1			
08-Feb	Friday		Transect 2		C1	A1 remote
09-Feb	Saturday	Roost count	Data	Transect 3	A1 remote	A1 remote
10-Feb	Sunday	Roost count		Transect 1	A1 remote	C1
11-Feb	Monday			Transect 2	Data	
12-Feb	Tuesday			A3		
13-Feb	Wednesday		Transect 1	A3		
14-Feb	Thursday		Transect 2	Data		
15-Feb	Friday		Transect 3		A1 remote	C1
16-Feb	Saturday		Data	Transect 1	A1 remote	A1 remote
17-Feb	Sunday			Transect 2	C1	A1 remote
18-Feb	Monday			Transect 3	Data	
19-Feb	Tuesday			Data		
20-Feb	Wednesday		Transect 2			
21-Feb	Thursday		Transect 3			
22-Feb	Friday		Transect 1		C1	A1 remote
23-Feb	Saturday	Roost count	Data	Transect 2	A1 remote	A1 remote

			Team 1	Team 2	Team 3 AM	Team 3 PM
Date	Day (orange=hunting day)	Roost count days	Anni/Mladen	Anton/Pencho	Yana/Jifko	
24-Feb	Sunday	Roost count		Transect 3	A1 remote	C1
25-Feb	Monday			Transect 1	Data	
26-Feb	Tuesday			A3		
27-Feb	Wednesday		Transect 3	A3		
28-Feb	Thursday		Transect 1	Data		
01-Mar	Friday		Transect 2		A1 remote	C1
02-Mar	Saturday		Data	Transect 3	A1 remote	A1 remote
03-Mar	Sunday			Transect 1	C1	A1 remote
04-Mar	Monday			Transect 2	Data	
05-Mar	Tuesday			Data		
06-Mar	Wednesday		Transect 1			
07-Mar	Thursday		Transect 2			
08-Mar	Friday		Transect 3		C1	A1 remote
09-Mar	Saturday	Roost count	Data	Transect 1	A1 remote	A1 remote
10-Mar	Sunday	Roost count		Transect 2	A1 remote	C1
11-Mar	Monday			Transect 3	Data	
12-Mar	Tuesday			A3		
13-Mar	Wednesday			A3		
14-Mar	Thursday			Data		
15-Mar	Friday					
16-Mar	Saturday					
17-Mar	Sunday					
18-Mar	Monday					
19-Mar	Tuesday					
20-Mar	Wednesday					
21-Mar	Thursday					
22-Mar	Friday					
23-Mar	Saturday	Roost count				
24-Mar	Sunday	Roost count		A3		
25-Mar	Monday			A3		
26-Mar	Tuesday					
27-Mar	Wednesday					
28-Mar	Thursday					
29-Mar	Friday					

### Annex III. Map of plots along transect routes, for taking into field





**Table 2 – Form 2: Data form for individual plots**

<b>Observer initials</b>		<b>Date(eg 23/01/13)</b>		<b>Transect number</b>							
<b>Field number/Code</b>		<b>Time of recording</b>	<b>Start (hh:mm)</b>		<b>End (hh:mm)</b>						
<b>GPS waypoint ID for plot</b>			:	:							
<b>For all plots:</b> Complete the following information on the number of birds present or each species listed. If count is zero, please tick box below. Circle Yes/No to indicate whether you feel that you have under- or over-estimated the actual number, eg due to bad visibility or using multiple viewpoints.											
<i>B. ruficollis</i>		<i>A. albifrons</i>		<i>Cygnus</i> sp.		Other geese (specify)					
Number:	Tick if zero <input type="checkbox"/>	Number:	Tick if zero <input type="checkbox"/>	Number:	Tick if zero <input type="checkbox"/>	Number:	Tick if zero <input type="checkbox"/>				
Underestimate?	Yes/No	Underestimate?	Yes/No	Underestimate?	Yes/No	Underestimate?	Yes/No				
Overestimate?	Yes/No	Overestimate?	Yes/No	Overestimate?	Yes/No	Overestimate?	Yes/No				
<b>Behaviour of geese</b> (state the prevailing behaviour of the majority of geese at the moment of finishing count)											
Feeding		<input type="checkbox"/>	Alert		<input type="checkbox"/>	Other (please specify)					
<b>Average density of crop</b>	No shoots	<input type="checkbox"/>	Sparse	<input type="checkbox"/>	Thick	<input type="checkbox"/>	Tussoks	<input type="checkbox"/>	Don't know	<input type="checkbox"/>	
<b>Main colour state of crop</b>	Green	<input type="checkbox"/>	Yellowing		<input type="checkbox"/>	Brown		<input type="checkbox"/>			
<b>Visible signs of goose grazing</b>	No obvious signs of grazing		<input type="checkbox"/>	Some signs of grazing		<input type="checkbox"/>	Signs of heavy grazing		<input type="checkbox"/>	Too far away	<input type="checkbox"/>
<b>Snow/water cover</b>	Snow cover (to nearest 10%)		%	Is there an obvious visible pool for drinking?			Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	
<b>Disturbance activities (please complete for ALL plots with geese – Do NOT fill in if no geese present)</b> For each disturbance activity that occurred, please tick ONE column only. Use 'other notable activity' if another activity was observed, and specify the activity. If no potentially disturbing activities occurred, please tick box for 'no notable activity'.											
<b>NO notable activities (listed below) occurred</b>			<input type="checkbox"/>								
<b>Type of disturbance:</b>			<b>Reaction of geese (tick ONE column per activity)</b>								
			<b>Event occurred but no visible reaction</b>	<b>Some disturbance flight but birds did NOT leave the field</b>	<b>Some disturbed birds left the field</b>	<b>Majority/all of birds left the field</b>					
Raptor (specify if harrier, eagle, hawk or buzzard)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Mammalian predator (give species)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Hunting shots fired			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Farm machinery in field			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Vehicles on roads/tracks			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
People present			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Other notable activity (specify)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

## Annex V. Instructions for completing forms

**Table 3 – Instructions for completing Form 1: Transect information and checklist of plots.**

<b>Transect information</b>	Please complete this section ONCE for each transect visit
<b>NAMES OF OBSERVERS</b>	Include names and contact details of all observers.
<b>DATE</b>	Enter the date of the transect survey as Day/Month/Year <i>eg</i> 23/01/2013
<b>TIME OF RECORDING</b>	Enter the approximate start and finish times using the 24-hour clock ( <i>eg</i> 09:00/13:00).
<b>TRANSECT NUMBER</b>	The transect number to be covered will be listed here: <ol style="list-style-type: none"> <li>1. Durankulak and northern third of study area</li> <li>2. Shabla Lake Complex and middle third of the study area</li> <li>3. Kaliakra SPA/IBA and southern third of the study area</li> <li>4. Remote area transects</li> <li>5. C1 area between Durankulak and Shabla</li> </ol>
<b>WIND STRENGTH</b>	Please circle the approximate wind strength according to the Beaufort scale (see Annex V, Table 6). If the wind changes significantly during the course of the transect, record the change and approximate time of the change.
<b>CLOUD TYPE AND % COVER</b>	Please enter the appropriate cloud type <i>eg</i> cumulus/ cirrus and the estimated percentage cover of clouds in the sky. If the cloud cover changes significantly during the course of the transect, record the change and approximate time of the change.
<b>WEATHER EVENTS</b>	Please tick if there was rain, snow or fog for a significant proportion of the time.
<b>Checklist of plots</b>	This table lists all the plots for coverage on the transect number specified. They are already entered into the form.
<b>Unique field code</b>	Each of the listed plots should be visited
<b>Crop type</b>	The type of crop in each field is predefined in the form. If a different crop type is noticed in the field, please correct this on the form.
<b>Average height of crop</b>	This column should be filled in for each plot at the beginning, middle and end of the season, using the five categories provided. If the field is too far away to make a reliable estimate, use category 5 (not visible).
<b>Field form completed? (Y/N)</b>	Please enter a Y (Yes) if the plot was visited and a data form completed. Enter N (No) if the plot was not visited.
<b>Reason for no/reduced coverage</b>	To be completed for all plots not visited, or plots with incomplete coverage. Please give the reason for not visiting/reduced coverage, <i>eg</i> no access. These data are important for scientific reasons rather than to keep check of fieldworkers, so please give an honest answer.
<b>Field form verified</b>	Please DO NOT fill in this column. This will be completed by the conservation officer/scientific advisor when checking the form against the completed data forms.
<b>Entered into database by (insert initials)</b>	To be filled in by the person who entered the data into the database.



**Table 4 - Instructions for completing Form 2: Data form for individual plots.**

Recording field	Instructions
<b>Transect information</b>	Please complete this section for each data form sheet completed
<b>INITIALS OF OBSERVERS</b>	Include names and contact details of all observers.
<b>DATE</b>	Enter the date of the transect survey.
<b>TRANSECT NUMBER</b>	Insert the transect number to be covered: <ol style="list-style-type: none"> <li>1. Durankulak and northern third of study area</li> <li>2. Shabla Lake Complex and middle third of the study area</li> <li>3. Kaliakra SPA/IBA and southern third of the study area</li> <li>4. Remote area transects</li> <li>5. C1 area between Durankulak and Shabla</li> </ol>
<b>Information to be recorded for EVERY PLOT</b>	The following information must be completed for EVERY PLOT visited, INCLUDING fields where no geese are present.
<b>UNIQUE ID OF PLOT</b>	Enter the specific identification number for the plot, referring to GPS basemap and paper map for numbering.
<b>WAYPOINT ID OF PLOT</b>	Using the GPS a waypoint must be created in the centre of the observed plot. The unique ID of the waypoint should be recorded on the form.
<b>TIME PERIOD OF OBSERVATION</b>	Enter the approximate start and finish times using the 24-hour clock (eg 09:00/13:00). Only counts made between these times should be included on the form.
<b>WATERBIRD COUNTS</b>	<p><b>Number:</b> Enter the count of individuals in the relevant boxes under each of the species listed, to the nearest 10%. Priority should be given to counting the key species <i>B. ruficollis</i> and <i>A. albifrons</i>. Please specify the species of swans and other geese counted.</p> <p><b>Tick if zero:</b> Tick this box if no geese were present in the plot.</p> <p><b>Underestimate/Overestimate?</b> Circle Yes if you feel that certain factors prevented you from recording a reasonably accurate number of the birds present, under the relevant boxes for an under- or over-estimate. Circle No under both options if you feel that your estimate is reasonably accurate.</p>
<b>PREVAILING BEHAVIOUR OF GEESE</b>	Please tick the predominant behaviour (feeding, being alert or other behaviour) of the <b>majority</b> of <i>B. ruficollis</i> and <i>A. albifrons</i> <b>at the time of completing the count</b> . If 'other behaviour', please specify the behaviour.
<b>AVERAGE DENSITY OF PLANTS</b>	Please tick ONE option only (No shoots, Sparse, Thick or In tufts), to best describe the average density of the vegetation. If the field is too far away to make a reliable estimate, tick 'Too far away'.
<b>MAIN COLOUR STATE OF CROP</b>	Please tick ONE option only (Green, Yellowing, or Brown), to best describe the <b>predominant</b> colour state of the crop i.e. more than 50% of the field.
<b>VISIBLE SIGNS OF GOOSE GRAZING</b>	<p>Please tick ONE option only (No obvious signs of grazing, Some signs of grazing or Signs of heavy grazing), as appropriate. If the field is too far away to make a reliable estimate, tick 'too far'.</p> <p>Signs of grazing may be visible droppings, short-grazed areas of wheat etc. Signs of heavy grazing would be areas of bare soil, heavily trampled ground etc. <i>This is concerned with the appearance of the crop, not the presence/absence of geese.</i></p>
<b>SNOW AND WATER COVER</b>	<p><b>Snow cover:</b> Please enter the approximate percentage of the field that was covered with snow, to the nearest 10%.</p> <p><b>Is there an obvious visible pool for drinking?</b> Geese will gather around even small pools in fields in to drink. These may be located in dips or even tracks made by farm vehicles. Please indicate Yes or No, whether there are obvious pools visible.</p>
<b>DISTURBANCE ACTIVITIES</b>	Please complete this section for all plots where geese are present.
<b>NO NOTABLE ACTIVITIES OCCURRED</b>	Please tick the box if NO potentially disturbing activities took place.
<b>TYPE AND NATURE OF DISTURBANCE</b>	For each of the potentially disturbing activities listed, please tick ONE column only under the 'reaction of geese'. If a potentially disturbing activity occurred but is not given in the list, please use the 'Other notable activity' row and specify the activity.

## Annex VI. Reference material

**Table 5 – Beaufort wind scale**

Beaufort <sup>a</sup>	Avg Miles per Hour	Knots	Surroundings
0 calm		0-1	Smoke rises vertically and the sea is mirror smooth
1 light air	1.2 - 3.0	1 - 3	Smoke moves slightly with breeze and shows direction of wind
2 light breeze	3.7 - 7.5	4 - 6	You can feel the breeze on your face and hear the leaves start to rustle
3 gentle breeze	8.0 - 12.5	7 - 10	Smoke will move horizontally and small branches start to sway. Wind extends a light flag
4 moderate	13.0 - 18.6	11 - 16	Loose dust or sand on the ground will move and larger branches will sway, loose paper blows
5 fresh breeze	19.3 - 25.0	17 - 21	Surface waves form on water and small trees sway
6 strong breeze	25.5 - 31.0	22 - 27	Trees begin to bend with the force of the wind and causes whistling in telephone wires. Some spray on the sea surface
7 moderate gale	32.0 - 38.0	28 - 33	Large trees sway. Moderate sea spray
8 fresh gale	39.0 - 46.0	34 - 40	Twigs break from trees, and long streaks of foam appear on the ocean
9 strong gale	47.0 - 55.0	41 - 47	Branches break from trees
10 whole gale	56.0 - 64.0	48 - 55	Trees are uprooted and the sea takes on a white appearance
11 storm	65.0 - 74.0	56 - 63	Widespread damage
12 hurricane	75+	64 +	Structural damage on land, and storm waves at sea