

Manual to count Great Cormorant roosts

The January 2013 roost count in the Western Palearctic

Version 1 - December 2012



IUCN/Wetlands International Cormorant Research Group (CRG)

& The European Commission project 'CorMan'

1 Quick Guide / Summary

The **prime date** to make the Pan European winter roost count will be the weekend of the **12-13 January 2013**. Additionally and as an alternative option (e.g. in case of severe weather conditions) the roost count can be carried out during the following weekdays or postponed to the next weekend (19-20 January) latest.

Count the number of cormorants on the **night roost** (= total number of birds present when darkness is completed). Report your **best estimate of total number** on the roost at complete darkness if you cannot count all the cormorants present on the roost. Keep disturbance of the roost at a minimum when counting.

Report your count results

- Through the count project homepage <http://www.cormocount.eu/> after you have been registered as a counter (see the sub-page 'Login', top right corner)
- By filling a standard count form. Mail the filled form to the National Coordinator in your country. A standard form in pdf as a guideline can be downloaded at <http://www.cormocount.eu/instructions.aspx> or <http://cormorants.freehostia.com/index.htm>
- Or in another way as you have been informed by the National Coordinator.

Minimum of information needed

- **Name of observer**
- **E-mail address** of the person reporting the count result
- Name of your **country**
- **Date of count**
- **Hour of count** (start and end of observation time)
- **Roost (site) name** (add name of Wetland area /river)
- **Geographical coordinates** of roost site. Give Latitude and Longitude in decimal degrees. See guide at <http://www.cormocount.eu/instructions.aspx>
- **Total number of cormorants present** (counted or best estimate given)

Deadline to report count results

Individual counters should submit their records to their National Coordinator as soon as possible after the field work. The Counts Project asks all National Coordinators to go through a data quality check and to send in all country results before **1 May 2013**.

Questions concerning the counts should be addressed to the relevant National Coordinator or to the Area Coordinators (see Appendix I).

2 Introduction

The IUCN/Wetlands International Cormorant Research Group is collaborating with the new EC project 'CorMan' in order to assess the number and distribution of great cormorants in Europe during breeding and winter.

The aim of the joint cormorant count project ***Cormorant Counts in the western Palearctic*** is to organise a pan-European census of breeding colonies in 2012 and a census of winter roosts in January 2013.

Most countries will report the results at the national level. The joint count project will report the major results from the count

- On the homepage of the IUCN/Wetlands International Cormorant Research Group (<http://cormorants.freehostia.com/index.htm>)
- On the official EU Cormorant Platform (http://ec.europa.eu/environment/nature/cormorants/home_en.htm).

This short guidance about how to report count results and how to count cormorants on roosts is partly based on the count section of 'The INTERCAFE Field Manual' (Carss *et al.* 2012).

Questions concerning the counts (where to count, how to count and how to report the results of the counts etc.) should be addressed to the relevant National Coordinator (or Sub-national /Provincial coordinator) or to the relevant Area Coordinators (see Appendix I).

3 Reporting of results

3.1 How to report

The National Coordinator will give you the instructions about how he or she would like you to report the results of your roost count(s). Some countries are using **already existing data-collection-systems** for counts of cormorants.

Report through the project homepage. In some countries observers will report through the homepage developed specifically for reporting results from counts of cormorant roosts: <http://www.cormocount.eu/>

Only registered users can log on and enter data through this home page. If you would like to register, please go to the subpage 'Login', go to the top on the right, above the cormorant picture, and click on 'HERE'. Your National Coordinator will then automatically receive an e-mail and he or she will accept you as a user of the homepage. You automatically receive an e-mail with username and password.

Other ways of reporting results

In some countries the National Coordinator offers the observer the option of reporting back by entering data in a standard form if that is preferred. The count project has designed a **standard protocol form** in a pdf format that can be used for data collection (see Appendix III in this manual). The form can be downloaded from:

- The count project homepage under 'Instructions'
<http://www.cormocount.eu/instructions.aspx>
- The homepage of the IUCN/Wetlands International Cormorant Research Group
<http://cormorants.freehostia.com/index.htm>
- Or you can receive the form by e-mail from the relevant National Coordinator or Area Coordinator.

Individual counters will mail the filled form to the National Coordinator in their country.

Depending on individual agreements made or by the use of already existing networks in a country National Coordinators can receive count results also in other ways, e.g. as text in an e-mail or through an already existing national system for reporting count results.

3.2 What to report

Required information. For the joint project "Cormorant Counts in the western Palearctic" the following **minimum of information** about the roost count is needed:

- **Name of observer**
- **E-mail address** of the person reporting the count result
- Name of your **country** (add name of province)
- **Date of count**
- **Hour of count** (start and end of observation time)
- **Roost (site) name** (add name of Wetland area /river)
- **Geographical coordinates** of roost site. Give Latitude and Longitude in decimal degrees.
- **Total number of cormorants present on the roost when darkness is completed** (counted or best estimate given)

Finding Coordinates and /or converting coordinates to decimal degrees

A guide to find the coordinates in decimal degrees by the use of Google Earth is given on <http://www.cormocount.eu/instructions.aspx>

To convert coordinates from original degrees, minutes, seconds to degrees and decimal degrees in WGS84 a variety of tools can be found on the web - e.g. you can try the following link: <http://transition.fcc.gov/mb/audio/bickel/DDDMSS-decimal.html>

Useful supplementary information. Your National Coordinator may ask for more details relevant for the roost count. Suggestions for supplementary information like describing environmental conditions or taking notes about bird flocks or disturbances observed during the count are listed in Appendix II and in the protocol form shown in Appendix III in this manual.

3.3 When to report

The National Coordinator has probably given you a deadline for reporting your roost count(s) results on a national level already. Be aware that the National Coordinator needs time for data quality checks and for communication with individual counters to clear up questions among the members of the count teams. We therefore recommend that you send in your records **immediately** after the field work is completed.

The Count Project asks National Coordinators to send in all roost site records on a national level before **1 May 2013**.

4 When and where to count

The **prime date** to make the count will be the weekend of the **12-13 January 2013**. Additionally and as an alternative option (e.g. in case of severe weather conditions) the roost count can be carried out during the following weekdays or postponed to the next weekend (19-20 January) latest.

The Count Project tries to keep the "time slot" for the **simultaneous Pan-European roost counts** as narrow as possible. Fairly stable weather conditions in the middle of January will guarantee that cormorants will not start moving and disperse over larger distances within the given count period.

The **aim** is to count the number of cormorants on all night roosts in all participating countries.

4.1 Recommended methods for counting migrating Cormorants

- Where:** count cormorants on night-roost
When: simultaneous evening counts (late afternoon before dusk)
How: use standard protocols to take records

5 Roost counts

Standard waterbird counts are normally conducted during the day time. This counting methodology is not appropriate when assessing the total numbers of Great Cormorants in a specific region during the winter or the migration period. This is because Cormorants frequently move between foraging and loafing sites during their daily activities flying over larger distances. There is a strong risk of either missing birds or double counting individuals by checking single watercourses during day time. Workers seeking an accurate count of Cormorants can take advantage of the communal roosting habit of the species. In practice this means that Cormorant counts must be made by counting the number of birds on roost sites. These counts should be organized in a coordinated and simultaneous way and must take place in the late afternoon before dusk.

5.1 How is a night roost defined ?

Cormorants are communal birds and gather at roosts both during the day and at night. Normally after foraging Cormorants tend to form also "day roosts" which can be located close to their feeding areas. In order to distinguish a day roost from a night roost it is therefore necessary to wait until nightfall to see whether Cormorants leave a specific site or if they stay overnight.

At the end of the day during the non-breeding season and especially during the winter migration period all Cormorants from a given area aggregate at a communal night roost - a traditional site used night after night and year after year. Over the years these night-roosts where birds congregate and rest frequently are easy visibly due to the white colour of the guano on the trees or on the ground.

6 The counting of a roost

6.1 Timing of the count

Cormorant night roost counts should be coordinated in time within a certain area. This means that all counts have to be carried out on the the same day simultaneously by all observers.

Cormorant flocks can frequently shift between adjacent night roosts locally, or over a wider area and so simultaneous counts on the same date require coordination on a regional, provincial or national level. Similarly close international coordination is crucial between neighbouring countries as they often share roost sites along national borders along river courses.

6.2 How to count

Field workers normally use binoculars or a telescope to count Cormorants. Observers should work from a sheltered position that offers a good view of the roost but does not go closer than the bird's reaction distance so that the birds can enter or leave the roost without disturbance. The more birds that are present at a roost, the more difficult it becomes to collect and record additional information on a small scale (e.g. age ratios). At large roosts, flight movements might be so fast and in such big waves that observers need to concentrate on just counting the numbers with no time left to take short notes on the flock size of arriving birds or flight directions.

Counting birds which are moving in big flocks requires training and field experience. Such counts may be made easier through counting teams, where one observer watches the birds through binoculars and a second person records the running commentary on bird numbers, flight directions, flock-size, age composition etc.

6.3 Undertaking an evening roost-count (terrestrial inland site)

The observer should be in place around two hours before dusk, but this period can be shorter if the roost is small (up to 300 birds) and/or the counter is familiar with the birds' behaviour at the specific location. However, it is necessary that the observer continues to count and stays in place until it is completely dark.

It is recommended to proceed with counts in the following way:

- on arrival at the counting site write down the starting time of your observation. Start with a preliminary overview counting the birds already present on the roost.
- take records regularly every 10 - 15 minutes by scanning the whole area. Write records down on a protocol list chronologically
- during the counting period record the arrival of every bird entering the roost, pay especially attention to large flocks. Taking notes about time of arrival and flight direction can be useful to identify any shifting between simultaneously- counted neighbouring roosts.
- just before complete darkness make a final count of all the birds present which will be staying over night on the roost. Stay until complete darkness and write down the time when you leave the observation point.

Final roost count result:

number of Cormorants counted on the roost = total number of birds present when darkness is completed.

6.4 Counts at coastal areas, aerial surveys

The counting methods described above are generally most appropriate for inland roost sites accessible to observers on foot. It is considerably more difficult to count cormorant roosts along marine shorelines or on islands where boats are needed to count these type of roosts.

The aerial survey is a frequently used method for estimating waterbird flocks in general as well as for counting breeding populations. To date, only a few European countries have used this method so far also to count cormorants at their roosts during the winter months.

7 Literature

- T. Bregnballe, D. Carss, S.-H. Lorentsen, S. Newson, J. Y. Paquet, R. Parz-Gollner, S. Volponi (2012). Counting cormorants. Chapter 3 in: Carss, D.N., Parz-Gollner, R. & Trauttmansdorff, J. (eds.) The INTERCAFE Field Manual - research methods for cormorants, fishes and the interactions between them. COST Action Final Report II. ISBN 978-1-906698-08-9

Appendix I - Area Coordinators

Area Coordinators maintain contact with national coordinators. Communication with individual counters will normally either be through the National Coordinator or through a Provincial Coordinator. However, you are welcome to address questions to the relevant Area Coordinators. There are two Cormorant Count Area Coordinators in each major area of Europe and the countries further east.

Area WEST (orange):

Loic Marion [Loic.marion@univ-rennes1.fr] & Jean-Yves Paquet [jean-yves.paquet@aves.be]
Belgium, France, Ireland, Luxembourg, Portugal, Spain, The Netherlands, United Kingdom,
Northern Africa (Algeria, Libya, Morocco, Tunisia)

Area NORTH (blue):

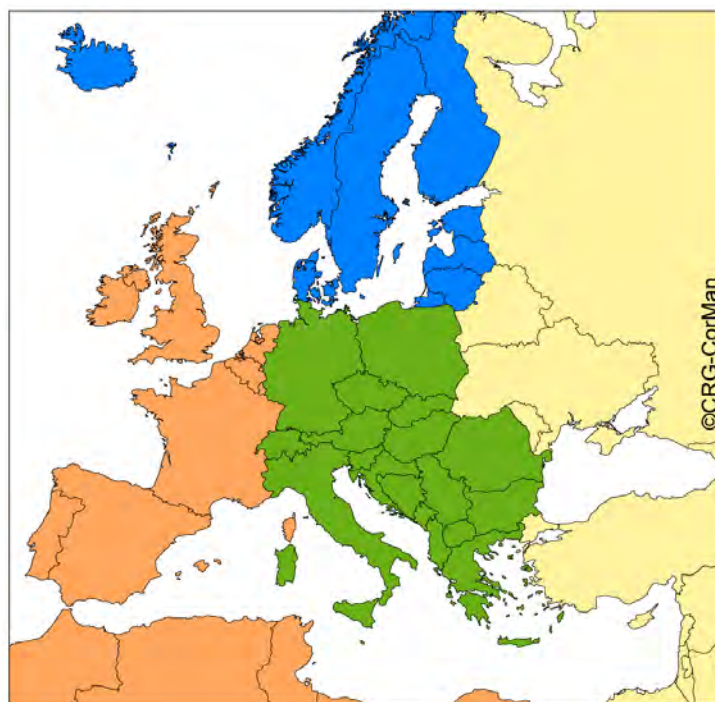
Thomas Bregnballe [tb@dmu.dk]
Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Russia, Sweden

Area CENTRAL & EAST (green):

Rosemarie Parz-Gollner [parz@boku.ac.at] & Stefano Volponi [stefano.volponi@isprambiente.it]
Austria, Albania, Bosnia Herzegovina, Bulgaria, Croatia, Czech Republic, Germany,
Greece, Italy, Hungary, Kosovo, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia,
Slovenia, Switzerland

Area FURTHER EAST (yellow):

Thomas Bregnballe [tb@dmu.dk]
Belarus, Georgia, Moldova, Russia, Turkey, Ukraine



Appendix II -

Roost counts - supplementary information

If possible additional notes can be taken about the following details:

Type of water body

Tick the relevant box listed on the protocol form or give details about the type of water body where the roost site is located (give only one answer).

Type of roost site

Please give details and describe or mark the relevant category listed on the protocol form (multiple answers possible).

Type of count

Please indicate if you have conducted a **night roost count** or if you have counted cormorant numbers during the day - e.g. being involved in an International Waterbird Count census (IWC) on a specific date.

Method of counting

Please indicate if you have been counting Cormorants on a roost from the ground (walking or driving to the location), by ship /boat or by aerial survey.

Quality of count

please classify and choose among the following options (give only one answer):

optimal count = good visibility of all birds present. The count was conducted by a simple count of all birds perched /visible.

sub-optimal count = some birds were hidden due to bad observation conditions or partly hidden roost location. The count was conducted mostly by a simple count of birds visible, a small proportion of the total number is estimated.

low quality count = most birds on the roost were not visible due to very bad weather conditions or well concealed roost. The count may have been conducted by flushing the birds or by counting arrival/departure of birds instead of perched /resting birds. The number given is believed to be quite close to reality.

rough estimate / "best guess" = the number given is considered to be a rough estimate or a best guess.

Local weather conditions

Describe details about the local situation like fog, wind, rain, snowfall or amount of ice-cover, all kind of factors that might influence viewing conditions during the count.

Age ratio on the roost - please give numbers (N) or an estimate (%) if possible

- **adult birds** = birds with complete black plumage
- **non-adult /immature birds** = individuals with highly variable breast plumage, this ranges from an almost completely white breast to various extents and patterns of white and dark speckled underparts.
- **birds of unknown age** - not visible, no distinction possible.

Further remarks about the count

Note flocks of other bird species being present (herons, sea eagles, gulls), take notes about the detection of ringed birds.

Disturbances during the counting period

Please indicate human presence, boat /ship traffic, shooting, harassment actions, felling of trees etc.

Appendix III

Roost Count Form in pdf format

Can be downloaded from

<http://www.cormocount.eu/instructions.aspx>

or

<http://cormorants.freehostia.com/index.htm>

EU Cormorant Roost Count mid January 2013

Part A - Affiliation and location

COUNTRY	Name of province	Date of counting (dd-mm-yyyy)
Name of respondent / local counter		Counting time from - until (hh:mm) from: until:
Location - name of roost site		Name of River /Lake /Wetland Area
Geographical coordinates of roost site /or nearest town, village...(please use decimal degrees)		
Decimal degree N:		<i>See Manual for details about coordinates</i>
Decimal degree E:		
Type of water body (tick box with number of category): (1) Open sea /Shore, (2) Estuaries /River delta, (3) Inland sea /Large Lagoon, (4) Large Lakes, (5) Large Rivers, (6) Streams /Small Rivers, (7) Reservoirs /Small Lakes /Sandpits, (8) Fish Ponds, (9) Other type of inland waterbody <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9		
Type of roost site (please specify and tick box below): (1) Sand flat /mud flat /bare soil, (2) Pebbles or stretch of flat rock, (3) Boulder dam, rocks, poles in water, incl. fishing gear, (4) Small bush in open water, (5) Riverine forest, small trees (<10m), (6) Other forest, major trees (>10m), (7) Power pylon, masts, (8) Other artificial structures - <i>please specify in the field "Additional remarks other topics"</i> <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8		

Part B /1 - Counting data

<b style="color: red;">Number of cormorants counted on the roost:	
<i>(= total number of birds present when darkness is completed)</i>	
Best estimate of total number at complete darkness:	

Please write the time of the start and end of your observation in the box "counting time (from - until)" above

Quality of count (please classify and tick only one of the options) <i>See Manual for classification details</i>	
<input type="checkbox"/> Optimal count	<input type="checkbox"/> Low quality count
<input type="checkbox"/> Sub-optimal count	<input type="checkbox"/> Rough estimate / "best guess"

Type of count	Method of counting
<input type="checkbox"/> Roost count	<input type="checkbox"/> from the ground
<input type="checkbox"/> Other	<input type="checkbox"/> by ship /aerial survey



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Part B /2 - Additional remarks

Local weather conditions - (please describe - e.g. fog, wind, rain-, snowfall, ice cover, good view..)		
Age ratio on the roost - please give numbers (N) or an estimate (%) if possible		
Adult birds	Non-adults /Immatures	Birds of unknown age
N <input type="text"/> or % <input type="text"/>	N <input type="text"/> or % <input type="text"/>	N <input type="text"/> or % <input type="text"/>
Remarks about the count (e.g. other birds being present - herons, sea eagles; ringed birds.....)		
Disturbances during the counting period (please indicate e.g. human presence, shooting, boat /ship traffic....)		
Additional remarks - other topics		

Part C - Contacts

Name of respondent / local counter(s):	
Tel.Nr.:	Email:
Address:	

Please return this form with your count results to:	
Name of National Coordinator:	
Contact of National Coordinator:	

THANK YOU VERY MUCH FOR YOUR HELP AND COOPERATION