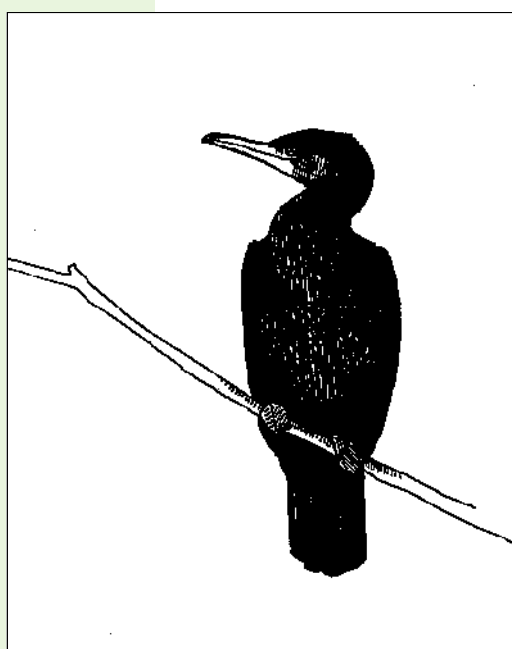


# Number and distribution of Great Cormorants *Phalacrocorax carbo* in Switzerland in January 2003

Verena Keller  
Marcel Burkhardt



Pan European Cormorant midwin-  
ter census 2003 - national report  
for Switzerland



# Impressum

## **Number and distribution of Great Cormorants *Phalacrocorax carbo* in Switzerland in January 2003.**

Pan European Cormorant midwinter census 2003 – national report for Switzerland.

### **Authors:**

Dr. Verena Keller, Marcel Burkhardt

### **Illustration (cover):**

J. Gremaud

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### **Ordering address:**

Schweizerische Vogelwarte, CH-6204 Sempach

Tel 041 462 97 00, Fax 041 462 97 10, e-mail [info@vogelwarte.ch](mailto:info@vogelwarte.ch)

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## Summary

The report presents the results of the count of Great Cormorants at roosts in Switzerland in January 2003, carried out as part of the coordinated European census organised by the Wetlands International Cormorant Research Group. In total, 4201 Cormorants were counted in Switzerland, 5885 if the roosts across the borders to adjacent countries are included. Overall, 60 occupied roosts were found, 46 of which were in Switzerland.

## Zusammenfassung

Der Bericht stellt die Resultate der Kormoran-Schlafplatzzählungen in der Schweiz im Januar 2003 zusammen. Diese fanden im Rahmen der gesamteuropäischen, von der Arbeitsgruppe Kormoran von Wetlands International koordinierten Zählung statt. Insgesamt wurden in der Schweiz 4201 Kormorane erfasst, 5885 unter Einbezug der grenznahen Schlafplätze im Ausland. Sie verteilten sich auf total 60 besetzte Schlafplätze, 46 davon in der Schweiz.

## Résumé

Le rapport présente les résultats des recensements aux dortoirs des Grands Cormorans en Suisse en janvier 2003, organisés dans le cadre des recensements européens coordonnés par le groupe de recherche Cormorans de Wetlands International. Au total, 4201 Grands Cormorans ont été comptés en Suisse, 5885 si les dortoirs frontaliers des pays voisins sont inclus. Les Cormorans étaient répartis en 60 dortoirs, dont 46 étaient situés en Suisse.

## 1. Introduction

The strong increase and the development of Great Cormorant breeding colonies is well documented in many European countries. On the other hand, information about the actual situation of the wintering population of Great Cormorants in Europe is incomplete. Not everywhere are Cormorants included in the traditional mid-winter census of waterbirds coordinated by Wetlands International, and counts during day-time may not give an adequate estimate of the total number of Cormorants in a country (Gilissen et al. 2002). The Wetlands International Cormorant Research Group therefore organised a coordinated census of Great Cormorants across Europe in order to get an overview on population size, migration patterns and distribution of Great Cormorants in winter. In each country, a national coordinator was appointed who organised counts at night roosts in mid January 2003. This report presents the results for Switzerland.

## 2. History of Great Cormorant censuses in Switzerland

In Switzerland, counting Cormorants has a long tradition. Great Cormorants were included in the national waterbird census from its start in 1967. However, a combination of methods was used. While some people counted Cormorants during daytime, others made a separate count at night roosts. These differences could largely be eliminated by a careful analysis of the data for the publications on population size and trend of Cormorants in Switzerland (Suter 1989, Pedrolì & Zaugg 1995). Since 1996, daytime counts and counts at night roosts can be indicated separately on recording forms, which largely eliminates double counts. In addition, Great Cormorants were counted at night roosts in a separate programme supported financially by the Federal Agency for the Environment, Forests and Landscape FAEFL. This programme covered the winters 1995/96 to 2000/01 and incorporated a count in mid-November and one in mid-January (Schifferli & Kestenholz 1998, Sieber & Keller 1999, Bornhauser-Sieber & Keller 2000, Burkhardt & Keller 2001). A summary of the situation of Great Cormorants was compiled in a fact sheet (Burkhardt et al. 2002a, Burkhardt et al. 2002b).

## 3. Organisation of the census in 2003

The European Cormorant census was organised by the coordinators of the Swiss national waterbird census at the Swiss Ornithological Institute in Sempach, Verena Keller and Marcel Burkhardt. It was coordinated with the waterbird census in mid-January, which was carried out on the weekend of 11/12 January 2003. All known night roosts of Great Cormorants were covered, mostly by experienced counters who had already participated in the earlier counting programme. In addition, all waterbird counters were informed about the European census and asked to look for any additional roosts and carry out counts in the evening. Overall, around 60 observers participated in the census.

In the Bodensee (Lake Constance) region the "Ornithologische Arbeitsgemeinschaft Bodensee" (OAB), which coordinates the waterbird census in the Swiss, German and Austrian parts of this cross-border site, carried out roost censuses every two weeks during the whole winter (coordinated by Anne Puchta). As the count dates did not correspond to the ones from the International Waterbird Census, we decided, together with the coordinators of the Cormorant census in Germany (Johannes Wahl) and Austria (Rosemarie Parz-Gollner) to use the data from 19 January 2003.

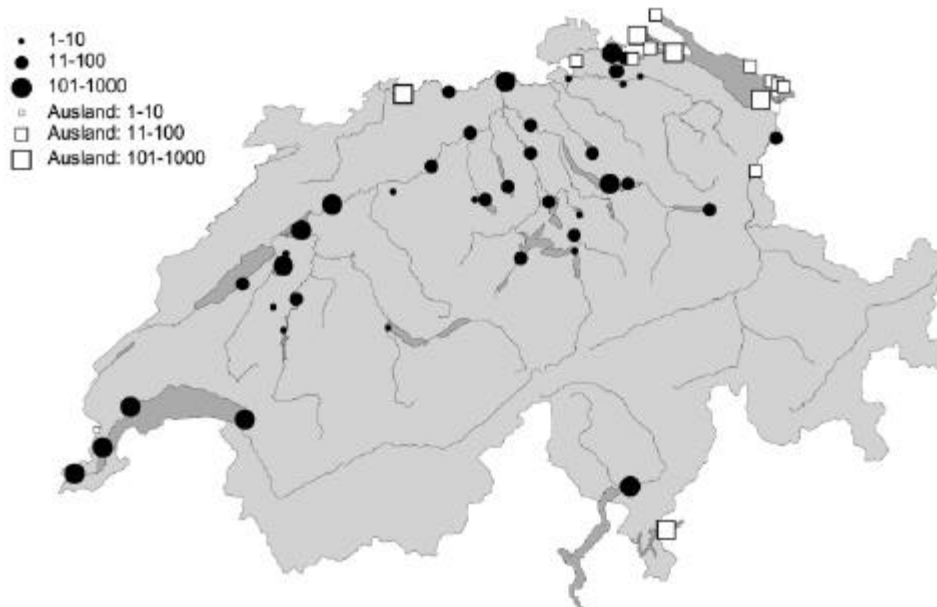
In addition to the roosts on Swiss territory, several roosts across the borders to the neighbouring countries were counted as well. The results of these counts are presented as well. Where roosts were situated right on or very close to the border, roosts were assigned to only one country to avoid double-recording for the national totals. This concerned roosts along the Hochrhein and in the Bodensee region, and was done in close contact with the other coordinators.

## 4. Results and discussion

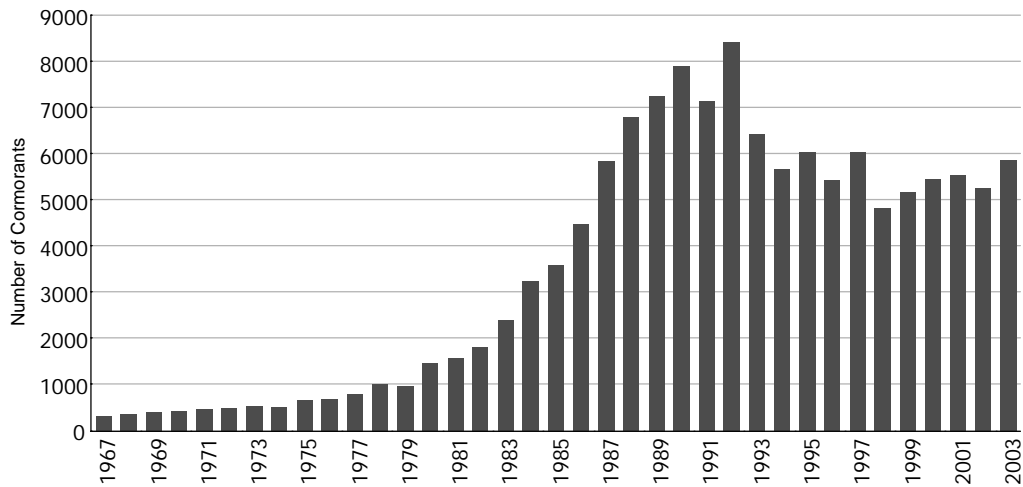
In total, 4201 Cormorants were counted in Switzerland, 5885 if the roosts across the borders to Germany, Austria, Liechtenstein, Italy and France are included (Table 1, 2). Overall, 60 occupied roosts were found, 46 of which were in Switzerland. Observers indicated an additional eight roosts which on the count date were not occupied. Around two thirds of the roosts, holding 78% of Cormorants, were situated on lakes, one

third (22% of birds) on rivers. Islands are generally rare on Swiss lakes and rivers. It is therefore striking how many roosts were found on islands. In fact, roosts were mostly situated on the only island available on a lake. The Cormorant is widespread on the Swiss Plateau north of the Alps, while south of the Alpine chain roosts were found only on the two large lakes Verbano/Lago Maggiore and Ceresio/Lago di Lugano (Fig. 1). Most lakes, also very large ones like Lake Neuchâtel or Bielersee, had only one roost. The maximum number of roosts was four, on Bodensee-Untersee. The largest roost, Les Grangettes on Lake Geneva, held 984 cormorants (Table 2). This has always been the largest roost, with a maximum number of 3900 recorded in November 1994. The maximum number in January was 2250 in 1992. Two other roosts held more than 500 Cormorants: Lac de Morat and Crotti/Ramponio I close to the Italian/Swiss border near Gandria on Ceresio/Lago di Lugano.

Cormorant numbers in Switzerland increased strongly until the early 1990s (maximum number in January 8412 individuals in 1992, roosts across the borders included; Fig. 2). Subsequently numbers dropped to around 5000 birds in the last few years. The results of 2003 are similar to those of the previous years.



**Fig. 1.** Distribution of Great Cormorant roosts in Switzerland in January 2003. "Ausland": Roosts outside Swiss territory.



**Fig. 2.** Numbers of Great Cormorants in January for Switzerland, roosts across the borders included (Pedroli & Zaugg 1995; Burkhardt et al. 2002a,b, updated).

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## Acknowledgements

We thank the volunteer observers who participated in the census and the Swiss Federal Agency for the Environment, Forests and Landscape FAEFL for financial support.

**Table 1.** Number of roosts and of Great Cormorants on different lakes and rivers.

| Lake/river                        | Number of occupied roosts      | Location of roost (habitat)      | Number of Cormorants |
|-----------------------------------|--------------------------------|----------------------------------|----------------------|
| Lac Léman                         | CH 3                           | Lake                             | 1637                 |
| Lac de Morat                      | 1                              | Lake                             | 650                  |
| Ceresio/Lago di Lugano            | I 1                            | Lake                             | 650                  |
| Bodensee (Untersee)               | CH 1, D 6                      | Lake                             | 562                  |
| Aare                              | 4                              | River / Reservoir (dammed river) | 395                  |
| Hochrhein                         | CH 3, D 2                      | River                            | 356                  |
| Zürichsee                         | 3                              | Lake                             | 242                  |
| Bodensee (Obersee)                | A 3, D 4                       | Lake                             | 240                  |
| Verbano/Lago maggiore             | CH 1                           | Lake                             | 235                  |
| Bielersee                         | 1                              | Lake                             | 129                  |
| Rhône                             | 1                              | Reservoir (dammed river)         | 109                  |
| Zugersee                          | 1                              | Lake                             | 97                   |
| Lac de Neuchâtel                  | 1                              | Lake                             | 82                   |
| Greifensee                        | 1                              | Lake                             | 78                   |
| Alpenrhein                        | CH 1, FL 1                     | River                            | 64                   |
| Sempachersee                      | 1                              | Lake                             | 61                   |
| Vierwaldstättersee                | 2                              | Lake                             | 56                   |
| Limmat                            | 1                              | River                            | 42                   |
| Saane / Sarine                    | 2                              | Reservoir (dammed river)         | 40                   |
| Reuss                             | 1                              | Reservoir (dammed river)         | 32                   |
| Lauerzersee                       | 1                              | Lake                             | 28                   |
| Seebachtal TG                     | 2                              | Small lakes                      | 26                   |
| Baldeggersee                      | 1                              | Lake                             | 18                   |
| Walensee                          | 1                              | Lake                             | 12                   |
| Lac de Divonne                    | F 1                            | Lake                             | 10                   |
| Thur                              | 2                              | River                            | 9                    |
| Mauensee                          | 1                              | Lake                             | 6                    |
| Inkwilersee                       | 1                              | Small lake                       | 5                    |
| Canal de la Broye                 | 1                              | Canal                            | 5                    |
| Aegerisee                         | 1                              | Lake                             | 3                    |
| Thunersee                         | 1                              | Lake                             | 3                    |
| Lac de Seedorf                    | 1                              | Small lake                       | 3                    |
| Total number on lakes             | 41 (CH 30, A 3, D 6, F 1, I 1) |                                  | 4833                 |
| Total number on rivers/reservoirs | 19 (CH 16, D 2, FL 1)          |                                  | 1052                 |
| Total number Switzerland          |                                |                                  | 4201                 |
| Total number Switzerland          | roosts across borders included |                                  | 5885                 |

**Table 2.** List of Great Cormorant roosts in Switzerland counted in January 2003.

| Lake/river          | Name of roost                  | Country | Canton<br>(Bundesland,<br>Département,<br>Regione) | Swiss grid<br>reference | Longitude<br>(degrees,<br>minutes) | Latitude<br>(degrees,<br>minutes) | Location of roost<br>(habitat) | Date  | Number<br>of Cor-<br>morants | Counter       |
|---------------------|--------------------------------|---------|--|-------------------------|------------------------------------|-----------------------------------|--------------------------------|-------|------------------------------|---------------|
| Alpenrhein          | Alter Rhein, Diepoldsau/Altach | CH      | SG   | 766 248                 | 9 38.2                             | 47 21.7                           | River - shore                  | 19.1. | 31                           | E. Häfele     |
| Alpenrhein          | Ruggell                        | FL      |  | 758 235                 | 9 31.6                             | 47 14.8                           | River - shore                  | 15.1. | 33                           | G. Willi      |
| Bodensee (Obersee)  | Fussacher Bucht                | A       | Vorarlberg   | 767 263                 | 9 39.3                             | 47 29.8                           | Lake - shore                   | 19.1. | 0                            | A. Puchta     |
| Bodensee (Obersee)  | Rheinmündung                   | A       | Vorarlberg   | 766 265                 | 9 38.6                             | 47 30.9                           | Lake - shore                   | 19.1. | 3                            | A. Puchta     |
| Bodensee (Obersee)  | Rheinspitz                     | A       | Vorarlberg   | 760 263                 | 9 33.7                             | 47 29.9                           | Lake - shore                   | 19.1. | 125                          | A. Puchta     |
| Bodensee (Obersee)  | Alter Rhein, Mündung           | A       | Vorarlberg   | 759 263                 | 9 32.9                             | 47 29.9                           | Lake - shore                   | 19.1. | 4                            | A. Puchta     |
| Bodensee (Obersee)  | Lindau                         | D       | Bayern   | 769 268                 | 9 41.0                             | 47 32.5                           | Lake - shore                   | 19.1. | 31                           | A. Puchta     |
| Bodensee (Obersee)  | Schachener Bucht               | D       | Bayern   | 767 269                 | 9 39.4                             | 47 33.0                           | Lake - shore                   | 19.1. | 20                           | A. Puchta     |
| Bodensee (Obersee)  | Wasserburg                     | D       | Bayern   | 764 270                 | 9 37.1                             | 47 33.6                           | Lake - shore                   | 19.1. | 18                           | A. Puchta     |
| Bodensee (Obersee)  | Eriskircher Ried               | D       | Baden-<br>Württemberg                              | 756 276                 | 9 30.8                             | 47 37.0                           | Lake - shore                   | 19.1. | 39                           | G. Knötzsch   |
| Bodensee (Untersee) | Stockacher Aach-Mündung        | D       | Baden-<br>Württemberg                              | 719 296                 | 9 1.6                              | 47 48.2                           | Lake - shore                   | 19.1. | 19                           | H. Werner     |
| Bodensee (Untersee) | Wollmatinger Ried - Seerhein   | D       | Baden-<br>Württemberg                              | 726 281                 | 9 7.0                              | 47 40.1                           | Lake/river - shore             | 19.1. | 230                          | H. Jacoby     |
| Bodensee (Untersee) | Radolfzeller Aachried          | D       | Baden-<br>Württemberg                              | 712 288                 | 8 55.9                             | 47 44.0                           | Lake - shore                   | 19.1. | 189                          | S. Olschewsky |
| Bodensee (Untersee) | Hornspitze                     | D       | Baden-<br>Württemberg                              | 717 283                 | 8 59.8                             | 47 41.2                           | Lake - shore                   | 19.1. | 3                            | S. Schuster   |
| Bodensee (Untersee) | Mettnau                        | D       | Baden-<br>Württemberg                              | 717 283                 | 8 59.8                             | 47 41.2                           | Lake - shore                   | 19.1. | 77                           | H. Reinhardt  |
| Bodensee (Untersee) | Stein a.Rh./Eschenz, Werd      | CH      | TG   | 707 279                 | 8 51.8                             | 47 39.2                           | Lake - island                  | 19.1. | 12                           | H. Werner     |
| Bodensee (Untersee) | Stein a.Rh./Öhningen, Stiegen  | D       | Baden-<br>Württemberg                              | 708 279                 | 8 52.6                             | 47 39.2                           | Lake - shore                   | 19.1. | 0                            | S. Werner     |
| Bodensee (Untersee) | Öhningen-Wangen                | D       | Baden-<br>Württemberg                              | 710 279                 | 8 54.2                             | 47 39.1                           | Lake - shore                   | 19.1. | 32                           | U. von Wicht  |
| Hochrhein           | Bibermühle                     | CH      | SH   | 702 281                 | 8 47.8                             | 47 40.3                           | River - shore                  | 19.1. | 110                          | S. Werner     |
| Hochrhein           | Rüdlingen, Alter Rhein         | CH      | SH   | 685 271                 | 8 34.1                             | 47 35.1                           | River - island                 | 11.1. | 2                            | K. Wanner     |
| Hochrhein           | Rheinau-Altenburg, Greut       | D       | Baden-<br>Württemberg                              | 688 278                 | 8 36.6                             | 47 38.8                           | River - shore                  | 11.1. | 18                           | M. Widmer     |
| Hochrhein           | Kaiserstuhl                    | CH      | AG   | 673 269                 | 8 24.5                             | 47 34.1                           | River - shore                  | 19.1. | 0                            | W. Müller     |
| Hochrhein           | Rhein Wyhlen D, NSG Altrhein   | D       | Baden-<br>Württemberg                              | 620 265                 | 7 42.3                             | 47 32.1                           | River - island                 | 12.1. | 183                          | M. Leuzinger  |
| Hochrhein           | Stein/Bad Säckingen            | CH      | AG   | 638 266                 | 7 56.6                             | 47 32.6                           | River - island                 | 12.1. | 43                           | C. Berger     |



| Lake/river         | Name of roost                  | Country | Canton<br>(Bundesland,<br>Département,<br>Regione) | Swiss grid<br>reference | Longitude<br>(degrees,<br>minutes) | Latitude<br>(degrees,<br>minutes) | Location of roost<br>(habitat)    | Date  | Number<br>of Cor-<br>morants | Counter                                |
|--------------------|--------------------------------|---------|--|-------------------------|------------------------------------|-----------------------------------|-----------------------------------|-------|------------------------------|--|
| Thur               | Frauenfeld, Erzenholz          | CH      | TG   | 706 269                 | 8 50.8                             | 47 33.8                           | River - shore                     | 12.1. | 1                            | W. Geiger                              |
| Thur               | Pfyn, Eggenrain                | CH      | TG   | 713 272                 | 8 56.5                             | 47 35.3                           | River - shore                     | 11.1. | 8                            | A. Krämer                              |
| Seebachtal TG      | Nussbaumersee                  | CH      | TG   | 703 274                 | 8 48.5                             | 47 36.5                           | Small lake - shore                | 12.1. | 13                           | W. Geiger                              |
| Seebachtal TG      | Hasensee                       | CH      | TG   | 704 274                 | 8 49.3                             | 47 36.5                           | Small lake - shore                | 12.1. | 13                           | W. Geiger                              |
| Greifensee         | Maur, Fluh                     | CH      | ZH   | 694 242                 | 8 40.9                             | 47 19.3                           | Lake - shore                      | 11.1. | 78                           | H.U. Dössegger                         |
| Walensee           | Walenstadt, Insel Bommerstein  | CH      | SG   | 740 220                 | 9 17.0                             | 47 7.0                            | Lake - island                     | 12.1. | 12                           | R. Noser                               |
| Zürichsee          | Kloster Wurmsbach              | CH      | SG   | 708 230                 | 8 51.9                             | 47 12.7                           | Lake - shore                      | 11.1. | 68                           | K. Anderegg                            |
| Zürichsee          | Ufenau                         | CH      | ZH   | 701 230                 | 8 46.3                             | 47 12.8                           | Lake - island                     | 11.1. | 174                          | W. Schetz                              |
| Zürichsee          | Halbinsel Au                   | CH      | ZH   | 691 234                 | 8 38.4                             | 47 15.0                           | Lake - shore                      |       | 0                            | W. Honegger                            |
| Limmat             | Spreitenbach, Chessel          | CH      | ZH   | 670 253                 | 8 22.0                             | 47 25.4                           | River - island                    | 12.1. | 42                           | O. Honegger                            |
| Aegerisee          | Ägerisee, Oberägeri, Nas       | CH      | SZ   | 689 218                 | 8 36.7                             | 47 6.4                            | Lake - shore                      | 12.1. | 3                            | S. Nussbaumer                          |
| Lauerzersee        | Lauerzersee                    | CH      | SZ   | 687 210                 | 8 35.0                             | 47 2.1                            | Lake - shore                      | 12.1. | 28                           | U. Glutz von<br>Blotzheim, P.<br>Kühne |
| Zugersee           | Risch                          | CH      | ZG   | 677 223                 | 8 27.2                             | 47 9.2                            | Lake - shore                      | 12.1. | 97                           | A. Zimmermann                          |
| Vierwaldstättersee | Treib                          | CH      | UR   | 687 204                 | 8 34.9                             | 46 58.9                           | Lake - shore                      | 11.1. | 8                            | U. Glutz von<br>Blotzheim              |
| Vierwaldstättersee | Alpnachersee                   | CH      | OW   | 666 201                 | 8 18.3                             | 46 57.4                           | Lake - shore                      | 14.1. | 48                           | A. Borgula                             |
| Reuss              | Flachsee Unterlunkhofen        | CH      | AG   | 670 242                 | 8 21.9                             | 47 19.5                           | Reservoir (dammed river) - island | 11.1. | 32                           | A. Ingold                              |
| Baldeggersee       | Stäfligen                      | CH      | LU   | 661 229                 | 8 14.6                             | 47 12.5                           | Lake - shore                      | 11.1. | 18                           | W. Sager                               |
| Hallwilersee       | Riesle                         | CH      | AG   | 657 240                 | 8 11.5                             | 47 18.5                           | Lake - shore                      | 11.1. | 0                            | R. Berner                              |
| Sempachersee       | Sursee, Gamma-Insel            | CH      | LU   | 652 224                 | 8 7.5                              | 47 9.9                            | Lake - island                     | 11.1. | 61                           | R. Wüst                                |
| Mauensee           | Mauensee, Insel Bognau         | CH      | LU   | 648 224                 | 8 4.3                              | 47 9.9                            | Lake - island                     | 11.1. | 6                            | R. Wüst                                |
| Thunersee          | Gwatt, Insel Bonstetten        | CH      | BE   | 614 174                 | 7 37.3                             | 46 43.0                           | Lake - island                     | 11.1. | 3                            | M. Wettstein                           |
| Aare               | Stausee Niederried             | CH      | BE   | 585 205                 | 7 14.5                             | 46 59.8                           | Reservoir (dammed river) - shore  | 12.1. | 0                            | E. Niggeler                            |
| Bielерsee          | Hagneck                        | CH      | BE   | 580 212                 | 7 10.5                             | 47 3.5                            | Lake - shore                      | 12.1. | 129                          | T. Marbot                              |
| Aare               | Häftli                         | CH      | BE   | 592 222                 | 7 20.0                             | 47 8.9                            | River - shore                     | 11.1. | 125                          | A. Blösch                              |
| Aare               | Rothrist Hungerzelg / Boningen | CH      | AG   | 631 237                 | 7 50.9                             | 47 17.0                           | River - shore                     | 12.1. | 52                           | B. Rügger                              |
| Aare               | Telli/Aarau, Zurlindeninsel    | CH      | AG   | 646 250                 | 8 2.9                              | 47 24.0                           | River - island                    | 11.1. | 35                           | P. Jean-Richard                        |

| Lake/river   | Name of roost                      | Country | Canton<br>(Bundesland,<br>Département,<br>Regione) | Swiss grid<br>reference |     | Longitude<br>(degrees,<br>minutes) |      | Latitude<br>(degrees,<br>minutes) |      | Location of roost<br>(habitat)         | Date  | Number of Cor-<br>morants | Counter                                |
|--|------------------------------------|---------|--|-------------------------|-----|------------------------------------|------|-----------------------------------|------|--|-------|---------------------------|--|
| Aare   | Klingnauer Stausee                 | CH      | AG   | 660                     | 270 | 8                                  | 14.2 | 47                                | 34.7 | Reservoir<br>(dammed river) -<br>shore | 11.1. | 183                       | M. Güntert                             |
| Inkwilersee  | Inkwilersee                        | CH      | SO   | 616                     | 227 | 7                                  | 39.0 | 47                                | 11.6 | Small lake                             | 12.1. | 5                         | H.P. Aeschli-<br>mann                  |
| Saane / Sarine                                     | Schiffenensee, Palatinot/Windig    | CH      | FR   | 578                     | 185 | 7                                  | 9.0  | 46                                | 48.9 | Reservoir<br>(dammed river)            | 12.1. | 32                        | S.-P. Parrat                           |
| Saane / Sarine                                     | Schiffenen, Barberèche             | CH      | FR   | 579                     | 190 | 7                                  | 9.8  | 46                                | 51.6 | Reservoir (dam-<br>med river)          | 12.1. | 0                         | A. Aebischer                           |
| Saane / Sarine                                     | Lac de la Gruyère, Rossens         | CH      | FR   | 573                     | 173 | 7                                  | 5.1  | 46                                | 42.5 | Reservoir - shore                      | 12.1. | 8                         | J. Gremaud                             |
| Lac de Neuchâtel                                   | Forel                              | CH      | FR   | 557                     | 191 | 6                                  | 52.5 | 46                                | 52.1 | Lake - artificial<br>structures        | 12.1. | 82                        | P. Rapin                               |
| Lac de Seedorf                                     | Lac de Seedorf, Corjolens          | CH      | FR   | 569                     | 182 | 7                                  | 2.0  | 46                                | 47.3 | Small lake - shore                     | 12.1. | 3                         | H. Vigneau                             |
| Lac de Morat                                       | Guévoz (Vallamand)                 | CH      | VD   | 573                     | 198 | 7                                  | 5.0  | 46                                | 56.0 | Lake - shore                           | 11.1. | 650                       | P. Monney, G.<br>Banderet, E.<br>Curty |
| Canal de la Broye                                  | Kanal Grosses Moos                 | CH      | BE   | 574                     | 203 | 7                                  | 5.8  | 46                                | 58.7 | Canal - shore                          | 13.1. | 5                         | M. Beaud                               |
| Lac Léman  | Les Grangettes                     | CH      | VD   | 558                     | 138 | 6                                  | 53.6 | 46                                | 23.5 | Lake - island                          | 13.1. | 984                       | O. Epars                               |
| Lac Léman  | Bursinel                           | CH      | VD   | 513                     | 143 | 6                                  | 18.4 | 46                                | 26.0 | Lake - shore                           | 12.1. | 421                       | C. Sterchi                             |
| Lac Léman  | Versoix- Prévorsier                | CH      | VD   | 502                     | 127 | 6                                  | 10.0 | 46                                | 17.2 | Lake - shore                           | 12.1. | 232                       | B. Piot                                |
| Lac de Divonne                                     | Lac de Divonne                     | F       | Ain  | 500                     | 134 | 6                                  | 8.4  | 46                                | 21.0 | Lake - island                          | 12.1. | 10                        | B. Piot                                |
| Rhône  | Verbois/Aire-la-Ville, 13.22       | CH      | GE   | 491                     | 117 | 6                                  | 1.6  | 46                                | 11.7 | Reservoir<br>(dammed river) -<br>shore | 11.1. | 109                       | B. Lugrin                              |
| Rhône  | Etournal                           | F       | Ain  | 484                     | 109 | 5                                  | 56.3 | 46                                | 7.4  |  | 11.1. | 0                         | B. Piot                                |
| Verbano/Lago maggio-<br>re                         | Bolle di Magadino                  | CH      | TI   | 709                     | 112 | 8                                  | 51.0 | 46                                | 9.0  | Lake - shore                           | 11.1. | 235                       | F. Croci, M.<br>Garbani-Nerini         |
| Ceresio/Lago di Lugano                             | Crotti, Ramponio (near Gandria TI) | I       | Lombardia  | 723                     | 95  | 9                                  | 1.6  | 45                                | 59.7 | Lake - shore                           | 12.1. | 650                       | S. Pittaluga                           |
| Total Switzerland                                  |                                    |         |  |                         |     |                                    |      |                                   |      |  |       | 4201                      |  |
| Total Switzerland (roosts across borders included) |                                    |         |  |                         |     |                                    |      |                                   |      |  |       | 5885                      |  |