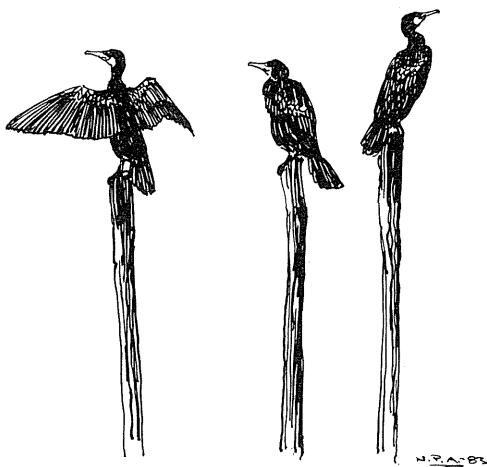


The distribution and numbers of the Southern Cormorant *Phalacrocorax carbo sinenses* in Europe

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(Med et dansk resumé: Mellemskarvens udbredelse og antal i Europa)



INTRODUCTION

There is a growing understanding of the fact, that national populations of Cormorants within Europe are closely interacting with each other.

When numbers of Cormorants in Denmark increase, it may have a positive effect on the populations in neighbouring countries like Sweden, Poland and East Germany. The colonies in these countries receive part of the surplus produced in Denmark (Gregersen 1982). Also in more distant countries like Switzerland, Italy and France, where the birds winter, such an increase is noticed and appreciated by naturalists. Regulating Cormorants in any country is not *only* a matter of national interests, but ought to be looked upon in a wider context with due respect to the international distribution and numbers of the species.

These considerations emphasize the need of international surveys. When doing research for my book »Skarven« (Hansen 1980) I found, that no such surveys had ever been made. The

most detailed handbook (Bauer & Glutz 1966) offers a rather detailed, historical outline of the fluctuations of the species during the last 150 years, but only covers central Europe. For many countries within the range of the Southern Cormorant information is incomplete or non-existing. Nor does the most recent handbook (Cramp & Simmons 1977) give much help but merely summarizes old handbooks and a few out-of-date papers.

Therefore in December 1979 a questionnaire was mailed to ornithologists in all European countries where the Southern Cormorant breeds, has bred or might be breeding. Of the European parts of the Soviet Union only the Baltic states were included, however.

My book had to go to press in July 1980, before all answers were received, and hence the survey therein is incomplete too. This paper aims at remedy that deficiency.

It should be stressed that even this survey will be valid only for a few years, because of the large fluctuations in the populations from one year to another. They are caused partly by

Tab. 1. The number of Cormorants in Europe, 1982. Note that the information from some countries is from before 1982.

Antallet af Mellemskarver i Europa, 1982. Bemærk, at tallene fra enkelte lande er fra før 1982.

Country <i>Land</i>	Number of nests/pairs <i>Antal par</i>	% North/South Europe	% Total Europe	Number of colonies <i>Kolonier</i>	Size of colonies <i>Kolonistørrelse</i>						Year of survey
					1-50	51-200	201-500	501-1000	1001-2000	>2000	
Sweden	1090	7.6	5.1	2		1		1			1982
Denmark	3676	25.6	17.3	4	1			1	2		1982
Lithuania, Latvia and Estonia	0	0	0	0							1981
Poland	1475	10.3	6.9	10	4	4	1	1			1981
East Germany	1249	8.7	5.9	4	1	1	1	1			1982
West Germany	126	0.9	0.6	3	2	1					1982
Netherlands	6716	46.9	31.6	4		1	1			2	1981
Belgium	0	0	0	0							1982
France	7	0.05	0.03	1	1						1981
Subtotal	14339	100	67.3	28	9	8	3	4	2	2	
Czechoslovakia	30	0.4	0.1	1	1						1982
Hungary	600	8.6	2.8	1				1			1979
Austria	0	0	0	0							1982
Italy	50	0.7	0.2	1	1						1980
Yugoslavia	1500	21.6	7.0	3		1		2			1982
Albania	+	+	+	+							1978
Romania	4000	57.6	18.8	13	no detailed information						1981
Bulgaria	600	8.6	2.8	3	1	1	1				1979
Greece	180	2.6	0.8	2	1	1					1978
Subtotal	6960	100	32.7	24	4	3	1	3			
Total (Europe)	21299		100	52	13	11	4	7	2	2	

rapid growth of undisturbed colonies, partly by regulation of others. This paper only gives a snapshot of numbers and distribution, and in a few years it will mostly be of historical interest.

METHODS

The questionnaire asked the following questions:

1. Status of the species in 1980 (breeding/nonbreeding, number of pairs/nests, number of colonies).
 2. Brief review of the history of the species during the last 200 years.
 3. Human attitude to the species (legal protection status, persecution).
 4. Biology of the species (habitat, breeding habits, nest sites).
 5. References to national papers on the species.
- Answers came back from 23 countries covering all relevant nations, except Albania, where direct contact to any ornithologists never was established. So here the survey had to rely on contacts in neighbouring Yugoslavia and a few published papers.

Besides, all relevant literature was consulted.

In early spring 1983 all informers were contacted once more and asked to update and correct my draft. Nearly all did answer.

The size and numbers of colonies in northern Europe are wellknown, and in most countries national surveys are carried out every year. In southern Europe and especially on the Balkan Peninsula a less precise picture exists, and some figures are based on estimates.

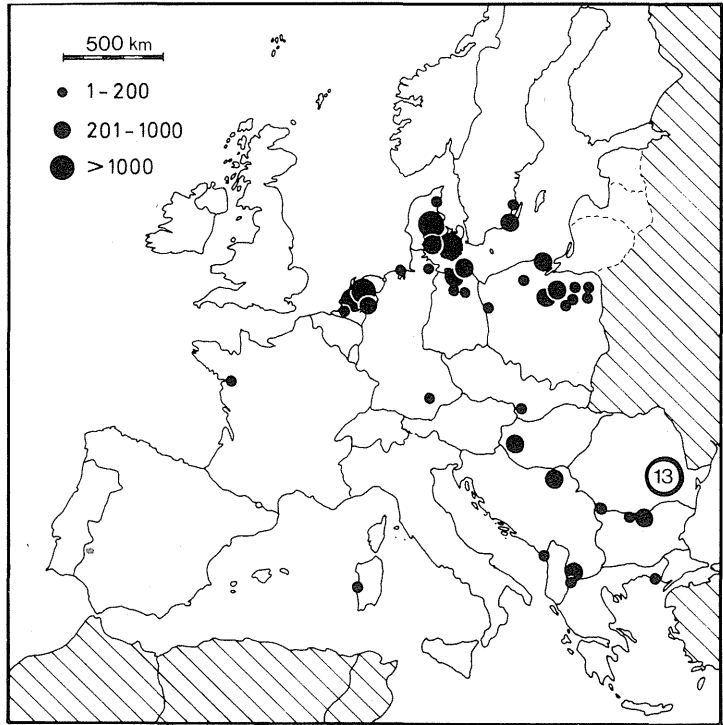
Most ornithologists use the number of nests in the colony, when doing their counts. However, in a few cases the size of the population is reported in terms of pairs. Here the two categories are used as equals.

RESULTS

The breeding distribution in 1982 is mapped in Fig. 1. The number of pairs/nests and colonies in each country is given in Tab. 1, together with data on colony sizes. The percentage of the population in northern and southern Europe and in Europe as a whole are also calculated. Below follows a summary of the results, giving a general outline of the status of the Southern Cormorant in Europe, and there-

Fig. 1. The distribution of Cormorants in Europe, 1982. Small circles: 1-200 pairs/nests, medium circles: 201-1000, big circles: more than 1000. The location of the 13 colonies in Romania is not known.

Udbredelsen af Mellemskarv i Europa, 1982. Små prikker: 1-200 reder/par, mellemstore prikker: 201-1000, store prikker: flere end 1000. Placeringen af de 13 kolonier i Rumænien kendes ikke.



after the rather detailed national accounts together with references to the main sources.

Distribution and numbers in Europe

Cormorants are still breeding in most countries within the traditional distribution area. However, they are missing in Belgium and Austria, and have only recently returned to France (1981), Czechoslovakia (1982) and the mainland of Italy (1982). The species has never bred in Luxembourg or Switzerland.

The distribution is divided in a northern (The Netherlands, Denmark, Sweden, West Germany, East Germany and Poland) and a southern population (Czechoslovakia, Hungary, the Balkans and Romania). At least in the northern population breeding birds are regularly exchanged between the colonies (Gregersen 1982, Lindell in litt.). It is not known whether there is any exchange between the northern and southern populations.

The total number amounts to 21,299 pairs in 1982. This figure presumably is very much below numbers breeding in former days. Two thirds of the birds breed in northern Europe, with the Netherlands and Denmark alone con-

taining 49% of all European Cormorants. The only southern country of significance in this context is Romania with some 19% of the population.

A total of 52 colonies are known. At least 28 of these hold less than 500 pairs.

Northern Europe

The population numbers 14,339 pairs. Nearly half of these, 47% of the population, breed in the Netherlands. Denmark is the second most important country with some 25% of the birds. 28 colonies are found, but only 8 of these contain more than 500 pairs. The four biggest colonies together hold 8693 pairs, or some 60% of the population.

During this century the species have been extinct in Sweden, Denmark, West Germany, Belgium and France. It is still missing in Belgium and it has only recently recolonized France.

In general the population is increasing with rapid growing colonies, especially in Denmark and the Netherlands. The increase during the last decade can be attributed to more restrictive game acts and protection of breeding colonies. In all countries, except Sweden with a li-



Cormorants may build on old nest year after year, and the nest may attain several meters in height. This nest is from the nature reserve of Kisbالاتون in Hungary. Photo: Bécsy László.

Mellemskarver bygger undertiden år efter år på den samme rede, der kan antage vældige dimensioner. Denne flere meter høje rede er fra det ungarske naturreservat Kisbالاتون.

mitted open season, Cormorants are totally protected.

Southern Europe

The population counts 6960 pairs according to this survey. More than half of these (58%) breed in Romania, but since exact information is missing this figure might be somewhat unprecise. Yugoslavia is the second most important country with 1500 pairs or 22% of the population.

24 colonies are known. Only 3 of these are known to hold more than 500 pairs, but certainly some big colonies must exist in Romania, so also this figure are not quite reliable.

During this century the species is known to have been extinct in Czechoslovakia, Austria and the mainland of Italy. It is still missing in Austria, and only returned to the Italian mainland and Czechoslovakia in 1982. After years

of decline the population in Greece may now be near the point of extinction (1978).

Cormorants never bred in Switzerland, but during the last decade growing numbers are wintering in the great lakes, reaching a peak number in January 1983 with 1810 birds. Breeding attempts could be expected.

In general the population is decreasing, except for Hungary and Yugoslavia, where colonies show signs of a slow increase.

In all countries, except Austria with a short open season in one province, Cormorants are totally protected by law. But in spite of this, birds are frequently shot, both legally and illegally, at fish ponds in most countries, according to the information from the questionnaire.

Sweden

Two colonies.

In 1982 990 nests were counted on the little island of Svartö south of Kalmar. Abt. 100 pairs were breeding in 1982 at the island of Gåsö north of Kalmar. This colony was established in 1961. At the island of Stubbö, also north of Kalmar, 2-3 pairs bred in 1980, but none in 1982. The species became extinct in 1909 and did not return until 1948 to Svartö.

During some years in the 1960s birds were shot at Svartö, and until 1970, the last year of persecution, the colony numbered less than 150 pairs. Since then it has increased rapidly. Now nesting trees are becoming scarce on the island, and presumably the colony will have to move away in less than 15 years.

There is an open season in the period 21/8-31/12, but most birds leave the country in the beginning of August.

References: Jonsson (1979), Lindell (1980), Lindell (in litt.).

Denmark

Three big colonies and one small with altogether 3676 nests in 1982. Also two unsuccessful breeding attempts in atypical habitats that year. The population has been rapidly increasing during the last decade.

Several large colonies in the last century but persecution from fishermen and forest owners exterminated all colonies around 1875. Returned in 1938 to Tranekær, Langeland, and in 1944 to Vorsø in Horsens Fjord. During the following years small colonies were established at 7 localities, but all were gone by the end of 1960, except for Vorsø. Until 1971 this was the only breeding place in the country, and the population was kept below 200 pairs by shooting.

When the persecution stopped in 1970 a rapid increase began. In 1972 a new colony was established on the island Ormø in southwestern Zealand, and in 1973 at Brændegårdssø in the southern part of Funen.

In 1982 the following numbers of nests were counted: Vorsø 1470, Ormø 1423, Brændegårdssøen



Swedish Cormorants nesting in pine trees on a small island. Photo: Kjeld Hansen.
Svenske Mellemskarver ynglende i fyrretrær på lille ø i skærgården.

766. Also in 1982 a new colony emerged with 5 nests at lake Tofte, northern Jutland (Abrahamsen & Gregersen 1982). More than 500 birds were seen there in summer. In addition, breeding was attempted without success this year on two treeless marine islets, one near Samsø (Harritz 1982) and the other in Lillebælt.

During the last decade the population has increased by some 10-20% every year, and new colonies are expected in the next few years. Only the colony at Vorsk is situated in a nature reserve.

Totally protected by law since 1982, but permission is still granted to shoot nestlings on Ormø where damage to trees is claimed.

Further references: Hald-Mortensen (1974), Hansen (1980), Gregersen (1982).

Lithuania, Latvia and Estonia

Extinct or disappeared.

According to Ivanauskas (1959) small colonies existed in the last century in Lithuania. Has never bred in Latvia (J. Baumanis in litt.) or Estonia (V. Lilleleht in litt.).

Poland

Ten colonies. Since 1948 at least seven colonies have disappeared.

In 1981 the population numbered 1475 pairs (1980: 1400). The largest colony is found at Katy Rybackie, 40 km east of Gdansk. The number of pairs increasing during recent years to 646 pairs in 1981.

The other colonies are: on the river Brda near Szczytno lake, Czerwica lake near Ilawa, Wyspa Lipowa on the Morag lake, Gieladzkie lake, Dobskie lake, Rydzowka lake, Gawlik lake, Lazno lake, river

Warta near mouth of river Odra. All hold between 10 and 200 pairs.

In the beginning of this century the population was still strong, but after the Second World War the number of birds and of colonies has decreased. Some figures exist: in 1959 at least 1800 nests, in 1965 abt. 1500 nests, in 1973 1300 nests (Przybysz & Przybysz 1975 and in litt.).

Seven colonies are declared nature reserves, but regulations are not always sufficiently restrictive. Disturbances and wood cutting are responsible for the disappearance of two colonies. Five were abandoned for no obvious reason, four of these in nature reserves. Overfishing is thought to have a negative influence. Of seven abandoned colonies five were situated at lakes and two at rivers.

Totally protected since 1952.

East Germany

Four colonies. Previously a much larger population.

In 1982 1249 nests were counted: Niederhof 684, Bolzer See 160, Torgelower See 399 and Lewitz 6 (Gregersen 1982).

In the last century large colonies were situated at Müritzsee, Tollensesee, Pinnowersee and other localities. A very harsh campaign of destruction was started; e.g. a battalion of soldiers attacked Cormorants in Brandenburg, northeast of Berlin, where the last colony was exterminated in 1883. Around the turn of the century most colonies were abandoned.

On the island of Pulitz at Rügen a colony was found in 1922. In 1939 350-400 pairs were counted here. After the war the birds were persecuted, and the last disappeared in 1950. Birds probably stemming

from Pulitz established the still-existing colony at Niederhof, Stralsund, in 1953. This colony grew very rapidly, and soon shooting was started in order to keep numbers below 600 pairs. The shooting was not stopped until 1968. Niederhof is situated in a protected forest, and to-day the colony is the largest in the country.

The colony at Bolzer See was established after 1962. In 1970 it had grown to 250 pairs. That year shooting was initiated, and it went on until 1975, when only 35-40 pairs were left. To-day the colony is slowly increasing. Small colonies were found at Lewitz and Ludorf in the 1960s, but only Lewitz exist to-day. Torgelower See was established in 1972, when birds moved from Bolzer See because of the shooting.

No open season, but the number of birds can be regulated by shooting.

Further references: Bauer & Glutz (1966), Siefke & Berger (1979).

West Germany

Only three small colonies with 126 nests in 1982.

In 1982 111 nests were counted on two old lighthouses in the nature reserve Knechtsand-Eversand in the estuary of the river Weser. The birds settled there in 1947. The lighthouses are situated abt. 7 km out into the Wadden Sea. Both are very dilapidated, but action has been taken to restore them (Friedrich Reilmann in litt.).

A small colony was established in the late seventies some 20 km northeast of Munich in the Ismaning pond area. In 1980 it held 7, in 1981 11 and in 1982 15 pairs. Other attempts to breed in Bavaria have failed, mainly due to disturbances by anglers. Further attempts are expected in the future (Josef Reichholf in litt.).

Nine nests were found in 1982 at Grossen Plöner See in Schleswig-Holstein, but the birds were not successful (Henning Thiessen in litt.).

Previously breeding took place at many lakes in the northern part of Germany (West Germany). In Schleswig-Holstein a very big colony lay near Hohwachter Bay. It was founded in 1812, grew very fast, and in 1815 it was said to count 7000 pairs. The following year local fishermen destroyed all the nests; during the next years the colony was regularly disturbed, and eventually it disappeared. Finally, a colony was situated at lake Flemhuder in the years 1870-90. It was destroyed during the construction of the Kiel Canal (Berndt & Drenckhahn 1974).

From 1944 until 1961 a small colony existed near Lütetsburg in Ostfriesland, less than 8 km from the Wadden Sea. Probably the birds came from the Netherlands, where large colonies were disturbed during the war. The colony at Lütetsburg never exceeded 100 pairs because the birds were persecuted, and finally they left the site.

Several times during the fifties a few birds have tried to establish a colony at Holzburg near Beder-

kesa, but they never succeeded (Goethe et al. 1978).

Totally protected since 1976.

The Netherlands

Four colonies with 6716 nests in 1981. Most important breeding place in Europe.

The two largest colonies are: Naardermeer near Amsterdam with 3800 nests in 1981 (Gregersen 1982), and Oostvaardersplassen in the reclaimed part of the IJsselmeer with more than 2500 in 1982. This colony was established in 1978 with 125 nests, but already counted 700 nests the following year.

The oldest colony, already in existence more than a hundred years ago, is at Wanneperveen near Zwolle. In 1940 it numbered 2250 nests, in 1976-79 150 to 300, and in 1981 350 nests. In the Biesbos, southeast of Rotterdam, 66 breeding pairs started a new colony in 1979, but this colony has not increased significantly.

During the last 150 years several colonies have existed throughout the Netherlands. Besides the above mentioned large colonies, smaller ones have been found for short periods, especially in the estuaries. Land reclamation, pollution and persecution have forced birds to move much around.

Persecution has been the most serious factor in bringing down numbers. The birds were regarded as harmful to fishery in inland waters, and as a pest to the woods where they built their nests.

The Cormorants presumably survived primarily because they were partly protected in nature reserves; in addition, colonies have occasionally been tolerated because the nestlings were utilized as food. In Naardermeer, which was purchased as a nature reserve in 1906 by the Dutch Society for the Conservation of Nature Monuments, the initial settlement of Cormorants was not tolerated because it was feared that they would harm the colonies of Purple Herons *Ardea purpurea* and Spoonbills *Platalea leucorodia* by robbing their nests of material. The nests of Cormorants were pushed down from the trees, nestlings were killed, and at last the whole area was set on fire. After a few years the colony was abandoned until 600 pairs returned in 1942. The next year 1600 pairs tried to build nests, but they were destroyed and during the following years the size of the colony fluctuated due to varying disturbances. Not until 1965 did the persecution come to an end.

What is left of the former IJsselmeer is to-day the most important feeding ground for Dutch Cormorants. Up to 7000 birds are counted here (August 1978/79).

Totally protected since 1965 (Coomans de Ruiter 1966, Teixeira 1979, Ernst R.P. Poorter in litt.).

Belgium

Extirminated in 1965. An attempt to reintroduce the species has not been successful.

Known as a breeding bird since old ages, but fiercely persecuted in this century. Due to felling of nest



The Danish Cormorant colony at Vorskø, 1978. Photo: Erik Thomsen.

En fjerdedel af Nordeuropas Skarver yngler i Danmark. Her er et udsnit af kolonien på Vorskø i 1978.

trees and shooting four colonies (Koolkerke, Overmeire, Berendrecht, Ekeren) were abandoned before 1950, and another five (Woumen, Steenkerke, Merkem, Westkerke, Wulveringen) were abandoned before 1956. Increasing water pollution is held responsible for the disappearance of some of these colonies.

In 1961 four nests were found in a former colony at Meetkerke, which used to exchange birds with the southernmost colony in the Netherlands. In 1943 there were 127 nests, but military activities during the war drove the birds away from this very old breeding locality.

Until 1965 four to eight nests were counted at Meetkerke, but since then Cormorants have not bred in Belgium.

As an attempt to reintroduce the species 22 young birds were imported during 1966-67 from the Netherlands. They were released in the nature sanctuary of De Blankaart near Woumen. The idea was, that these birds should induce wild Cormorants to settle down and breed, but the experiment was not successful.

Cormorants are protected in Belgium.

References: Lippens & Wille (1972), J. Sabbe (in litt.), W. Roggeman (in litt.), R. de Liedekerke (in litt.).

France

One small colony since 1981. First successful breeding in recent time.

In the 19th century the Cormorant is said to have

bred at lakes and along rivers, but the species was exterminated by fishermen.

One nest was found in Dept. de la Nievre in 1954, but the birds were killed. During the period 1970-75 a few birds, mainly immatures, built nests in Lorraine and Alsace, but no eggs were laid. In the same period 10-25 nests were reported from the area around Osani at Corsica (Yeatman 1976), but this was due to a misidentification, *Ph. carbo sinensis* being confused with the Shag *Ph. aristotelis* (Luc Marion in litt.).

Seven pairs in 1981 and an unknown number in 1982 bred successfully at lake Grand-Lieu in Dept. Loire-Atlantique. These birds apparently belong to *sinensis* and may have immigrated from the Netherlands (Marion 1983).

The nominate form *Ph. carbo carbo* breeds along the coasts of Normandy and Brittany. The population numbered between 728 and 741 pairs in 1981. A few *sinensis* have been said to breed among them (Philippe Dubois in litt.), but this seems not to be true (Marion op. cit.).

Large numbers of both *carbo* and *sinensis* winter along the west coast in the Bay of Biscay, on the river Loire and at La Camarque in southern France. Altogether some 10,000 birds in 1982. Of these a significant part was found at La Camarque, where 4000 birds were present during the winter 1980/81. The number has increased during the last decade (Hafner et al. 1980, H. Hafner in litt.).

Totally protected since 1969.

Czechoslovakia

One colony in 1982. First breeding since the early sixties. Previously several large colonies.

Best known is the former colony 'Cormorant Islands' in the Danube at Podunajské Biskupice. It was established around 1920 and counted 3000 birds in 1934. In spite of persecution 800 nests were still found in 1950, but intense shooting from 1951 reduced the colony to 500 nests in 1955, 127 nests in 1959, 93 nests in 1960 and only 7 nests in 1961. The colony was abandoned shortly thereafter.

In 1982 abt. 30 pairs were breeding in southern Moravia at a newly constructed water reservoir.

From this century a colony is also known at Lednice, where Cormorants tried to breed in a mixed colony with Grey Heron *Ardea cinerea* and Night Heron *Nycticorax nycticorax*. Near Petrov and at the river Morava other colonies existed. Along the Danube the species has bred at Bodiky, Szemet, Palkovicovo and at Pavlovce in eastern Slovakia.

In all parts of the country where fish ponds are found, Cormorants have always been heavily persecuted.

The species has been protected since 1975.

References: Hudec et al. (1972), K. Stasný (in litt.).

Hungary

One stable colony.

In 1979 5-600 nests were counted in the nature reserve of Kisbalaton. The main part were situated in the southwestern corner of the lake Balaton. The colony was discovered in 1947 and has presumably been established by birds driven away from Biskupice in Czechoslovakia. Until 1953 the colony held 60 nests, in the period 1954-57 110-172 nests and in 1964 abt. 180 nests.

Along the river Tisza a few, unstable colonies have existed during recent years.

From 1838 a colony with 100 nests is known on the island of Adony in the Danube, 40 km south of Budapest. However, it was abandoned as early as 1910. There have been other Danube colonies, but all are abandoned today.

Although legally protected birds are still shot illegally, especially at fish ponds.

References: Keve (1973), Keve (in litt.), D. Janossy (in litt.).

Austria

Extinct. Last breeding in 1971.

Already before the turn of the century several large colonies were abandoned, possibly because of large-scale reclamation of lakes and regulations of the river Danube. Since then, in spite of persecution, new colonies have been established, but none have persisted to the present day.

Ten colonies are known from the last hundred years, mainly along the Danube in the eastern part of the country. The largest colony was situated at Lobau near Vienna. Shooting of 700 birds in 1915 and 500 in

1916 indicates the size of this colony. In 1919 the systematic persecution came to a climax, but not until 1926 did the last birds disappear.

At Orth near Vienna a colony existed until 1966, and west of Vienna near Tulln a few pairs nested until 1970. The last colony, abandoned in 1971, was founded near Marchegg at the river Morava on the Czechoslovakian border in 1945.

Regarded as a hunting object in most provinces, but an open season only in the province of Vorarlberg at the lake Bodensee. Totally protected in the other 8 provinces.

Reference: Prokop (1980).

Italy

Exterminated on the mainland until 1982 (?), but small colonies on Sardinia. According to Allavena (in litt.) the species was breeding at the river Po in 1982, but no detailed information is available on this.

In 1975 four colonies or breeding localities existed on the west coast of Sardinia, where 68-73 nests were seen. The number had decreased to 30-40 nests in 1980. The birds breed on islets or on rocky cliffs at the coast (Schenk 1976, 1980). Besides there is an undocumented report of some 10-15 pairs breeding among Herring Gulls *Larus argentatus* along the west coast of Toscana near Grosseto (F. Perco in litt.).

100-200 years ago the Cormorant was a common breeding bird at lakes and wetlands of Veneto, Circeo, Comacchio, Toscana, Trasimeno lake in Umbria, Orbetello, lakes near Naples, Lesina lake and Barletta near Grosseto. Because of drainage, reclamation and disturbances these colonies have disappeared. It is not known when the last colonies on the mainland were abandoned (S. Allavena in litt.).

On migration and wintering Cormorants are seen on all coasts, at the great lakes in the north and at Trasimeno lake in central Italy. The numbers of wintering birds are increasing and to-day they amount to more than 2500 individuals, including at least 1000 birds around Sardinia (F. Perco in litt.).

Since 1977 the Cormorant has been protected by law, but it is still illegally shot, especially at fish ponds.

Yugoslavia

Two, maybe three colonies with altogether abt. 1500 pairs. At least 10 colonies have been abandoned in recent time.

The most important colony is situated in the nature reserve Kopački Rit in the northeastern part of the country. In 1980 the birds were breeding at two places here. Their numbers are still increasing: in 1975 100 nests, 1978 366 nests, 1980 534 nests and in 1982 858 nests.

On the rocky island of Golem Grad, in the eastern part of lake Prespa, 600 nests were counted in 1976. At least 400 of these were occupied (Gregori 1976/77). In 1979 the number of nests was estimated at 600. This colony has been known since 1943. It may ex-

change birds with colonies on Albanian territory (J. Mikuska in litt.).

At lake Skadar the Cormorant bred in 1978 with 84 nests. It is assumed that the birds came from a colony in Albania. Recent information has not been available.

In 1976 62 birds tried to establish a colony at the fishpond Bardača at Posavina. Nine nests were built, but because of disturbances eggs were only laid in one. The birds reappeared in 1977 but did not breed because of persecution.

During the years 1969 and 1972-74, 10-12 pairs have tried to breed at the river Drava near Donji Mihojčac.

Formerly the species bred at at least 10 other localities: Katlanovo, Crna Rijeka, Zemun, Bački Monoštor, Korod, Bojana, Obedska Bara, Kovilj, Carska Bara, Apatin. From the five firstmentioned localities the birds were driven away because of destruction of the habitat, while the other five colonies were abandoned because of tree-felling, persecution at fish ponds and decreasing amounts of fish stocks. At present the population is still diminishing except for the protected colony at Kopački Rit.

Protected all over Yugoslavia but still shot, especially at fish ponds.

Albania

Situation unknown, but presumably some colonies.

It has not been possible to obtain any information from Albania. But according to observations from the territories of Yugoslavia and Greece, colonies are found, or at least existed before 1978, at lake Prespa and lake Skadar. Also a colony in recent years at the river Bojana. (J. Mikuska in litt.).

Legislative status unknown.

Romania

Abt. 4000 pairs in 13 colonies.

Previously very common in large colonies along the Danube, in the Danube delta and at the coasts of the Black Sea. In 1907 a colony of 5000 pairs existed at lake Serbanu-Braila, and even other colonies exceeded 2000 pairs.

After the turn of the century reclamation of lakes and wetlands together with persecution from fishermen have reduced the population very much.

In 1936 ten colonies existed in the Danube delta. In addition there were colonies at lake Razelm and lake Uzlina near Sf. Gheorghe.

From 1949 a severe campaign of persecution was launched, and the number of colonies were heavily

Cormorants, adult and immature, at the colony in Brændegårdssøen on Funen. Photo: Erik Thomsen. *Skarver i deres rette element. Ung og gammel fugl i Brændegårdssøen.*



reduced. In 1956 only three colonies remained in the Danube delta.

To-day regulations protect the birds, and the population is slowly increasing. It is forbidden to visit the colonies in the Danube delta during the breeding season. No open season.

References: Ciochia (1969 and in litt.).

Bulgaria

One big and two small colonies. Formerly a widespread and common breeding bird.

In 1979 the population numbered less than 600 pairs. The three colonies are all situated along the Danube, close to the border of Romania. At the biggest colony, on the island of Vardim in the nature reserve Staria Dub, the number of nests in 1979 was estimated at 250-400, while the two small colonies, Perisina and Golia near Vidin, consisted of 78 and 11 nests.

Previously nine other colonies existed along the Danube and at the Black Sea coast: Vidin, Dolni Tzibir, between Kozlodui and Oriahovo, near Somovit, Varna, Lake Mandrenskoto, south of Bourgas and Maslen Nos, Straldzanskoto swamp and near Dolni Bogrov. At the Black Sea coast the species have not bred since 1970.

During this century the population decreased heavily, and is now on the verge of extinction. Until 20 years ago birds were shot at fish ponds and lakes, and nesting trees, nests, eggs and nestlings were destroyed. Reclamation and pollution of the wetlands along the Danube and the Black Sea coast have caused loss of habitats. Lack of legal protection in the past in neighbouring Romania has also had its influence, because birds from the colonies along the Danube feed on Romanian territory.

Totally protected, except at fish ponds and within 500 m of these when causing serious damage.

Reference: T. Mitchev (in press).

Greece

Two colonies. Total population does not exceed 180 pairs.

The main colonies are situated in the Evros delta and at lake Prespa. Negative trends in recent years. Evros: 1966 140 pairs, 1967 70-90 pairs, 1978 10 pairs. Prespa: 1968 100-500 pairs, 1969 350 pairs, 1978 140 pairs (B. Antipas in litt.).

According to at recent survey (Hallmann 1982) the total population does not exceed 180 pairs. Outside Evros and lake Prespa only a few pairs breed at lake Kerkini and at Mitrikou.

Previously much more common with several colonies in the northeastern part of the country, among others at Kuru Tsei, lake Wistonis and lake Dojran. Also formerly breeding in the Axios delta and presumably at lake Artzan.

Totally protected, but many birds are still shot.

Further references: Bauer et al. (1969), M. Hodge (in litt.), D. Iles (in litt.).

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DANSK RESUMÉ

Mellemskarvens udbredelse og antal i Europa

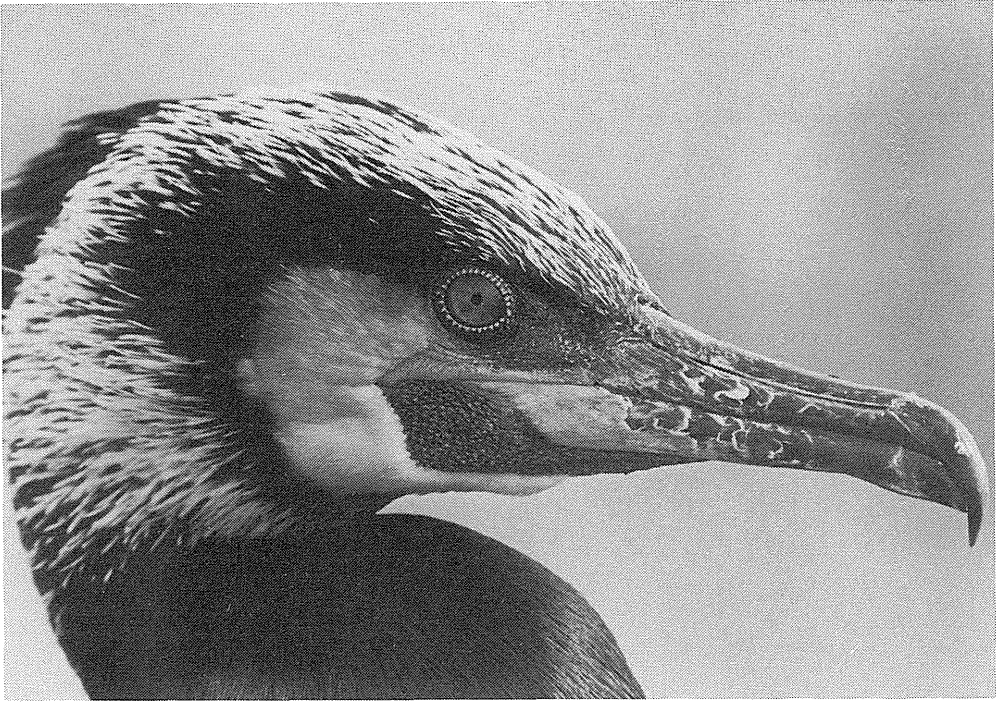
Gennem en spørgebrevs-undersøgelse er der indsamlet oplysninger om den europæiske bestand af Mellemskarv. Fig. 1 viser artens aktuelle udbredelse og i Tab. 1 gives en oversigt over antal par og kolonier i de enkelte lande.

Mellemskarven yngler stadig i de fleste lande inden for dens traditionelle udbredelsesområde. Dog er den udryddet eller forsvundet fra Litauen, Belgien og Østrig, og først fornylig er den genindvandret til Frankrig (1981), Italiens fastland (1982) og Tjekkoslaviet (1982). Den har aldrig ynglet i Luxemborg eller Schweiz.

Den samlede bestand er opgjort til 21.299 par i 1982. Heraf yngler 67% i Nordeuropa, hvor næsten halvdelen (49%) af alle Europas Mellemskarver findes i Holland og Danmark tilsammen. Rumænien er det eneste sydeuropæiske land med en bestand af væsentlig betydning (19% af totalbestanden).

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Portrait of a Southern Cormorant. Photo: Erik Thomsen.

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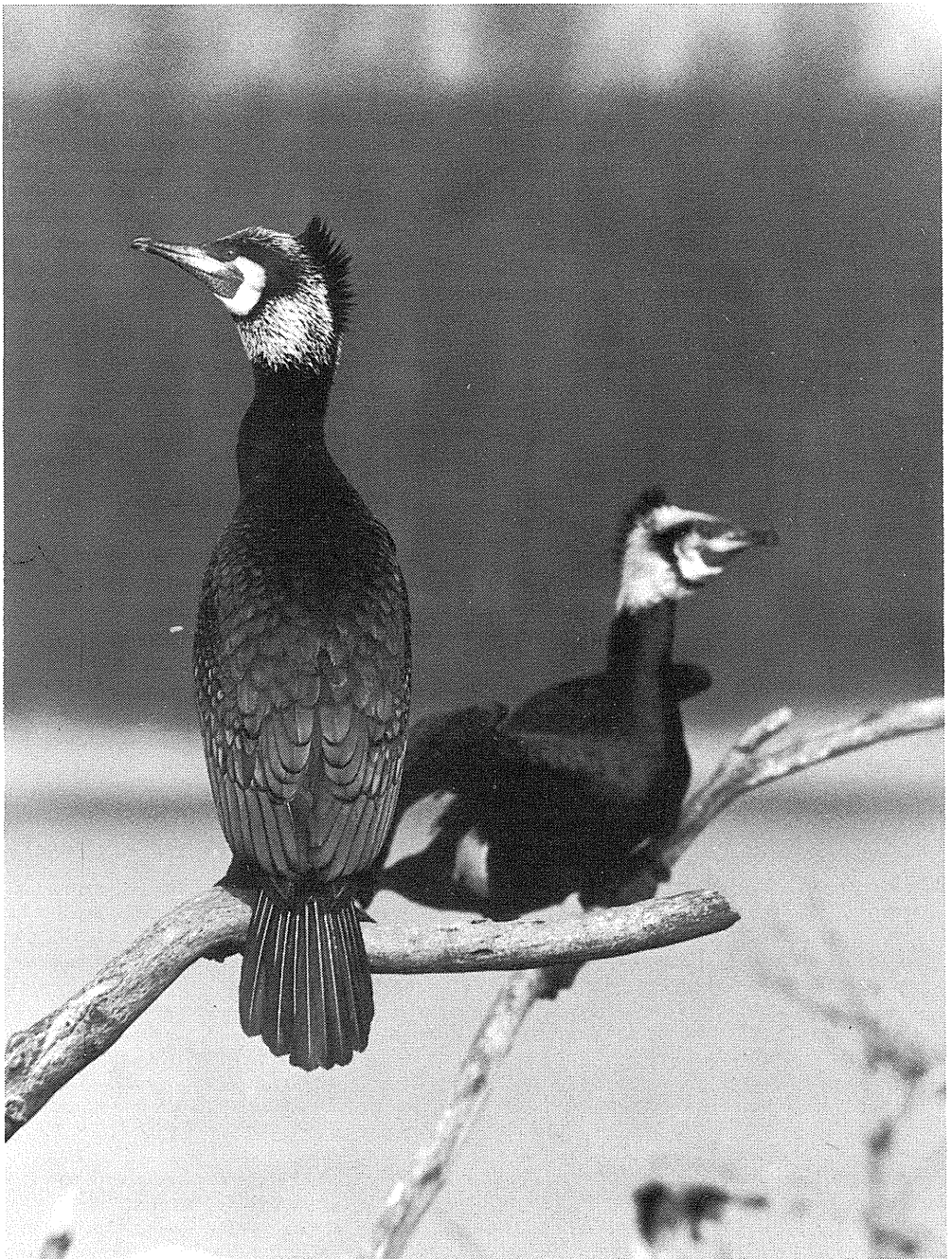


Foto: Erik Thomsen.