

## **Working Party on the Prevention and Control of Bird Predation**

The convenor, E. Staub (Switzerland), reports that there has been little activity of the Working Party. It is not clear whether there are any specific questions that would have to be addressed within this Working Party. Also, no activity has been noted the European cormorant management plan level during the last years. Unfortunately, the countries holding the most important breeding areas, such as the Netherlands and Denmark, are not willing to take any action against the rising numbers of cormorants or to permit actions for lowering cormorant numbers. However, with the elimination of the cormorant from the EU list of highly protected birds, EU member states may take action against the cormorant in well-founded cases. Some countries have indeed made use of this possibility in recent years.

In order to promote the basic ideas of the Cormorant Management plan established under the Convention on Migratory Species (CMS), a research project "Reducing the conflicts between cormorants and fisheries on a pan-European scale" (REDCOFE) was elaborated by various institutions and submitted to the European Commission in October 1999 for funding. The project was approved in April 2000 and will last two years. It aims at reducing conflicts between birds and fish/fisheries at a pan-European scale.

The convenor has conducted a European-wide literature survey on fish-relevant publications on cormorants and other fish-eating birds published during the intersessional period 1998-2000 (see attached Annex). Conclusions and recommendations for future work of the Working Party will be formulated during an *ad hoc* meeting at the beginning of the Twenty-first Session of EIFAC.

## **ANNEX**

### **EIFAC Working Party on Bird Predation**

#### **Status report for the intersessional period 1998-2000**

##### **1. Meetings**

A meeting is planned at the beginning of the Twenty-first Session of EIFAC.

##### **2. Fish-relevant publications on cormorants and other fish-eating birds during the intersessional period 1998-2000**

The following summary, arranged by country, provides an overview of fish-relevant publications on cormorants and other fish-eating birds. Papers before 1998 have not been considered. The list includes primary journals and grey literature.

##### **Austria**

Uiblein *et al.* (2000) give information on the situation of grayling in three rivers located in Oberösterreich. They conclude that all measures to improve the situation of grayling should take into account predation by fish-eating birds (especially cormorant, grey heron and goosander). In the region of Steiermark (Zauner 1999) a loss of 98% of grayling biomass is reported and

attributed to cormorant predation. In the region of Kärnten, a comparison of the fish stocks at the beginning and the end of wintertime showed losses of 67-99% (AKL 1999). Perger (1998) completed these studies with an analysis of cormorant diet (n = 59 pellets containing 75% cyprinids). In the booklet of Rutschke (1998) there is a chapter on cormorants and fisheries presenting an ornithological point of view.

AKL (Amt der Kärntner Landesregierung) (1999). Kärntner Umweltbericht 1999. Natürlich Kärnten, Umweltschutz Land Kärnten, p. 184-186.

Perger N. (1998). Fisch als Nahrung des Kormorans in alpinen Gewässern. Diplomarbeit, Inst. für Zoologie, Universität Graz, Graz, 81 pp.

Rutschke E. (1998). Der Kormoran – Biologie, Ökologie, Schadabwehr. Parey, Berlin, 161 pp.

Uiblein F, Jagsch A., Könner G., Weiss St., Gollmann P. & Kainz E. (2000). Untersuchungen zu lokaler Anpassung, Gefährdung und Schutz der Äschen (*Thymallus thymallus*) in drei Gewässern in Oberösterreich. Österreichs Fischerei **53**: 89-165.

Zauner G. (1999) Einfluss des Kormorans auf die fischökologischen Verhältnisse der steirischen Enns zwischen Liezen und Johnsbach. Universität für Bodenkultur, Wien, 58 pp.

### **Czech Republic**

Cormorants are reported to regularly cause great damage to fish stocks in ponds.

Musil P., Cepák J. & Marincová M. (1999). Great Cormorant in the Czech Republic: Populations status and action plan. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

### **Denmark**

Bildsoe *et al.* (1998) studied technical measures to reduce cormorant predation in pond nets.

Bildsoe M., Jensen I.B. & Verstergaard K.S. (1998). Foraging behaviour of cormorants *Palacrocorax carbo* in pound nets in Denmark: the use of barrel nets to reduce predation. *Wildlife Biology* **4**: 129-136.

### **France**

Recent data on the number of wintering cormorants in France (and other countries) are given in Troillet (1999). Frederiksen *et al.* (1999), using a population model, tried to assess whether culling of wintering cormorants in France has the potential to affect population density. In Lake Geneva, cyprinids are the main prey (amounting to 75% of the diet) whereas perch is the dominating species (70%) in the diet of cormorants feeding in Lake Annecy (Mathieu & Gerdeaux 1999). It seems that cormorants are partly responsible for the decreasing roach yield in Lake Geneva. Cormorant stomachs (n = 141 from 3 sites) from the River Moselle contained those fish species (33% roach, 18% perch, 11% bream) that are also highly abundant in the fish population of the river (Collas 1999). Roach was also dominating (32%) in cormorant stomachs

(n = 52) from the Rivers Marne and Saulx (Collas 1998). The number of shot cormorants is strongly limited by the government.

Collas M. (1998). Approche du regime alimentaire du Grand Cormoran (*Palacrocorax carbo*); rivières Marne, Saulx et Moselle, hiver 1997/98. Conseil supérieur de la pêche, Délégation régionale No. 3, Montigny-lès-Metz, 24 pp. et annexes.

Collas M. (1999). Comportement alimentaire du Grand Cormoran sur la rivière Moselle. Conseil supérieur de la pêche, Délégation régionale No. 3, Montigny-lès-Metz, 37 pp.

Frederiksen M., Lebreton J-D. & Bregnballe T. (1999). A population model for European Great Cormorants: preliminary results and applications to management. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Mathieu L. & Gerdeaux D. (1999). The predation of Great Cormorant in Lakes Geneva, Annecy and Bourget. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Trolliet B. (1999). Répartition et effectifs du grand cormoran (*Palacrocorax carbo*) en Europe. *Gibier Faune Sauvage - Game and Wildlife* **16**: 177-223.

### **Germany**

In the Bavarian area there exists a severe cormorant reduction program: the number of cormorants shot was 657, 6'259, 3'285 and 3'577 in winters 1995/96 through 1998/99, respectively (Keller 1999). Proposals to overcome the deadlock situation are expected on an European scale: more and realistic activity is needed from the CMS-Convention and the EU (Lukowicz 1998). A special issue of the journal "Vogel und Umwelt" with eight papers (see Richarz & Werner 1998) describes the situation in the regions of Hessen and Rheinland-Pfalz. An annex lists the cormorant reduction measures in all German Bundesländer. The chapter on cormorant and fisheries (Werner & Richarz 1998), texted by two ornithologists, concludes that there is no scientifically proven reduction of fish stocks or yield in open waters. For aquaculture units, however, a negative effect of cormorant predation is agreed. In the area of Baden-Württemberg, angling clubs started to collect relevant data and produce reports on cormorant effects; these are annually issued (e.g. Landesfischereiverband Baden 1998, 1999). There is extensive information on cormorant damage (Jäger 1999; Proske 1999; Wissmath *et al.* 1998; Wissmath *et al.* 2000) and protection measures (Leppelsack 1999; Schmidt 1998; Schreckenbach *et al.* 1998). Both issues provoke technical and political discussions (Zobel 1998). Fiedler (1999) presents a ringing recovery analysis of the years 1986-99 giving information on the flypaths from breeding to wintering areas. Keller & Visser (1999) analysed the daily consumption rate, based on the doubly labelled water technique: in captivity it was 1325 kJ day<sup>-1</sup> corresponding to 341 g fish day<sup>-1</sup>, and in the wild 2094 kJ day<sup>-1</sup> corresponding to 539 g fish day<sup>-1</sup>.

Fiedler W. (1999). Kormorane *Phalacrocorax carbo* als Durchzügler und Wintergäste in Süddeutschland und Österreich – eine Ringfundanalyse. *Der Ornithologische Beobachter* **96**: 183-192.

Jäger S. (1999). Ergebnisse der Kormoranzählung im Bereich der Ruhrfischereigenossenschaft und in Schwerte-Geisecke 1996-98. *Fischer & Teichwirt* **50**: 49-50.

Keller T. & Visser H. (1999). Daily energy expenditure of Great Cormorans *Phalacrocorax carbo sinensis* wintering at Lake Chiemsee, Southern Germany. *Ardea* **87**: 61-69.

Keller T.M. (1999). Cormorant management in Bavaria, southern Germany – shooting as a proper management tool? Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Landesfischereiverband Baden (1998). Kormoran und Fischerei. Landesfischereiverband Baden, Arbeitskreis IX, Freiburg.

Landesfischereiverband Baden (1999). Kormoran und Fischerei. Landesfischereiverband Baden, Arbeitskreis IX, Freiburg.

Leppelsack H-J. (1999). Versuche zur Vergrämung von Kormoranen durch Unterwasserschall. *Fischer & Teichwirt* **50**: 49-50.

Lukowicz M. (1998). Possibilities of solving the problem of losses to the inland fisheries caused by cormorants. III. Krajowa Konferencja Rybackich Uzytkowników Jezior, Olsztyn, p. 47-70.

Proske C. (1999). Kormoran-Schäden in der Karpfenteichwirtschaft des Aischgrundes. *Fischer & Teichwirt* **50**: 177-179.

Richarz K. & Werner M. (1998). Die Arbeitsgruppe "Kormoran" für Hessen und Rheinland-Pfalz. *Vogel und Umwelt* **9**: 205-206.

Schmidt J.P. (1998). Kormoranabwehr durch weitmaschige Überspannung von Karfenwinterungsteichen in der Oberpfalz. *Ornithol. Anzeiger* **37**: 1-18.

Schreckenbach K., Dersinske E. & Schulz A. (1998). Einfluss von Kormoranen auf Satzkarpfen in ungeschützten und überspannten Teichen. *Fischer & Teichwirt* **49**: 186-192.

Werner M. & Richarz K. (1998). Kormoran und Fischerei. *Vogel und Umwelt* **9**: 263-268.

Wissmath P., Wunner U. & Huber B. (1998). Kormoranschäden an Stellnetzen der Seenfischer- eine hinnehmbare Bagatelle oder ein handfester fischereiwirtschaftlicher Schaden? *Fischer & Teichwirt* **49**: 486-489.

Wissmath P., Reschenauer M. & Limburg U. (2000). Kormoranschäden in der Netzfischerei am Ammersee? *Fischer & Teichwirt* **51**: 82-84.

Zobel H. (1998). Internationales Smposium: "Der Kormoran im Spannungsfeld zwischen Naturschutz und Teichwirtschaft" in Königswartha. *Fischer & Teichwirt* **49**: 3-8.

## Italy

**Great cormorant:** The Waterbird Society (formerly, Colonial Waterbird Society) held its 23<sup>d</sup> Annual Meeting in Grado, Italy. There was a special session on cormorants with a good dozen of presentations concerning cormorants in Europe and the USA. In the Northern Adriatic area a lot of suitable nesting habitats exist (Volpony 1999). The cormorant breeding population (n = 400 pairs in 1999) may substantially increase in the future. This situation, together with a high number of wintering birds, is expected to promote conflicts with aquaculture producers. An

extended analysis of pellets (n = 1'206) by Volponi & Privileggi (1999) showed variations in space (between colonies) and time (changing foraging grounds due to prey distribution during wintertime). The cormorant problem should be solved at an European level by reducing the reproduction intensity in the breeding areas, whereas shooting of wintering cormorants is considered a palliative measure (Cau *et al.* 199?).

**Other waterbirds:** The stomach content of 22 great crested grebes (*Podiceps cristatus*) was dominated by bleak (*Alburnus alburnus*; 83%) and roach (*Rutilus rutilus*; 15%) in Lago di Como.

Cau A., Bacetti N., Cataudella S., Corda G., Donati F., Mainardi D., Rossi R. & Bertelletti M. (199?). Relazione finale "Impatto degli uccelli ittiofagi sull'attività di Acquacoltura". Commissione Scientifica Nazionale sugli uccelli ittiofagi, Ministero delle Risorse Agricole, Alimentarie e Foresti, Roma. 98 pp.

Volponi S. & Privileggi N. P. (1999). Diet and predation of Great Cormorants wintering in two areas along the Northern Adriatic Sea coast. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Volponi S., Cherubini G. & Utmar P. (1999). Population development of wintering and breeding Great Cormorants in the Northern Adriatic, Italy. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

The file with all abstracts of the 23<sup>d</sup> Annual Meeting of ist 23<sup>d</sup> Annual Meeting of the Waterbird Society is also available via my e-mail (erich.staub@buwal.admin.ch).

## Israel

**Great cormorant:** Studies on cormorants' prey selection in a water tank showed a visual detection at a distance of at least 1.4 m (Strod *et al.* 1999). Choice experiments showed preference for larger fish.

**Other waterbirds:** There are foraging studies (Nathan *et al.* 1999) on a second cormorant species, the globally threatened pygmy cormorant (*Phalacrocorax pygmeus*).

Strod T., Izhaki I., Arad Z. & Katzir G. (1999). Prey detection and prey preference in diving cormorants. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Nathan M., Izhaki I., Zorovski Y., Arad Z. & Katzir G. (1999). Behavioral and eco-physiological aspects of the Pigmy cormorant's biology. Abact for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

## Norway

Breeding cormorants from 4 colonies were flying 2.9 km on average (range 1.5 – 5 km) to their feeding areas (Lorentsen & Rov). Kelp forests (*Laminaria hyperborea*) are shown to be an important habitat for young fish and preferred foraging area for cormorants.

Lorentsen S-H. & Rov N. (1999). Close overlap between feeding areas for Great Cormorants and Kelp forests. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

## **Poland**

An extended analyses of pellets ( $n > 1200$ ) by Bzoma & Stempniewicz (1999) revealed 70-95% round goby (*Neogobius melanostomus*) during April through September 1998, and 90% stickleback (*Gasterosteus aculeatus*) during October through November 1998. Goc *et al.* (1999) tracked birds that were equipped with radio-transmitters, and Kopciewicz *et al.* (1999) studied breeding success.

Bzoma S. & Stempniewicz L. (1999). Changes in numbers and diet of cormorants *Phalacrocorax carbo* in the Gulf of Gdansk. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Goc M., Iliszko L. & Brylski T. (1999). Foraging flight pattern of the cormorant (*Phalacrocorax carbo sinensis*) studied during a breeding season by telemetry and visual counts. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

Kopciewicz P., Nitecki C., Bzoma S. & Stempniewicz L. (1999). Breeding succes of cormorants *Phalacrocorax carbo sinensis* in the colony at Katy Rybackie (N Poland), 1995-1999. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

## **Romania**

Gogu-Bogdan & Hanganu (1999) compared the diet of a fluvial colony with that of a fluvio-maritime one.

Gogu-Bogdan M. & Hanganu D. (1999). Comparative studies in food composition of Great Cormorant in three different colonies from the Danube delta reserve. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

## **Sweden**

The estimated fish consumption by cormorants in a highly productive lake was  $15 \text{ kg ha}^{-1} \text{ year}^{-1}$  (in comparison, the yield of the fishery was  $8.6 \text{ kg ha}^{-1} \text{ year}^{-1}$ ). Main foraging species was ruffe (*Gymnocephalus cernuus*) amounting to 75% of the diet. Cormorant predation probably did not lead to a decline of commercial fish species, since eel (which is most important for the fishery) was absent in the diet.

Engström H.D. (1999). Long-term effect of cormorant predation on fish communities and fishery in a freshwater lake (Ymsen) of south-central Sweden. Abstract for the 23<sup>d</sup> Annual Waterbird Society Meeting in Grado, Italy.

## **Switzerland**

For several running waters there exist detailed data (AFV 1999; Renz 2000) on the presence of cormorants and common merganser (*Merganser merganser*), angling yield, fish stocking, estimation of fish population size and stomach content of piscivorous birds ( $n = 2000$  cormorant stomachs for the whole of Switzerland). Most research activities are co-ordinated by a cormorant-fish working group (AG K+F 1988) with the aim to assess the effectiveness of the Swiss cormorant management plan. Additional data are available on fish loss in gillnets caused by cormorants (Egloff 1998). Cormorant control programs are limited to running waters; about

1'000 cormorants are shot each winter. Some ornithologists (e.g. Suter 1999) deny scientifically proven damage in running waters. However, fish loss from gill nets is accepted as damage.

AFV (Aargauischer Fischereiverband) (1999). Fische und Kormorane im Kanton Aargau - Ergänzungsbericht 1999. Bericht des Aargauischen Fischereiverbandes, 16 pp.

AG K+F (Arbeitsgruppe Kormoran und Fische) (1998). Arbeitsverzeichnis für die Berichterstattung der Erfolgskontrolle. Papier der AG K+F (Sitzung vom 9.6.98).

Egloff K. (1998). Kormoran und Berufsfischerei im Untersee, Winter 1997/98. Fischereiaufsicht Kt. Thurgau, 14 pp.

Renz H. (2000). Gefiederte Prädatoren plündern die Saane. *Petri-Heil* **51/3**: 15-17.

Suter W. (1999). Kormoran – *Phalacrocorax carbo*. In: Heine G. *et al.* (1999). Die Vögel des Bodenseegebietes. *Orn. Jh. Bad.-Württ.* 14/15, p. 203-207.

### **The Netherlands**

**Great Cormorant:** Mous (2000) gives information on the complex situation of plankti-/benthivorous and piscivorous fish, fishermen's target species, bycatch of immature fish, fish predation by birds etc. Management options are analysed with a population model.

**Other waterbirds:** In addition to the predation problem, the fisheries of The Netherlands are confronted with bird protection problems because wintering waterbirds are drowned in gillnets (van Eerden *et al.* 1999).

Mous P.J (2000). Interactions between fisheries and birds in IJsselmeer, The Netherlands. Thesis, University of Wageningen, 205 pp.

Van Eerden M., Dubbleddam W. & Muller J. (1999). Sterfte van watervogels door visserij met staande netten in het IJsselmeer en Markermeer. RIZA, rapport 99.060, 42 pp.

### **United Kingdom**

The results of a four-year research program (MAFF 1999; ....) give recent data on the number of wintering and breeding cormorants and goosanders, and on its distribution on the coast and in inland waters. The impact of fish-eating birds is a problem for specific fisheries rather than a general problem. Some times bird predation can be high enough to cause serious problems. Factors other than predation by birds can affect fisheries and have a more significant impact than bird predation. Evidence on whether or not shooting to kill enhances the effectiveness of bird scaring was inconclusive; and apart from human presence, no other management measure were found to be consistently effective although fish refuges showed some promise.

MAFF (Ministry of Agriculture, Fisheries and Food) (1999). ...[File lost] ...

## **3. Activities of international bodies**

### **Cormorant research group**

The cormorant research group of Wetlands International held its last symposium in April 1997. There is no announcement for a next symposium.

The papers of the 1997 symposium are issued in Polish Journal of Ecology **45**.

### **European Anglers Alliance (EAA)**

The EAA (1998) collected the data on wintering birds and made proposals.

EAA (European Alliance of Anglers) (1998). Situation of the cormorant in Europe. EAA, Amersfoort, 48 pp.

### **European Management Plan of CMS**

In October 1998, the Danish Ministry of Environment sent out the finalised "Action Plan for the Management of the Great Cormorant" which was elaborated under the umbrella of the Bonn Convention (or CMS, Convention on Migratory Species). Amongst other proposals the plan presents measures in order to control cormorant populations within existing breeding colonies. However, the countries with the strongholds of the European breeding population are seemingly not willing to implement such measures.

### **European Union**

Under the lead of D. Carss, Institute of Terrestrial Ecology, UK, the research project REDCOFE (Reducing the conflicts between cormorants and fisheries on a pan-European scale) was submitted to the European Commission in October 1999 to get subsidies. The project was accepted in April 2000. It intends to push forward the basic idea of the CMS-Management plan. It will last two years; in total, four working meetings are planned (each of about 3 days).

There are two representatives of EIFAC amongst the participants in the project:

Project leader: Dave Carss; BirdLife International: Julian Hughes; Denmark: Thomas Bregenballe, Mogens Bilsoe and Christian Dieperink; EAA (European Anglers Alliance): Gilbert Marsollier; EIFAC (European Inland Fisheries Advisory Commission): Erich Staub and Heiner Klinger; Estonia: Redik Eschbaum; France: Loic Marion and Daniel Gerdeaux; Germany: Thomas Keller and Harald Kleisinger; Greece: Kazantzidis Savas; Latvia: Janis Baumanis; Israel: Ido Izhaki, Zeef Arad and Gado Katzir; Poland: Robert Gwiazda; Spain: Carlos Garcia de Leaniz, Sweden: Stellan Hamrin and Henri Engström; The Netherlands: Mennobart van Eerden and Willem Dekker; United Kingdom: Ian Winfield, Philip Scott Jones, Ian Russell.

### **Conclusions and Recommendations**

To be discussed and drafted at the meeting planned at the beginning of the 21<sup>st</sup> EIFAC Session.

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