

# The problems:

- Overexploited/weak fish stocks
- Adult birds eat mainly fish
- Feces from colonies kill green plants
- Effects on other birds (Caspian tern)
- Effects on biodiversity??
- → Concern and resistence



# The Swedish Roxen report

- 1992: first established colonies in lake Roxen
- 1999: 908 couples nesting (March September)
- Fish both species composition and size distribution has changed
- Angling heavily restricted (bag limit etc.). One commercial fisherman left.



Aqua reports 2014:10

#### Mellanskarven i Roxen

Förändringar i fisksamhället och mellanskarvens (Phalacrocorax carbo sinensis) föda

## The Swedish Roxen report

Recommended outtake of fish: 3-6 kg/ha (100 x 100 m)

Commercial fisheries: 0,85 kg/ha

• Cormorants: 7,50 kg/ha

**Conclusion:** cormorants take the major part of the fish stock and has an effect on the stocks. Cormorants probably the main reason that most of the fish doesn't reach reproductive size

**Suggestions:** manage the cormorants to get the fish outtake back to sustainable levels, by:

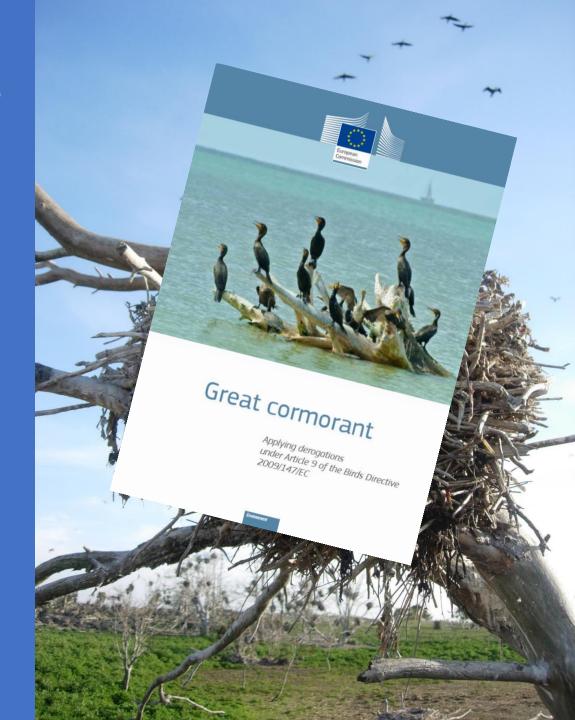
- lowering the nesting/breeding results (but how?)
- Scaring off migrating cormorants
- Good documentation

# Why improve management?

- Fast expansion of the continental cormorant (*Phalacrocorax carbo sinensis*) in Europe

  → historically high population numbers (*Finland 1996-2002: 10 → 16 007 br. pairs*)

  → significant impact on (the recovery of) local fish stocks
  - → breeding sites vs. landowner interest concern and resistance
- Highly protected but why today?
   sub-species complexity
- Cormorant vs. fish stock management
- Lack of cooperation between MS
- Management uncertainties in member states



### Why a Nordic cooperation?

• The geographical distribution of the continental cormorant implies a regional approach









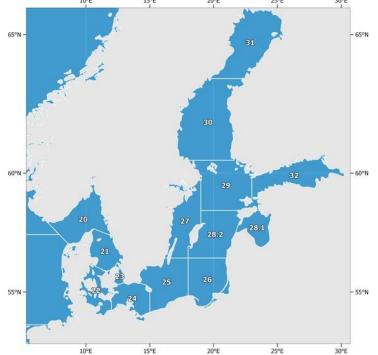
















#### What do we want?

- The protection of weak fish stocks and threatened fish species shall be considered more important than the protection of species with a positive stock status
- In areas of importance for fisheries, especially angling and angling tourism, more active measurements shall be carried out if the cormorants cause a considerable damage on the fish stocks (limit/eliminate colony).
- The national authorities handling cormorant management in the Nordic countries shall be given the responsibility to survey and follow up the effect of the cormorant populations on the fish stocks.
- National councils (like in Denmark)
- Nordic (+ Germany) cooperation/forum/council between the authorities
- European strategy "BEST PRACTICE"

To protect fish resources! Bottom-up perspective!

