

Great cormorant conflict – is there any solution for large pond systems?

Experience from the Czech Republic

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AREAS of INTEREST - Pond aquaculture in the Czech Republic

Aquaculture: ~ 20,000 tons fish

- ▶ **pond aquaculture** - 42,000 ha ponds
~ 95 % of production
- ▶ **special systems** (RAS, raceways)
~ 5 % of production

85 % of production = common carp

5 % = herbivorous species

4 % = salmonids

1 % = predators

5 % = others



Average pond size = 2 ha

Great cormorant (*Phalacrocorax carbo sinensis*) in the Czech Republic

- History (occurrence – bird nesting in a colony from early 80s of 20th century)
- Currently - several nesting colonies (only on trees) with 300-400 pairs
- actual population numbers (migration from the Baltic region – up to 100,000 inds. , overwintering – 10-15 ths.)
- current protection status = protected according to EU Bird directive and subsequently in Czech legislation as a wild bird



Solution according some ideas proposed by EC's projects, adopted by Czech nature protectors

- EC projects (REDCAFE, INTERCAFE, CorMan) for reducing the cormorant-fisheries conflict
- Unfeasibility of the most suggestions (dangerous for wildlife, flood events, expensive, open landscape,...)
- Enclosures (cages)
- Wires, lines, strings – in grid patterns
- Scarecrows (with shot guns)
- Mylar tapes, CDs



Losses mitigation

Frightening (disturbance) – derogation essential (Art. 9 BD, local or regional authority)

Gas (LPG) cannon

- Automatic use (timing), no personal presence
- Disturbing of other bird species, cormorants get used, complaints of people (hygienic limits), thieves



drones

- For large pond areas and/or inaccessible islands
- Operator essential, expensive, cormorants get used





Losses mitigation

Lethal technique - shooting support

- 1) Derogation (Art. 9 BD) issued by local/regional/national nature protection authorities
- 2) Derogation issued by local gamekeeper authority
- 3) Obtaining hunting licence from local gamekeeper club
- 4) Only 20 % of birds from the bird flock
- 5) 1 August-30 April, dawn (-1 h) – dusk (+1 h), out of specially protected areas (bird areas)

20 EUR/ind. (12 EUR/ind. by fish farmers)

Year	Number of cormorants (inds.)	Financial compensation (EUR)
2012	6,050	
2013	5,751	
2014	4,615	
2015	5,464	
2016	7,808	
2017	8,883	
2018	7,875	
2019	4,420	
Ministry of agriculture		
2018/2019	5,138	102,760
2019/2020	9,589	191,780
2020/2021	9,717	194,340
2021/2022	805	16,100
2022/2023	17,421	348,420

Cormorants shooting is not easy, low cost-effective, but with additional preparation...

artificial floating attractant



30 EUR

+

camouflage suit



80 EUR

=

success



420 EUR + protection of fish stock
from predation



Losses mitigation

Compensation of caused damages

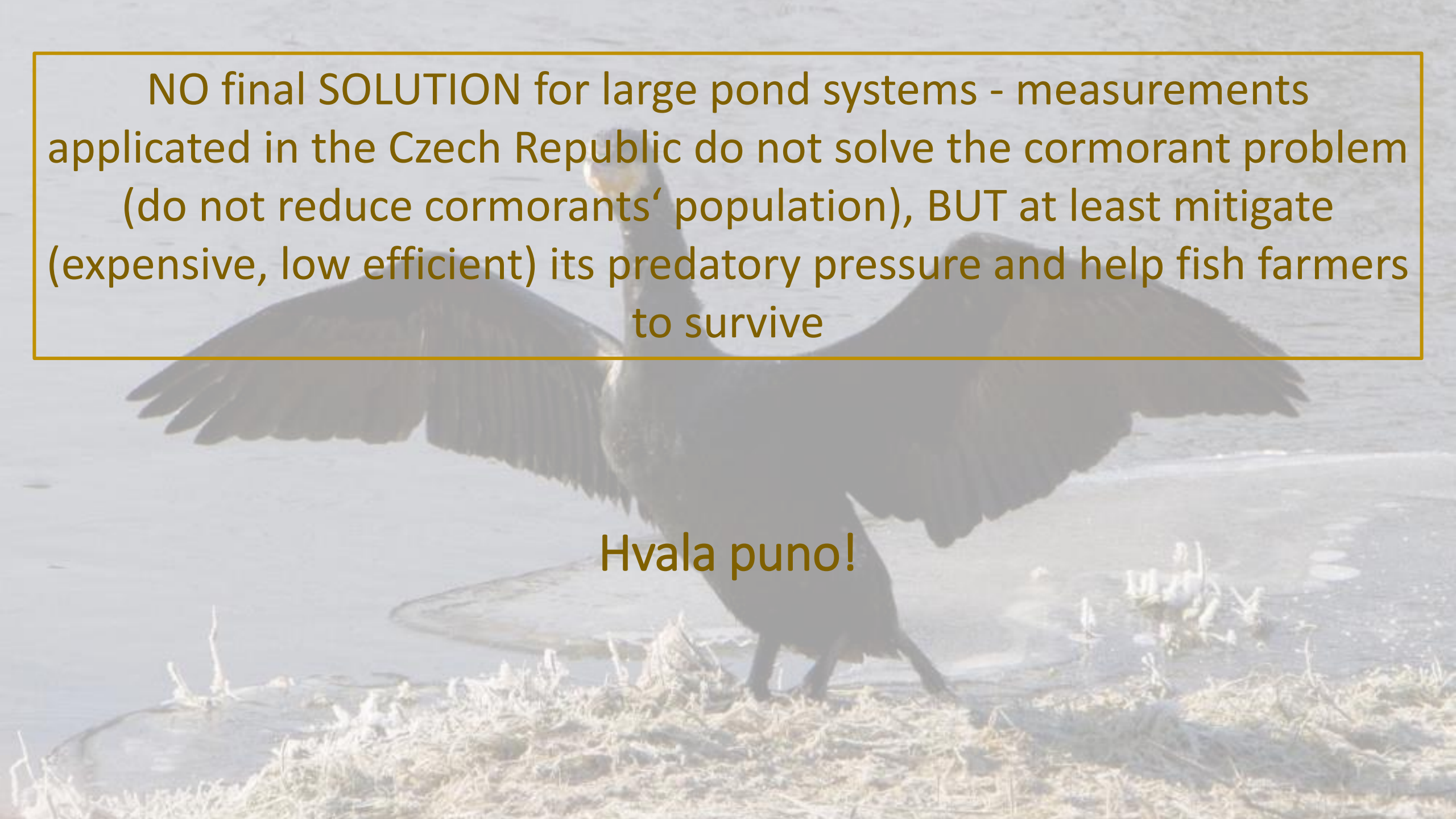
Act. No. 115/2000 Coll. (the list of chosen, specially protected animals: cormorant, otter, beaver, wolf, bear, lynx, elk)

- condition: animals specially protected when damage occurs

2013 – removal of cormorant from the list » no compensation (2014-2017)

- act amendment (2018) for 2018-2020
 - act amendment (2020) for 2021-2023
 - act amendment (2022) for 2024-2026
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- Only in ponds, no rivers (wildlife)
 - No. of cormorants (observation 3-4 days, average No./period)
 - each pond observed separately
 - fish stock (fry, fingerlings < 0.7 kg), daily ration = 0.5 kg
 - fish price (EUR/kg) – price list in region or national price list
 - Usually only primary damages, secondary losses compensated rarely

year	damage (thds. EUR)	compensation (thds. EUR)
2011	3,712	1,593
2012	3,714	1,619
2013	3,212	1,984
2014	3,989	0
2015	5,214	0
2016	4,981	0
2017	3,603	0
2018	3,537	0
2019	3,998	1,488
2020	3,716	2,944
2021	4,374	2,019
2022	4,634	2,022
2023	6,052	2,888



NO final SOLUTION for large pond systems - measurements
applied in the Czech Republic do not solve the cormorant problem
(do not reduce cormorants' population), BUT at least mitigate
(expensive, low efficient) its predatory pressure and help fish farmers
to survive

Hvala puno!