

Basic principles of sustainable harvest of migratory birds in the flyway context

**SUSTAINABLE WATERBIRDS HARVESTING AND CONSERVATION TRAINING WORKSHOP
LIFE16/NAT/BG000847 “LIFE for Safe Flight” Project**

June 2022

Niels Kanstrup



Short presentation

Niels Kanstrup

- Danish
- Biologist and scientist at Aarhus University
- Owner of Danish Academy of Hunting
- Hunter and bird watcher



Content

- Harvest – the diversity of harvest types (here: mostly hunting)
- Sustainability – the fundamental principles (ecological, economical, social)
- Ecological aspects: Harvest and population dynamics + Spatial distribution of species and planning of harvest + Disturbances
- Political aspects: The purpose of hunting (food or sport) + ethics (suffering of game animals) + behaviour of hunters.
- Hunting pressure – a definition.

Bird Harvest is diverse

- Limesticking of songbirds Cyprus
- Egg and down collection Iceland
- Falconry Arabia
- Duck/goose hunting



Sustainability – a common obligation

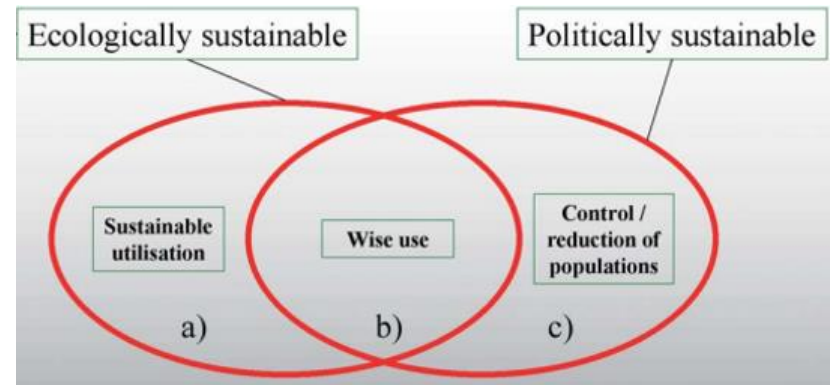
- Formally adopted by several legal instruments internationally and nationally.
- *“A development that meets the needs of the present without compromising the ability of future generations to meet their own needs”*

UN Report 1987

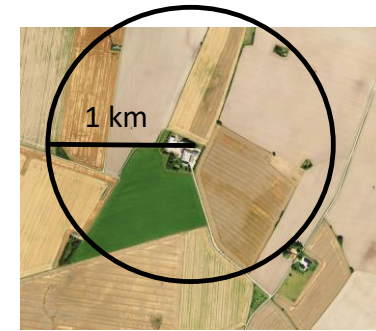
- Normally regarded in terms of:
 - Ecological
 - Economical
 - Social
- } aspects

But in terms of harvest it can be simplified to

- Ecological
 - Political
- }



Ecological aspects



- **Spatial distribution of populations**

- Local
- Regional/national
- International (flyway)

- ... and level of management competence:

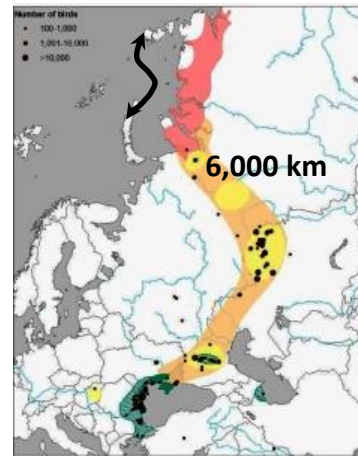
- Landowner
- Regional/national authority
- International authority/body

Partridge (*Perdix perdix*)

Eider duck (*Somateria mollissima*)

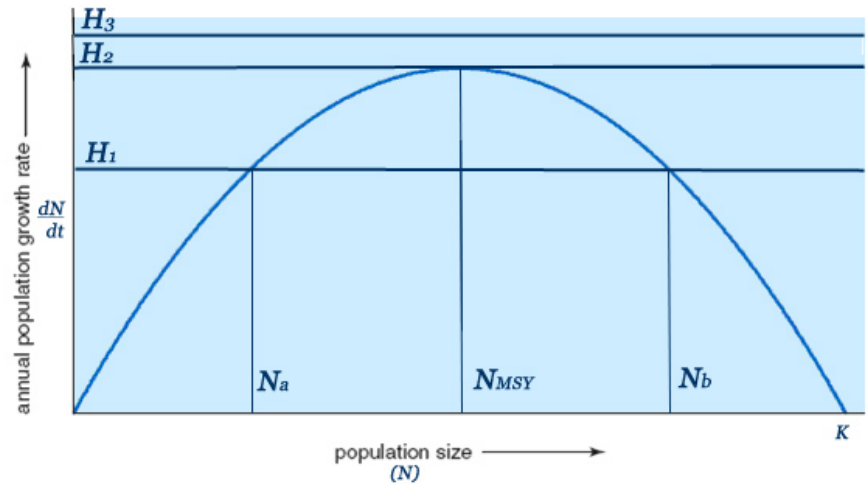
Regional population Kattegat

Red-breasted goose (*Branta ruficollis*)

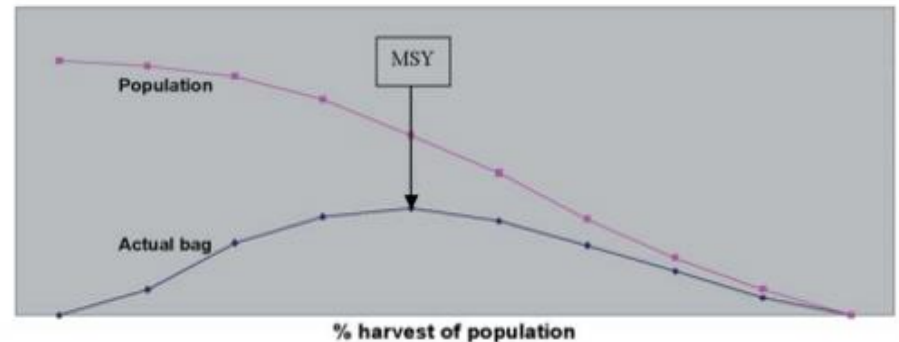


Ecological aspects

- **Harvest rates**
 - Populations grow by a certain annual (reproduction) rate.
 - This "surplus" (yield) is the frame for harvest.
 - Many populations have:
 - High reproduction rates.
 - Correlations between reproduction rates and population size – density dependence.
 - Correlations between mortality factors (compensatory).
- But some populations are at so critical low levels that these mechanisms do not apply.



Maximum sustainable yield



Ecological aspects

Wildlife Biology 1(1):193-207. 1995
<https://doi.org/10.2981/wlb.1995.0025>

Impacts of hunting disturbance on waterbirds - a review

[Jesper Madsen](#) & [Anthony D. Fox](#)

Number of literature references to demonstrated effects and impacts of hunting disturbance on waterbirds.

Effects/impacts	Cormorants	Swans	Geese	Dabbling ducks	Small diving ducks	Large diving ducks	Waders
Increased escape distance			4	2			1
Modification of behaviour		1	2	8	1		
Local re-distribution	1	3	4	7	2	1	4
Local under-use of habitats		1	4	18	2		2
Regional under-use of sites		4	2			1	
Impacts on reproduction/survival			(2) ¹				

¹ Refers to break-up of pair-bonds.

- **Disturbance**
 - Flight distances
 - Behaviour – adaptation/habituation
 - Distribution
 - Energi budget
 - Reproduction/survival

- ... and their managerial consequences:
 - Possible conflict with conservation goals
 - Bird observation possibilities reduced
 - Hunting possibilities reduced
 - Damage to agriculture
 - Birdstrike risks may increase



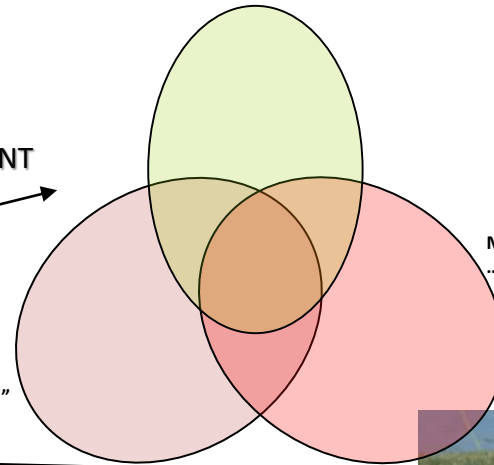
Political aspects

WHY WE HUNT

Food and products
.... "otherwise we starve"

Management
.... "we control populations"

Recreation
.... "we like it!"

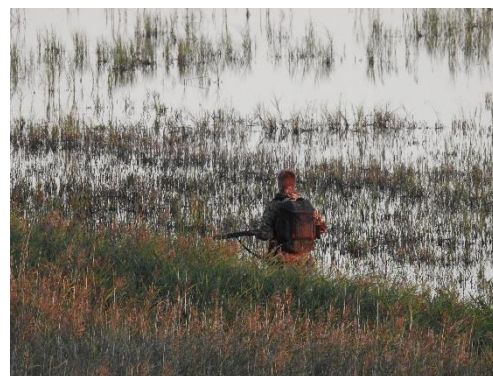


- **The public opinion and influence**

May depend on ecological aspects, but more likely:

- The motivation for hunting.
- Ethics
 - suffering of animals.
 - respectful use of quarry.
 - hunters' behaviour and display (social media).

Hunting pressure



- **Often just regarded to = harvest rate, but include also:**
 - Disturbance:
 - From the shooting.
 - From access and traffic (walking, driving, dogs etc.).
 - +
 - Left items/litter (more or less visible and more or less reversible):
 - Shooting hides.
 - Gunshot – particularly lead shot.
 - Ammunition plastic litter.

Hunting pressure



Impact of hunting

- Often only the bag (harvest) is used as a parameter for impact.
- Many other elements must be taken into account.
- Particularly for birds living in flocks.

