How to assess the status and habitat of otters?

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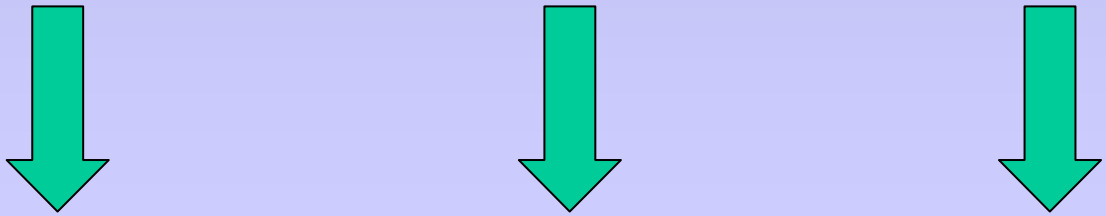
Lutra lutra and it's habitat: strictly protected (EU FFH-Dir.)

Environmental assessment procedure

Natura 2000 compatibility

Impact of projects:



- Direct threat of individuals (e.g. roads)
- Habitat alteration (e.g. hyrdo power p.)
- Habitat loss (e. g. mining areas)

Crucial questions:

- Status before project (**otter & habitat**)
- Impact of the project
- Measurements to mitigate negative effects
- Status after project realisation

Population & status of the otter:

- How many live here?

- presence / absence
- **relative** abundance
- **absolute** abundance

➢ **relative** abundance

- ✓ counting of holts (Kruuk 1989)
- ✓ Visitation rate via repeated surveys:

  Vis. = X spraints found / X weeks

  differentiate between fresh & old! Gruber et al. 2007
- ✓ number of spraints at a given time:

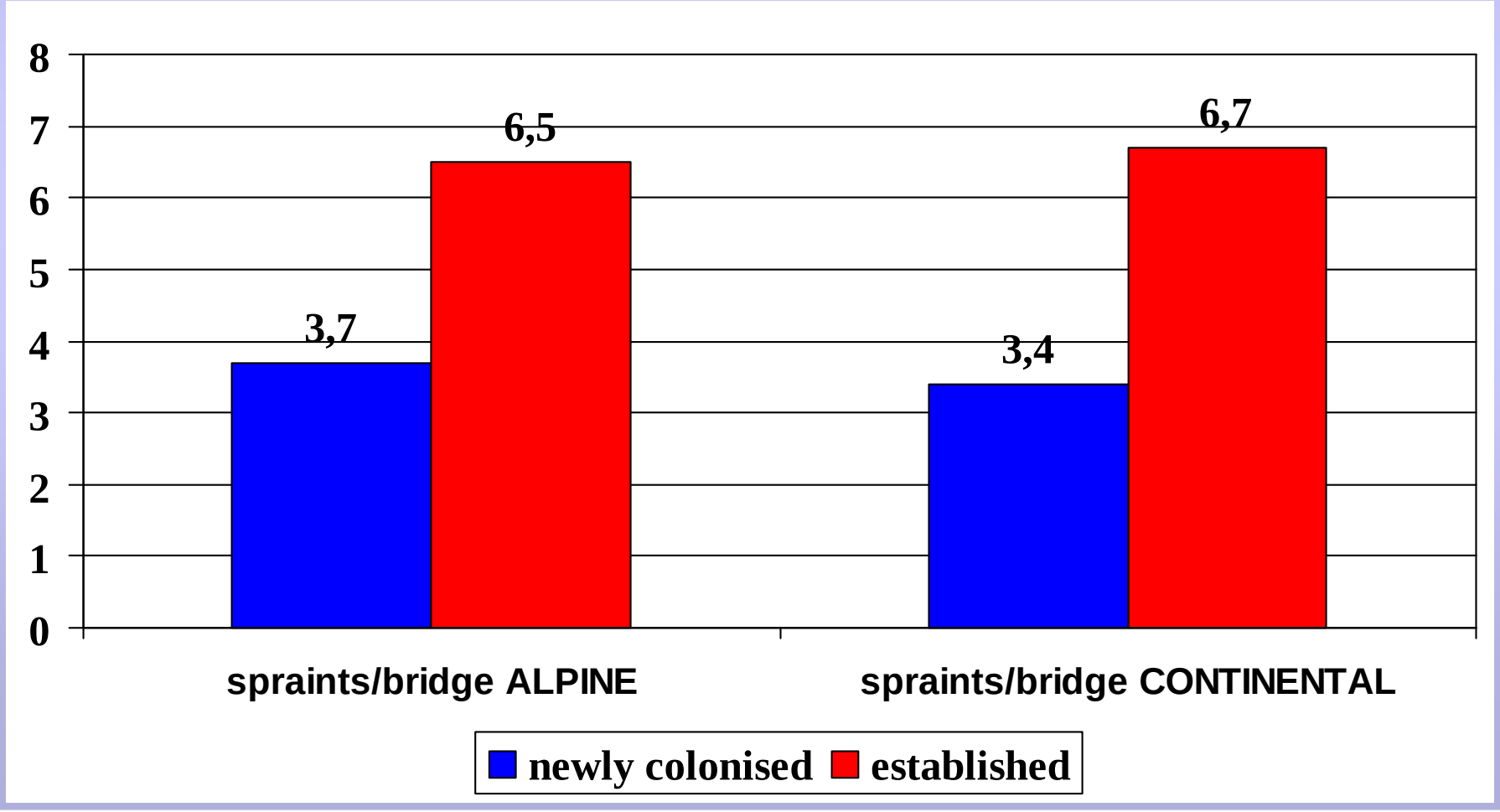
- **relative** abundance by

number of spraints at a given time:

Is there a difference in the **number** of spraints under bridges between areas with:

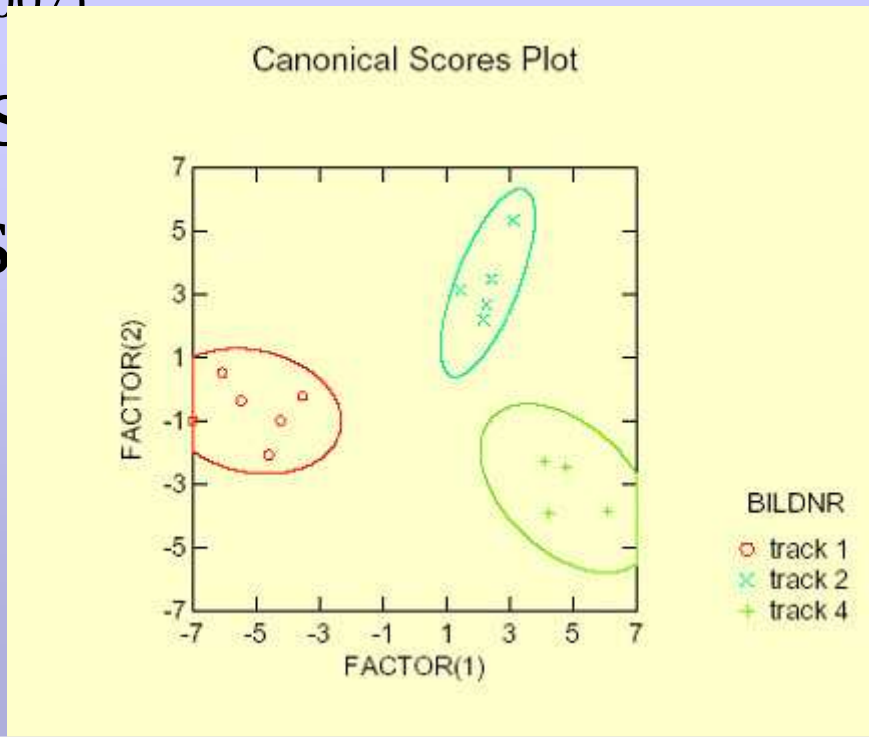
- an established otter population
- newly colonised ones?

Yes, there is a significant difference!!!



➢ **absolute** abundance

- ✓ Visual census (Ruiz-Olmo 2001)
- ✓ Snow tracking (Sulkava 2007)
- ✓ DNA-analysis from s
- ✓ Measuring footprints



Population & status of the otter:

➢How many females / reproductions?

- ✓ repeated track surveys
- ✓ could we get some information from spraints?

Population & status of the otter:

- Degree / reasons of mortality?

Population & status of the otter:

➢ Population trend in the past?

- ✓ locally presumably not
- ✓ reginally yes, maybe

Population & status of the otter:

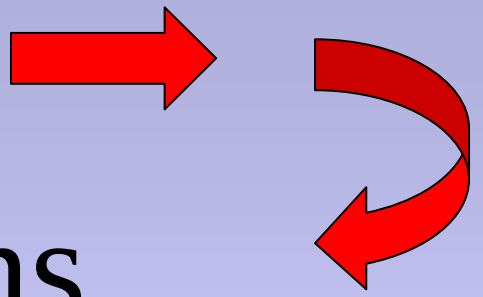
➢Carrying capacity after it?

✓ Do we have reference areas?

✓ Reference database may help!

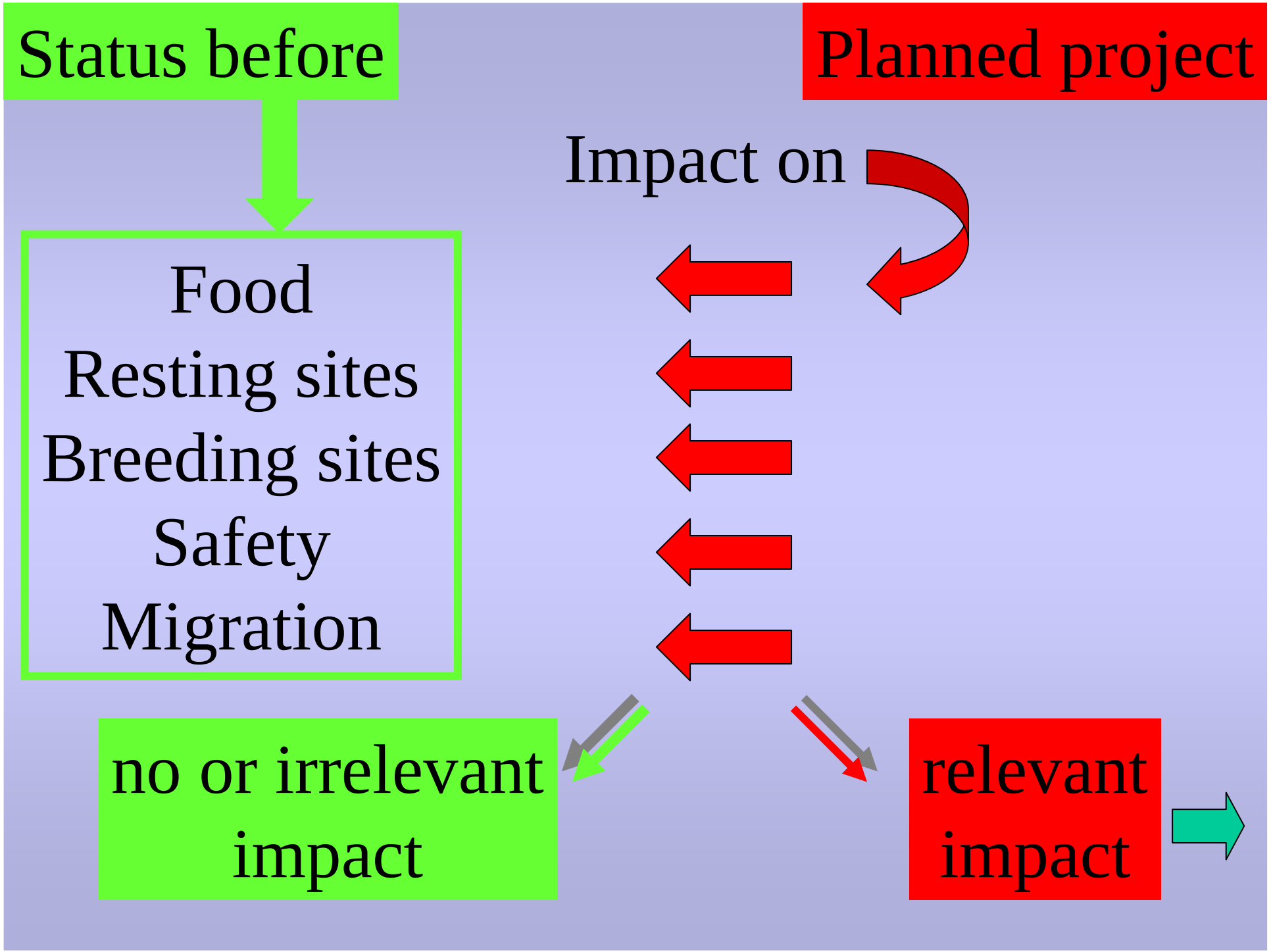
continental www-based

Status of the habitat



Habitat functions

- Availability of food
- Day resting sites
- Reproduction sites
- Safety aspects
- Migration potential


Status before
Planned project
Impact on
Food
Resting sites
Breeding sites
Safety
Migration
no or irrelevant impact
relevant impact

Status before:

Area 1	Main river	Other aquatic	Forest	Other areas	Summary
Food	2	3	1	0	**6**
Resting	2	3	2	1	**8**
Breeding	0	1	1	0	**2**
Safety	4	2	2	1	**9**
Migration	4	2	2	1	**9**

no = 0

low = 1

medium = 2

high = 3

Very high = 4

Status before:

	Area 1	Area 2	Area 3
Food	**6**	**10**	**4**
Resting	**8**	**10**	**6**
Breeding	**2**	**8**	**1**
Safety	**9**	**5**	**3**
Migration	**9**	**8**	**5**
Sum:	**34**	**41**	**19**

Impact of planned project:

	Main river	Other aquatic	Forest	Other areas	Summary
Food	i.i.	m.i.	n.r.	n.r.	i.i.
Resting	m.i.	n.r.	n.r.	n.r.	m.i.
Breeding	n.r.	h.i.	n.r.	n.r.	h.i.
Safety			n.		
Migration	n.r.	n.r.	n.r.		n.r.

no action needed

action needed

improvement

not relevant

moderate impact

high impact

inacceptable impact

Impact of planned project:

Running phase	Main river	Other aquatic	Forest	Other areas	Summary
Food					
Resting					
Breeding					
Safety					
Migration					

improvement

low impact

high impact

not relevant

inacceptable impact

Effect of proposed compensation measures:

	Project impact	Compen. effect
Food	i.i.	WHAT IS SUFFICIENT
Resting	m.i.	WHAT IS SUFFICIENT
Breeding	h.i.	WHAT IS SUFFICIENT
Safety	n.r.	
Migration	n.r.	

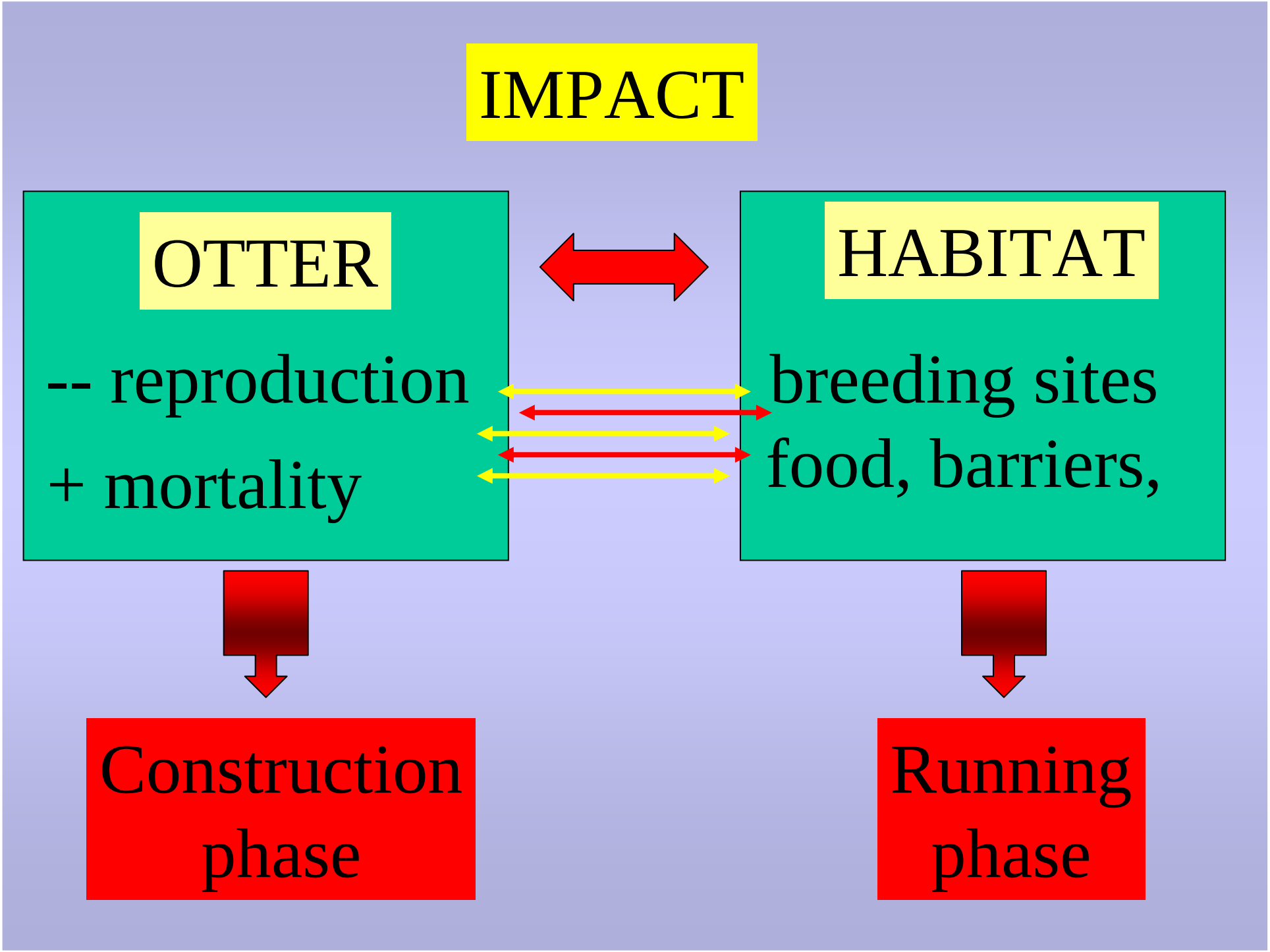
improvement

moderate

high impact

not relevant

inacceptable impact


IMPACT
OTTER
-- reproduction
+ mortality
HABITAT
breeding sites
food, barriers,
Construction phase
Running phase

Construction phase

9 otters lost

Running phase

equivalent of 4 otters lost / year

Take home message:

Make it **transparent**,
logical,
and **simple**,

you have to convince
engeneers,
loyers
and **administratives**

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Thank you for your attention!