

*The Swedish Transport  
Administration*

Bats  
2018-11-27



**TRAFIKVERKET**

Anders Sjölund  
Senior sakkunnig Landskap  
Nationell samordnare Landskap  
[anders.sjolund@trafikverket.se](mailto:anders.sjolund@trafikverket.se)  
+46 70 5975228

Trafikverket

# Bats!

What do we know? What do we not know?  
What do we need to know?



# High speed Railway

Avoiding to build a new Great Chinese Wall i.e. to divide Sweden into three pieces!



No animals on the railway call for:

- The entire length is fenced
- Many fauna passages

*If few fauna passages are built, a reinforced fence (higher and stronger) is a necessity and the result can be considered A Great Swedish Wall*



# The Species Protection Ordinance

*In Sweden, the EU provisions on species protection from the Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEG) are mainly transposed to the Species Protection Ordinance (2007:845).*

All Swedish bats are listed. But are they affected by Roads, Railways and Traffic?

A steadily growing number of judgments in court showed that:

Not knowing, is no reason for exemption or an excuse from taking Bats into consideration or making mitigation measures.



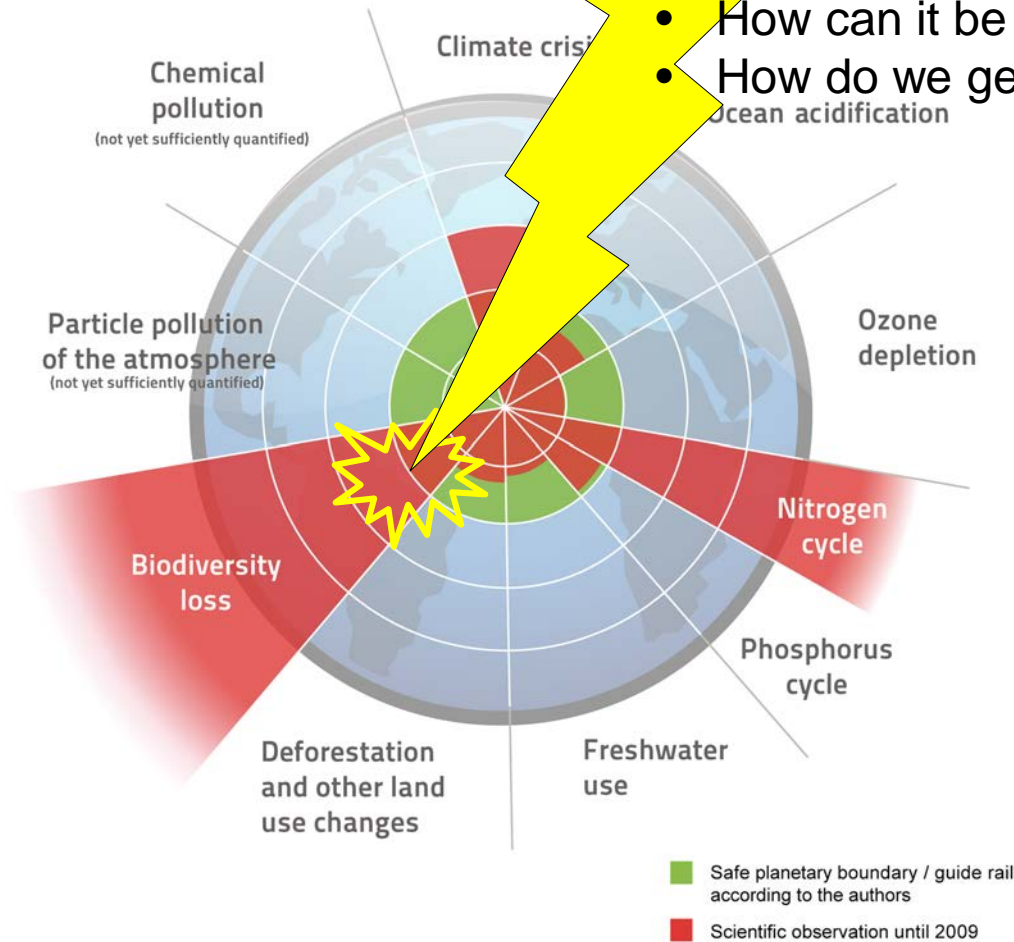
There was a significant risk that Bats could cause great problems (time and costs) or even stop parts of the project.



Urgent need for knowledge.  
We contacted Johnny De Jong, CBM for help!

# Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009



Where is this boundary for infrastructure?

- How can it be expressed?
- How can it be measured?
- How can it be followed up?
- How do we get there?

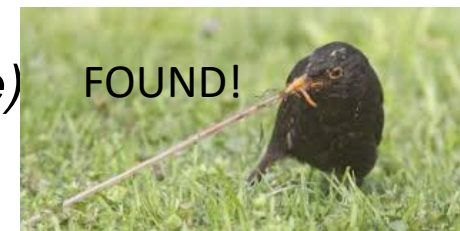
Illustration: Felix Müller ([www.zukunft-selbermachen.de](http://www.zukunft-selbermachen.de)) Licence: CC-BY-SA 4.0

# ECOLOGICAL STANDARDS for Roads and Railways:

In order to meet the requirements for sustainable boundaries.

The decisive impacts on biodiversity should be addressed with the following adaptations:

1. Safe passages for animals (*barrier and mortality*)
2. No traffic noise in important birdhabitats (*disturbance*)



3. Maintain, strengthen and add new species-rich habitats in the infrastrucure (*connectivity etc.*)
4. Prevention and control of alien invasive species.



# 1. Safe passages for animals should

be provided

8. När vägar och järnvägar korsar vattendrag ska passage för vattenlevande djur finnas.
9. Vid ny- och ombyggnad av vägar och järnvägar ska passage för grod- och kräldjur finnas vid identifierade konfliktsträckor.
10. Anläggningen ska vara utformad så att djur inte riskerar strömgenomledning, kollisioner med ledningar eller att fångas i fällor (t ex kabelbrunnar).
11. Riktade miljöåtgärder ska vara genomförda på identifierade konfliktsträckor enligt Mitigation measures should be implemented on conflict areas identified according to established methods for the following species:
  - a. Medelstora däggdjur. a. Ungulates and big carnivores
  - b. Stora däggdjur. b. Other mammals
  - c. Fladdermöss. c. Bats
  - d. Grod- och kräldjur. d. Amphibians and reptiles
  - e. Vattenlevande djur. e. Aquatic animals
12. Alla passage ska skötas och underhållas så att de har fullgod funktion enligt skötselinstruktion och baskontrakt.
13. Hantering av viltolyckor ska ske så att sekundära djurpåkörningar orsakade av kvarliggande kadaver undviks.



# For each indicator (group of species) the following should be available:

- Definition
- Recommended methods for identification of serious conflicts with roads and/or railways (including traffic if relevant).

And furthermore

*In “Technical standards for Design of Roads” where ecological “how” standards are included*

- Recommended actions/mitigation measures (or set of)
- Recommended design of mitigation measures (if relevant)
- Recommended actions for maintenance





# Ecological Standards, in summary

## BATS

