



## Reporting under Resolution No.8 (2012) on the conservation status of species and habitats

### Favourable Reference Values: theory, observations, examples

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# Presentation plan

- Short theory, but further reading: [T-PVS/PA\(2024\)07](#)
- Experience from previous HD Art. 17 reporting (EU)
- Approaches and examples of FRV setting from Latvia (2019-2024)

# Definition

- An important part in Conservation Status assessment for species and habitats

**FRP** – favourable reference population (species)

**FRA** – favourable reference area (habitats)

**FRR** – favourable reference range (species, habitats)

- Values reflect the situation that warrants preservation of species or habitat in a longer time perspective
- In CS assessment, FRVs are used to **compare with the current values (CVs)** >>>

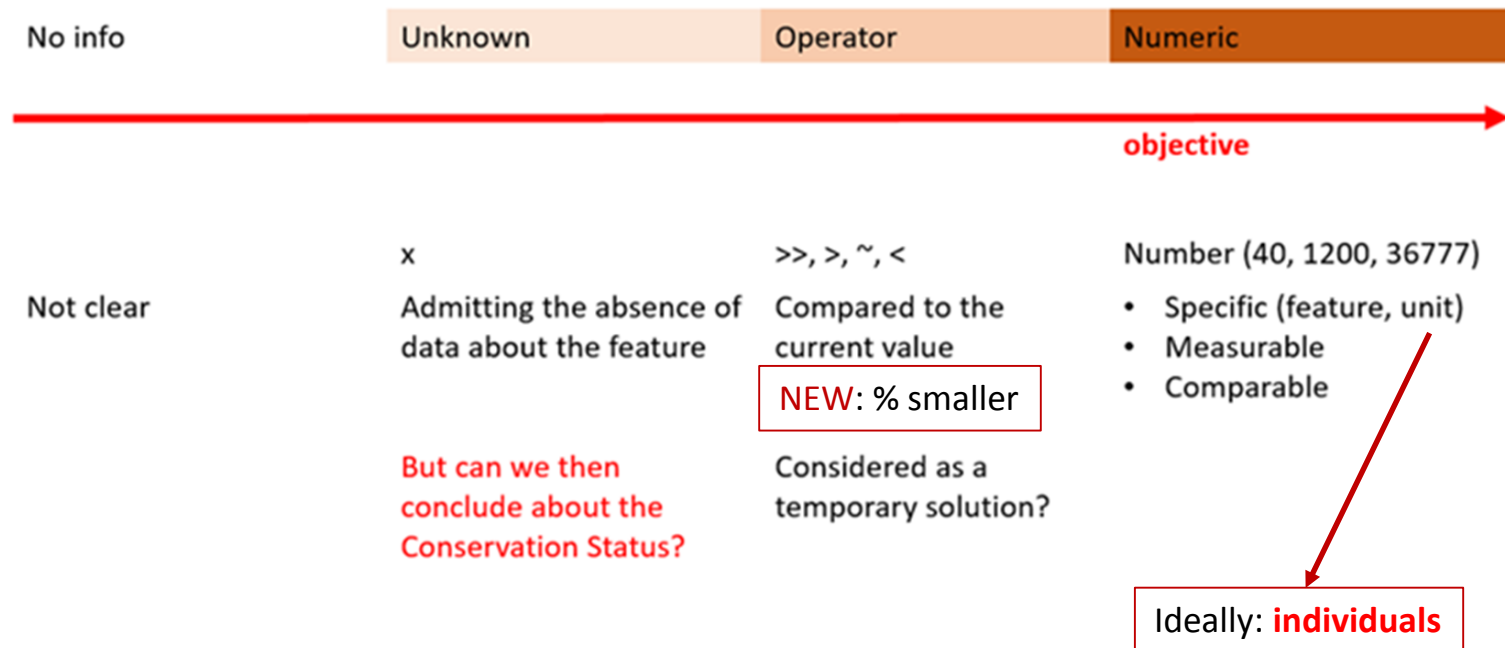
## PART C - ASSESSING CONSERVATION STATUS OF A SPECIES

General evaluation matrix (per biogeographical/marine region within a MS)

Parameter	Conservation Status			
	Favourable ('green')	Unfavourable - Inadequate ('amber')	Unfavourable - Bad ('red')	Unknown (insufficient information to make an assessment)
<b>Range</b> (within the biogeographical region concerned)	Stable (loss and expansion in balance) <u>OR</u> increasing <u>AND</u> not smaller than the 'favourable reference range'	Any other combination	Large decline: Equivalent to a loss of more than 1% per year within period specified by MS <u>OR</u> more than 10% below favourable reference range	No or insufficient reliable information available
<b>Population</b>	Population(s) not lower than 'favourable reference population' <u>AND</u> reproduction, mortality and age structure not deviating from normal (if data available)	Any other combination	Large decline: Equivalent to a loss of more than 1% per year (indicative value MS may deviate from if duly justified) within period specified by MS <u>AND</u> below 'favourable reference population' <u>OR</u> More than 25%	No or insufficient reliable information available

# General principles

- Should be set using the ecological considerations and **best available knowledge and scientific expertise**;
- Should not, in principle, be **lower than the values when a country has joined Bern Convention**;
- For population is **always bigger than the minimum** viable population for demographic and genetic viability;
- Be **realistic** but not automatically accepted as current values;
- FRVs are **long-term targets** and can be linked to other level (site and biogeographical) targets (e.g.  $FRV = \sum SSCOs + \text{resource outside the network}$ );
- FRVs should be set taking into account the **precautionary principle** (margin for uncertainty, better some FRV than none).



## Main methods

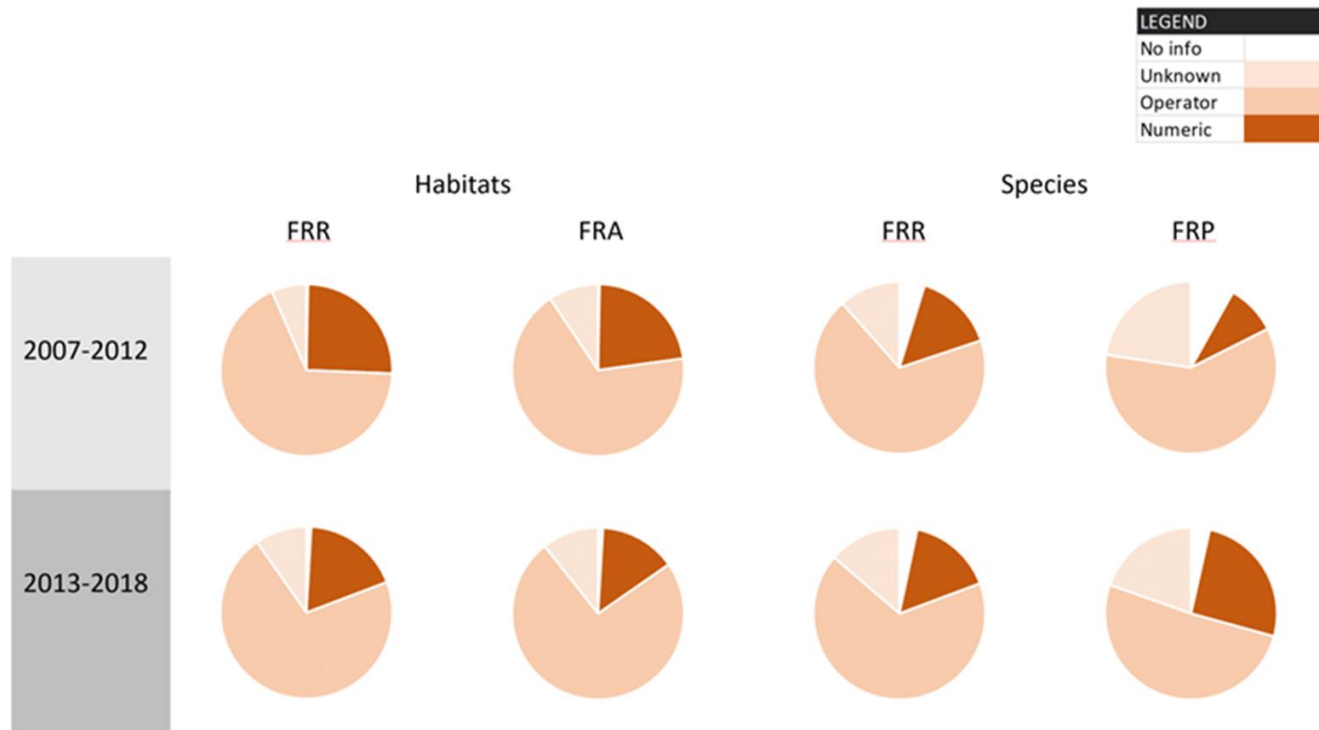
- Model-based approach [=modelling **future** developments using current status and available information]
- Reference-based approach [=judging about safe population levels from **past** experience]
- Other miscellaneous methods adapted to certain species groups

Key method choice factor is **data availability!**

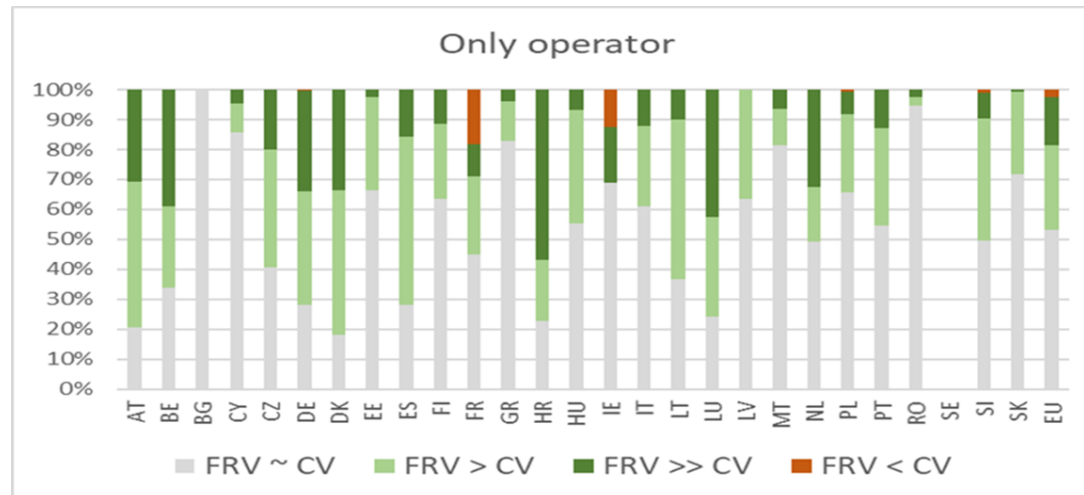
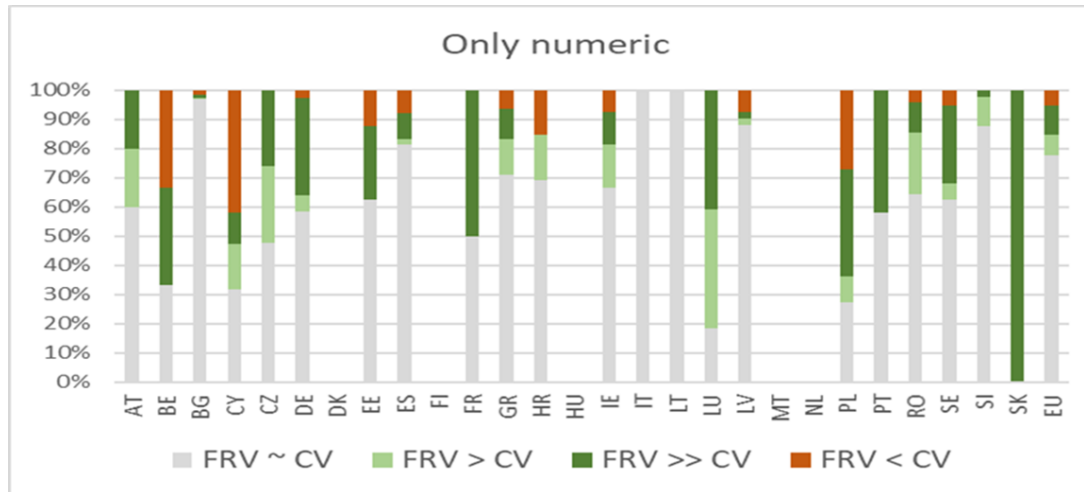
# Observed difficulties

- **Not-reporting FRVs.** There are four parameters for Conservation Status assessment: (1) “range”, (2) “population” (species) or “area” (habitat), (3) “habitat” (species), “structure and functions” (habitat), (4) “future prospects”. Assessment rules are that the if population or habitat area assessments are unknown, the overall assessment can be still Favourable, if the other 3 parameters are concluded Favourable.
- **Operators and similar** are not very helpful either to assess precise distance to target nor have a reference to other level targets
- FRVs too **often automatically accepted as current values.** Good to remember that the FRVs could be achieved not only by preserving existing status, but also restoring or improving it!
- Good FRV also needs a **good CV** to be used for comparison!
  - Same population units needed for FRVs and CVs!
  - For populations, there are 6 CV values possible in SDF (min, max, best, alt) while only one FRV. Sometimes causes problems.
  - The difference between min and max, if used, cause problems in interpretation. E.g. if CV minimum-maximum is 4300-43000i, and FRV is 43000i, what can we conclude?

# FRV quality during the last two Article 17 reporting rounds



# Relationship between FRVs and CVs: species

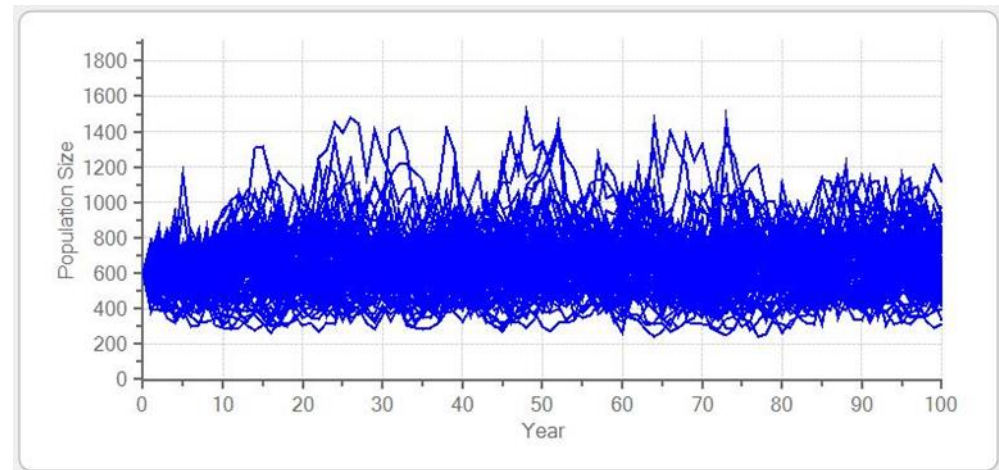
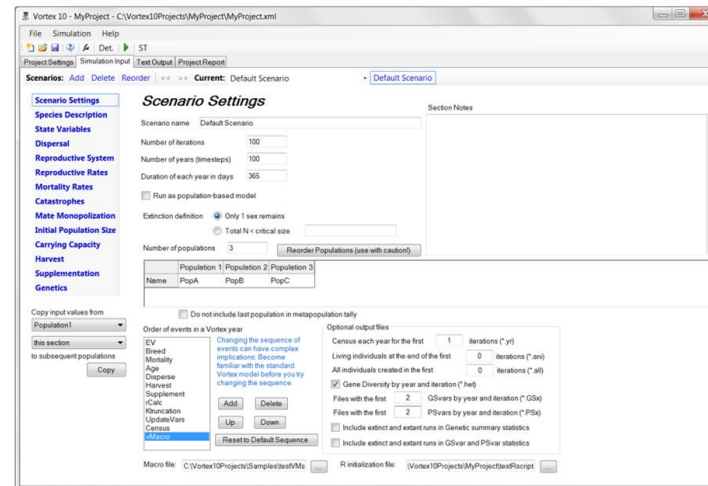


## Examples from Latvia

- Developed for 2019-2024 Article 17 reporting round
- Methodology 2018-2019, implementation: LIFE-IP project (2021-2024)
- FRVs are seen in the same system as site-level conservation objectives
  - **Model-based** approach: **<5%**
  - **Reference-based** approach: **ca 70%**
  - **Other** approach: **ca 25%**

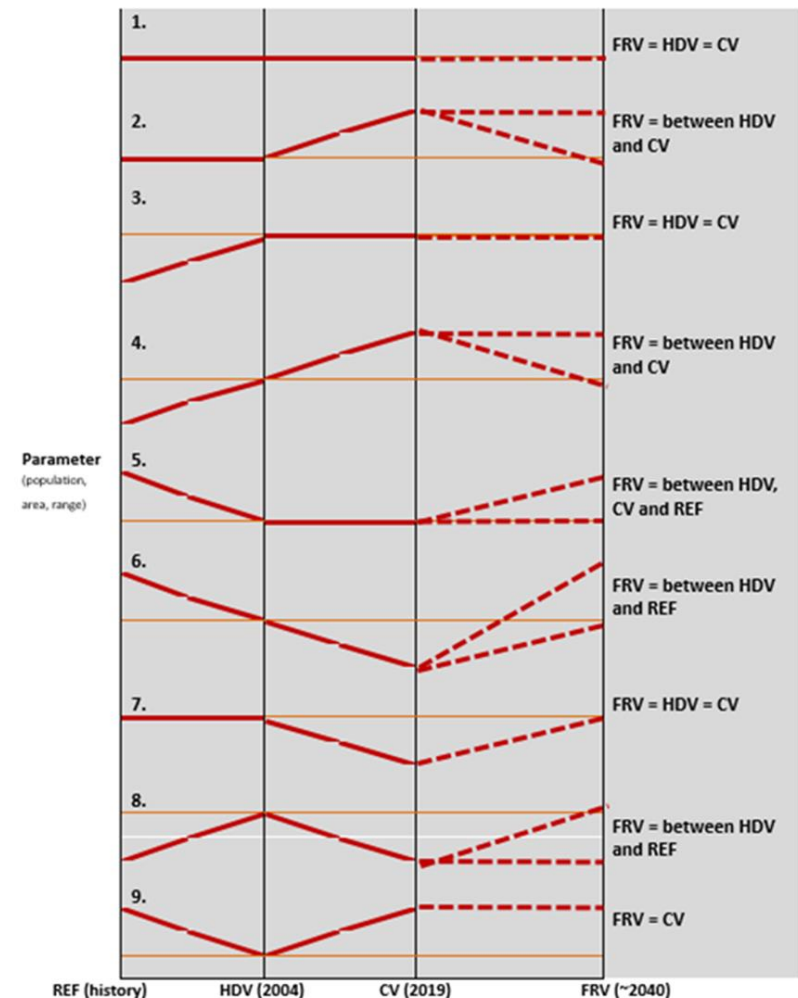
# Model-based approach: wolf

- Population Viability Analysis (Vortex)
- Most scientific
- Very data hungry: needs data eg for dispersal, reproductive system, reproductive rate, mortality rate, initial population size, harvest, etc.,
- Answers if population will get extinct in 100 years given the selected population size (FRP) as a departure point
- Program models various possibilities in iterations (1000) taking different input values within confidence limits
- Wolf: FRP = 600 individuals before hunting season
- HDV was 300-400 individuals
- Range: whole country



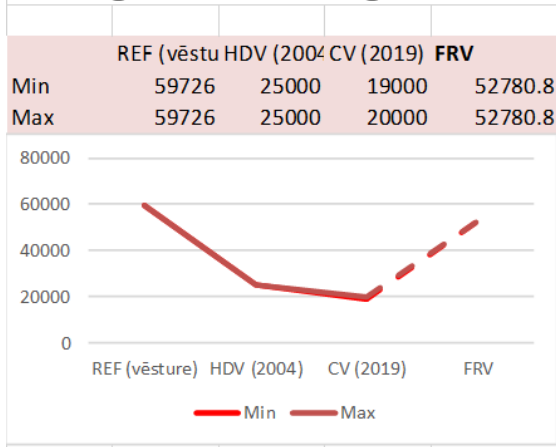
# Reference-based approach: most species

- Based on values in and changes between 3 milestones (REF, HDV, CV)
- Possible 9 scenarios
- One value in 4 scenarios (1., 3., 7., 9.)
- Interval in 5 scenarios (2., 4., 5., 6., 7.)
- If interval – additional 5 questions to identify final value with interval (one question = +20% of the interval)
  - Climate change
  - Importance of LV population
  - Population isolation
  - Presence of negative factors
  - Negative trends

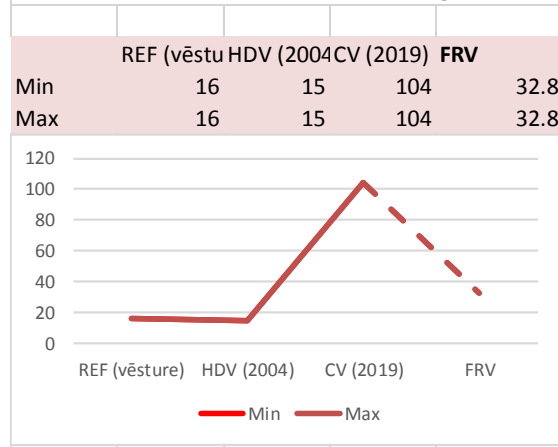


# Reference-based approach: examples

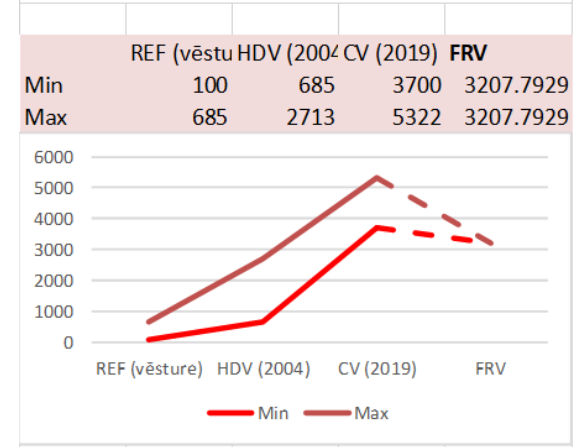
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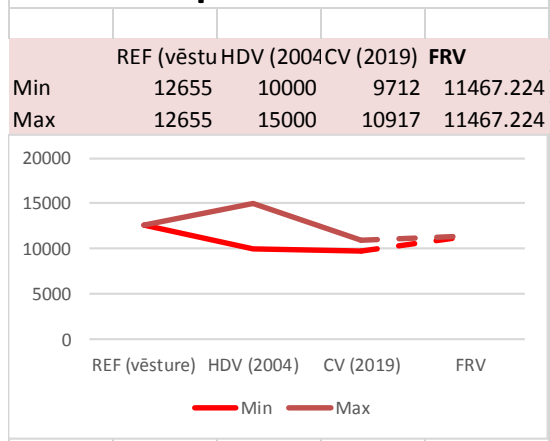
## Parnassius mnemosyne



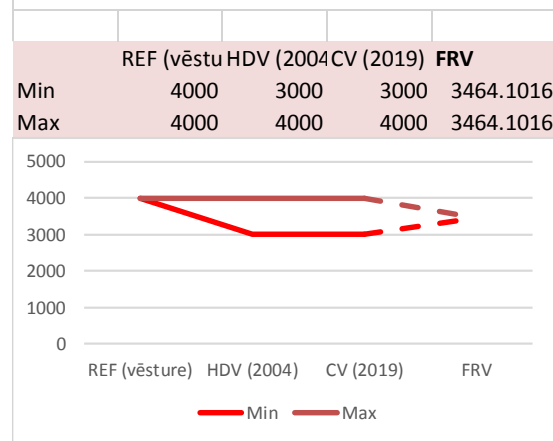
## Bombina bombina



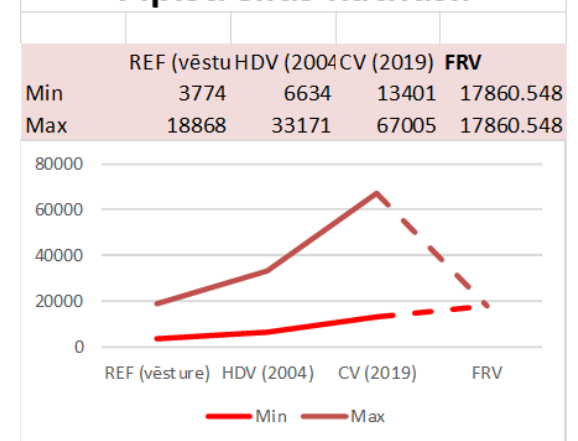
## Lepus timidus



## Lutra lutra



## Pipistrellus nathusii

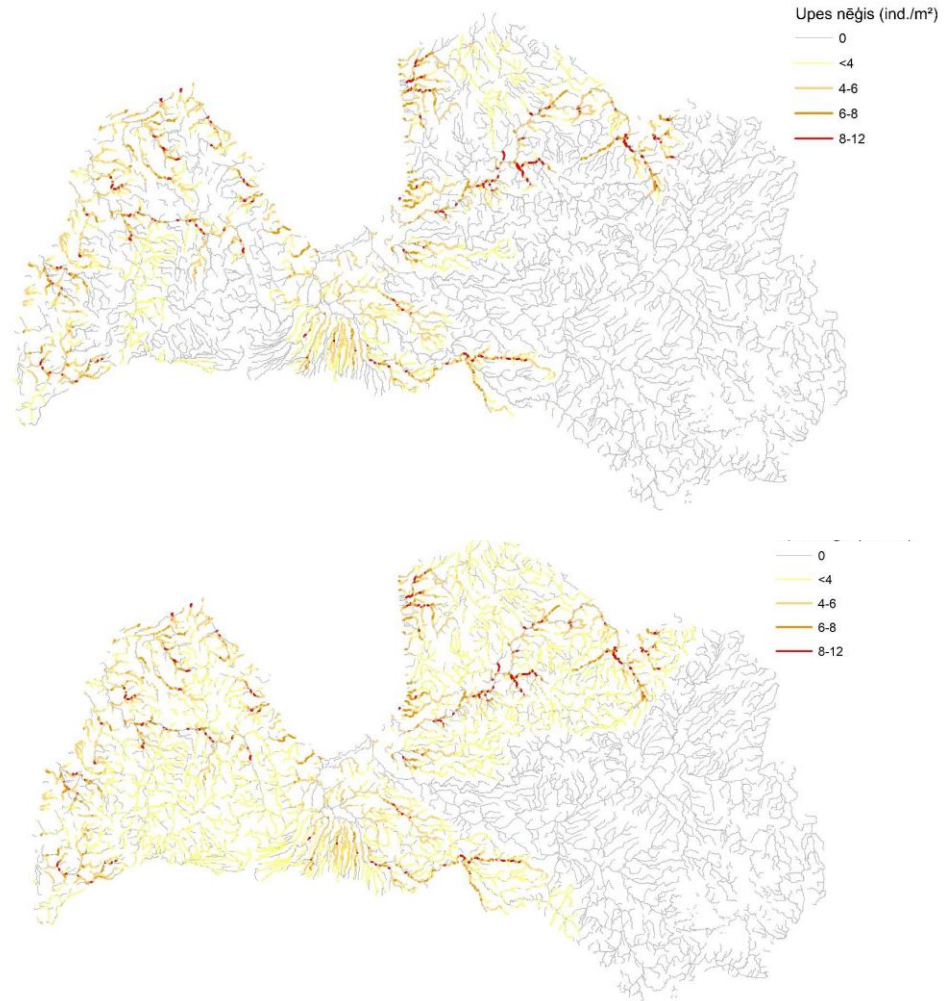


# Other approach: river lamprey

- Focusing on **present situation**
- Based on **habitat suitability analysis** (conditional modelling)
- **Data** from: (1) country-wide database of 1 km long river segments that include various environmental and anthropogenic factors and (2) long-term fish monitoring from sample plots
- FRP corresponds to situation when **adverse anthropogenic effects** (eg migration obstacles, pollution sources etc.) on lamprey habitat are removed
- **Population unit:** number of larvae in August-September calculated from densities

CV: 132 993 404 individuals

FRP: 205 167 076 individuals



## Final remarks / suggestions

- Report preparation is only a closing stage of the process: the importance of **data collection** – not to forget!
- Use all best possible data and **mobilise scientific community**
- Do not hesitate **to be creative** and develop new methods that best suite your country and possibilities
- Be **transparent** - record your steps and data assumptions (so that study can be repeated)
- Foresee a **review process** for FRVs, especially if data situation is poor
- Better some FRVs (and then review if better data arrive) than none

Thank You for attention!

