

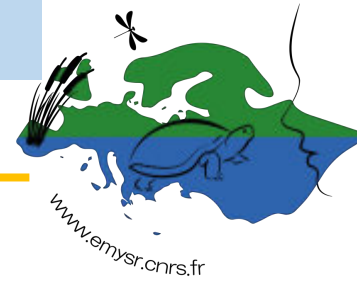
GENERAL AND LOCAL PERCEPTION OF WETLANDS BASED ON AI IMAGES SEMIOTIC ANALYSIS

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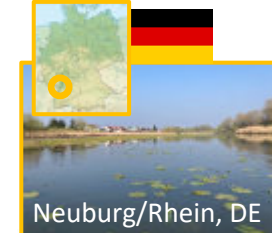
Patrycja Romaniuk (Polish Academy of Sciences, Université de Strasbourg)



The Emys-R project

A 3-yr transdisciplinary action-oriented research project

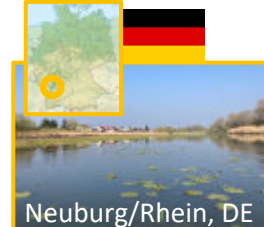
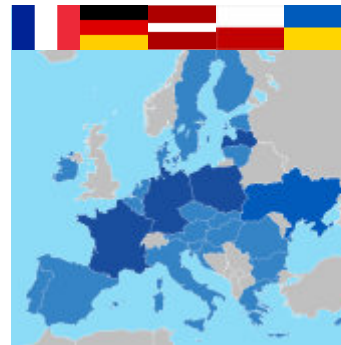
- for defining the most efficient, socially-supported, ecological methods to restore wetlands in favour of *Emys* reintroduction and associated biodiversity in Europe
- based on
 - literature review of former EU-funded conservation initiatives
 - long term monitoring on 3 study sites in FR, DE and LV



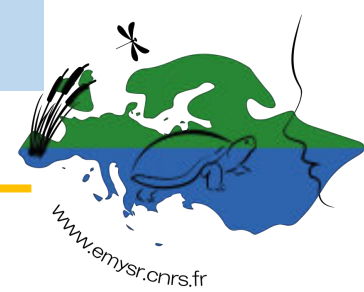


The Emys-R project

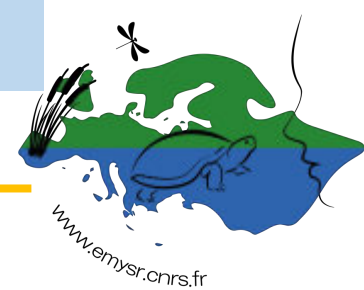
- Develop an integrative socio-ecological approach for multi-stakeholder participation in wetlands conservation
- We are interested in what kind of nature-related values people have and how these values could be mobilised to engage people in nature conservation
- We are interested in how people perceive nature, especially wetlands
- Our study is based on semi-structured interviews, seminars and workshops



Research questions



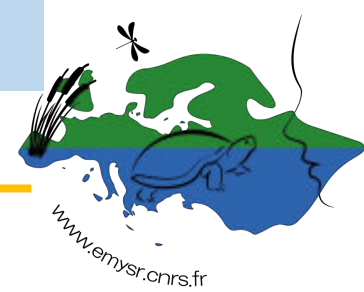
- Is there a general perception of wetlands represented by the information in the global internet network?
- If so, what kind of perception is it?
- Does the perception of wetlands differ when we ask about specific locations?



Research procedure

1. Artificial intelligence (AI) engine Midjourney, was asked to draw pictures of wetlands in general, wetlands animals and turtles in wetlands
2. Subsequently, the engine generated four images after adding specified locations from the EMYS-R project to every prompt - Silene (Latvia), Neuburg am Rhein (Germany), and Lauterbourg (France).
3. The perception of wetlands was tested using semiotic and comparative analyses based on created AI art

How the images were created



- Artificial Intelligence (AI) involves training algorithms to learn patterns and structures from existing data and then using that knowledge generates new, previously unseen content
- **Midjourney** is a generative artificial intelligence program that creates images from natural language descriptions

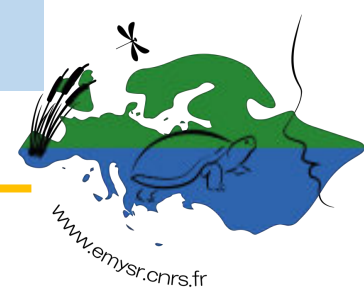
Prompts used (MidJourney Bot)



- /image prompt picture of wetlands - **produced no results**
- /image prompt picture of Silene wetlands
- /image prompt picture of Neuburg am Rhein wetlands
- /image prompt picture of Lauterbourg wetlands
- /image prompt picture of wetlands animals, Silene
- /image prompt picture of wetlands animals, Neuburg am Rhein
- /image prompt picture of wetlands animals, Lauterbourg
- /image prompt picture of turtles in wetlands, Silene
- /image prompt picture of turtles in wetlands, Neuburg am Rhein
- /image prompt picture of turtles in wetlands, Lauterbourg

- The results of every prompt is always 4 pictures

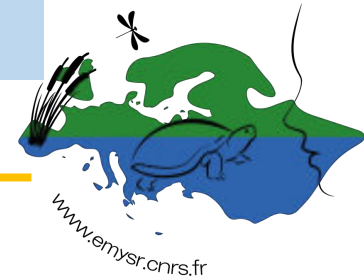
Methods of semiotic and comparative analysis



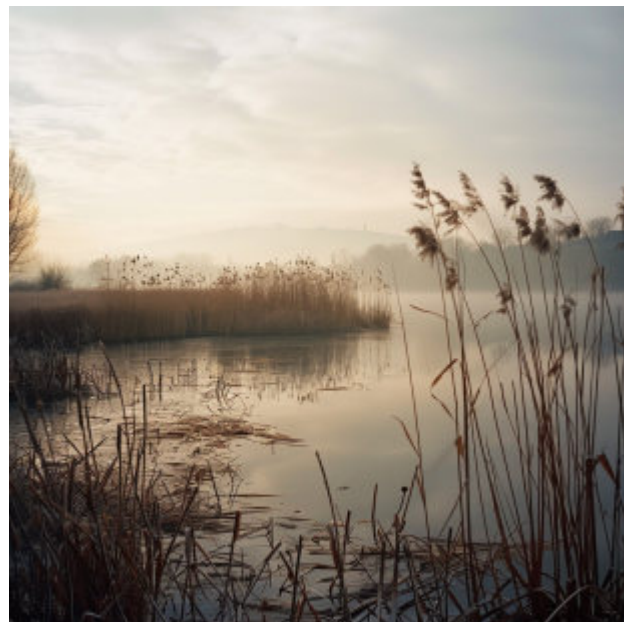
Two connected methods:

- **Compositional method of Gillian Rose** - allows for a detailed understanding of a work's internal structure, techniques and composition
- **Arts-Based Research** - enables us to capture subjective experiences and multiple interpretations that enrich our understanding of the images under study

/image prompt picture of Silene wetlands



/image prompt picture of Neuburg am Rhein wetlands

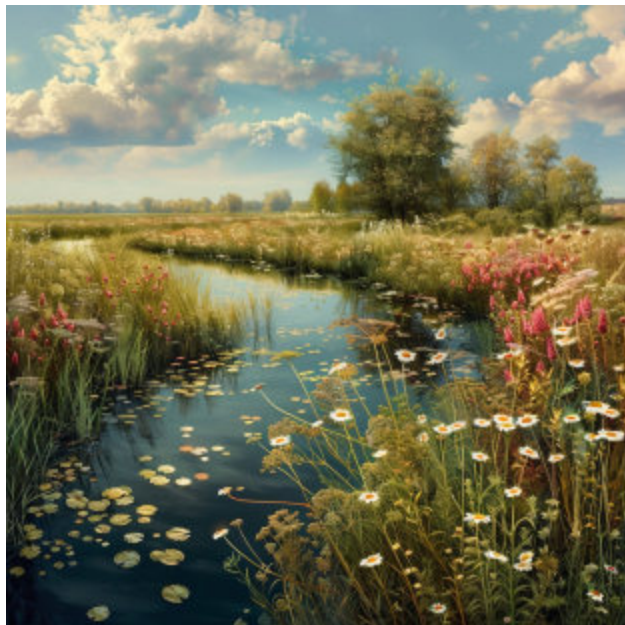


/image prompt picture of Lauterbourg wetlands





Picture of wetlands comaprision



Silene, Latvia



Neuburg, Germany



Lauterbourg, France



/image prompt picture of wetlands animals,...



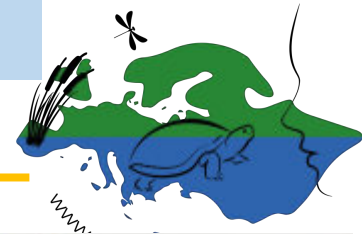
Silene, Latvia



Neuburg, Germany



Lauterbourg, France



/image prompt picture of wetlands animals,...



Silene, Latvia



Neuburg, Germany



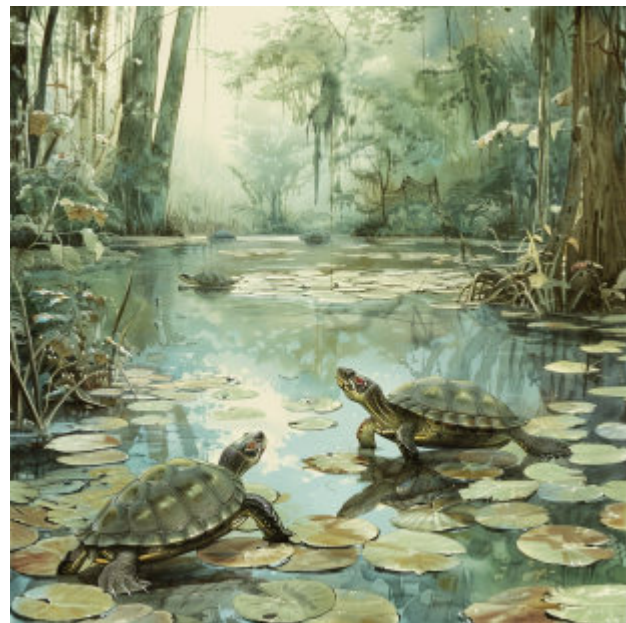
Lauterbourg, France



/image prompt picture of turtles in wetlands, Silene



/image prompt picture of turtles in wetlands, Neuburg am Rhein



/image prompt picture of turtles in wetlands, Lauterbourg



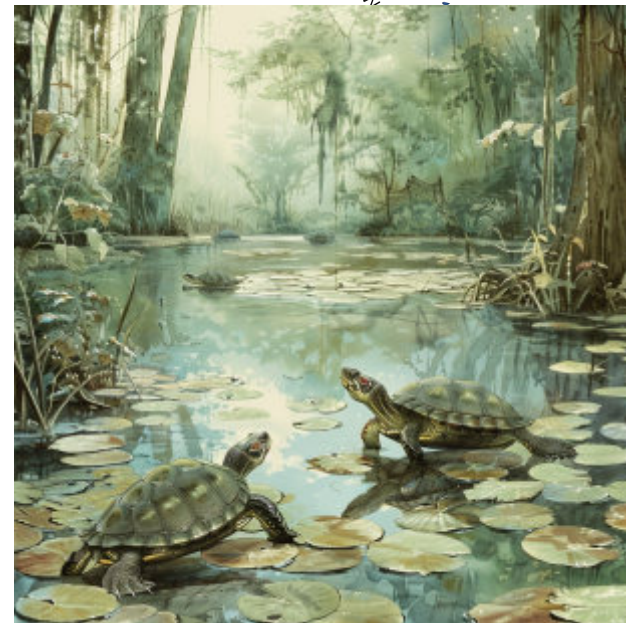
/image prompt picture of turtles in wetlands,...



Silene, Latvia



Neuburg, Germany

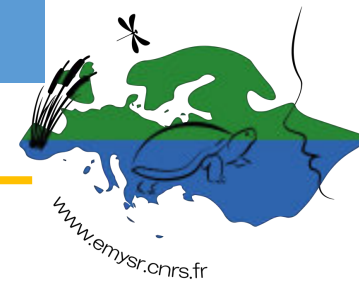


Lauterbourg, France

Main findings

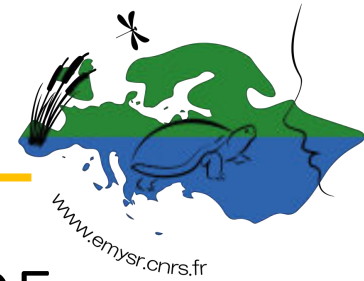


- The image of the wetlands is primarily positive and idyllic, showing the beauty but also the power of nature
- Latvian wetlands (compared to others) always have a lot of flowers and colours
- German wetlands are often with some anthropological components
- Very often, oil texture painting was used by AI



Main findings

- The animals that appear in the pictures are only the big ones - most likely the ones most readily observed by humans
- Interesting that wetlands are "not associated" with amphibians or reptiles, no with the turtles – this seems to be quite a gap in the information available on the global network
- The images are pretty homogeneous and repetitive - this indicates that there is still little information (few images) about wetlands on the web and that AI's knowledge on the subject is somewhat limited



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