

北海道大学大学院環境科学院  
環境起学専攻  
人間・生態システムコース

**Course in Human and Ecological Systems**  
**Division of Environmental Science Development**  
**Graduate School of Environmental Science, Hokkaido University**

令和6年度4月入学大学院修士課程入学試験問題（春季入試）  
**Entrance Examination**

専門科目  
**Specialized Subjects**  
[留学生用]  
**[For International Students]**

- **All the questions must be answered in English.**
- **The backside of the answer sheet can be used if necessary.**

**February 19, 2024**



**Question** Regarding the researches in the course in human and ecological systems, choose 8 among the following terms and descriptions, and explain each of them in 3-4 lines. The answer should include the number you choose.

1. Difference between alluvial fan and delta
2. Frost heave
3. Marine terrace
4. Difference between tsunami and high tide waves
5. Holocene
6. Younger Dryas
7. Geoid and geoid height
8. River capture
9. Craton
10. Cirque and roche moutonnée
11. Biological species concept
12. Difference between in-situ and ex-situ conservation
13. Relationship between habitat fragmentation and connectivity
14. Difference between correlation and causation
15. Definition and two examples of renewable energy
16. Definition and two examples of secondary nature
17. Definition and one example of Eco-DRR (Ecosystem-based Disaster Risk Reduction)
18. Phenotypic plasticity
19. Biodiversity
20. Ecological succession
21. Belowground competition
22. Scale-dependent environmental factor
23. Active layer
24. Thermokarst
25. Vector and raster formats in geographic information system
26. Fourier's law
27. Structure difference between extratropical cyclones and tropical cyclones
28. Specific humidity
29. Downburst
30. Formation mechanism of subtropical high