



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

SCHOOL OF AGRICULTURE AND NATURAL RESOURCE SCIENCES

DEPARTMENT OF NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCES MANAGEMENT	
QUALIFICATION CODE: 07BNRS	LEVEL: 7
COURSE CODE: CSE621S	COURSE NAME: Conservation Ecology 2
DATE: JANUARY 2025	
DURATION: 3 HOURS	MARKS: 150

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms. Elise Nghalipo and Mr. Jeremia K.L. Amutenya
MODERATOR:	Mr. Helmuth Tjikurunda

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book
3. Non-Programmable Calculator

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Excluding this front page)

QUESTION 1: Terminology

Write short notes to define or explain the following ecological terms:

- 1.1 Ecological niche (2)
 - 1.2 Fire Intensity (2)
 - 1.3 Habitat loss (2)
 - 1.4 Ecological disturbance (2)
 - 1.5 Population dynamics (2)
 - 1.6 Species Distribution Modelling (2)
 - 1.7 Keystone species (2)
 - 1.8 Carrying capacity (2)
 - 1.9 Desertification (2)
 - 1.10 Rehabilitation (2)
- [20]**

QUESTION 2: Terminology

Explain the difference between the following ecological terms.

- 2.1 Fire head vs. Fire flank (2)
 - 2.2 Equilibrium dynamics and Non-equilibrium dynamics (2)
 - 2.3 Stochastic vs. Deterministic (2)
 - 2.4 population size vs. population density (2)
- [8]**

QUESTION 3: Ecosystem Health and Management

3.1 Explain how the concept of ecosystem health and management can be used in the following sectors:

- a) Environmental impact Assessment (4)
 - b) Conservation management (4)
 - c) Climate change adaptation (4)
- [12]**

QUESTION 4: Dryland Ecology and Habitat Suitability

- 4.1 Discuss ways in which biodiversity is affected by climate change. (9)
 - 4.2 True or false: the Kaokoveld Centre of Endemism will most likely not experience significant species loss as a result of climate change. (1)
 - 4.3 Discuss the importance of habitat suitability modelling. (10)
- [20]**

QUESTION 5: Population Ecology and Management

- 5.1 Explain the concept of carrying capacity and its relationship with population density. (8)
 - 5.2 A population of 50 sable was introduced into Waterberg National Park. In the first year, 13 were born and 5 died. Calculate the size of the population after 10 years, assuming a constant growth rate based on the natalities and mortalities of the first year. Show all calculations. (12)
- [20]**

QUESTION 6: Disturbance Ecology

- 6.1 Briefly explain how the theory of the Intermediate Disturbance Hypothesis can be applied and used in the effective management of Protected Areas (PAs) in Namibia, especially a park-like Khaudum. (22)
- 6.3 Discuss the significant role that fire plays in a savanna ecosystem. (5)
- 6.3 List three (3) types of fires prominent in a savanna ecosystem. (3)
- [30]**

QUESTION 7: Landscape Ecology

- 7.1 You have been appointed as a Control Warden within the Ministry of Environment, Forestry and Tourism, how would you build/initiate a flourishing landscape, using lessons learned from other landscapes in the country? (15)
- 7.2 What are the key challenges of managing Landscapes in Namibia as per the Guest lecture (Ms Monika Shikongo)? (5)
- [20]**

QUESTION 8: The ecology of a changing world

- 8.1. Mention the main causes of land degradation. Clearly explain the measures you will put in place to curtail the devastating consequences of land degradation. (10)
- 8.2. Explain how an alien invasive species, such as *Pennisetum setaceum*, may influence biodiversity negatively. (10)
- [20]**

END OF QUESTION PAPER