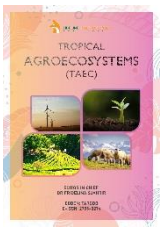
ZIBELINE INTERNATIONAL™ PUBLISHING

ISSN: 2735-0274 (Online)
CODEN: TARGDB

Tropical Agroecosystems (TAEC)

DOI: http://doi.org/10.26480/taec.02.2023.39.42



RESEARCH ARTICLE

STUDYING THE IMPACT OF HUMAN ACTIVITIES ON THE VEGETATION COVER IN AN AREA EXTENDING BETWEEN BOUTRABA AND TOLAMITHA

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ARTICLE DETAILS

Article History:

Received 08 April 2023
Revised 15 May 2023
Accepted 23 June 2023
Available online 26 June 2023

ABSTRACT

The study aimed to study the excessive and random human practices in the exploitation of that natural wealth that led to its deterioration, as significant changes were observed in the distribution and density of plants in the study area. Negatively affected the life of plant species, especially the cutting of trees and wild shrubs represented by *Juniperus phoeicea* L, *Pistacia lentiscus* L, *Ceraaonia Siliqna* L, *Ceraaonia Siliqna* L, and their use as firewood and charcoal, which led to the weakness and lack of vegetation cover and the emergence of the phenomenon of Desertification in the area of study of the impact of human activities on the cover and its use as firewood and charcoal, which led to the weakness and lack of vegetation cover and the emergence of the phenomenon of desertification in the study area.

KEYWORDS

human activities, overgrazing, logging, an area extending between Boutaraba and the Tolmitha area, the green mountain.

1. INTRODUCTION

The study area is characterized by a natural vegetation cover as it is rich in many plant species that are an important part of the vegetation cover, which contributed to the lack of environmental awareness among the local population and the use of modern techniques such as modern plowing machines that led to the uprooting of plants from their roots and the use of saws and four-wheel drive cars. Excavation of methods in addition to the logging operations of trees and shrubs, *Juniperus phoeicea* L, *pistacia lentiscus* L, *Ceraaonia Siliqna* L, and their use as fuel (charcoal), as well as the cultural expansion that led to the removal of many plant species.

2. RESEARCH PROBLEM

This problem has increased in recent years, especially the logging operations and random grazing, which negatively affected plant species, especially the shrubs,

Juniperus phoeicea L, *pistacia lentiscus* L, and the *Ceraaonia Siliqna* L, which led to the disintegration and erosion of the soil and the emergence of the phenomenon of desertification in the study area Questions the study :

I. What is the degree of danger that results from the use of modern machinery for vegetation cover?

II. What are the harms caused by human activities?

III. What are the measures to be used to preserve the vegetation cover?

2.1 Study hypotheses

I. It can be said that human activities, especially overgrazing and logging, have led to the extinction of many plant species if the current situation continues in this way.

II. Climate changes will negatively affect plant species, especially in cases of drought

To which the study area has recently which the study area has recently been exposed.

2.2 Research aims

I. Identifying the most human activities that led to the lack of vegetation cover.

II. Identifying the damages resulting from overgrazing and logging operations.

III. Learn about the methods that help to re-plough the plants that have been removed.

2.3 Research Importance

The importance of the research enables it by addressing a topic of great importance in clarifying the role of methods of protecting its environment from human activities represented in overgrazing and logging in a random and not scientifically studied manner, which has become the focus of the world's attention to preserve the vegetation cover that has recently been continuously exposed to operations Drain which will negatively affect the lack of oxygen and increase the proportion of carbon dioxide.

3. STUDY METHODOLOGY

Descriptive approach: The study relied on the descriptive approach as it suits this study in describing the causes and effects of it and developing appropriate solutions.

3.1 Previous Studies

Libya has received many studies, including:

- It was noted that natural and human factors profoundly affect the deterioration of the pastures, and the random effects are the most

Quick Response Code	Access this article online	
	Website: www.taec.com.my	DOI: 10.26480/taec.02.2023.39.42

Cite The Article: Mabroka Sulaiman Mohammad AL-Hammaly (2023). Studying the Impact of Human Activities on the Vegetation Cover in an Area Extending Between Boutraba and Tolamitha. *Tropical Agroecosystems, 4(2): 39-42*.

important factor in increasing the severity of the deterioration, and the pastures require effective management that depends on accurate and timely data to assess the deterioration of the pastures, as the natural pastures were considered one of the pillars The importance of supporting the Libyan national economy Despite the important role of pastures in Libya from an economic and environmental point of view, the vegetation cover of the Libyan pastures has changed negatively in terms of quality and quantity over the past four decades (Al-bukhariet study et al., 2018) .

- Study and one of the most important foundations for the proper use of pastures is to determine the animal load capacity of the pastures so that overgrazing can be avoided and to determine the most appropriate times for the exploitation of the pastures so that it does not harm the renewal of plants or avoid the early and late grazing (Mujahid, 19995).Reference of the Fourth Scientific Conference on Environment and Sustainable Development in the Regions Dry and semi-dry p. 123

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3.2 Study Location

The study area is located in the north-east of Libya, overlooking the first edge on a steep edge near the sea to the east of the Tolmitha region and retreating in the west away from the coast of the Jabal Al-Akhdar region, 40 km from the city of Benghazi and the city of Al-Marj 25 km.

Astronomical location: In front of an astronomer, the study area is located between latitudes ˚32`50 `00 ,˚32`30 `00North and longitudes 00`, ˚21`10 ˚20`40 00 east.

Source: Land Sat8 moon images using Arc Gis10.5

Figure 1: Map of the study area .

3.3 The Climate

The study area is characterized by a Mediterranean climate that is hot and dry in summer and rainy and warm in winter, where rain begins in the months of September and October and continues until the months of April and May, and rain is rare in the summer months, June, July and August, where it was observed (Muhammad Al-Awdat, 1995)

The highest average rainfall is in the months of December and January45.32,62.89 45.32,62.89mm/year, and the lowest average rainfall is zero, which negatively affects the growth of plant species, especially annual plants whose growth is related to the rate of rainfall, and where the average impact varies. as the average temperature varies from month to month, we note that December, January and February are the coldest seasons, while the months of May, June, July and August are the highest in temperatures (Zhou et al., 2019). The monthly average of temperatures in August a month reaches 32.4°C and the lowest average temperature It reaches 15.3°C, the relative humidity increases in the summer on the coast, where it reaches its maximum increase in the months of December and January, which are the rainy months in which the humidity reaches the saturation point (salm), the highest percentage of relative humidity is in the months of December and January, where it reaches in the month of December to 72.05%, while the lowest percentage of relative humidity reached in a month in which it reaches 50.16%.The wind speed plays a major role in its impact on the vegetation cover, as the study area is characterized by the blowing of the tribal winds, and these winds are characterized by heat and drought, which results in damage to the plant because it is accompanied by dirt grains of coarse clay, which leads to an increase in the transpiration process and leads to drought A plant where the maximum wind speed reaches 7.7February. (Salem Muhammad Al-Zawam, 1995).

Table 1: Monthly averages of the amount of rain, mm for the years from 1989 –2018 AD

Year	Average rainfall mm	Temperature	Relative humidity	Wind speed
January	45.32	15.3	72.02٪	7.1
February	43.02	16.2	71.33٪	7.7
March	26.52	19.0	65.84٪	7.5
April	7.26	23.0	57.17٪	7.5
May	6.41	27.2	52.54٪	6.9
June	1.34	31.1	50.16٪	6.9
July	0	32.2	55.50٪	7.3
August	0	32.4	58.21٪	7.1
September	6.09	30.7	57.73٪	6.8
October	22.39	26.5	61.41٪	6.4
November	30.42	21.4	66.04٪	6.8
December	62.89	17.0	72.05٪	7.3

Source: 1 National Center meteorological station, Tripoli, meteorological station Marj from the year1989 – 2018.

The geology of the region: The sediments of the study area are mostly marine limestone, formed in the Quaternary section of the epochs of modern life in the Pleistocene and Heliocen eras.

Soil: There is a difference in the soil of the region, which is characterized by the sandy coast on the soil in the eastern sites, while the reddish clay soil abounds towards the north (Salem Muhammad Al-Zawam, 1995).

4. Results and Discussion

Through the field visit, the subject of the study, it was noted that there were significant changes in the distribution and density of plants in the valley, due to the human activities that were exposed to it as a result of the uprooting of large quantities of these plants by grazing and their use as pasture agents for animals and the cutting of trees and wild shrubs and their use as firewood and charcoal, which led to weakness and scarcity. The vegetation cover and its distribution, specifically in (the area of the foot of the study) National Center meteorological station,1989/2018.

Figure 1: A picture showing soil erosion in the study area

4.1 Overgrazing.

Grazing represents one of the methods of living in the study area, as it was random and unstudied, as it was found that it was exposed to activity, permanent and continuous pastoral activity throughout the periods of the year, as it focused mainly in the areas of the foot and the bottom of the study area (Salem Muhammad Al-Zawam, 1995). The animals that feed on them are sheep, goats and cows, which seem to prefer some of them, such as *Phoenicea Juniperus* ,Sarcopoterium spinosum villosa Calicotome. Cistus parviflous at the foot of the study , *Pistacia lentiscus*, *Ceratoina siliqua*, *Helichrysum Phlomis* floccose at the foot and bottom of the study, in addition to *Olea europaea* and *Arbutus pavarii* at the bottom of the study ,Which leads to a decrease in the level and efficiency of pasture lands, which means dwarfing of perennial shrubs and their small size, especially palatable ones, and the extinction of some species of annual plants, due to grazing and devouring them before the time of flowering and fruiting, which caused scarcity and decay. Vegetation cover in general (National Center meteorological station , 1989 – 2018).

Overgrazing is known as overgrazing: it means increasing the number of animals or prolonging their stay in the pasture, which results in an increase in grazing pressure, which in turn leads to an increase in the degree of grazing to a higher degree than the pasture's ability to bear (Mahfouz Abu Zant, 1997).

These plants may be affected indirectly by trampling on these plants on a continuous and repeated basis, as direct and repeated trampling on plants leads to a decrease in vegetation cover, especially grassy and short-lived plants, which is clear with it that the study area has already become a grazing area for livestock throughout the year This led to the vegetation cover of this area being affected and damaged significantly as a result of the decrease in the distribution of plants due to the increase in the phenomenon of overgrazing and the devouring of the animals that graze on them to large quantities of these plants, which further aggravated the overgrazing in the drought years that the pasture goes through and the increase in the number of The grazing animals, collecting them from different directions, east and west, and bringing them to graze in one area ((National Center meteorological station , 1989 – 2018).

Figure 2: An image showing overgrazing

4.2 Logging

The logging process is an old, traditional process intended to be satisfied with filling a need from the plant data (shrubs) for the purposes of fuel or clearing the land for cultivation. Agriculture, in addition to fires, all of these things led to the revitalization of the process of desertification in the lands of the forest and limiting the renewal of the matter, which led to the revitalization of the process of desertification in forest lands (Muhammad al-Awdat, 1995)

Also, through the frequent civil visits to the valley under study, the contribution of the human element to the impact of the valley's plants in a clear negative way due to the residents residing near the area The valley has a clear negative effect because the residents living near the study area continuously cut trees and use them as firewood, as well as the charcoal industry. and density), which will negatively affect the balance of the ecosystem in this area, which will lead to a decrease in the annual rates of growth of these trees and shrubs in a study area due to their exposure to continuous and unstudied cutting due to the lack of population awareness of the extent of the role and importance of these plants in the density and growth of vegetation cover and the lack of erosion Soil and its desertification, as well as the lack of effective environmental control that contribute to reducing this phenomenon.

Figure 3: A picture showing the phenomenon of logging in the study area.

4.3 Extracting and assembling economic and medicinal species

One of the factors contributing to the low rates of vegetation growth in the study area is the uprooting of many types of plants that are abundant in the study area, for the purpose of using and selling them for medicinal purposes. parvifolius, thyme, Thymus capitatus, Ajugo iva, Globularia alypum, Rhus trparita, and the bulbous species Asphodelus microcarpus and Urginea maritima, as they are included in the calculation of plants that stabilize the soil from erosion, and other plants that have been affected by human activities.

Figure 4: A picture showing the foot of the study area

4.4 Road construction

The impact of road construction in the study area on the removal of the surface layer rich in plant species, which negatively affected the herbaceous species, in particular, and led to their extinction, due to car traffic back and forth.

Figure 5: A picture showing the construction of roads in the study area

4.5 Population Expansion

Population growth and increased investment in the housing sector led to an increase in demand for land use, which led to damage to overexploited lands. Distinguished by its biodiversity, and thus the loss of large areas of environments

RECOMMENDATIONS

Awareness of the human being, who is the main element that threatens the vegetation cover, and increasing interest in awareness programs to preserve plant diversity.

The vegetation cover in the study area must be preserved by limiting and preventing the cutting of medicinal plants there, as well as overgrazing.

Establishing natural reserves to preserve plant species threatened with extinction by stimulating existing plants and taking care to increase their growth and increase their numbers.

Enacting laws and strict procedures on cutting and removing trees and shrubs used for fuel (charcoal). Activating existing laws for the protection of agricultural lands and applying penalties to deter logging operations, overgrazing and charring, and punishing anyone who violates that.

Supporting and motivating the competent authorities entrusted with the protection of agricultural lands, such as the agricultural police, in order to carry out its assigned duties to the fullest extent.

Work on the latest kind of balance between man and his environment by using mental development and expanding knowledge and awareness, which makes him aware of the importance of the interactive relationship between him and his environment and the extent of their need for the other.

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