مدرسة الشيخ سالم بن حمود السيابي

THE GLOBE PROGRAM

Sultanate of Oman

سلطنة عمان
وزارة التربية والتعليم

The effect of throwing construction and demolition waste on the environment

In the Sultanate of Oman, Governorate of Muscat

: the students

Nawaf bin Hamad Al-Maamari

Shaham bin Abd Allah Rahman Al-Kharusi

Khalid bin Hamoud Al-Maqbali

School: Sheikh Salem bin Hamoud Al-Siyabi

Supervision : Nasser bin Mohammed bin Saif Al-Mamari

February 2020

: Summary

Through this research, we have tried to identify the negative effects of demolishing waste and building on the environment using the tools of the .GLOBE program

And through the problem of the effects of throwing away demolition and .construction waste

:And that is by answering the two main questions

Is there an impact of throwing construction and demolition waste on the .1 ?ground cover

Is there an impact of throwing construction and demolition waste on the .2 ?soil

The research methodology was by identifying a location near the school and then applying the activities of the GLOBE protocols to measure and observed both the vegetation affected using google earth and in addition to observing and measuring the soil layers using the soil protocol

She indicated

The research results show that there is a clear effect of throwing construction and demolishing waste on the ground cover through decreasing number of trees, spread of environmental pollution, distortion of .the landscape, and rodent and insect breeding

There is also a layer of earth layers that are considered to be land residues .through the soil protocol

Our recommendations through this research are to allocate a site for receiving and treating construction and demolition waste in the various

governorates of the Sultanate, launching small crushers to recycle this type of waste with a view to recovering value from materials that were used in construction and demolition, and in coordination with the relevant .authorities to activate the legislative and regulatory sides

:Basic terms

Waste: Solid, non-hazardous waste generated from demolition and construction activities

Demolition and construction: These are solid parts of a large size that are difficult .to dispose of after demolishing the house or after constructing a new home

: Research questions

Is there an impact of throwing construction and demolition waste on the .1 ?ground cover

?Is there an impact of throwing construction and demolition waste on the soil .2

: Introduction

The rapid urban growth witnessed by the land during the past years has resulted in tons of construction and demolition waste and the dumping of construction and demolition waste in places not designated for this, which confirms the existence of a problem in how to get rid of this waste

To recycle this waste and support research and studies in this field, .with a view to eliminating this problem in the future

The phenomenon of throwing construction and demolition waste in the stomachs of valleys and abandoned places increased, as a result of urban expansion and the growth of construction and demolition facilities, which caused lack of interest in transporting waste to the sites designated for them and the spread of environmental pollution and distorting the general view, as well as creating obstacles in the valleys of the valleys resulting in the emergence of many swamps Water pools, and pollution did not stop there, but the phenomenon of throwing waste also spread on both sides of the roads without paying .attention to the laws and laws in force in the country

-: search methods

:Research plan -1

:A schedule has been set for the research plan as follows -2 -2

work plan	the month
Choose the subject of the study and determine the problem to be studied	October 2019
Apply protocols	November 2019

Application of protocols and analysis of results complement the research	December 2020
Completing the research and submitting it	January 2020

(Table (1

:Distribution of work roles

requester	the work
shaham and Nawaf	Formulation of research problem and identification of tools
Khaled and Ahmed	Collection and analysis of data through the application of the soil protocol
Muhannad and shaham	Collection and analysis of data through the application of the vegetation protocol
Nawaf and Khaled	Reaching conclusions, drafting the abstract, and writing the paper

جدول (2)

:Follow the search plan

1- Determine the location of the study.
2- Apply the soil protocol
3- Apply the vegetation protocol
4- Compare results and write recommendations.
5- Doing an interview with municipal officials
6- Data collection and organization in tables
7- Entering data in the program's website WWW.GLOBE.GOV
8- Data analysis and graphical representation.
9- Reaching conclusions and recommendations
10- Writing scientific research

:Study location -2

The research plan was implemented in the Sultanate of Oman in the Governorate of Muscat in Al-Mabilah region, so that the soil protocol and the vegetation protocol were implemented, .taking the required measurements and recording the results

Photo (1): the study site

Picture 2: Study site with coordinates

Third: data collection and analysis

Initially, Google Earth was used to take a survey of the Earth during different periods of time and note the variables

2019/9/2 Picture 3: History

2017/11/15 Picture 5: History

2018/3/3 Picture 4: History

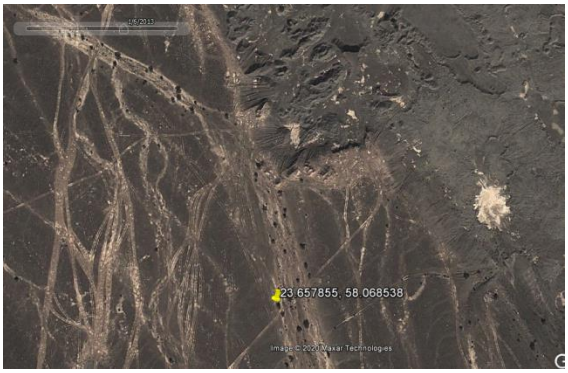
2016/6/17 Picture 7: History

2017/9/7 Picture 6: History

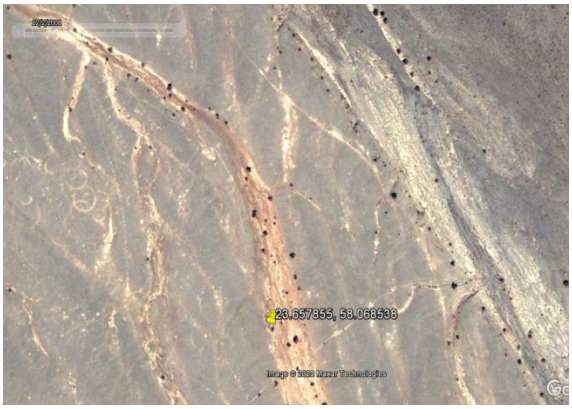
2014/12/10 Picture 9: History

2015/7/20 Picture 8: History

2009 / 2 /25 Picture 11: History



2013/1/6 Picture 10: History



2001 / 12 / 2 Picture 13: History

2008/ 3/8 Picture 12: History

After collecting data and observing the image during the time periods of the site, what is the effect of construction waste and its effect on the vegetation environment of the land cover

As for the soil protocol, we took the pits at the site and then measured

Location	Properties
N:58.068538 E:23.657855	The coordinates
4	Classes

First class (70 -0) cm	Classes
dry	Humidity condition
Sheets and Waste	Structure
His crucifixion	Consistency and consistency
Gravel and cement	The fabric
Few	Rocks
Few	Rocks
Little reaction	Rocks
8.1	Ph
6/6yr10	Rocks

Table (3): The first layer of the Earth's layers

The second layercm (105 -70)	Classes
dry	Humidity condition
Granular	Structure
Fragile	Consistency and consistency
Sanding my child	The fabric
Few	Rocks
Few	Rocks
Little reaction	Rocks
6.7	Ph
6/5yr10	Rocks

Table (4): The second layer of the Earth's layers

The third layer (155 -105)cm	Classes
dry	Humidity condition
Granular	Structure
Cruel	Consistency and consistency
sandy	The fabric
Few	Rocks
There is no	Rocks
There is no	Rocks
7.1	Ph
6/7yr10	Rocks

Table (5): The third layer of the Earth's layers

The fourth layer (175 -155)cm	Classes
dry	Humidity condition
Intermittent	Structure
Intermittent	Consistency and consistency
sandy	The fabric
a lot	Rocks
There is no	Rocks
Little reaction	Rocks
7.3	Ph
6/8yr10	Rocks

Table (6): The fourth layer of the Earth's layers

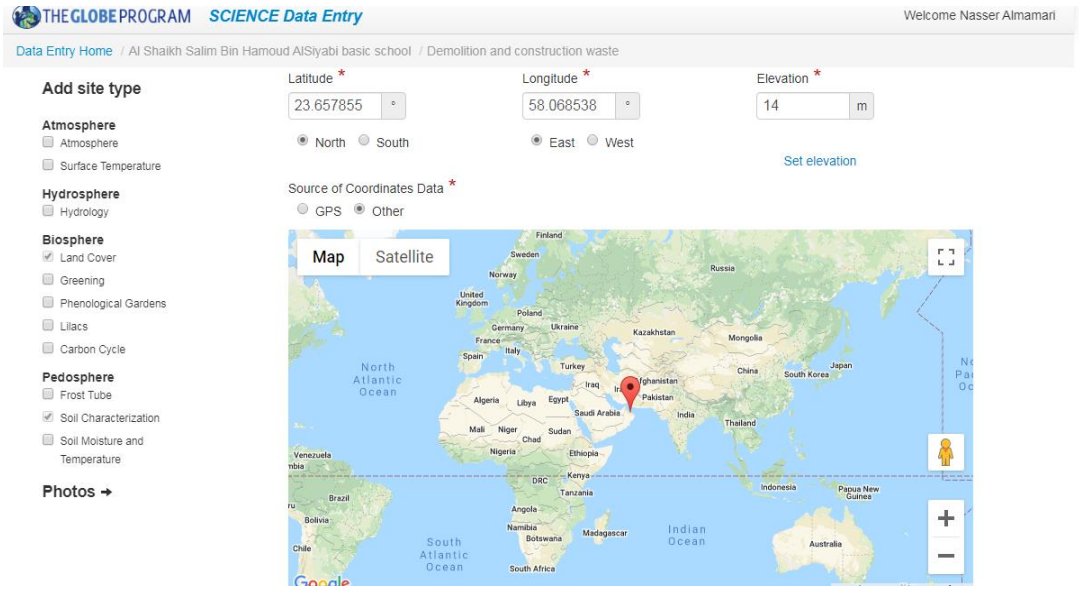
: Pictures of demolition and construction waste

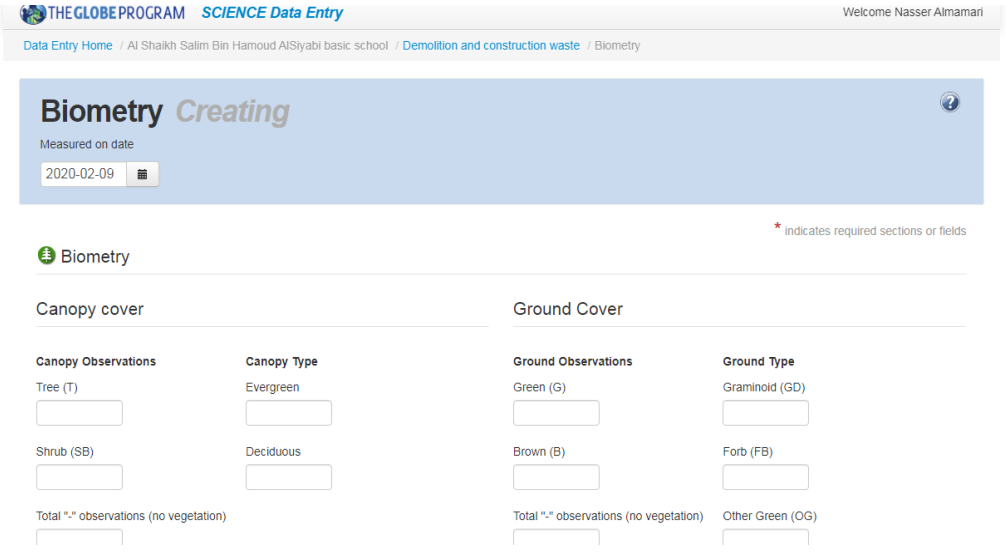
: Results

As a result of the urban expansion and the growth of construction and demolishing facilities, which caused lack of interest in transporting waste to the sites designated for it and the spread of environmental pollution and distorting the landscape, and also led to obstacles in the streams of valleys that resulted in the emergence of many swamps and water pools, and pollution did not stop at this point but spread The phenomenon of waste throwing also on both sides of the roads without attention

There are many challenges caused by construction and demolition waste as they occupy a lot of space in the designated sites, cause a lot of fires, rodents and .insects breed and attract stray animals that feed on mixed waste residues

https://www.globe.gov/home للرابط Enter data and send it to a program site GLOBE





:Discuss the results

Through the results obtained from satellite imagery, the first question was answered from the presence of a clear effect during the time periods of the vegetation cover of the site and the presence of a significant change in the features of the land and the decrease of trees

Also, the second question was answered that there is a formation layer that expresses construction and demolition waste from among the soil layers .through the soil protocol, which in turn reproduces rodents and insects

:Conclusion

Through the application of the protocols of the GLOBE program, we reached the importance of preserving the environment and the .consequences of throwing away construction and demolition waste

Allocating a site for receiving and treating construction and demolition waste in the various governorates of the Sultanate

Launching small crushers to recycle this type of waste in order to recover value from materials that were used in construction, demolition and reusable (such as gravel, sand, and cement products) so that the recycling of this type of waste contributes to the sustainability of natural resources

And in coordination with the concerned authorities, to activate the legislative and regulatory sides to suit the requirements of urban .development

:Acknowledgment

If I say thank you, my thanks will not be fulfilled. Indeed, you have endeavored. The endeavor was appreciated. If my ink dried up, the heart .would write you a expression of serenity of love in expression

.Thanks to Mr. Nasser Musharraf, the program at the school

:References

- المعمري، نوح .(2019 .30 نوفمبر) .**الاودية والطرق مراد عشوائية لنفايات البناء والهدم** . استرجعت بتاريخ 1 فبراير .2010https://www.omandaily.om/?p=748481
- شركة سيورد الدولية بالتعاون مع وزارة التربية والتعليم ،**تدريب المعلمين بواسطة شبكة المعلمين العالمية** .2016م.
- برنامج GLOBE البيئي .دليل المعلم GLOBE .