



# **Green-up - Tree and Shrub**

**Розвиток бруньок і листя –  
Дерева та кущі  
е-тренінг**




# THE GLOBE PROGRAM



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### Get Trained

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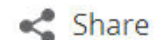
## Get Trained

GLOBE offers trainings around the world. In order to provide high-quality data to the scientific community, teachers are trained in GLOBE data-collection procedures. GLOBE protocols are written and reviewed by scientists.





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### Protocol eTraining

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## Protocol eTraining

To enter GLOBE data on this website or through the GLOBE data entry app, GLOBE users must complete the necessary training either by attending a [GLOBE workshop](#) or by completing the required online eTraining modules and assessment tests in this section. Please review the [eTraining Requirements](#) to learn which modules are required to become a trained GLOBE teacher or GLOBE Observer. Once your training is complete, you will be ready to start entering your measurements and will be joining a community of thousands teachers around the world!

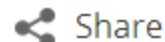
Existing GLOBE teachers can continue to expand their GLOBE protocol knowledge by completing additional modules and assessment tests. Click on the [Trained GLOBE Users](#) link below to learn which tests are required to become certified in a particular GLOBE protocol.

The GLOBE community looks forward to welcoming you. Please [contact us](#) if you have any questions. Your question may also be answered in one of our [Discussion Forums](#), so check there as well.

A [summary document](#) about GLOBE eTraining is available for download.



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### Protocol eTraining

Atmosphere

Biosphere

Hydrosphere

Pedosphere  
(Soil)

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## Biosphere



### INTRODUCTION TO BIOSPHERE

This module provides an introduction to the Biosphere



#### GREEN UP-GREEN DOWN - Tree and Shrub Green-Up

Learn how to select and define a Tree and Shrub Green-Up protocol study site and get a step by step introduction of the protocol. After completing this module, you'll know how to explain what phenology is to your students and why monitoring green-up is scientifically important to our understanding of the changing Earth system. You will know how to collect data in the field, upload data to the GLOBE database, and visualize data using GLOBE's Visualization Site.

Download Module

Assessment Test

Test not completed



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### Protocol eTraining Assessment Test

## Tree and Shrub Green-Up Module

Click the "Start Quiz" button to begin. Good luck!

**Start Quiz**



### What is Phenology?

Що таке фенологія?

- ☐ It is the study of daily changes in temperature.
- ☒ It is the study of living organisms' response to seasonal and climatic changes in the environment in which they live.

- ☐ It is the period 

Це вчення про реакцію живих організмів на сезонні та кліматичні зміни у середовищі їх існування.
- ☐ All of above

Submit All

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### Protocol eTraining Assessment Test

You live in the northern hemisphere and are collecting green-up measurements on a native tree. You are selecting the leaves to monitor. In which direction should the branch face that has the leaves you will monitor?

- ☐ North
- ☒ South
- ☐ East
- ☐ West

Південь

Ви живете в північній півкулі і проводите виміри бруньок та листя на вибраному дереві. Ви вибираєте листочки для спостереження. Куди повинна бути спрямована верхівка гілочки, за якою ви спостерігаєте?

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What is the name of the common measurement of vegetation obtained by analyzing satellite imagery?

- ☐ Normalized Vegetation Globe (NVG)
- ☐ Globe Vegetation Index (GVI)
- ☐ Measurement Vegetation Globe (MVG)
- ☒ Normalized Difference Vegetation Index (NDVI)

Як називаються звичайні виміри рослинності отримані за допомогою аналізу супутникових зображень?

Нормалізований відносний індекс рослинності



Чому GLOBE вчені досліджують розпускання бруньок та розвиток листя?

### Why do GLOBE scientists study Green-Up?

- ☐ To calculate growing season length and duration  
Щоб розраховувати зміну тривалості сезону і спостерігати за щорічними змінами тривалості вегетаційного періоду
- ☐ To determine how environmental factors like temperature, precipitation, soil moisture, and day length affect plant growth  
Щоб визначити як умови навколишнього середовища (температура повітря та ґрунту, опади, вологість ґрунту, довжина дня) впливають на ріст рослин
- ☐ To monitor the nature and extent of climate change and its effects on plants and animals  
Щоб спостерігати за природою та ступенем кліматичних змін і їх впливом на рослини та тварин
- ☐ To help interpret satellite observations of greenness  
Щоб допомогти інтерпретувати супутникові спостереження за пробудженням рослин
- ☒ All of the above  
Все зазначене вище
- ☐ A, C and D only

Submit All

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If the bud is unchanged near the beginning of your data collection, what do you record it as?

Якщо брунька не змінюється на початку ваших досліджень, як ви зазначите її в протоколі?

- ☐ Swelling
- ☐ Lost
- ☐ Budburst
- ☒ Dormant

Спляча

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When should you stop measuring the length of a leaf?

Коли ви можете припинити виміри довжини листка?

- ☐ When it decreases in length
- ☒ When it stops increasing in length
- ☐ When it increases in length, but less quickly
- ☐ It doesn't matter when you stop measuring

Коли виміри довжини  
перестануть зростати

Submit All

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If something happens to the bud and you cannot continue observations, you should record your data as:

☐ Budburst

☐ Swelling

☒ Lost **втрачена**

☐ Dormant

Якщо щось трапиться з брунькою і ви не зможете продовжувати спостереження за нею, ви повинні відмітити це як:

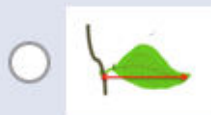
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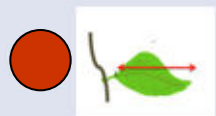
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Which is the correct leaf measurement to report when using the Tree and Shrub Green-Up protocol?



Який тип вимірювання листка правильний при використанні протоколу Розвиток листя на деревах та кущах



Вимірюємо тільки довжину листкової пластинки



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### Protocol eTraining Assessment Test



**Congratulations! You successfully completed the Tree and Shrub Green-Up module. Click 'Finish' to record your results.**

### Quiz Result

Your Score: **90%**

Passing Score: **80%**

[Review Quiz](#)

[Finish](#)





### GREEN UP-GREEN DOWN - Tree and Shrub Green-Up

Learn how to select and define a Tree and Shrub Green-Up protocol study site and get a step by step introduction of the protocol. After completing

#### eTraining Information

Recently completed module: **GREEN UP-GREEN DOWN - Tree and Shrub Green-Up**

To be considered trained in an protocol, you must complete the assessment tests for an Introduction to a Sphere module (Atmosphere, Biosphere, Hydrosphere or Pedosphere) and the protocol you wish to be trained in. You only need to pass an introduction module once.

[View your training records](#)

[Download Module](#)

Test not completed



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