



dark sky ecotourism

Module 4 – Experience from Iceland

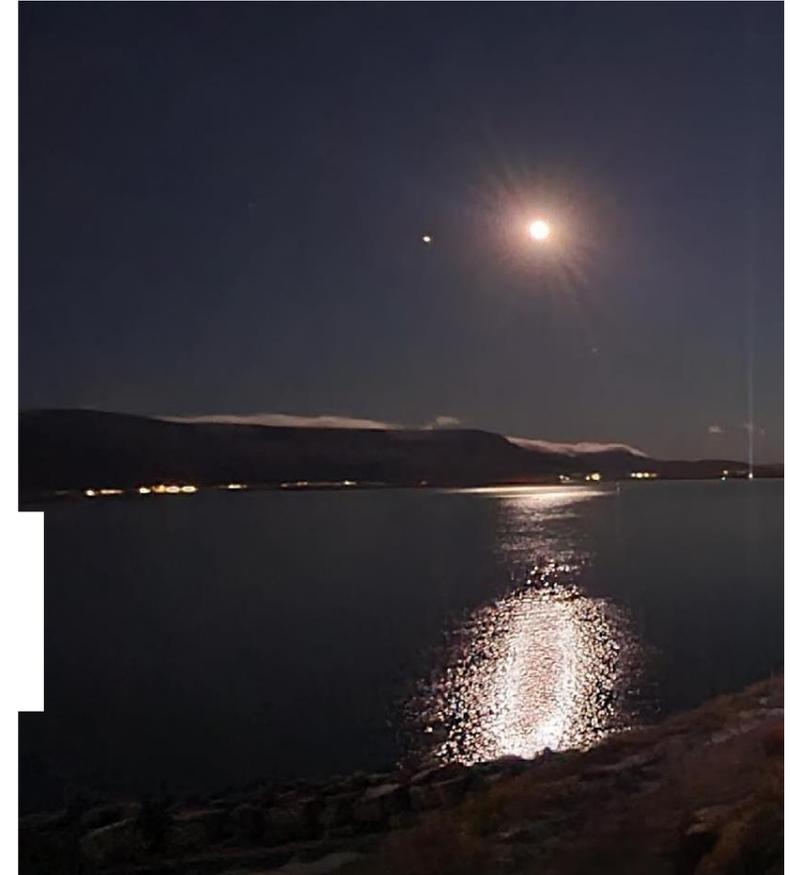
A dark sky ecotourism coastal walk



Introduction

Welcome to our educational module on crafting a Dark Sky Ecotourism Experience. This module describes a coastal dark sky ecotourism walk next to the Natural History Museum of Iceland, which is located near the coast and next to an urban area. The module contains:

- The different steps your experience design
- How to prepare for this type of a dark sky walk
- Lists possible apps, things and items to consider for this walk
- Connects to the use of nature interpretation methods and describes the different interpretative experiences you can use during the walk.
- Gives an example for an ecotourism message for the walk and how to effectively end the experience.



The dark sky conditions will be different from one walk to another, based on e.g. the weather, the seasons etc. Therefore it is always good to have plan A, B etc. and be able to adapt.

Preparing the dark sky coastal walk

This activity is a dark sky walk, approximately **60 minutes long easy walk**.

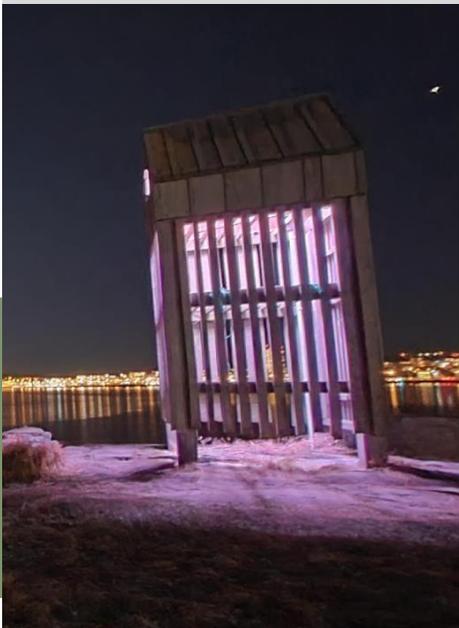
Target group can be wide ranging: Families with children, individuals and groups, of all age range, hike listed as easy / 1 shoe.

Safety / risk assessment checklist – terrain should be easy to walk, also keep the weather in mind. With full moon you can more easily see where you are walking, but on the other hand you see the dark sky less clearly.

We often aim for short walks on an easy terrain to accommodate as many target groups as possible and keep the walk as safe as possible.

LEARNING ACTIVITY:

- Fill out a risk assessment checklist for your specific activity and for a specific season.
- List some possible key lessons from this activity, which could e.g. include how many persons/organisations you need to fulfill the requirements of the risk assessment. Possible options: the municipality, your neighbours, other businesses, rescue organisations etc. Here your business/community can map your own network, what your community outreach is or could be. So through this learning activity you can find out your connect to your community



Apps for preparation

Before you design the dark sky walk you need to **find out what kind of dark sky quality you have in your area.**

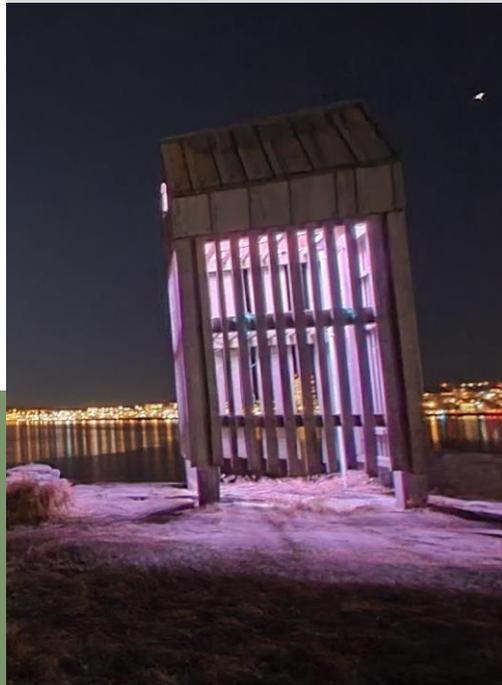
To find you you can use the **Dark Sky meter app** (currently only available on iPhone). With your mobile phone you simply point the camera to the night sky and it gives a reading of the dark sky quality. This app will use the **Bortle scale** to measure the quality of your dark sky and thus your dark sky opportunities.

Another app – e.g. **light pollution map** (both in iPhone and Android) – will show you the extent of **light pollution** in your area.

To further increase your knowledge of your night sky you can use apps like **SkyView Free (and others)** to **show you the name and location of constellations and stars in the night sky.**

LEARNING ACTIVITY:

- Download the Dark Sky meter app (if you have an iPhone) and apply to your area.
- Find out how the light pollution app applies to your area
- Use the SkyView app to see what stars and constellation you see in your area



Framing the dark sky ecotourism coastal walk



Give your walk an **interesting and catchy title!** E.g.:
What lives in the dark? What can you see in the dark etc.

The walk takes about 60 minutes. Try to time your walk as accurately as possible, but remember that groups are different in both regarding how often they ask questions, how fast they walk and how long they want to stay at each stop. Also the weather might make it easy to lengthen the walk or if bad you need to shorten the walk.

It starts at the Natural History Museum building, which is located near a sandy beach. The walk is partly on paved walking paths and partly on the sandy beach.

The walk ends at the museum itself or close by.

Things and items for use to consider during the walk



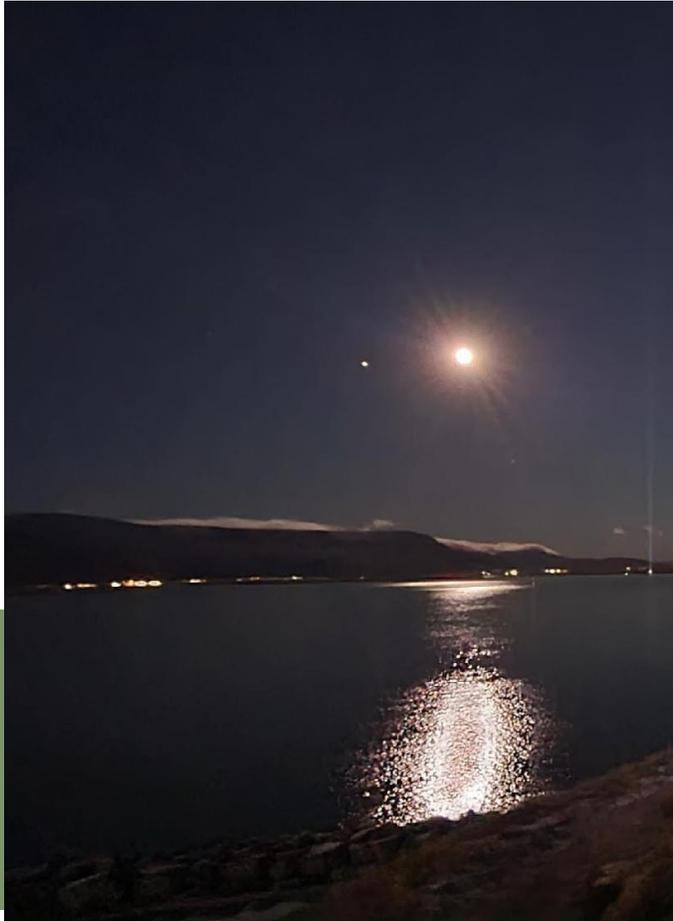
Before the walk the guide may need to inform the guests about certain things so that guests can safely enjoy the dark sky walk. The guide may also want to use different kinds of aids. Here we mention some of these and how they can be used:

- At the start emphasize that people turn off their phones, we use a red light for people to find the way, especially if people find it difficult to walk in the dark. Red light preserves our night vision.
- We need – in the beginning (from stop 1 to 2) to give people a chance to adjust to the dark – car lights and other lights can be difficult to disturb.
- A tablet or photographs can be used to show what lives in the dark. However, keep in mind that on the walk we are experiencing the dark so we don't want to use any light sources that might reduce our night vision, so maybe it is better to use such aids inside, this case in the museum, at the beginning or end of the tour.

Things and items for use to consider during the walk

Before the walk the guide may need to inform the guests about certain things so that guests can safely enjoy the dark sky walk. The guide may also want to use different kinds of aids. Here we mention some of these and how they can be used:

- A good way to show the position of stars in the sky is to use a laser pointer.
- Illustrate use of laser pointer, e.g. by pointing out the “Karlsvagninn” = Big Bear = Orsa Major or other star constellation, that is clearly visible during the walk.
- Keep in mind that senses other than sight are sharpened when walking in the dark, e.g. hearing and smell may become more pronounced. Listen to the surf or the ocean, smell seaweed. In this way, the narrative can be shaped based on senses other than sight.
- **Learning activity** – walk when it is dark around your area, listen for what sounds you hear, where are the best stops to hear specific sounds? What will you hear during e.g. early spring, late summer, mid winter etc.?



Start of the walk – stop 1

We start the walk at the Natural Museum of Iceland. We can end at the same spot or close by. Keep also in mind the aim of your walk. Do you want your guests to e.g. get to know the area, than perhaps ending at a different place might help with that. If the aim is for people to see more of an exhibition, eat at your café or restaurant then perhaps ending at the same spot is better.

Set down how you will address your guests, this will help in keeping the walk on time and to deliver the ecotourism message (see module 5):

“Welcome to the Natural History Museum's dark sky ecotourism walk - we are going to find out what lives here in the dark. Maybe we can see or hear some things but others can only be seen by using night binoculars / by using hidden night cameras that take pictures of animals that live in the dark”

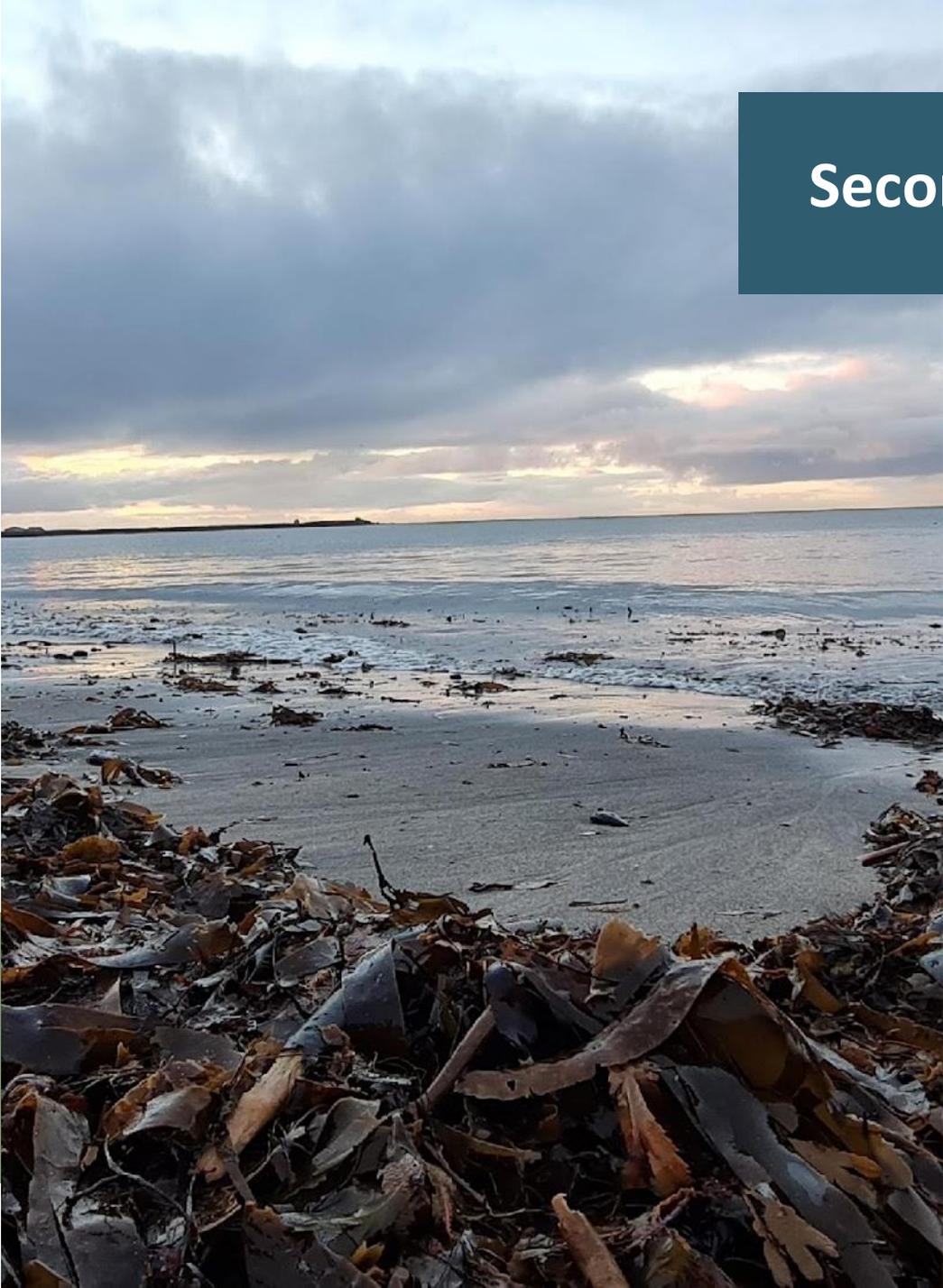


First interpretative experience – stop 2

At Bakkatjörn lake – We could show a piece of a white paper. We need to be careful that it does not reflect any strong light as not to damage people's nightvision.

We can then say about this piece of paper: "this is what insects and other nocturnal animals see when we humans light up the night sky. That's why they often cannot see their food, or they are fooled by the light and use too much of their energy".

So this white paper is an example of what happens if you shine a light in a person's/animal/insect eyes.



Second interpretative experience – stop 3

On the beach – connecting to the darkness deep in the sea where daylight does not reach.

Here we can start by listening to the sea. We can say: “In the depths of the sea there is darkness, the sunlight does not reach down there, where animals live a good life in the dark. In fact, they often make their own light“

We could have a photo printed out or on a tablet that shows an example – this might though affect negatively our **night vision**, so maybe such an aid should be used at the end or beginning of the walk, as showing such a picture reduces the adaptation of our eyes to the dark.

Third interpretative experience – stop 4

While we walk out towards the Gróttu lighthouse, we look at a seawall that protects the landspit towards the (almost) island where the lighthouse is.

There we can see birds and we see coastal area that would be ideal for seals if not for the many people that come out there for a walk.

So we cannot see seals but we can hear the birds. Here we can wonder what the effect of darkness is on these animals that we know so well.

How does light pollution from our cities and towns impact these animals native to our land?



End of the walk, stop 5

The end of the walk depends on our aims for the walk. Here we have several options. We can end by a small hot pool, or by a wooden shed used to dry fish (thus giving us a distinct smell to awake our senses) or where we started. If we choose the last option this will then become a roundtrip and we can more easily have the guests visit the indoor exhibition.

At the end of walk we try to say something that connects our guests to nature. For that reason keep in mind a clear ecotourism message:

"Darkness surrounds us and we cannot see as well as during the day, but our other senses are sharpened (smell, hearing, touch). But what do we see, hear or smell in the dark? Our eyes need to get used to the dark, so if we have too much light around us, we do not discover the many living creatures that live in the dark."

Here the idea for our ecotourism message is make people aware of the effect of light pollution and how it impacts both us and the ecosystem and its flora and fauna. More on the ecotourism message in module 5.



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ecotourism**

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