Increase in Awareness on Components of Nature

We do not inherit the Earth from our ancestors, we borrow it from our children

What is Nature?

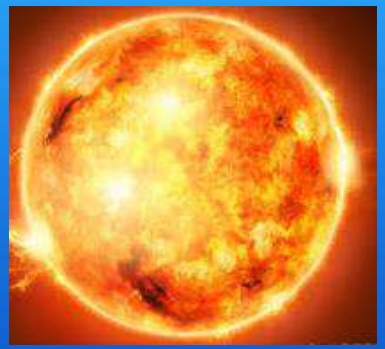
- Nature refers to the phenomena of the physical world and to life in general
- Nature ranges in scale from the subatomic to the cosmic level
- Nature refers to living plants and animals, geological processes, weather, matter and energy

What are the components of nature?

Soil

Atmosphere

Sun radiation



Water

Living organisms

What is Soil?

- A mixture of organic matter, minerals, gases, liquids, and organisms
- All together these elements support life
- Earth's body of soil = pedosphere

What is soil ?

https://www.youtube.com/watch?v=I6HGPoQ3dZY

What is Soil

- **Pedosphere's functions:**
  - Plant growth medium
  - Water storage, supply and purification means
  - Earth's atmosphere modifier
  - Living organisms habitat
  - Protector against water loss

Let us talk about soil !

https://www.youtube.com/watch?v=invUp0SX49g

The soil profile

- Each soil has its own set of characteristics
- Soil is made of layers (horizons: O, A, E, B, C, R).
- The horizons form a soil profile
- Soil profile tells a story about its life

O - organic

A - topsoil

E - eluviated

B - subsoil

C – parent material

R - bedrock

Let us talk about soil !

https://www.youtube.com/watch?v=invUp0SX49g

Protect the soil !

- Prevent soil from eroding – plant grass, flowers, trees in empty places
- Avoid overwatering – protect from erosion
- Use natural nutrients
- Avoid disposal of hazardous chemicals

Protect the soil !

https://www.youtube.com/watch?v=Fzv7fVmHPzs

Atmosphere

- Atmosphere - the gaseous layer enveloping the Earth

- The atmosphere is unique to Earth and sustains life due to oxygen abundance

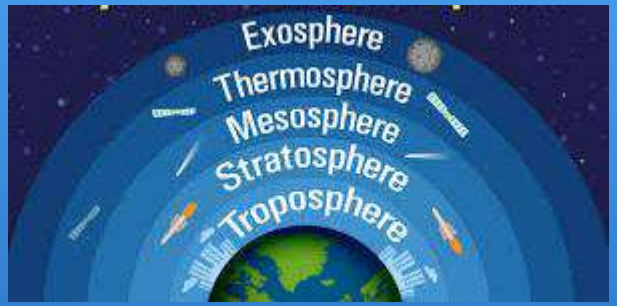
Atmosphere - composition

- Atmosphere comprises:
  - 78.08% Nitrogen
  - 20.95% Oxygen
  - 0.93% Argon
  - 0.038% carbon dioxide
  - and traces of hydrogen, helium, and noble gases

Elements constituting the atmosphere
https://www.britannica.com/science/atmosphere

Atmosphere – main levels

- Earth's atmosphere can be divided into five main layers:
  - Exosphere
  - Thermosphere
  - Mesosphere
  - Stratosphere
  - Troposphere

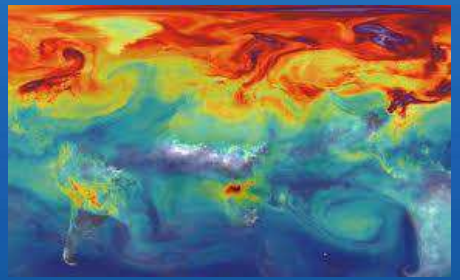


Atmosphere levels

https://www.youtube.com/watch?v=Y0AOg_fPkog

Protect the atmosphere !

- **Air pollution** - the introduction of chemicals, particulate matter or biological materials that cause harm or discomfort to organisms.
- **Air pollution** causes stratospheric ozone depletion due to ozone-depleting substances.
- **Global warming** - the anthropogenic greenhouse gases accumulating in the atmosphere.

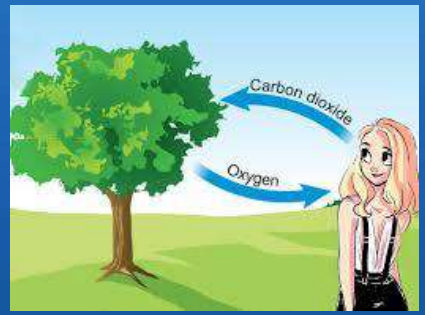


Protect the atmosphere !

- **Reduce pollution** – cut back on fossil fuel combustion and invest in energy efficiency and renewable energy sources.

  https://www.youtube.com/watch?v=ILvm2jxVkRI

- **Monitor air pollution** – people advocate for changes that make the air safer to breathe.
- https://www.youtube.com/watch?v=t7Q7y_xjR5E



Sun radiation

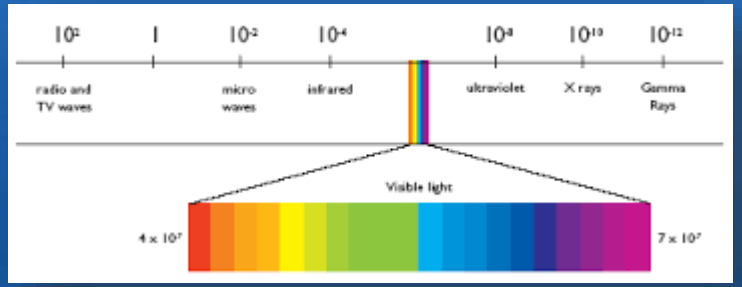
- Sun - the ultimate source of the heat energy reaching the Earth
- Sunlight (solar radiation) - the electromagnetic radiation arriving at the Earth's surface due to direct illumination by the sun
- Sun radiation Includes ultraviolet, visible and infrared components

Sun radiation - properties

- Sun radiation intensity varies by season and time of day due to the orbit of the Earth around the sun and the Earth's rotation
- Sun radiation drives photosynthesis in plants to fuel all life
- Sun radiation is responsible for maintaining the temperature of the Earth at levels hospitable to life on Earth as we know it.
- Sun radiation is also the energy source for almost all life on planet Earth

Sun radiation spectrum

- UV: 100 – 400 nm
  - 100 - 280 nm: undetectable by the unaided eye; mutagenic, carcinogenic and germicidal
  - 280 – 315nm: responsible for the photochemical reaction leading to the production of the ozone layer
  - 315 – 400 nm: sun tanning and therapy for psoriasis
- Visible: 400 – 700 nm: detectable to the human eye
- IR: > 700 nm

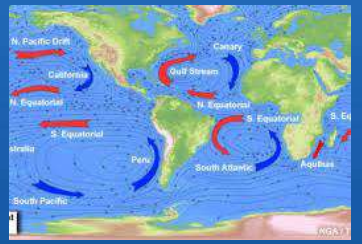


Sun radiation – the power supply of the biosphere

- Sun radiation - the source of most biological energy needed to sustain life on the planet Earth
- The chief mechanism for conversion of solar power to biological energy is photosynthesis
- Approximately 10^{14} watts of sun radiation are converted to photosynthetic resulting in about 10^{11} tons of biomass production annually

In addition to photosynthesis ….

- Sun radiation
  - Powers the ocean and atmospheric currents
  - Determines circadian rhythm impulses that govern many diurnal biological processes
  - Cues to fauna that perform seasonal migration
  - Directs finding capabilities for bees and other fauna that use the sun location as a means of navigation.



Sun radiation – beneficial & deleterious

- Benefits to human health
  - Manufacture of vitamin D
- Danger effects
  - Sunburn and the possibility of carcinoma or other genetic mutation
  - Green house effect - ozone layer has been punctured

- How the sun heat the earth?

  https://www.youtube.com/watch?v=dg_DOM1OQoo

- Here Comes the Sun!

  https://www.youtube.com/watch?v=6FB0rDsR_rc

- Green house effect

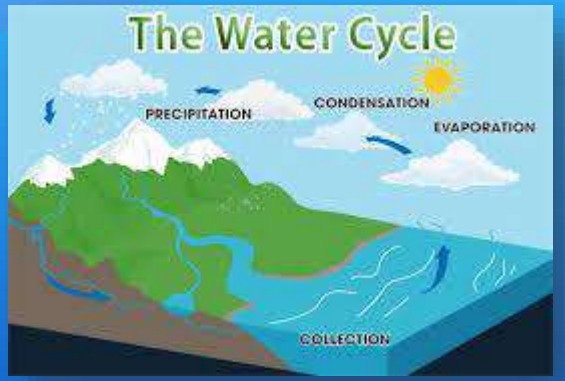
  https://www.youtube.com/watch?v=x_sJzVe9P_8

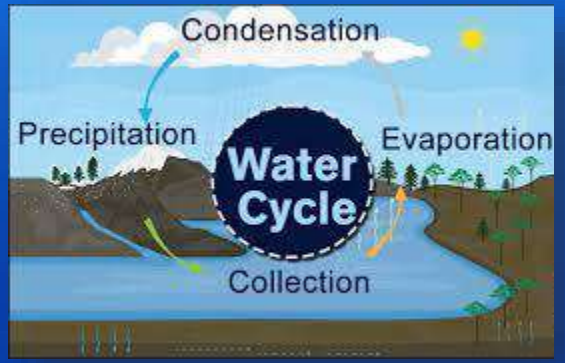
WATER

- The basic building block for all life on Earth
- The most plentiful natural resource on the planet - over two-thirds of the Earth is covered by water
- 97 percent is held in the oceans, while only 3 percent is freshwater
- Of the freshwater, only 1 percent is easily accessible as ground or surface water, the remains are stored in glaciers and icecaps
- There are a number of heavily populated countries located in arid lands where fresh water is scarce.

WATER CYCLE

- Continuous exchange of water within the hydrosphere, between the atmosphere, soil water, surface water, groundwater, and plants.
- Basic transfer processes:
  - Evaporation from oceans and other water bodies into the air and transpiration from land plants and animals into the air.
  - Precipitation, from water vapor condensing from the air and falling to the earth or ocean.
  - Runoff from the land usually reaching the sea.





Water is precious !

- Water regulates the temperature of the planet
- Water cycles essential nutrients through the land, air, and all living things
- Water is both the most abundant natural resource on our planet and a basic element of life
- Water is fundamental to photosynthesis and respiration.

Water is dangerous !

- Water is one of the most destructive forces on earth
- Water carves breath taking gorges and valleys, yet disasters related to water are responsible for large scale loss of life as well
- Water-related hazards like floods are the results of complex interactions in the ocean atmosphere-land process cascade; floods are expected to increase due to global warming.

Water types

- See water - contains about 3.5% sodium chloride and unique physical properties
- Fresh water - as stocks and flows in lakes, water vapor, groundwater, ice and snow

Water is life !

- All known forms of life depend on water
- Water is vital both as a solvent in which many of the body's solutes dissolve
- Water is essential part of metabolic processes and enzyme function
- Water is fundamental to photosynthesis and respiration

Who lives in the water?

- The marine life - the plants, animals and microorganisms (incl. viruses) that live in the salt water of the sea or ocean, or the brackish water of coastal estuaries
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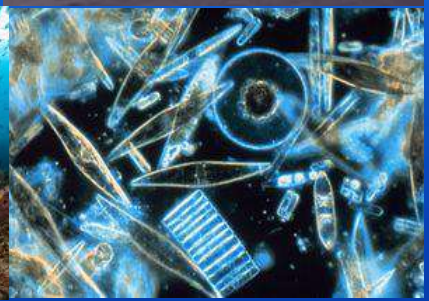


Water in use

- For drinking
- Agriculture
- Washing
- Transportation
- Heat exchange
- Chemical & industrial applications
- Water industry
- Food processing
- Recreation

Value the water, preserve the water…

- Water and everyday life – we use water to produce the food we eat and the beverages we drink, to clean and sustain us
- Water and the environment – produce thermoelectric power, for irrigation, transport
- Water and the economy – needs of reliable and clean source of water
- Water and the community – water connects people

- Importance of water

https://www.youtube.com/watch?v=qkIEjgynmYY

- Where does water come from?

https://www.youtube.com/watch?v=R0K7VKkksyc

- Preserve the water

https://www.youtube.com/watch?v=bGWr5jXJfbs

Living organisms

- What are the main characteristics of the living organism?
  - Sensitivity – be responsive to the environment
  - Growth - capable of growth and change
  - Reproduction - able to reproduce
  - Respiration - able to metabolize and breathe
  - Nutrition and excretion - able to maintain homeostasis
  - Made of cells
  - Able to pass traits onto offspring

Living organisms - animals

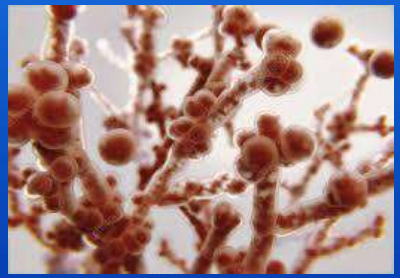
- Animals are:
  - Multicellular organisms
  - Usually have nerves or nervous systems for coordination, and they are able to move from place to place.
  - Do not have cell walls
  - Do not contain chloroplasts, so animals cannot carry out photosynthesis
  - May store carbohydrate as **glycogen**
  - The main parts of an animal cell are the nucleus, cell membrane and cytoplasm

Living organisms - plants

- Plants are:
  - Multicellular organisms
  - Are not able to move
  - Do not have cell walls
  - Contain chloroplasts, so can carry out photosynthesis
  - May store carbohydrate as starch or sucrose
  - Plant cells contain the same parts as animal cells, and the additional chloroplasts, cell wall made of cellulose and permanent vacuole

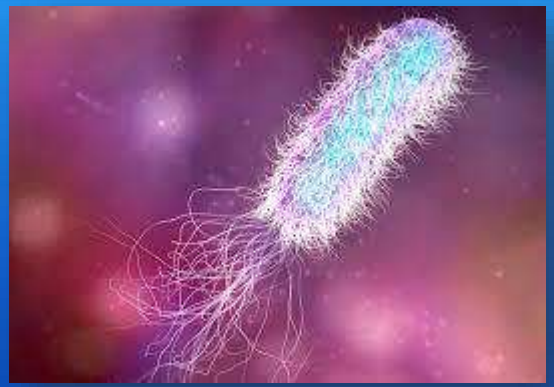
Living organisms - fungi

- Fungi are:
  - Multicellular organisms, besides yeasts (unicellular)
  - Use saprotrophic nutrition
  - Secrete enzymes onto their food so that digestion happens outside the fungal cells
  - Do not have cell walls
  - Organized into a mycelium - which is made from thread-like structures, hyphae
  - The hyphae contain many nuclei
  - May store carbohydrate as glycogen



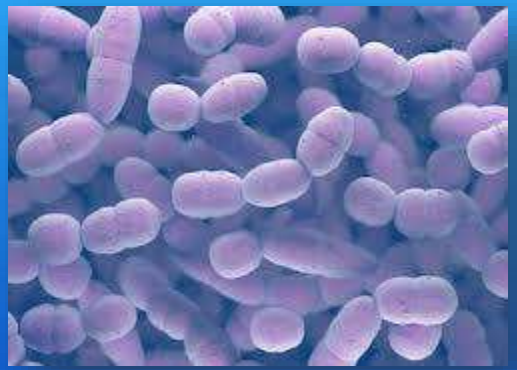
Living organisms - Bacteria

- Bacteria
  - ✓ Are microscopic single-celled organisms
  - ✓ Have a cell wall made of polysaccharides and proteins
  - ✓ Do not have a nucleus, but instead they have a circular chromosome of DNA.
  - ✓ May also have small extra circles of DNA called plasmids.
  - ✓ Some bacteria can carry out photosynthesis, but most bacteria feed from other organisms



Living organisms - Bacteria

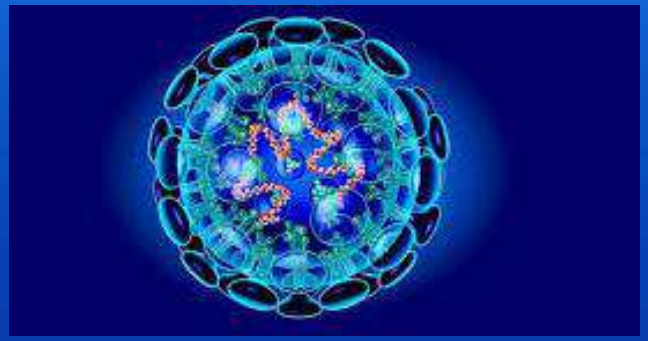
Lactobacillus bulgaricus - a rod-shaped bacterium used to make yoghurt from milk

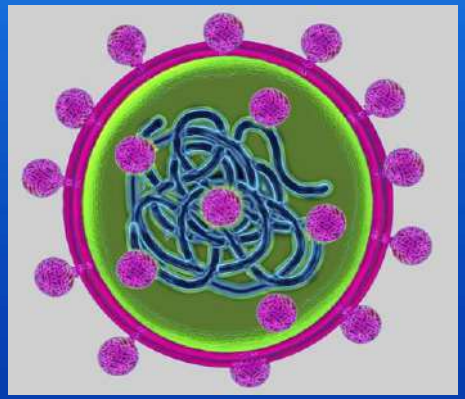


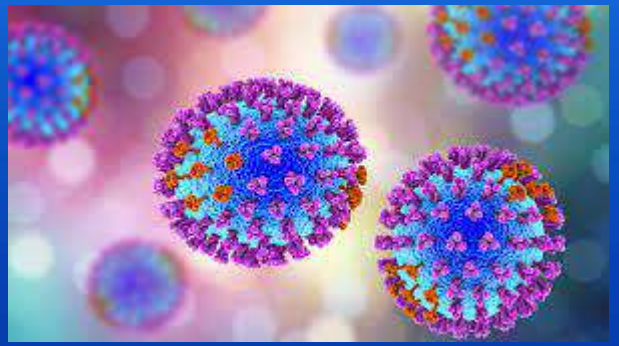
Pneumococcus - a spherical bacterium causes pneumonia

Living organisms - Viruses

- Viruses are very small particles capable of infecting every type of living organism. They are parasitic and can only reproduce inside living cells.
- Virus particles have a variety of shapes
- Viruses do not have a cellular structure: they have a core of genetic material surrounded by a protein coat. Their genetic material can be **DNA** or **RNA**, but not both.







Living organisms - Biosphere

- All the regions on Earth where life exists is called **Biosphere**.
- The ecosystems that support life could be in soil, air, water or land.
- Biosphere refers to the sum total of all living matter, the biomass or biota
- Biosphere extends from the polar ice caps to the equator, with each region harboring some life form suitable to the conditions there.

Living organisms - Biodiversity

- Biodiversity - the variety of all living organisms including ecosystems, plants, animals, their habitats and genes—
- Protect biodiversity
    - Government legislation
    - Nature preserves
    - Reducing invasive species
    - Habitat restoration
    - Captive breeding and seed banks
    - Research
    - Reduce climate change
    - Purchase sustainable products

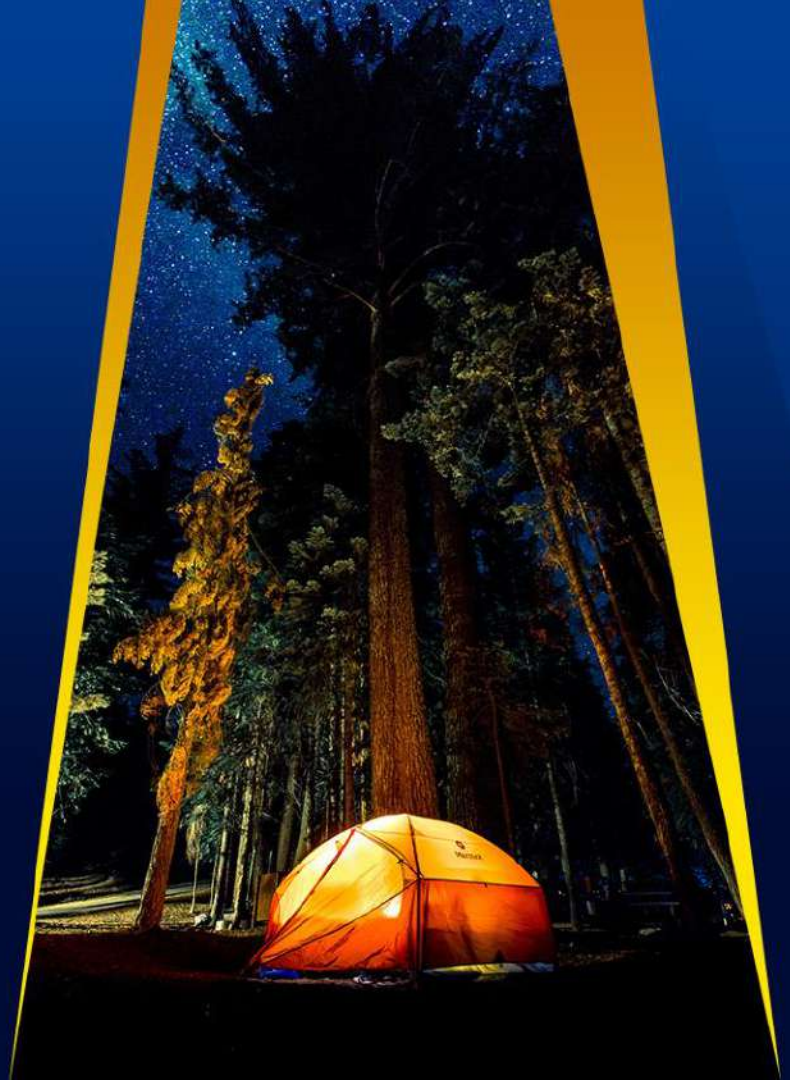
Living organisms

Protect biodiversity !
https://www.youtube.com/watch?v=kHhspf5IfdE

How the EC protect living organisms?
https://www.consilium.europa.eu/en/policies/biodiversity/

Living organisms around us
https://www.youtube.com/watch?v=TnwglHfgGtw

- Promote environmental awareness
  - Get outdoors: visit a park, make a garden
  - Science: develop energy awareness, practice water cycle, watch birds
  - Healthy lifestyle: go to farmer's market
  - Reading: read about environment
  - Connect environment and art: be creative with recyclables



CAMPING

Leave the screens behind and pitch a tent ☺

Why Camping

Camping is:

- One of the most environmentally friendly ways to go on holiday.
- An opportunity to stay in eco-friendly accommodations.
- An option to organize electronic-free activities: nature treasure hunt, books, card games, simple art supplies, build fairy houses in the woods, hammocks.

Camping – safety tips

Where to camp:

- Do not camp on high, windy ridges
- Do not camp in a ravine or dry creek bed that might become flooded in a rainstorm
- Camp away from large trees standing alone that could be hit by lightning
- Camp away from the water's edge to avoid polluting the waters and to avoid rapidly rising water, high tide, or wind-driven waves

SafetyFirst
SAFE KIDS SAFE COMMUNITY

Camping – safety tips

Where to camp:

- Camp away from anthills and poisonous plants
- Camp away from unstable hillsides or dirt slide areas
- Camp away from low ground or swampy areas to avoid mosquitoes and protect camping gear from dampness

SafetyFirst
SAFE KIDS SAFE COMMUNITY

Camping – safety tips

How to camp:

- Do not allow flammable rubbish to accumulate.
- Never use kerosene or other flammable substances to light a fire.
- Do not pour water on flaming grease; throw salt or baking soda on the flame, or cover it with a metal lid.
- Extinguish all outdoor fires before leaving them.

Camping – safety tips

How to camp:

- Be careful when using lanterns in sleeping quarters because of danger of fire.
- Use flashlights.
- Provide adequate ventilation to avoid poisoning if space heaters or charcoal burners are used in tent.

Safety First
SAFE KIDS SAFE COMMUNITY

Before camping …

- Stay up-to-date with the weather - check the weather forecast before your camping trip.
- Pack and store food safely to prevent unwanted confrontations with an animal
- Take insect protection - repellent that doesn’t dissolve easily in water.
- Wear long-sleeved shirts and long pants to avoid direct contact with insects.

Before camping …

- Pack everything in clear tubs for easy camping organization.
- Organize your camping supplies in bins large plastic tubs each one for Kitchen Supplies, Food & Snacks, Bathroom & Bathing, Toys, Tents & Sleeping Bags, Clothes & Laundry, Music & Entertainment.

During the camping…

- Protect your skin from the sun - wear a hat, put on sunglasses, seek a shadow.
- Stay hydrated **- d**rinking water regularly throughout the day, even if you don’t think you’re thirsty.
- Pay attention to how your body feels throughout your trip - wear the right size clothes, hiking boots or shoes, quick drying pants, rain jacket, hat for sun and wind

During the camping…

- Be aware of wildlife.
- Avoid touching and feeding wild animals.
- Avoid tasting unknown vegetation, especially mushrooms

Things You Learn While Camping

- You don’t need a lot of “stuff”
- Doing camping reminds us that our material possessions aren’t quite as important as we might think they are.
- Remember! You have to carry everything you need on your back.

Things You Learn While Camping

- A sense of direction - It helps you know where you are, where you're going, in what direction you'll find water, the camp site, etc.
- Self-trust - out in nature, you depend on yourself to problem-solve. Trust your gut instincts without leaning on technology for simple solutions. Thus you will build confidence in your abilities.
- Promoting responsibility, teamwork and cooperation, thinking, repairing, creating and imagining

The Camping Lessons

- How to set up the tent?

https://www.youtube.com/watch?v=tAFPLSfDEKs

- How to built a campfire?

https://www.youtube.com/watch?v=nPnyBfIM9E4

- What's the best way to supply water to your campsite?

https://www.youtube.com/watch?v=IdVLBxhZFGQ

…and more Camping Lessons

- Do things outside of the comfort zones—get dirty, cook by fire, become wet in the rain and learn to roll with the punch.
- Master useful everyday skills - how to properly sweep a floor, set and clear a table for 14, or clean up garbage strewn about after a storm

- Master socialization skills - being a part of a camp, regardless of its focus, can build a sense of community between participants.
- Understand that the routine jobs have to get done before fun can be had.

Nature study while camping

- Observe animals in their natural environments.
- Compare the differences in the environment in various areas.
- Identify plants and trees.
- Art projects and play with fallen objects, such as leaves, twigs.
- Star watching away from city lights; when night falls – observe the constellations.

Nature study while camping

- Understand and respect nature:
  - do not leave food around the campsite to avoid attracting animals.
  - leave what you found: do not take anything from the area such as plants, rocks or other natural objects.
- Demonstrate ways to protect the environment in camping area - carry out a project that helps to preserve or restore the area of the camping.

Let’s play Camping!

- Learn the basic principles for storing and preparing food in the outdoors.
- Learn about the various kinds of cloud formations.
- Demonstrate two methods for purifying drinking water.
- Learn how to signal for help in the outdoors.
- Identify local authorities who could provide help
- Learn how to contact .

Let’s play Camping!

- Demonstrate how to find directions by observing the sun and stars.
- Learn the basic principles of good nutrition. Plan and prepare one meal at the camping.
- Identify poisonous plants and edible plants in the area of the camping and talk about their differences.
- Spend time observing an event in nature - sunrise, sunset, the movement of clouds, rainbow
- Express your thoughts about this event with artwork, poetry, song, dance, or written words.

E-sources about camping

- https://www.gooutdoors.co.uk/expert-advice/camping
- https://www.youtube.com/watch?v=woFPe2fBWeg
- https://www.youtube.com/watch?v=1heVlNedCPM
- https://koa.com/blog/a-beginners-guide-to-camping-for-the-first-time/

E-sources about camping

- http://piar.cyc.org.au/wp-content/uploads/sites/8/2014/12/Adventure-Camping-Booklet-Sept-20121.pdf
- https://koa.com/blog/camping-safety-tips/
- https://www.linkinteractive.com/blog/2016/07/14/campfire-safety-tips-checklist/
- https://www.officialkidsmag.com/2019/06/25/outdoor-safety-tips/


Reading Nature‘s Signs

CONTENTS

Foreword

Reading nature's signs is the art of using outdoor clues to understand what is what and to find your way in the nature…

It is also the way for predicting the weather, locating water, tracking terrestrial and marine animals and plants to understand nature's call

…and also to listen the sky's song written by stars, moon and the rainbow…

The more time we spend outdoors, the better we learn to read the nature's signs .

Reading Terrestrial Ecosystems

Animal tracks and signs

All animals leave their traces behind, and many provide clues to read and to predict about the nature...

Plants and trees

Plants and trees are powerful indicators of many natural scenes & facts...

Mosses, Algae, Fungi and Lichens

Mosses, Algae, Fungi and Lichens are important organisms in reading the nature

The ground

The ground has its own picture album telling the history of the earth beneath...

Animal tracks and signs

Whether you are trying to find wild animals for food or trying to know where they are so you can keep safely away from them, nature gives us many signs that can help us.

Animals not only leave footprints or tracks, they usually leave a tell-tale path. Animals often follow the same route when they hunt for food or make their way to the nearest water source. They also leave tell-tale signs that point to the places where they sleep and eat.

Footprint of a European Lynx on the mud

Animal tracks and signs

Snow cover is a very nice place to observe animal tracks

Animal tracks and signs

Most common animals' track and signs

Black Bear

Bear bite on tree

Black Bear Scat

Black Bear Footprint

Animal tracks and signs

Grey Wolf footprint

Grey Wolf scat can be easily distinguished from the dog scat by the presence of hair and bones

A typical footprint of European Hare

Animal tracks and signs

Sand is also a good notebook for observing tracks of light animals like birds (a magpie track on the sand)

Baby green sea turtle tracks are indicators of emerging season…

Animal tracks and signs

Animals are also indicators to make weather predictions. For example, the followings are the signs of a hard winter ahead

The Early Departure of Geese and Ducks

The Early Migration of the Monarch butterfly

Ants Marching in a Line Rather Than Meandering

Early Seclusion of Bees Within the Hive

Animal tracks and signs

In addition, you can also watch the animals to find water in the nature.....

Insects can help point the way. Swarms of insects usually indicate that water is near. Look to the sky, especially in the early morning and the early evening, for flocks of birds. They may be heading to a body of water to drink, bathe, and find food.

Animal tracks and signs

People from as far back as 373 BC Greece, have reported that animals like rats, snakes, and insects flee their homes days before a large earthquake hits.

Caught on radar: Thousands of birds took flight minutes before Oklahoma earthquake

September 6, 2016 – Washington Post

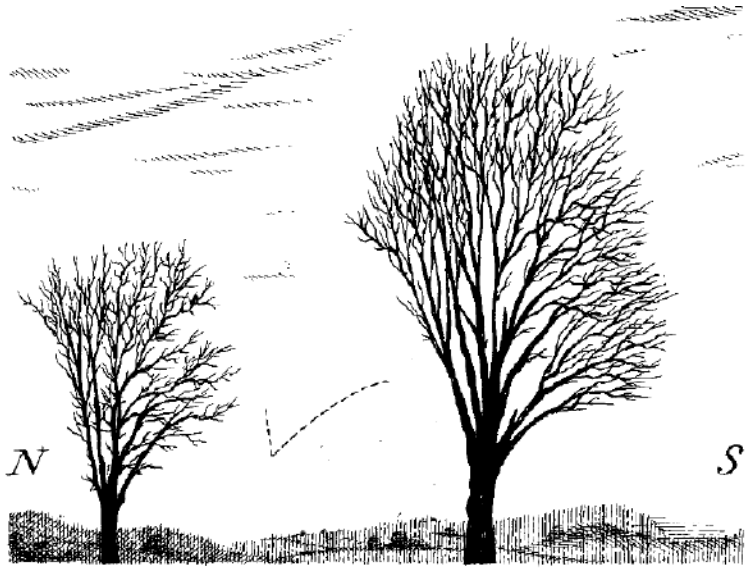
Plants and trees

The wedge effect

The growth of trees is altered by the wind, the more wind a tree has to tolerate the shorter and stouter it will grow.

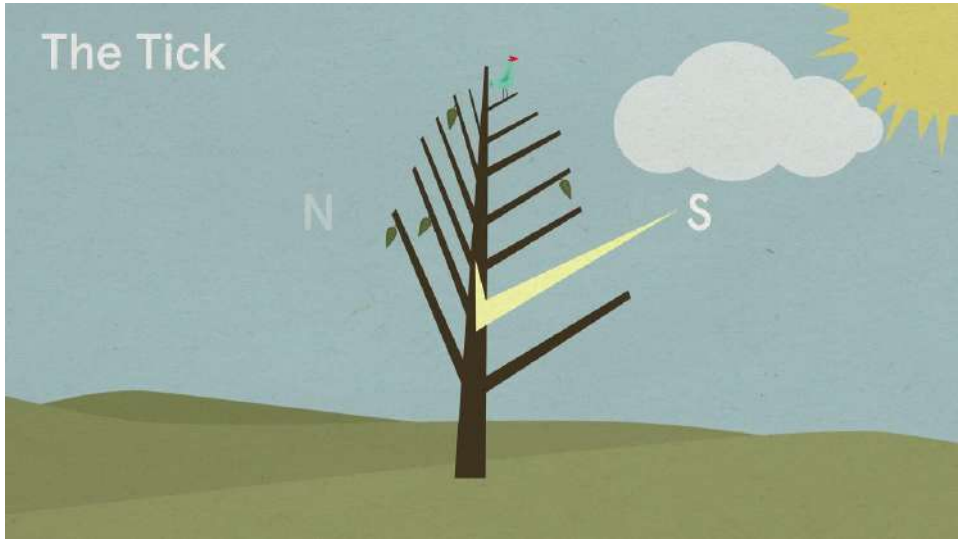
Plants and trees

You can easily find your way by looking at the trees

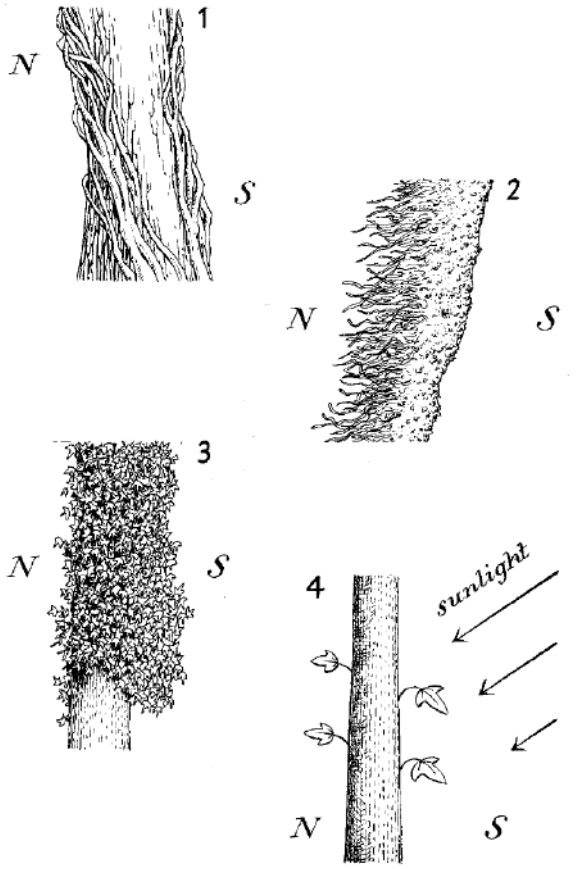


The thick effect

More branches grow on the south side of trees. The branches on the south side tend to grow toward the horizontal and the branches on the north side tend to grow more vertically.



Plants and trees



1. Juvenile ivy will grow away from light and can be found reaching round from the south side of trees to the north.

2. Ivy roots grow away from the light and can indicate north.

3. Mature ivy growing toward the light and heavier on southern side.

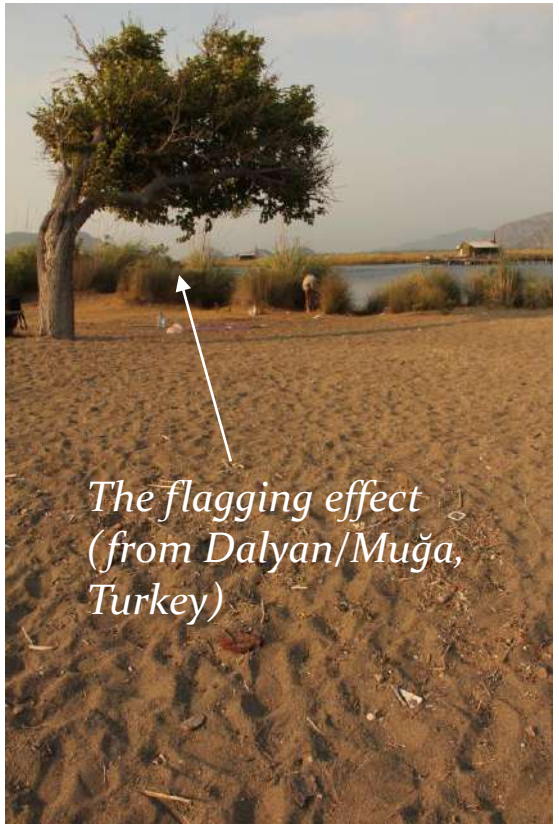
4. Leaves on the southern side tend to point a little lower than those on the northern side.

Plants and trees

Wind tunnel effect & the flagging effects

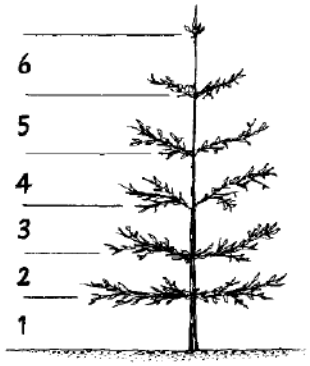
The prevailing winds have come from the right of the picture. Note the shape of the tree, but also the way more light gets through on the downwind side and the "lone straggler."

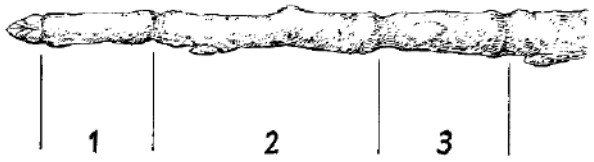
In this picture the surviving branches are pointing away from the prevailing wind.



Plants and trees

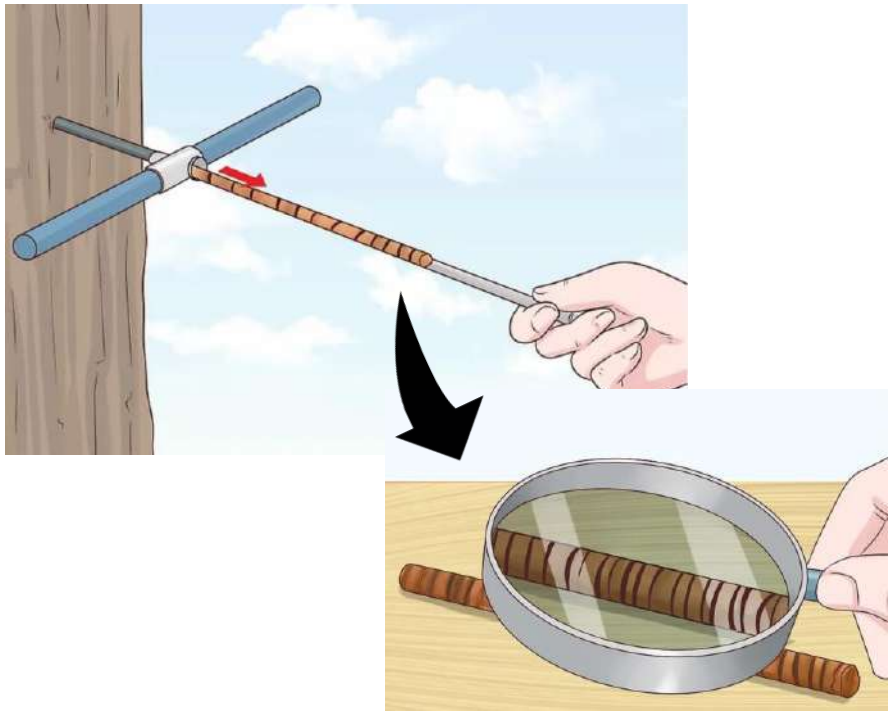
You can age a tree in different ways, where they leave annual growth signs





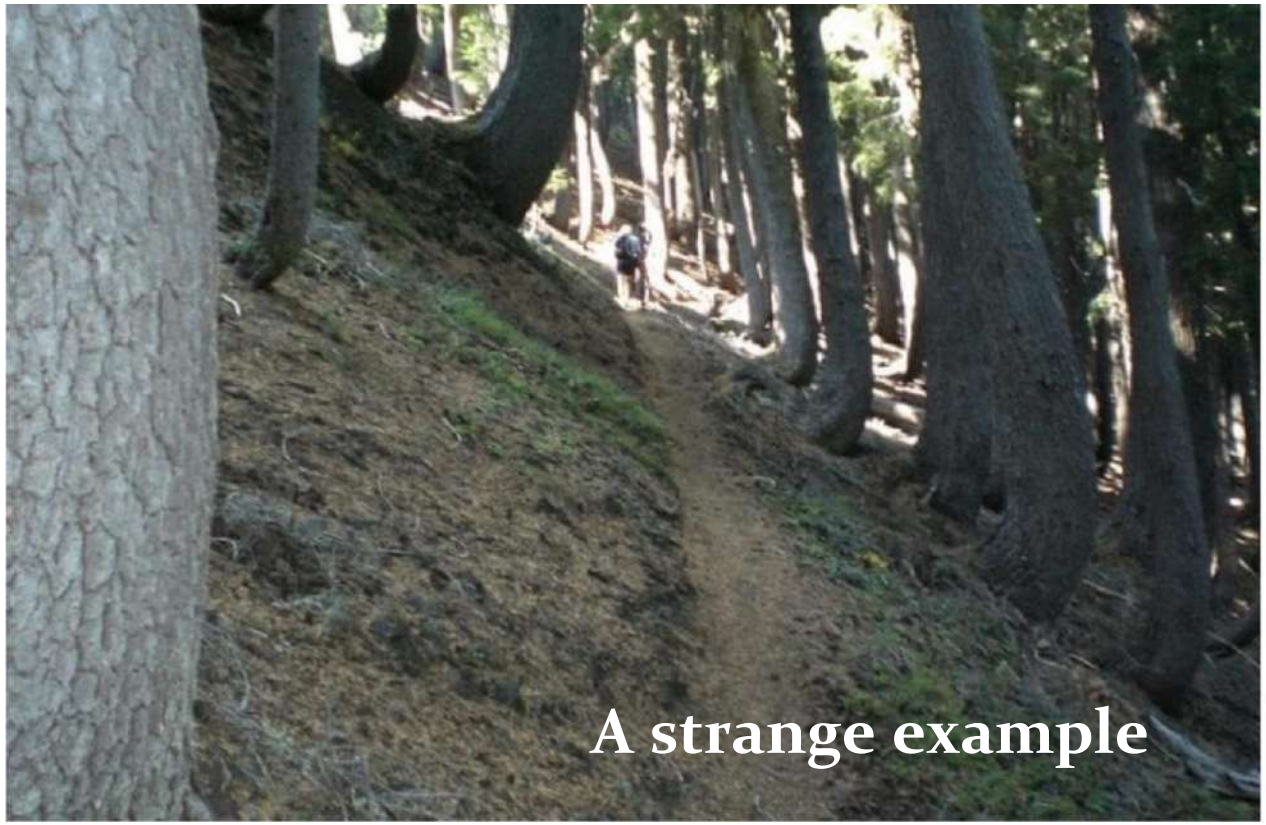
Conifers' whorls and bud scars reveal the annual growth in trees.

Counting the rings on a stump



Counting the rings on a core sample

Plants and trees



Beware of J-Shaped Trees

Here's an example of how striking can have a double entendre. Nature can be both eye-catching as well as dangerous at the same time. Have you ever been hiking in the woods and saw trees bent into the shape of a letter J? Well, if you survived to tell it, then you escaped a scary situation because these types of trees can be a sign of an upcoming **landslide**.

Plants and trees

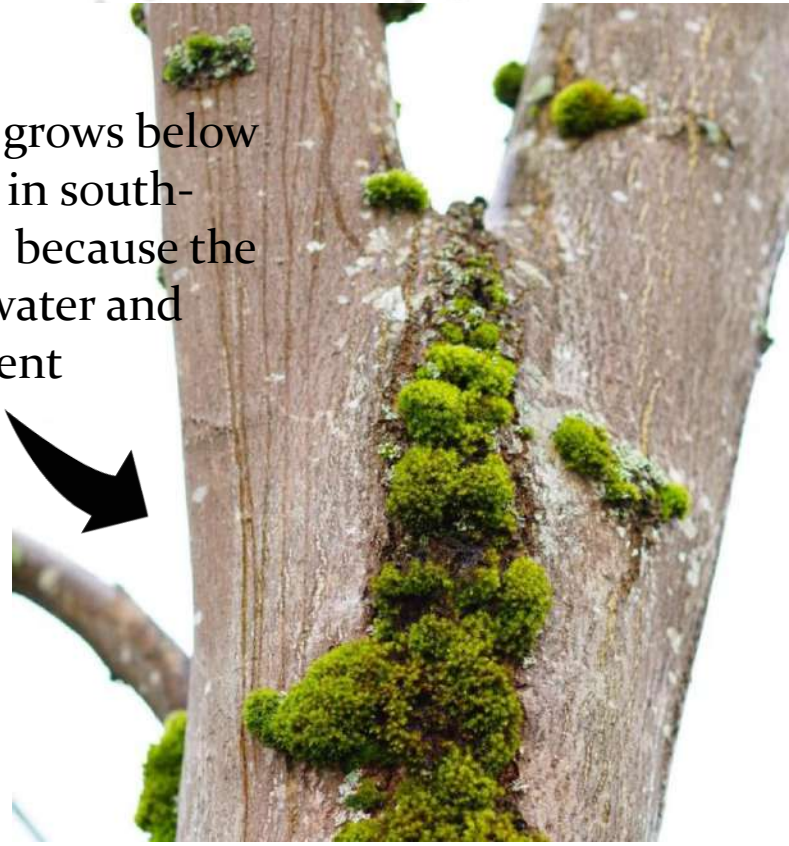
Flowering plants are great indicators of the change of seasons as thier own, most being very strictly periodical flowering pattern...

For example, Rosaceae trees or poppies announce the spring ahead and many crocus species (*Colchicum speciosum*) calling the winter...

Mosses, Algae, Fungi and Lichens

If you learn the trick that moss grows on the north side of trees, rocks and buildings then it may help you sometimes, but it will hinder you on an equal number of occasions. If, however, you learn that moss does not care about north or south, but thrives on moist surfaces, then your chances of finding direction accurately shoot up. Moss needs moisture to reproduce.

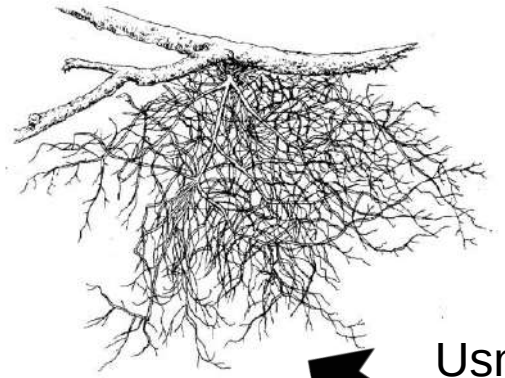
For example, Moss grows below forks in trees, even in south-facing sunny spots, because the forks channel rainwater and keep the environment moistured.



Mosses, Algae, Fungi and Lichens

Lichens are formed from both a fungus and an algae living in a partnership which enables them to survive in some of the hottest and coldest places on the planet. They are often the first living creatures to colonise bare rock and begin the process of breaking down rocks into soil that other plants start to grow in.

Lichens are widely used as environmental indicators or bio-indicators. If air is very badly polluted with sulphur dioxide there may be no lichens present, just green algae may be found. If the air is clean, shrubby, hairy and leafy lichens become abundant.



Usnea *lichens, a sign of fresh air.*

Mosses, Algae, Fungi and Lichens

There are fungi that indicate past fires, the pine firefungus and the bonfire scalycap being the two most helpfully named ones.

The ground

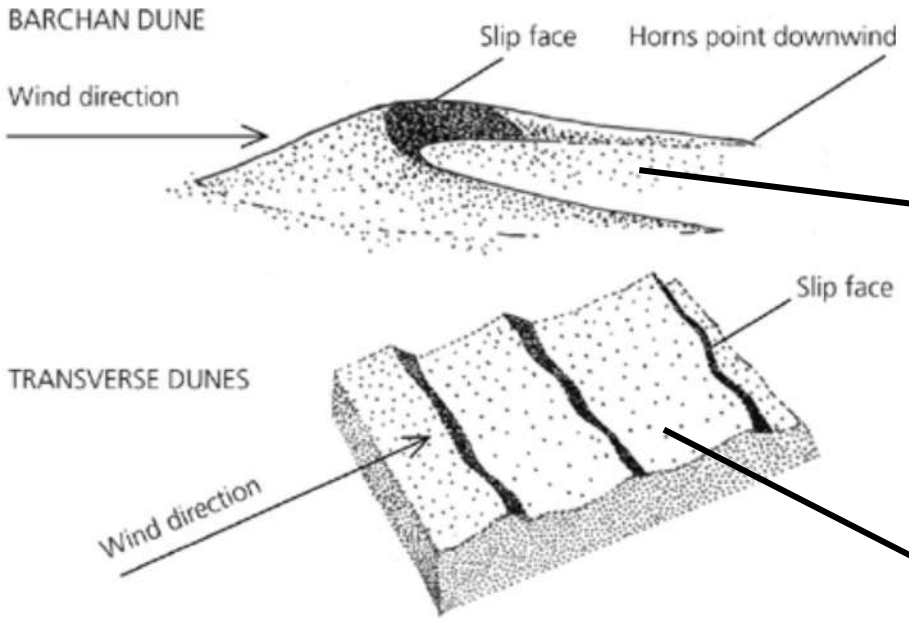
Reading rocks and ground is, in a way, reading the autobiography of the Earth

Every single layer in stratified ground is a remnant of different times that tells us about the history of that part of the Earth...

The ground

The volcano rocks announce an (hopefully) ancient volcano around

The ground



Some sand dunes yield clues to the prevailing wind direction.


Reading Marine Ecosystems


Marine Signs

Physical signs

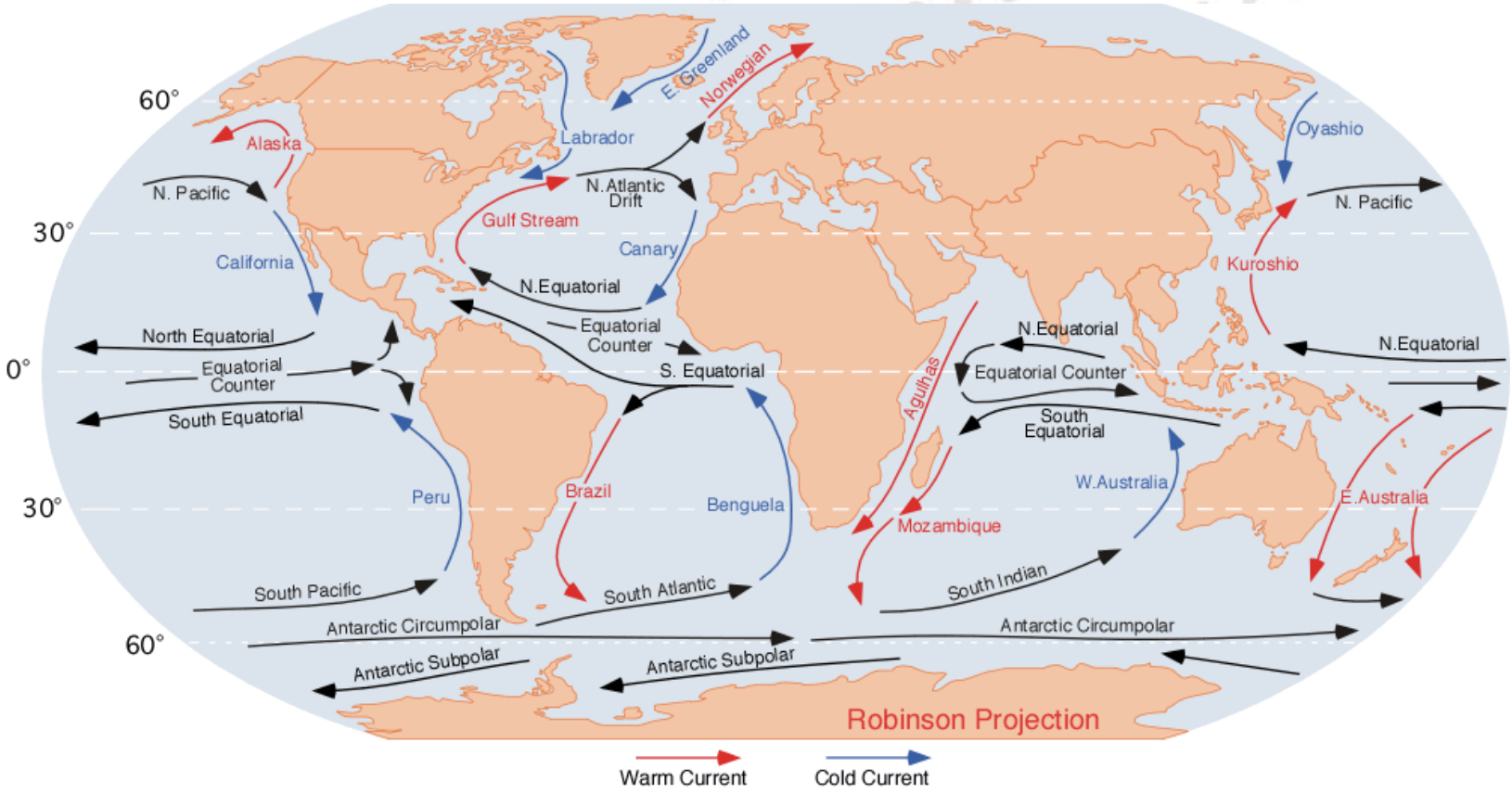
Biological signs

Reading the signs of marine ecosystems include those associated with physical events (e.g. tides, currents and waves) and biological components (e.g. track and signs of animals and plants)

Physical signs

Ocean Currents

Ocean currents are the continuous, predictable, directional movement of seawater driven by gravity, wind (Coriolis Effect), and water density. This abiotic system is responsible for the transfer of heat, variations in biodiversity, and Earth's climate system.



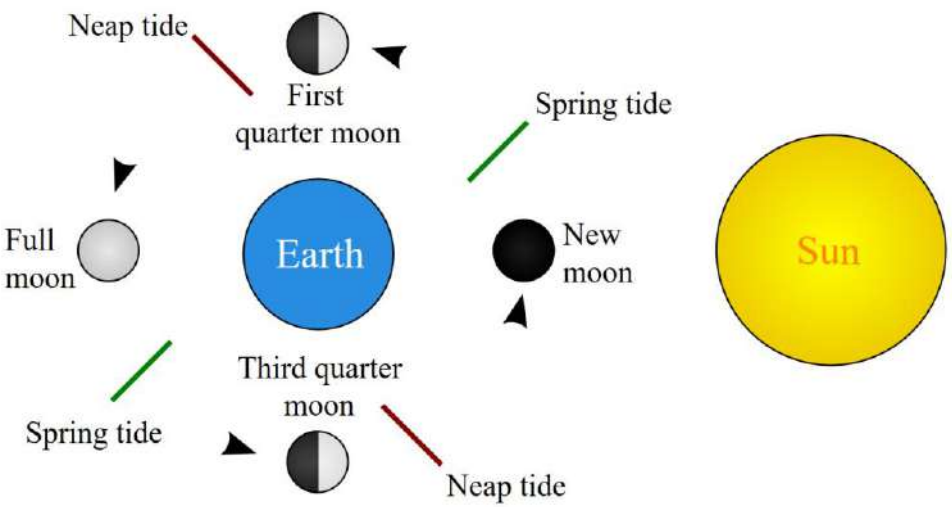
Physical signs

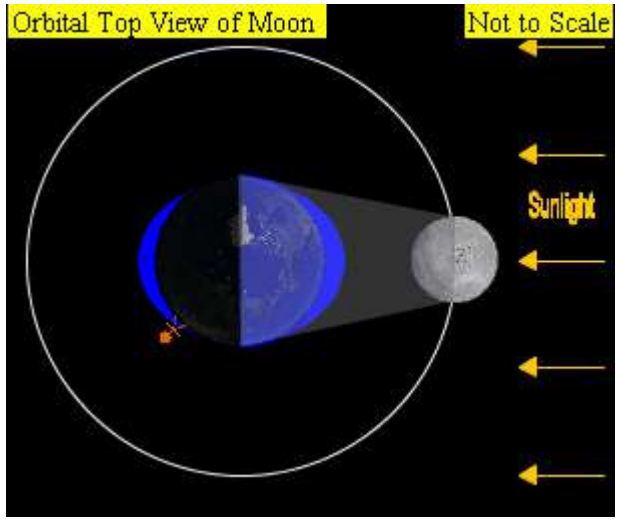
This strange rectangular shaped waves occur when two wave systems run into each other. One of the wave systems continued despite the shifting of wind which creates what's called a "cross sea." And as interesting as they look, cross seas are highly dangerous for boats, surfers, and swimmers.

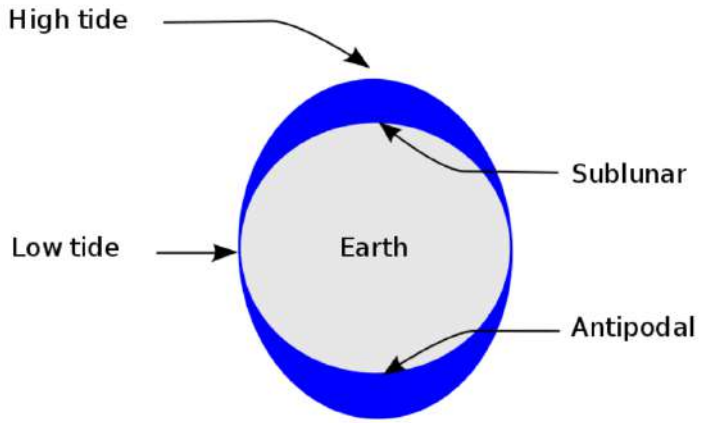
Physical signs

Tides

Tides are the rise and fall of sea levels caused by the combined effects of the gravitational forces exerted by the Moon and the Sun, and the rotation of the Earth.





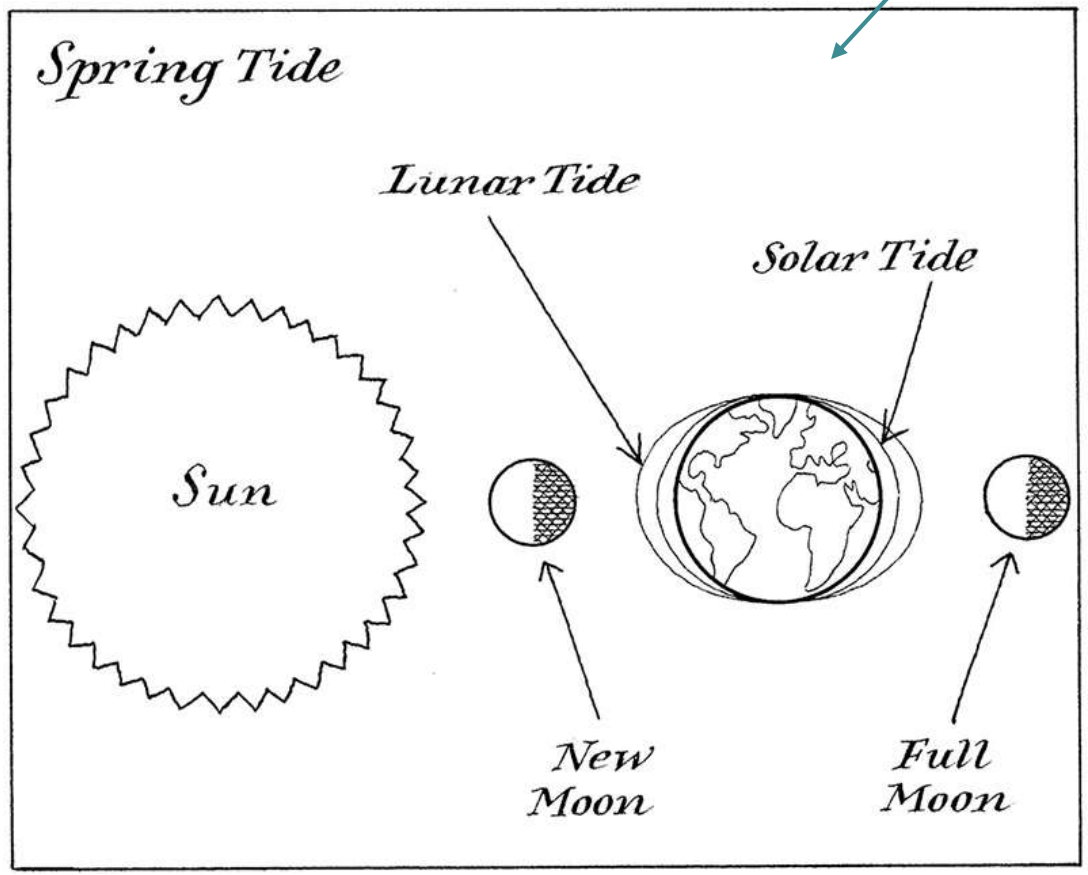


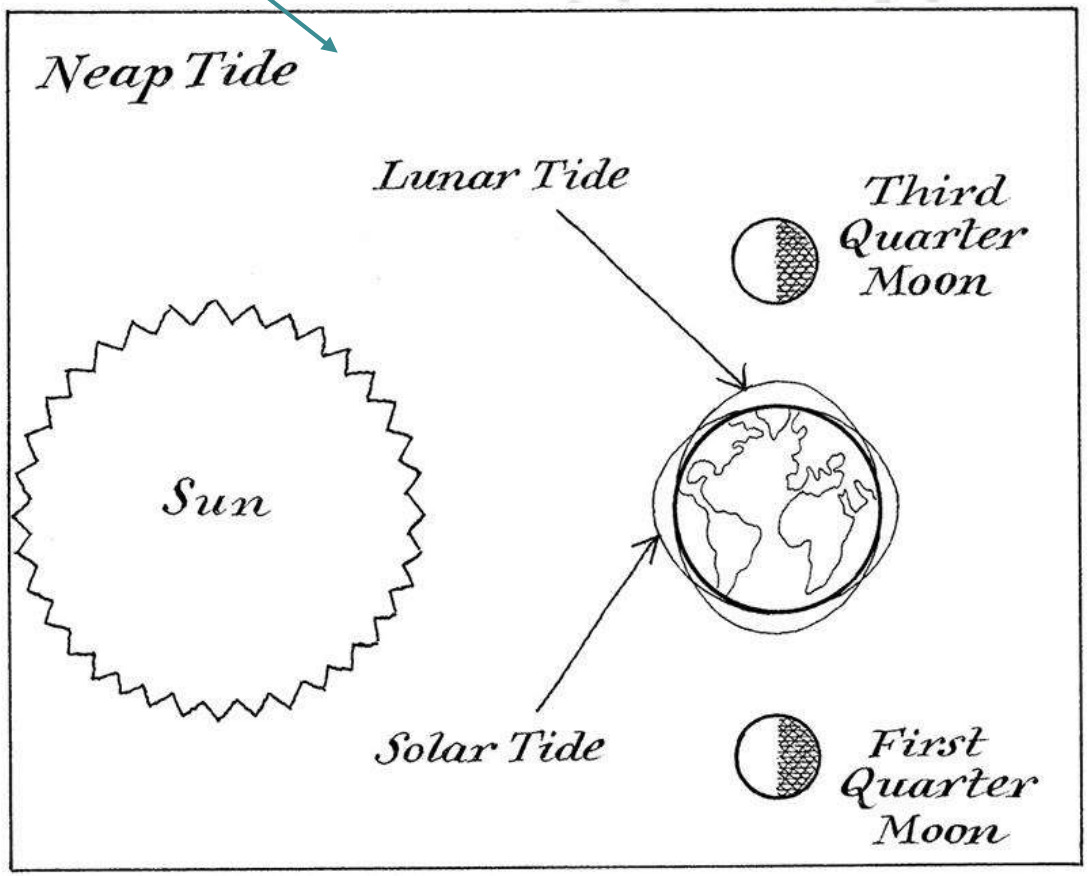
Simplified schematic of only the lunar portion of Earth's tides, showing (exaggerated) high tides at the sublunar point and its antipode for the hypothetical case of an ocean of constant depth without land.

Physical signs

A simplified schematization of Spring and Neap Tides

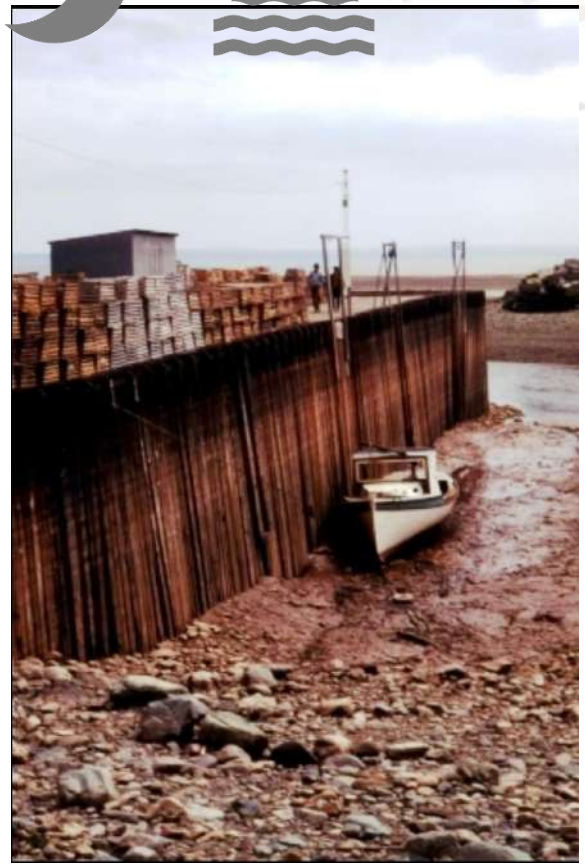
Tides



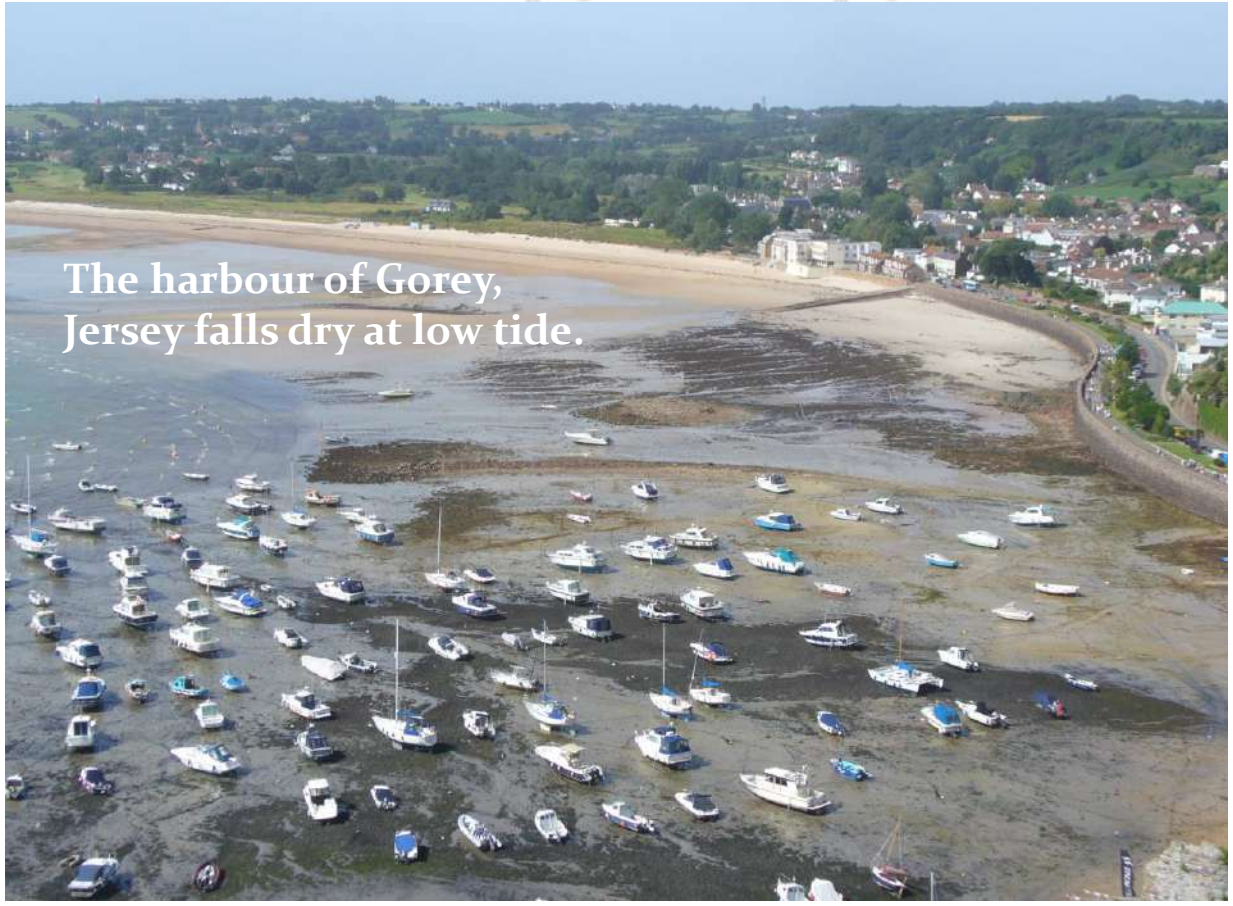


Physical signs

High tide, Alma, New Brunswick, Canada in the Bay of Fundy, 1972



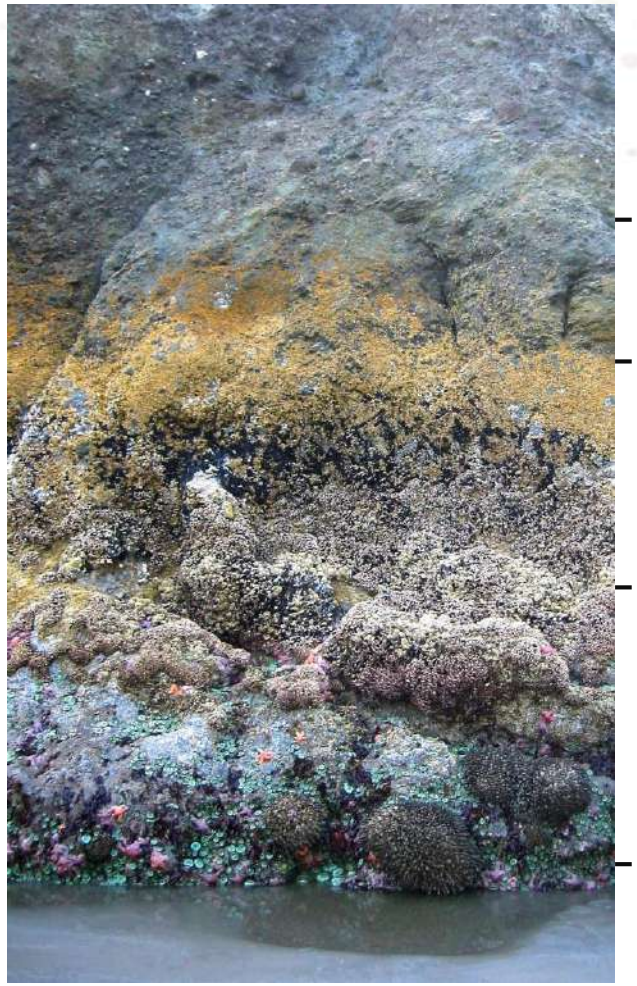
Low tide, Alma, New Brunswick, Canada in the Bay of Fundy, 1972



The harbour of Gorey, Jersey falls dry at low tide.

Physical signs

Tides



A little higher and the lichens turn grey; the crusty ones are *Lecanora* and the foliose ones, *Ramalina* and *Parmelia*.

Above this black band there are orange lichens, the Xanthoria and Caloplaca families.

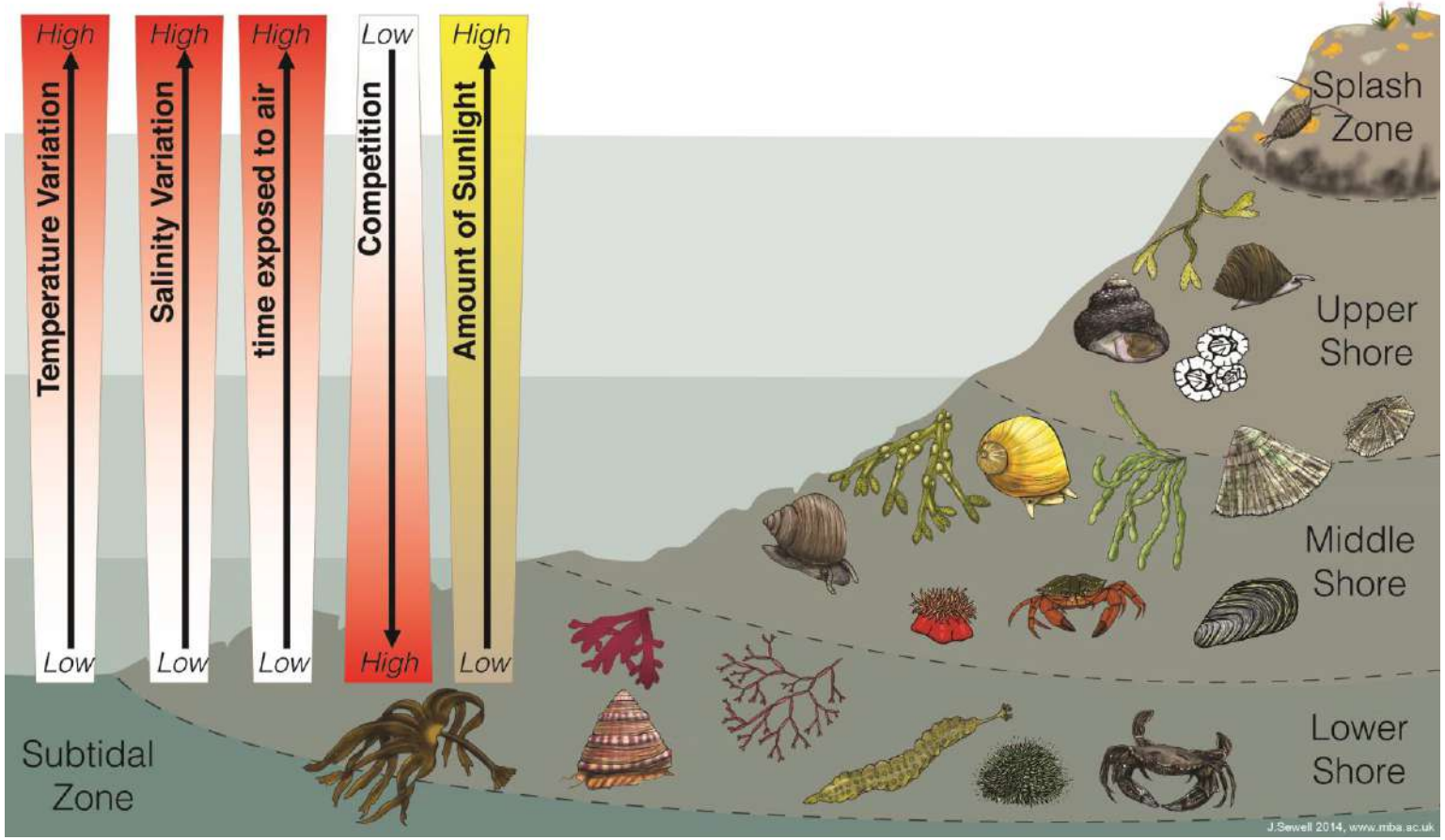
At the lowest level, on the rocks that are underwater at high tide, you will find a black, tar-like lichen, called *Verrucaria*.

The sign of the tides can be read by the lichen formations on the rocks

Biological signs

In ecological reading of the tides;

The area that exposed to tides (intertidal area) is important in ecological term that can harbour many lives having various strategies to cope with high and low tide conditions.

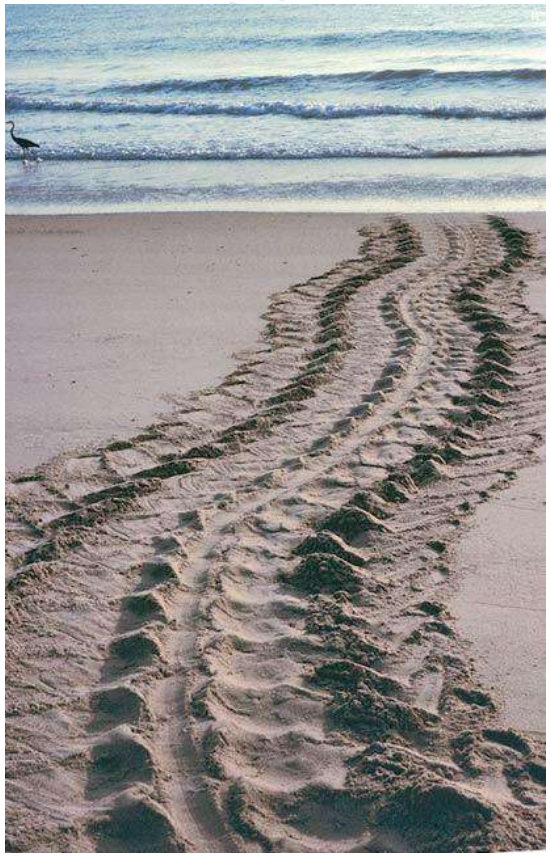


Biological signs

Animal track and signs in marine ecosystems

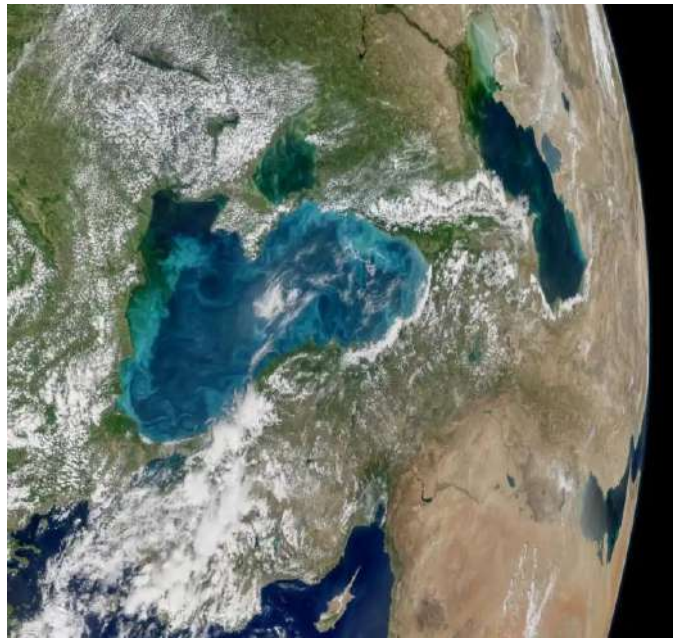
Sea turtles often left their tracks on the sand. And if you see a track of a sea turtle there is also likely a nest of her nearby.

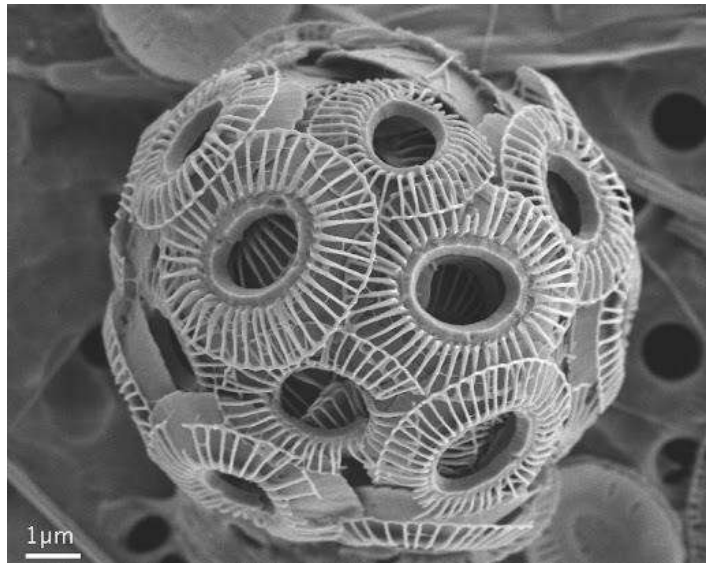
İf you see smaller tracks like these, then that means newly hatched babies are going to the sea...



Biological signs

The **turquoise color** stretches along the Bosporus to a large portion of the western Black **Sea**, which puzzled residents and raised questions about pollution. NASA explained that the **color** was caused by **phytoplankton**, single-celled microscopic organisms that make food from sunlight and nutrients in the **water**. The specific name of this organism is *Emiliania huxleyi*





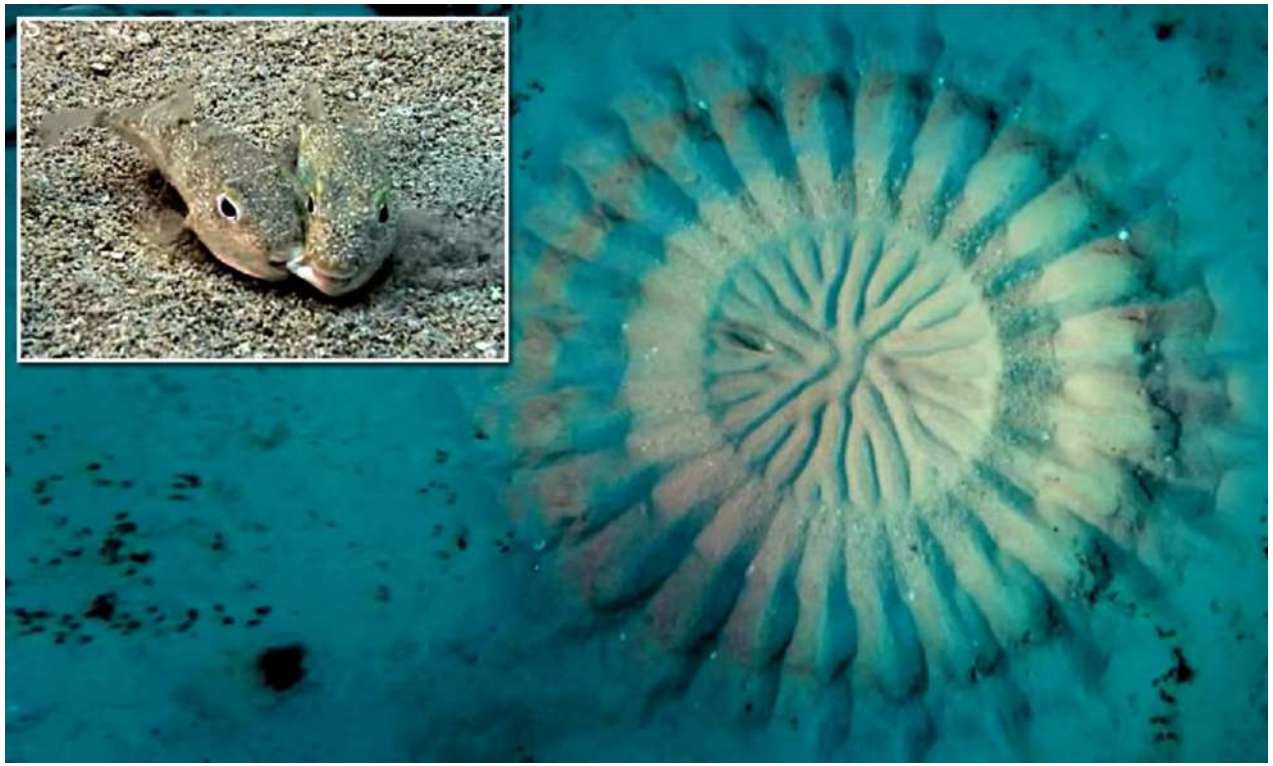
Emiliania huxleyi

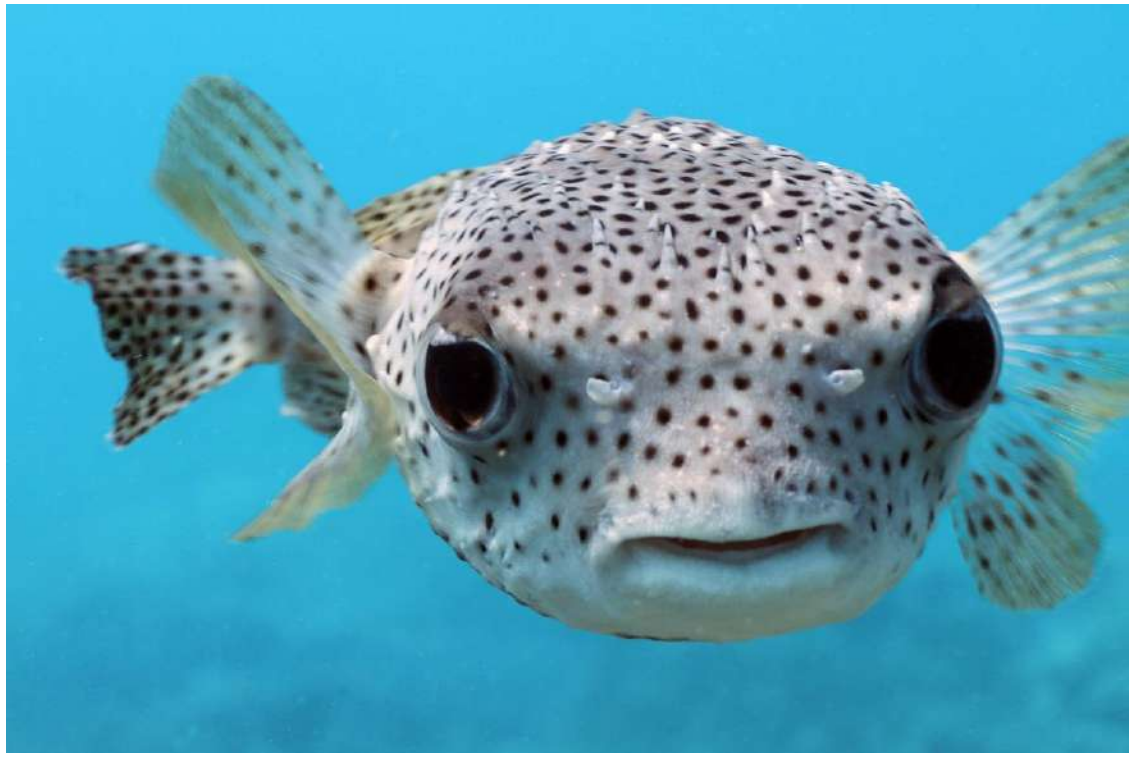
Biological signs

Seeing a bunch of sharks swimming together can be frightening for obvious reasons, but there may also be a reason other than potentially wanting to eat you. If you ever see sharks swimming deeper down in the water, it could be a sign that a hurricane or tropical storm is on its way.

Biological signs

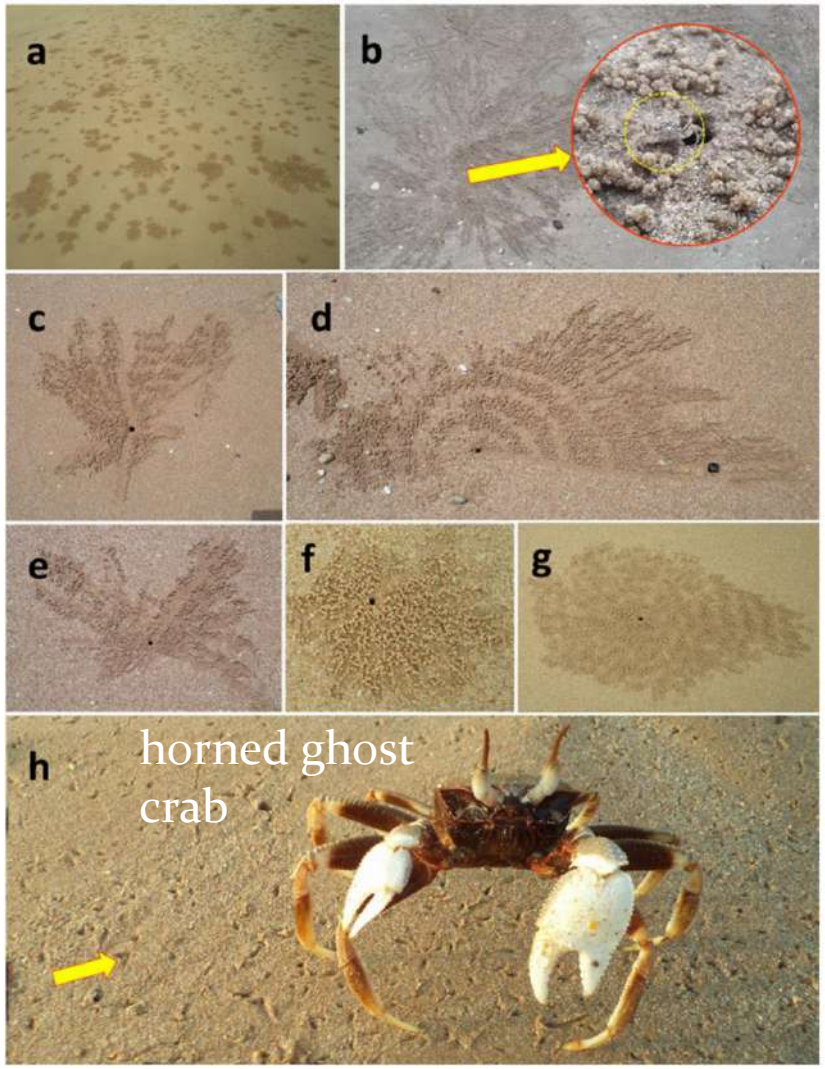
Animal track and signs in marine ecosystems





A typical nest of puffer-fish, making their sign on the seabed

Biological signs

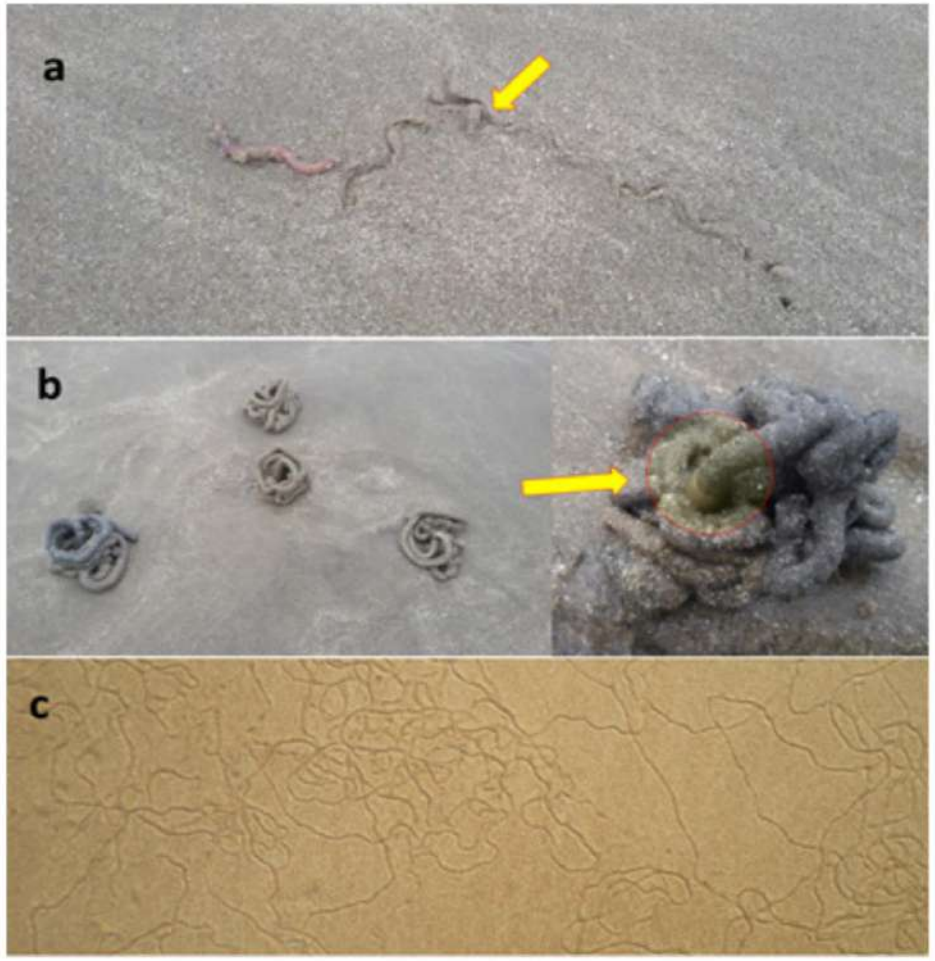


Sand bubbler crab *Scopimera* sp. making different artistic designs around its burrow with small sand pellets (a-g)

&

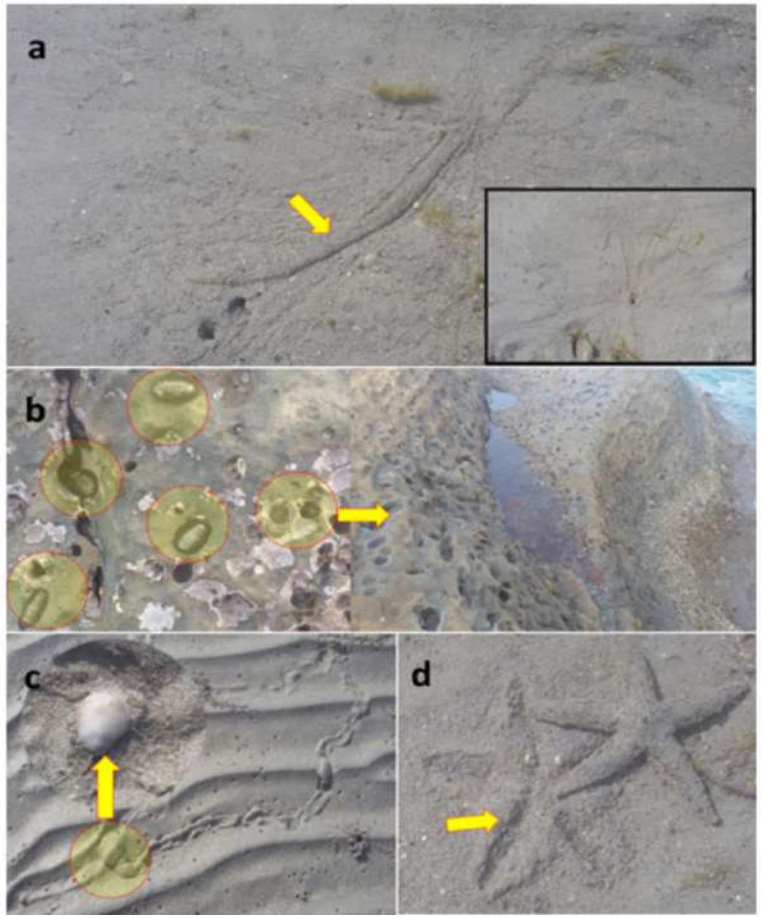
A horned ghost crab, *Ocypode ceratophthalma* leaves irregular foot signs on shore (h).

Biological signs



An unidentified marine nematode worm tracks (a); Defaecated sediment of lug worm (b); (c) Unidentified marine worm tracks

An unidentified worm signs around its burrow during foraging; (b) These holes on rock are due to large number of chitons; (c) Foot track of albino moon shell Polynices mamilla; (d) Body impression of starfish *Archaster typicus*.



Biological signs

Once you give your eyes on the sea snail tracks, you will recognize a great number of tracks and signs on the sand...

Biological signs

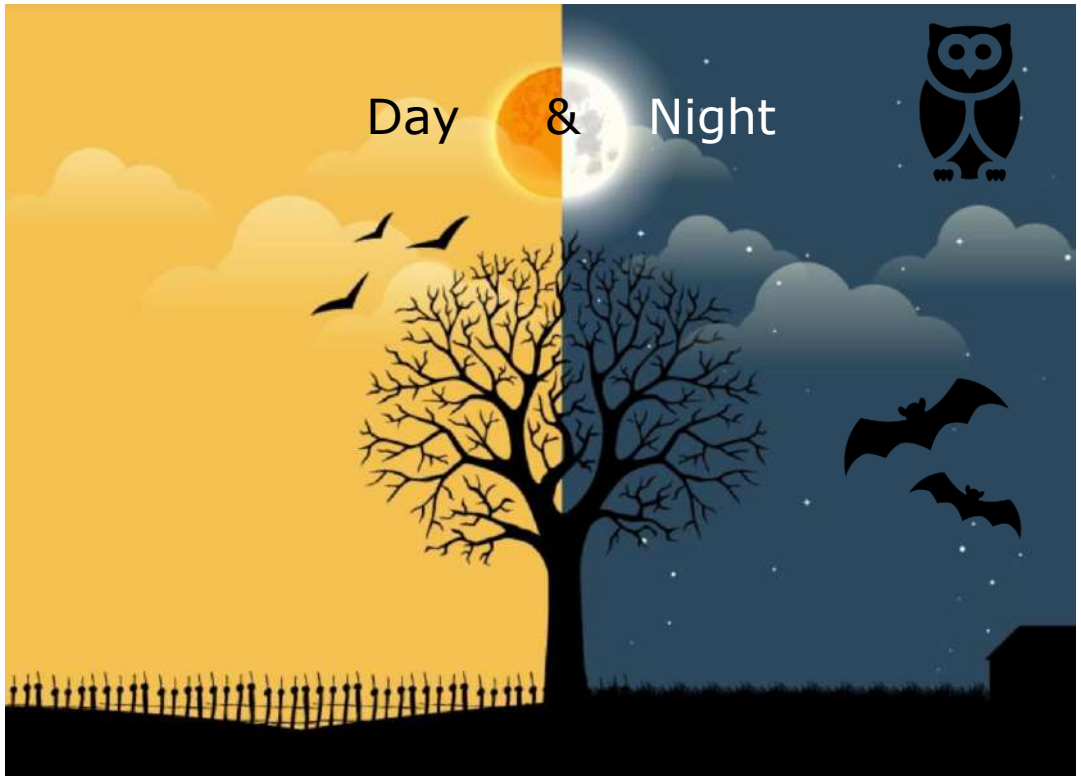
A coastal walk is a chance to see a lot of track and signs of animals

Biological signs

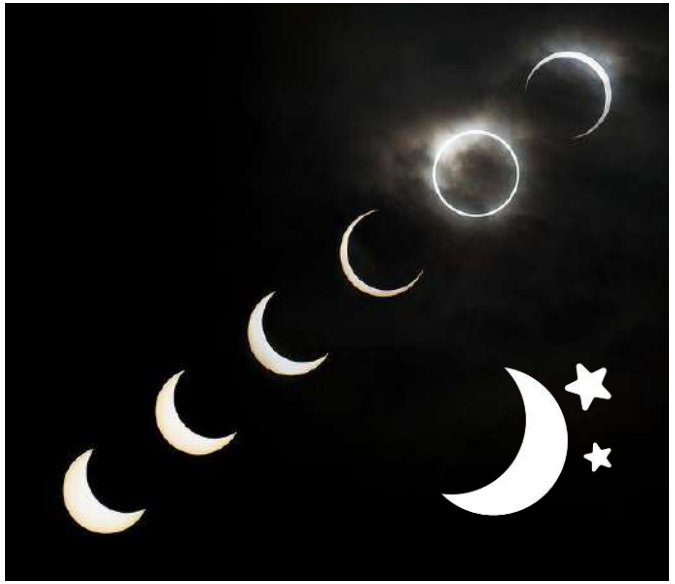
And the human being...

Reading Sky

Moon phases



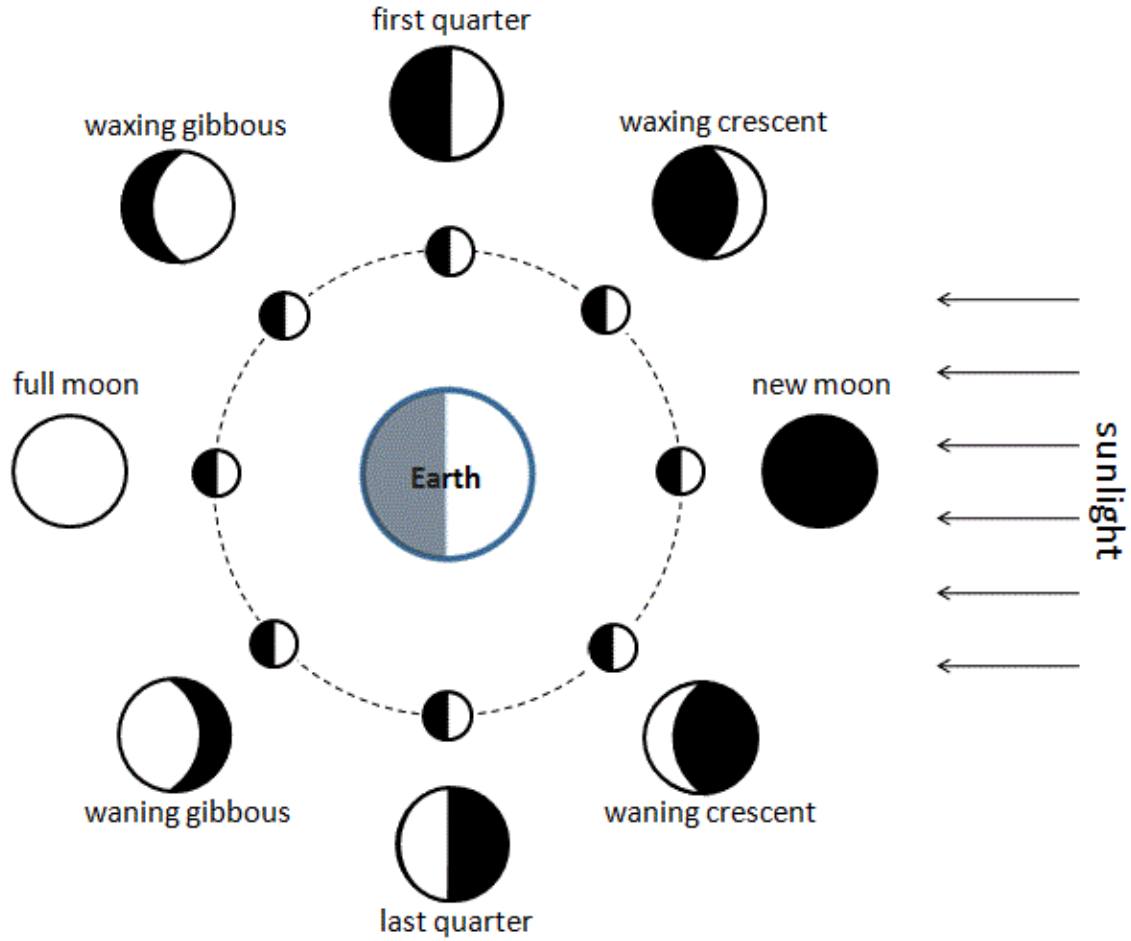
Solar eclipse



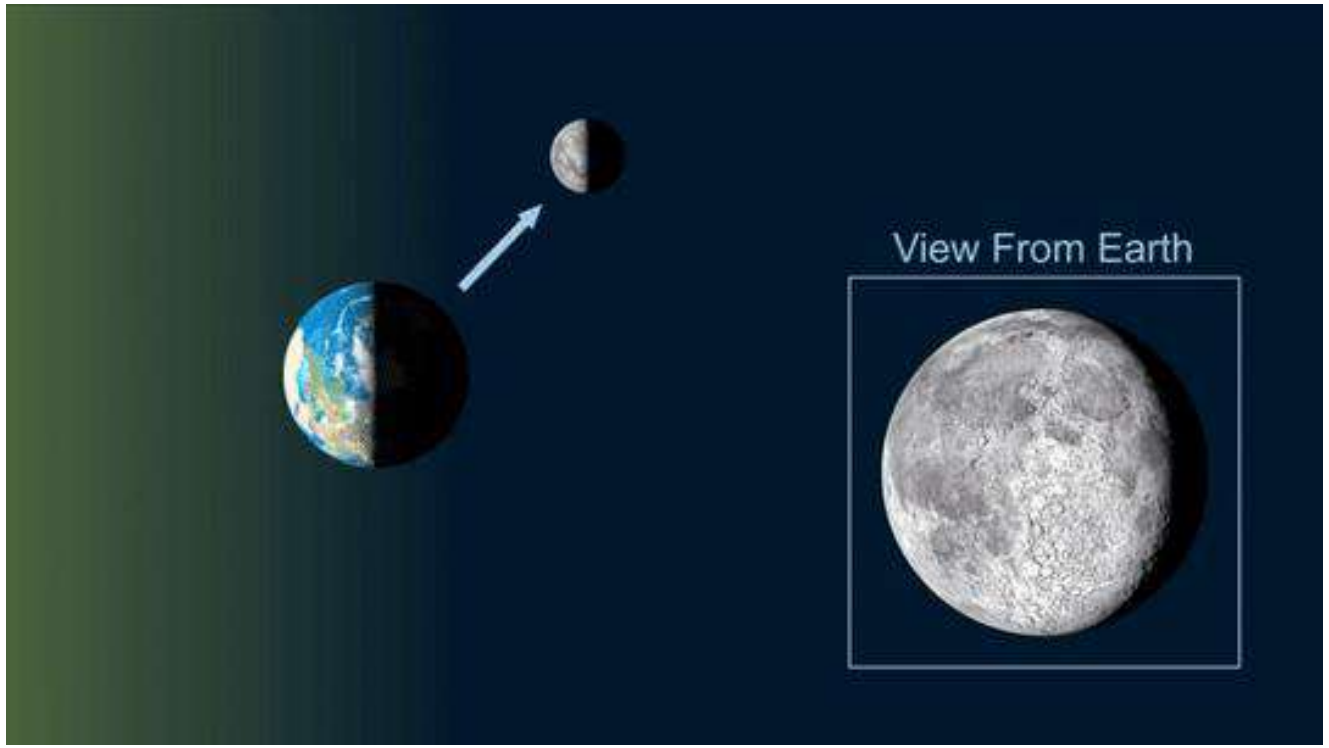
Moon phases

The Moon phase or lunar phase is the shape of the directly sunlit portion of the Moon as viewed from Earth.

The lunar phases gradually change over the period of a month as the orbital positions of the Moon around Earth and of Earth around the Sun shift.



Moon phases



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

The Moon's cycle of phases repeats about every 29 ½ days, with the cycle shown here from a new moon on Day 1 to the next new moon on Day 30.

Solar & lunar eclipses

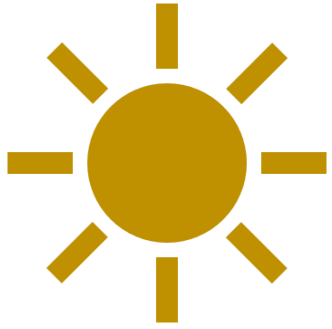
An eclipse is an astronomical event that occurs when an astronomical object or spacecraft is temporarily obscured, by passing into the shadow of another body or by having another body pass between it and the viewer.

A **solar eclipse** occurs when the Moon passes in front of the Sun. During a solar eclipse, the Moon can sometimes perfectly cover the Sun because its apparent size is nearly the same as the Sun's when viewed from the Earth.

Lunar eclipses occur when the Moon passes through the Earth's shadow. This happens only during a full moon, when the Moon is on the far side of the Earth from the Sun.

Solar eclipse

A **solar eclipse** occurs when the Moon passes in front of the Sun. During a solar eclipse, the Moon can sometimes perfectly cover the Sun because its apparent size is nearly the same as the Sun's when viewed from the Earth.



Lunar eclipse

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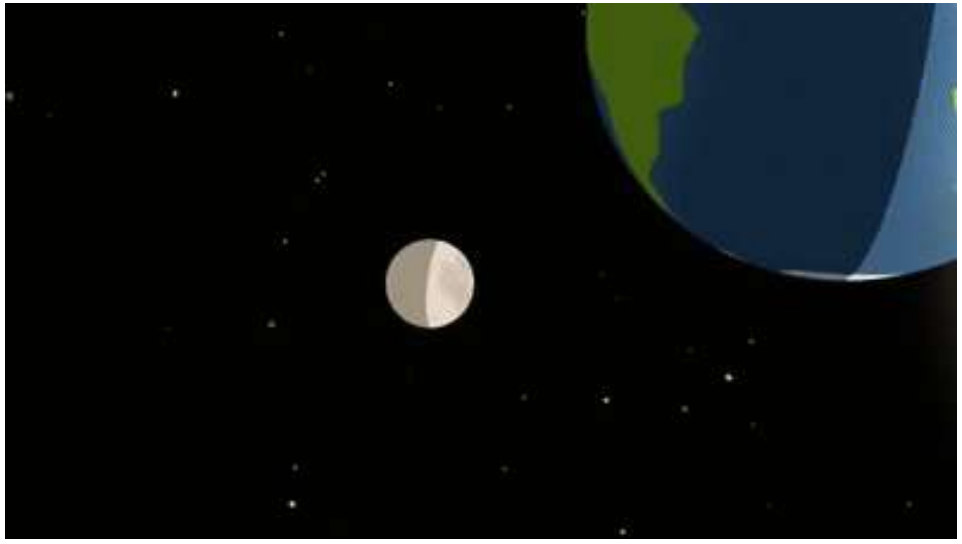
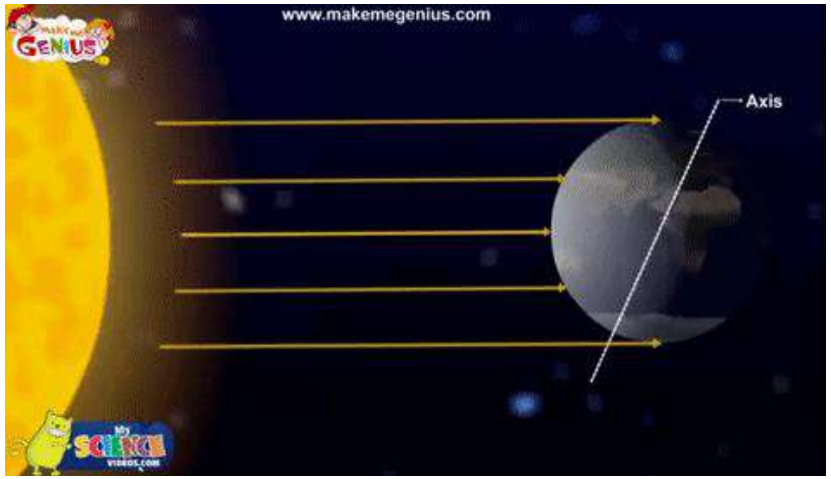


Day and night

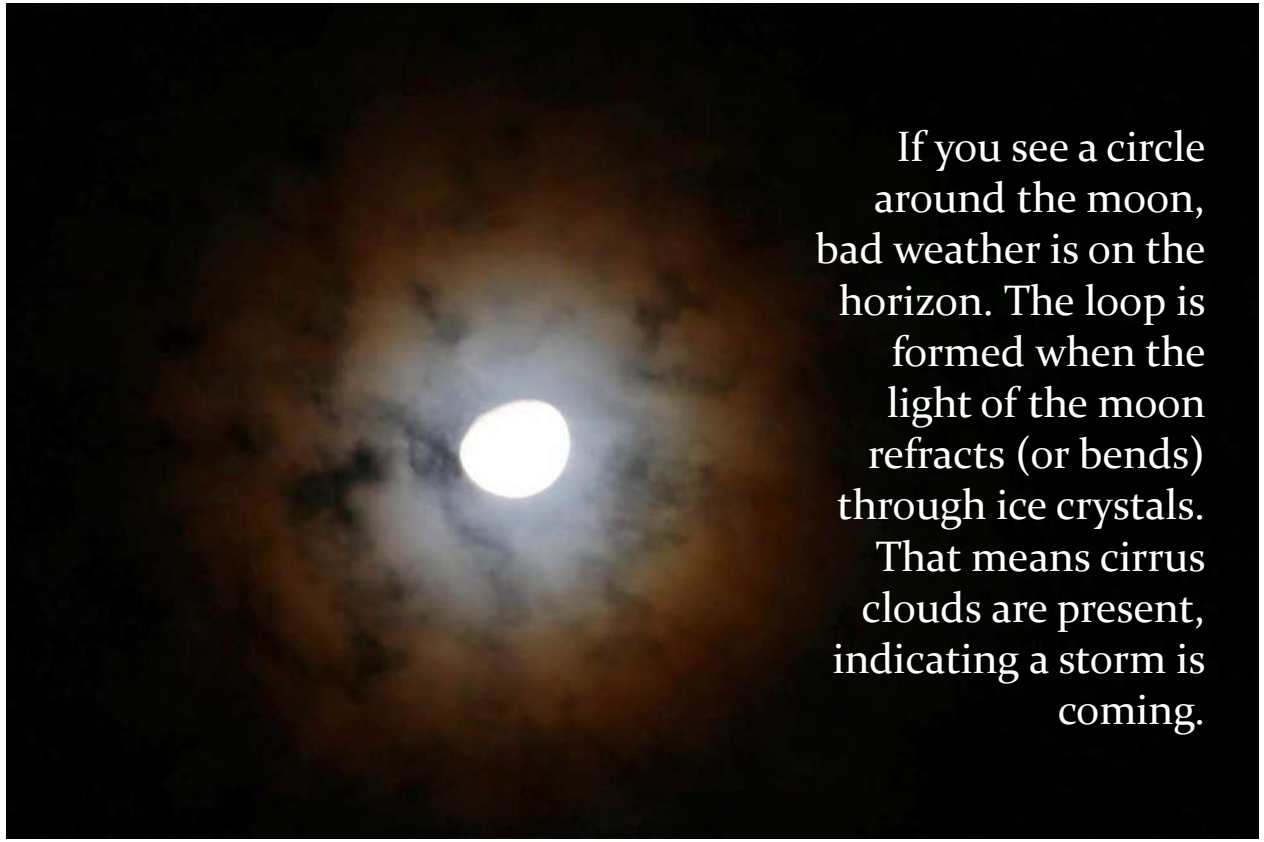
The **Earth** orbits the sun once every 365 days and rotates about its axis once every **24** hours. **Day and night** are due to the Earth rotating on its axis, not its orbiting around the sun.



Weather

"Red skies at night, sailors delight; red skies in the morning, sailors take warning."

This old saying makes good weather sense. If there is a pink sunset, the sun is shining on dust particles that are being pushed by a high-pressure system. This situation brings warm, dry air.
However, if the sunrise is red, it indicates that a low-pressure system likely is pushing moisture – and potentially winds. A storm will arrive soon.



If you see a circle around the moon, bad weather is on the horizon. The loop is formed when the light of the moon refracts (or bends) through ice crystals. That means cirrus clouds are present, indicating a storm is coming.

Weather

Like in the moon case…

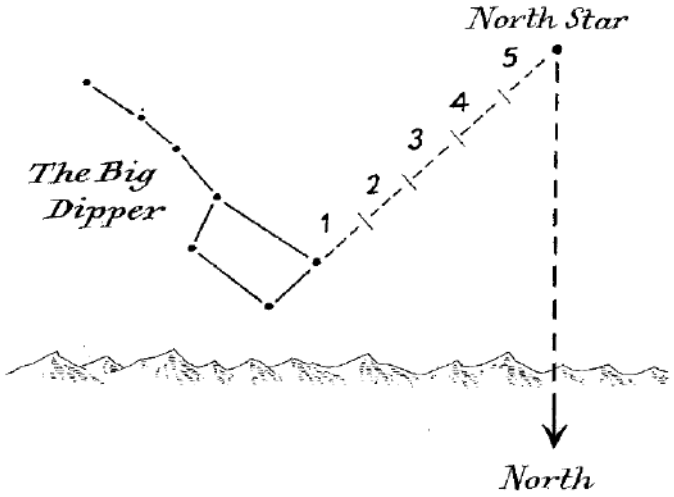
It’s something that happens when thin, soaring cirrus clouds float above you. These clouds are made up of small ice crystals that both split and reflect the light.

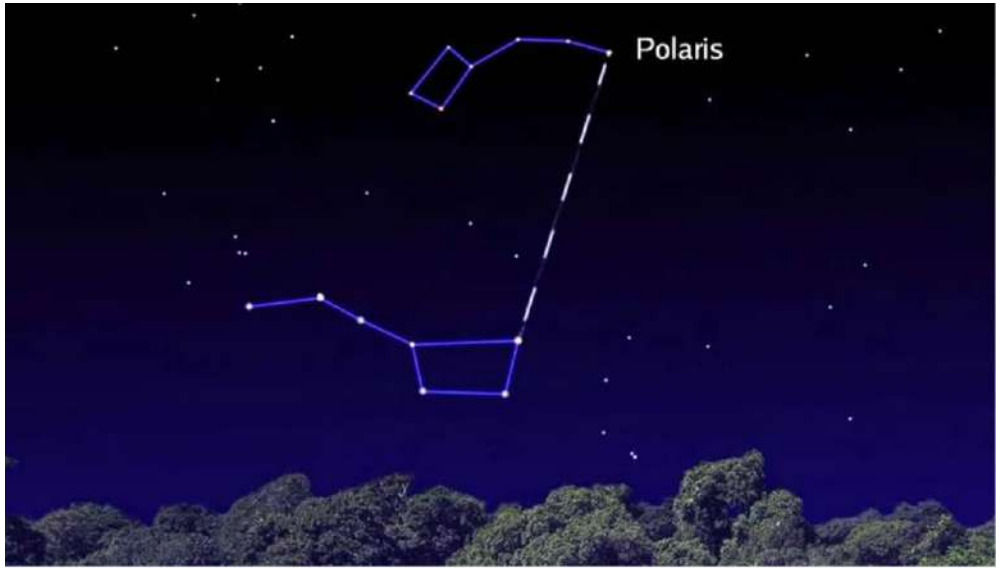
So what happens is the effect of a ring around the sun or moon. And remember that since cirrus clouds usually come before a storm, the ring may tell you that rain is on its way.

Stars

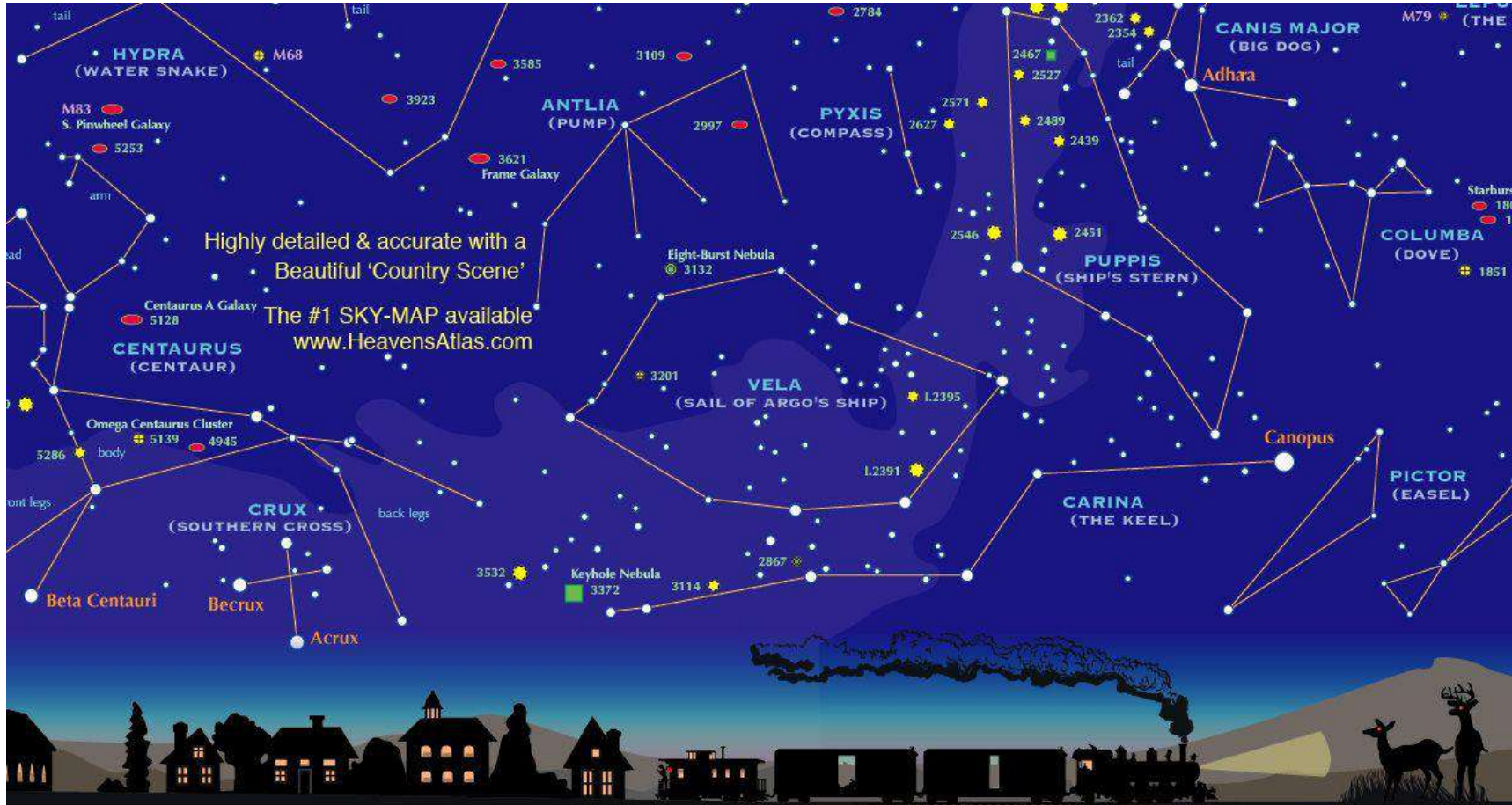
You can navigate by the sky at night by finding the ***Ursa Major*** constellation (also known as the Great Bear, the Wagon, the Plough, and most commonly, the Big Dipper).

About five times the distance of Ursa majo imaginary line, you can find the famous North Star (or Polaris or Pole star). The most important two things about this star are that it can be seen due north from everywhere in the northern hemisphere and it does not move in the night sky.





Here is a simple constellation atlas for those who willing to start stargazing…

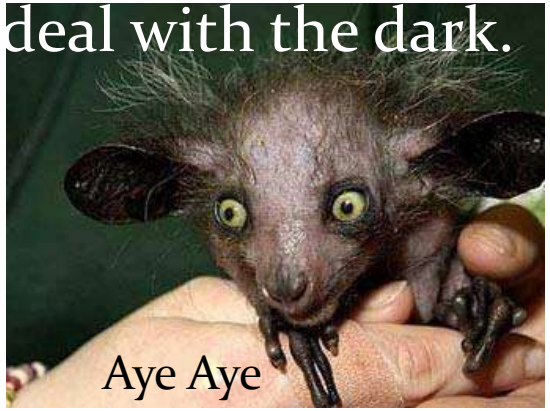


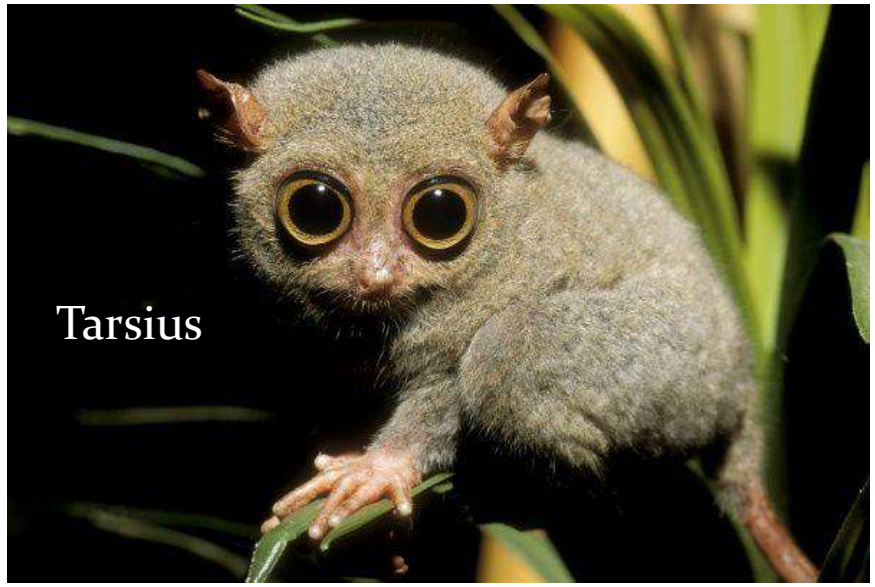
Nocturnal Animals

Nocturnality is an animal behavior characterized by being active during the night and sleeping during the day. The common adjective is "nocturnal", versus diurnal meaning the opposite. The most famous nocturnal animals are the bats and the owls...But lets see also more other less known examples of nocturnal animals.

Nocturnal Animals

Nocturnal animals generally have highly developed senses of hearing, smell, and specially adapted eyesight with **large eyes** to deal with the dark.



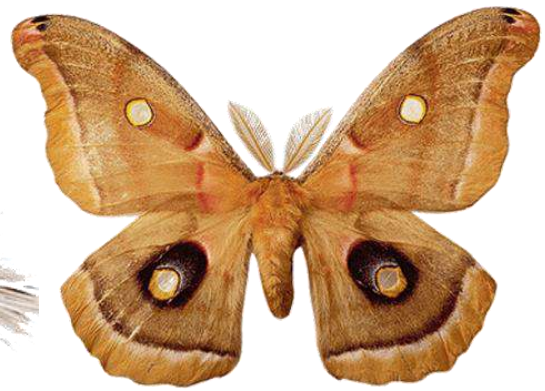


Nocturnal Animals

Many mice,

Porcupine,

Moths &



Raccoons are real nocturnals

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Visit & Observations in Zoo, Factory Farms & Animal Shelters, Understanding the Captive Animals Feelings, Observing them.

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Visit & Observations in the Zoo

Zoo (zoological garden ; an animal park or menagerie) is a facility in which animals are housed within enclosures, cared for, displayed to the public & in some cases bred. Zoos are designed to look after wild & domestic animals.

Source: https://unsplash.com/photos/ttpNCevA1tA

Visit & Observations in the Zoo

The purpose of a well-organized zoo is to introduce animals to people they do not know & at the same time to raise animal species closest to nature. Sometimes zoos help to protect endangered species & some species even live only in zoos in the world.

Source : https://unsplash.com/photos/SOnWbGD1jfs

Visitor Rules & Safety Tips at the Zoo:

- Obey the safety rules at the zoos in order not to get injured & pay attention to the Warning Signs in the Zoo.
- Children under the age of 13 cannot enter the garden without a big parent & parents are responsible for the safety of their children,
- Bicycles, skateboards, skates, balls & balloons are prohibited in the zoo,
- Pets are not allowed inside the zoo,
- It is forbidden to have a picnic in the grass areas inside the zoo,
- It is forbidden to pollute with the water bottle, butts, cookie shells, food packages & nylon bags,
- Do not make noise so that the animals & other visitors in the garden are not disturbed,

Visitor Rules & Safety Tips at the Zoo:

- Taking photos with flash is prohibited,
- In the garden; Those who behave in a way that could harm the environment, people, animals or self, and those who pollute the environment will be taken out of the garden,
- For the sake & health of animals, it is forbidden to feed animals, do not give foreign materials & food to animals.

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Visitor Rules & Safety Tips at the Zoo:

- It is dangerous & forbidden to overcome the fence surrounding the animal shelters, sit on the fence, contact animals from cages, hit the windows, throw foreign matter into the shelters. Do not stretch yourself or arms into cages & do not try to touch the animals through the wires. Approaching to animals is dangerous and prohibited.

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Visit & Observations in the Zoo

There is a continuous argument about zoos, some says that zoos, where all kinds of needs of animals are met, are a paradise for animals, while others say that taking away the freedom of animals is the most cruel thing to do. The zoos also offer a unique environment for sociology & psychology studies due to their diversity. In fact, the existence of zoos is a result of the animal world hierarchy. By making observations at the zoo, people understand the world better.

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Visit & Observations in the Zoo

The zoo hypothesis has been developed based on this idea. If we humans can imprison living creatures with lower life forms than our own life form & make observations on them, can our planet be a giant zoo where people who are smarter & have higher life forms make observations & take holographic notes?

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Visit & Observations in the Zoo

On the other hand, freedom is the leading desire of consciousness. If the animals have reached a level of consciousness, then they will realize that they mustn't be imprisoned & they will try to escape & be free.

Freedom for Animals is a campaign to end the use of animals in entertainment, such as circuses, the pet trade & the audio-visual industry. (Wikipedia)

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LESSONS LEARNED FROM THE ZOOS!

- Zoos are not good places for the animals & they suffer in the zoos, animals must be left free in the nature, must sent back to their homes. They must not be prisoned!
- Zoos cause great suffering & stress to the captive animals.Animals in zoos are caged for life & deprived of the opportunity to develop & fulfill the full range of their interests & needs. They lose control over their lives & the environment they live in.

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Visit & Observations at the Factory Farms

Factory farms are places for raising animals to get food under extreme confinement to maximize agricultural profits. In addition to intense closure, usually, factory-intensive doses of abuse related to agriculture include hormones & antibiotics, a cage, beak trimming, tail placement, pregnancy packets & calf crates. Until slaughter, animals spend all their lives in these miserable conditions & their pain is unthinkable.

Although factory farming involves many brutal practices, it's not just these apps that are inconvenient. The use of food animal & animal products is contrary to animal rights.

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Visit & Observations at the Factory Farms

Animals are exposed to painful applications, such as castration, marking (causing third-degree burns), tail cutting & horn blinding, without any pain relief. Unfortunately, people who buy these foods, seeing meat, eggs & dairy products embellished with pictures of animals that run happily on the meadows, with reassuring articles such as "natural", "free circulation" & thinking that animals are treated well, are unfortunately wrong.

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Visit & Observations at the Factory Farms

In today's factory farms, thousands of animals are clicked into the shackles, wire cages, pregnancy chests & other incarceration systems in windowless dirt. These animals will never be bred by their families, they will never stand their feet in the ground, build their nests or do anything natural to them. They will never feel the sun on their backs, or they will never breathe fresh air until they are loaded onto trucks for cutting. Deprived of moving, they spend all their body energy to produce meat, eggs or milk for people to consume.

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Visit & Observations at the Factory Farms

At the end of their unhappy life, animals that do not die on the farm are loaded into trucks & sent to slaughter houses in all weather conditions, usually without food, water & rest, as applied by the same factory farms. There, he hangs upside down & his throats are cut, often while their consciousness is still open & struggling to escape. Some are still conscious when immersing in the boiling water of the hair removal tanks or when their bodies are disintegrated.

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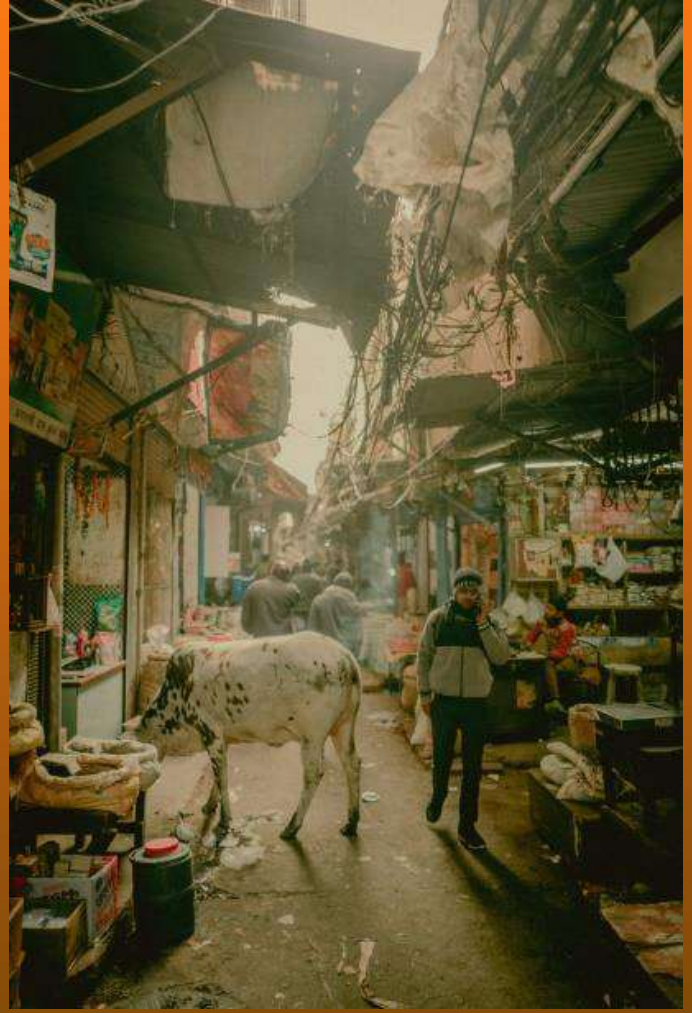

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Visit & Observations at the Factory Farms

The meat industry is "one of the most important causes of today's most serious environmental problems". Reports concluded that a transition to a global vegan diet is necessary to combat the terrible effects of climate change. Switching from standard meat nutrition to vegan nutrition is much more effective than switching from a standard car to a hybrid car. It is said that a meat-eating person is responsible for seven times more greenhouse gas emissions than a vegan-fed person. As a result; If you care about the environment, one of the most effective things you can do is to choose vegan nutrition.

Visit & Observations at the Factory Farms

Regardless of whether there is excessive use of resources, global warming, major air & water pollution or landslides, raising animals for food continues to cause great harm to the world. Bacteria that reproduce on meat & other animal products cause food poisoning, which is manifested by stomach cramps & symptoms ranging from diarrhea to organ failure, cancer & death.

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Visit & Observations at the Animal Shelters

An animal shelter or pound is a place that stray, lost, abandoned or surrendered animals, mostly dogs & cats & sometimes sick or wounded wildlife, animals are kept & rehabilitated. While no-kill shelters exist, it is sometimes policy to euthanize animals that are not claimed quickly enough by a previous or new owner. (Wikipedia)

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Visit & Observations at the Animal Shelters

Animal nursing homes are generally established with the support of animal rights advocates & animal lovers to provide a temporary place to shelter animals that are run by the state or private institutions, usually raised on the street, lost or excluded by their owners.

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Visit & Observations at the Animal Shelters

At these facilities, frightened animals are reassured, sick & injured animals receive treatment or a peaceful end to their suffering & the animals' living quarters are kept clean & dry. Animals who are accepted into no-kill shelters may be warehoused in cages for months, years, or the rest of their lives, becoming more withdrawn, depressed, or aggressive every day—further reducing their chances of adoption. Conditions at some no-kill shelters are criminal.

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Visit & Observations at the Animal Shelters

No shelter that truly cares for animals should ever turn its back on an animal in need, even when that means taking in animals who are diseased, badly injured, aggressive, or elderly. These animals have little to no chance of being adopted or helped by anyone else, but a responsible animal shelter should at least provide them with a painless release from a world that does not want them.

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Visit & Observations at the Animal Shelters

Most shelters will take every stray that arrives, but are forced to euthanize some animals when they become too full. A smaller number of shelters only accept limited numbers of animals but promise to care for them until they are adopted. These are called “no kill” shelters. Despite the name, though, these shelters will euthanize animals that are too old or ill to care for anymore.

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Visit & Observations at the Animal Shelters

There are also animal sanctuaries, which serve as refuges for homeless animals. These are usually large areas of land that house & care for dogs & cats, as well as for goats, cows, donkeys, pigs & other larger farm animals. Some animal sanctuaries even keep wild animals, such as lions & tigers. In many cases, animals will stay at a sanctuary for the rest of their lives without ever being adopted.

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Visit & Observations at the Animal Shelters

The people who work at animal shelters must do the same things most pet owners do to care for their pets. They give the animals food twice a day, make sure they have enough water, clean their cages, walk them, pet them & care for sick animals that need special medical attention.

It's also mandatory in many shelters to spay or neuter (surgically sterilize by removing the reproductive organs) all pets they accept. Shelters do this to prevent more unwanted animals from being born & ending up in shelters.

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Understanding How the Captive Animals Feel, Observing them.

- Animals are living creatures with their own unique existence, emotions & feelings in nature but unfortunately by the humans they are sold & turned into commodities. The place of these animals is nature, not a shopping mall.
- Animals are creatures that can be felt just like humans. Again, like us, people feel pain, they are affected by extreme heat & cold, & when they are imprisoned, they seek their freedom. It is for great pain to animals used in the food, clothing & entertainment sectors of animals & cosmetic experiments. We reject any such animal exploitation. We find it morally problematic for animals to be displayed in circuses, zoos, aquariums, & sacrifice to commercial ambitions.

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Understanding How the Captive Animals Feel, Observing them.

Existing laws are far from protecting animals. It was bought & sold like goods & used as a slave & was in accordance with the laws of that time. Today, such violence & torture against animals is still legal. The lawfulness of animal bondage does not reduce the suffering of animals, nor can it justify this brutal exploitation. The fact that animal exploitation is legal does not mean that it is moral.

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Understanding How the Captive Animals Feel, Observing them.

Animals are often prevented from doing most of the things that are natural & important to them, like running, roaming, flying, climbing, foraging, choosing a partner, & being with others of their own kind. Zoos teach people that it is acceptable to interfere with animals & keep them locked up in captivity, where they are bored, cramped, lonely, deprived of all control over their lives, & far from their natural homes.

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Lessons Learned from the Observations of the Animals

Investigation of numerous zoos across the country found several bear species exhibiting neurotic, stereotypic behaviors. These frustrated animals spend much of their time pacing, walking in tight circles, swaying or rolling their heads, & showing other signs of psychological distress.

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Lessons Learned from the Observations of the Animals

- The animals are far from their natural life,
- Zoos are bondage,
- Animals cannot express themselves,
- Zoos are the work of human selfishness,
- Circus is an environment of torture, not entertainment,
- Animals are given medicines they don't want,
- Animals are exposed to bad conditions when moving from their natural habitat,
- Animals are not our toys..

They have to be left to their Natural Life!

Lessons Learned from the Observations of the Animals

Industrialized Farm Animal Production causes global warming, degradation of land, increased greenhouse gas emissions, inefficiency in soils & water pollution & it is one of the most important causes of environmental problems such as air pollution & loss of biological diversity.

It may grow as fast as twice till 2050 in the developing world compared to other sub-sectors of agriculture. It is stated that these problems will continue to increase as long as the enterprises cannot change from intensive ones to traditional & extensively enterprises.

Lessons Learned from the Observations of the Animals

Today, for the supplement of the needs of increasing population & industrialization & urbanisation, the world is faced with global warming created by technological and chemical applications used to increase vegetative & animal production.

The reason for the increase in global temperature & greenhouse gas emissions is the human source. It is evident that global warming brings along economic, ecological & sociological problems.

Lessons Learned from the Observations of the Animals

Considering that approximately 2.5 billion people in developing countries earn their living from agriculture, it is clearly seen how much climate change will threaten human welfare & agricultural production.

Greenhouse gases such as CO_2, CH_4 & N_2O, which occur as a result of agricultural activities (energy consumption, vegetal & animal production, fertilization, drug use, etc.) are considered among the causes of climate change.

Animal farming must be done using the traditional & natural ways!

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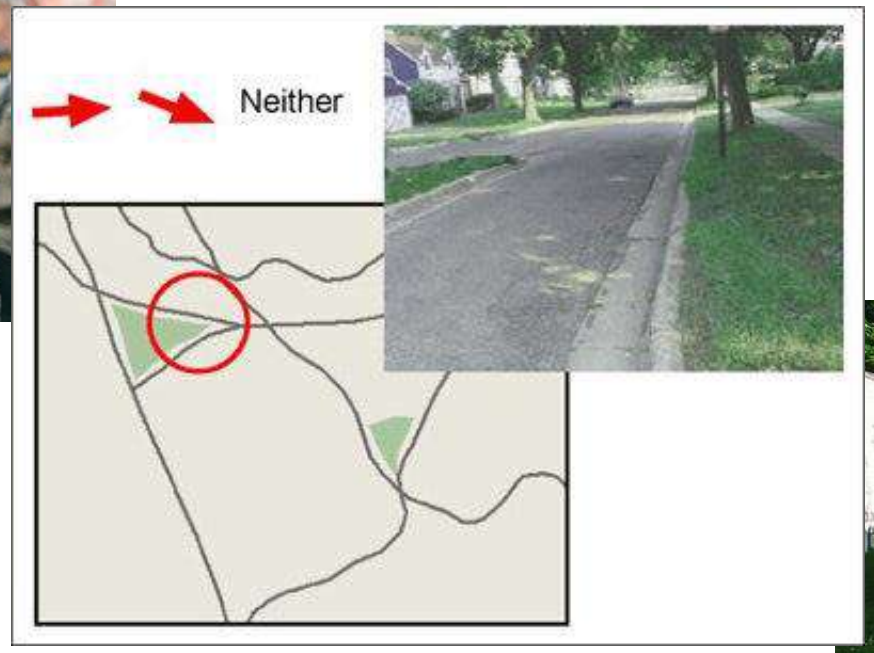
Map Reading



Which arrow, when applied to the map, indicates the perspective seen in the photograph?

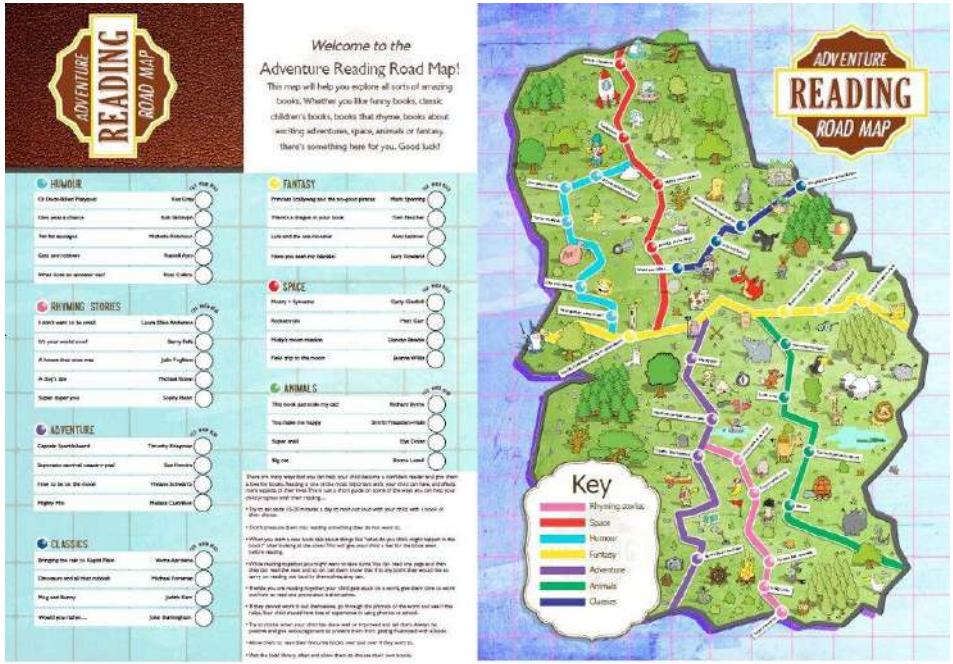
WHAT IS A MAP?

A **map** is a ***drawing or graphical representation of the land, as viewed from the air from a great height.*** This perspective is called the ***"aerial view"*** or ***"map view."*** As land bound creatures who usually walk across the land rather than fly above it, the map view is not the natural perspective for humans; rather, we have more of a "side view" of the land surface. Maps are useful because they illustrate specific and detailed features of a given area, region, or an object. They represent features such as boundaries, topography, physical features, climate, and even economic activities (1).

TYPES OF MAPS

There are different kinds of maps:

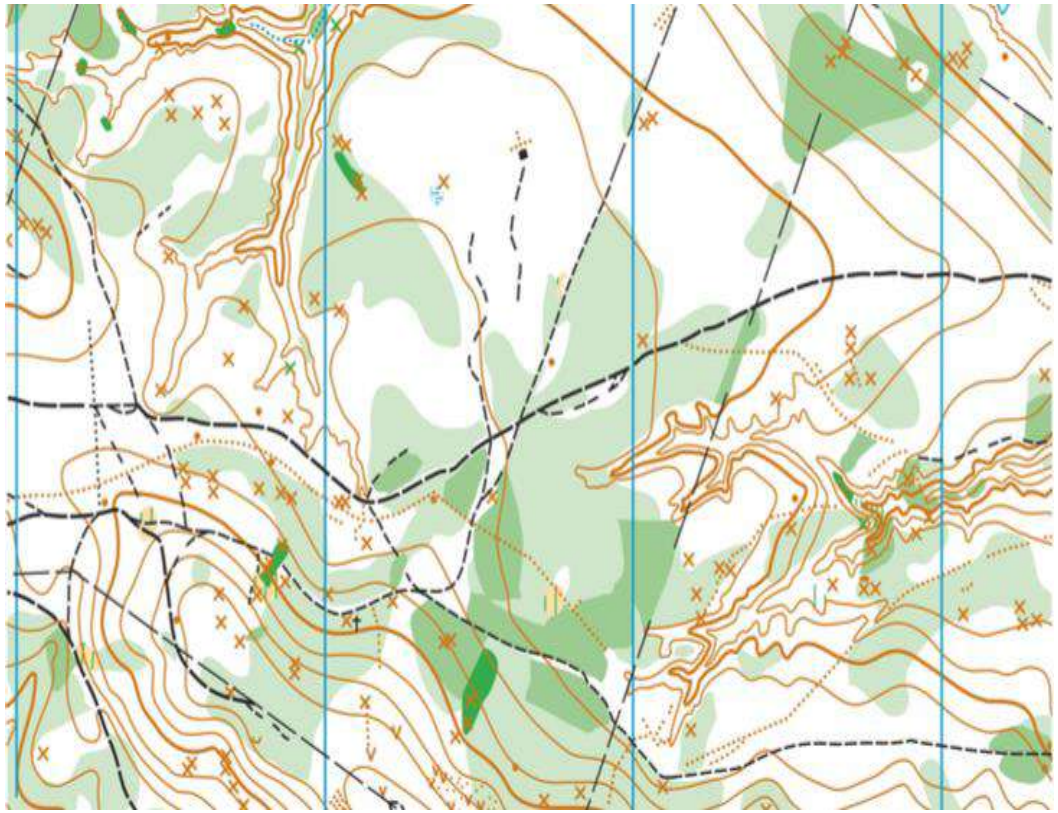
- dimensional,
- static,
- dynamic,
- interactive maps



Maps have been in use since ancient times when they may have been produced and used as necessary tools for identification and navigation. Maps became more and more accurate and factual in the 17th to 19th century with various countries adopting national mapping programs. The widespread use of aerial photography during World War I contributed significantly to the map-making process. Discussed below are some of the different types of maps. (2)

Topographic Map

A topographic map is a type of map that shows large-scale detail and quantitative information of relief by the use of contour lines and various other methods. A topographical map is based on a topographical survey that has been performed on large scale and shows varieties of elevations and landforms. The map shows both human-made and natural topographical features.



Topographic maps have various uses;

- geographical planning,
- civil engineering,
- large-scale architecture,
- recreation such as hiking

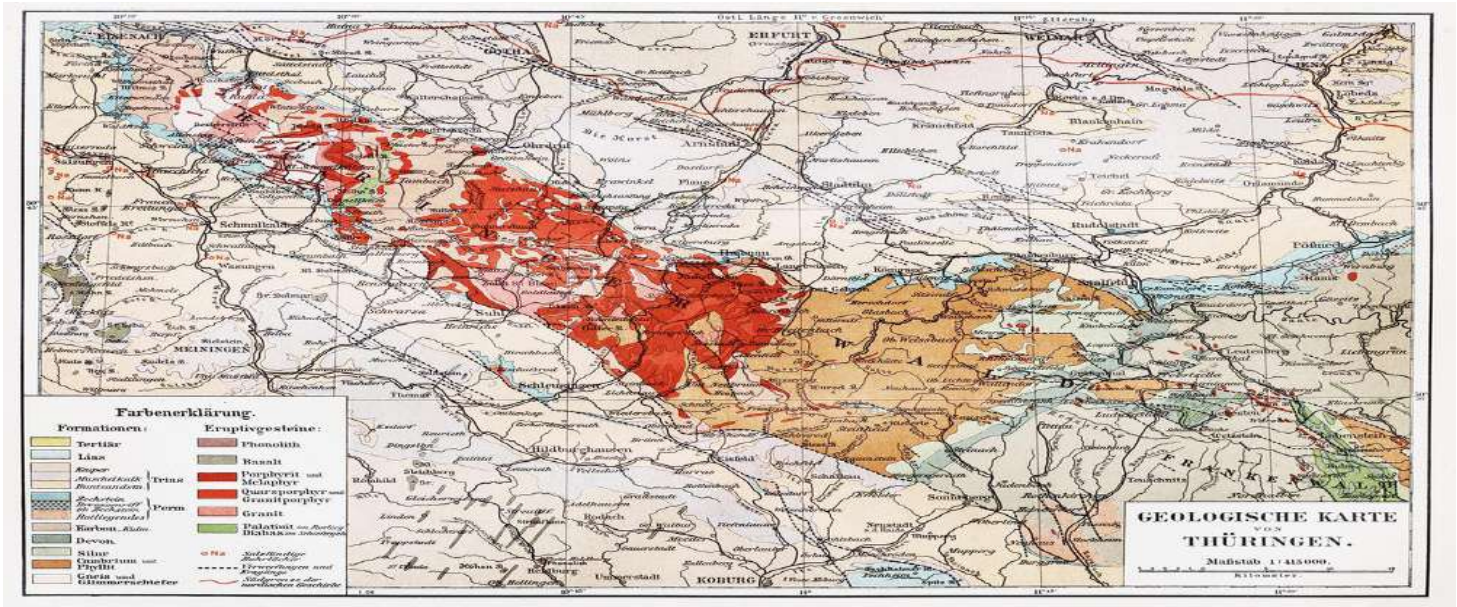
Features on the map are usually represented by conventional signs and symbols. For instance, different colors can be used to indicate the different classifications of roads. The signs are usually explained just below the map or on the margins. **Apart from contour lines, topographic maps also show forest covers, water bodies, and buildings.**

Geological Map

A geological maps;

- Show geological features such as geologic strata and rock units.
- The location of these features underneath the earth's surface are shown by symbols or colors.
- Other features such as fault lines, foliations, and folds are shown with strike and dip symbols which gives them a three-dimensional orientation.

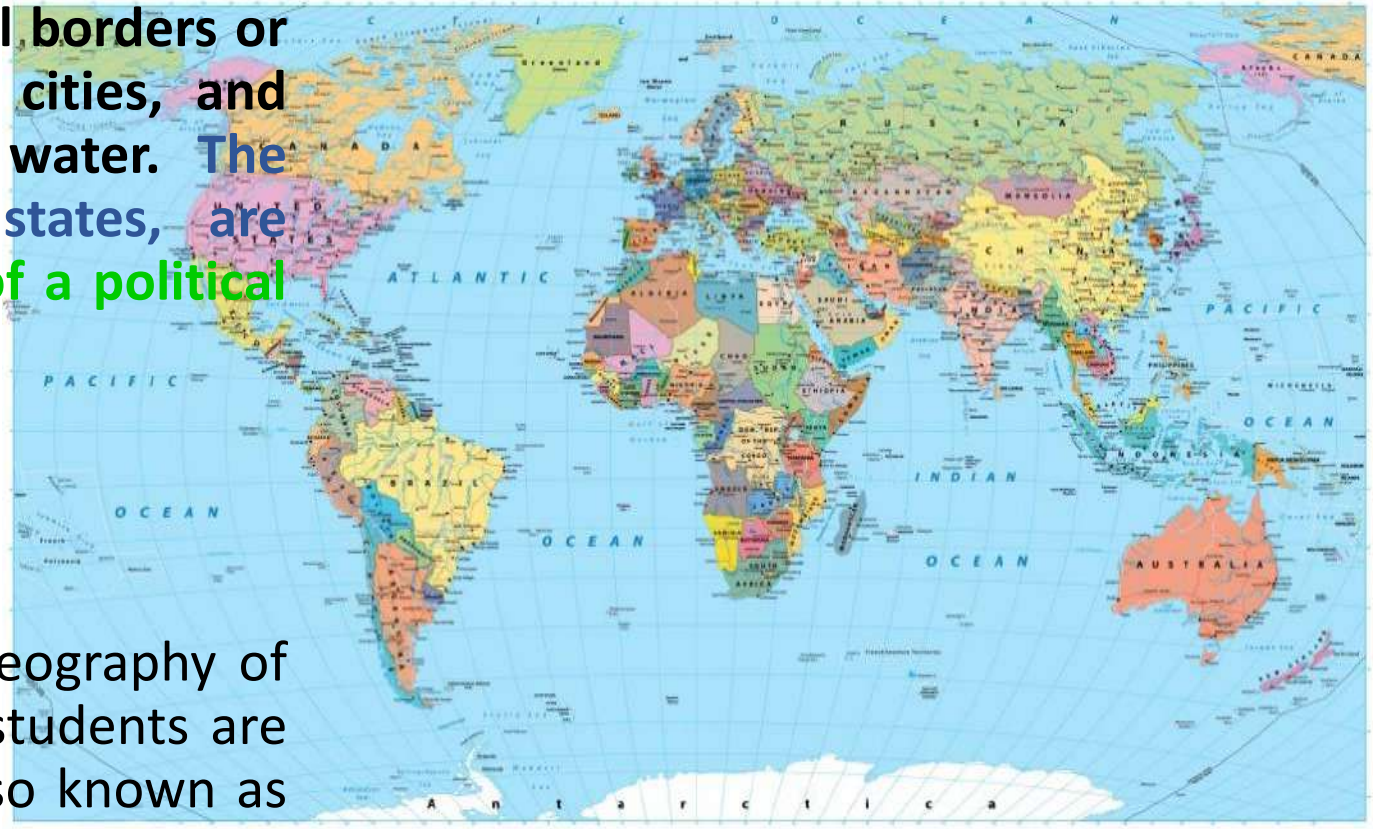
In the US, geologic maps are superimposed over topographic maps with additional color masks with letters to represent a geologic unit. In the UK, the term “geological map” is used instead of “geologic map.”



Political Map

Political maps:

shows a region or country's different territorial borders or boundaries, the location of major areas or cities, and significant land masses such as bodies of water. The boundaries between countries, cities, or states, are indicated by lines. One of the main features of a political map is the geographical boundaries.



There are different sizes of political maps.

Political maps help in the understanding the geography of the world and are usually the first maps that students are introduced to in school. This type of map is also known as "reference map" and are either printed on a physical medium or paper. It can also be produced in digital form for online use.

Physical Map

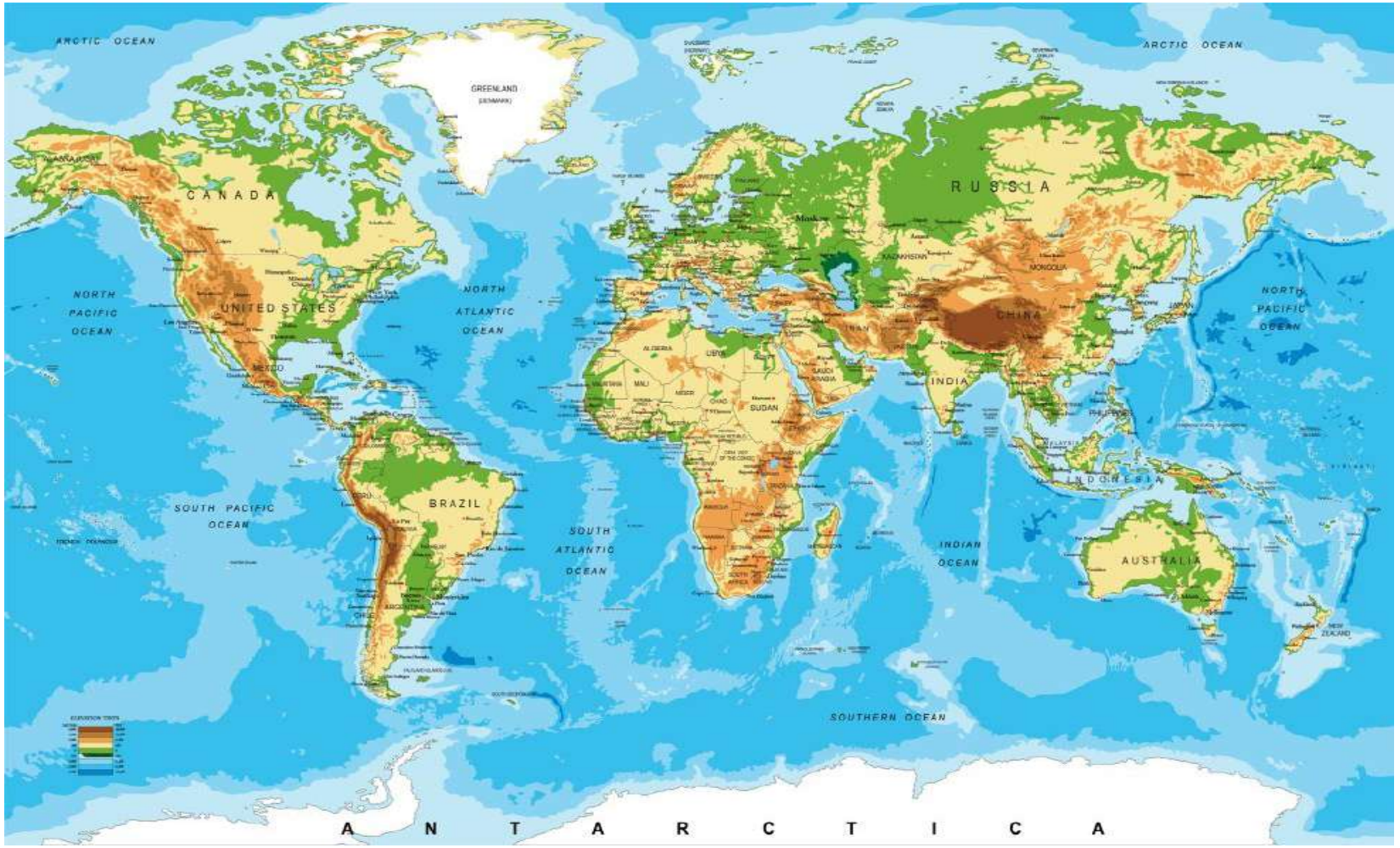
As the name suggests, physical maps are maps that have been designed to show the physical or natural landscape features of the Earth. **The maps are best known to show several geographical features such as soil type, mountains, and land use including infrastructural developments such as roads and buildings**.

Physical maps are some of the most colorful maps with a different color used to indicate different physical features:

- Most maps use green to brown to gray color scheme to show elevation.
- A dark green color is used to indicate near-sea level elevations and brown for higher elevations.
- Water bodies such as lakes, rivers, and oceans are often indicated by a blue color (light blue for shallow areas and dark blue for deeper waters).
- Ice and glacier are shown in white color.

Cultural information is not a focus of physical maps but may be included on the map for geographic reference.

Physical Map



Road Map

Road maps, also known as route maps, indicate roads and other transport links. They are navigational maps that also include political boundaries, making them part of political maps.

Apart from road and boundaries, road maps also show certain points of interests such as tourism sites, prominent buildings, recreational facilities like parks and restaurants, train station, and airports.

The maps are of different sizes, shapes, and scales:

*Small maps are used to show the overview of region's major roads or routes

*Large maps give greater details and cover a large area

Highway maps give the overview of major routes within a region. Street maps mainly cover areas within a city or metropolitan area. A collection of road maps bound together in a book is referred to as road atlas. Road maps often use thin lines to indicate minor roads and thicker or bolder colors to indicate major roads.

Cadaster Map

A cadaster map is a map showing the real estate of a country.

It includes the:

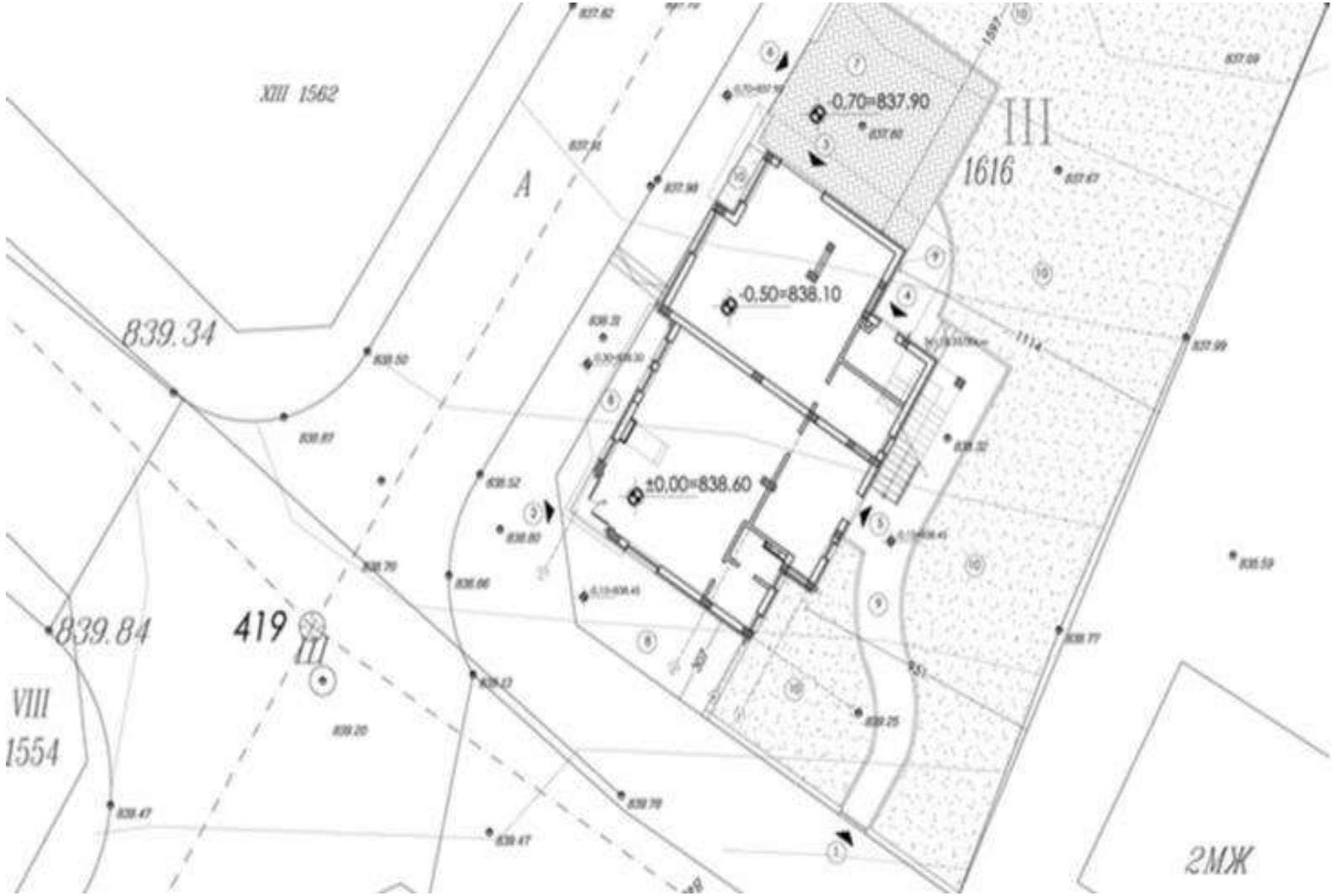
- location,
- area
- ownership,
- value, and tenure of an individual parcel of land

A cadaster is an up-to-date land information system that contains records of interest of lands such as restrictions, rights, and responsibilities.

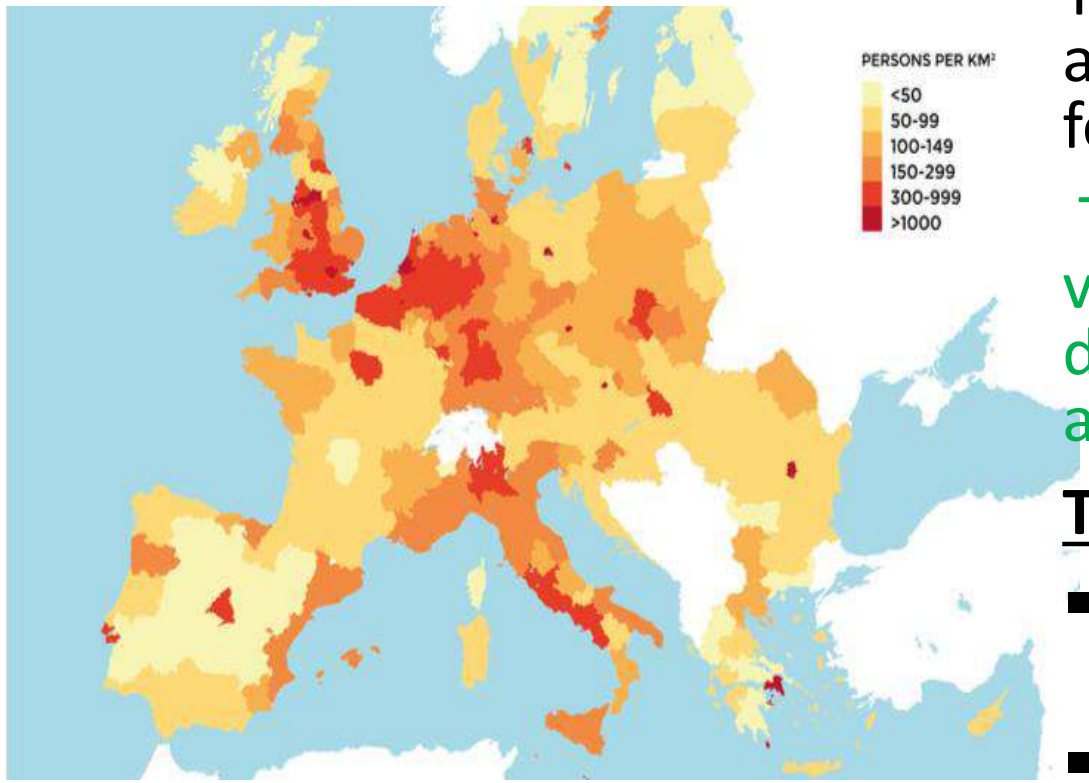
It includes the geometric description of the land and used alongside other records that describe the nature of the interest, controls of such interest, and the value of the parcel of land.

Some maps also show additional information such as parcel's identification number, survey district name, certificate of title number, adjacent street names, and position of existing structures.

Cadaster Map



Thematic Map**



A thematic map is a map designed to highlight a theme connected with a specific geographic area.

Thematic map focuses on a specific subject area and uses base data only as a point of reference for the feature being mapped.

Thematic maps also put emphasis on a spatial variation on a number of geographical distributions such as climate, population density, and health.

The map serves three main purposes:

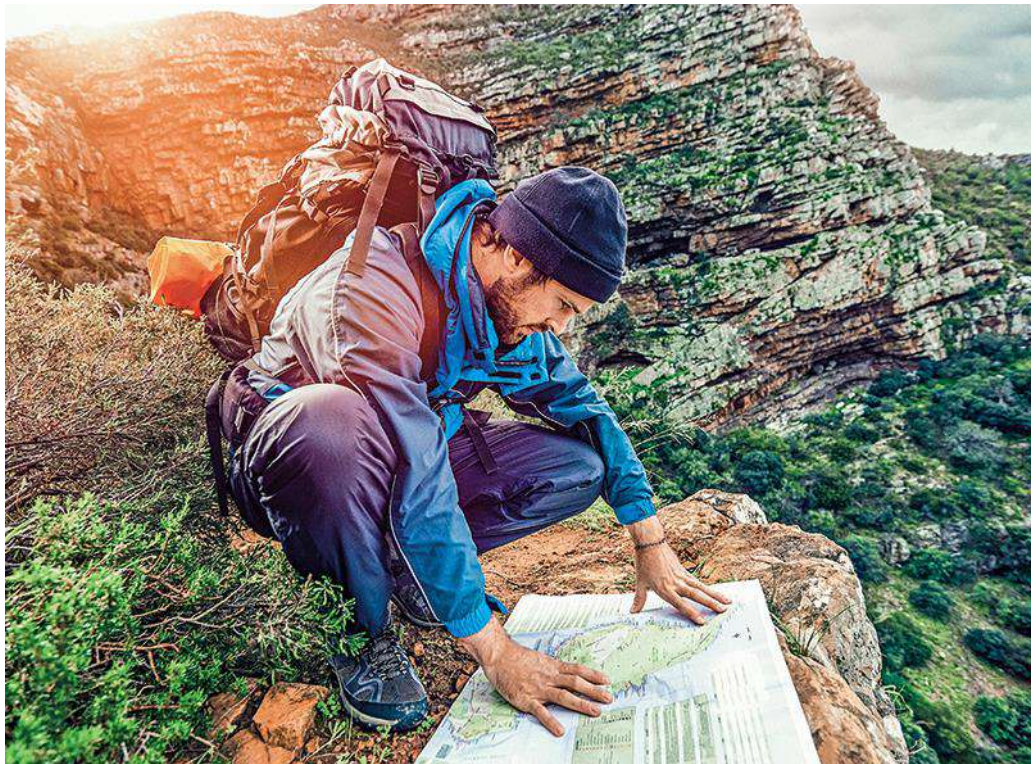
- to provide information about a piece of specific information,
- to provide general information about the spatial pattern,
- to compare patterns on different maps.

How to read a map?

Map reading is the act of interpreting or understanding the geographic information portrayed on a map.

- **To do this, the reader will need to derive essential information presented by the map:**

- such as distance,
- direction,
- natural and man-made features, topographical features



BASICS FOR MAP READING (3)

Step 1 – Choose The Correct Type Of Map and Scale

The right scale of a map very much depends on what your purpose is.

1:50,000

The most common scale to use cover large area is 1:50,000. This means that for every centimetre on the map, there are 50,000 centimetres (or 500 metres) in real life.

Maps are broken up into grids, with each box of the grid measuring 2 centimetres. That means for every full box on the map, it covers 1 kilometre in real life. This is useful for quick estimation of distances at a glance.

1:25,000

More detailed maps have a scale of 1:25,000 (1 centimetre = 250 metres). Therefore, each box grid on a map covers 500 metres in real life.

These more detailed maps show features such as group of trees , forest, rivers, rocky sides, etc and other landuse featuers on the ground.

1:10,000-1:1000

More more detailed maps mostly to use in urban environment

These more detailed maps show features such as buildings, streets, walls, etc… on the ground.

Step 2 – Understand The Features Of The Map

Legend

Gives a description and guide of the different features and markings on the map.

Title

Tells you what area the map is of.

Grid References

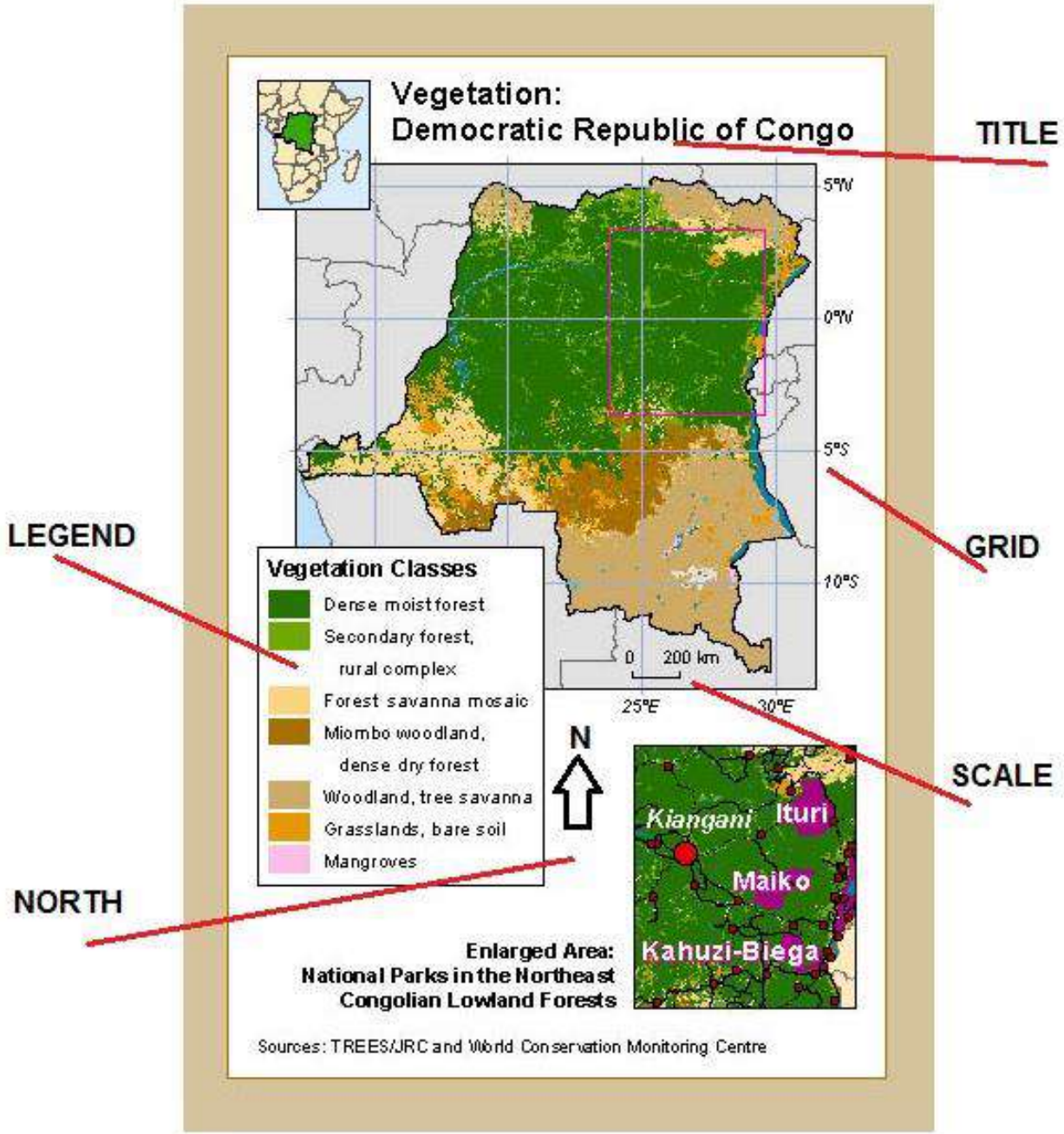
A map is broken up into grid boxes, with the first 2 (or 3, depending on accuracy) digits being the x-value, and the last 2 (or again, 3) digits being the y-value. Each grid reference starts with the letter assigned to the map.

The North Arrow

This arrow tells you which way is north – it always points to the top of the map.

Scale

The scale will tell you what scale your map is whether it's 1:25,000 or 1:50,000.



Step 3 – Put The Map Into Practice

3.1. Point Your Map North

To point your map north, place your compass flat on your map, pointing towards the top, and rotate yourself until the compass' needle points north. Simple!

3.2. Find Your Location On The Map

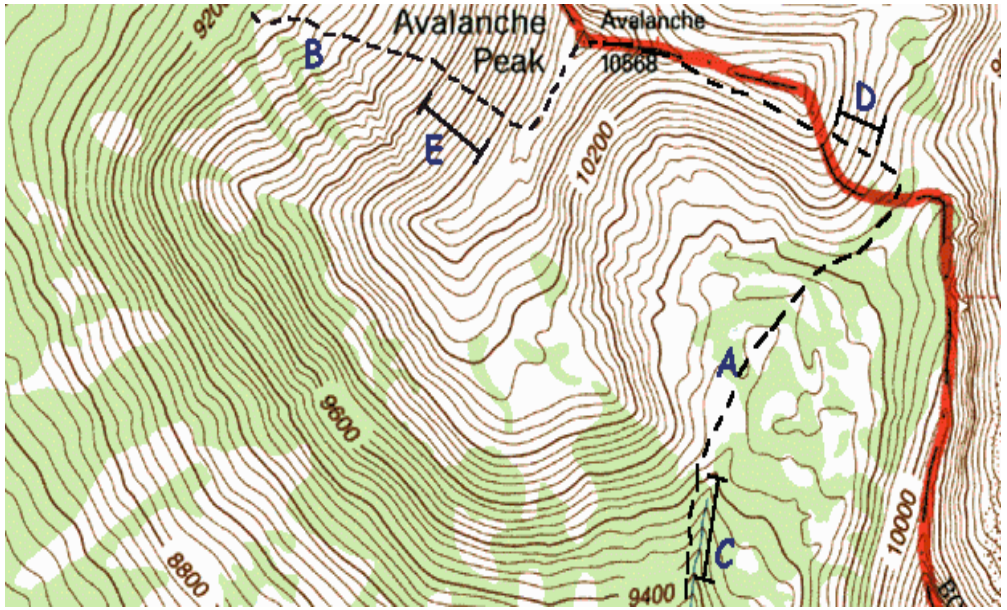
Identifying your surroundings and relating them back to your map is the most important thing when trying to locate your position. You usually won't know your exact grid reference starting out, so a good idea is to start at a grid reference that you do know.

If you began in a town or village and drove to the start of the hike, then start there on your map and re-trace your steps. Once you're confident that you're in the correct general area, you can begin to look around for landscape features.

These can be mountains, rivers, walls, spurs, saddles, roads – the list goes on. If you can identify 3 surrounding features in real-life and pinpoint them on your map, you can be quite confident that you have located yourself.

3.3. Reading Contour Lines

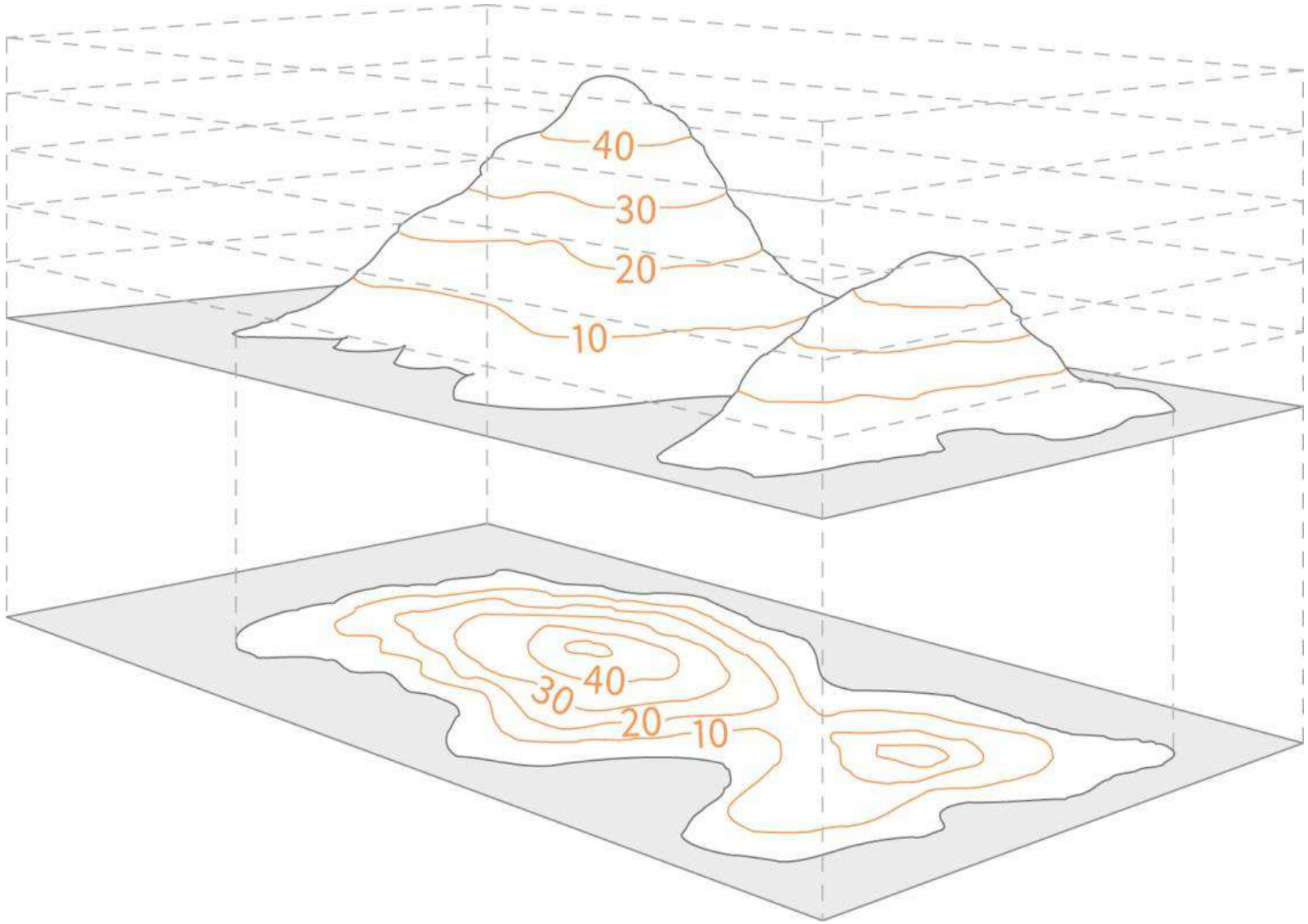
Contour lines are the small black lines that wave around the whole map.



Each contour line on a 1:50,000 scale map represents a rise of 10 metres above sea level. Every 5th contour line will be slightly bolder, to make it easily countable when you're counting many contours at a time.

The closer the contour lines are together, the steeper the gradient.

The ability to understand the shape of the ground from a map is a useful skill to learn, particularly in mountainous landscapes and when you are out .

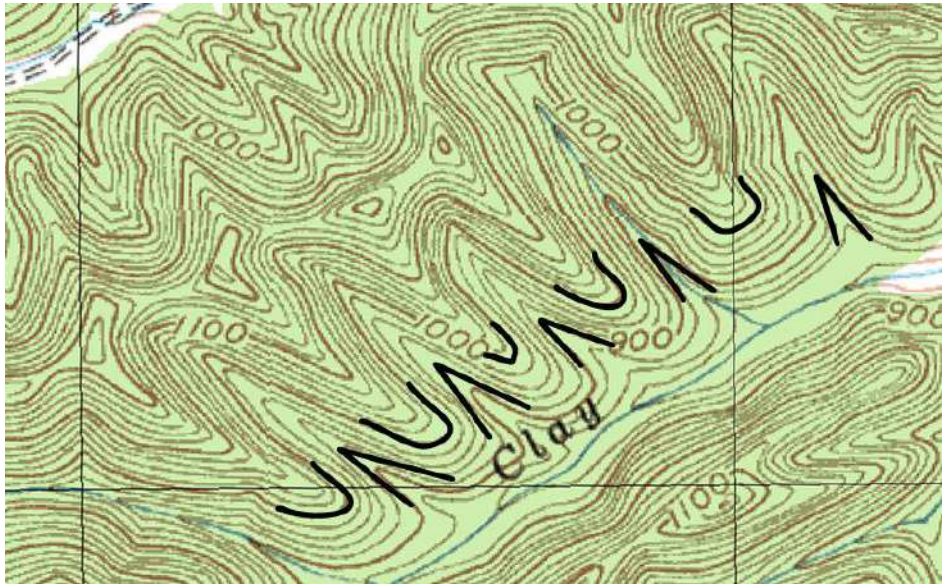


How contour lines show a pair of small hills

3.4. Identify Features Of The Landscape

Spur

A spur is recognisable in real-life as a feature that slopes downwards on three sides, and slopes upwards on one. On a map, it looks like this:



The contour lines will point away from the summit of the mountain/hill, indicating a spur.

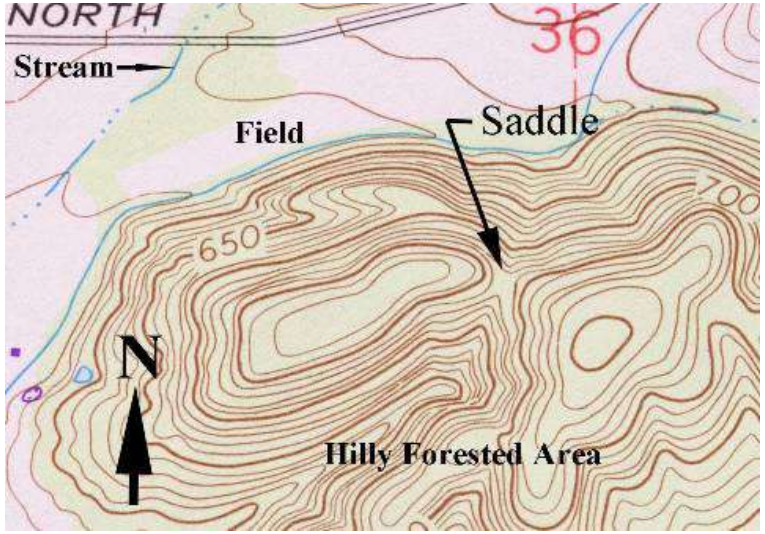
3.4. Identify Features Of The Landscape

Re-Entrant

A re-entrant is an ‘indentation’ in the side of a mountain and can be identified on a map as contour lines pointing against the natural slope of a mountain. These can also be seen in the above example.

Saddle

A saddle can be seen in real-life as a feature that slopes down on two sides, and slopes up on two sides.



3.4. Identify Features Of The Landscape

Summit

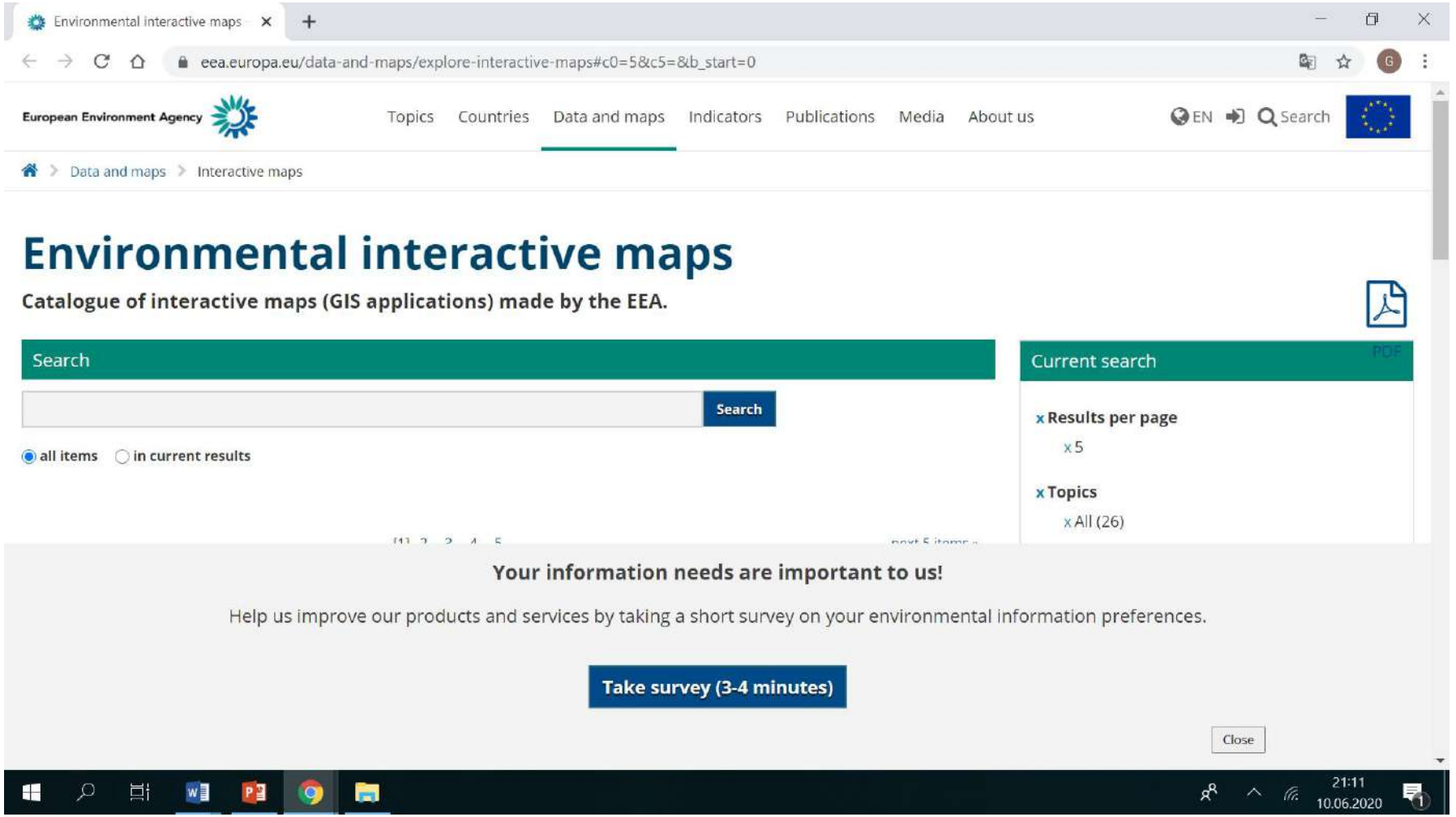
The summit of the mountain is the very top and can be identified on a map by a ‘ring contour, seem in the above example.

Thumbing

It’s a useful idea to keep note of your last known location on the map. This is so you can re-trace your steps should you lose your bearings while walking. To do this, place your thumb on your current location on the map, drop it to your side and forget about it.

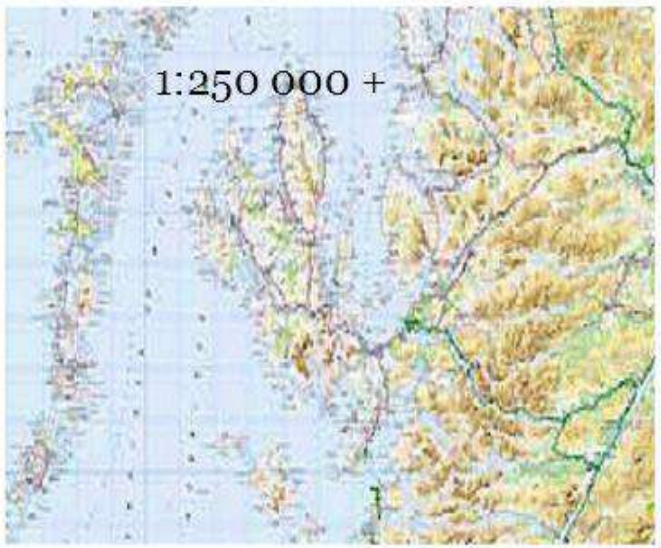
Next time you look at your map, your thumb will still be on your last location and you can then work out where you are currently.

MAP READING for ECOLITERACY



Map Scale

- Maps can either be **small** scale or **large** scale
- The difference is the amount of detail illustrated



SMALL SCALE
-small amount detail with a large area

LARGE SCALE
-large amount of detail of a small area

https://slideplayer.com/slide/1587328/

BASICS FOR ECOLITREACY MAP READING

A. Selection of right type and scale of map

- Topographical maps telling campers how to reach campsites and lodging areas, and even tourist maps highlighting famous landmarks for sightseers.

- For the environmental purposes topographical and physical maps are the most suitable ones.
- Explorer/nature map (used for hiking, cycling, kayaking, and similar short-range activities) will have a scale around 1 : 25,000, while the average driving map will be closer to 1 : 50,000.

For the environmental purposes map scale should be between 1:25.000-1:5000 to better reading map physical /environmental legends and to compare with real world.

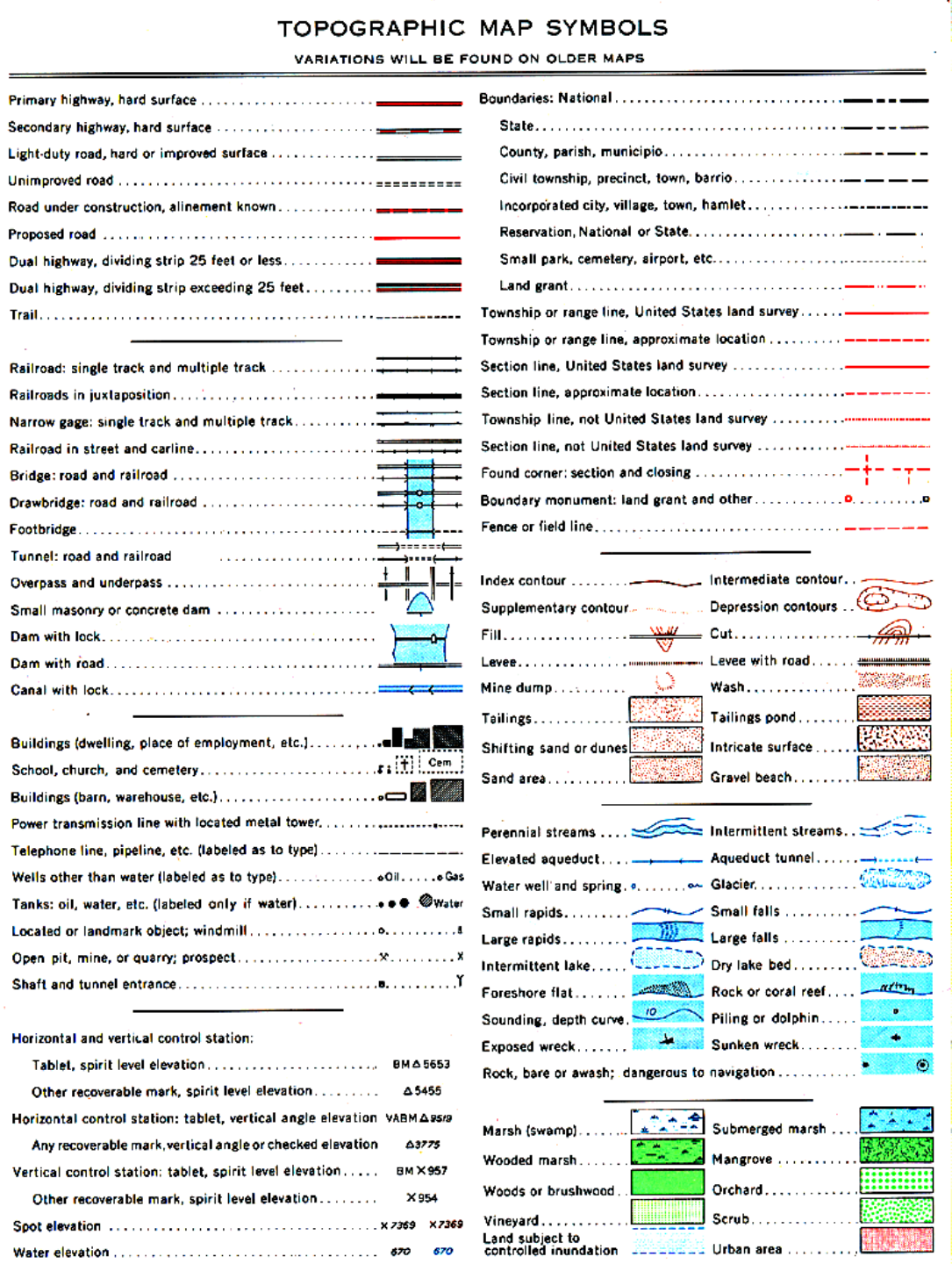
B-Envıronmental legends on maps

Maps symbols are representing;

- roadways,
- town and city limits,
- prominent landmarks,
- color-coded environmental features like mountains, forests, and bodies of water depending on its type and the scale.

All maps represent some component of the reality of the earth. These elements are designed to educate users on how to interpret and safely traverse their surroundings.

Most common topographical and physical map symbols



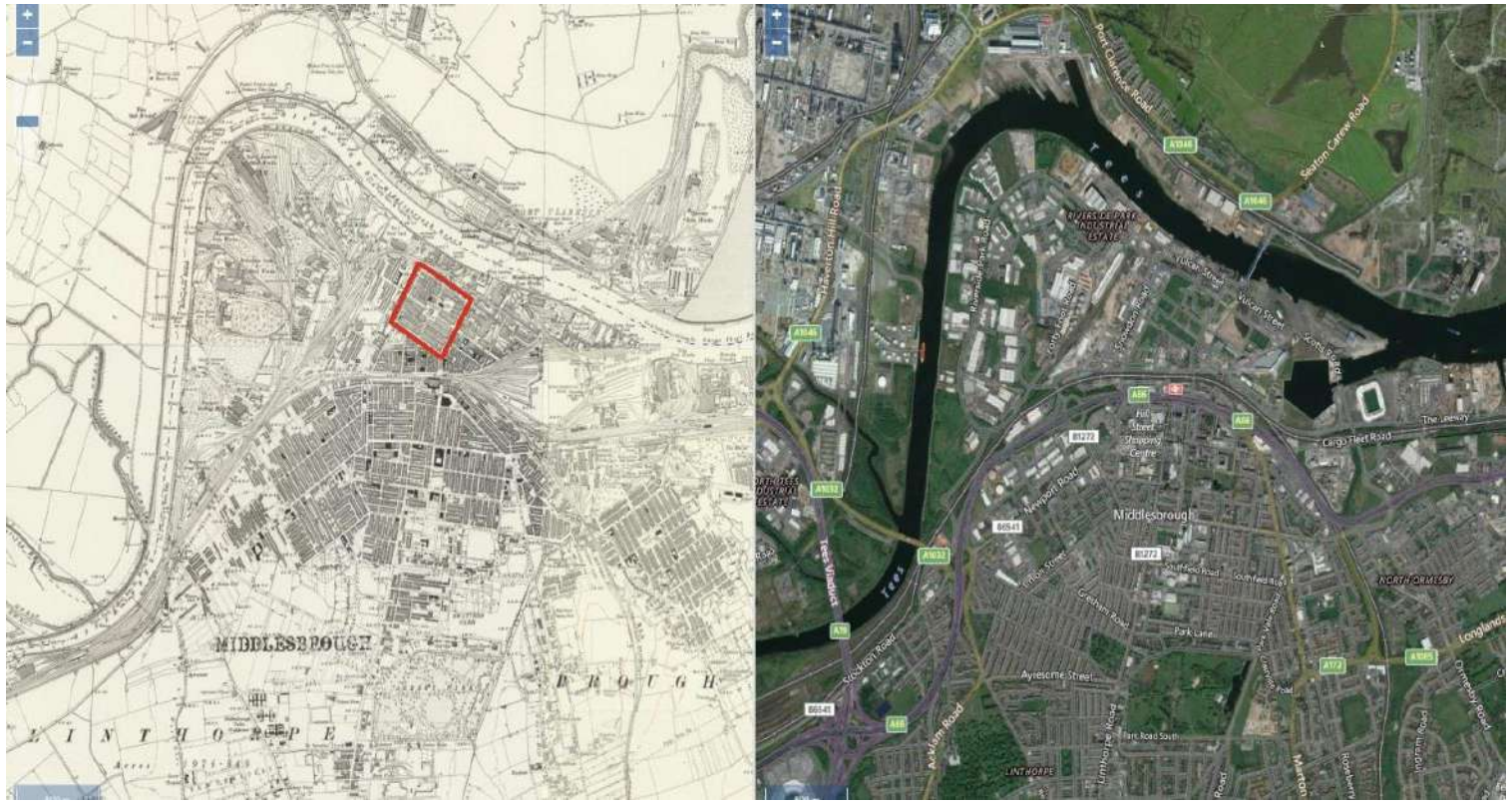
C-Environmental readings using the maps

C1-Using old maps to read impacts on environment

By comparing an old map of the same area with an updated map, it is possible to identify in which areas, what kind of physical / spatial changes and environmental degradation has occurred.

We can evaluate environmental degradations, losses, new developments, etc…

For example;

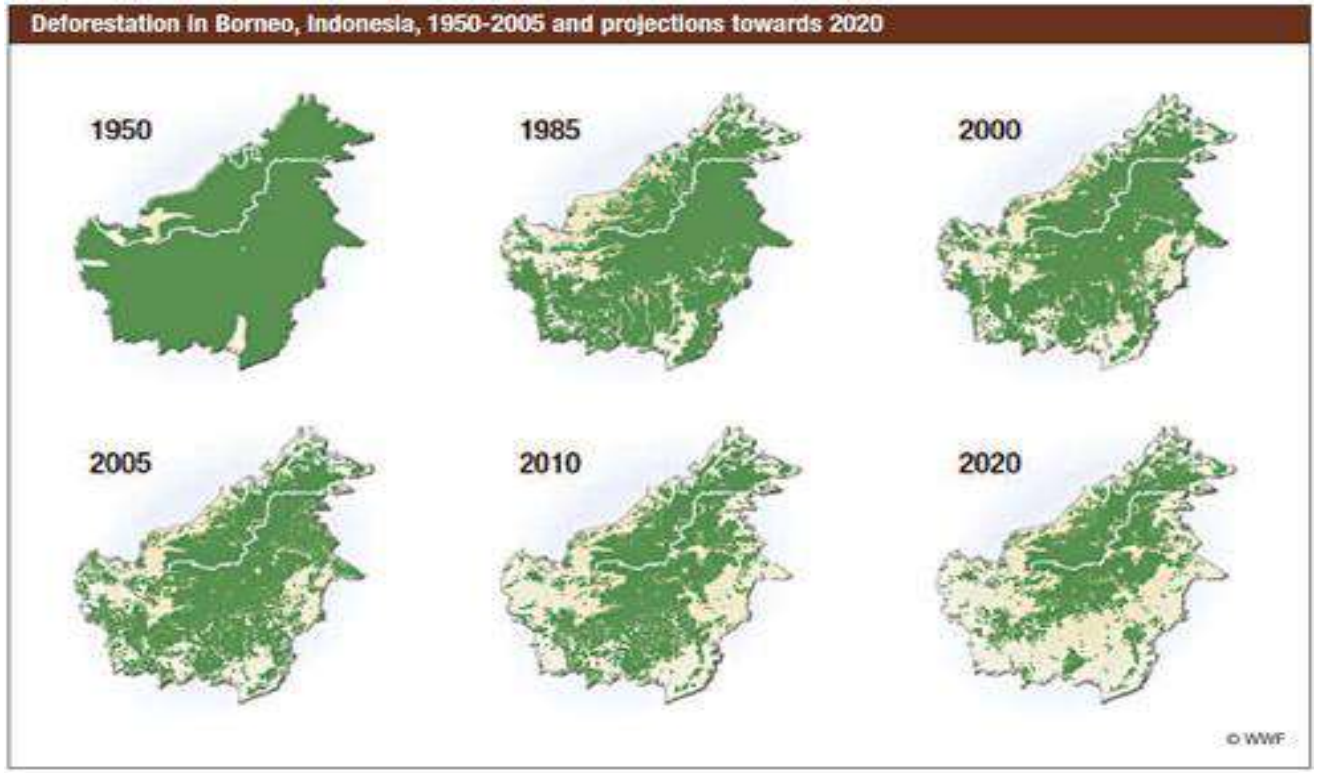


Maps showing Middlesbrough in the late 19th century and Middlesbrough today. The red highlighted area is the original planned town that developed from the 1830s.

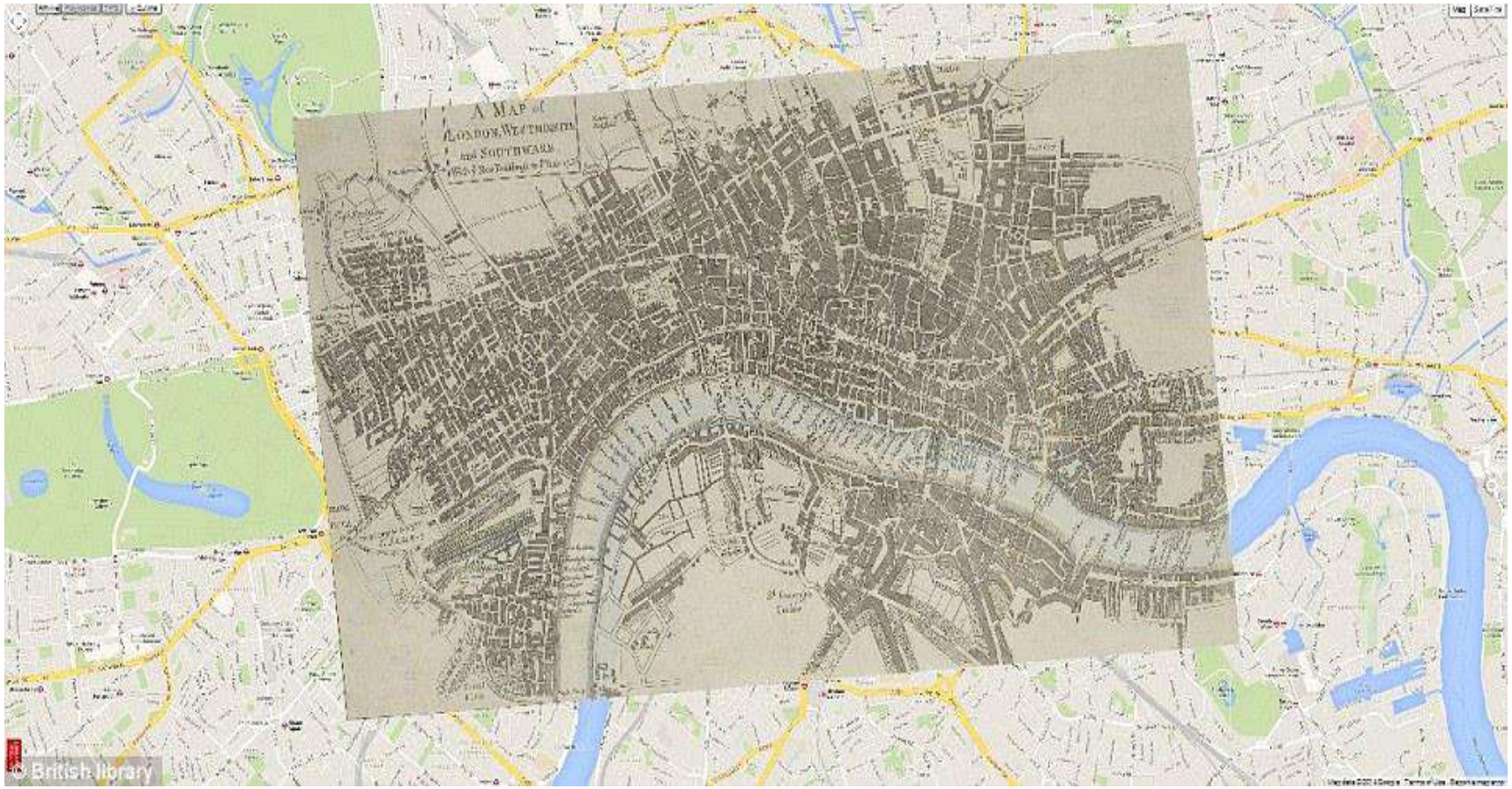
Map from the National Library of Scotland website's side by side feature at https://maps.nls.uk/geo/explore/side-by-side/

C2-using series of maps (time-line) to read impacts on environment

A series of map reading (tematic, topographical, physical) on a time line could create a good evironmental awareness in different scales.



https://www.nrdc.org/experts/jake-schmidt

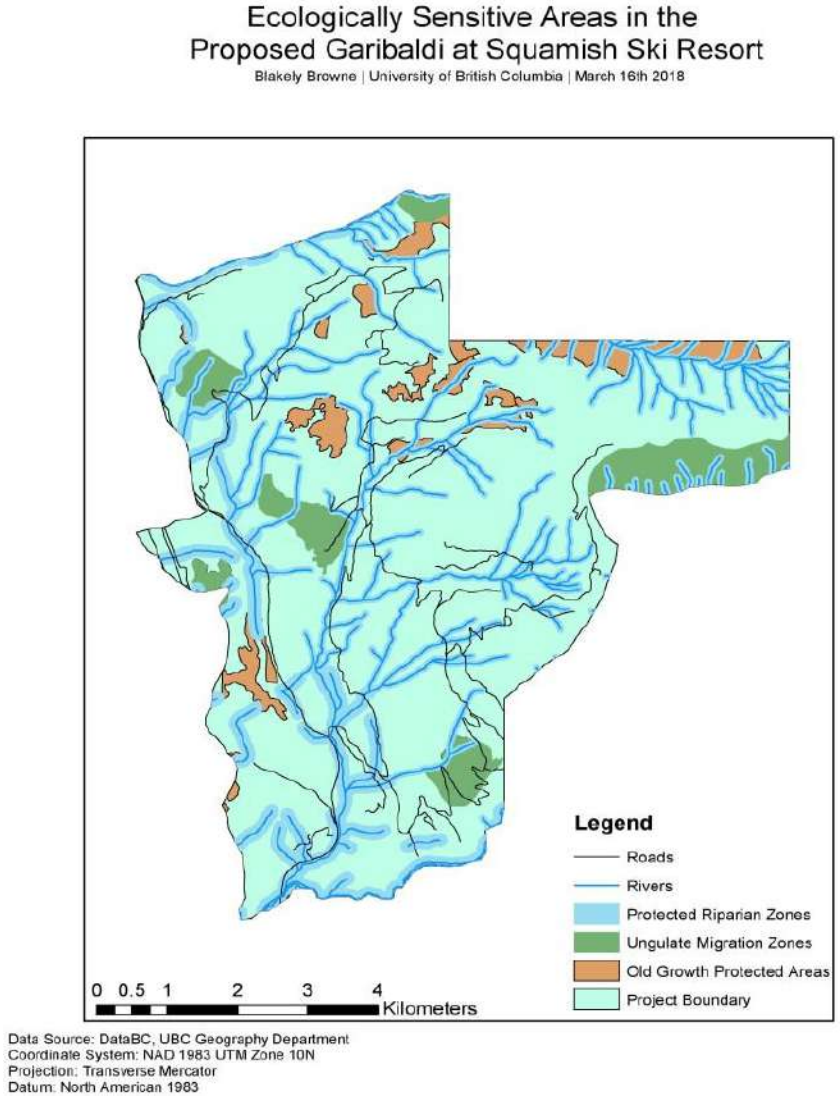


Old and new: **The above map shows the City of London** and the boroughs of Westminster and Southwark as they were in 1733. The street layouts are in many cases the same - though there is more open space and no evidence of railways .

https://www.dailymail.co.uk/news/article-2742399

C3- Using the maps to read environmental features/zones

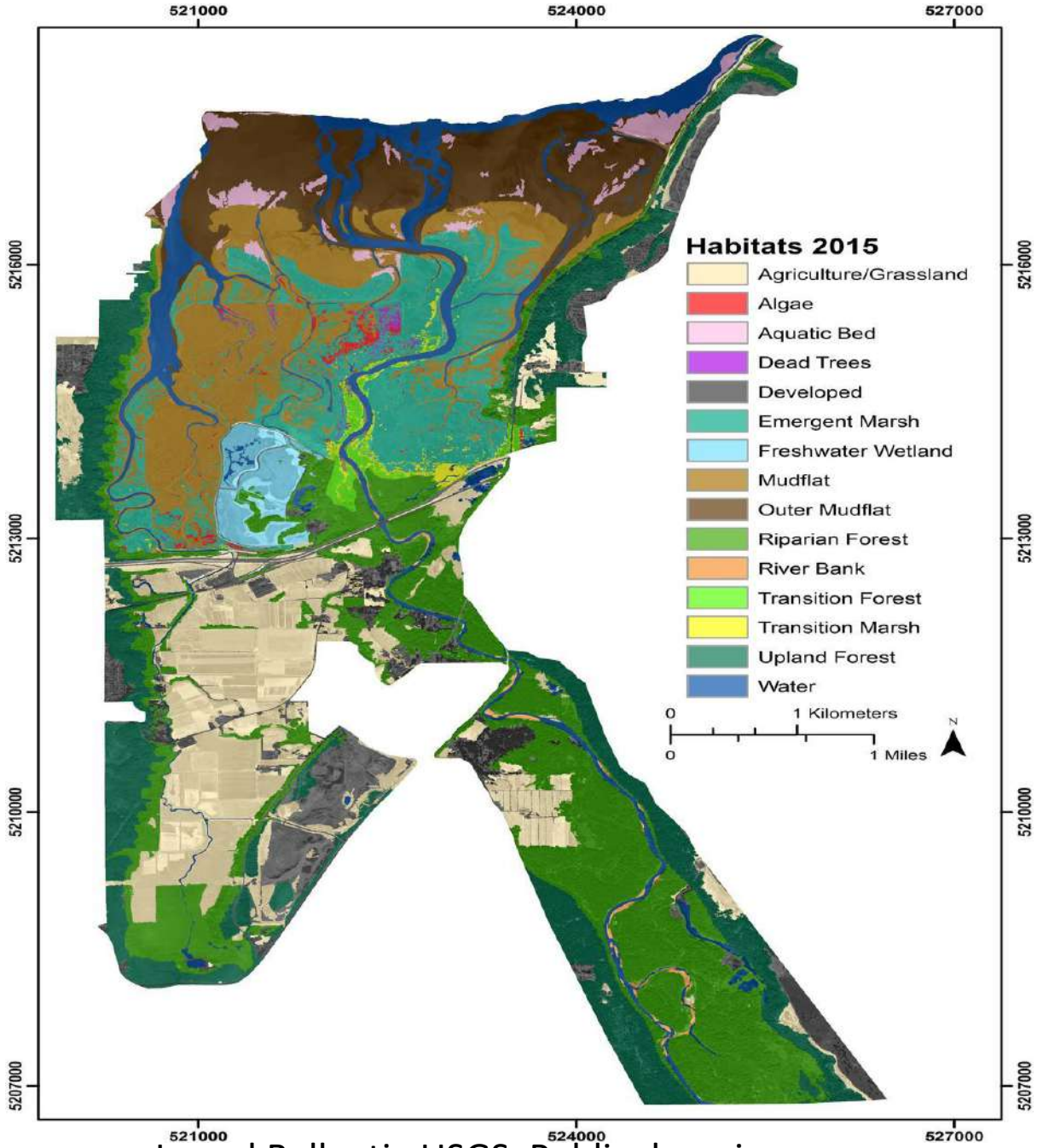
If we have a certain level of ecological information background, we can identify locations and regions, such as habitats, basins, settlements,etc directly from maps of the appropriate type and scale or we could produce the thematic maps by transferring information we have obtained from the field to the maps we have.



http://blogs.ubc.ca/blakelygeography

For example;

A habitat map of the Billy Frank Jr. Nisqually National Wildlife Refuge 2015 habitat classification



Laurel Ballanti , USGS. Public domain

C4- Using the maps for environmental modeling & monitoring

Maps are important communication, navigation and decision support tools. They also serve as mechanisms for both storage and communication of spatial data and information.

Maps also provide the opportunity to model the reflections of the possible effects of the projects being carried out on the space. Especially emission, noise, pollution etc. can be tested for possible outputs spread in the space and affect the sensitive areas.

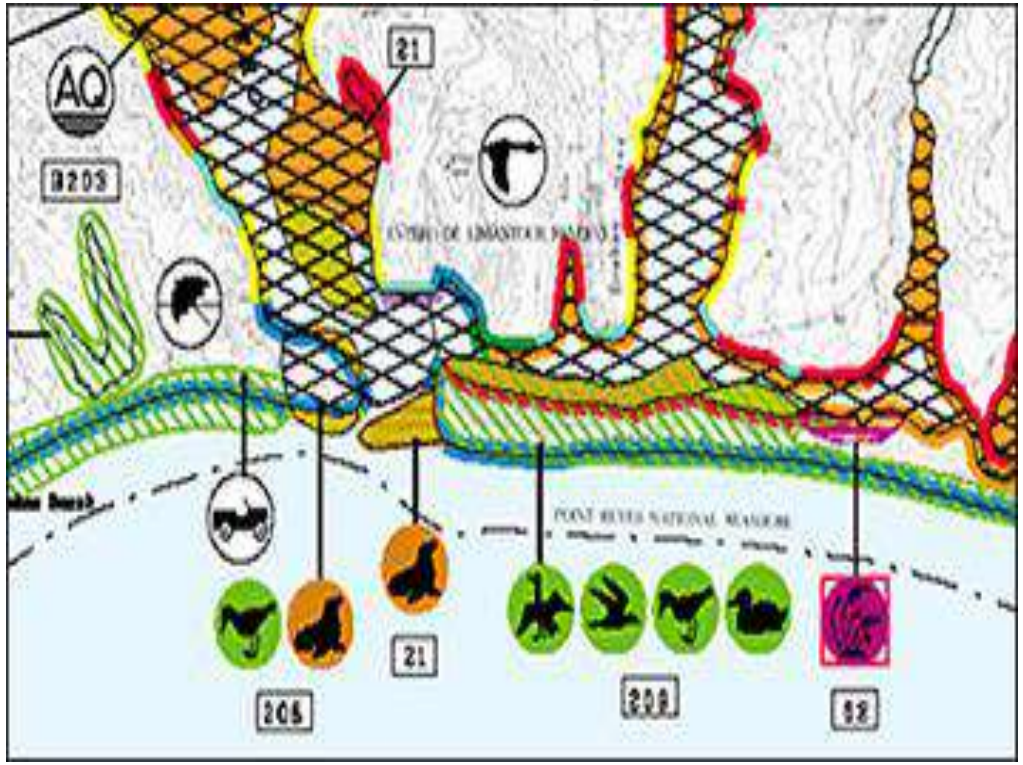
Examples:

Modeling

noise impact and modeling on maps

https://www.dbc-ltd.co.uk/

Monitoring



- *Shorelines on ESI maps are color-coded by sensitivity to oil. Symbols mark localized areas for biological and human-use resources.* https://response.restoration.noaa.gov/resources/environmental-sensitivity

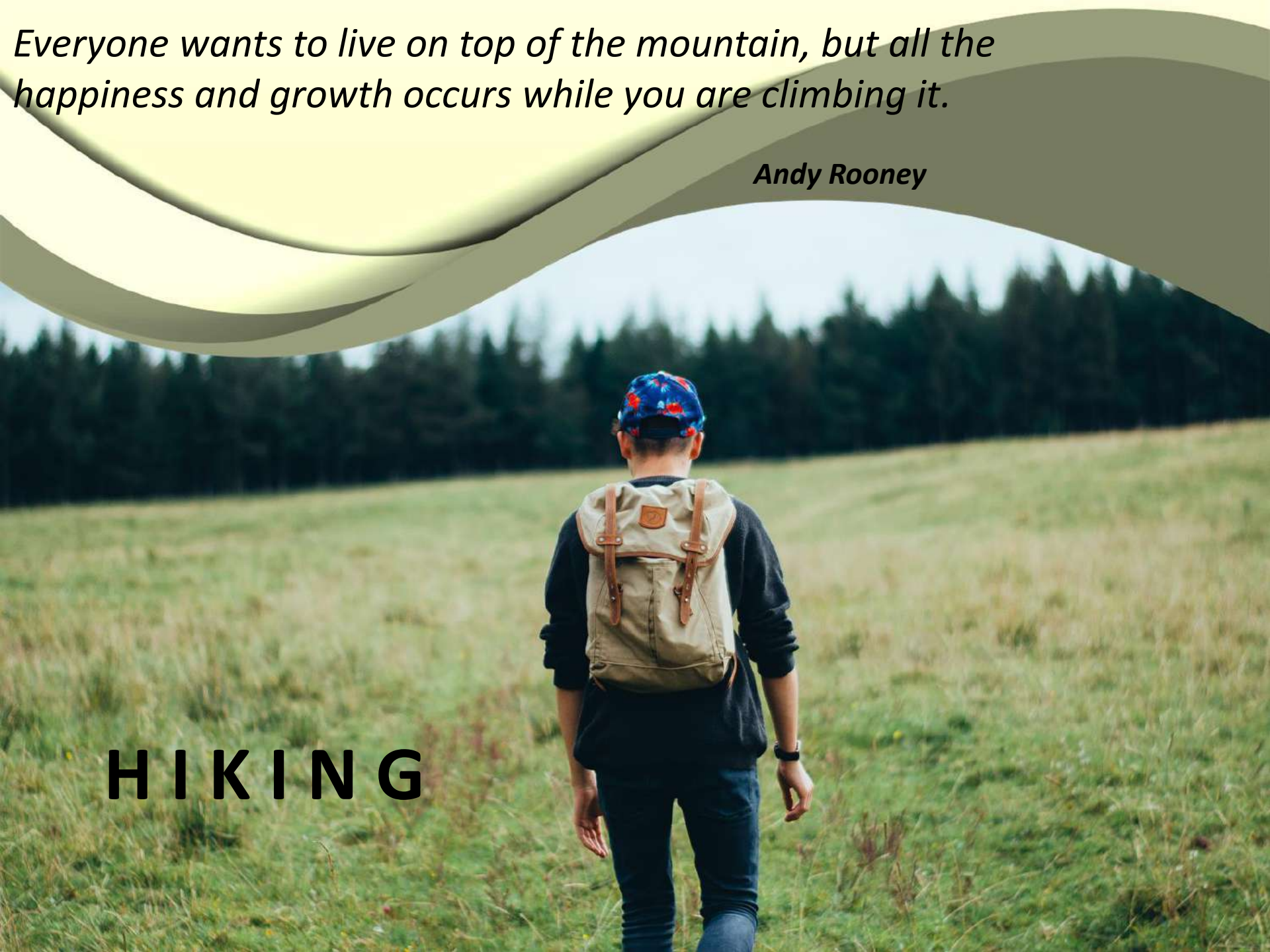
Environmental Sensitivity Index (ESI) maps provide a concise summary of coastal resources that are at risk if an oil spill occurs nearby. Examples of at-risk resources include biological resources (such as birds and shellfish beds), sensitive shorelines (such as marshes and tidal flats), and human-use resources (such as public beaches and parks).

When an oil spill occurs, ESI maps can help responders meet one of the main response objectives: reducing the environmental consequences of the spill and the cleanup efforts. Additionally, ESI maps can be used by planners—before a spill happens—to identify vulnerable locations, establish protection priorities, and identify cleanup strategies.

ESI maps and data are created by NOAA OR&R researchers, working with colleagues in state government agencies, federal government agencies, and industry.

Everyone wants to live on top of the mountain, but all the happiness and growth occurs while you are climbing it.

Andy Rooney



HIKING

What is Hiking ?

Hiking - an outdoor activity, which consists of walking in natural environments, often on hiking trails for a longer duration than a simple walk and usually in places where hiking boots are required.

- **A Day Hike** - a hike that can be completed in a single day and not requiring an overnight camp

- **Long-Distance Hike** – footpaths that are away from routes mainly through rural areas, used for non-motorized recreational travelling

Why Hiking ?

- **HIKING** is a wonderful way to get outdoors, immersed in nature and burn some of the energy
- **HIKING** can teach about our surroundings and instill an appreciation for nature deep in our soul.
- **HIKING** can build confidence, foster independence and encourage curiosity
- **HIKING** builds perseverance - it teaches you to keep moving forward



Why Hiking ?

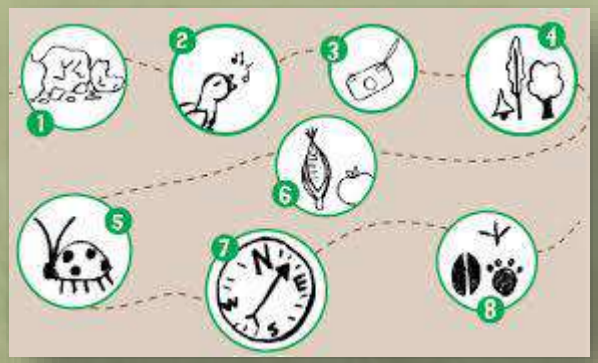
- **HIKING** gives opportunities to explore your local area, learn about local plants and animals and other natural teaching opportunities
- **HIKING** helps to push you out of your comfort zone and accomplish something you can be proud of
- **HIKING** provides a distraction-free environment for quality time with your dear people…and what could be better than that?
- **HIKING** improves communication - it - provides a time to talk without all the noise and distractions of the modern world

Why Hiking ?

- **HIKING** provides physical activity - it is a great form of exercise
- **HIKING** promotes a healthy weight - the physical activity of regular hiking can help maintain a healthy weight
- **HIKING** fosters a love of nature – it encourages a respect for creation and wonder

Why Hiking ?

- **HIKING** relieves stress - the combination of time spent in nature and the physical activity work together to relieve stress
- **HIKING** help to unplug from electronics – it offers an actual experience, rather than an online game.
- **HIKING** is educational - the scientific world awaits on a hiking trail.



When to get started hiking ?

- The perfect time is **RIGHT NOW** !
- You have to choose the right hike - won't be too long, difficult or dangerous
- You have to choose a hike that has a destination or goal to get to (a creek, waterfall, lake, swimming hole, or picnic area)
- You have to find trails with interesting features or have a lot of varying terrain
- The best time of day to go hiking is usually in the morning
- Become naturalist **-** make observations by using all your senses: **look, feel, sound, taste, smell**

HIKING - Safety Tips

- Respect hiking etiquette
- Always stay on designated boardwalks and trails to reduce damage to soil and plants and protect fragile vegetation
- Trailblazing is strictly forbidden
- Avoid putting your hands and feet anywhere you cannot see
- Do not litter; littering harms wildlife and spoils the view; use available recycling facilities
- Never hike alone and stay together
- Never change your originally intended route unless it is an emergency

HIKING - Safety Tips

- Do not collect or disturb plants, animals, rocks or cultural artifacts; destruction or removal are prohibited
- Do not approach, disturb, chase or harass wildlife; enticing wildlife is unlawful
- Wild flowers and other natural objects are beautiful indeed; leave them intact for others to enjoy
- Twigs, branches, bark or dead wood may not be gathered for firewood
- It is illegal to set up cooking devices or start fires unless done so on designated areas

HIKING - Safety Tips

- Remember the 3 C's:
  - **Courtesy**
  - **Communication**
  - **Common Sense**
- No running while on the hiking, stay together and always look around to make sure other part of the group is right behind
- Look in front of you and under your feet to avoid getting hurt

Being Prepared for Hiking

- **BE PREPARED WITH KNOWLEDGE & STUFF**
  - Learn in advance about the terrain, conditions, local weather before you start
  - Know how to rescue yourself
  - Have emergency equipment on hand: e.g. pocket knife, maps, compass, flashlight, First-Aid kit, rain or wind gear, anything to start a fire
- **KNOW WHERE YOU ARE GOING**
  - Be familiar with the type of terrain you'll encounter – consult the map
  - Learn how to use a map and compass

Being Prepared for Hiking

- **KNOW WHEN TO TURN BACK** - respect Nature's unpredictability and head for home when weather goes bad

- **CARRY A WHISTLE**
  - One of the most important things you have to carry with you on a hike
  - Wear it around your neck at all times or fasten it to your backpack
  - It is for emergency only; the sound of a whistle can travel much farther than the human voice

Being Prepared for Hiking

- **LEAVE YOUR HIKING PLANS FOR EMERGENCY RESCUE PURPOSES**
  - Inform family members or friends where you intend going
  - The trails you are hiking
  - The route you intend following
  - When you will be departing from base camp
  - How long the anticipated hiking trail will take to complete
  - When you will return and your emergency plans

During Hiking, always …

- **RESPECT THE SIGNALS NATURE AND YOUR BODY SEND** – make a wise decision when to continue and when to turn back

- **HAVE A PROPER EQUIPMENT**
  - Comfortable backpack - the weight of your backpack may not exceed one third of your body weight
  - Comfortable strong shoes
  - Wear bright colors when hiking- be as visible as possible, even from Air; the best colors to wear are scarlet red, Barbie-pink, neon orange, neon yellow, and sky blue

Safety Walking Techniques

- **Walking individually**
  - Walk slowly and evenly - swinging forward naturally

- **Walking as a group**
  - At the pace of the slowest member
  - Maintain an even, steady pace – one that everybody in the group can maintain for extended periods of time, without getting out of breath or hurting themselves
  - Adapt your walking style to the type of terrain in order to avoid injuries

Safety Walking Techniques

- **Walking uphill**
  - Shorten your stride, keeping the same rhythm, leaning forwards, place your feet flat on the ground.
- **Walking down hill**
  - Open your stride and lean back slightly
  - Do not try to go too fast
  - Descending is hard on your knees
- **Walking on sand or loose ground**
  - On soft sand, slow down and place each foot deliberately putting weight on it gradually
  - Walking sideways prevents the toes from digging in

What to do during hiking if …

- **YOU ARE LOST**
  - **S.T.O.P.** = Stop, Think, Observe, Plan! Your brain is your #1 survival tool
  - If possible, stay near an open space; move into it to be visible from the air and ground
  - Keep your eyes and ears open and seek clues of human habitation or human activities

What to do during hiking if …

- **YOU HAVE TO PREVENT DEHYDRATION**
  - Avoid overexertion on hot days
  - Pace yourself and rest often, in the shade if any is available
  - Drink water
  - Soak a bandana with water and cover your head with it
  - Hike in the cool of the morning and late afternoon
  - Wear a sun hat with a wide brim to protect your ears, face, scalp and back of your neck
  - Wear cool natural fiber clothing
  - Eat regularly throughout your hike

Let's Go Hiking!

- Going on a hike is a great way to encourage people to be active and connect with nature
- Plan your hike together and talk up the adventure:
  - Should we walk by a river today?
  - Climb some rocks?
  - Search for the biggest tree?
- Bring a friend along - invite friends or another group of people to go hiking together
- The journey is often more important than the destination
- Touch and feel things and find marvelous things that other have missed

Let's Go Hiking!

- Go at good pace - let others set the pace of the hike, even it's much slower than would go.
- Do different hikes
  - Meandering through a dense forest
  - Find a boardwalk trail
  - Hike that starts high and gives you sweeping views
  - Make a local trail at night
- Make the hiking a game
  - Use the environment as a prop for trail games
  - Tell a story
  - Create an imaginary scenario on your hike

Let’s Go Hiking!

- Hiking with kids

https://www.youtube.com/watch?v=HZwEEPN0WSQ

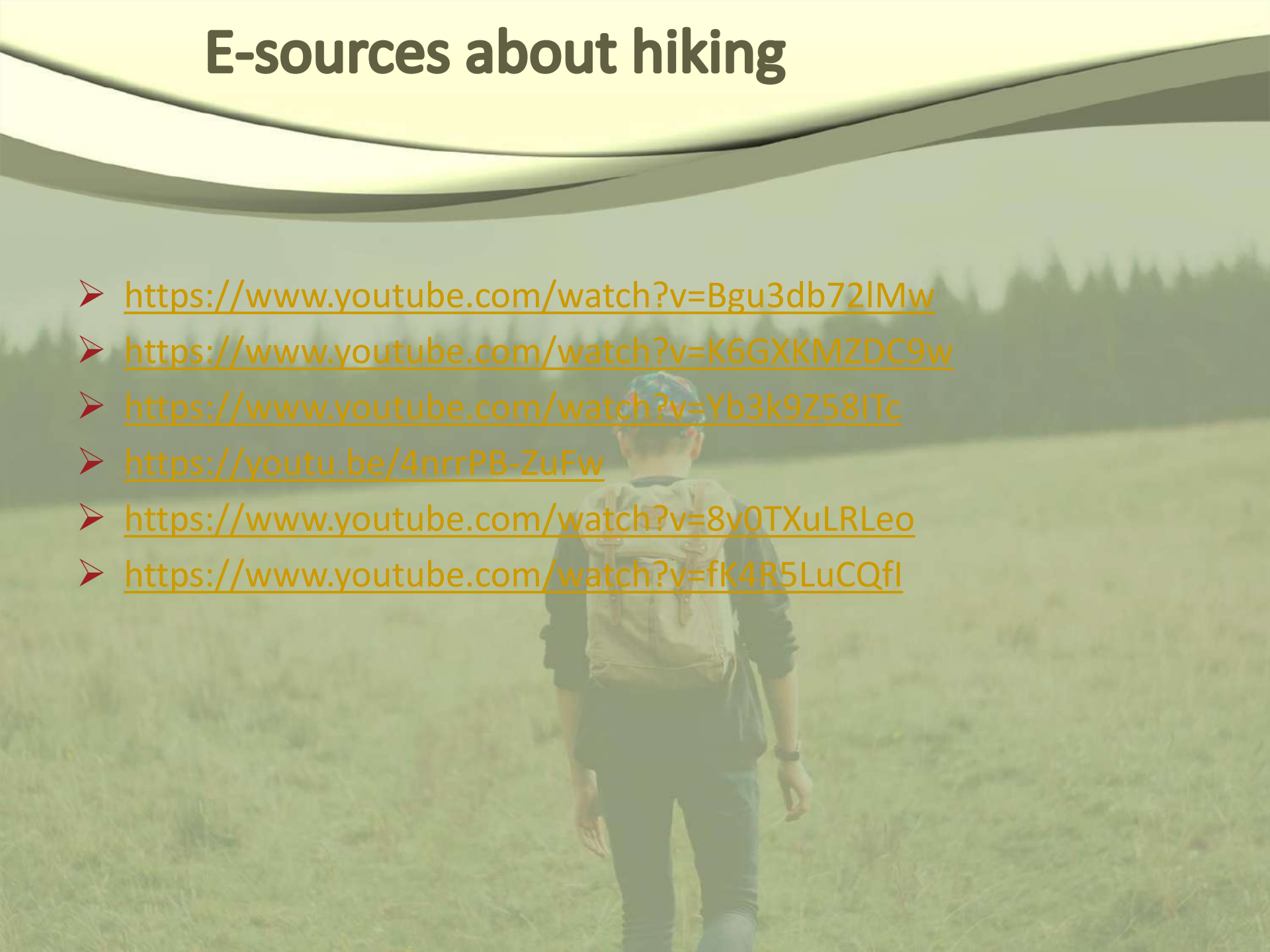
- Let’s take a hike

https://www.youtube.com/watch?v=dYyB6uCpXXM

- What to pack for hiking

https://www.youtube.com/watch?v=O8b5ujHbsyo

E-sources about hiking



- https://www.youtube.com/watch?v=Bgu3db72lMw
- https://www.youtube.com/watch?v=K6GXKMZDC9w
- https://www.youtube.com/watch?v=Yb3k9Z58ITc
- https://youtu.be/4nrrPB-ZuFw
- https://www.youtube.com/watch?v=8v0TXuLRLeo
- https://www.youtube.com/watch?v=fK4R5LuCQfI

Canoeing

Paddle Deep

Canoeing Safety tips

- TO GET INTO YOUR CANOE: HAVE SOMEONE HOLD THE CANOE STEADY
- CROUCH LOW keep your knees bent and GRAB THE SIDES OF THE CANOE FOR BALANCE
- ALWAYS WALK ALONG THE CENTER
- STAY LOW
- ALWAYS WEAR YOUR LIFE JACKET
- AVOID SUDDEN OR JERKY MOVEMENTS

Canoeing Safety tips

- BE AWARE OF THE CURRENTS IN THE WATER
- ALWAYS SIT ON THE SEATS OR IN THE CENTER OF THE CANOE
- STAY AWAY FROM LOW HANGING TREES AND BRANCHES NEAR THE SHORE
- DO NOT CANOE IN BAD WEATHER
- AVOID LETTING BIG WAVES HIT THE SIDE OF YOUR CANOE

Canoeing Safety tips

- IF YOUR CANOE TIPS OVER: DON'T PANICSTAY WITH YOUR CANOE PADDLE OR PUSH YOUR CANOE TO SHORE
- ALWAYS BRING ALONG EXTRA CLOTHING IN A WATERPROOF CONTAINER
- SURE TO BRING THE PROPER EQUIPTMENT: SUN PROTECTION, FIRST AID KIT, FOOD AND WATER, LIFE VESTS, MAP
- TIE ALL YOUR EQUIPMENT TO THE CANOE
- DO NOT LITTER - carry out everything you bring in

Canoeing Safety tips

Video: 7 Canoe Safety Tips Every Paddler Should Know

Canoeing

- Basics of canoeing
- Paddling with kids
- Canoeing excursions for outdoor education
- Consideration for others
- Avoid the spread of invasive non-native species
- Responsibility for actions while canoeing
- Environmental aspects
- Reducing Our Environmental Impact When Kayaking
- Canoe and the marine environment
- Deployment Guidance for Instructors, Coaches and Leaders

Basics of canoeing

Short video showing basic instructions on how to use paddles (video)

Paddling with kids

Tips for canoeing with kids to keep trips fun and safe (video)

Canoeing excursions for outdoor education

Definitions,
Environment,
Activities, People
Risks, Resources in
a nutshell (link)

Consideration for others

On Land

- **Stay away from houses and private gardens**
- **Change discreetly, using public facilities if possible**
- **Do not obstruct roads or entrances to building or properties when you park your car**
- **Ensure your kit does not cause obstruction when unloaded**
- **Avoid damage to fences and walls**

Consideration for others

On Water

- **Follow the general rules of navigation issued by authorities. Arrange for any necessary licenses or other payments**
- **Respect and do not obstruct other water users**
- **Keep a look out and be aware that larger vessels may not see you and are less manoeuvrable**
- **When aiding those in need, on or off the water, do not put yourself or fellow canoeists at risk**

Consideration for others

Anglers

- **Keep a look out for anglers whilst paddling, anglers can be hard to spot on banks**
- **Co-operate to avoid lines, nets and swims**
- **If it is unclear where to pass lines or swims, then quietly attract the attention of the angler and agree a route to follow**
- **When an angler is playing a fish from the bank or wading, stop some way off and await their acknowledgement to proceed**

Avoid the spread of invasive non-native species

- **Check, Clean and Dry canoes & wet equipment after use**
- **Check your equipment and clothing for live organisms, plant fragments**
- **Clean and wash all equipment, footwear and clothing thoroughly.**
- **If you come across any organisms, leave them where you found them.**
- **Dry all equipment and clothing - some species can**
- **live for up to 16 days in moist conditions**
- **Make sure you don’t transfer water elsewhere.**

Responsibility for actions while canoeing

Outdoors activities are ideal for education, sport and recreation, and natural environment needs to be treated with respect.

- **Be aware of information/hazards for your chosen journey and ensure you are confident in the ability of your party to cope with the expected conditions**
- **Take account of water flows, levels, weather and forecasted conditions**

Responsibility for actions while canoeing

- **Leave details of your trip with a responsible person and advise a safe arrival**
- **Ensure your equipment is in good condition and use and wear it correctly**
- **Be aware of health, water quality and other safety information**

Environmental aspects

Canoe is a traditional craft used throughout the world for exploring wilderness areas and observing wildlife and flora.

Canoe causes no erosion, noise or pollution and leaves no trace of its passing.

Canoeing at appropriate water levels is an environmentally benign activity and causes no damage to fish stocks

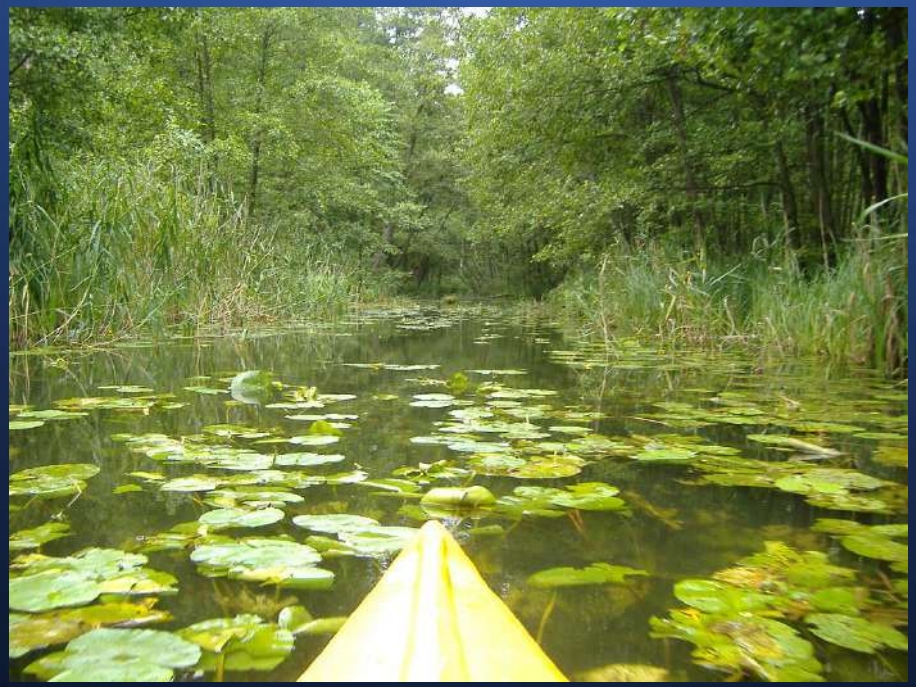
By following some simple steps you can ensure your presence is not detrimental to the freshwater and marine environment, to minimize and avoid disturbing

Environmental aspects

- Take your litter home with you to leave no trace of your visit
- Leave the environment as you found it
- Make minimum noise
- Constantly assess wildlife: if you see disturbance signs move away quickly
- On rivers, avoid paddling over gravel banks in low water conditions as they may contain fish spawn
- On marine waters take care on stony beaches as they may be nesting grounds
- Keep a safe distance away from wildlife to avoid causing disturbance and stress
- Report pollution, incidents, damage and invasive species to the relevant authorities

Reducing Our Environmental Impact When Kayaking

Link: 10 ways to minimise the impact of your kayak adventure on the environment



Canoe and the marine environment

Do you know at what time of year you should take care not to disturb the seals?
The disturbance we cause is minimal, but we should not be complacent and should strive to learn more about the sea, developing skills and senses that ensure the natural heritage of the sea does not suffer from our visits.

Canoe and the marine environment

- **Be aware of weather conditions and water temperature. Prepare for changes in weather and the possibility of a capsize.**
- **Beware of off-shore winds that make it difficult to return to shore**
- **Seek qualified instruction to learn proper paddling techniques, water safety and Most importantly, WEAR YOUR PERSONAL FLOATATION DEVICE**
- **Tell someone your paddle plan. Then stick to your plan.**
- **When paddling in a new area, check with the locals regarding currents, shoreline conditions and weather patterns. Plan an "escape" route - an alternative place to get off the water should environmental conditions**

Deployment Guidance for Instructors, Coaches and Leaders

Guidance for Instructors, Coaches and Leaders to become more experienced over time (link)

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Beginner's guide to bird watching

The art observation of live birds in their natural habitat

Birding is a great way to see wildlife, but how do you get started?

Bird Watching

Are you fascinated by birds?

When you see them chirping and flying from tree to tree, do you want to understand them more?

Bird watching, or birding, is an increasingly popular pastime that can enrich your knowledge of birds, relax you and help you bond with other enthusiasts.

What is the appeal? Why do so many people enjoy this activity?

Birding fulfills many of our basic criteria for what makes for good outdoor recreation.

Birds are beautiful and their extravagant plumages are dazzling to the eye.

Birds appeal to our sense of aesthetics.

Their complex behavior is intriguing and their songs are varied, evocative and very pleasing to the ear.

- You don’t have to be rich to go birding. All you really need is a good field guide to the birds and a pair of binoculars to start.
- Birding always presents an intellectual challenge because there are lots of different species.
- Birding generally appeals to our intellectual curiosity: Birds have amazing and varied behaviors.

- Birding, as a sport is non-consumptive and nondestructive to the environment.
- Going birdwatching is a great way to get out into nature, to
- keep in touch with the awe and mystery of the natural world.

- Tracking the seasonal movements of birds keeps you in touch with the passing seasons.
- Birding can contribute positively to your feelings of mastery and self esteem.
- Finally, amateur birdwatchers have contributed and continue to contribute much to the scientific knowledge of birds.

How to Bird Watch

- Good birders are not born–they develop their skills progressively with time and practice.
- While there are many aids on the market to help beginning birders, such as books, videos, cassettes, CDs, and computer software, there is no substitute for field experience when it comes to mastering the art of birding.
- The more time you spend out in the field, the better you will become.

PART 1: Gathering Equipment

1. Look at binoculars you have on hand.

- You don’t need fancy birdwatching equipment to start watching birds.
- Anything that will help you see far away will work in the beginning.

You very well may decide to buy binoculars especially for birding, but you can use opera glasses, telescopes or anything you have on hand. Ask a friend, who may have binoculars, if you can borrow them.

2. Compare binoculars for fit and feel.

- If you decide to buy, the way binoculars fit on your face and feel in your hands is important.
- Go to a sporting goods store or find a nature center that may have different pairs to try.
- Find a lightweight pair that will be easy to carry and hold steady whi le you spot birds.

3. Look at the magnification and lens size

Binoculars will have two numbers that are listed like 8x29, 7x50, 10x40, or some other combination.

The first is how many times they magnify an image and the second is the lens size, or how much light they bring in.

Pick a lens on the low end, because a high one captures a lot of movement too and can be too bulky for watching birds in a forest or field.

Pick a magnification of 7 to 8 times.

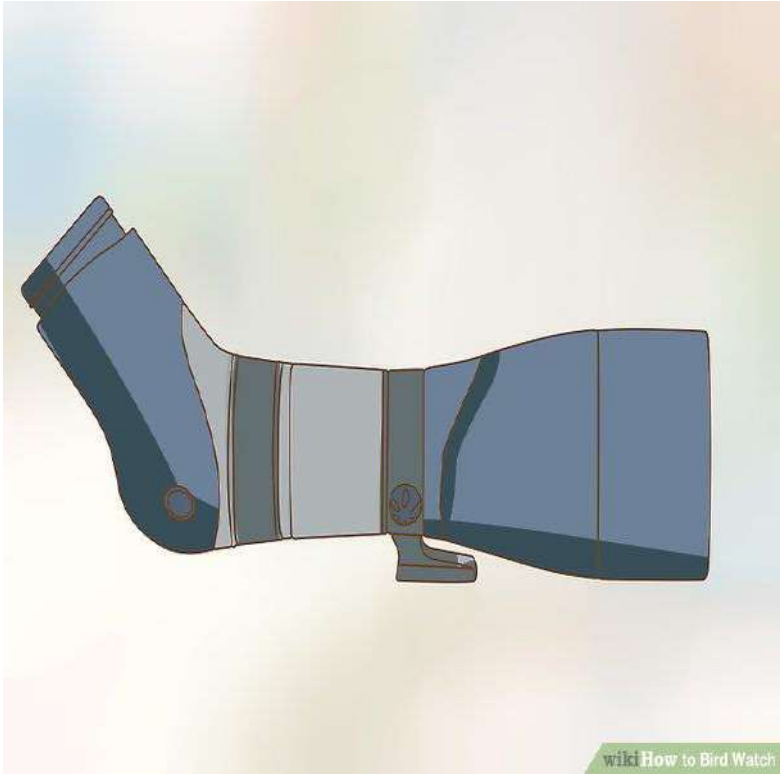
Pick a lens number between 30 and 40 millimeters for the most versatility

4. Consider the binocular strap

- When you go into the field, you will be wearing binoculars on your neck for hours at a time, so make sure the strap is wide and comfortable.
- Use a harness that distributes weight to the shoulders and back, if you have a heavier pair.

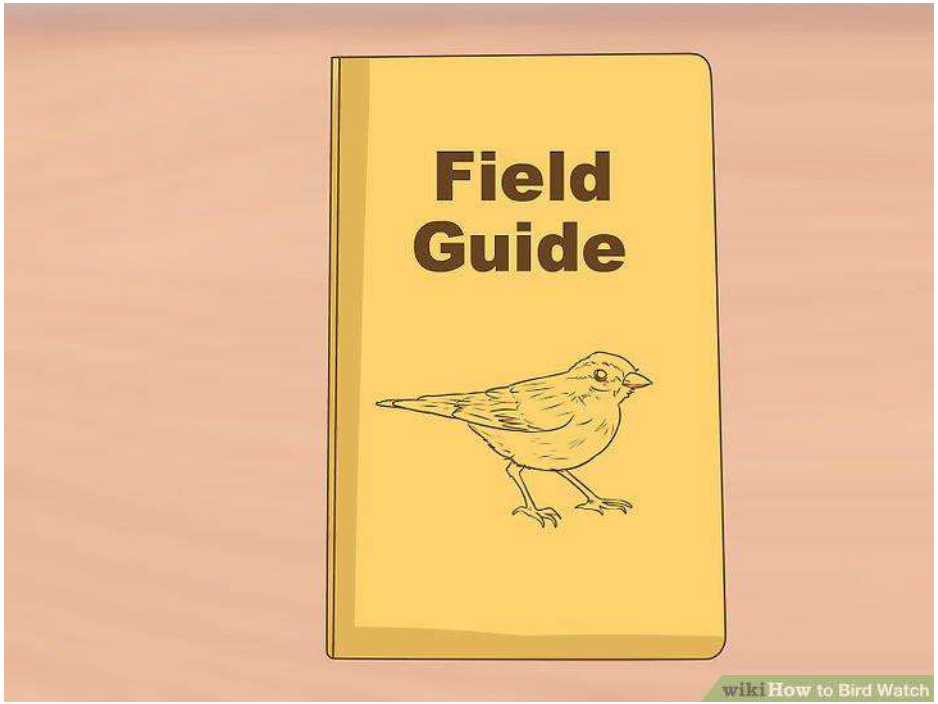
5. Use a spotting scope

A scope will offer stability, since it’s used on a monopod, and has higher magnification abilities.
If you get serious about birding, invest in a scope to spot birds from greater distances, like across lakes or fields.
Look for one with at least one lens that is fully coated with magnesium fluoride.
This will give you the sharpest views of feathers and colors. It will also capture movement easier than binoculars.



6. Get a field guide

A regional field guide can help you narrow down what birds to lo ok for locally.
Learn about different families of birds, like swallows, warblers, and herons.
Get into the habit of studying their habits, calls, and field marks.



Other than binoculars, your field guide will be your go-to for bird watching, because it will have all the information you need to identify different species.

7. Find a good camera

Find a quality camera to take bird pictures, since they are small and do not stay still.

Look for a DSLR one with a lens attachment of at least 300 mm.

8. Bring microphones to record songs

Learning bird songs and calls are a helpful way to identify them.
You may want to record their sounds while you're out spotting.
Take either a parabolic microphone or a shotgun mic that you can attach to your camera.
Use your camera to record.
Regular microphones will be ineffective at recording soft or distant bird sounds and will capture too much background noise.

PART 2 : Preparing to Spot

1. Find a birding group

What better way is there to learn about birding, than from other birders?

The more sets of eyes and ears there are, the more birds you'll find, especially if you go with bird watchers who are more experienced than you are.

2. Dress appropriately

Wear waterproof boots, so you'll be prepared if you encounter puddles or mud.

Wear dark, neutral colors, like brown and gray, so you don't frighten birds away.

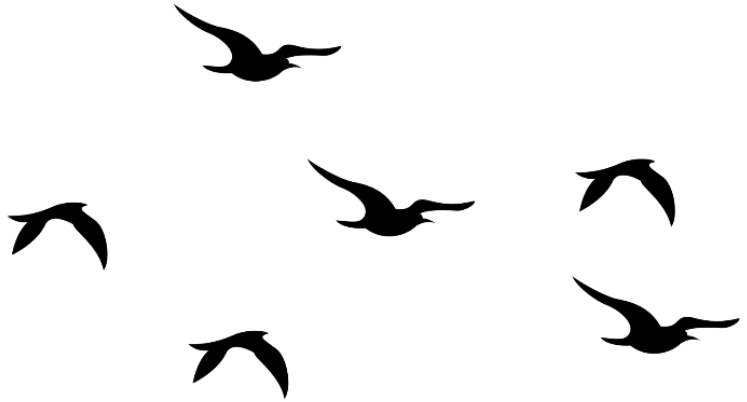
Bright or white colors enhance movement around them.

3. Be quiet

Loud talking or laughing can cause birds to flee before you even get close. Put your phone on silent, and speak softly or use hand signals and gestures to communicate with a group.

Don’t be tempted to yell “Look over here!,” no matter how excited you get by sp otting a rare bird.

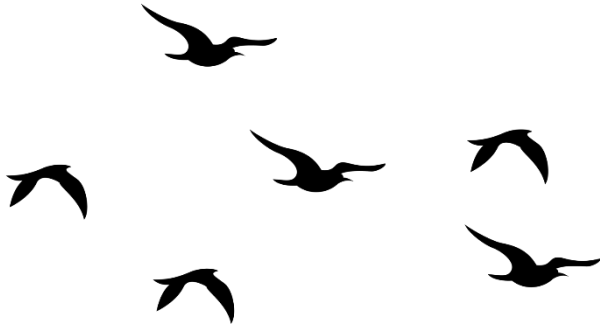
4. Go at the right time



Depending on where you're located and what birds you're trying to spot, the time of day you venture out can greatly impact successful birding. Songbirds are normally spotted two hours after sunrise and right before sunset.

- Hawks and eagles are best seen when the sun first rises.
- Spot ducks any time of day.
- Shorebirds are out when ocean tides change.

5. Lure birds to you



- Start with simple black oil sunflower seeds and diversify with things like mealworms and fruit.
- Place a birdbath or fountain in your yard. Birds love shallow or running water.

Part 3:Identifying Birds

- Start by learning to quickly recognize what group a mystery bird belongs to.

- **<u>You do this in two ways:</u>**
- By becoming familiar with the general shape, color, and behavior of birds, and
- By keeping a running tally in your head of what kinds of birds are most likely to be seen in your location and time of year.

Put The 4 Keys Into Practice

Bird watchers can identify many species from just a quick look.

They're using the four keys to visual identification:

- Size & Shape,
- Color Pattern,
- Behavior, and
- Habitat.

Practice with these common birds to see how the 4 keys work together: You can also see the 4 keys in action in free Inside Birding series of instructional videos.
https://academy.allaboutbirds.org/inside-birding-size-shape/#_ga=2.78792468.1061969188.1592042604-1844625336.1591690830

Size & Shape

Blue Jay. Jays are large, stout-bodied songbirds with long, full tails and straight, powerful bills. Blue Jays (and Steller's Jays) have a prominent crest.

Great Blue Heron: A classic silhouette: long, spear-like bill, elegant S-shaped neck, long legs.

The combination of size and shape is one of the most powerful tools to identification.

Though you may be drawn to watching birds because of their wonderful colors or fascinating behavior, when it comes to making identifications, size and shape are the first pieces of information you should examine.

Color Pattern

Male **Harlequin Ducks** are so strongly patterned that it's very difficult to mistake them for anything else. *Photo by Jim Paris via Birdshare.*

Even with a brief view of a flying bird, color patterns can lead you to an ID. **Northern Harriers** always show this conspicuous white rump patch. *Photo by Bob Powell via Birdshare.*

As soon as you spot a bird, your eyes take in the overall pattern of light and dark.

And if the light allows, you'll probably glimpse the main colors as well. This is all you need to start your identification.

Behavior

Kingbird The heftiest and most tyrannical of the "tyrant flycatchers." Erect, thick-headed, with a broad, flat bill.

American Robin Sturdy, strong-framed, and sure of itself.

House Sparrow Large-headed and plump, often hunched over crumbs or watching out for cats and shopkeepers.

Bird species don’t just look unique, they have unique ways of acting, moving, sitting, and flying. When you learn these habits, you can recognize many birds the same way you notice a friend walking through a crowd of strangers.

Habitat

In spring and summer, **Bullock's Orioles** overlap with Baltimore Orioles only in a narrow region where the Rockies meet the Great Plains. *Photo by Sam Wilson via Birdshare.*

Brown-headed Nuthatches look very similar to Pygmy Nuthatches, but the farthest west they occur is the pine flatwoods of East Texas. *Photo by Mike Powers via Birdshare.*

Gambel's Quail live in the Desert Southwest. Their range overlaps very little with California Quail. *Photo by Joan Gellatly via Birdshare.*

Habitat is both the first and last question to ask yourself when identifying a bird. Ask it first, so you know what you're likely to see, and last as a double check. You can fine-tune your expectations by taking geographic range and time of year into consideration.

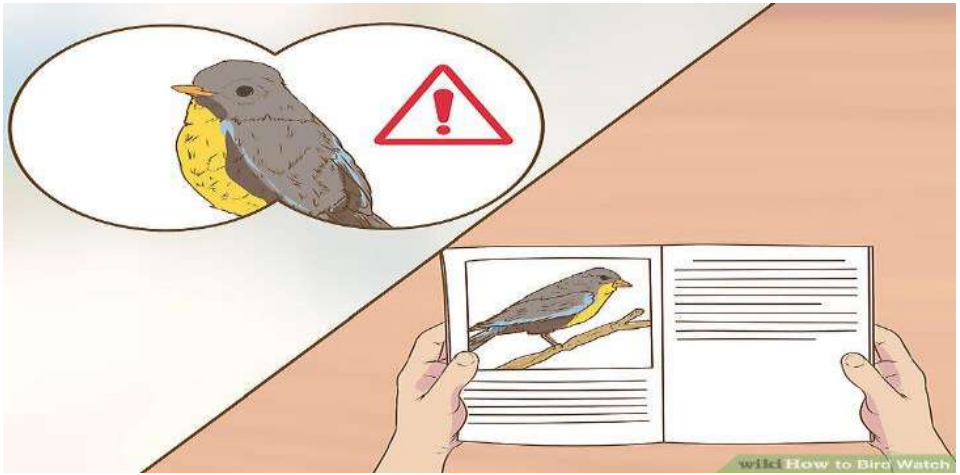
1. Find a bird with your own eyes first

No matter what type of binoculars you use, they will lessen your field of vision. Avoid missing birds by spotting them with your own eyes first.
Find birds around trees and overhead in fields, and then use your binoculars to have a closer look.

2. Use your field guide

- The shape and size of the bird, including whether it’s big, small, round or oval.
- What the bird is doing. Is it searching for insects, circling overhead or soaring?
- Places where field markings are normally, like wing bars or the tail feathers.

3. Don’t use colors alone



- Focusing on bird colors can lead to misidentification.
- Light and shadow can make colors appear different than what they really are.
- A bright red feather can look brown in certain light. Focus instead on sha pe, size, markings, posture, behavior, etc.

4. Listen to their songs

- Sometimes the only way you can identify a bird is by their songs and calls because they are good at hiding.
- Listen to bird chirps to determine where they may be coming from.
- Keep in mind what birds you may see on an outing and look up their calls beforehand.
- Record sounds with a parabolic or shotgun microphone.

5. Look at the surrounding environment

- You wouldn’t expect to see a heron in the desert. Moreover, you should expect to see different birds in a forest than you would see in the city park.
- There will also be different birds by oceans than by lakes. Always consider the known habitat of species you're looking for.

6. Take a picture

- Use a camera, without a flash or clicks to prevent frightening birds, to look back on after an outing.
- This way, you can record what you've spotted, but also help identify birds later on, when you're not in the field.
- With time, you'll become an expert and may only need the camera to record all the interesting birds you encounter.

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NATURAL ACTIVITY IN URBAN AREAS

BENEFITS OF NATURAL ACTIVITIES IN URBAN AREAS …

WHAT MIGHT BE DONE AND HOW FOR…

- HUMAN
- BIODIVERSITY
- ENERGY
- NUTRITION AND FOODS
- LANDUSE/SOIL
- WATER
- AIR
- TRANSPORTATION
- CONSTRUCTION/BUILDINGS/ GREEN INFRASTRUCTURES
- TRAINING ACTIVITIES

NATURAL ACTIVITIES
IN URBAN AREAS

HUMAN

Main Activities

- Awareness raising in nature, ecosystems, self-sufficiency, species diversity, climate change, etc.
- Strengthening of social organizations (associations, clubs, unions etc. voluntary organizations)
- Education studies
- Creation of various activities (production, distribution, organization etc.)
- Increasing labor force participation

Important Criteria

- Nature rights
- Human rights
- Compatibility
- Sustainability
- Climate change
- Applicability
- Motivationalism
- Reassurance
- Productivity

BIODIVERSITY

Main Activities

- Determination of biodiversity in the city and its surroundings (wild plant and animal species)
- Production of plant species in the city (at home, on the balcony, in the garden, on the farm)
- Production of animal species in the city
- Preservation of production of seeds, crops etc.
- Reorganization and rehabilitation of local markets
- Marketing and distribution of produced

Important Criteria

- Protectionism (live rights)
- Naturalness and integrity
- Climate change
- Sustainability
- Applicability
- Biodiversity
- Productivity

ENERGY

Main Activities

- Areas where solar energy will be expanded and used
- Areas where wind energy will be expanded and used
- Repair and improvement of the current energy system (electricity generation and distribution systems)
- Encouraging new searches in energy

Important Criteria

- Ecological (clean)
- Sustainable
- Renewable
- Cheap
- Easy to obtain
- Hazardous waste free (safe)

NUTRITION AND FOODS

Main Activities

- Increasing organic and ecological production
- Increasing the quantity and quality of production areas and facilities
- Reducing ecological and carbon footprint
- Protecting the manufacturer's rights
- To provide energy support for food production
- Supporting individual productions and increasing motivation
- Changes to increase food production in the city

Important Criteria

- Sensitive to living rights
- Ecological
- Climate change
- Healthy
- Producible
- Pustainable
- Equitable

LAND USE / SOIL

Main Activities

- Increasing local plant and animal growing areas in and around the city
- Increasing biodiversity in natural areas
- Increasing the amount of parks and gardens
- Space acquisition and naturalization projects
- Space acquisition with vertical urbanization

Important Criteria

- Naturalness
- Wholeness
- Climate change
- Sustainability
- Soil ethics
- Farmer rights
- Food networks and biodiversity
- Fitness for health

WATER

Main Activities

- Protection of naturalness and integrity of water resources and watersheds
- Water management for conservation of biodiversity
- Arrangements for storing and using rainwater in buildings and land
- Less and crop-based water use techniques in agriculture
- Water use systems suitable for balconies, terraces and vertical gardening in buildings (commissioning of waste water)

Important Criteria

- Naturalness
- Integrity (basin approach)
- Climate change
- Sustainability
- Recycling
- Saving
- Food networks and biodiversity
- Water rights

AIR

Main Activities

- Design and applications for increasing air quality
- Ecological and Renewable Energy concept
- Establishment of self-sufficient systems as energy
- Commissioning clean fuels
- Increasing-regulating vivid green tap and carbon-attracting areas
- Increasing air quality in residences and all kinds of buildings

Important Criteria

- Air quality
- Climate change
- Sustainability
- Wholeness
- Energy recovery
- Compliance with ecosystems
- Price suitability

TRANSPORTATION

Main Activities

- Widespread use and cheapening of clean fuel
- Bicycle paths and popularization
- Arrangement of walking paths
- Increasing and expanding the quality of public transportation
- Traffic flow and density suitable for the ecological city
- Change and renewal of ecological quality of road materials (materials that do not absorb temperature or vice versa)

Important Criteria

- Reducing emissions
- Ecological Compatibility
- Sustainability
- Applicability
- Cheapness
- Facilitation

CONSTRUCTION

Main Activities

- Design of light, water, energy, material and settlement to increase ecological production
- Reorganization of old buildings and their surroundings
- Design and construction of new buildings and their surroundings
- Some buildings are designed and organized for animal production
- Reorganization and rehabilitation of local markets
- Marketing and distribution of produced

Important Criteria

- Ecological compatibility
- Healthiness
- Sustainability
- Applicability
- Functionality
- Durability
- Ease
- Reasonable price

TRAINING ACTIVITIES

Main Activities

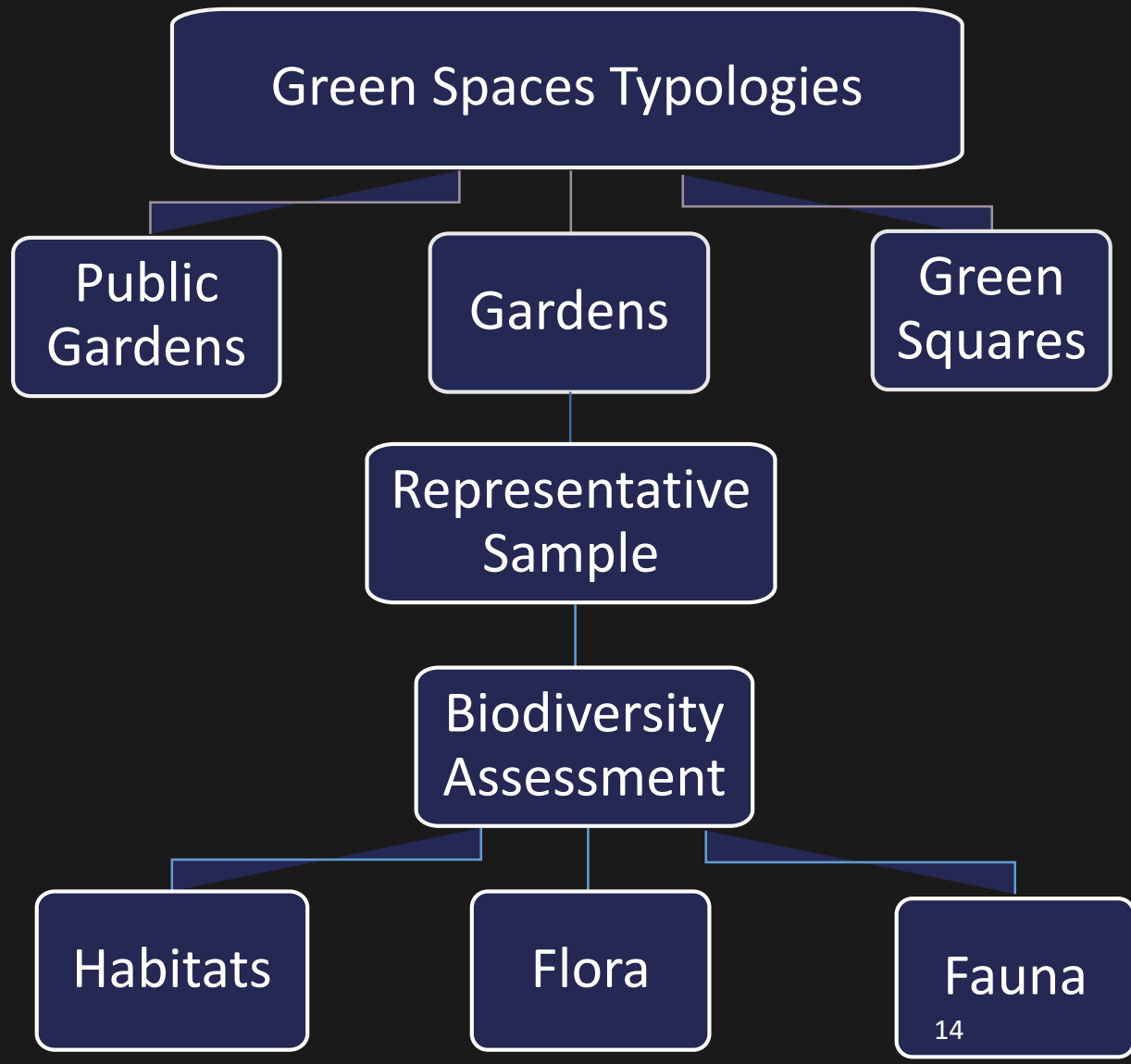
- Creation of the educative structure
- Creating training groups
- Creation of educational spaces and environments
- Creation and preparation of educational material
- Creating training topics
- Workshops and applications
- Field studies
- Groups to organize healthy life in the city

Important Criteria

- Live supervisor rights
- Egalitarian and libertarian
- Compatibilizer
- Creative
- Applicable
- Functional
- Communication facilitator
- Motivating

RECOGNITION OF CITY FLORA AND FAUNA RICHNESS

BIODIVERSITY IN THE CITY



BIODIVERSITY IN THE CITY

Biodiversity – the variety of life on Earth – makes our planet habitable and beautiful. Many of us look to the natural environment for pleasure, inspiration or recreation. We also depend on it for food, energy, raw materials, air and water – the elements that make life as we know it possible and drive our economies.

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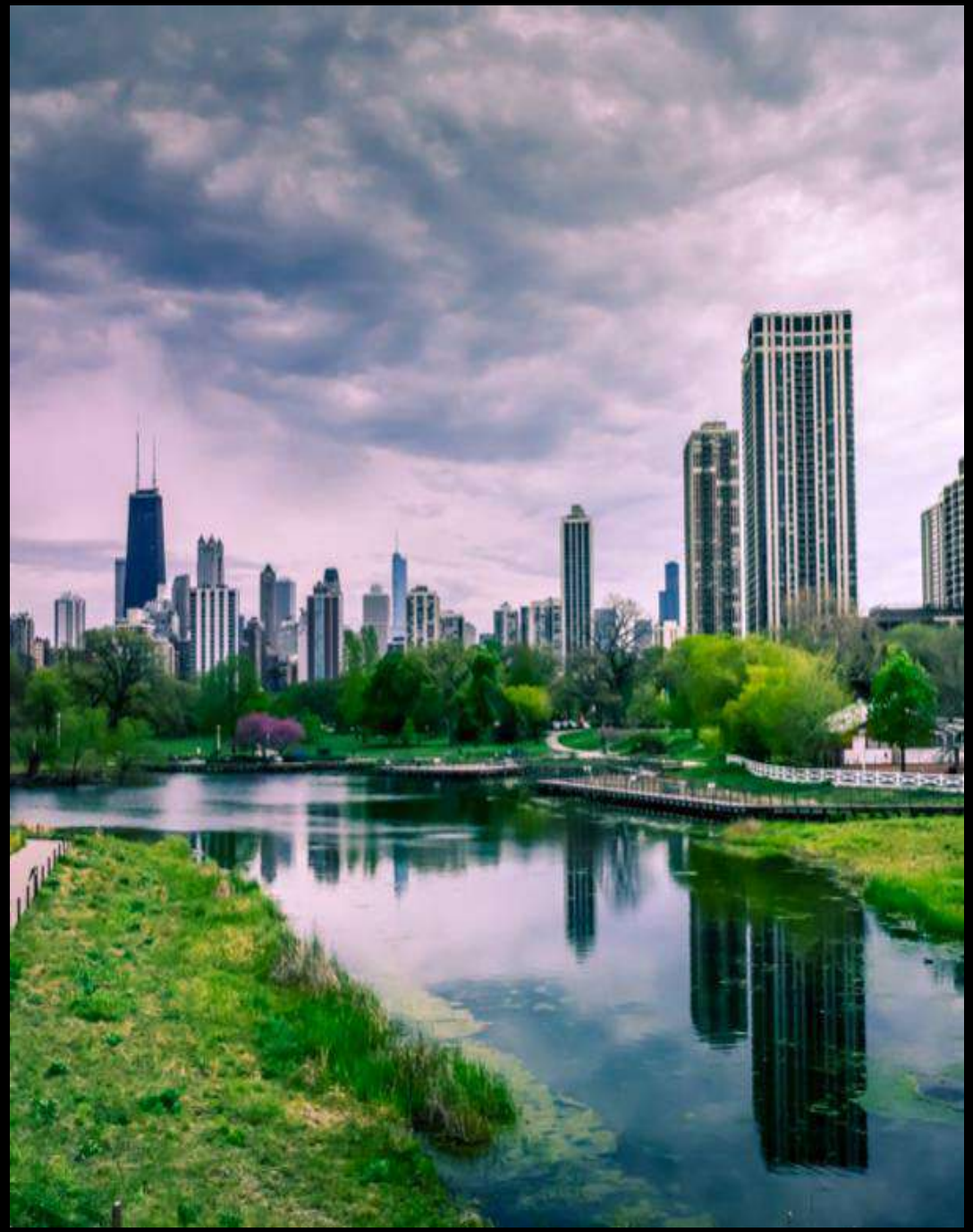
15

THE CITY, A PLACE WHERE MANY ANIMAL AND PLANT SPECIES LIVE

A city is an environment where a large human population is concentrated and which organizes its space according to needs and activities. The ecological characteristics of cities are quite particular due to the concentration of buildings of all kinds and the importance of human activities. In reality, these characteristics may vary according to the density of human populations, the geographical location and the type of activity. Nevertheless, the human presence is still more significant than in rural areas.

WHY PRESERVE BIODIVERSITY IN THE CITY?

Through the services they provide, urban plants help to improve the quality of air, water and soil. Trees in particular absorb significant amounts of pollutants. They play a significant role in the carbon cycle and have a significant impact on neighbourhood temperatures, especially in the event of severe heat waves. Indeed, the water taken by the roots of the trees and circulating (the sap) to the leaves evaporates thanks to the stomata. This conversion of liquid water into water vapour (evapotranspiration), which uses large amounts of solar energy, has a particularly appreciable local cooling effect during the summer months.



WHAT SPECIES IN THE CITY?-1

The major taxonomic groups are almost all represented in the city. As in many other terrestrial ecosystems, aquatic species suffer most from developments that are often at the expense of wetlands. For example, amphibians are often at high risk in urban areas. Otherwise, plants, herbivores or phytophages, carnivores may be found in cities. Apart from trees that have a special status, urban animal and plant organisms are of modest size.

WHAT SPECIES IN THE CITY?-2

On the wildlife side, the most visible are birds. House sparrows (*Passer domesticus*), blue tit (*Cyanistes caeruleus*), blackbird (True thrushes) and black swift (*Cypseloides niger*) are among the most common species. In the urban environment, adapted birds find nesting places and abundant feeding resources, so the abundances observed can be very high. The house sparrow remains common in the city. In winter, the city loses some migratory species but also gains some non-breeding species such as alder tarin, which come to seek food and heat.

WHAT SPECIES IN THE CITY?-3

The last references to large mammals, carnivores or herbivores, wolves, deer, etc. date back several centuries, even if wild boars are increasingly reported in some outlying districts. Hedgehogs, moles, martens, squirrels, rats and mice, rabbits or foxes and some species of bats are about the only mammals found in urban centers. Hedgehogs in particular are in sharp decline due to the increasing scarcity of insect or gastropod species on which they feed, killed by insecticides or slug pellets. Fencing between gardens in increasingly large urban areas that prevent genetic exchanges between populations, as well as deadly encounters with vehicles on the road, make them a highly threatened species.

WHAT SPECIES IN THE CITY?-4

The warm urban environment and the high availability of food resources also attract many small invertebrates. In general, the city appears to be a refuge for generalist insects, adapted to varying living conditions in highly disturbed environments. Butterflies often desert city centers but can be found in large numbers in gardens when they have a few unmanaged spaces and when the floral resource is quite abundant. Other pollinating species are also found in cities, especially solitary bees, which are responsible for most of the pollination of entomophilic plants in cities or are not too competitive with honeybees from the many hives placed in certain areas.

SOME USEFUL LINKS TO RECOGNIZE CITY FLORA AND FAUNA

- http://learningintheleaves.co.uk/flora-and-fauna-identification
- https://ypte.org.uk/factsheets/birds-in-the-city/birds-in-the-city
- https://www.nhm.ac.uk/discover/city-birds-and-how-to-watch-them.html
- https://ypte.org.uk/factsheets/wildlife-in-the-garden/gardens-are-important
- https://friendsoftheearth.uk/bees/bee-identification-guide
- https://www.wildfooduk.com/mushroom-guide/
- http://www.mushroom.world/mushrooms/list
- http://www.bugcollectors.com/where-to-find-insects
- https://www.inaturalist.org/projects/never-home-alone-the-wild-life-of-homes
- https://butterfly-conservation.org/our-work/conservation-projects/england/big-city-butterflies

CITY GARDENING


https://www.urbannaturale.com/why-you-should-green-your-roof-this-summer/


https://gfycat.com/backcloudyalaskajingle

The first action for realizing ecological life in cities

Permaculture

WHAT IS PERMACULTURE?

Permaculture is a set of design principles centered on whole systems thinking, simulating, or directly utilizing the patterns and resilient features observed in natural ecosystems. It enables us to look at the world from a different window with a holistic approach containing different disciplines.

IMPLEMENTATION PLACES OF PERMACULTURE DESIGNS

- In cities, towns, villages
- In sites, hospitals, factories, facilities
- In school, institutions and companies
- In homes, apartments, sites
- On farms, in agricultural areas

PERMACULTURE DESIGN AREAS

Permaculture Design Areas in Cities	Permaculture Design Areas in the Countryside
• Balcony and gardens • Flat roofs • Parks and refuges	• Rehabilitation of damaged areas • Water capture and storage, feding groundwater resources • Animal shelters and habitats, protection of endemic species • Creating a food forest and food produced • Combating erosion and preventing erosion

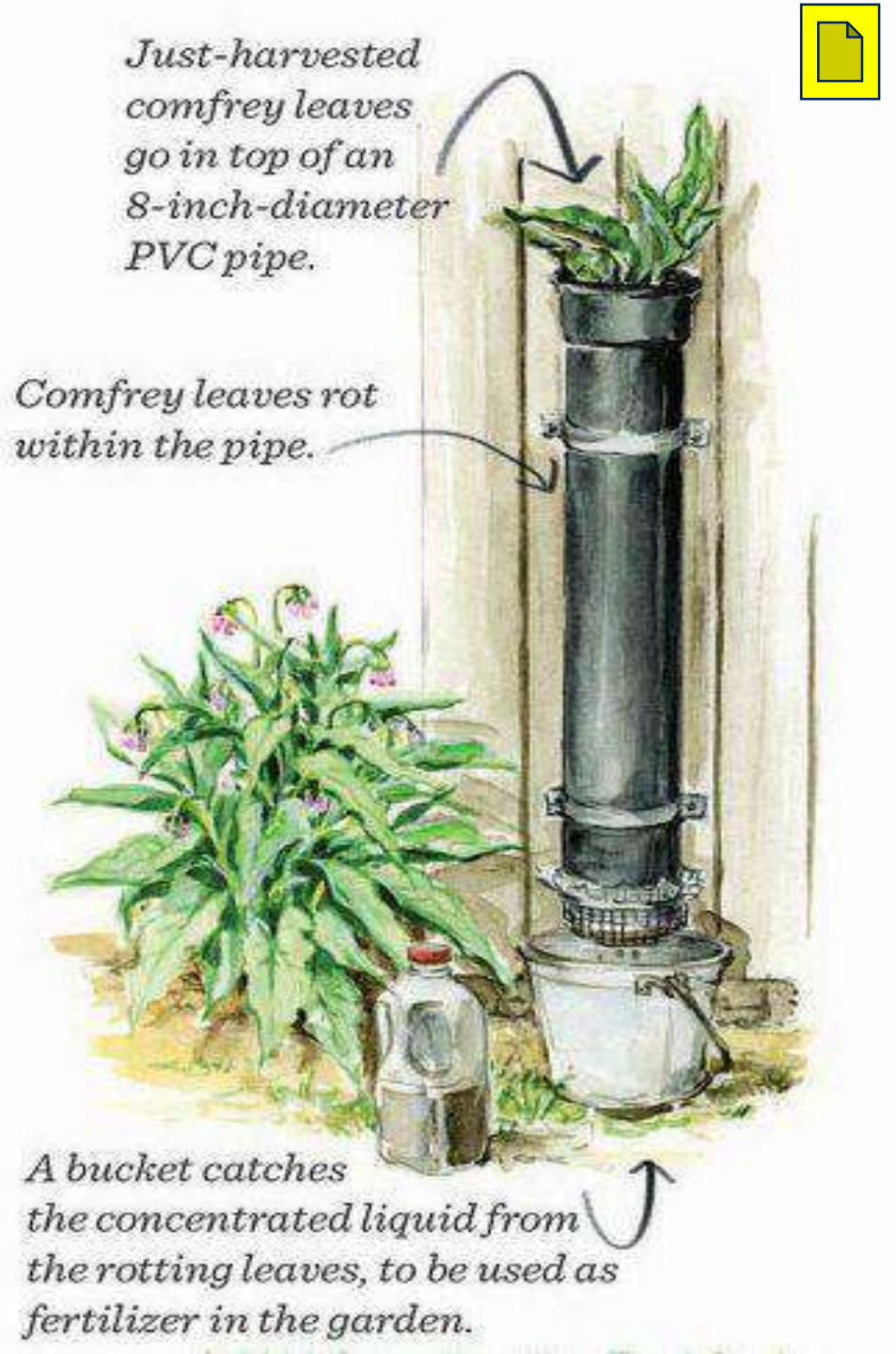
PERMACULTURE REGIONS - ZONES

- REGION 0: Living space, home.
- REGION 1: Places visited every day, usually a maximum of 10 m of the house.
- REGION 2: It is usually visited every 2 days. Animals (Chicken and goat), production gardens, pond, fruit trees, compost area.
- REGION 3: It is a region visited once a week. It is the spreading and animal feed area of plants and animals such as garlic, potatoes that require less care.
- REGION 4: There is a tree field or woodland, irrigation pond, cattle and horses, a grain field.
- REGION 5: It is a wild area and this area is the protected area.

SEGMENT AND ZONES IN PERMACULTURE

- Rain regime
- Temperature
- Neighbors
- History
- View
- Noise
- Slope
- Guests

- Animals
- Infrastructure
- Disasters (earthquake, flood, storm ..)
- Frost
- Transportation (roads)
- Soil
- Pollution



CREATING A FOOD FOREST-1

Fruiting Bottom Vegetation

- Gooseberry produces a sour fruit and due to the spikes, animals cannot eat their leaves much.
- The various types of gooseberry selected yield larger, larger quantities and sweeter fruits. Black and red currants can be used instead of gooseberry.
- Many types of currant are known to keep whiteflies away. Snowball and blueberry plants can also be included in this list.

Ground Coverers

- Natural groundcovers can be used to control the threadworms in the soil, or it can be ensured that latin flowers and marigold flowers perform this function.
- It is also possible to benefit from strawberries and mushrooms. Comfrey grass, broad beans and saryonca, cut between early spring and mid-summer, provide trace minerals, mulch and nitrogen.

CREATING A FOOD FOREST-2

Soil and Land Preparation

- Soil preparation and grafting are indispensable for productive food forests.
- One of the suggestions for land preparation is to introduce large amounts of organic matter input into the food forest.

Farming

- Animals are indispensable for all kinds of forest systems, especially for human-made food forests with abundant fruit.

Plants Suitable for Nutrition and Reproduction of Insects

- They resemble parsley (dill, anise, carrots left for seeding), nettle and other small-flowered plants.
- These plants and rosaceae provide a natural habitat for wasps that control looting insects.

WATER MANAGEMENT AND USE OF RAINWATER IN PERMACULTURE-1

- In permaculture, generally the first step of land practices is water management in the land.
- It is ensured that the water comes out of the land cleanly.
- One of the cultures that people lose quickly is rainwater cisterns.
- Rainwater recovery is the cheapest and easiest to collect fresh water source.

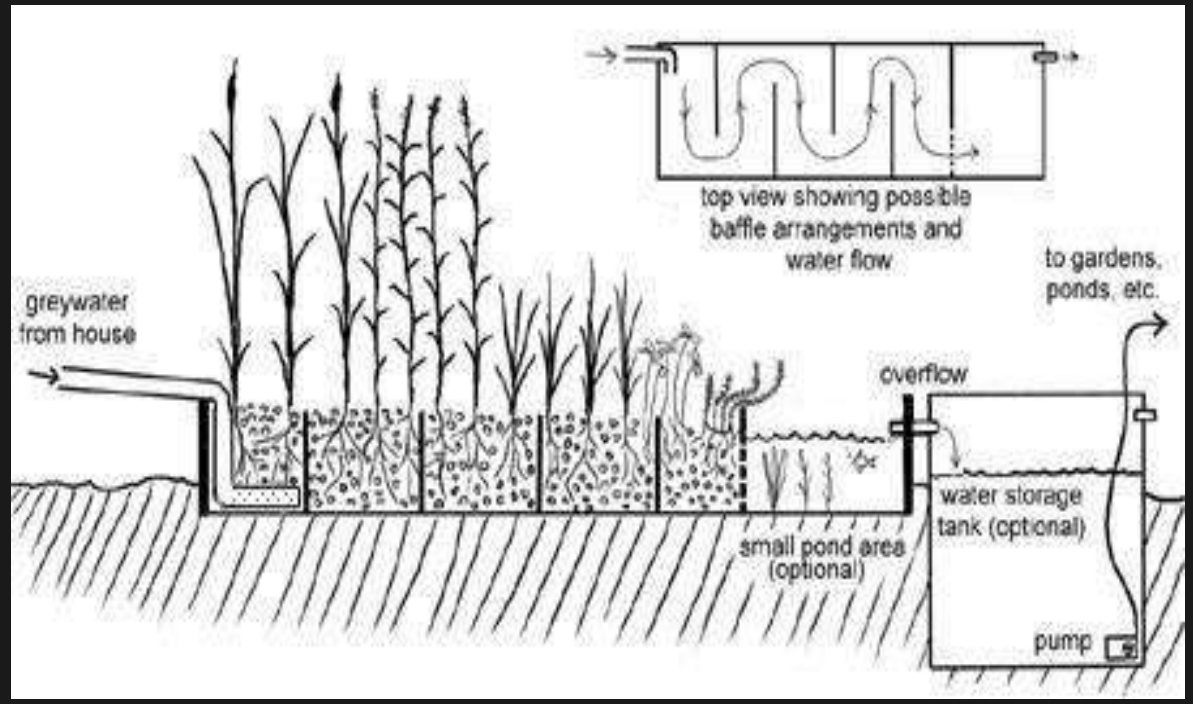
WATER MANAGEMENT AND USE OF RAINWATER IN PERMACULTURE-2

Water Retention

- In order to eliminate water shortage in the field, it is a convenient method to make a rainwater collection pool.
- A scoop is kept.
- The area where the pool can be opened is determined. (which area is better).
- The slope of the land is a serious advantage for us.
- It should be determined how much water flow is in the places where snow waters melting and observing in winter.
- The location of the pool should be higher than the areas to be irrigated, not too far away, in a place where the slope ends or decreases.

GREY WATER-1

- Gray water contains one-quarter of the total suspended solids in domestic wastewater and more than two-thirds of total phosphorus.
- Dish and laundry detergents are the main source of phosphorus in gray water.
- The water from the kitchen sink containing food pieces and the water from the laundry are much more polluted than the gray water from the shower and the sink.

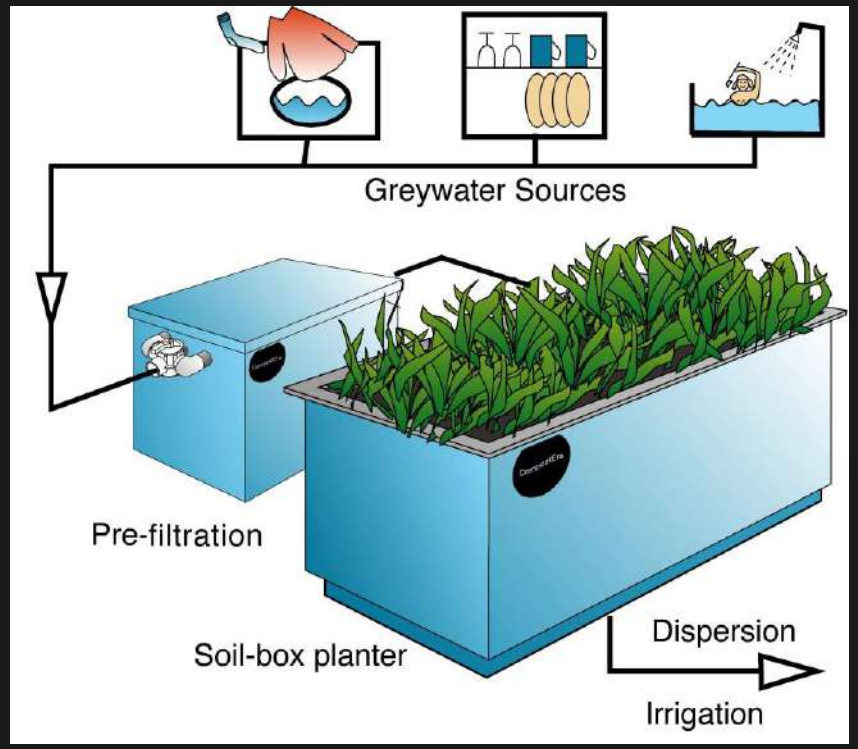


- Gray water; It can be defined as wastewater generated in showers, bathrooms, sinks and kitchen sinks in pretreatment.
- Depending on the state of chemical pollution, evaluation is made in the form of less polluted gray water and very polluted gray water.

GREY WATER-2

Very Dirty Gray Waters

- Indicates waste water from the kitchen and washing machine.
- Gray water is the largest percentage of domestic wastewater by volume, with a share of 75%.



Less Dirty Gray Water

- Lightly soiled gray waters mean waste water from showers, bathrooms and sinks.
- The pollution rate is quite low.

HEALING HERBS SPIRAL

- The logic of the herb spiral is to grow many herbs planted in a narrow space together as much as possible.
- Actually, the meaning of the spiral; to design different ecological conditions in a small area, normally not possible.
- Moreover, small area means that both irrigation and harvesting are easier.
- Statically medicinal weed spirals are self-supporting structures when normally built on flat ground.

- The thickness of the material to be used in the wall of the spiral should also be considered at the beginning of the work and the final diameter should not exceed 1.5-2 meters.
- This form provides different possibilities in terms of light receiving angle, wind exposure and drainage, and the plants can be placed according to their needs.
- As the material that forms the walls; even bricks, stones, tree stumps and bottles to be stuck inverted into the raised soil pile can be used.

SAFETY INSTRUCTIONS

However, the importance of knowing flora and fauna needs to be coupled with first aid knowledge and an understanding of what to do in an emergency. Below you will find advice and guidance on what to do in the worst should happen:

http://learningintheleaves.co.uk/flora-and-fauna-identification

ACKNOWLEDGEMENT

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Traditions, Cultures and Nature

The relationship

Outdoor training guidelines – Traditions, Cultures and Nature

What is it about?

- **The objective**: contribution to building of competency in outdoor education and training to promote eco-literacy
- **The aim:** presentation of practical advices how to unify the visions for traditions, nature and culture, and implement them in behavior and education, integrating emotional, social, and ecological intelligence
- **The structure:** consequent presentation of the:
  - Basic concepts of culture, traditions, and nature
  - Relationships among them
  - Key bridges determining their relationships
  - Idea of nature culture
  - Importance of interactions and concerns for disconnections
  - Useful information resources
  - Conclusion remarks and perspectives

Traditions, Cultures and Nature – the essence

The traditions

- The word **tradition** comes from the Latin traditio, the noun from the verb tradere (to transmit, to hand over, to give for safekeeping)
- **Traditions** are beliefs, objects, customs, practices, rituals, attitudes to life, attitudes toward nature, and perceptions of life, performed or believed in the past, followed and transmitted by mankind for centuries, and performed or believed in the present

- **Traditions** are preserved by mankind for generations, since breaking traditions may have a negative impact and destroy the existing societal harmony
- **Traditions** have to be followed in a correct manner that is determined by the available knowledge, science and technology, literature, arts, philosophy, and value axioms.
- **Traditions** survive through culture

Traditions, Cultures and Nature – the essence

The culture

- The modern term "**culture**" is based on a name used by the Ancient Roman orator Cicero who wrote of a cultivation of the soul or "*cultura animi*"
- Culture is what people accumulate along the life of generations through individual and group striving
- Culture is a way of life of people - the behaviors, beliefs, values, and symbols that they accept and pass along by communication from one generation to the next

- Culture consists of patterns of and for behavior acquired and transmitted by symbols, constituting the human achievements
- Culture essential core consists of traditional ideas and their attached values
- Culture is the sum of the learned behavior, considered to be the tradition and transmitted from generation to generation
- Culture is a collective programming of mind

Traditions, Cultures and Nature – the essence

The nature

- The word **Nature** originates from the Latin word *natura*, or "*essential qualities, innate disposition*"; literally it means '*birth*'
- Nature, in the broadest sense, is the natural, physical, or material world or universe
- Nature refers to the phenomena of the physical world, and also to life in general

- **Nature's** scale encompasses the material world from subatomic to cosmic level
- Generally, the term "**Nature**" refers to matter and energy, i.e. living organisms, geological processes, weather, etc.
- **Nature** often refers to the "natural environment" or "wilderness", i.e. wild animals, rocks, forest, beaches, and other objects that have not been substantially altered by humans, or have been persisting despite human intrusion

Traditions, Cultures and Nature – the relationships

Nature & Culture: the two sides of the coin

- **Nature & culture** must survive and thrive together; understanding their relationship and interaction is crucial in ensuring this:

Protect the Nature with Culture!

- **Nature & culture** come together in many ways that link values, beliefs and standards to practices, livings, knowledge and languages:

Shift in one way is often leading to a change in the other!

- **EXAMPLE:** knowledge evolves with the ecosystems upon which it is based, and the language contains words describing the ecosystem components. If plants or animals are lost, then the words used to describe them are lost shortly afterwards; **this changes the way the natural environment is shaped by the practices of the human communities**

Traditions, Cultures and Nature – the relationships

Nature & Culture: the two sides of the coin

- Culture is rooted in a time and place. It determines the relationship of people to nature and their physical environment (the earth and the cosmos)
- Culture expresses people attitudes to and beliefs in other living organisms
- Culture shows tendency to root in and adapt to specific environment and geo-historical context
- Natural and cultural diversities are mutually dependent; humans and the environment have undergone mutual adaptation over time, and therefore they interact with and affect one another in complex ways in a sort of co-evolutionary process
- Due to the knowledge and the traditional and native practices developed over centuries of adaptation in the use of natural resources, the modern techniques are in general green 'by design'; they represent more sustainable pattern of land use, consumption and production, contributing also to food security and water access.

Natural and cultural diversity are intrinsically linked and paved the way to sustainable development!

Traditions, Cultures and Nature – the relationships

Nature, Culture & Sustainable Development

- **Nature** provides the scenery in which cultural processes, activities and belief systems develop

- **Culture** is at the heart of development.

Nature and Culture MUST be in the heart of sustainable development!

Traditions, Cultures and Nature – the relationships

Nature, Culture & Sustainable Development

- **Sustainable Development** means not only economic growth; it is a means to achieve a more adequate intellectual, emotional, moral and spiritual existence.

- **Sustainable Development** is attached to culture and culture contributes to sustainable development. We measure this interrelation through standards and demonstration tools like cultural statistics, inventories, regional and national mapping of cultural resources.

- The principles of **cultural diversity** and the values of cultural pluralism into all public policies, mechanisms and practices must be integrated.

Culture has to be incorporated into all development policies related to education, science, communication, health, environment and has to be supported by the development of the cultural sector through creative industries!

Key bridges linking Nature with Culture

Beliefs and worldviews

- **Worldviews**: the sets of beliefs and assumptions that express how culture interprets and explains their experience.
- **Worldviews** are essential for humans to make sense of their life; one must understand culture as systems by which one can interpret the world around

The worldview triangle

Diverse worldviews are central to the management of natural diversity

- **Feel free** to link the meanings and the interpretations to the natural world in the most diverse ways depending on your personal attitudes
- **Follow the rule**: the more resource-dependent is the community, the better eye-catching are the links
- Consider the climate change challenges and make efforts to support the transition of our industrialised livelihoods to more nature-oriented; **Support the amalgamation of nature and culture!**

Key bridges linking Nature with Culture

Beliefs and worldviews

The worldview triangle

Nature and culture for a sustainable future

https://www.youtube.com/watch?v=fawN-ABRvxQ

Key bridges linking Nature with Culture

Livelihoods and practices

- **Livelihood**: a set of activities essential to everyday life that are performed along one's live span
- **Culture**, as a set of practices, forms constantly rearranges the landscape because it selects and maintains living organisms

Culture shapes biodiversity!

Diverse cultural practices are central to the management of natural diversity!

- **Anthropogenic Nature:** the landscapes that reflect local cultures and are produced by human history

Nature is a reflection of local culture and a product of human history!

- The virgin, unspoiled habitats are in fact a result of resource-dependent livelihood practices

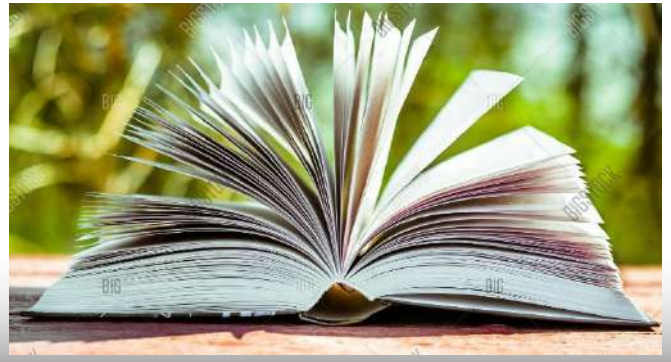
Landscapes are ecological profiles of cultural practices!

Key bridges linking Nature with Culture

Knowledge about Nature

- **Knowledge** is the key link between nature and culture
- **Knowledge about nature** is called traditional, indigenous, local or ecological
- **Knowledge about nature** is accumulated within a society and transferred through cultural tools for transmission (stories, narratives, etc.).

- **Cultural knowledge of nature** gives rise to sustainable management practices
- **Cultural knowledge of nature** contributes to knowledge of species requirements, ecosystem dynamics, sustainable harvesting and ecological interactions
- **Cultural knowledge of nature** enables people to live within the limits of their environment



Key bridges linking Nature with Culture

Regulations and institutions

- Knowledge about nature gives rise to **norms and regulations** that govern the society and the human interactions and behaviors towards the nature
- **The norms** and regulations are common property rules that govern the use of resources
- **The norms** and regulations define appropriate behaviors, and maintain the productivity and diversity of socio-ecological systems

Protect the nature while protecting the culture; conserve both biological and cultural diversity!

The role of institutions:

- To organize at local level recovery projects, revitalisation schemes, culturally appropriate education schemes, and language revitalisation
- To revive culturally appropriate healthcare systems, protect traditional food systems, and support the greening of businesses
- To implement strengthen mechanisms to favour social and environmental sustainability
- To take care the policy efforts to be internationally driven, geographically targeted, multi-level and inclusive
- To build solid platforms from which communities can play a central role in biodiversity conservation whilst retaining their own cultural distinctiveness

Nature Culture

The basic principles

- **Nature culture** is a collection of traditions grounded on a sustainable natural world
- **Nature** has benefits for humans

Make nature the basis of a culture to sustain the natural world over a long term!

- **Experience nature**: spend time in nature to establish a relationship that can form the basis of a culture
- **Create cultural traditions**; show motivation and willingness to express your experience
- **Share your experiences** to established them as a culture

Nature Culture

Sustain, experience, celebrate nature

- ***Sustain the natural world*** to enhance its value; learn how nature provides benefits on humans and how to provide those benefits to everyone
- ***Organize a cultural response***: provide places where people can spend time in the natural world
- ***Come to nature through cultural expression*** (art, science, music, dance, food, language, etc.)
- ***Getting to know nature and celebrate the natural world*** through walking, birdwatching, photographing, cycling, running, surfing, hiking, canoeing, gardening, or just spending time out of doors
- ***Become comfortable in nature and make the others so***: promote the nature culture approach into school curricula, clubs, and family trips.

Make celebrating nature a tradition showcasing experiences in nature!

Nature Culture

Your Nature Culture in five steps

- **Step 1 - Define your region:**
  - Form a partnership to develop a common vision about your region
  - Choose an area that has common ecological features

- **Step 2 – Choose what to celebrate:**
  - Identify the major natural elements, like forests, lakes, seashore and marshes, the common animals, the sources of food, the places people can visit nature
  - Decide which elements you want to become entry points for a nature culture
  - Create a natural events calendar from which you can select elements to celebrate
  - Think about when and why these events occur and what must be sustained for them to continue

Nature Culture

Your Nature Culture in five steps

- **Step 3 - Select your cultural events::**
  - Choose some of the natural events that you might like to celebrate because they inspire a cultural response
- **Step 4 – Experience nature:**
  - Get people to experience nature
  - Organize events for people to join
  - Engage Nature clubs to lead them,
  - Choose a time and place to return to nature and make it tradition
- **Step 5 - Building the culture:**
  - Start alone, make individual experiences with nature to give rise to new forms of expression
  - Invite people to nature in a variety of ways: through science, music poetry and art, food
  - Welcome everyone to join the celebration

Interactions & Disconnections

Cultural services

- **Cultural services:** The non-material benefits people obtain from ecosystems (aesthetic inspiration, cultural identity, sense of home, and spiritual experience related to the natural environment, opportunities for tourism and for recreation)
- **Cultural services** are among the most important values people associate with nature
- **Cultural services** are interconnected with each other and connected to provisioning and regulating services

Interactions & Disconnections

Cultural services

- **Recreation and mental and physical health -** nature-based opportunities for recreation (walking and playing sports in parks and urban green spaces)
- **Tourism -** enjoyment of nature worldwide
- **Aesthetic appreciation and inspiration -** ecosystems as a source of inspiration for arts, culture, and science
- **Spiritual experience and sense of place -** Natural heritage, spiritual sense of belonging, traditional knowledge, and associated customs are important for creating a sense of belonging

Interactions & Disconnections

Avoid disconnection with nature

- The nowadays shift to consumption patterns, the globalisation of food systems, and the commodification of natural resources rise damaging pressure that put in risk both cultural and ecosystems resilience.
- Restrict this shift spending more time in nature and avoid destructive health outcomes of the consumption way of life
- Spend more time directly experiencing nature to improve your psychological health and wellbeing, and increase your physical activity levels
- Disconnection leads to feelings of biophobia and a fear of the outdoors, perceiving it to be a wild and unfamiliar environment

Avoid turning into a new lost generation who are disconnected to any place and unable to feel innate relationships with nature!

Outdoor training guidelines – Traditions, Cultures and Nature

- ***Protect the Nature with Culture!***
- ***Put Culture and Nature in the heart of sustainable development!***
- ***Support the amalgamation of Nature and Culture!***
- ***Culture shapes biodiversity; conserve both biological and cultural diversity!***
- ***Nature is a reflection of Culture and a product of human history; protect the Nature while protecting the Culture!***
- ***Sustain, experience, celebrate Nature!***
- ***Avoid disconnection with Nature!***

Outdoor training guidelines – Traditions, Cultures and Nature

Useful links and visual resources:

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