## SECTION F
# HERBIVORE AND HUMAN DISTURBANCE

Assessing the impact of large mammals (boars, horses, goats...) of and humans on a wooded area can be done visually through simple observations of certain indicators, and not complicated measurements. The impact of browsing and grazing can be described using the following indicators:

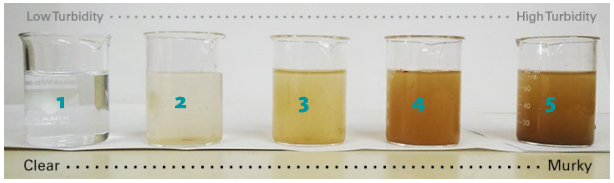
- **Bark stripping and stem breakage:** noting down the number and the species of the affected individuals.

- **Ground disturbances:** noting down tracks, scrapes, depressions in mud, etc. left by large mammals.

- **Herbivore signs:** noting down the presence of sheep's wool or boar hair on barbed wire fences or brambles, the presence of fecal pellet groups, evidence of vegetation consumed by herbivores (squirrel bites on pinecones, for example).

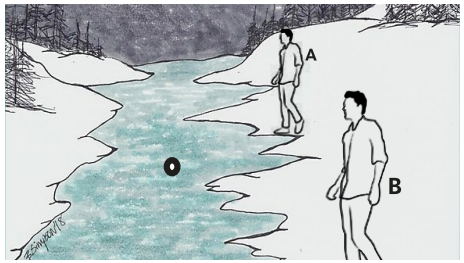
## SECTION G
# RIVERINE ECOSYSTEMS

Water turbidity is determined by taking a water sample from the freshwater body in a transparent container and assessing it on a scale from 1 to 5 using the following picture as reference:




The speed or flow of water is measured by following the steps below:

**1.** An item that can float on top of the water is chosen from the river surroundings,
**2.** Two people stand on each side of the river length,
**3.** Person A lets go of the item in the water as person B starts a timer,
**4.** When the item arrives at person B, they stop the timer.




## SECTION H
# FOREST TREE DISEASES AND PARASITES

Environmental factors like droughts, freezing temperatures and air pollution cause stress in trees. This renders them more susceptible to pathogen attacks which can threaten tree health and can lead to tree mortality.

SPNL homat al hima

BioConnect

Funded by the European Union

# PAMPHLET FOR CITIZEN SCIENCE BIODIVERSITY MONITORING IN LEBANON

A pictorial guide to filling out field templates

SECTION A

# SIGNS OF HUNTING

In Lebanon, hunting unfortunately takes the form of illegal persecution of birds as two and a half million birds are estimated to be killed annually. This form of poaching is a major conservation issue in the country, and it has led to Lebanon being ranked one of the most dangerous countries in the world for birds with unfavourable conservation status.
The official hunting season lasts from September to the end of January; spring hunting is forbidden. Signs of hunting, including bullet casings and lead on the ground, should be reported to monitor illegal hunting.

SECTION B

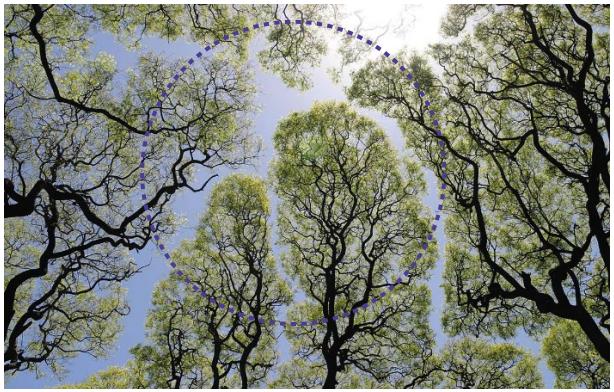
# SIGNS OF QUARRYING

Quarrying activities have a major negative effect on the native vegetation cover at high altitudes with little chance of regeneration. Studies have shown that the natural regeneration and recovery of ecosystems in Lebanon is occurring but at a pace insufficient for the restoration of ecosystem functions.

SECTION C

# CANOPY SCOPE OPENNESS

Canopy openness is determined by standing on the ground in the middle of the sampling quadrant, looking up and imagining a circle, and estimating the percentage of visible sky (not obscured by vegetation) in that imaginary circle. This variable is a representation of the amount of solar radiation that's transmitted onto the forest ground.



SECTION D

# FOREST FIRE RISK FACTORS

The main cause of forest fires is human activity, be it by accident or by deliberate arson. Spatial variables related to human activities can help predict the occurrence of fires: location and distance to infrastructures such as roads and power lines, distance from populated areas or recreational sites, and distance from agricultural lands.
Fire occurrence in the Mediterranean basin can be predicted by environmental factors affecting flammability:

- Lightning; the main natural cause of ignition around the world,
- Long summers from June to October, and sometimes even longer,
- Daytime temperatures exceeding 30°C,
- Strong and fast winds that decrease atmospheric humidity (below 30%) and spread fires by carrying sparks over great distances,
- Amount of dead material on the forest ground which act as fire fuel,
- Moisture content of forest litter (below 5%).

Dead material on forest grounds includes:

**Coarse woody debris**

**Fine woody debris**

**Loose plant material in decomposition**

**Herbs including ferns, moss, and lichens**

SECTION E

# GRAZING PRESSURE

Excessive access of small ruminants into certain ecosystems and overgrazing can reduce species richness and diversity. Evaluating grazing pressure in a given area can be carried out using the following indicators:

- Identifying the number of entry points for cattle into the area,
- Sampling the number and frequency of livestock dung piles,

- Assessing the proportion of weed species in herbaceous forest covers palatable to livestock,
- Assessing the proportion of vegetation covered ground in the area.