\*Slide intro

\*clicG - In this module, we've seen what ecological monitoring a protected area means, and that it intends to assess the state of the territory's values.

\*B - These values are characterised by ecological attributes which are described by indicators, and ecological monitoring follows a protocol that specifies the sampling plan and approach to use.

\*G - So let's summarise the steps to follow to implement ecological monitoring.

\*clicB - First off, you need to identify the values to monitor, the ones that matter to the management of the PA and that could be part of a sensible ecological monitoring plan.

\*clicG - It can be an animal species or an ecosystem within the protected area for instance.

\*clicB - You then determine the key ecological attributes, the ones that will characterise the value and help understand the state of the PA.

\*G - The density of the species that is being monitored for instance, or its population dynamics, or even the original floral composition of the chosen ecosystem.

\*clicB - It is generally useful to specify some indicators easily measurable to express these ecological attributes.

\*clicG - In other words, the number of individuals of the targeted species, the age distribution or even the presence or absence of an invasive species within this ecosystem.

\*clicB - The next step consists in identifying the acceptable limits within which the ecological attribute may vary, the limit between a healthy attribute and one that requires intervention.

\*clicG - An example is to set a minimal number of individuals that indicates the endangerment of the species, or on the other hand, a maximum number that implies an excessive number of individuals that puts the ecosystem at risk.

\*clicB - Then comes the choice in method to measure these indicators, which will of course take into account the monitored values, but also the capabilities of the protected area in terms of means and skills.

\*G - You can either choose to directly count the animals, or indirectly by monitoring tracks for example... This decision should be based on the context in which you work and the results you hope to obtain.

\*clicB - Once the approach chosen, you need to draw up the sampling plan that will ensure the obtained results will be as usable, precise and correct as possible.

\*clicG - You can then proceed to counting all the individuals near a waterpoint if the species is localised, or on the other hand, sampling 10% of the park if the species is spread out equally. For instance, monitoring invasive plant species is done by counting the new stems in random transects.

\*clicB - Then, you collect the data according to the chosen method and sampling plan.

\*clicG - What matters in this step, is to follow the drawn up rules and to do the work with precision. If you don’t, you give way to unacceptable bias for the data processing.

\*clicB - The data collected should be stored, and remain available for future-use, because they guarantee the truthfulness and the reliability of the monitoring.

\*G - They especially ensure that another user will obtain the same results later on with the same data...

\*clicB - These data will then be analysed and the obtained results will be transformed into information.

\*G - Thereby, the animal count is rendered into a density in the park, which can then be compared to a known standard for this kind of ecosystem.

\*B - At this point, and according to predetermined monitoring goals, you should get an idea of the monitored values' condition.

\*G - For instance, the questions around invasive plant species should now be answered: what species are present, how many, where, how fast do they progress etc.

\*clicB - Depending on this health condition and the predefined limits for the attributes, the decisions will be made and actions put into place to maintain the PA in good condition, or on the other hand, restore an attribute that may have been damaged.

\*G - If animals become too scarce, we would for example need to change the strategy in the fight against poaching. If the environment is invaded by an invasive plant species, you change the rhythm of fire ignition or you proceed to manual extraction.

\*clicB - And all this needs to be repeated as often as needed to feed the decision-making process of adaptive management, because the monitoring is in fact just part of a larger cycle that intends to manage the territory in the best way possible.