

# How to best promote tourism — and protect sensitive natural areas by monitoring visitors

## Why count?



### Observe

- Attendance
- Peak periods
- Usage patterns
- Impact of weather



### Preserve

- Mating and nesting
- Protected and sensitive areas
- Anticipate soil erosion



### Understand

- Visitors' experience
- Most used trails
- New facilities' impact



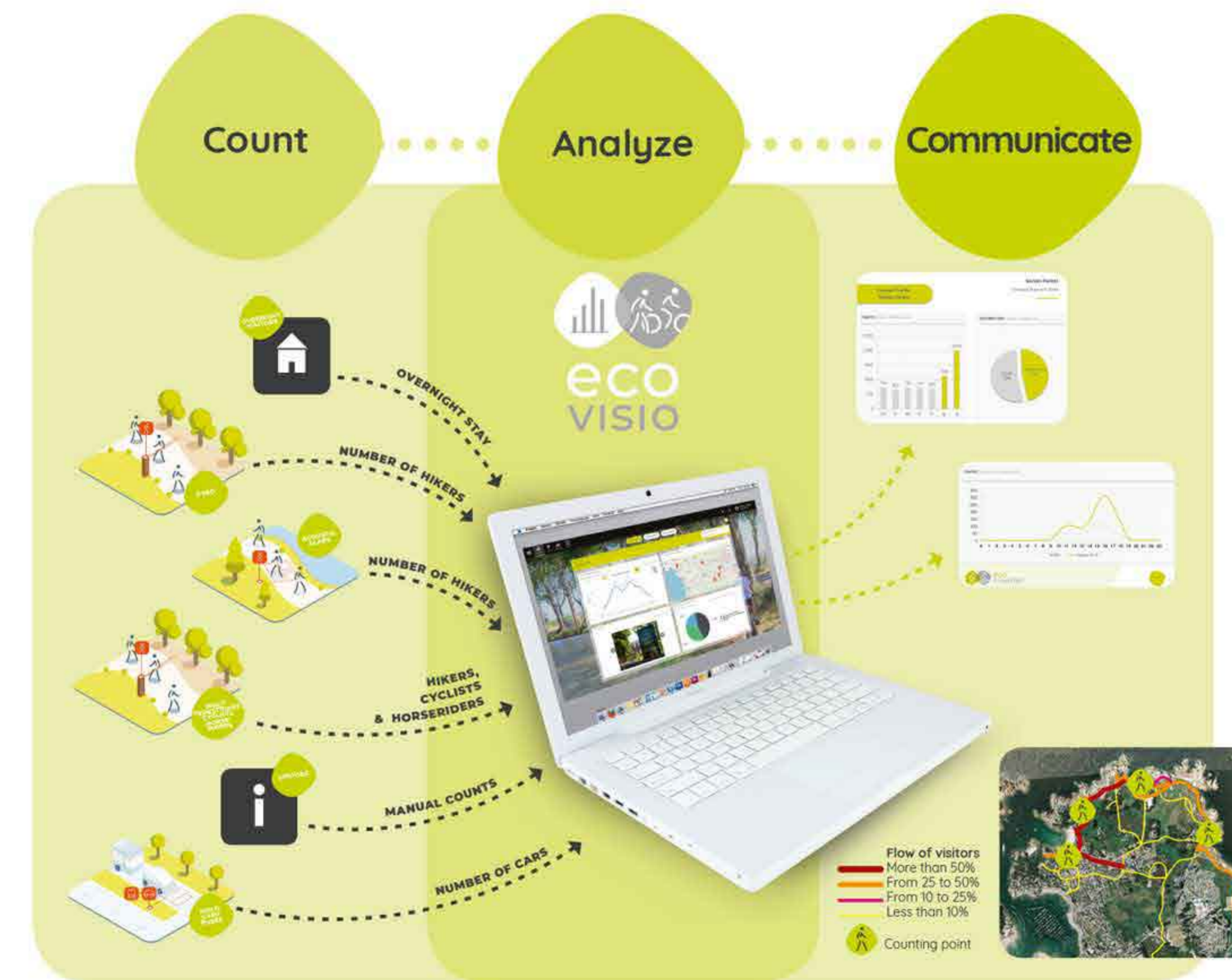
### Promote

- Accurate data to support investments
- Regular reports on visitation rate
- Field team motivation

## Build a visitor monitoring system

A monitoring system provides a means of centralizing data from manual and automatic counts as well as from other sources.

- Compare data from different counting points (parking lots, orientation tables, main and side trails, etc.).
- Integrate external data (number of nights spent in mountain huts, number of visitors at tourist information offices, etc.).
- Check the effectiveness of signage and assess the popularity of new fixtures and amenities.
- Measure visitor attendance in protected areas during nesting seasons.
- Anticipate erosion.
- Measure the effectiveness of ad campaigns or on-site events.
- Build a visitor attendance forecast calendar, etc.



## European Case Studies



### Management of visitor flows Sintra, Portugal

The site of Sintra is the first European site listed by UNESCO as a Cultural Landscape. Its parks and historical monuments encompass around 960 hectares and forms part of the Sintra-Cascais Natural Park.

Parques de Sintra-Monte da Lua S.A. (PSML) is a state-owned organization who has the responsibility to manage the natural and cultural heritage in

Sintra and Queluz, including the Park and Palace of Pena, the Gardens and the Palace of Monserrate, etc. The management of these properties involves their restoration, revitalization, conservation, research, publicity and operation, enhancing their touristic value.

To lead all those actions, 4 pedestrian and 5 bicycle counters were installed to manage, understand the trends for each site and track the results of its communication & preservation programs. In 2018, the organization noted that all the monuments and parks collectively welcomed over 3 million visitors.

### Evaluation of the impacts of tourism France



A dozen slab counters have been installed along the 250 km (155 mi) Cathar Trail in the upper Aude Valley. The count data has been compared with data from:

- field surveys of visitors;
- surveys of local accommodation providers (campgrounds, mountain huts, cottages, hotels, etc.)
- telephone and mail surveys;
- panel discussions (academics, technicians, etc.)
- local tourism promoters (hiking guide sales, etc.).

Comparing this data with the count data logged by pedestrian, horse and MTB Eco-Counters has enabled the identification of the media, social, and economic impacts of the popularity of the Cathar Trail.



### Protection of flora and fauna Norway

A project to close a mountain hut and a number of roads in order to protect the local wild reindeer population has been a subject of debate in an area of Northern Norway for several decades. To justify the project's viability, the Norwegian Institute for Nature Research (NINA) has installed Eco-Counters to compare the spatial and temporal distribution of visitors with the GPS positions of the wild reindeer. What is the impact of strollers on the deer herds and what is the impact of human activity on a pristine natural environment? The study's results will be used to develop an environmentally friendly land-use policy for this region where nature is at the center of every decision.

## Estimating recreational use in Sonian Forest

Laure Doidi (Eco-Compteur), Vincent Colson (Ressources Naturelles Développement asbl)

With help of automated counters and a data expertise provided by Eco-Counter, Vincent Colson from Ressources Naturelles Développement asbl was able to put forward a study of uses for the Sonian Forest, a green space located in Brussels Capital Region.

This analysis combined conventional qualitative field survey methods with the use of a GPS system to obtain information on visitor flows within outdoor sites and analyze how these sites are used by visitors.

In 2012, Brussels Institute for Management of the Environment (IBGE-BIM) - the public administration responsible for environment and energy in Brussels Capital Region - wanted to estimate recreational use in Sonian forest (84 hectares), mostly used for recreational purposes by local people. 18 automatic counters (PYRO-sensors) were installed at each entrance of the study area. The collected data was analyzed to study temporal variations and to observe which entrance visitors were using and when.

A field survey was carried out by BE-IBGE staff. GPS data was also collected and face to face questionnaires were led at the main entrances of the area. GPS traces enabled to analyze visitor movements at regular time interval in the area and the duration of their activities. A questionnaire gathered data on group size, age...



### Main activities and comparison of visitor flows according to the profile

Visitor flows were mapped on GIS and overlaid with the protected area layers to analyze effects of visitor pressure on the ecology: in these areas, visitors are allowed to walk on the hiking trails and the dogs have to be on leash. The study shows only 10% of visitors with the dog penetrate in these zones and IBGE decided not to reinforce security in those areas.



### Major Results

- For one year, the counters estimated 700,000 visitors in this area. The typical profile of the visitor was a person alone (36%) or couple (16%), mostly in their 40-50s.
- Wildlife is mostly affected by recreation in spring and autumn and especially on Sundays.
- Visitors use a smaller part of the area during the weekdays whereas the duration of visit is equivalent whatever the day of visit.
- Average time of a visit: 1.14 h. Only 13% of visitors spent more than 2 hours in the forest. No difference noticed between winter and summer time.
- 88% of the visitors walked/ran less than 8km.

#### Annual distribution



#### Weekly distribution

