

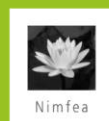


# REPORT ON MONITORING WORKPLAN IMPLEMENTATION

- High Modenese Apennine Regional Park
- Salse di Nirano Natural Reserve

D.T2.4.3 -Emilia-Romagna Region (PP01) -  
Central Emilia Park's Managing Authority

Ver.1.3  
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## 1. Introduction

The Ente di Gestione dei Parchi e la Biodiversità Emilia Centrale (Central Emilia Park's Managing Authority), has joined the Interreg CEETO project "Central Europe Eco Tourism: tools for nature protection" - CE 926 with the aim of testing a model of governance of tourist flows within protected areas in order to reduce environmental impacts and improve the socio-economic benefits that can result from a sustainable tourism approach.

Two Pilot Areas were therefore selected for the implementation of the Interreg CEETO project: The Pilot Area of the Lago Santo modenese within the Regional Park Alto Appennino Modenese and the Nature Reserve of "Salse di Nirano" (Nirano's Mud-bursting).



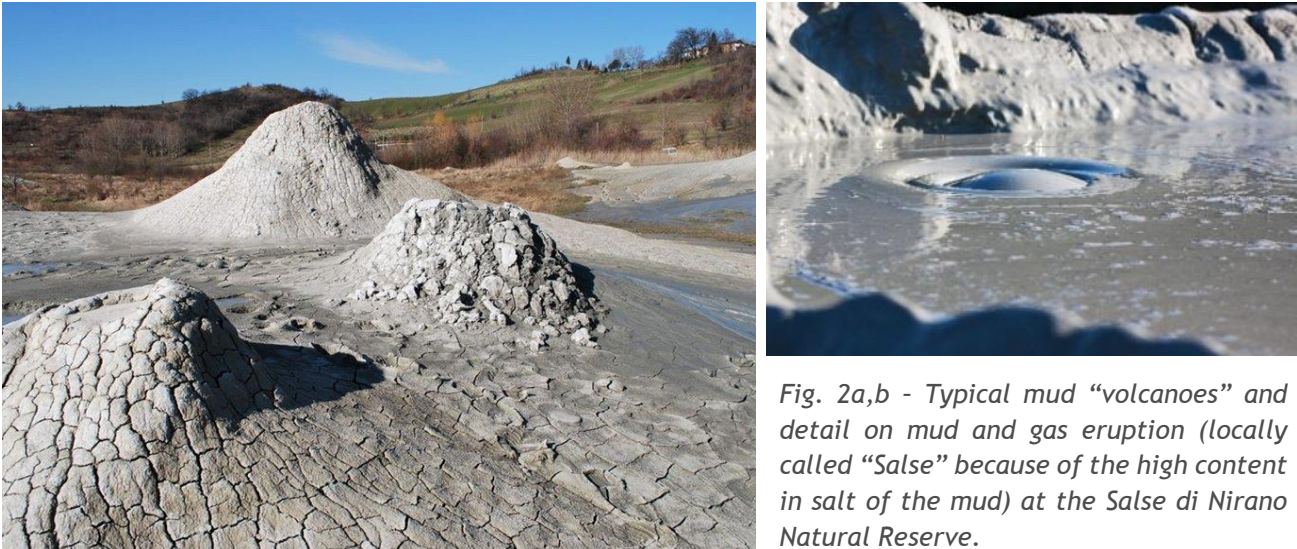
*Fig. 1 - View of the Lago Santo Modenese (1'501m a.s.l.) from the trail to Monte Giovo (1'997m a.s.l.).*

The pilot area of Lago Santo Modenese is characterized by a high tourist presence, especially in summertime (July and August). The area is experienced by visitors mainly for its recreational use, less like a treasure of natural value and landscape, especially out of season.

The main problem is, in fact, related to traffic congestion, overcrowded parking and lack of safety along the access roads (both for trekkers and drivers). Moreover, visitor behaviour, which is not always adequate (illegal camping), contributes to a general sense of chaos and disorder.

The pilot area of "Salse di Nirano", on the other hand, is characterized by a high degree of frequentation throughout the year, mostly by daily excursionists. The main objective in the sustainable tourism development was, therefore, the protection and preservation of the Reserve, accompanied by the

preparation of a varied and well-structured offer of educational and play activities for students, families and associations. In the Nature Reserve of “Salse di Nirano”, it was strategic to acquire as much data as possible to document the main factors of threat to the Reserve deriving from poor or incorrect use even by visitors, in support of feasible defensive actions, that should be harmonized with the already existing activities.



*Fig. 2a,b - Typical mud “volcanoes” and detail on mud and gas eruption (locally called “Salse” because of the high content in salt of the mud) at the Salse di Nirano Natural Reserve.*

The main challenge faced by the Central Emilian Parks Managing Authority, was to ensure that the Sustainable Tourism Action Plan (D.T2.2.3) could become the basis for developing the actions that can bring up to the European Charter for Sustainable Tourism (ECST) award, methodology and certification issued by the EUROPARC Federation.

## 2. Pilot Actions Implementation

The two pilot areas have different characteristics and criticalities and, therefore, the monitoring activities implemented in the two pilot actions have provided for different approaches and systems.

In the pilot area of the lake Santo, the aims of the monitoring activities concerned:

- the promotion of sustainable forms of accessibility instead of the car,
- the acquisition of a better knowledge of the characteristics, choices and degree of awareness of visitors about the specific nature of the holy lake of Modena,
- the ability to make visitors responsible for their own behaviour within the Park through adequate information on the correct rules of conduct.

The monitoring of tourist influxes to Lake Santo was therefore carried out by collecting and analysing data on the number of parking meter tickets and the number of people using alternative routes to reach the area of Lake Santo or data on the use of the shuttle service and kilometers of routes connected to the network of trails in the Valley of the Tagliole through the compilation of sample questionnaires for tourists in visitor centers.



*Fig. 3 - Departure path from Lago Santo to the parking in Tagliole.*

In the pilot area of the Salse di Nirano, the aims of the monitoring activities concerned:

- making visitors responsible for their own behaviour in the Salse di Nirano reserve, by providing them with adequate information on the correct rules of conduct;
- the protection and conservation of the local environment and landscape.

In order to protect and preserve this unique and delicate area, its habitats and landscape in the best possible way, it was first necessary to collect as much information and objective data on the current level of use and the behaviour of visitors in the field as possible. The collected data can be used in order to sensitize visitors and tourists and to stimulate correct styles and behaviours, inducing them to a responsible fruition of the reserve areas, and in particular area A, the most significant and delicate one.



*Fig. 4 - Wooden footbridge and final round square in Salse di Nirano. These barriers are often over crossed by tourists to get closer to the mud bursting apparatus.*

## 3. Monitoring design and setup

### 3.1. Monitoring Activities

As part of the CEETO project in the pilot area of Lago Santo Modenese, the analysis of data refers to the year 2019 and, in particular, when tourism flows are most significant, i.e. in the central weeks of August (from 10 to 25 August 2019). The testing of alternative accessibility systems should have a significant impact on the reduction of private motor vehicles that travel the road to the parking lot of Lago Santo. Therefore, the implementation of alternative mobility actions seeks to affect the reduction of motor vehicles in the Tagliole valley and, at the same time, the implementation of responsible and sustainable behaviour in the areas of greatest protection.

Within the pilot area of the Salse di Nirano, on the other hand, it is necessary to monitor the main threats to the integral protection zone and to the "sauces" and to direct the behaviour of visitors and access to the whole area, preserving its unique and fragile landscape. The purpose of the system is, in fact, to acquire as much data as possible to document the main factors of threat to the Reserve arising from poor or incorrect use even by visitors, in support of possible and possible actions of defence and accompanying what already exists.

### 3.2. Monitoring Equipment

With regard to the pilot area of Lake Santo Modenese, a paper survey was conducted among visitors to Lake Santo Modenese, with the aim of understanding it:

- identity (age, sex, residence);
- tourist behaviour (visit during the day or with overnight stay, if not inhabitant of the place), the choices in terms of overnight stay (place and type of accommodation) and the duration of the stay;
- means of transport used to reach Lake Santo Modenese and the availability to use alternative modes (shuttle, e-bike or hiking trail);
- awareness of being in a Protected Area and the existence of a specific code of conduct;
- activities usually carried out during the visit to Lake Santo Modenese.



*Fig. 5 - Questionnaire and CEETO leaflets and gadgets (bag, pen), available at the Santo Lake InfoPoint.*

A question on the quality of the shuttle service for those who have used the service has been inserted. This complete questionnaire is attached at the end of this document.

The survey was carried out in July, August and September 2019 and the questionnaires were distributed:

- At the InfoPoint located near Lake Santo Modenese;
- At the stops of the shuttle service;
- At the Ente Parchi Emilia Centrale headquarter of Pievpelago (MO), with the possibility of downloading them from the website:

[http://www.parchiemiliacentrale.it/pdf/Questionario\\_LagoSanto.pdf](http://www.parchiemiliacentrale.it/pdf/Questionario_LagoSanto.pdf).

Incentives were provided to tourists to fill in the questionnaires, such as the gift of a canvas bag, marked with the logos of the Park and the CEETO Project, and a pen to those who answered the questionnaire during the shuttle journey.

At the Salse di Nirano site, near the Cà Rossa eco-museum, 3 cameras have been installed on a pre-existing electric distribution facility, after an agreement with the energy provider (fig. 6a). The two sides cameras framing the two conic apparatus in front of the building and the municipality road, beyond which there is the Zone A (of full protection) of the reserve. The central camera is framing the reserve's pedestrian walkway and a third big eruptive apparatus, closed to the end of the footbridge of fig.4. The cameras are connected to an automatic data processing and extraction unit, which uses state-of-the-art Artificial Intelligence algorithms (fig. 6b).

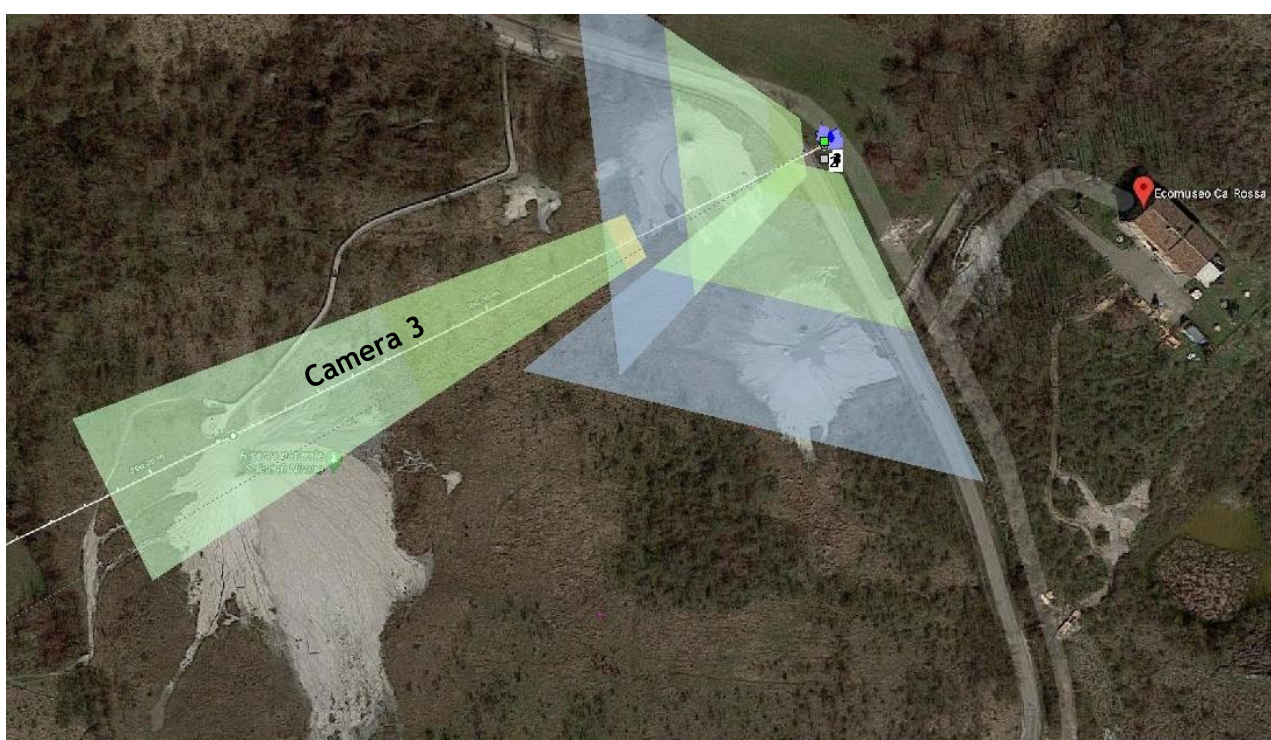


*Fig. 6a,b - ENEL concrete pole with the three cameras installed (a) and monitoring equipment in Cà Rossa: the industrial PC is the small box with the label Vision-e, on the top right of fig 6b.*

### 3.3. Monitoring Systems Setup

The system was installed at the beginning of July and started the acquisitions on 19/07/2019. In its full regime, the system acquires data every day of the year from 30 minutes before sunrise until 30 minutes after sunset (because of the need of an adequate amount of light and contrast to make the recognition reliable). Every second the scene is analysed and numerical position and type (person, animal, bike, motorcycle, car) of each object detected is saved. In addition, every 5 minutes an image of the volcano is saved to create time-lapse in order to study the morphological changes.

Figure 7 shows the map of the areas framed by the 3 cameras of fig 6a, in the Salse di Nirano Reserve. The system, in addition to monitoring (quantifying and qualifying) the actual use of the area, also documents the main factors of threat to the Natural Reserve of Salse di Nirano, to support the design of possible defence actions.



*Fig. 7 - Aerial photo with the fields of view of the three cameras of fig. 6a. Two out of three cameras have a wide-angle view while the central one has a much higher focal length, to better focus on the mud-bursting apparatus in the lower left part of the picture. On the upper right the Cà Rossa Visitor Centre.*

### 3.4. Implemented managerial activities

The implementation of a remote monitoring service for the acquisition and processing of data documenting both the frequentation and the main threatening factors for the Salse di Nirano Nature Reserve, using Video Content Analysis (VCA) methodologies, has involved the active collaboration of the Municipality of Fiorano Modenese as owner and manager of the Cà Rossa Visitor Centre.





The VCA system is based on a state-of-the-art Computer Vision technology which, in recent years, is gaining in popularity for the control of mainly urban or industrial environments, often indoor (stations, airports, hospitals, etc.). The present experimentation is probably an absolute first as far as the application of the methodology at the level of Protected Natural Areas is concerned. For the occasion, the following monitoring system has been named “NeMOS - Nature rEserve MOnitoring System”.

We have to highlight that, since the system was initially planned to be installed at Lake Pratignano (High Modenese Apennine Regional Park), in a remote area with no network infrastructure available either for power supply or data transmission, in the initial design phase, particular attention had been paid to the energy configuration in a setup based on photovoltaic panels and rechargeable batteries, in order to save energy and make the installation feasible. To this purpose, a configuration was identified that would independently run on battery and photovoltaic panels, able to acquire for 5-7 days even without solar recharge. This was possible due to the low power consumption of the video cameras (a few Watts of power absorption during the acquisition and few mW in standby), the industrial PC that deals with data processing and the management software for the optimization of energy consumption that, for instance, switch-on the video cameras for few seconds for each acquisition and then switch them off again. For this reason the application of the system can be exported and arranged even in more remote locations, powering the equipment through batteries and photovoltaic panels and transmitting data already processed (and therefore "light"), through GPRS or similar networks (UMTS, EDGE, etc.).

In the context of installation of the system, near the building of Cà Rossa, with electrical and network data connection facilities available, it was chosen to economize and take advantage of these last facilities. The ancillary works carried out for the setup of the experimentation have been:

- laying of UTP cable lines for outdoor use in existing piping for connection from the ENEL pole to the box in the Cà Rossa structure via a counter compartment;
- certification of wired connection on LAN cables for the transmission of the measured data;
- bracket of the cameras through the supply of new outdoor brackets with a special attachment on an existing ENEL pole.

### 3.5. Education on the use of the equipment

In the pilot area of Lake Santo Modenese, the survey involved the training of operators both at the InfoPoint located near Lake Santo Modenese and at the headquarters of the Ente Parchi Emilia Centrale in Pievepelago, in order to make the operators able to provide the correct information about the Project CEETO and the right directions to complete the questionnaire.

The monitoring service of the Salse di Nirano Natural Reserve has been entrusted to the company Vision-e, which is responsible for data collection. The company provided access to a web portal for consultation of the data collected and trained the staff for its usage.

### 3.6. Monitoring system tourist information campaign

With regard to the pilot action at Lake Santo Modenese, the InfoPoint located near Lake Santo Modenese and the headquarters of the Ente Parchi Emilia Centrale in Pievepelago were set up with the following material:

- roll-up display panels including a rewindable aluminium structure for the CEETO project (fig. 8);



- posters placed on tripods to communicate the mobility initiatives (shuttle and e-bike) and the proposal of the new hiking trail from Tagliole to Lake Santo Modenese activated during the summer;
- stickers printed on UV-protected film to be applied to sheet metal signs including a 200 cm pole mounted on a mobile base with a diameter of 60 cm to indicate the entrance to the hiking trail at the 2 points of access, 1 road sign to indicate the parking area and 2 road signs to indicate the stop of the shuttle at the 2 points of departure/arrival.
- Materials and gadgets of the CEETO project such as shoppers and biro for the promotion of the pilot action, in order to facilitate the filling in of the questionnaires drawn up for the purposes of monitoring tourist flows and sustainable mobility initiatives.



*Fig. 8 - InfoPoint closed to the Lago Santo Parking lot, with the two Roll-Ups of the CEETO Project. In the hut, the information guide submitted the visitors the tourist questionnaires (fig. 5).*

As far as the pilot action at the Salse di Nirano is concerned, the company Vision-e made a demonstration video on the VCA system, which was called NEMOS (Nature rEServe MOnitoring System), of which the following link is given: [https://www.youtube.com/watch?v=6mbOOV\\_c0FI](https://www.youtube.com/watch?v=6mbOOV_c0FI)

An open day was also organized, dedicated to raising awareness of the territory and hikers on the specific environmental and landscape of the Salse di Nirano and the communication of the appropriate rules of conduct during the visit. The event, organized for the day of September 1 in collaboration with the Municipality of Fiorano Modenese and by G.E.Fi., Ecosapiens and Ideanatura, included a guided tour of the field of Saucés and the visitor centres of the Reserve. On this occasion, the CEETO project and the presence of the VCA system were illustrated, describing its objectives and operating methods..



*Fig. 9 - Information campaign in Cà Rossa eco-museum.*

### 3.7. Expected results

The results expected from the Pilot Action of Lake Santo Modenese are mainly two:

- to acquire a detailed knowledge about the visitors (local residents, hikers and tourists) of Lake Santo Modenese;
- the observation of the changes in the responses regarding mobility and the awareness of being in a Protected Area allowed to evaluate the effectiveness of the previous Pilot Actions, related to the provision of a shuttle service and the implementation of an InfoPoint.

As far as the Salse di Nirano Natural Reserve is concerned, the monitoring service aim at the acquisition, with spatial and temporal precision, of the following information:

- number of people (divided by means of transport), and the number of cars that travel the municipal road of Via Rio Salse, near the locality Cà Rossa, with distinction, where possible, the direction of travel. The system allows, in particular, the aggregation of data on an hourly, daily, weekly, monthly and overall basis, with reference to the entire monitoring period;
- maps of the spatial-temporal density of use (heat map) of the routes of “invaders” of the Zone A of the Reserve;
- evidence of the episodes of overriding of physical barriers (corresponding to a “virtual boundary” in the framed images for the Artificial Intelligence detection), and invasion of Zone A, with related statistical data;
- video recordings of overriding events, for their entire duration and with the automatic distinction between incursions of people and animals (these last divided by quadrupeds or birds);
- the video in “time lapse” mode of the framed areas for the seasonal evolutionary reconstruction of the landscape and the morphologies of the mud-bursting apparatus. These videos can also be used for the development of multimedia materials for the reserve promotion in terms of responsible tourism.



*Fig. 10 - Testing phase of the system. Combination of the views of the three cameras, with the recognition of people walking on the street and invading the Zone A of the Natural Reserve, beyond the fences. From the entire [explanation video](#).*



### 3.8. Use of Collected data

In both pilot actions, the overall evidence gathered through these monitoring systems constitutes the basis for the implementation of the activities foreseen in the five-year Action Plan.

### 3.9. Monitoring Workplan (TimeLine)

Tasks ↓	Trimester →	2018		2019												
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>1</b>	<b>Monitoring Plan</b>															
1.A.	<b>Fiorano Modenese - Salse di Nirano</b>															
1.A.1.	Realization of visual monitoring system with VCA - Video Content Analysis.															
1.A.2.	Monitoring access to the reserve, with particular reference to Zone A, of complete protection, by people and animals, and automated statistical extraction.															
1.A.3.	Intensification of supervisory activities with coordination of all supervisory bodies, both orderly and voluntary (GGEV and GEFI) GGEV and GEFI.															
1.A.4.	Data analysis and evaluation of results.															
1.B.	<b>Pievepelago - Lago Santo</b>															
1.B.1.	Access monitoring with reference to the variation of the influx of cars in the parking lot of the Lake															
1.B.2.	Access monitoring through the use of the shuttle service as an alternative to the use of the car															
1.B.3.	Monitoring of alternative access to cars through distribution and completion of questionnaires at the Info Point and at the Tourist Office in Pievepelago															
1.B.4.	Data analysis															
1.B.5.	Evaluation of the results with the aim of reducing motor vehicles in the upper Tagliole valley and implementing an increase in responsible and aware use of the area.															



## 4. Data Collection and Analysis

With regard to the pilot area of Lake Santo Modenese, the Pilot Action results Indicators and future targets (by the deadline of September 2019) can be listed as follows:

- total number of shuttle passengers per direction of travel;
- length of the route served by shuttle bus;
- average journey time by shuttle bus;
- average journey time by car, with reference to August 2018;
- database (in .xls format), of the daily number of tickets for paying parking at Lago Santo Modenese, with reference to the months of July, August and September 2018 and 2019;
- complete database (in .xls format), of the results of the survey, with commentary on the main evidence collected.

Within the framework of the Interreg CEETO Project in the pilot area of Salse di Nirano, the main objective concerns the conservation and protection of the Reserve, given the high level of enjoyment by visitors throughout the year, flanked by a varied and well-structured offer of educational and recreational activities for schools, families and associations. It is therefore strategic to acquire as much data as possible to document the main threat factors for the Reserve deriving from a poor or incorrect use even by visitors, in support of possible and possible defence actions in support of what already exists. The video-analysis service aimed at monitoring the use of the Reserve, meets both the needs of obtaining the current state of affairs, the use of the reserve itself, and identify the misconduct that requires mitigation measures aimed at safeguarding the natural assets there. The service requested concerns, therefore, the supply of images and statistical data processed using dedicated methods, using state-of-the-art Artificial Intelligence algorithms and able to return, with adequate numerical accuracy, and space-time, the following data:

1. number of people on foot, by bicycle, by motorbike, on horseback, etc. and number of cars travelling along the Municipal Road Via Rio Salse, near the locality of Cà Rossa (seat of one of the Visitor Centres of the Reserve), with distinction, where possible, between ascending (from valley to mountain) or descending (from mountain to valley) route and aggregation of the hourly, daily, weekly, monthly and overall data over the entire monitoring period;
2. Heat Map of the routes of the tourists/hikers of Zone A of the Reserve (considering the maximum surface area that can be framed by a single position of installation of the cameras), with aggregation of daily, weekly, monthly and total data over the entire monitoring period;
3. number and statistical data (duration, route, etc.), overcoming of physical barriers (fences) and invasion of the areas of volcanoes forbidden to access and trample;
4. In cases of exceeding the permitted limits (in compliance with the New European Privacy Code - GDPR 679/2018 - General Data Protection Regulation - and Legislative Decree 196/2003 coordinated with Legislative Decree 101/2018, i.e. making "human offenders" anonymous and unrecognizable), video recordings of exceedances, for the entire duration of the exceedances themselves. The software used must be able to automatically distinguish between exceedances of people and animals. For the latter, where possible, the automatic recognition of the family (horses, cattle, ungulates, canids, etc.) is required;



5. Video in "Time-Lapse" mode of the framed areas (minimum sampling of 1 image every 5'-10'), for the seasonal evolutionary reconstruction of the landscape and of the morphologies of the mud bursting apparatus (mud volcanoes).

## 4.1. Collected Data

For the pilot area of Lake Santo in Modena, the following data are attached:

- Database (in .xls format), of the daily number of tickets for access to the parking lot located at Lake Santo Modenese, with reference to the months of July, August and September 2018 and 2019;
- Complete database (in .xls format), of the results of the survey, with commentary on the main evidence collected.

The smart monitoring of the site Salse di Nirano, from the day of completion of installation (19/07/2019), has allowed to acquire the following data:

- Daily number of people, animals, vehicles visiting the site and direction of travel where possible;
- HeatMaps (one for each video cameras), divided by category (people, vehicles, animals), time intervals (time, day, week) that highlight the most used positions or "steps" (intended as the bottom part of recognized objects frame);
- Time-lapse video of protected areas highlighting morphological changes;

The daily data on the use of the area and the overruns recorded in 2 Excel files are attached:

- 2019-10-29\_SDN\_Presences\_until\_30sep2019.xlsx with attendance data;
- 2019-10-29\_SDN\_Intrusions\_until\_30sep2019.xlsx with intrusion data.

## 4.2. Deviations

In the pilot area of Lake Santo Modena, a total of 120 questionnaires were collected in the period from July 14, 2019 to September 30, 2019 taking into account that the InfoPoint at Lake Santo was open until September 1, 2019.

In the pilot area of Salse di Nirano, the system had a black-out in the period from 12/09/2019 to 19/09/2019 due to connectivity works on the installation site Cà Rossa, not depending by the service provider. In addition, there were the following technical problems:

- Camera1, 20/08/2019, technical problem that blocked the camera for the whole day;
- Camera3, in the first days, until 22/07/2019, the shot was too wide, and the fence caused several problems in detecting people. A zoom was made to have more detail and allow the neural network to work properly;
- Camera3, 23/09/2019, technical problems caused a partial recording of data about that single day.

Problems that can be managed by Vision-e have been promptly solved.



### 4.3. Data Analysis

#### Lago Santo Modenese

Below are the graphs resulting from the synthesis of the questionnaires completed in the period July to September 2019:

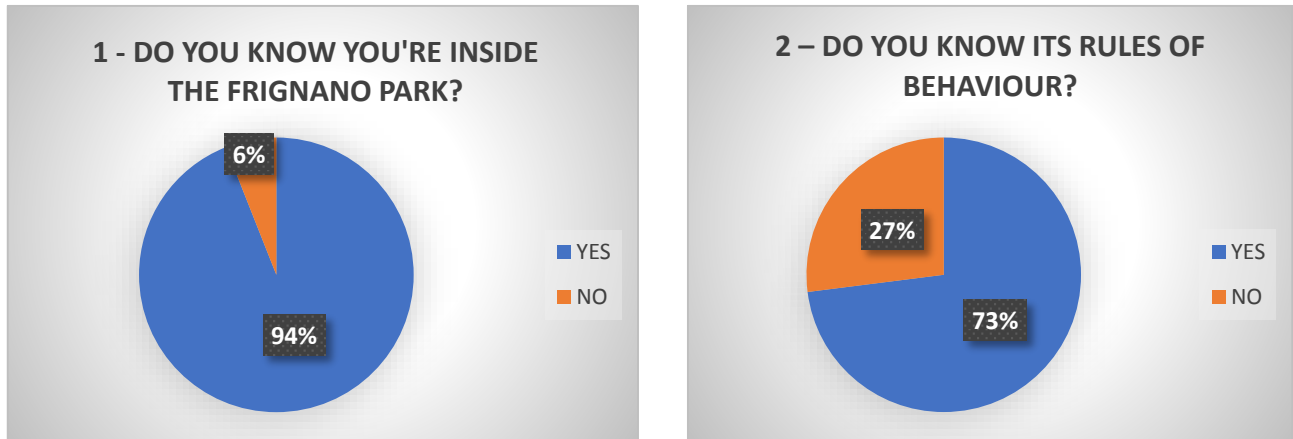


Fig. 11 - Awareness of tourist to be in a Regional Park and on the correct behaviour rules.



Fig. 12 - Questionnaire results on the leisure activity carried out by tourists in the Lake Santo area.

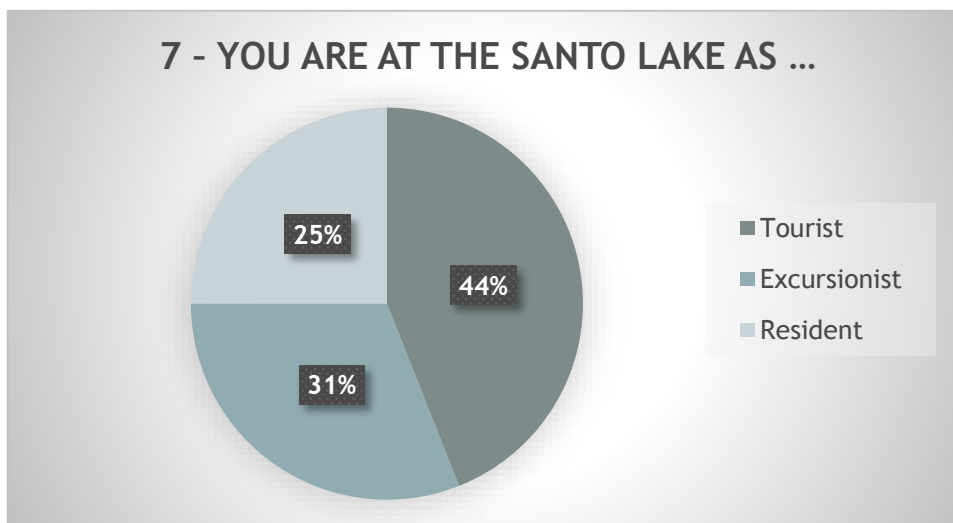
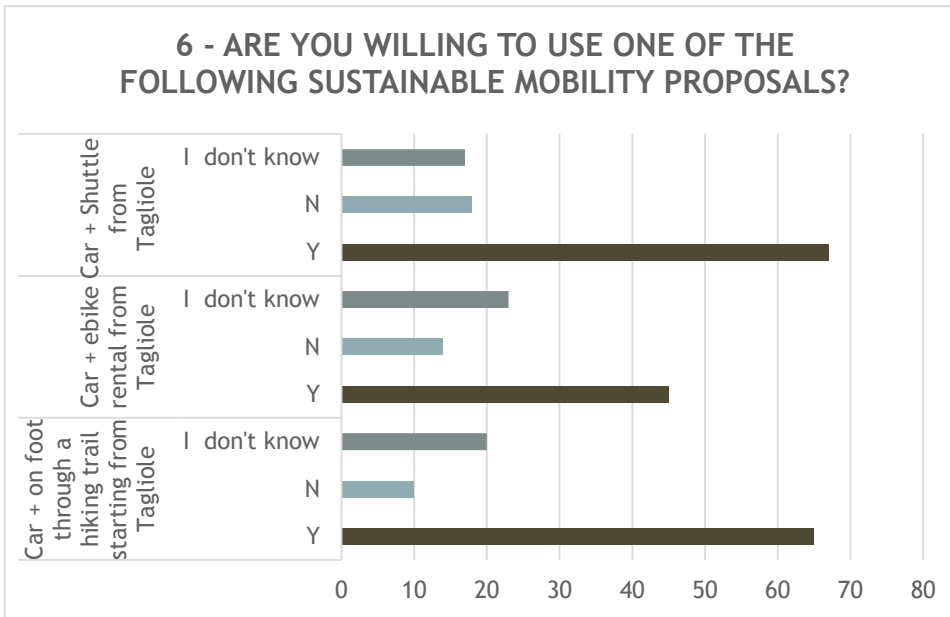
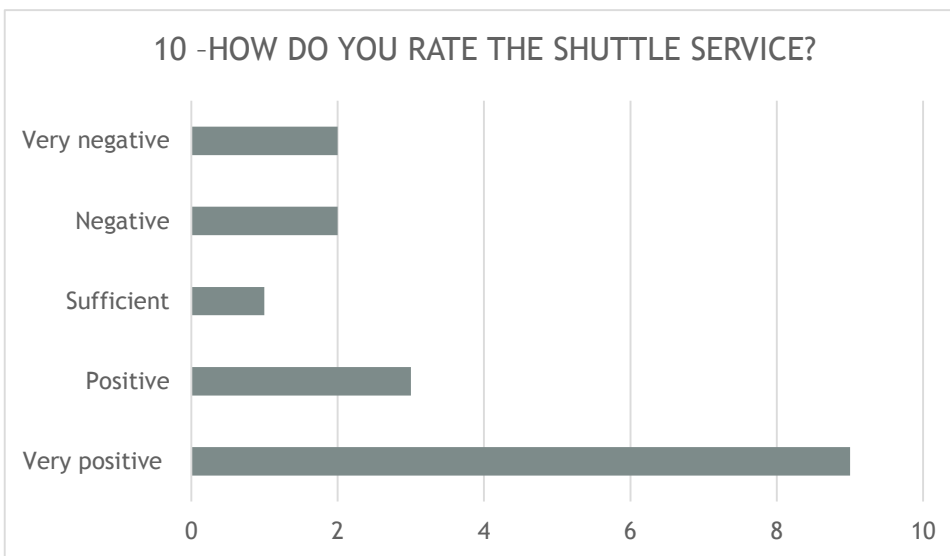


Fig. 13 - Classification of people visiting the Lake Santo area.



*Fig. 14 - Willingness of tourists to use alternative solutions to reach the Lake Santo area.*



*Fig. 15 - Tourist satisfaction about the Shuttle Service to reach the Lake Santo area.*

Fig. 11 says that the great most of the people (94%) are aware to be in a protected area, but not all of them knows (or admits to don't know) the rules of conduct and the proper behaviours.

Fig. 12 says that the most common activities carried out in the area is hiking and buying of local products (that's good for the wellbeing of local economies), followed by relaxation and fun, having lunch/dinner. Few people come for sport or to participate in natural guided tours or other similar activities. Actually, most of the visitors are tourists (44%) while the excursionists are just the 31% of the total (fig. 13). ¼ of the people are residents.

An important hint for the Park managers is that the great most of the people are willing to use alternative ways to reach the area (fig. 15) , mostly the new trail path and the shuttle bus; less desired the use of the e-Bikes. Actually, most of the responders appreciated the shuttle service tested by the Central Emilia Parks Managing Body.





**Salse di Nirano**

Below are the graphs of presence counting and intrusion detection of people, vehicles and animals, so as resulting from the acquisitions done from the start of the VCA System (19/07/2019), until the end of the Pilot Action (30/09/2019). Further we display the average distribution of access to the site, so as detected by Camera1.

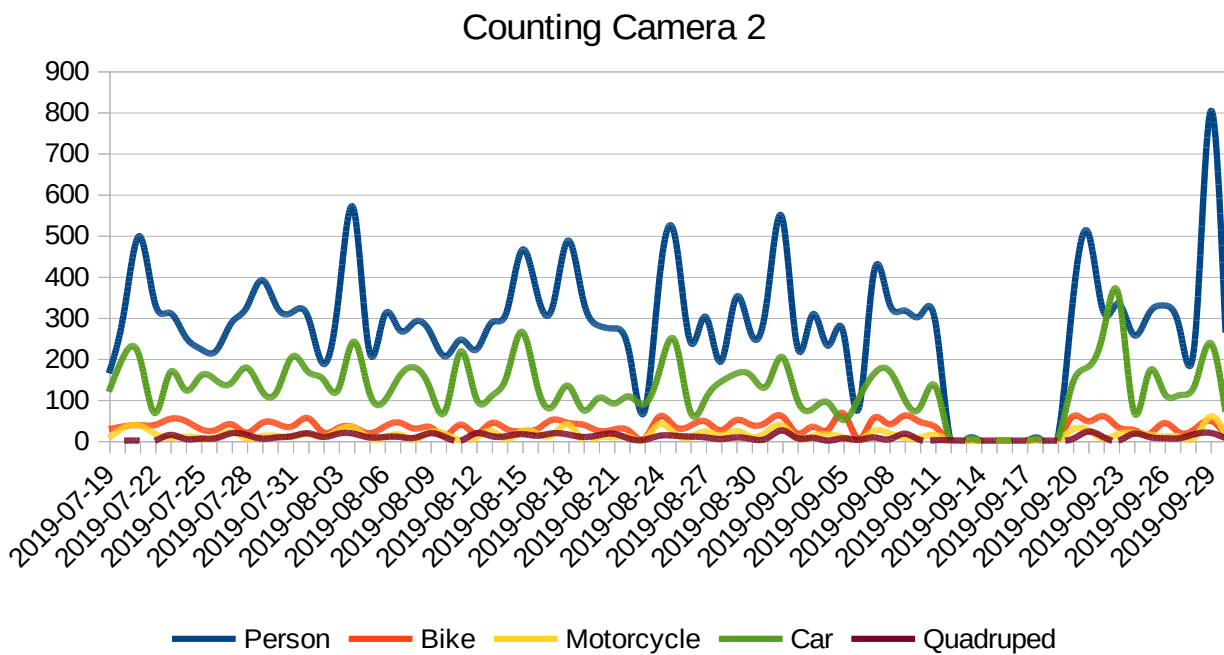
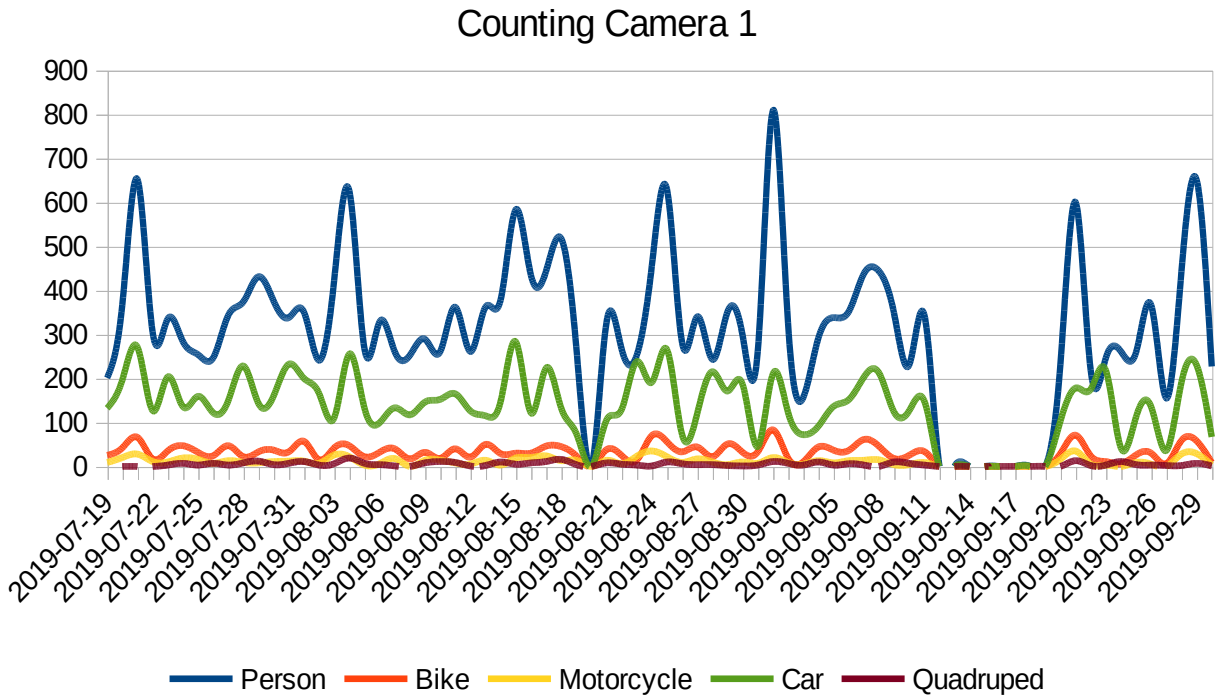


Fig. 16a,b - Statistic on the presence detected by the cameras acquisition.



Cameras 1 and 2 results are, as expected, quite similar with each other in shape but different in absolute values. The peaks of frequency are during the weekends (Fig. 16a,b). The third camera (Fig. 16c), looking far away from the street, recognized essentially only persons, quadrupeds and birds. It has to be highlighted that the highest peak for Camera 1 correspond to the 1<sup>st</sup> of September, the day where the park organized the Open Day. Cameras 2 and 3, instead, registered their highest peak on 29 September 2019 that was a Sunday. It happened because that day was organized the initiative “Puliamo il mondo”, National Day of ecological commitment with interventions of cleaning the paths of the Reserve especially involving children. Lastly, fig. 17 quantify what was actually visible also in fig. 16a-c, that is that the great most of the recognitions are people (pedestrians), followed by cars, bikes and motorbikes.

### Counting Camera 3

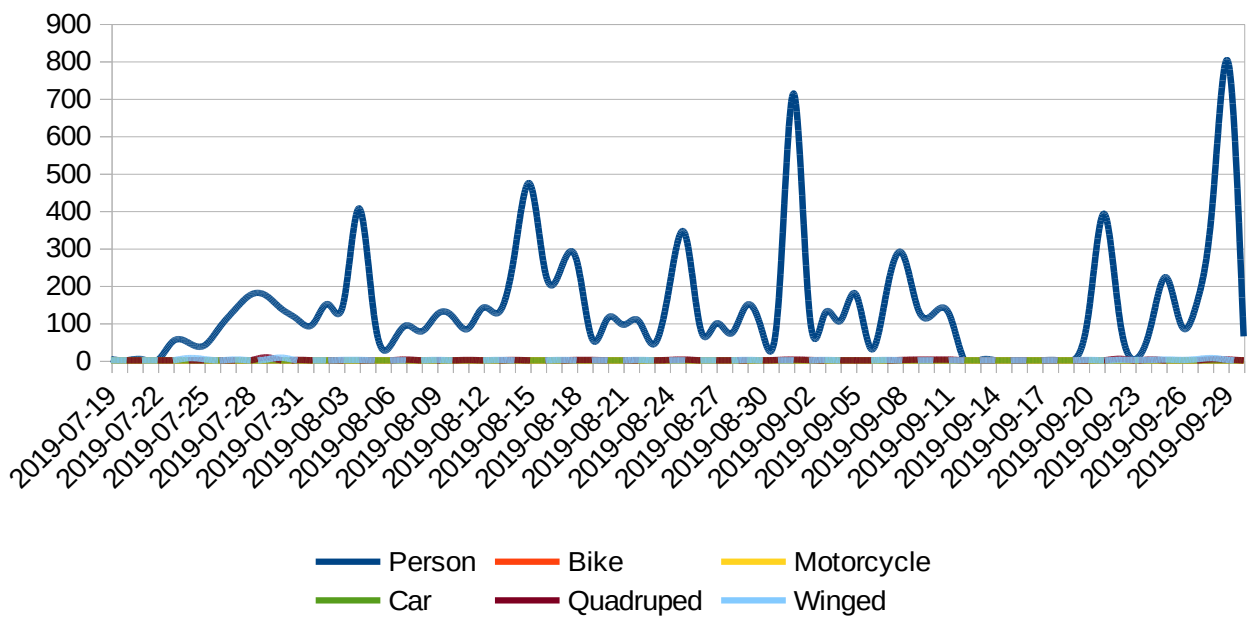


Fig. 16a,b,c - Statistic on the three cameras acquisition. Cam 1 and 2 results are, as expected, very similar while the third camera, looking away from the street, recognized essentially only persons, quadrupeds and birds.

### Class distribution Camera1

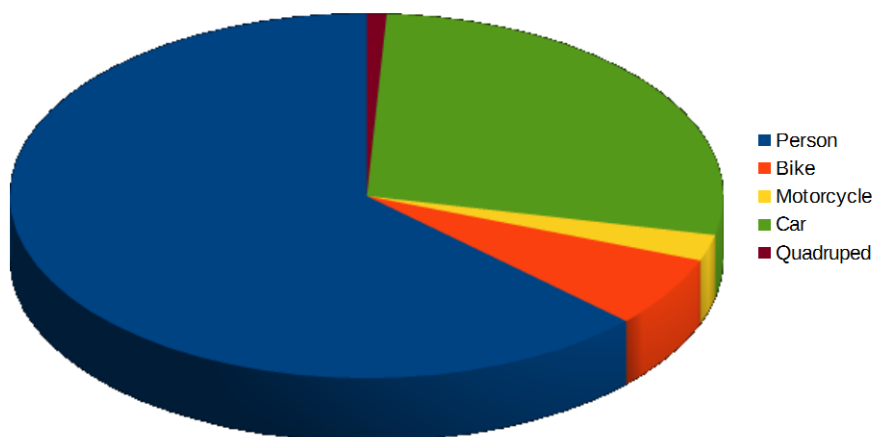




Fig. 17 - Example of the distribution of the recognition of means of transport which, during the period in question, have passed through camera 1.

As far as intrusions in Zone A are concerned, fig. 18a-c. show the histograms of the overriding events, recorded by the three cameras, aggregated by day. In the period 19/07 - 30/09/2019, a total of 352 people was recognized in Zone A by the camera 1, 313 by the camera 2 and 170 by the camera 3. The peak of daily overriding (or, in any case, walking in the Zone A of the reserve), are 13, 5 and 11 for the three cameras respectively.

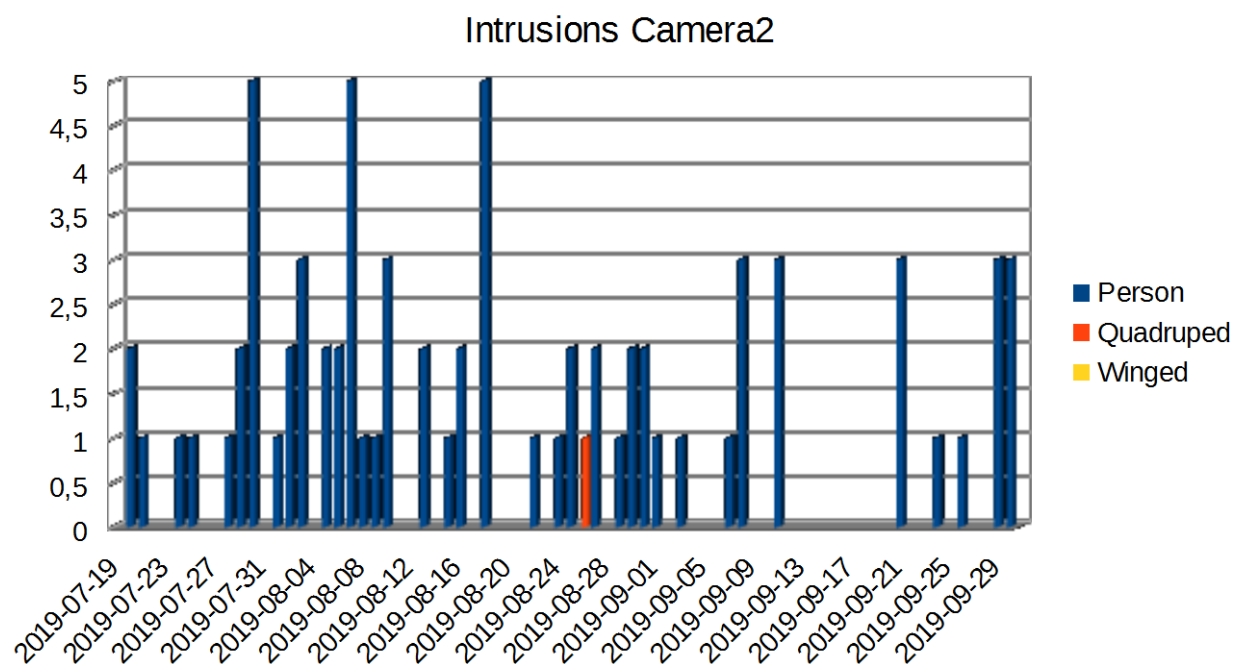
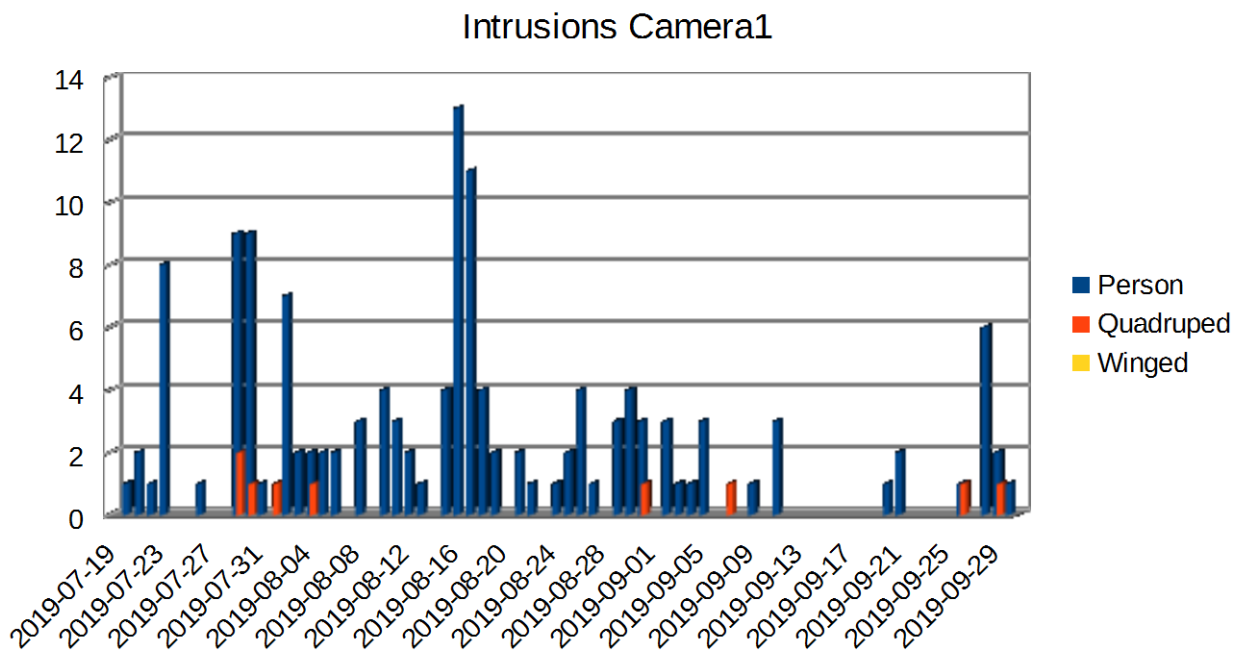




Fig. 18a,b - Statistics on intrusion events in Zone A of the Natural Reserve, from cameras 1 and 2, pointing at the apparatus closed to the municipal road.

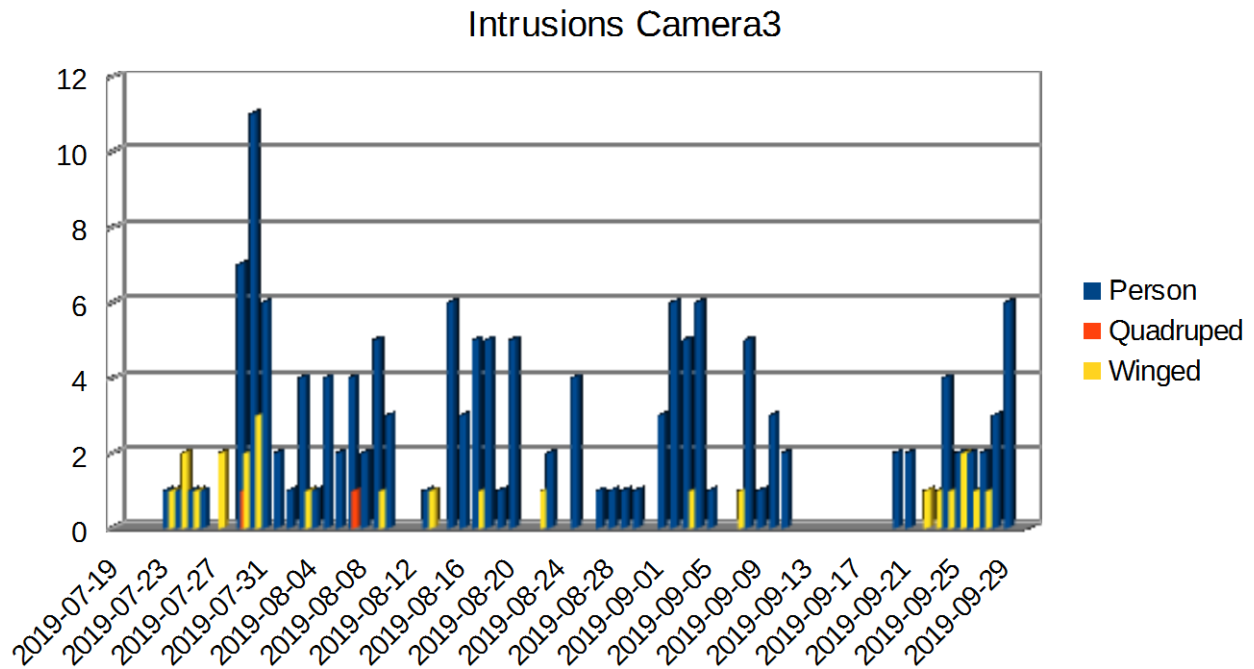


Fig. 18c - Statistics on intrusion events in Zone A of the Natural Reserve, resulting from the Camera 3, the zoom camera pointing at the furthest mud bursting cone apparatus.

Also, several quadrupeds were recognized, mostly in the area framed by camera 1, and several birds (winged), mostly by camera 3.

Analysing the data of fig. 18, reporting the daily statistics of the overcoming of physical barriers, recognized by the three cameras, we can confirm that the phenomena is quite frequent but, unlike what was expected at the moment of the monitoring system setup (i.e. that the areas framed by cameras 1 and 2 which, being positioned close to the road, would have been the areas that would have induced hikers to climb over to get closer to the eruptive cones), the highest number of overshoots is actually that recorded by camera 3, the one pointing to the most distant apparatus and to the area shown in the picture in fig. 4). The cause of this could be the visibility of the cameras in areas 1 and 2 while in area 3, being far from the cameras, probably leads people to think they are not "observed".



*Fig. 18 - General HeatMap. As expected, the flow of vehicles and pedestrians, saturates the information along the municipal road. In any case it can be noted the splitting in two main parts, related to the go/back flows.*

Analysing the intrusions from the HeatMaps it is possible to highlight the points mostly used by offenders (people) in which the public authorities could strengthen the dissuasive signs or add more precise indications on pedestrian access to the area (which are about 30m on the right of the area represented in the picture). The global HeatMap (fig. 18), of the data of people surveyed highlights the passages on the sides of the road and the stays in the vicinity of the chimney, like preferential overriding points. The same are more visible in fig. 19 where the area of the street (saturating the image due to the much higher frequentation of the road, as actually desired), has been neglected. Here it is possible to highlight: 1) the overriding points mostly used by offenders' people (the two arrows in the image); 2) the position of walking/stay inside the Zone A of the reserve. The first points are those where the managing authorities can strengthen the dissuasive plates or more precise indications to the footbridge access to the area (fig. 4).



Fig. 19 - HeatMap of the only Zone A of the Natural Reserve (excluding the transit along the road). The two red arrows indicate the most common points of intrusion of overriding people.

## 5. Use of monitoring data analysis

In the pilot area of Lake Santo in Modena, through the monitoring system implemented, an attempt was made to:

- Encouraging alternative and sustainable forms of accessibility instead of the private car;
- To acquire a better knowledge of the characteristics, choices and degree of awareness of visitors regarding the specific nature of Lake Santo Modenese;
- To make visitors responsible for their own behaviour within the Park, through adequate information on the correct rules of conduct.

The monitoring of data relating to the shuttle service has made it possible to highlight environmental and socio-economic benefits, relating to the reduction of air and noise pollution, the production of greenhouse gases, road congestion and parking areas, the risk of accidents and incidents of obstruction to the passage of rescue vehicles. In particular, with reference to congestion and the impact on the climate (see DT3.2.1), it is possible to estimate an overall benefit of € 3,500 for the month of experimentation of the new collective service alone.

The attraction of users from the car to the shuttle also suggests shorter travel times due to both the reduced road congestion and the reduced time spent searching for a free parking area. The time savings, between return trips, have been estimated at 5 minutes per passenger.

With regard to the shuttle service, the most interesting answers collected through the survey concerned:

- the interest in its future use to reach Lake Santo Modenese, declared by 66% of the respondents;



- the opinion on the service actually used, which in 71% of cases was positive or very positive;
- the indication of a strengthening of the connection, through a higher frequency and more capacious means.

The survey also made it possible to appreciate the effectiveness of the Park visitors' awareness of the delicacy of the local nature and habitat, carried out in particular through the InfoPoint function.

The use of the Survey allowed to know:

- the identity of the visitors (age, gender, residence);
- the tourist behaviour (inhabitant of the area, hiker, visitor staying overnight);
- the choices in terms of overnight stay (place and type of accommodation) and the length of stay;
- the activities carried out in the Park;
- wishes and suggestions for a better fruition of the naturalistic sites.

The inclusion of educational questions makes tourists aware of correct behaviour in the Protected Area.

Finally, it is important to point out that, in the light of the successful experimentation of the shuttle connection, the Park has already started a reflection on its future implementation with a view to tariff integration between transport and parking service, assuming a total amount of 2 Euros per car.

The Pilot Action concerning the promotion of e-bikes has to be considered as a further successful experience:

- it was carried out with the involvement of a local entity, with rental points in Pievepelago and Tagliole, enhancing their physical equipment and managerial skills and laying the foundations for a future increase in demand for bicycles in the area and the strengthening of the related supply system;
- following the example of the hiking trail connecting the Tagliole and Lake Santo Modenese, created by the Park in collaboration with the CAI, suggested the creation of a path dedicated to e-bikes only and therefore launched a project path within the ECTS, compatible with the complex of interventions included in the Sustainable Tourism Plan.

Finally, it should be pointed out that the evidence that emerged during the Survey has allowed us to acquire a detailed knowledge of the visitors of Lago Santo Modenese, forming the basis for the implementation of the activities foreseen in the Sustainable Tourism Action Plan.

In the pilot area of Salse di Nirano, the monitoring has allowed, in particular thanks to the heatmaps, to identify the weakest points of the fence system and statistically more used by the intruders. It will be possible to study a suitable signage that tries to dissuade intrusion actions and then monitor, with the same tool of VCA, if the number of intrusions or the points of intuition are reduced or changed.

The VCA system has proven itself:

- reliable, as the activity was interrupted only once, between 12 and 19 September 2019 and for external reasons, due to connectivity work at Cà Rossa;
- effective, since the system has made it possible to detect both presences and intrusions in the Protected Area, revealing a progressive downsizing of the latter. The improvement mainly concerned the number of transgressions detected by camera 1, which appear to have more than halved between the entry into operation of the system and 30 September 2019.



The Open day on 1 September saw the participation of 20 people and proved to be a good opportunity to communicate the presence of the VCA system, illustrating its purpose and how it works, by showing a short promotional video.

## 5.1. Use of the data in the Action Plan Implementation

The main challenge that the Managing Authority is carrying out concerns the possibility that the Action Plan for sustainable tourism elaborated and obtained through the Interreg CEETO Project is included in the path towards obtaining the European Charter of Sustainable Tourism promoted by Europarc/Federparchi undertaken in April of this year.

As part of the process of applying for the European Charter for Sustainable Tourism, the Ente di Gestione Parchi Emilia Centrale considers the two pilot actions tested through the CEETO Project to be strategic both from the point of view of tourism and enhancement of the territory.

In the pilot area of Lake Santo Modenese, the promotion of alternative accessibility systems should have a significant impact on the reduction of private motor vehicles that travel the road to the parking lot of Lake Santo.

The presence of an InfoPoint :

- dedicated to the joint and integrated promotion of the shuttle service, the correct rules for visiting the Park and the wider local tourist heritage;
- strongly oriented towards a dynamic and participatory approach towards local visitors;
- active according to a predefined calendar, stable and correctly modulated with respect to the actual needs of the area, with a distinct presence in the months of July and August;
- strengthened in the communication activities of the new shuttle service through the display of specific information material and the distribution of press releases and contributions on social networks;

has enabled an excellent result to be achieved in terms of demand attracted by private cars to collective transport.

Given the success of the experimentation of the shuttle service, it is strategic to plan the service and give continuity to this action based on sustainable tourism. The autonomy of the Park Authority in the definition of the transport service and in its management has been possible after the preliminary stipulation of agreements binding the subjects involved to the actual realization of the connections, in order to stem the consequences of unfavourable political dynamics (for example, the variation of the consensus on the project following elections).

Other aspects to be considered for the implementation of the shuttle service within the Action Plan are:

- Scheduling of the service timetable according to a daily frequency, for example 30 minutes per day;
- Coherence of the frequency of connections with the intensity of tourist demand, with a different modulation of supply on weekdays and public holidays, as well as in low and high season;
- Flexibility of the vehicle fleet, favouring small shuttles (9 seats) instead of larger buses, in order to reduce the risk of road congestion;
- Eco-sustainability of means of transport, preferring electric shuttles;
- Clear, widespread and articulated communication to visitors of the Park of the availability of shuttle connections, timetables and stop points (press, posters, flyers, web and social networks);





- Recognition of shuttles and stopping points by means of a consistent and simply identifiable layout;
- Spreading on the shuttles, during the route, of an audio dedicated to the introduction to the specificities of the Park and to the respect of the sites of visit;
- Conclusion of loan agreements with the owners of the land close to the shuttle stops and not used, with a view to their use as car parking spaces;
- Tariff integration between transport and parking services;
- Involvement of the local community in the promotion of the shuttle service, through word of mouth towards visitors to the area;
- Organization of a computer archive dedicated to the collection of data on the actual user of the shuttle.

The choices regarding the vehicle fleet, in particular, have made it possible:

- greater flexibility of service during peak times and on peak days, facilitating effective congestion management;

- better cost-effectiveness, in view of the lower operating costs of a 9-seater bus compared to a 20-seater shuttle bus.

In order to promote the use and diffusion of E-bikes and mountain bikes by providing for actions within the Action Plan aimed at sustainable tourism, the following elements should be taken into account:

- Creation of paths dedicated exclusively to bicycles
- Periodic maintenance of the tracks, in order to ensure their usability in terms of safety
- Forecasting along the route of rest points for emergency maintenance of bicycles
- Equipped with:
  - directional signage of distance and proximity to the points of greatest interest;
  - thematic signage, dedicated to the dissemination of the reasons of excellence of the environmental emergencies visited;
  - tables with behavioural dispositions, aimed at sensitizing visitors to the respect of nature and the habitat of the Park.
- Involvement of local operators in the rental and maintenance of vehicles;
- Promotion of trails within the wider local network of e-bike and mountain bike trails.

Given the effectiveness in the use of the survey, it can be assumed that the questionnaire can continue to be administered on paper or via a CAWI (Computer Assisted Web Interviewing) accessible from smartphones and tablets. In this way it is necessary to organize a computerized archive of responses to the survey received from visitors, divided between local residents, hikers and tourists.

Finally, in order to encourage an increasingly attentive and correct behaviour on the part of visitors and an ever-increasing awareness of the specificities of the territory, it is necessary to periodically define and implement an organized and coherent plan to sensitize Park visitors to the respect of the naturalistic excellences of the Park through the setting up of a place dedicated (InfoPoint) to the training of visitors proposing a calendar of moments specifically dedicated to the education of visitors (Open day).

The articulated and widespread communication of the rules of behaviour must be promoted through both traditional channels and innovative digital tools (press, brochures, the Park's website, social networks, audio



guides, educational videos, "talking" placemats at refreshment points and specific information panels inside the Park).

It is essential to maintain a consolidated collaboration with the main tourist stakeholders of the territory, i.e. the Park Visitor Centres, IAT offices, accommodation and catering activities, environmental guides and sports operators, oriented towards a joint awareness on the respect of the natural environment and its habitat.

In conclusion, the creation of awareness in visitors about the specificity of the Park necessarily passes through the fruition of the places (InfoPoint), the moments of meeting (Open day) and the network of relationships as opportunities to promote the wider local heritage, material and immaterial, in order to a sustainable redistribution of tourist flows in the territory and their seasonal adjustment..

In the area of Salse di Nirano, the results achieved by the "Nemos" VCA system and the active and constant participation within the Salse di Nirano area guaranteed by the busy calendar of initiatives promoted annually leads us to consider that the tested monitoring system can be replicated in other protected areas aimed at the conservation of habitats in relation to the control activity of the territory.



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## 6. Appendixes

### 6.1. Questionnaire

6.2. Database, in .xls format, of the daily number of tickets for access to the parking lot located at Lake Santo Modenese, with reference to the months of July, August and September 2018 and 2019

6.3. Complete database, in .xls format, of the results of the survey, with commentary on the main evidence collected

6.4. 2019-10-29\_SDN\_Presences\_until\_30sep2019.xlsx with attendance data

6.5. 2019-10-29\_SDN\_Intrusions\_until\_30sep2019.xlsx with intrusion data



# QUESTIONNAIRE

- Parco Regionale Alto Appennino Modenese

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Regione Emilia-Romagna (PP01)

Ver.1.1

Ente di Gestione Parchi Emilia Centrale

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06/2019



Regione Emilia-Romagna



EUROPARC  
FEDERATION



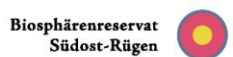
UNESCO  
BIOSPHÄREN-PARK  
Salzburger Lungau



SÖLKTÄLER  
NATURPARK



Nimfea



Biosphärenreservat  
Südost-Rügen



Federparchi  
FEDERAZIONE ITALIANA PARCHE E RISERVE NATURALI



KOPER  
RAC



MEDVEDNICA  
Park prirode  
Nature park



Krajinski park Strunjan  
Parco naturale Strugnano  
Landscape Park Strunjan



WWF





DATE OF COMPILATION \_\_\_\_/\_\_\_\_/2019

**1 - DO YOU KNOW YOU'RE INSIDE THE FRIGNANO PARK?**

YES  NO

**2 - DO YOU KNOW ITS RULES?**

YES  NO

**3- DURING YOUR STAY AT THE SANTO LAKE, WHAT EXPERIENCES HAVE YOU HAD? (Tick with an X)**

Food and wine	
Excursion on foot	
Cycling excursion	
Organized nature excursion	
Sporting activities	
Participation in events	
Relaxation and fun	
Buy typical products	
Other (to be specified)	

**4 - WHICH MEANS OF TRANSPORT DID YOU USE TO GET TO THE SANTO LAKE AREA? (Tick with an X)**

On foot through a hiking trail starting from Tagliole	
Motorbike	
Car	
Car + ebike rental from Tagliole	
Car + Shuttle from Tagliole (available from 10 to 25 August 2019)	
Other (to be specified)	

**5 - IF YOU PARKED YOUR CAR AT THE HOLY LAKE, HOW MANY PASSENGERS ARE YOU INCLUDING YOURSELF?**

1  2  3  4  5 OR MORE

**6 - ARE YOU WILLING TO USE ONE OF THE FOLLOWING SUSTAINABLE MOBILITY PROPOSALS?**

DOMANDA	YES	NO	I DON'T KNOW
Car + on foot through a hiking trail starting from Tagliole			
Car + ebike rental from Tagliole			
Car + Shuttle from Tagliole (available from 10 to 25 August 2019)			



**7 - YOU ARE AT THE SANTO LAKE AS ...**

- Tourist (holiday period with overnight stays away from your residence)
- Excursionist (you are here only today)
- Resident (you live in the zone)

**8 -IF YOU ARE A TOURIST,**

**IN WHICH LOCATION ARE YOU STAYING?**

\_\_\_\_\_

**HOW MANY NIGHTS DO YOU STAY?**

- 1
- 2
- 3
- 4
- 5 OR MORE

**WHAT KIND OF ACCOMODATION DO YOU USE?**

- Hotel
- Bed & Breakfast - B&B
- Camping
- Farmhouse
- Mountain Refuge
- Guest of friends and/or relatives
- Owned house
- Other (*to be specified*) \_\_\_\_\_

**9 - CAN YOU GIVE US SOME INFORMATION ABOUT YOURSELF?**

	0-18	19-30	31-45	46-65	OLTRE 65
AGE					

	F	M
GENDER		

	IN THIS MUNICIPALITY	IN THE PROVINCE OF MODENA	IN EMILIA ROMAGNA REGION	OUTSIDE THE REGION	OTHER STATUS
RESIDENCE					



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**10 - HOW DO YOU RATE THE SHUTTLE SERVICE?**

(1= very positive; 5 = very negative)

- 1       2       3       4       5

**11- WRITE HERE YOUR SUGGESTIONS:**

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INTERREG CENTRAL EUROPE CEETO

Numero biglietti in base alle letture	lug-18	ago-18	set-18	lug-19	ago-19	set-19
1				84		
2		75			130	174
3		14	206			
4						
5	363				134	
6		262		108		
7	151					
8				88		
9		189			138	
10	365		164			
11						
12		315			142	
13						
14		258			146	
15				90		
16	373				150	
17		333	175		154	
18						
19		300			158	
20				92		
21	385	259		63	162	
22				118		

23					166	
24	181	321	199			
25				65		
26					170	
27		229		67		
28	347					
29				126		
30	263					
31	1					
Totale mensile	#VALORE!	#VALORE!	#VALORE!			
Totale anno						

**INTERREG CENTRAL EUROPE CEETO**

Numero Questionari	lug-19	ago-19	set-19
Info Point Lago Santo		62	
Servizio Navetta		17	
Info Point Pievepelago		39	2
<b>Totale</b>		118	<b>120,00</b>



INTERREG CENTRAL EUROPE CEETO

62 QUESTIONARI COMPILATI

Domande			13/07/2019	14/07/2019
1 - DO YOU KNOW YOU'RE INSIDE THE FRIGNANO PARK?	Y		1	3
	N			
2 - DO YOU KNOW ITS RULES?	Y		1	3
	N			
3- DURING YOUR STAY AT THE SANTO LAKE, WHAT EXPERIENCES HAVE YOU HAD?	Food and wine		1	3
	Excursion on foot		1	3
	Cycling excursion			
	Organized nature excursion			
	Sporting activities			2
	Participation in events		1	2
	Relaxation and fun			2
	Buy typical products			1
	Other (to be specified)			
	4 - WHICH MEANS OF	On foot through a hiking trail starting from Tagliole		
Motorbike				
Car			1	3
Car + ebike rental from Tagliole				
Car + Shuttle from Tagliole				

TRANSPORT DID YOU USE TO GET TO THE SANTO LAKE AREA?	Other (to be specified)			
5 - IF YOU PARKED YOUR CAR AT THE HOLY LAKE, HOW MANY PASSENGERS ARE YOU INCLUDING YOURSELF?	1		1	
	2			2
	3			
	4			
	5 or more			1
6 - ARE YOU WILLING TO USE ONE OF THE FOLLOWING SUSTAINABLE MOBILITY PROPOSALS?	Car + on foot through a hiking trail starting from Tagliole	Y	1	3
		N		
		I don't know		
	Car + ebike rental from Tagliole	Y	1	1
		N		1
		I don't know		1
	Car + Shuttle from Tagliole	Y	1	1
		N		2
		I don't know		
7 - YOU ARE AT THE SANTO LAKE AS ...	Tourist			
	Excursionist			1
	Resident		1	2
IN WHICH LOCATION ARE YOU STAYING?				
HOW MANY NIGHTS DO YOU STAY?	1			
	2			
	3			
	4			
	5 OR MORE			
WHAT KIND OF ACCOMODATION DO YOU USE?	Hotel			
	B&B			
	Camping			
	Farmhouse			

<b>8 -IF YOU ARE A TOURIST</b>		Mountain Refuge		
		Guest of friends and/or relatives		
		Owned house		
		Other		
<b>9 - CAN YOU GIVE US SOME INFORMATION ABOUT YOURSELF?</b>	<b>ETA'</b>	0-18		
		19-30	1	1
		31-45		
		46-65		2
		65 or more		
		<b>SESSO</b>	F	
		M	1	2
	<b>RESIDENZA</b>	IN THIS MUNICIPALITY	1	1
		IN THE PROVINCE OF MODENA		2
		IN EMILIA ROMAGNA		
		OUTSIDE THE REGION		
		OTHER COUNTRY		







2								
	1	1			1	3	1	
							2 Residence	
					1	1		
	2			1	3	4	2	1
	1	1		3			4	1
2	1	1		4	3	5	2	
1			1					
1	2	1		4	1	4	3	1
2	2	1	1	4	6	6	5	1
		1	1	1		2	3	1
	2				3	6	4	
		1		1	1	2		1
3	2			6	3		1	



							2 Ebike Rifugio Vittoria
		1					15
1			2	2	2	1	21
	1					1	9
							5
1							6
			3	1	2	2	39
1		1					5
	1			1			14
			3	1	2	2	30
1				1			6
	1	1					17
1		1	3	2	2	2	33
1							9
	1						14
2			1			1	23
	1		1		2	1	21
		1	1	2			16
1 Riolunato 1 Sestola			1 Pievepelago			1 Riolunato	
							1
							2
1							2
1			1			1	17
1						1	7
							2
			1				2

1 Casa in affitto						
		1			1	
1			1		1	1
1			1			1
	1		1	2		
	1			1	1	
2		1	3	1	1	2
		1	1	2		
1						1
			1			1
1	1		1		2	

2  
7  
  
4  
19  
13  
24  
2  
21  
41  
15  
  
19  
8  
20

INTERREG CENTRAL EUROPE CEETO

17 QUESTIONARI COMPILATI

Domande			## ##### ##	## ##### ##	## ##### ##
1 - DO YOU KNOW YOU'RE INSIDE THE	Y		1	14	1
	N				
2 - DO YOU KNOW ITS RULES?	Y		1	13	1
	N			1	
3- DURING YOUR STAY AT THE SANTO LAKE, WHAT EXPERIENCES HAVE YOU HAD?	Food and wine			8	1
	Excursion on foot		1	11	
	Cycling excursion				
	Organized nature excursion				
	Sporting activities			5	
	Participation in events			2	
	Relaxation and fun		1	10	
	Buy typical products			6	
	Other (to be specified)				
	On foot through a hiking trail starting from Tagliole				1
Motorbike					

	Car				
	Car + ebike rental from Tagliole				
	Car + Shuttle from Tagliole		1	14	
	Other (to be specified)			1	
4 - WHICH MEANS OF TRANSPORT DID YOU USE TO GET TO THE SANTO LAKE AREA?  <u>YOUR CAR AT THE HOLY LAKE, HOW MANY PASSENGERS ARE YOU INCLUDING YOURSELF?</u>	1				
	2			1	
	3			1	
	4				
	5 or more				
6 - ARE YOU WILLING TO USE ONE OF THE FOLLOWING SUSTAINABLE MOBILITY PROPOSALS?	Car + on foot through a hiking trail starting from Tagliole	Y		7	
		N		1	
		I don't know		3	
	Car + ebike rental from Tagliole	Y		4	
		N		2	
		I don't know		2	1
Car + Shuttle from Tagliole	Y	1	11	1	
	N				
	I don't know				
7 - YOU ARE AT THE SANTO LAKE AS ...	Tourist		1	4	
	Excursionist			8	
	Resident			3	
IN WHICH LOCATION ARE YOU STAYING?		1 Abetone	2 Pievepelà	1 Castello	
	1				
	2				
	3			3	
	4				
	5 OR MORE		1	1	
	Hotel			3	

<b>8 -IF YOU ARE A TOURIST</b>	<b>WHAT KIND OF ACCOMODATION DO YOU USE?</b>	<b>B&amp;B</b>		1	
		<b>Camping</b>			
		<b>Farmhouse</b>			
		<b>Mountain Refuge</b>			
		<b>Guest of friends and/or relatives</b>			
		<b>Owned house</b>			1
		<b>Other</b>	1 Casa in affitto		
<b>9 - CAN YOU GIVE US SOME INFORMATION ABOUT YOURSELF?</b>	<b>ETA'</b>	<b>0-18</b>			
		<b>19-30</b>		2	
		<b>31-45</b>		5	1
		<b>46-65</b>	1	6	
		<b>65 or more</b>		1	
	<b>SESSO</b>	<b>F</b>		8	1
		<b>M</b>	1	7	
	<b>RESIDENZA</b>	<b>IN THIS MUNICIPALITY</b>		2	
		<b>IN THE PROVINCE OF MODENA</b>		8	
		<b>IN EMILIA ROMAGNA</b>		2	1
		<b>OUTSIDE THE REGION</b>	1	3	
		<b>OTHER COUNTRY</b>			
<b>10 -HOW DO YOU RATE THE SHUTTLE SERVICE?</b>	1		8	1	
	2	1	2		
	3		1		
	4		2		
	5		2		
	<b>Suggerimenti</b>	2 più navette e più posti			



TOTALI

16

INTERREG CENTRAL EUROPE CEETO

41 QUESTIONARI COMPILATI

Domande			13/07/2019	14/07/2019	17/07/2019
1 - DO YOU KNOW YOU'RE INSIDE THE	Y		6	1	3
	N				
2 - DO YOU KNOW ITS RULES?	Y		3		3
	N		2	1	
3- DURING YOUR STAY AT THE SANTO LAKE, WHAT EXPERIENCES HAVE YOU HAD?	Food and wine		5	1	1
	Excursion on foot		6	1	3
	Cycling excursion		2		
	Organized nature excursion		1		
	Sporting activities		2		
	Participation in events		4		
	Relaxation and fun		4	1	2
	Buy typical products		4		2
Other (to be specified)					
4 - WHICH MEANS OF TRANSPORT DID YOU USE TO GET TO THE SANTO LAKE AREA?	On foot through a hiking trail starting from Tagliole		1		
	Motorbike				
	Car		5	1	2
	Car + ebike rental from Tagliole				
	Car + Shuttle from Tagliole				
	Other (to be specified)				
YOUR CAR AT THE HOLY LAKE, HOW MANY PASSENGERS ARE YOU INCLUDING YOURSELF?	1				
	2		2		2
	3		2		
	4		1		
	5 or more				
6 - ARE YOU WILLING TO USE ONE OF THE FOLLOWING SUSTAINABLE MOBILITY PROPOSALS?	Car + on foot through a hiking trail starting from Tagliole	Y	4		1
		N	1		
		I don't know			
	Car + ebike rental from Tagliole	Y	2	1	1
		N	2		
		I don't know			
	Car + Shuttle from Tagliole	Y	1		1
		N	3		1
I don't know					
7 - YOU ARE AT THE SANTO LAKE AS ...	Tourist		1	1	2
	Excursionist		2		
	Resident		3		1

<b>8 -IF YOU ARE A TOURIST</b>	<b>IN WHICH LOCATION ARE YOU STAYING?</b>		1 Pievepelago		
	<b>HOW MANY NIGHTS DO YOU STAY?</b>	1		1	
		2			
		3			
		4			
		5 OR MORE	1		1
	<b>WHAT KIND OF ACCOMODATION DO YOU USE?</b>	Hotel			
		B&B			
		Camping	1		
		Farmhouse			
Mountain Refuge					
Guest of friends and/or relatives			1	1	
Owned house				1	
Other					
<b>9 - CAN YOU GIVE US SOME INFORMATION ABOUT YOURSELF?</b>	<b>ETA'</b>	0-18			
		19-30	2		
		31-45			1
		46-65	2	1	
		65 or more	2		2
	<b>SESSO</b>	F			
		M	6	1	3
	<b>RESIDENZA</b>	<b>IN THIS MUNICIPALITY</b>	2		
		<b>IN THE PROVINCE OF MODENA</b>	3	1	3
		<b>IN EMILIA ROMAGNA</b>	1		
<b>OUTSIDE THE REGION</b>					
<b>OTHER COUNTRY</b>					

19/07/2019	20/07/2019	22/07/2019	25/07/2019	27/07/2019	31/07/2019	01/08/2019	08/08/2019	10/08/2019
1	1	3	1	4	1	1	3	1
							1	
	1	2	1	1	1	1	2	1
1		1		3			1	
		3	1	4			4	1
1	1	2	1	3	1	1	4	1
		1					1	
1		1		2				
1		1	1	3	1		2	1
1		3	1	2			1	1
				1 Raccolta lamponi e mirtilli				
		1		1	1			
							1	
1	1	2	1	3		1	3	1
							1	
				1				
		1						1
1	1	1	1	2		1	3	
		2	1	1	1		1	
						1	1	
							1	
		1	1	1				
						1	1	
		1			1		1	
1	1	2	1	3			3	
		1			1	1	1	
								1
		1		4	1	1	2	1
1			1				1	
		2					1	

		1 Pievepelago			1 Frassinoro	1 Pievepela	1 Tagliole
							1
1		1			1	1	
		1			1		
1				3	1	2	1
						1	
		2		1		1	
1		1	1	2	1	1	2
						1	
1		3	1	3	1	1	3
1		2	1		1		1
				1		1	1
		1		2		1	2

16/08/2019	19/08/2019	20/08/2019	21/08/2019	29/08/2019	05/09/2019	TOTALI
1	2	1	2	5	2	39
	2		1	2	2	
1		1	1	1		
	1	1	2	3	1	
1	1	1	2	5	1	
				1		
	2					
	1			1	1	
1	2		1	5	2	
	1		1	4	1	
1	1				1	
	1	1	2	2	1	
				2 A piedi da sentiero Barga		
				1		
			1	1		
		1	1	1	1	
1		1	1	3	2	
				1		
				1		
1			1	2		
				2		
1	2		2	3		
				1		
				2		
1	1	1	2	3		
				1	1	
				2	1	

1 Riolunato		1 Sestola		1 Serramazzone	
	1				
		1			
				1	
1					
			2	2	
1				1	
	1				
				1	
			1		
		1	1	1	
1	1	1	2	3	
				3	2
1	1		1	1	
		1	1	5	2
					1
		1	1	1	
	1		1	1	1
1				4	

Camera1

Camera	Date	Person	Person to Nirano	Person to Spezzano	Bike	Bike to Nirano	
1	2019-07-19	201	114	87	25	2	
1	2019-07-20	367	212	155	42	10	
1	2019-07-21	652	397	255	66	13	
1	2019-07-22	306	178	128	17	10	
1	2019-07-23	335	216	119	35	12	
1	2019-07-24	284	157	127	47	14	
1	2019-07-25	254	152	102	32	11	
1	2019-07-26	246	142	104	24	4	
1	2019-07-27	343	219	124	47	11	
1	2019-07-28	374	216	158	22	10	
1	2019-07-29	431	219	212	33	3	
1	2019-07-30	376	243	133	37	2	
1	2019-07-31	338	216	122	33	3	
1	2019-08-01	351	215	136	57	10	
1	2019-08-02	241	148	93	15	2	
1	2019-08-03	422	238	184	42	6	
1	2019-08-04	626	340	286	47	6	
1	2019-08-05	268	168	100	22	3	
1	2019-08-06	328	173	155	32	6	
1	2019-08-07	261	146	115	40	11	
1	2019-08-08	252	126	126	17	11	
1	2019-08-09	289	166	123	32	4	
1	2019-08-10	260	152	108	18	7	
1	2019-08-11	362	207	155	40	13	
1	2019-08-12	261	164	97	21	4	
1	2019-08-13	362	196	166	50	16	
1	2019-08-14	378	243	135	29	8	
1	2019-08-15	583	363	220	30	15	
1	2019-08-16	435	268	167	30	13	
1	2019-08-17	443	255	188	46	16	
1	2019-08-18	518	313	205	45	10	
1	2019-08-19	272	153	119	24	4	
1	2019-08-20	0	0	0	0	0	
1	2019-08-21	327	171	156	38	6	
1	2019-08-22	267	158	109	25	8	
1	2019-08-23	252	126	126	14	6	
1	2019-08-24	455	252	203	70	16	
1	2019-08-25	629	360	269	56	11	
1	2019-08-26	281	171	110	33	5	
1	2019-08-27	340	185	155	44	16	
1	2019-08-28	243	149	94	22	5	
1	2019-08-29	351	202	149	51	7	
1	2019-08-30	297	172	125	32	6	
1	2019-08-31	261	137	124	33	5	
1	2019-09-01	808	508	300	83	16	
1	2019-09-02	326	209	117	19	3	
1	2019-09-03	156	74	82	10	3	
1	2019-09-04	291	184	107	44	2	
1	2019-09-05	338	203	135	37	10	
1	2019-09-06	351	206	145	36	8	
1	2019-09-07	437	256	181	61	9	



Camera1

1 2019-09-08	444	232	212	46	13
1 2019-09-09	349	210	139	18	3
1 2019-09-10	230	124	106	25	4
1 2019-09-11	345	203	142	34	2
1 2019-09-12	2	1	1	0	0
1 2019-09-13	0	0	0	0	0
1 2019-09-14	0	0	0	0	0
1 2019-09-15	0	0	0	0	0
1 2019-09-16	0	0	0	0	0
1 2019-09-17	0	0	0	0	0
1 2019-09-18	0	0	0	0	0
1 2019-09-19	0	0	0	0	0
1 2019-09-20	232	137	95	29	3
1 2019-09-21	600	320	280	71	14
1 2019-09-22	219	141	78	24	5
1 2019-09-23	246	137	109	11	3
1 2019-09-24	261	160	101	6	0
1 2019-09-25	259	152	107	26	6
1 2019-09-26	366	210	156	30	7
1 2019-09-27	155	86	69	6	1
1 2019-09-28	443	263	180	59	16
1 2019-09-29	651	390	261	58	20
1 2019-09-30	227	122	105	9	1

	<b>Person</b>	<b>Person to Nirano</b>	<b>Person to Spezzano</b>	<b>Bike</b>	<b>Bike to Nirano</b>	
Totale	22856	13325	9531		2257	510
Media	352	205	147		35	8

Camera1

<b>Bike to Spezzano</b>	<b>Motorcycle</b>	<b>Motocycle to Nirano</b>	<b>Motocycle to Spezzano</b>	<b>Car</b>	<b>Car to Nirano</b>	<b>Car to Spezzano</b>	
23	9	3	6	132	70	62	
32	20	4	16	196	120	76	
53	28	8	20	271	147	124	
7	11	3	8	127	79	48	
23	10	5	5	203	141	62	
33	19	12	7	136	81	55	
21	16	3	13	159	102	57	
20	7	2	5	122	81	41	
36	13	4	9	149	97	52	
12	9	7	2	228	150	78	
30	8	3	5	143	62	81	
35	11	4	7	160	74	86	
30	12	4	8	232	130	102	
47	12	3	9	200	133	67	
13	7	2	5	166	108	58	
36	26	5	21	110	64	46	
41	22	2	20	255	149	106	
19	3	2	1	133	77	56	
26	6	1	5	99	57	42	
29	18	11	7	133	71	62	
6	0	0	0	117	69	48	
28	14	6	8	146	91	55	
11	14	2	12	152	87	65	
27	8	1	7	165	98	67	
17	5	2	3	126	79	47	
34	14	4	10	115	70	45	
21	3	1	2	147	80	67	
15	19	4	15	283	163	120	
17	20	6	14	122	67	55	
30	24	8	16	223	95	128	
35	13	5	8	133	77	56	
20	14	5	9	75	41	34	
0	0	0	0	0	0	0	
32	14	6	8	105	58	47	
17	6	1	5	129	82	47	
8	23	6	17	238	123	115	
54	35	13	22	191	114	77	
45	22	8	14	265	154	111	
28	9	3	6	72	38	34	
28	17	5	12	120	70	50	
17	10	3	7	215	144	71	
44	4	0	4	171	103	68	
26	10	2	8	186	127	59	
28	7	1	6	45	26	19	
67	20	6	14	210	129	81	
16	9	3	6	123	74	49	
7	5	2	3	72	45	27	
42	13	4	9	91	50	41	
27	8	0	8	136	79	57	
28	13	4	9	151	89	62	
52	14	3	11	202	103	99	

Camera1

33	15	3	12	213	124	89
15	4	0	4	124	75	49
21	4	4	0	126	62	64
32	9	0	9	149	88	61
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
26	16	2	14	103	50	53
57	35	5	30	178	115	63
19	5	0	5	175	103	72
8	3	0	3	218	126	92
6	0	0	0	42	22	20
20	9	3	6	112	66	46
23	5	0	5	135	88	47
5	0	0	0	36	26	10
43	28	11	17	191	118	73
38	29	11	18	230	138	92
8	3	1	2	67	45	22

<b>Bike to Spezzano</b>	<b>Motorcycle</b>	<b>Motocycle to Nirano</b>	<b>Motocycle to Spezzano</b>	<b>Car</b>	<b>Car to Nirano</b>	<b>Car to Spezzano</b>
1747	819	242	577	9979	5864	4115
27	13	4	9	154	90	63

Camera1

Quadruped	Winged	Problems	Note
0		0	
0		0	
0		0	
0		0	
3		0	
7		0	
3		0	
7		0	
3		0	
8		0	
12		0	
4		0	
7		0	
11		0	
3		0	
6		0	
19		0	
7		0	
4		0	
1		0	
0		0	
8		0	
11		0	
9		0	
1		0	
2		0	
10		0	
5		0	
8		0	
11		0	
16		0	
4		0	
0		0	1 Problema tecnico di registrazione su Camera1
8		0	
5		0	
3		0	
1		0	
10		0	
6		0	
4		0	
4		0	
2		0	
1		0	
3		0	
11		0	
7		0	
3		0	
10		0	
3		0	
6		0	
3		0	

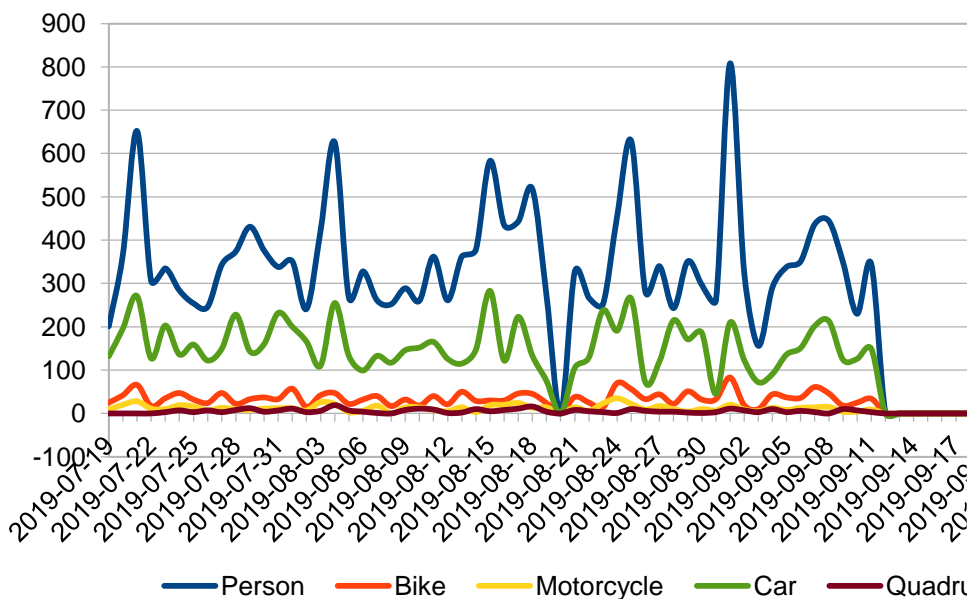
Camera1

0	0	
10	0	
7	0	
3	0	
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	
13	0	
2	0	
3	0	
11	0	
4	0	
3	0	
2	0	
2	0	
7	0	
1	0	

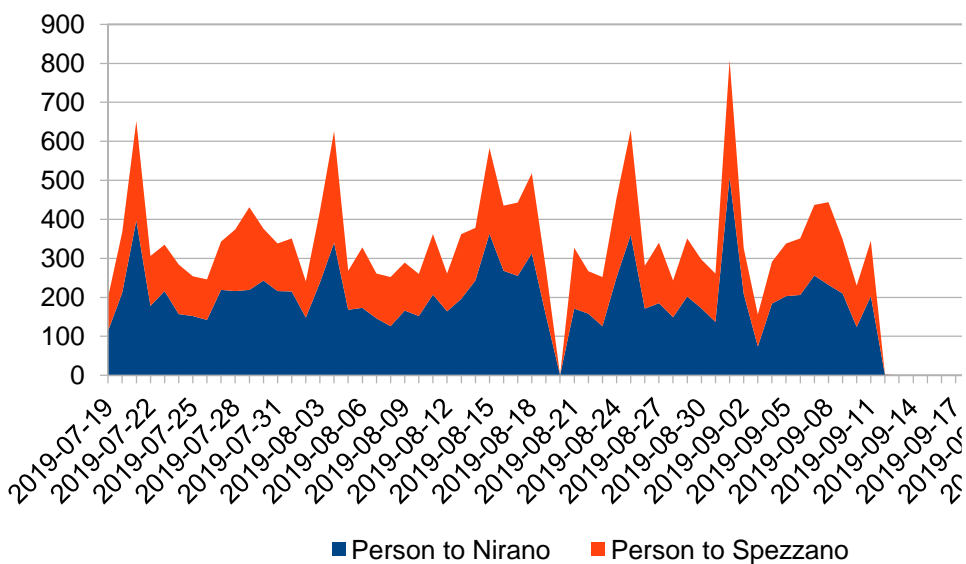
Quadruped	Winged	Day of full day working
348		0 65
5		0

# Camera1

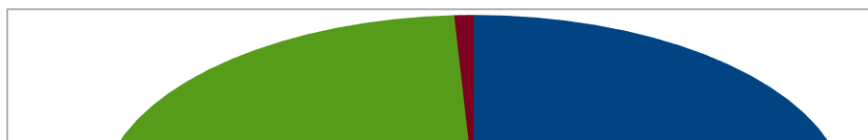
## Counting Camera 1



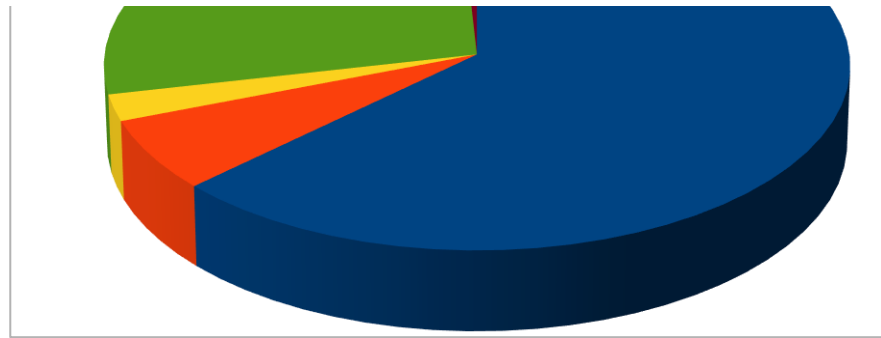
## Direction people walk



## Class distribution Camera1

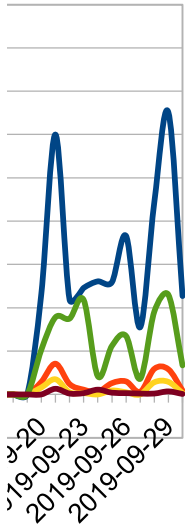


Camera1

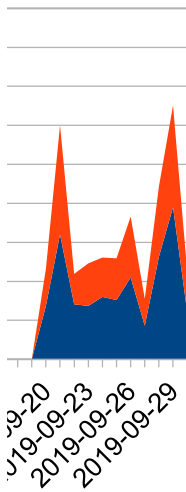


3sa  
3sa  
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3sa  
3sa  
3sa

Camera1



aped





Camera1

- 
- 1
  - 2
  - 3
  - 4
  - 5

Camera2

Camera	Date	Person	Person to Nirano	Person to Spezzano	Bike	Bike to Nirano	
	2 2019-07-19		164	100	64	28	26
	2 2019-07-20		315	180	135	35	32
	2 2019-07-21		498	290	208	38	34
	2 2019-07-22		336	185	151	38	34
	2 2019-07-23		311	196	115	53	44
	2 2019-07-24		253	144	109	48	45
	2 2019-07-25		223	135	88	28	23
	2 2019-07-26		218	127	91	26	23
	2 2019-07-27		286	176	110	40	34
	2 2019-07-28		324	154	170	19	10
	2 2019-07-29		391	240	151	43	40
	2 2019-07-30		324	208	116	41	37
	2 2019-07-31		313	205	108	35	35
	2 2019-08-01		303	172	131	55	48
	2 2019-08-02		187	107	80	20	19
	2 2019-08-03		343	194	149	31	31
	2 2019-08-04		564	295	269	33	33
	2 2019-08-05		222	142	80	18	17
	2 2019-08-06		304	150	154	34	33
	2 2019-08-07		269	152	117	44	40
	2 2019-08-08		289	157	132	29	29
	2 2019-08-09		264	148	116	33	31
	2 2019-08-10		205	125	80	13	13
	2 2019-08-11		246	137	109	39	35
	2 2019-08-12		221	131	90	17	16
	2 2019-08-13		287	171	116	43	39
	2 2019-08-14		313	171	142	28	28
	2 2019-08-15		464	255	209	23	22
	2 2019-08-16		358	188	170	28	26
	2 2019-08-17		325	175	150	51	46
	2 2019-08-18		487	266	221	43	41
	2 2019-08-19		344	224	120	39	39
	2 2019-08-20		280	153	127	24	21
	2 2019-08-21		273	147	126	27	20
	2 2019-08-22		218	120	98	24	21
	2 2019-08-23		69	41	28	4	4
	2 2019-08-24		396	214	182	59	53
	2 2019-08-25		499	291	208	34	29
	2 2019-08-26		242	158	84	36	32
	2 2019-08-27		302	172	130	47	47
	2 2019-08-28		192	123	69	25	21
	2 2019-08-29		348	208	140	50	46
	2 2019-08-30		259	148	111	38	33
	2 2019-08-31		334	188	146	45	40
	2 2019-09-01		545	290	255	60	54
	2 2019-09-02		230	137	93	17	16
	2 2019-09-03		307	185	122	34	31
	2 2019-09-04		231	144	87	26	25
	2 2019-09-05		266	151	115	67	64
	2 2019-09-06		76	46	30	4	4
	2 2019-09-07		407	222	185	55	47

Camera2

2 2019-09-08	337	213	124	40	35
2 2019-09-09	317	167	150	61	61
2 2019-09-10	303	170	133	46	46
2 2019-09-11	295	188	107	34	33
2 2019-09-12	1	1	0	0	0
2 2019-09-13	0	0	0	0	0
2 2019-09-14	0	0	0	0	0
2 2019-09-15	0	0	0	0	0
2 2019-09-16	0	0	0	0	0
2 2019-09-17	0	0	0	0	0
2 2019-09-18	0	0	0	0	0
2 2019-09-19	0	0	0	0	0
2 2019-09-20	334	169	165	59	57
2 2019-09-21	508	269	239	47	42
2 2019-09-22	316	207	109	60	60
2 2019-09-23	334	180	154	32	27
2 2019-09-24	257	175	82	26	24
2 2019-09-25	310	194	116	16	14
2 2019-09-26	329	170	159	43	37
2 2019-09-27	273	127	146	19	15
2 2019-09-28	246	119	127	29	21
2 2019-09-29	799	472	327	49	44
2 2019-09-30	263	144	119	13	13

	<b>Person</b>	<b>Person to Nirano</b>	<b>Person to Spezzano</b>	<b>Bike</b>	<b>Bike to Nirano</b>	
Totale	20646	11802	8844		2343	2140
Media	313	179	134		36	32

Camera2

<b>Bike to Spezzano</b>	<b>Motorcycle</b>	<b>Motocycle to Nirano</b>	<b>Motocycle to Spezzano</b>	<b>Car</b>	<b>Car to Nirano</b>	<b>Car to Spezzano</b>	
2	7	7	7	0	119	37	82
3	32	26	26	6	208	91	117
4	37	32	32	5	205	82	123
4	17	17	17	0	67	17	50
9	7	7	7	0	166	74	92
3	10	9	9	1	123	54	69
5	6	4	4	2	158	62	96
3	7	5	5	2	147	55	92
6	22	18	18	4	140	63	77
9	5	3	3	2	178	67	111
3	11	11	11	0	121	60	61
4	11	11	11	0	121	36	85
0	10	10	10	0	205	95	110
7	16	11	11	5	168	68	100
1	9	9	9	0	150	59	91
0	26	23	23	3	125	55	70
0	32	28	28	4	241	105	136
1	7	6	6	1	120	50	70
1	7	6	6	1	96	42	54
4	15	9	9	6	157	48	109
0	3	3	3	0	178	59	119
2	21	15	15	6	126	43	83
0	16	16	16	0	73	31	42
4	0	0	0	0	217	98	119
1	7	5	5	2	104	35	69
4	24	20	20	4	108	47	61
0	3	2	2	1	156	64	92
1	24	23	23	1	265	109	156
2	18	11	11	7	133	61	72
5	14	9	9	5	83	25	58
2	40	33	33	7	134	59	75
0	0	0	0	0	74	22	52
3	8	4	4	4	104	47	57
7	8	6	6	2	90	35	55
3	10	8	8	2	108	39	69
0	3	2	2	1	88	34	54
6	41	30	30	11	170	62	108
5	17	15	15	2	243	97	146
4	8	6	6	2	72	27	45
0	23	19	19	4	101	35	66
4	12	7	7	5	143	40	103
4	24	23	23	1	163	67	96
5	9	8	8	1	158	57	101
5	21	16	16	5	133	53	80
6	38	34	34	4	204	77	127
1	5	5	5	0	100	35	65
3	11	10	10	1	77	36	41
1	15	15	15	0	93	43	50
3	8	8	8	0	50	22	28
0	0	0	0	0	101	39	62
8	24	19	19	5	162	74	88

Camera2

5	18	17	1	171	99	72
0	7	7	0	102	31	71
0	7	7	0	79	21	58
1	14	13	1	134	56	78
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
2	27	25	2	139	57	82
5	26	15	11	179	61	118
0	5	5	0	261	99	162
5	16	16	0	356	133	223
2	19	17	2	72	22	50
2	15	12	3	167	58	109
6	10	6	4	115	39	76
4	9	6	3	111	36	75
8	8	4	4	136	66	70
5	59	41	18	238	106	132
0	15	8	7	70	28	42

<b>Bike to Spezzano</b>	<b>Motorcycle</b>	<b>Motocycle to Nirano</b>	<b>Motocycle to Spezzano</b>	<b>Car</b>	<b>Car to Nirano</b>	<b>Car to Spezzano</b>
203	1004	823	181	9356	3704	5652
3	15	12	3	142	56	86

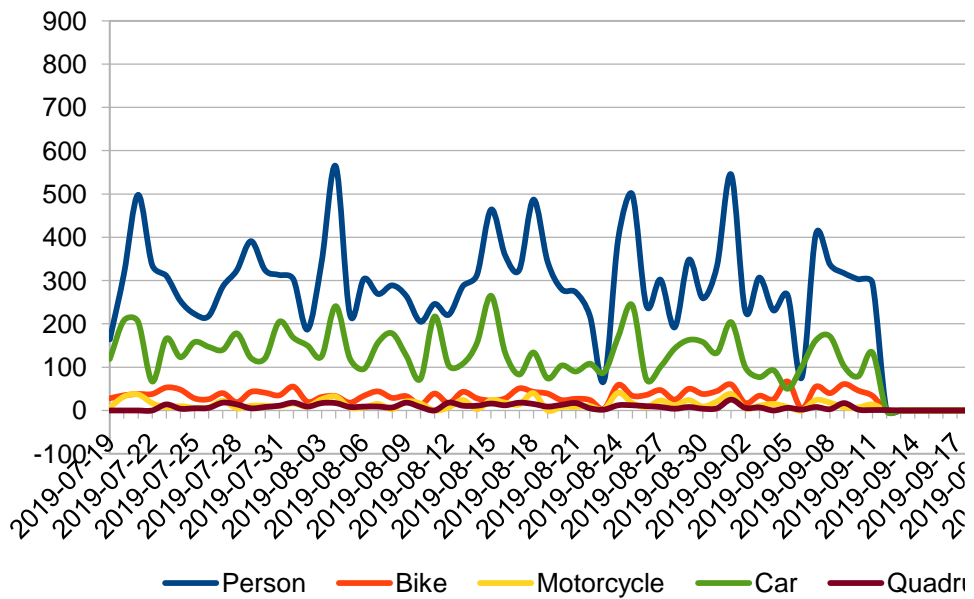
Quadruped	Winged	Problems	Note
0		0	
0		0	
0		0	
0		0	
14		0	
4		0	
5		0	
6		0	
18		0	
14		0	
5		0	
8		0	
11		0	
18		0	
9		0	
17		0	
17		0	
8		0	
9		0	
9		0	
7		0	
18		0	
8		0	
0		0	
18		0	
11		0	
11		0	
16		0	
12		0	
18		0	
15		0	
9		0	
13		0	
17		0	
5		0	
2		0	
12		0	
12		0	
10		0	
8		0	
4		0	
8		0	
4		0	
5		0	
25		0	
6		0	
7		0	
0		0	
6		0	
2		0	
8		0	

Camera2

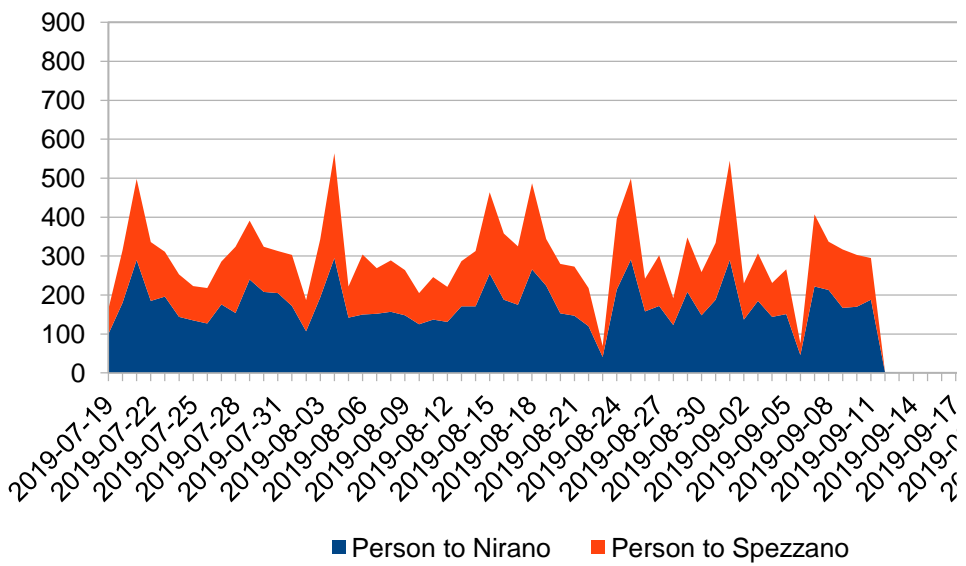
3	0	
17	0	
2	0	
1	0	
1	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
4	0	
22	0	
9	0	
0	0	
17	0	
9	0	
6	0	
6	0	
16	0	
19	0	
6	0	

Quadruped	Winged	Day of full day working
606	0	66
9	0	

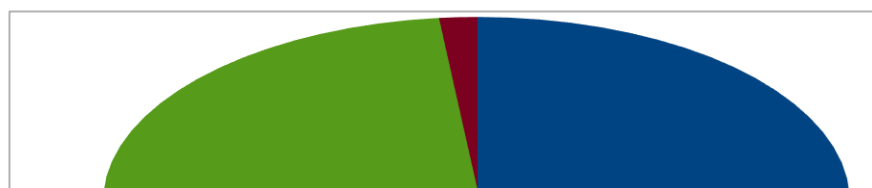
### Counting Camera 2



### Direction people walk

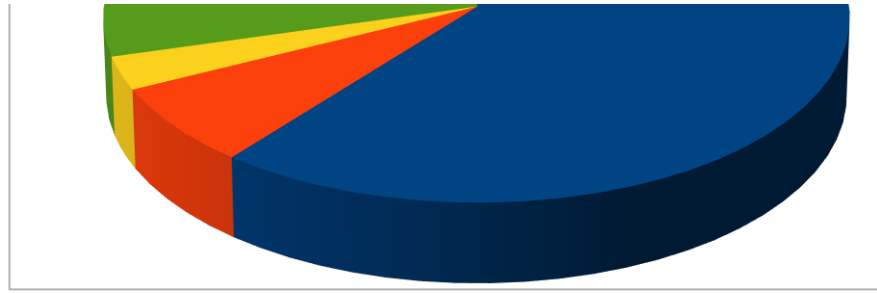


### Class distribution

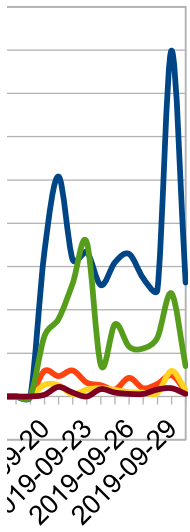




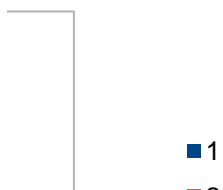
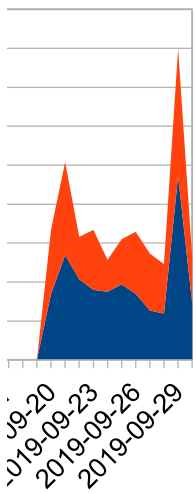
Camera2



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uped



Camera2

- 2
- 3
- 4
- 5

Camera3

Camera	Date	Person	Person to Nirano	Person to Spezzano	Bike	Bike to Nirano	
	2 2019-07-19		3	0	3	0	0
	2 2019-07-20		0	0	0	0	0
	2 2019-07-21		3	0	3	0	0
	2 2019-07-22		0	0	0	0	0
	2 2019-07-23		51	32	18	0	0
	2 2019-07-24		47	34	13	0	0
	2 2019-07-25		39	27	12	0	0
	2 2019-07-26		88	50	38	0	0
	2 2019-07-27		136	84	52	0	0
	2 2019-07-28		175	105	70	0	0
	2 2019-07-29		173	135	38	0	0
	2 2019-07-30		137	73	64	0	0
	2 2019-07-31		110	53	57	0	0
	2 2019-08-01		96	63	33	0	0
	2 2019-08-02		150	103	47	0	0
	2 2019-08-03		156	90	66	0	0
	2 2019-08-04		406	279	127	0	0
	2 2019-08-05		106	58	48	0	0
	2 2019-08-06		38	22	16	0	0
	2 2019-08-07		93	59	34	0	0
	2 2019-08-08		77	49	28	0	0
	2 2019-08-09		122	95	27	0	0
	2 2019-08-10		118	72	46	0	0
	2 2019-08-11		84	47	37	0	0
	2 2019-08-12		141	83	58	0	0
	2 2019-08-13		128	75	53	0	0
	2 2019-08-14		281	179	102	0	0
	2 2019-08-15		472	302	170	0	0
	2 2019-08-16		233	168	65	0	0
	2 2019-08-17		244	172	72	0	0
	2 2019-08-18		269	183	86	0	0
	2 2019-08-19		58	38	20	0	0
	2 2019-08-20		112	69	43	0	0
	2 2019-08-21		95	64	31	0	0
	2 2019-08-22		106	59	47	0	0
	2 2019-08-23		43	32	11	0	0
	2 2019-08-24		198	129	69	0	0
	2 2019-08-25		338	221	117	0	0
	2 2019-08-26		84	39	45	0	0
	2 2019-08-27		98	68	30	0	0
	2 2019-08-28		72	42	30	0	0
	2 2019-08-29		148	108	40	0	0
	2 2019-08-30		74	45	29	0	0
	2 2019-08-31		139	80	59	0	0
	2 2019-09-01		713	484	229	0	0
	2 2019-09-02		135	91	44	0	0
	2 2019-09-03		124	78	46	0	0
	2 2019-09-04		105	80	25	0	0
	2 2019-09-05		177	112	65	0	0
	2 2019-09-06		30	14	16	0	0
	2 2019-09-07		185	127	58	0	0

Camera3

2 2019-09-08	286	176	110	0	0
2 2019-09-09	139	91	48	0	0
2 2019-09-10	124	84	40	0	0
2 2019-09-11	126	97	29	0	0
2 2019-09-12	0	0	0	0	0
2 2019-09-13	0	0	0	0	0
2 2019-09-14	0	0	0	0	0
2 2019-09-15	0	0	0	0	0
2 2019-09-16	0	0	0	0	0
2 2019-09-17	0	0	0	0	0
2 2019-09-18	0	0	0	0	0
2 2019-09-19	0	0	0	0	0
2 2019-09-20	122	84	38	0	0
2 2019-09-21	392	259	133	0	0
2 2019-09-22	115	64	51	0	0
2 2019-09-23	3	3	0	0	0
2 2019-09-24	87	62	25	0	0
2 2019-09-25	222	190	32	0	0
2 2019-09-26	92	61	31	0	0
2 2019-09-27	155	115	40	0	0
2 2019-09-28	419	282	137	0	0
2 2019-09-29	798	540	258	0	0
2 2019-09-30	64	50	14	0	0

	<b>Person</b>	<b>Person to Nirano</b>	<b>Person to Spezzano</b>	<b>Bike</b>	<b>Bike to Nirano</b>	
Totale	10345	6827	3517		0	0
Media	170	112	58		0	0



Camera3

0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Bike to Spezzano	Motorcycle	Motocycle to Nirano	Motocycle to Spezzano	Car	Car to Nirano	Car to Spezzano	
	0	0	0	0	0	0	0
	0	0	0	0	0	0	0

Quadruped	Winged	Problems	Note
0		0	1 Area di analisi troppo estesa, la staccionata era troppo vis
0		0	1 Area di analisi troppo estesa, la staccionata era troppo vis
0		0	1 Area di analisi troppo estesa, la staccionata era troppo vis
0		0	1 Area di analisi troppo estesa, la staccionata era troppo vis
0		0	
0		6	
0		3	
0		0	
0		2	
0		0	
8		2	
0		7	
1		0	
0		0	
0		0	
0		1	
0		1	
0		0	
0		0	
2		0	
0		0	
0		1	
0		0	
1		0	
0		0	
0		1	
1		0	
0		0	
0		0	
0		0	
0		1	
1		0	
1		0	
0		0	
0		0	
0		1	
0		0	
1		0	
2		0	
0		0	
0		0	
0		0	
0		1	
0		0	
1		0	
2		0	
1		0	
0		1	
0		0	
0		0	
0		0	
0		1	
0		0	
1		0	
2		0	
1		0	
0		1	
0		0	
0		0	
0		0	
0		1	



Camera3

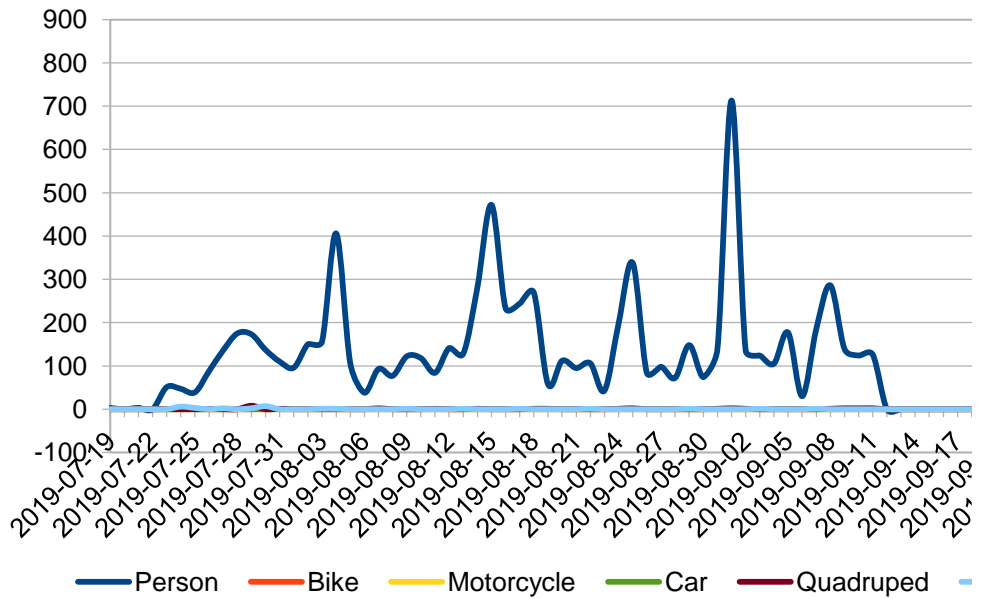
1	0	
2	0	
2	0	
2	0	
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	0	1 Interruzione registrazione causa lavori sulla rete in Cà Ros
0	1	
0	0	
4	1	
0	1	1 Problema tecnico sulla camera che non ha registrato tuta
2	1	
0	2	
0	1	
0	3	
3	6	
2	1	
0	0	

Quadruped	Winged	Day of full day working
40	45	61
1	1	

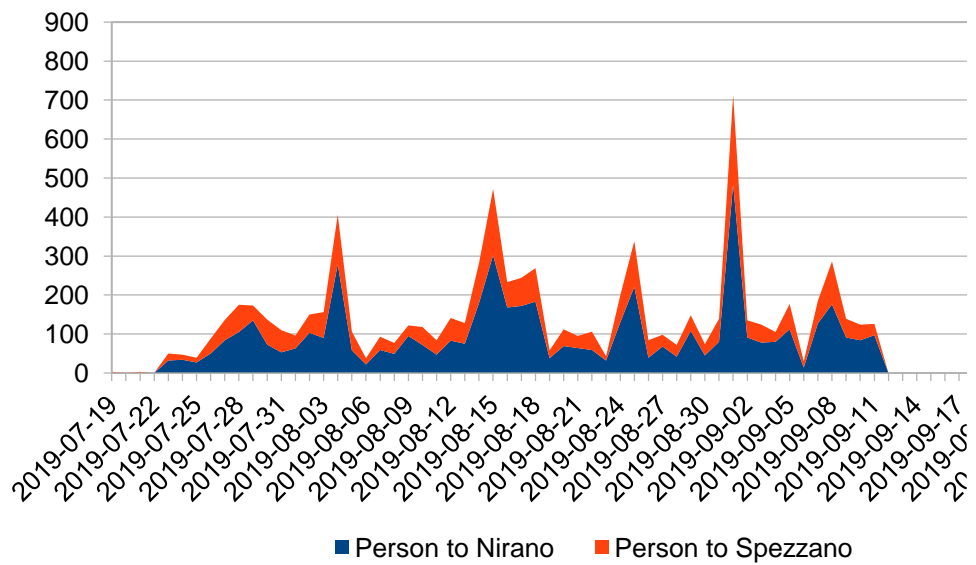
### Camera3

#### Counting Camera 3

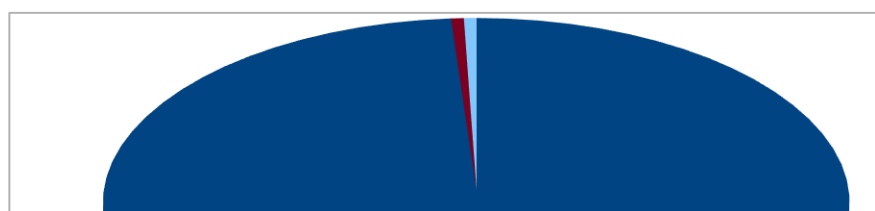
ibile dal 23/07/20  
ibile dal 23/07/20  
ibile dal 23/07/20  
ibile dal 23/07/20



#### Direction people walk



#### Class distribution

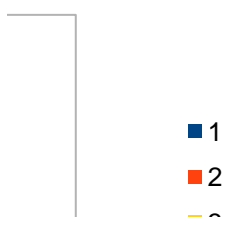
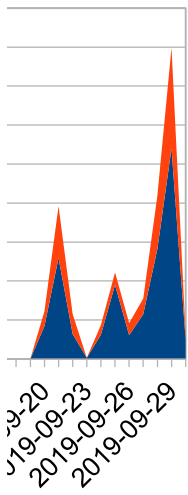
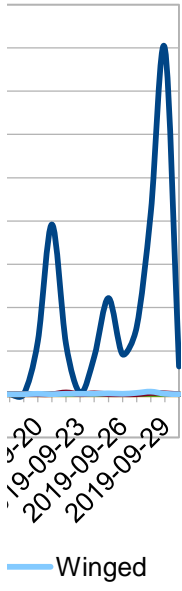


Camera3



3sa  
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la giornata



Camera3

- 3
- 4
- 5
- 6

Camera1

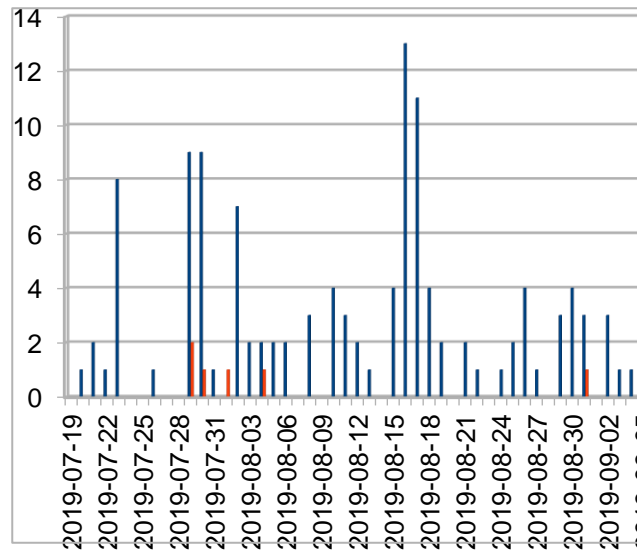
Camera	Date	Person	Quadruped	Winged	Problems	Note
1	2019-07-19		0	0	0	
1	2019-07-20		1	0	0	
1	2019-07-21		2	0	0	
1	2019-07-22		1	0	0	
1	2019-07-23		8	0	0	
1	2019-07-24		0	0	0	
1	2019-07-25		0	0	0	
1	2019-07-26		1	0	0	
1	2019-07-27		0	0	0	
1	2019-07-28		0	0	0	
1	2019-07-29		9	2	0	
1	2019-07-30		9	1	0	
1	2019-07-31		1	0	0	
1	2019-08-01		0	1	0	
1	2019-08-02		7	0	0	
1	2019-08-03		2	0	0	
1	2019-08-04		2	1	0	
1	2019-08-05		2	0	0	
1	2019-08-06		2	0	0	
1	2019-08-07		0	0	0	
1	2019-08-08		3	0	0	
1	2019-08-09		0	0	0	
1	2019-08-10		4	0	0	
1	2019-08-11		3	0	0	
1	2019-08-12		2	0	0	
1	2019-08-13		1	0	0	
1	2019-08-14		0	0	0	
1	2019-08-15		4	0	0	
1	2019-08-16		13	0	0	
1	2019-08-17		11	0	0	
1	2019-08-18		4	0	0	
1	2019-08-19		2	0	0	
1	2019-08-20		0	0	0	1 Problema tecr
1	2019-08-21		2	0	0	
1	2019-08-22		1	0	0	
1	2019-08-23		0	0	0	
1	2019-08-24		1	0	0	
1	2019-08-25		2	0	0	
1	2019-08-26		4	0	0	
1	2019-08-27		1	0	0	
1	2019-08-28		0	0	0	
1	2019-08-29		3	0	0	
1	2019-08-30		4	0	0	
1	2019-08-31		3	1	0	
1	2019-09-01		0	0	0	
1	2019-09-02		3	0	0	
1	2019-09-03		1	0	0	
1	2019-09-04		1	0	0	
1	2019-09-05		3	0	0	
1	2019-09-06		0	0	0	
1	2019-09-07		0	1	0	
1	2019-09-08		0	0	0	
1	2019-09-09		1	0	0	

		Camera1		
1	2019-09-10	0	0	0
1	2019-09-11	3	0	0
1	2019-09-12	0	0	0
1	2019-09-13	0	0	0
1	2019-09-14	0	0	0
1	2019-09-15	0	0	0
1	2019-09-16	0	0	0
1	2019-09-17	0	0	0
1	2019-09-18	0	0	0
1	2019-09-19	0	0	0
1	2019-09-20	1	0	0
1	2019-09-21	2	0	0
1	2019-09-22	0	0	0
1	2019-09-23	0	0	0
1	2019-09-24	0	0	0
1	2019-09-25	0	0	0
1	2019-09-26	1	1	0
1	2019-09-27	0	0	0
1	2019-09-28	6	0	0
1	2019-09-29	2	1	0
1	2019-09-30	1	0	0

1 Interruzione re  
1 Interruzione re  
1 Interruzione re  
1 Interruzione re  
1 Interruzione re  
1 Interruzione re  
1 Interruzione re  
1 Interruzione re

Camera1

### Intrusions Ca

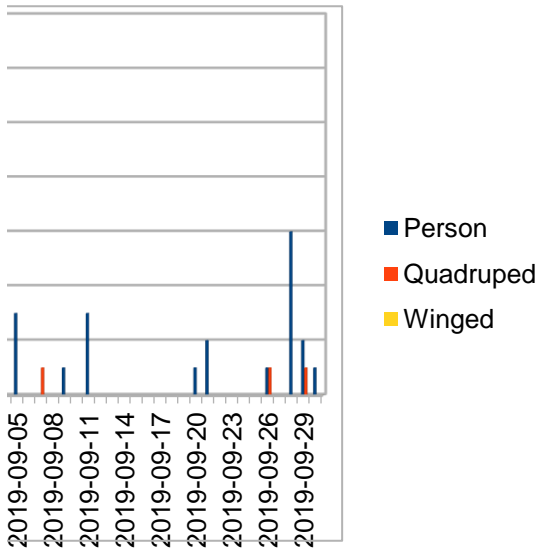


Video di registrazione su Camera1



registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa

Camera1



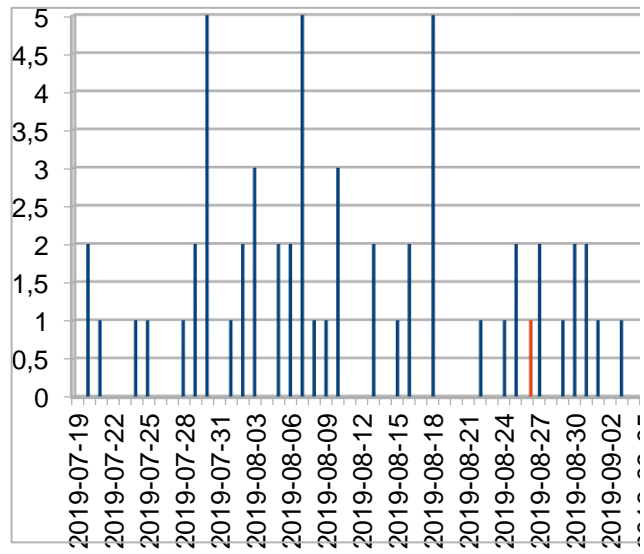
Camera2

Camera	Date	Person	Quadruped	Winged	Problems	Note
2	2019-07-19		0	0	0	
2	2019-07-20		2	0	0	
2	2019-07-21		1	0	0	
2	2019-07-22		0	0	0	
2	2019-07-23		0	0	0	
2	2019-07-24		1	0	0	
2	2019-07-25		1	0	0	
2	2019-07-26		0	0	0	
2	2019-07-27		0	0	0	
2	2019-07-28		1	0	0	
2	2019-07-29		2	0	0	
2	2019-07-30		5	0	0	
2	2019-07-31		0	0	0	
2	2019-08-01		1	0	0	
2	2019-08-02		2	0	0	
2	2019-08-03		3	0	0	
2	2019-08-04		0	0	0	
2	2019-08-05		2	0	0	
2	2019-08-06		2	0	0	
2	2019-08-07		5	0	0	
2	2019-08-08		1	0	0	
2	2019-08-09		1	0	0	
2	2019-08-10		3	0	0	
2	2019-08-11		0	0	0	
2	2019-08-12		0	0	0	
2	2019-08-13		2	0	0	
2	2019-08-14		0	0	0	
2	2019-08-15		1	0	0	
2	2019-08-16		2	0	0	
2	2019-08-17		0	0	0	
2	2019-08-18		5	0	0	
2	2019-08-19		0	0	0	
2	2019-08-20		0	0	0	
2	2019-08-21		0	0	0	
2	2019-08-22		1	0	0	
2	2019-08-23		0	0	0	
2	2019-08-24		1	0	0	
2	2019-08-25		2	0	0	
2	2019-08-26		0	1	0	
2	2019-08-27		2	0	0	
2	2019-08-28		0	0	0	
2	2019-08-29		1	0	0	
2	2019-08-30		2	0	0	
2	2019-08-31		2	0	0	
2	2019-09-01		1	0	0	
2	2019-09-02		0	0	0	
2	2019-09-03		1	0	0	
2	2019-09-04		0	0	0	
2	2019-09-05		0	0	0	
2	2019-09-06		0	0	0	
2	2019-09-07		1	0	0	
2	2019-09-08		3	0	0	
2	2019-09-09		0	0	0	

Camera2

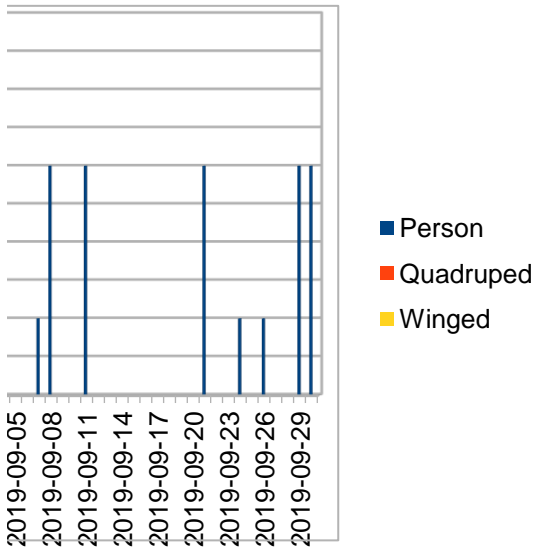
2 2019-09-10	0	0	0	
2 2019-09-11	3	0	0	
2 2019-09-12	0	0	0	1 Interruzione re
2 2019-09-13	0	0	0	1 Interruzione re
2 2019-09-14	0	0	0	1 Interruzione re
2 2019-09-15	0	0	0	1 Interruzione re
2 2019-09-16	0	0	0	1 Interruzione re
2 2019-09-17	0	0	0	1 Interruzione re
2 2019-09-18	0	0	0	1 Interruzione re
2 2019-09-19	0	0	0	1 Interruzione re
2 2019-09-20	0	0	0	
2 2019-09-21	3	0	0	
2 2019-09-22	0	0	0	
2 2019-09-23	0	0	0	
2 2019-09-24	1	0	0	
2 2019-09-25	0	0	0	
2 2019-09-26	1	0	0	
2 2019-09-27	0	0	0	
2 2019-09-28	0	0	0	
2 2019-09-29	3	0	0	
2 2019-09-30	3	0	0	

Intrusions Ca



registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa

mera2



Camera3

Camera	Date	Person	Quadruped	Winged	Problems	Note
3	2019-07-19		0	0	0	1 Area di analisi
3	2019-07-20		0	0	0	1 Area di analisi
3	2019-07-21		0	0	0	1 Area di analisi
3	2019-07-22		0	0	0	1 Area di analisi
3	2019-07-23		1	0	1	
3	2019-07-24		1	0	2	
3	2019-07-25		1	0	1	
3	2019-07-26		1	0	0	
3	2019-07-27		0	0	2	
3	2019-07-28		0	0	0	
3	2019-07-29		7	1	2	
3	2019-07-30		11	0	3	
3	2019-07-31		6	0	0	
3	2019-08-01		2	0	0	
3	2019-08-02		1	0	0	
3	2019-08-03		4	0	1	
3	2019-08-04		1	0	0	
3	2019-08-05		4	0	0	
3	2019-08-06		2	0	0	
3	2019-08-07		4	1	0	
3	2019-08-08		2	0	0	
3	2019-08-09		5	0	1	
3	2019-08-10		3	0	0	
3	2019-08-11		0	0	0	
3	2019-08-12		0	0	0	
3	2019-08-13		1	0	1	
3	2019-08-14		0	0	0	
3	2019-08-15		6	0	0	
3	2019-08-16		3	0	0	
3	2019-08-17		5	0	1	
3	2019-08-18		5	0	0	
3	2019-08-19		1	0	0	
3	2019-08-20		5	0	0	
3	2019-08-21		0	0	0	
3	2019-08-22		0	0	1	
3	2019-08-23		2	0	0	
3	2019-08-24		0	0	0	
3	2019-08-25		4	0	0	
3	2019-08-26		0	0	0	
3	2019-08-27		1	0	0	
3	2019-08-28		1	0	0	
3	2019-08-29		1	0	0	
3	2019-08-30		1	0	0	
3	2019-08-31		0	0	0	
3	2019-09-01		3	0	0	
3	2019-09-02		6	0	0	
3	2019-09-03		5	0	1	
3	2019-09-04		6	0	0	
3	2019-09-05		1	0	0	
3	2019-09-06		0	0	0	
3	2019-09-07		0	0	1	
3	2019-09-08		5	0	0	
3	2019-09-09		1	0	0	

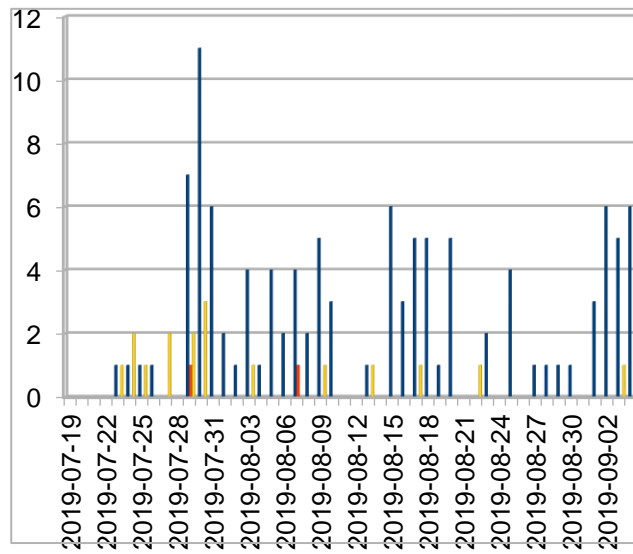


Camera3

3 2019-09-10	3	0	0	
3 2019-09-11	2	0	0	
3 2019-09-12	0	0	0	1 Interruzione re
3 2019-09-13	0	0	0	1 Interruzione re
3 2019-09-14	0	0	0	1 Interruzione re
3 2019-09-15	0	0	0	1 Interruzione re
3 2019-09-16	0	0	0	1 Interruzione re
3 2019-09-17	0	0	0	1 Interruzione re
3 2019-09-18	0	0	0	1 Interruzione re
3 2019-09-19	0	0	0	1 Interruzione re
3 2019-09-20	2	0	0	
3 2019-09-21	2	0	0	
3 2019-09-22	0	0	1	
3 2019-09-23	0	0	1	1 Problema tecr
3 2019-09-24	4	0	1	
3 2019-09-25	2	0	2	
3 2019-09-26	2	0	1	
3 2019-09-27	2	0	1	
3 2019-09-28	3	0	0	
3 2019-09-29	6	0	0	
3 2019-09-30	0	0	0	

troppo estesa, la staccionata era troppo visibi  
troppo estesa, la staccionata era troppo visibi  
troppo estesa, la staccionata era troppo visibi  
troppo estesa, la staccionata era troppo visibi

### Intrusions Ca



### Camera3

registrazione causa lavori sulla rete in Cà Rossa  
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registrazione causa lavori sulla rete in Cà Rossa  
registrazione causa lavori sulla rete in Cà Rossa

video sulla camera che non ha registrato tutta la giornata

Camera3

