

Integrating Activities for Advanced Communities



D2.13 - Pocket guide for tourist on how to behave around research station, incl. their study areas and local communities

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the Consortium (including the Commission Services)	
CO	Confidential, only for members of the Consortium (including the Commission Services)	

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Publishable Executive Summary

The pocket guide for tourist on how to behave around research stations and their local communities has been developed in collaboration with station managers. The guide seeks to make tourists aware of the potential benefits and harms which may occur when visiting INTERACT stations and interacting with the research and the people in the surrounding area. The guide is an awareness tool comprising four sections 1) *What goes on at a research station* (Science, different disciplines, instruments, plots, etc.), 2) *Research stations and tourism* (all stations must find a balance between science, safety, education/awareness within their own setting), 3) *Impacts of tourism* (Tourists can influence a research station and the surrounding area in different positive and negative ways) 4) *Expected behaviour around research stations* (Familiarisation with local regulations and guidelines, Be aware of the science, Be aware of local residents).

1. What goes on at research stations

Research stations are managed to provide a platform for scientists studying a variety of issues related for example to climate change, ecosystems and biodiversity protection, pollution, landscape processes, societies, and cultures which all require scientific investigation. Scientists may stay at the research station all year or may visit research stations once or several times over consecutive years and stay for anything from a few days to months.

Scientific studies often require instruments to be set up to capture data or designation on the ground of vegetation, geological or glacial plots that are visited to study changes over time. Some scientists study changes in the natural environment others the impact of human activities. Thus, the requirements for scientists differ based on the aim of their studies; some need pristine environments, while others study human—ecosystem interactions in human modified environments.

INTERACT research stations are open to scientists from all over the world and stations work together to identify good practices and offer the best possible service to visiting scientists. Some stations also have accommodation and welcome interested tourists.

2. Research stations and tourism

Many INTERACT stations welcome tourists at the station. Depending on the activities and their need for pristine environments, there may be access restrictions to ensure that research activities can be carried out in accordance with the scientific aims. At the same time, research stations have an interest in contributing to awareness raising and education and some obtain economic contributions from visiting tourists. In addition, many encourage voluntary data collecting by tourists through specific programs, often using smart phones and thus increase the number of observations of a phenomenon or animal (such data collection often termed citizen science). Each station therefore may have a different perspective on the tourism (Fig 1). Research stations need to find a balance between positive and negative interactions with tourists that allows them to achieve their scientific aims and at the same time welcome tourists at the station and surrounding environment (Fig 2).

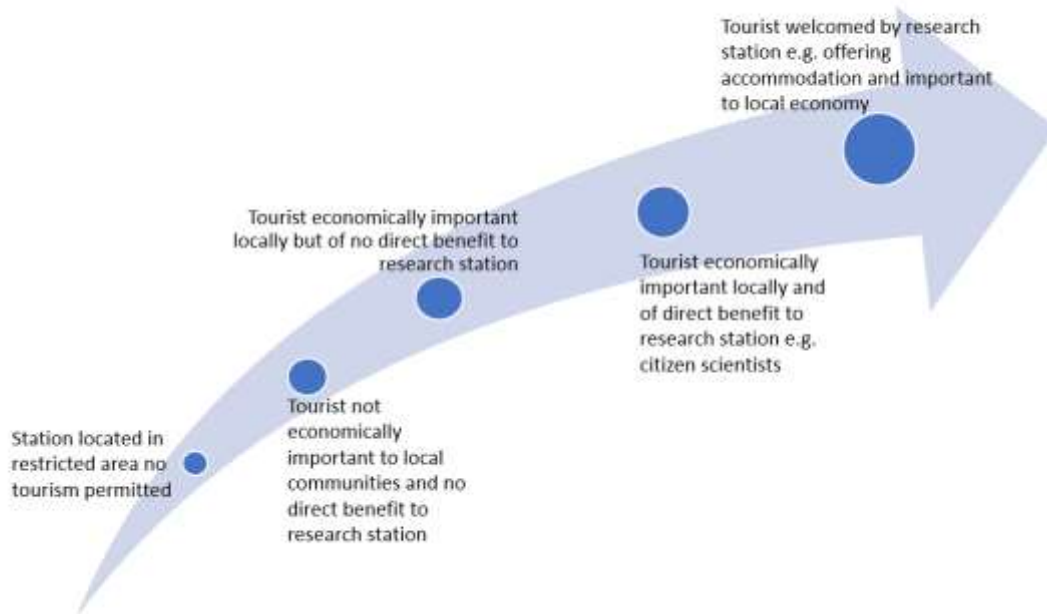


Figure 1. Range of possible interactions with tourist reported by INTERACT research station managers.

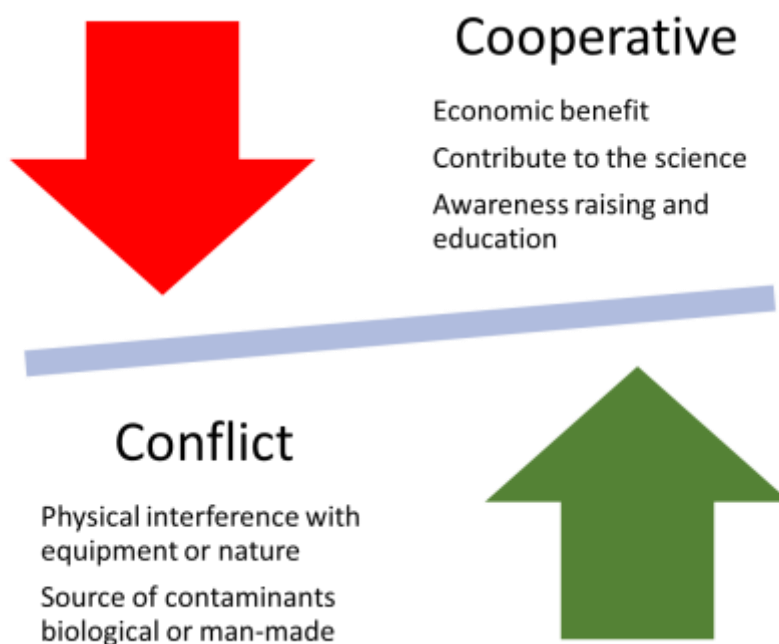


Figure 2. Tourists may interact positively or negatively with INTERACT station managers.

3. Impacts of tourism

3.1. Positive impacts

The many benefits of interacting with tourists are recognised by station managers (Fig. 3). Tourists can be a key stakeholder for achieving awareness and educational aims of research stations, and tourists can contribute directly to science by taking part in citizen science programmes (e.g. collecting sighting of animals) or by taking part in research projects as subjects offering their opinion for example on the value of protected areas. Tourism may also contribute with economic benefits, either directly to the station (through for example sale of guided tours/talks and merchandise) and indirectly to the local community (through local accommodation for tourists attracted to the research station or local tour operators/guides taking tourists to the research stations and surrounding area).








Figure 3. Categories and examples of positive interactions identified by station managers that can result from research stations interactions with tourists.

3.2. Negative impacts

Tourists can negatively impact research activities by interfering physically with scientific instruments or study sites or being a source of contamination - either knowingly or unknowingly (Table 1). Table 1 provides a summary list of potential impacts tourists may have on the most common compartments of the environments researched at or around INTERACT stations. Most stations have very good relations with the local community so have included the potential negative impacts on them in this list as a reminder.

Table 1. Examples of negative interaction that can result from tourists visiting research stations and their surroundings.

Environmental compartment monitored	Types of potential impacts from tourism
Vegetation 	Physical interference with equipment and monitoring plots. Human or vehicle tracks resulting in erosion. Spread of alien species. Vegetation-animal interaction, e.g., disturbing natural grazing, seed dispersal, etc. Contamination with human waste products.
Air 	Physical interference with equipment. Human source of contamination, e.g., carbon dioxide from human breath. Vehicle/machinery sources of contamination, e.g., NOx gases from vehicle exhausts.
Water 	Physical interference with equipment. Human sources of contamination, e.g., biological waste. Vehicle/machinery sources of contamination, e.g., oil. Great demands on local water sources, particularly in dryer areas. Physical interference with waterways.
Biodiversity 	Physical interference with equipment, e.g., camera traps, acoustic recorders. Presence of humans disturbing animal behaviour. Vehicle/machinery disturbance to animal behaviour. Light pollution disturbing animal behaviour, e.g., moth traps. Noise pollution disturbing animal behaviour, e.g., shy nocturnal animals. Drones disturbing animal behaviour. Extraction of biological resources (berries, mushrooms, fish etc.).
Local communities 	Disrespect towards local communities by, e.g., taking photos of children and local culture. Disrespect towards local communities' property, e.g., walking across crops and disturbing livestock.

4. Expected behaviour around research stations

Being aware of the impacts you as a tourist may have on the natural environment and the science that goes on at research stations is the first step to guide your behaviour. Table 2 provides suggested actions you can take to avoid the negative impacts of tourism identified by station managers who conduct monitoring and experiments at INTERACT stations.

Here we provide a few guiding principles, the primary principle is to familiarise yourself with the area (and station) you want to visit and consider how you may impact the natural environment and the science that is conducted there by:

- Gather information on local regulations and visitor guidelines for the particular area you want to visit from local tourist information centres.
- Explore the station website to see if they offer services to tourists or if you can contribute to the science that goes on at the station.
- Respect regulations and any signage used to guide visitor behaviour – they are there for a reason.
- Do not interfere with scientific instruments and stay out of marked study sites – you may hamper years of research.
- Be respectful of local communities. Do not disturb artefacts and local traditions/livelihoods and ask permission before doing something that may be considered inappropriate.








Table 2. Suggested actions tourists can take to avoid negative interactions on INTERACT research stations.

Environmental compartment monitored	Types of potential impacts from tourism	Action tourists can take to avoid interfering with the science
Vegetation	Physical interference with equipment and monitoring plots.	Never approach equipment in the field – if interested please consult the research station website or contact the research station directly. Don't pick up a stick if stuck into the ground it may be the corner post of a vegetation plot
	Human or vehicle tracks resulting in erosion.	Walk on the path
	Spread of alien species.	Always clean cloths and equipment especially footwear after visiting nature
	Vegetation-animal interaction,	Avoid disturbing all animals as these may be grazing an area or dispersing seed
Air	Contamination with human waste products.	Many plants grow in arctic and alpine areas because they can tolerate nitrogen poor conditions human waste is nitrogen rich and deposits can significantly alter the environment and the plant species which thrive in an area
	Physical interference with equipment.	Never approach equipment in the field – it is difficult to tell what it is measuring and physical interference can upset the measurements but the scientists may not know you have interfered and 'believe ' the data
	Human source of contamination.	If equipment is measuring ambient carbon dioxide concentration your presence will significantly increase the ambient concentration so best to avoid going near equipment
Water	Vehicle/machinery sources of contamination.	Combustion engines produce a range of gases which are often monitored and many INTERACT stations are located in pristine environments thus providing a global background concentration your vehicle can significantly pollute the data so best to avoid all equipment
	Physical interference with equipment.	Never approach equipment in the field – it is measuring something and your presence may be measured but scientists may not be able to explain the results because they don't know you are there
	Human sources of contamination.	Never pollute water ways – the waste from one person may not upset the balance in a water way but you may not be the only person passing or swimming at the location that day
	Vehicle/machinery sources of contamination.	Ensure all vehicles and machinery is well maintained and clean before entering in the water – oil and fuel contamination is a common problem
	Great demands on local water sources, particularly in dryer areas.	Be consider in your use of water at all times
Biodiversity	Physical interference with waterways.	Be careful when entering water when bathing not to disturb the vegetation many rare plants grow at the edge of rivers in the transition zone between water and land
	Physical interference with equipment.	Never approach equipment in the field, biodiversity is often monitored by capturing imagines or sound
	Presence of humans disturbing animal behaviour.	Never disturb animals
	Vehicle/machinery disturbance to animal behaviour.	Never taker a vehicle off road as this may disturb animals or trample nesting or feeding sites
	Light pollution disturbing animal behaviour.	Be aware of the influence of light pollution on animal behaviour and minimise the use of artificial light sources
	Noise pollution disturbing animal behaviour.	Be aware of the influence of noise pollution on animal behaviour and minimise both day and night
Local communities	Drones disturbing animal behaviour.	Be aware of the influence of drones on animal behaviour (and fellow humans enjoying nature). Always check local licencing laws – if in doubt check with the station manager
	Extraction of biological resources.	Be aware that there is likely an animal or local person harvesting biological resources such as berries and mushrooms
	Disrespect towards local communities.	Always be respectful of local people for example ask permission to take photograph
	Disrespect towards local communities' property.	Always be respectful of nature and property

Understanding internationally recognised colour and shapes of signs (ISO 7010) is also important. Five combinations of shape and colour are commonly used to distinguish between the type of information presented in terms of hazards – these may be adapted for local use (Table 3).

Table 3. Summary of the International Organization for Standardization technical standard for graphical hazard symbols on hazard and safety signs.

Sign type	Meaning	Colour (per ISO 7010)	Shape	Example
Prohibition sign	Prohibition	Red	Circle with diagonal line	 No open flame
Mandatory sign	Must do	Blue	Circle	 Keep dog on a lead
Warning sign	Warn of hazard	Yellow	Equilateral triangle with rounded corners	 Roof avalanche
Safe Condition sign	Safety equipment & exits	Green	Square or rectangular	 Emergency Assembly Point
Fire Safety sign	Fire Protection	Red	Square	 Fire Extinguisher

Research stations strive to be as open as possible, so we hope that you take the opportunity to gain insight into what the research stations does and the results, contribute with what you can and acknowledge that potential restrictions are there for a reason.

Please explore websites about the area and the research station you want to visit to learn what you can expect and what is expected of you. You can find out more about INTERACT research stations on www.eu-interact.org including links to websites of all INTERACT stations.

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