LIFE Lynx

Preventing the extinction of the Dinaric-SE Alpine lynx population through reinforcement and long-term conservation

LIFE16 NAT/SI/000634

Lynx camera trapping guidelines

Action A3:
Pre-reinforcement survey of the potential release sites and the genetic and demographic status of residual lynx

Authors: Matija Stergar, Vedran Slijepčević

Contributors: Ivana Selanec, Magda Sindičić, Miha Krofel, Rok Černe

Illustrations: Aleš Pičulin

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ZAVOD za GOZDOVE SLOVENIJE
Slovenia Forest Service

University of Ljubljana

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Why camera trapping?

In the last two decades, camera trapping has been established as one of the most common methods for monitoring of wild animals. Cameras set in the wildlife habitat are activated by animals (their movement triggers the sensor), so wildlife can be monitored non-invasively, without human presence in the habitat. Camera trapping is particularly useful for monitoring of elusive and individually recognizable animals, such as lynx. Unique pelage pattern of lynx enables easy distinction of different individuals, when photographed from the same side. Since lynx are territorial, camera trapping can provide the information on occupancy and (if camera trap density is high enough) also about the size of their territories and lynx density. Moreover, with camera traps we can also detect family groups – information that is especially valuable in threatened populations, such as Dinaric – SE Alpine lynx population.

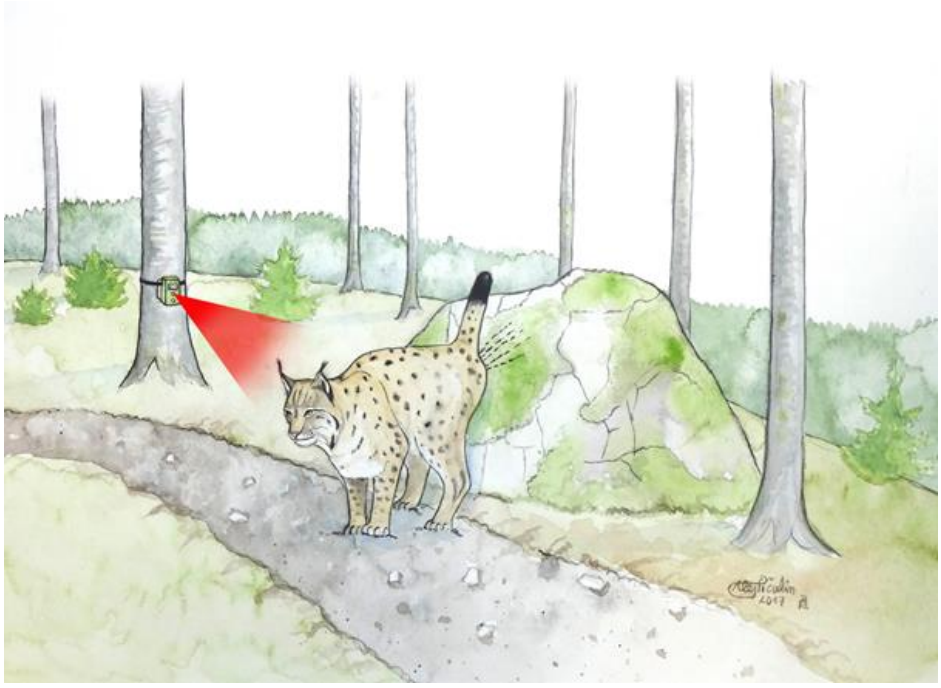
Where to place camera traps?

Selecting proper locations for placing camera traps in the field is crucial for successful monitoring. There are two general types of locations, most suitable for setting camera traps for lynx: 1) lynx marking sites and 2) lynx trails.

1. Lynx marking sites. Lynx preferably mark on large conspicuous objects. Old forest huts, barns, wells and other anthropogenic objects are especially frequently used as lynx marking places (picture 1). Conspicuous rocks or boulders (especially vertical or over-hanging sides) and certain trees (mostly young conifers) are also often marked by lynx (picture 2). Those objects should be closely inspected and sometimes lynx (or wildcat) hair can be found. Lynx urine smell can also be sensed if lynx urinated recently (smells similar to cat urine). Such locations should preferably be selected for lynx camera trapping.
2. Lynx trails. Trails often used by lynx are not easily recognizable in the field. There are however certain parts of habitat that lynx typically uses for movement and should thus be used as camera trapping sites: ridges (picture 3), narrow passages (e.g. between two rocks; picture 4), shelves on steep slopes (picture 5), fallen trunks (picture 6) and also forest roads and logging trails (picture 7). Snow tracking of lynx can be very helpful in detecting such locations, as well to decide on the best micro-location to set the cameras.

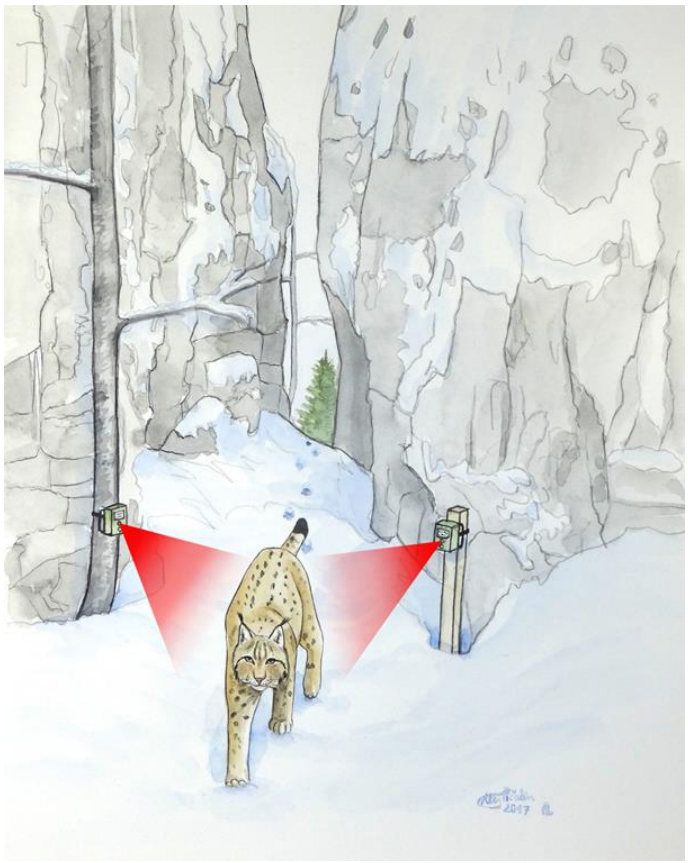
Locations like game feeding stations, puddles and salt licks can also occasionally be visited by lynx. However most of the photos from such locations will contain ungulates and other animals, so it is best to avoid them for lynx camera trapping.

Picture 1: Lynx very often marks on wooden huts (abandoned or occupied), making them ideal location for camera trapping



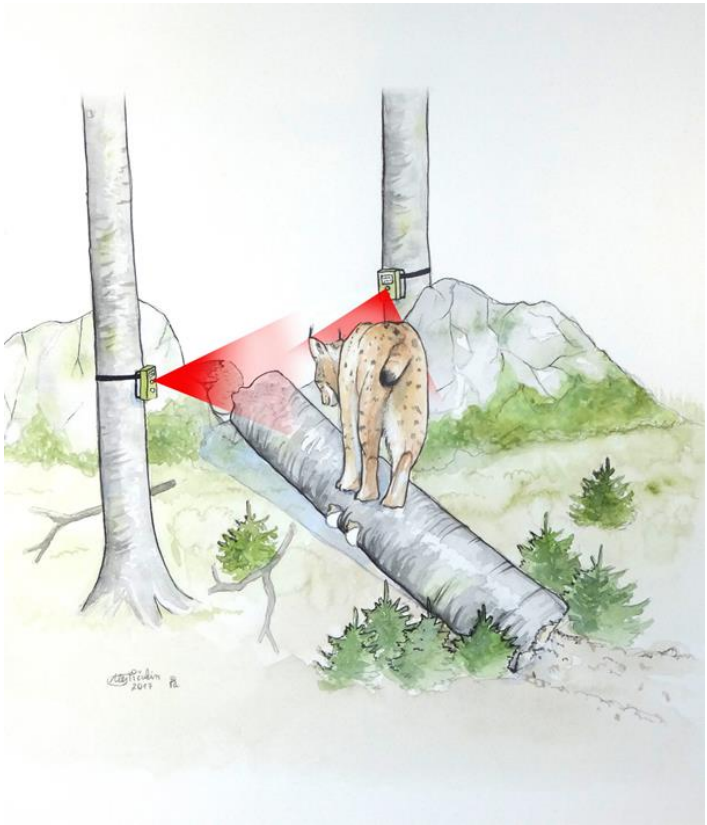
Picture 2: Big rocks or boulders are common lynx marking sites

Picture 3: Lynx likes to use ridges for its movement

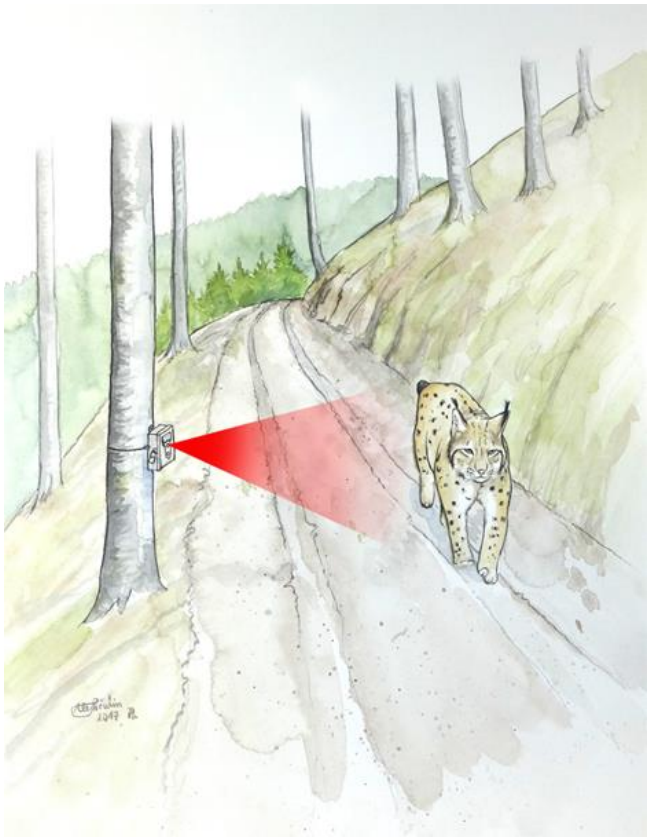


Picture 4: Narrow passages are suitable locations for lynx camera trapping, because they canalize lynx movement

Picture 5: Narrow trails on steep slopes are often used by lynx



Picture 6: Lynx likes to climb and walk on fallen trunks



Picture 7: Lynx also regularly uses forest roads and logging trails

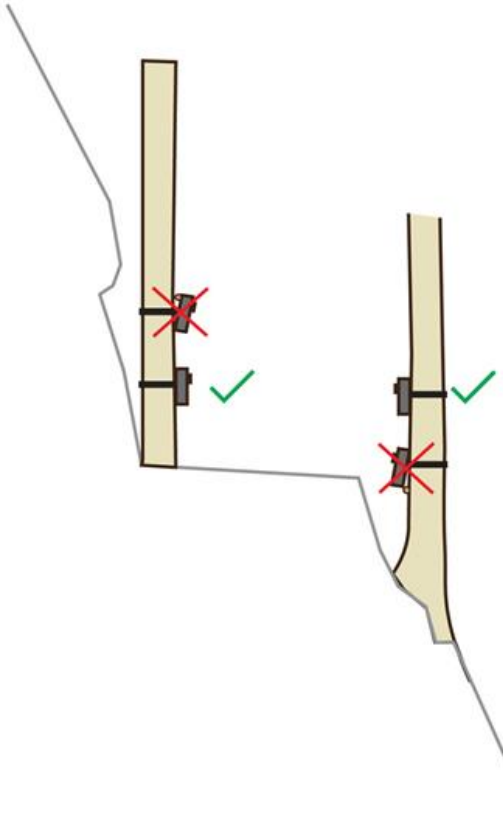
What type of camera to use?

There are three general types of camera traps: infrared (IR), black IR and white flash. The advantage of IR cameras is that they emit a faint red glow (or almost no glow in case of black IR), which is less disturbing to animals. Their drawback is that they make black and white photos or films and that photos can sometimes be blurry (this can considerably reduce chance for individual recognition of lynx). White flash cameras on the other hand emit strong white light, which might scare and deter animals, but produce sharp colour night images. On marking sites, where lynx stops and persists for a while, IR or (even better) black IR cameras should be used and set to record short (30 – 60 sec.) films. On the trails, white flash cameras should be used to record sharp and clear images of passing lynx. Alternatively, IR (not black IR!) cameras can be used on trails and set to 3 – 5 photo burst with minimum delay (between consecutive photos).

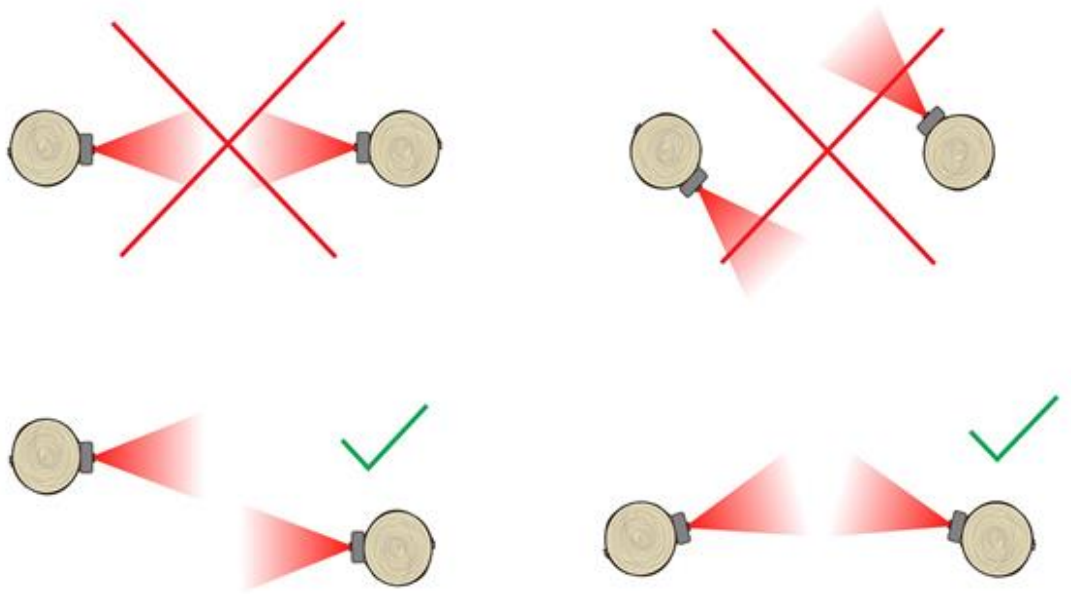
How to set camera trap in the field?

At marking places (huts, etc.) single camera trap is usually sufficient, while on trails two cameras should ideally be set at opposite sides of the trail. The distance between camera trap and marking place or trail should ideally be 3-5 meters, but not more than 7 meters. When placed closer than 3 m, the strength of flash/IR light should be decreased. Camera trap sensor must be in the height of lynx body (around 40-50 cm above the ground). When setting camera traps on the slopes, be careful not to mount camera trap too high or too low (picture 8). In case of trails, camera trap sensors should be oriented approximately perpendicular (or slightly off perpendicular; see picture 9) to the course of

the trail. While both camera traps at the trail should be placed one against the other (with the trail in between), they should be directed slightly away from each other to avoid overexposure of the photo due to simultaneous triggering (picture 9). The camera view should be clear of vegetation such as tall grass or branches (remove, if necessary). If possible, location with less vegetation should be selected. Lynx will generally avoid tall grass, so we can sometimes even motivate lynx to get in front of the camera by clearing some vegetation (this should be done after consulting the lynx expert). Besides, vegetation moved by wind can create high number of empty recordings. After the exact location is determined, a camera trap should be fixed firmly to a tree, wooden pole (picture 4) or some other object, by either strap or screws. In case of locations that are frequently used by humans (huts, forest roads), camera traps should be stored in metal security housing and locked, using cable lock (picture 1 and picture 7). After placing a camera, it is always good to test it by day as well as by night (using portable device, if available). The best way to test it is to imitate lynx by crawling on the ground or using a dog. Make sure that field of view is wide enough (if not, increase the distance from camera to the trail/marking place) and that the camera is actually oriented toward the location where lynx is expected to appear. If the flash is too strong, decrease flash intensity by either software setting (if camera enables this) or duct tape, taping over 1 or 2 lines of IR leds (or small part of xenon flash). If possible, record GPS coordinates of camera trap location (easiest way is to use mobile phone with suitable application).



Picture 8: Camera trap should always be placed at the height of lynx, even when used on steep slopes.



Picture 9: Opposing cameras should be directed into the same point on the trail, but not directly facing one another (to avoid overexposed photos).

When to perform camera trapping?

Lynx camera trapping can be performed all year round or in particular season, depending on the goal of the monitoring and habitat characteristics. The main goal of lynx monitoring in LIFE Lynx project is to detect presence of territorial lynx of both sexes and potential offspring. In Slovenia for example, we will perform intensive camera trapping (with regular checking of camera traps) from the beginning of September until the end of November. From December and until April we will perform extensive trapping, meaning that cameras will be left in the field and visited/checked only occasionally. Camera trapping in summer period should be avoided to decrease chances of cameras being stolen.

How to check and maintain camera traps in the field?

During the intensive camera trapping period (Sept.-Nov.) responsible person should regularly (at least every 2-3 weeks) visit each camera trap in order to: 1) check if the camera trap is still at the location (if missing, immediately report to the monitoring coordinator); 2) check if the camera is shifted or moved (if so, it has to be re-positioned); 3) change SD memory card (be careful not to damage the card; do not use pliers or any other tool!); 4) check and replace the batteries in case of low capacity; 5) each time before SD card is removed and after the new one is deployed and camera activated, write with big letters on a piece of A4 paper: hunting ground, the location of the camera (local name), camera ID and date and put this paper in front of camera to make few photos (this information can be very valuable when later checking photos on the computer); 6) check for any signs of lynx presence at the location (hair, scat, urine, footprints).

How to store recorded photographs/videos?

Photos and videos from memory cards should each time (right after the field visit) be copy-pasted to computer, into a new folder, which name contains the camera trap number, name of camera trap location, and the date of field visit in the form: *14_RisjiVrh_2018_11_18*. It is important to every time save new photos/films into new folder, not to override previous photos/films. Any recorded lynx photos should immediately be reported and e-mailed to the monitoring coordinator. Empty memory card should be properly stored until the next visit of the camera trap.