



# Test de l'effarouchement bioacoustique du Grand Corbeau sur des placettes d'alimentation "gypaète"

## Test of bioacoustic deterrent of common Ravens on Bearded vulture feeding place

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**LIFE GypRescue  
Seminar 07/11/2024  
- Ajaccio**



# Context



Main actions of the LIFE GypRescue :



- Strengthening the population
- Securing the existing population through egg collection
- Increasing the efficiency of artificial feeding
- Securing dangerous power lines
- Raising awareness of the various mountain stakeholders

Increase productivity

Specific feeding

This talk

**Bioacoustic deterrence tests on common Ravens**





# Context

## Food places do not benefit enough to Bearded Vultures

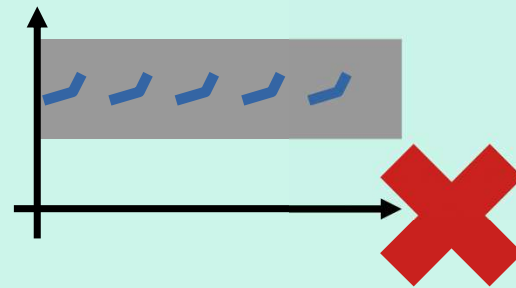
→ Interspecific interactions with Common Ravens:  
Eat quickly, defend the food place, mobbing...

## Acoustic deterrence

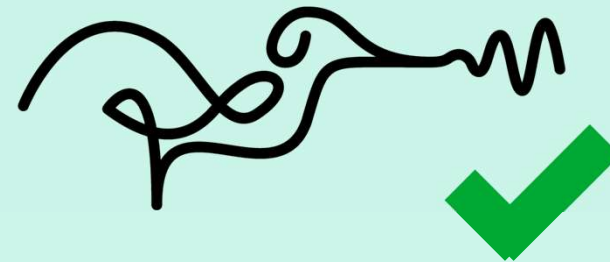
Detonators



Discomfort / Masking signals



Behavioural relevant signals



# Methods

2022

**EXPERIMENT 1**  
Test of the efficacy of  
acoustic deterrence  
method  
based on alarm and  
distress calls broadcast  
for common ravens *Corvus*  
*Corax*

2023-2024

**EXPERIMENT 2**  
Test on the effect of an acoustic  
deterrent signal on the bearded  
vultures, the common ravens  
and the red kite



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# Methods

2022

## EXPERIMENT 1

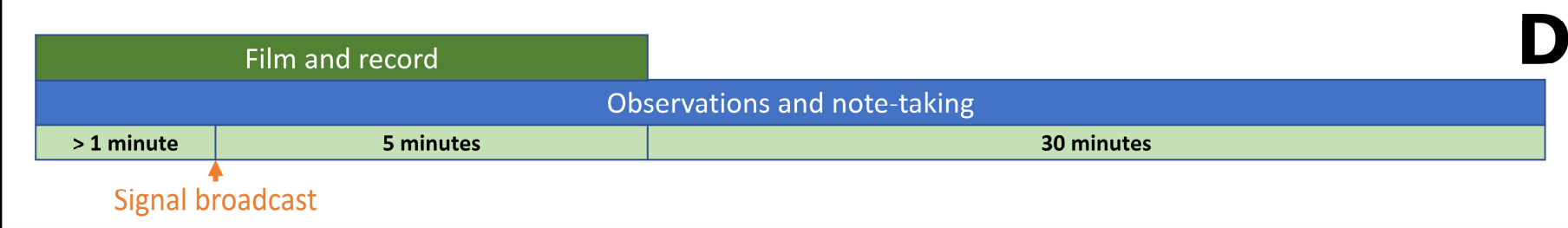
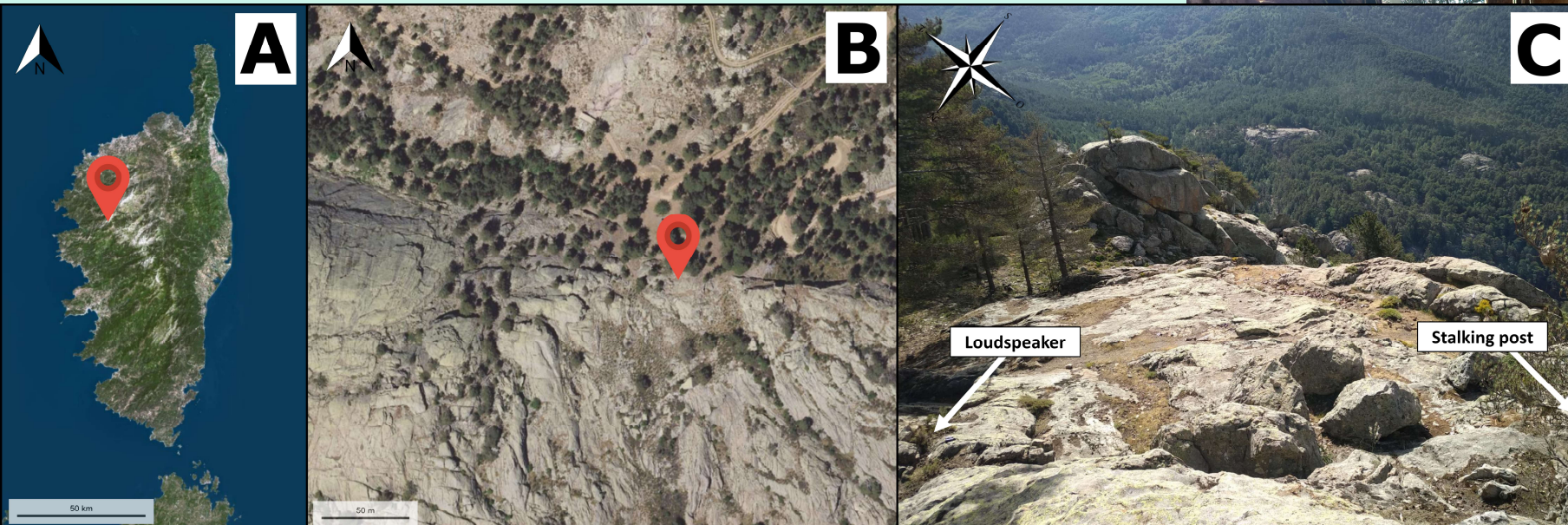
Test of the efficacy of  
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based on alarm and  
distress calls broadcast  
for common Ravens  
*Corvus Corax*



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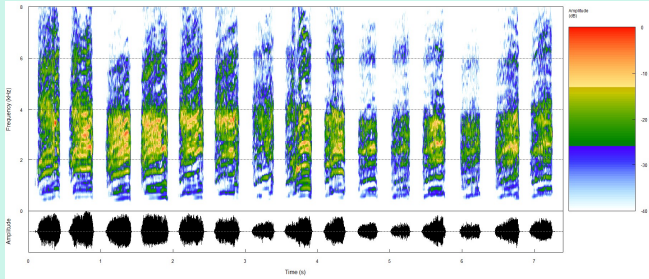


# Methods – Experiment site

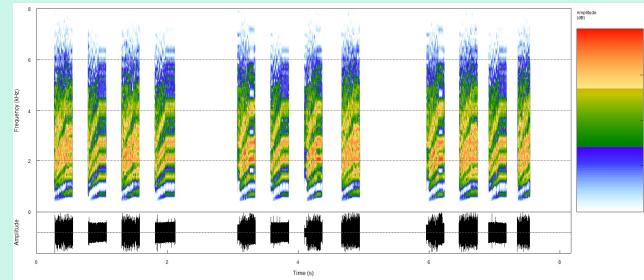


# Methods – Acoustic signals

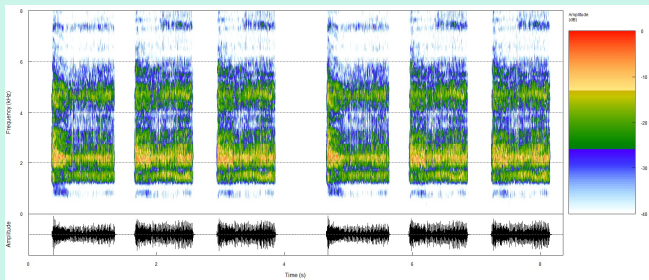
## Eurasian jay DISTRESS



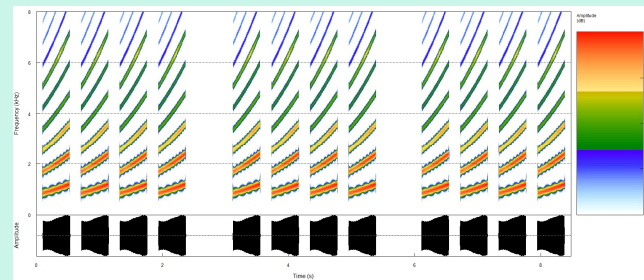
## Eurasian jay (synthetic) DISTRESS



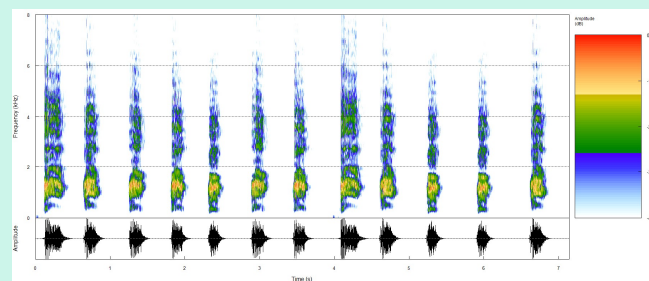
## Western Jackdaws ALARM



## Interspecific(synthetic) DISTRESS



## Common Raven ALARM



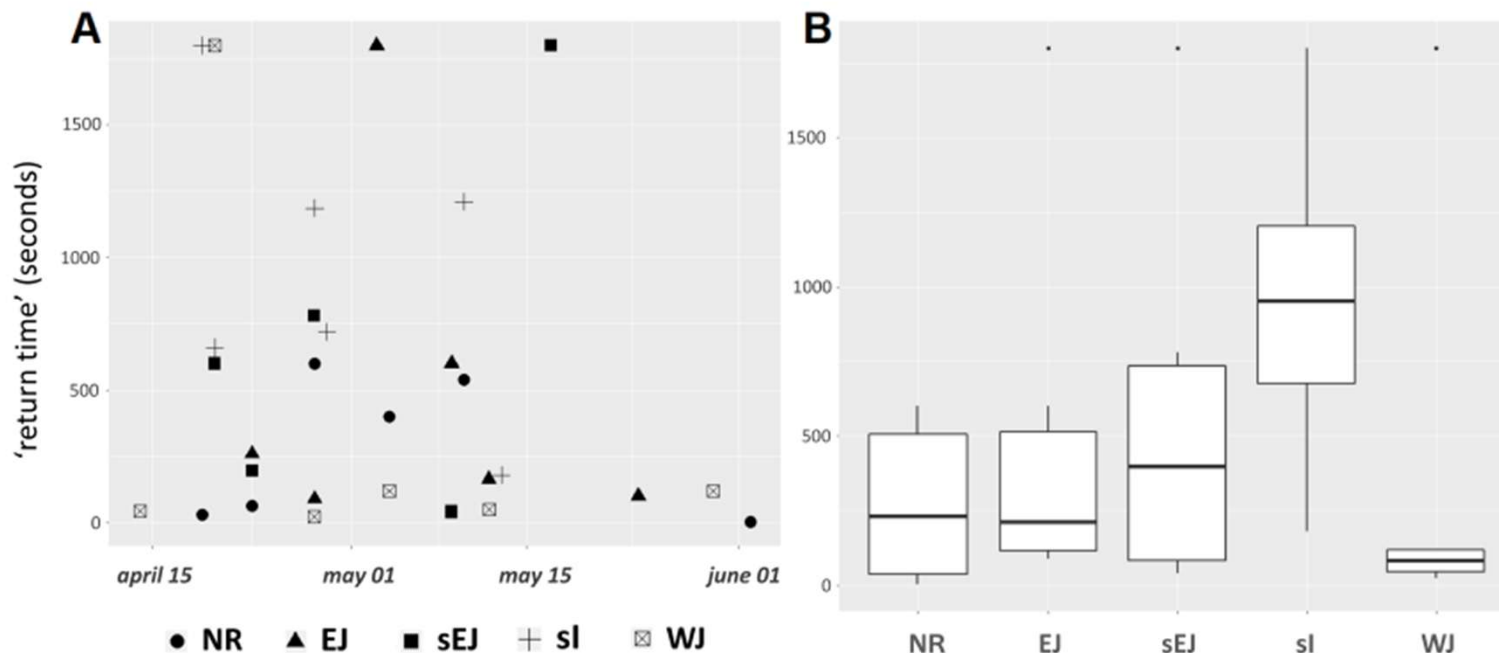
- 5 to 7 seconds
- Normalized to -3dB (peak)
- About 80 dB at receivers

- Davidková & al, 2020  
- Magrath & al, 2014  
- Aubin, 1991

Work of F. Sèbe and T. Aubin on airport, 2009-2015

# Results

Time for ravens (at least 3) to come back on the feeding station after signal broadcast: 'return time' in function of date (A) and (B) broadcast signal



29 over 30 playback → ravens flew away in less than 1s.

In average, the return time for common Ravens is :

- 8min 54s for all signals
- 16minutes for the interspecific alarm signal (sl)



# Results

Difficult experiments but not impossible

Synthetic signals are more efficient

- Acoustic parameters
- Alarm/distress

Weak habituation

Different initial parameters are important:

- Quantity of food
- Absolute time between the food deposit and the first playback
- Number of NR individuals on the food place
- Presence of the Golden Eagle

## Does it have an impact on Bearded Vulture ?



2022

**EXPERIMENT 1**

Test of the efficacy of  
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*Corvus Corax*

2023-2024

**EXPERIMENT 2**

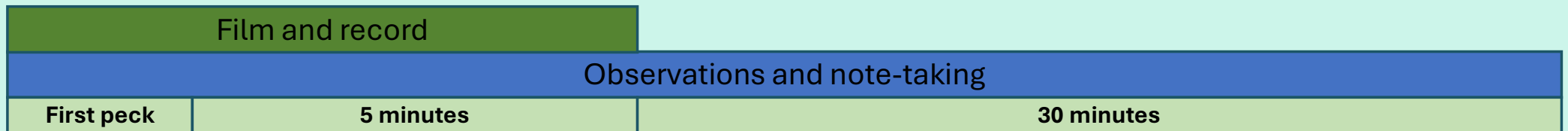
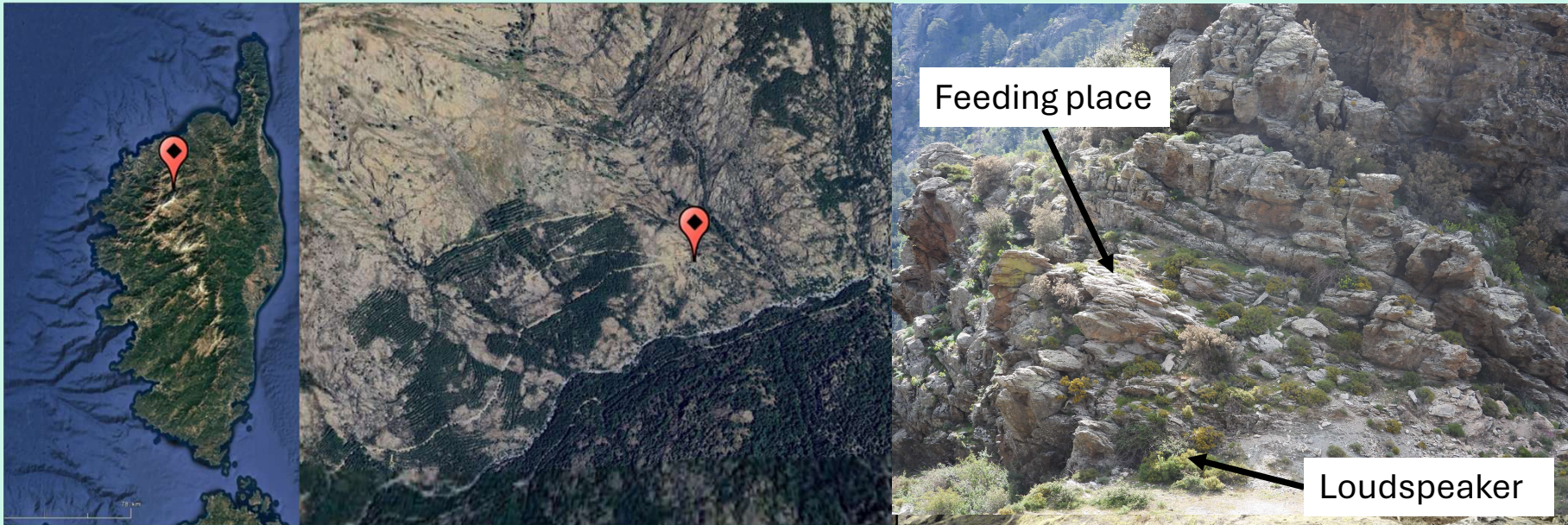
Test on the effect of an acoustic  
deterrent signal on the bearded  
vultures, the common ravens  
and the red kite



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# Methods – Experiment site



↑  
Signal broadcast



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# Methods

Objectives : Test on bearded vultures and « real » application conditions

- 2 tests on bearded vultures
- 2 tests on bearded vultures and common ravens
- 2 tests on common ravens
- 1 test on red kite



## **Prefectoral decree :**

Arrêté 2A 2023 05 03 00001

Arrêté 2B 2023 05 03 00001

AP\_2A-2024-02-12-00001

AP 2B-2024-02-12-00001

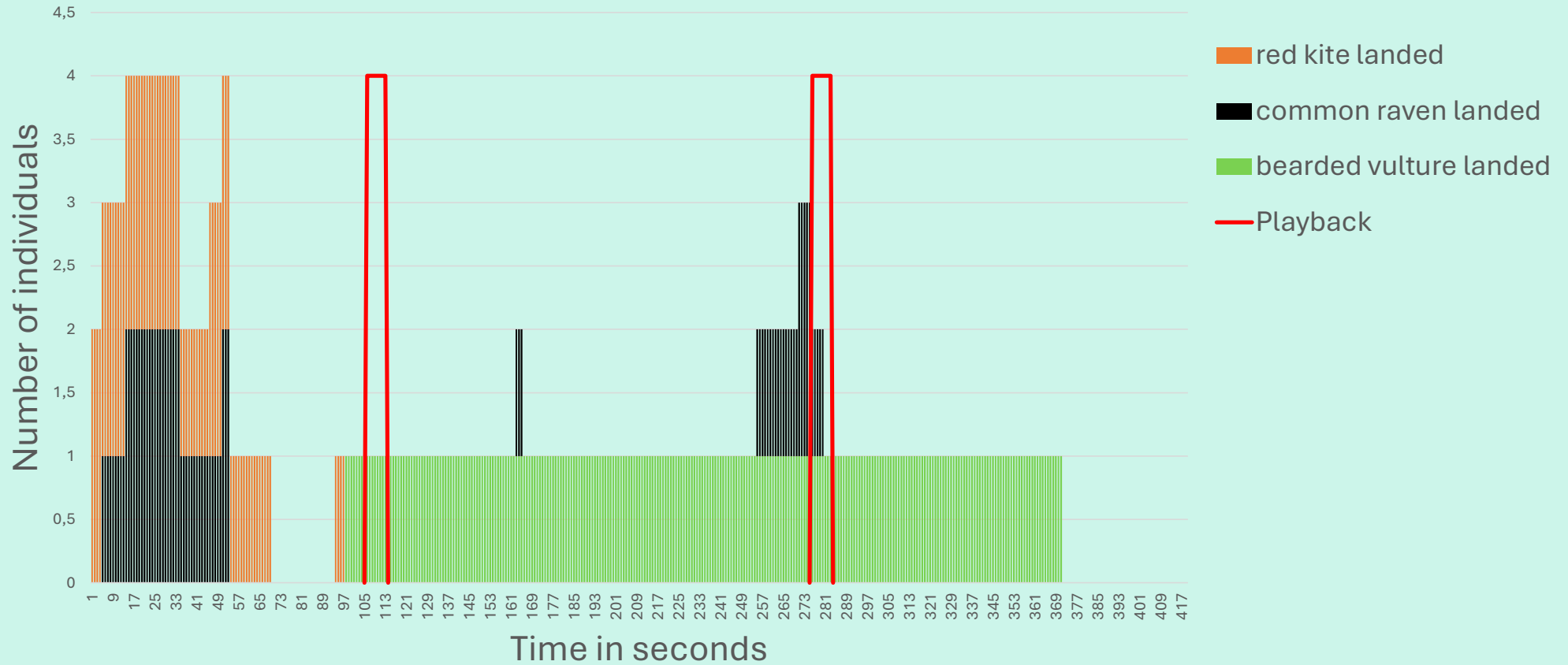


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# Results

Playback Asco 03 april 2024



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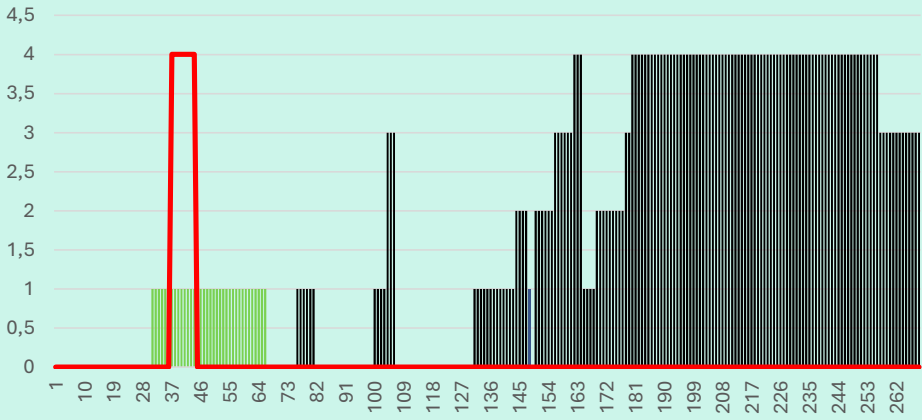


12 C 26.62 inHg

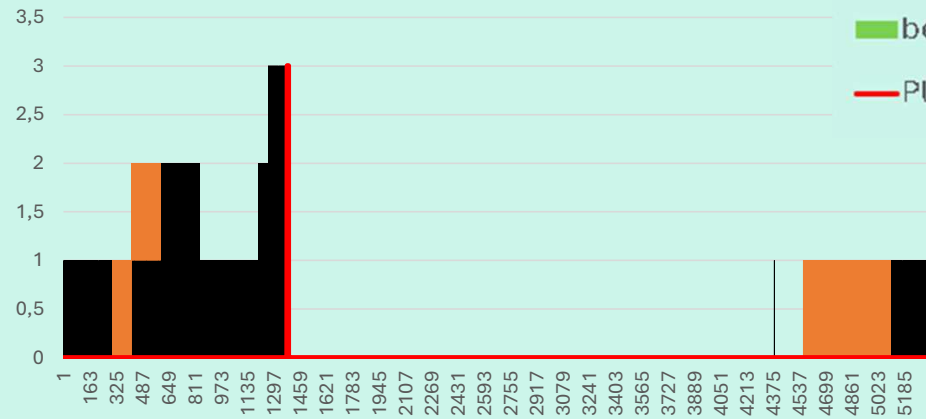
ASCO CAM01

04/03/2024 11:51:21AM

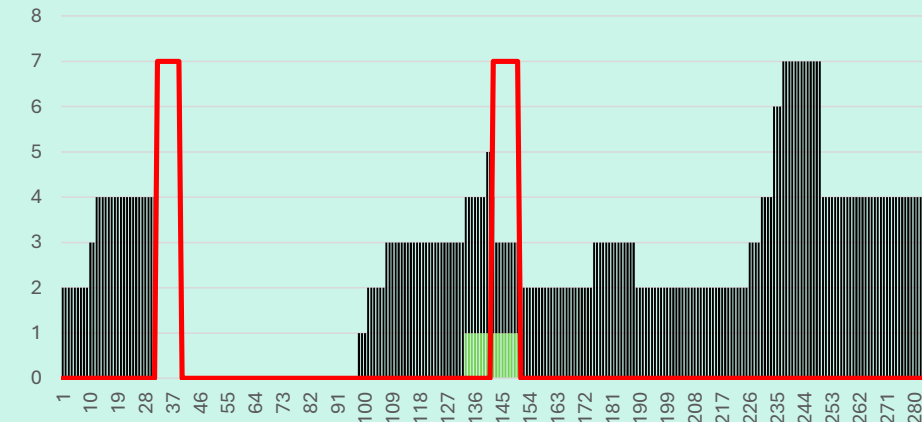
Playback Asco 17 april 2024



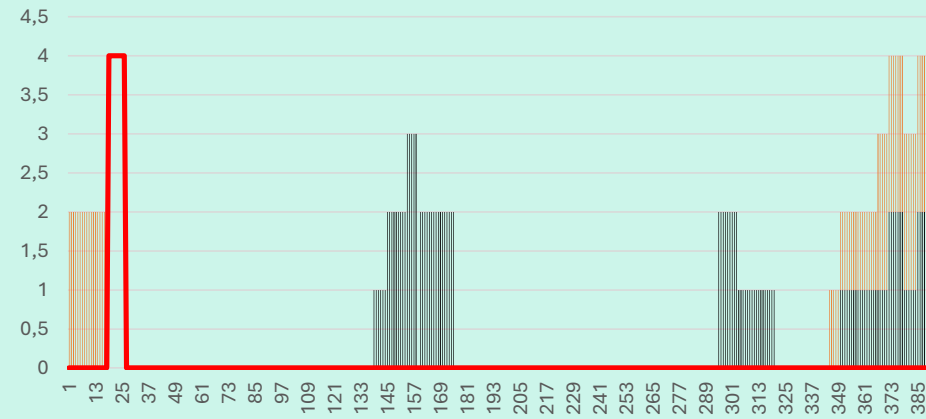
Playback La Scala 12 april 2024



Playback 2 Asco 17 april 2024



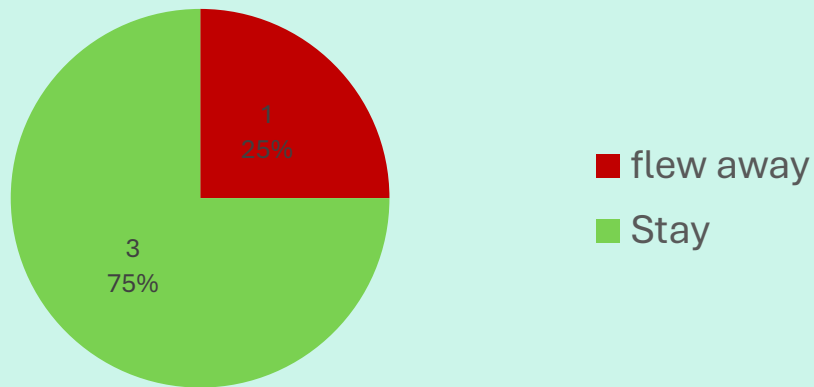
Playback La Scala 16 april 2024



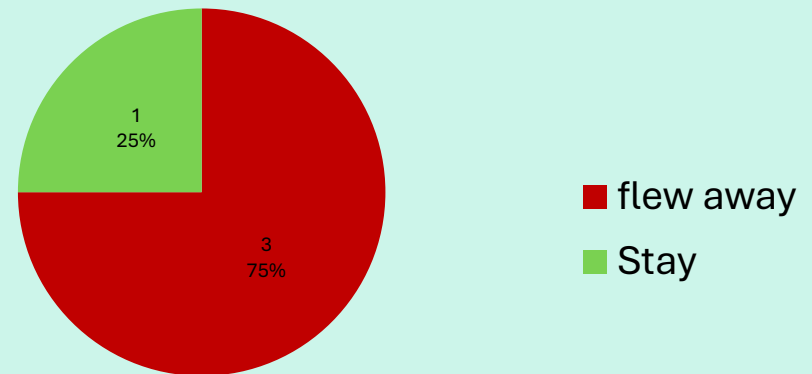
- █ red kite landed
- █ common raven landed
- █ bearded vulture landed
- █ Playback

# Results

Bearded Vultures reaction to playback



COMMON RAVEN REACTION TO PLAYBACK



Flew away for the second playback on the same day.  
13 common ravens where harassing the bearded vultures before (high vigilance)

# Conclusion

Interspecific distress signal seems to have a greater impact on the Common Raven and almost no impact on the Bearded Vulture.

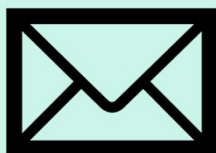
## HOWEVER

- Signal has been tested under specific conditions (in Corsica, only on 1 bearded vulture)
- Signal should be used with very strict protocol (probably only 1 time per day, not every day, for a short period of time)

**Could be used in the specific problem in Corsica (during the 3-4 weeks of juvenile feeding, when food is brought to the feeding place) to open short but effective windows for the bearded vultures to increase the efficiency of feeding**



# *Thank you for your attention!*



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