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European Union Network for the Implementation and Enforcement of Environmental Law

Biodiversity case

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Environmental Liability Directive (ELD)

PILOT WORKSHOP

Ministry of the Environment and Energy

Athens (EL), 14-16 October 2024

The practical example I will present here is for illustrative purposes only and does not represent actual events (even if the woodland and its biocoenosis are real).
Please do not infer any conclusion about real facts.

looking for the EVIDENCES of DAMAGE on BIODIVERSITY


August 2016
https://earth.google.com
199
hectares of
woodland

What we already know:

THE BASELINE

a) Are there some **protected species** in the target area?

b) If so, do we have data on their population size and density? On their range? On their used habitat?

c) Are there some **protected natural habitats**?

d) If so, do we have data on their covered area? Do we know their conservation status at local level?

a) Protected species: yes (check-list)

b) Population size: no data

c) Population distribution: no data

d) Protected habitats: yes; annex I 9340

e) Extent of habitat 9340: yes, 100 hectares

f) Map of protected habitats: yes

g) Conservation status of species and habitat: no data


https://animalia.bio/it/little-owl


https://commons.wikimedia.org/wiki/File:Lucanus_cervus_male_top_2.jpg


https://www.flickr.com/photos/svetlik/3976480253 , Ján Svetlík


https://commons.wikimedia.org/wiki/File:Lecceta.jpg


August 2016
https://earth.google.com
199
hectares of
woodland


August 2017
https://earth.google.com

SLIDO: QUESTION 1

August 2016

August 2017

Multiple choice
0 votes

Poll settings

1. GOOGLE EARTH IMAGES 2017: WHAT DO YOU SEE?

a) A devastating pest devoured all the canopy. 0%

b) Nothing special. 0%

c) A fire burnt the woodland. 0%

d) The brown colour is the effect of summer drought. 0%

+ Add option

ON AUGUST 2017, A FIRE BURNT THE WOODLAND

There was an explosion in a gasoline depot just outside the crater; a serious fire developed and eventually spread into the crater.

SLIDO: QUESTION 2

Multiple choice
0 votes

Poll settings

2. IS THIS AN EVIDENCE OF DAMAGE?

a) Yes, it's an evidence because fire started from an activity of Annex III of ELD Directive, and this is enough.

0%

b) No: we should know if there were protected species and habitats and if the effects were relevant for them.

0%

c) I don't know.

0%

d) No, it is a cue.

0%

+ Add option

SLIDO: QUESTION 3

Multiple choice
0 votes

Poll settings

3. Quantifying adverse effects on species and habitats. HOW?

a) Go there many times during at least one year and check the status of species and habitats.

0%

b) Search for all the possible sources of data and information on species and habitats; then go there one or two times after fire.

0%

c) Call the local universities and ask them to check the status of species and habitats.

0%

d) None of the above.

0%

Quantifying adverse effects *on protected species and habitats is* ***compulsory*** *to ascertain the damage and apply the ELD,*

BUT…

we never have enough money to carry out a deep and thorough *on site* investigation

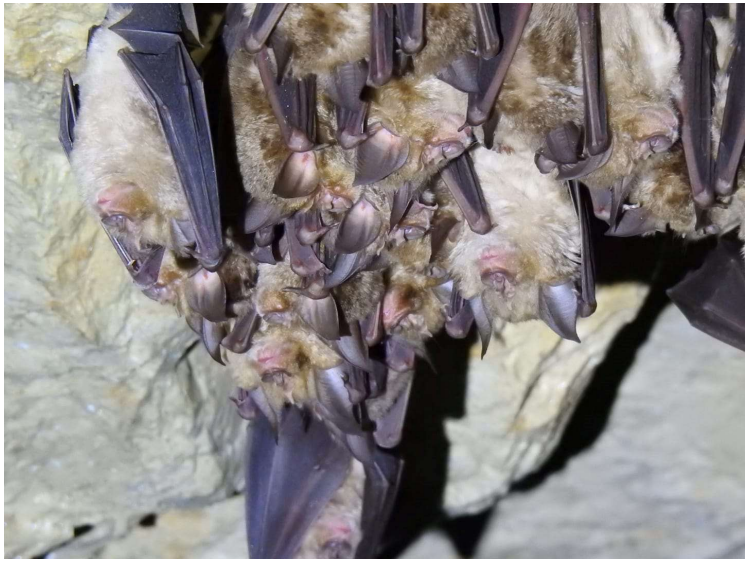


Photo Ilaria Guj

Photo Simone Proietti

SOURCES OF DATA AND INFORMATION

- ✓ satellite images, aerial photos, drones, ROVs
- ✓ data from regional authorities for biodiversity conservation
- ✓ reports and data from Life and Interreg projects
- ✓ scientific literature, scientific manuals, MSc and PhD thesis
- ✓ site inspections
- ✓ museum collections
- ✓ open science, citizen science and reliable websites
- ✓ reporting for the Water Framework Directive and the Marine Strategy
- ✓ reporting for the Habitats Directive and the Birds Directive
- ✓ *inside protected areas*: data from the management body
- ✓ *inside Natura 2000 sites*: standard data form and management plans

Thanks to the survey, we collect the following data:

- Data from Fire Dept.: **75%** of the woodland of the crater burnt.
- Satellite data: fire spread **uniformly** in the whole woodland.
- **The majority** of **old** holm oaks burnt → woodpeckers, owls, bats, coleoptera, micromammals associated to mature woods lost their habitat.
- Herbaceous **invasive non-native species** colonized all the burnt area in a couple of months after the fire; now the ecological succession is going on with them.

We also have the baseline data, do you remember?

a) Check-list of protected species

b) No data on their population size: how many? We don't know.

c) No data on their distribution: where? We don't know.

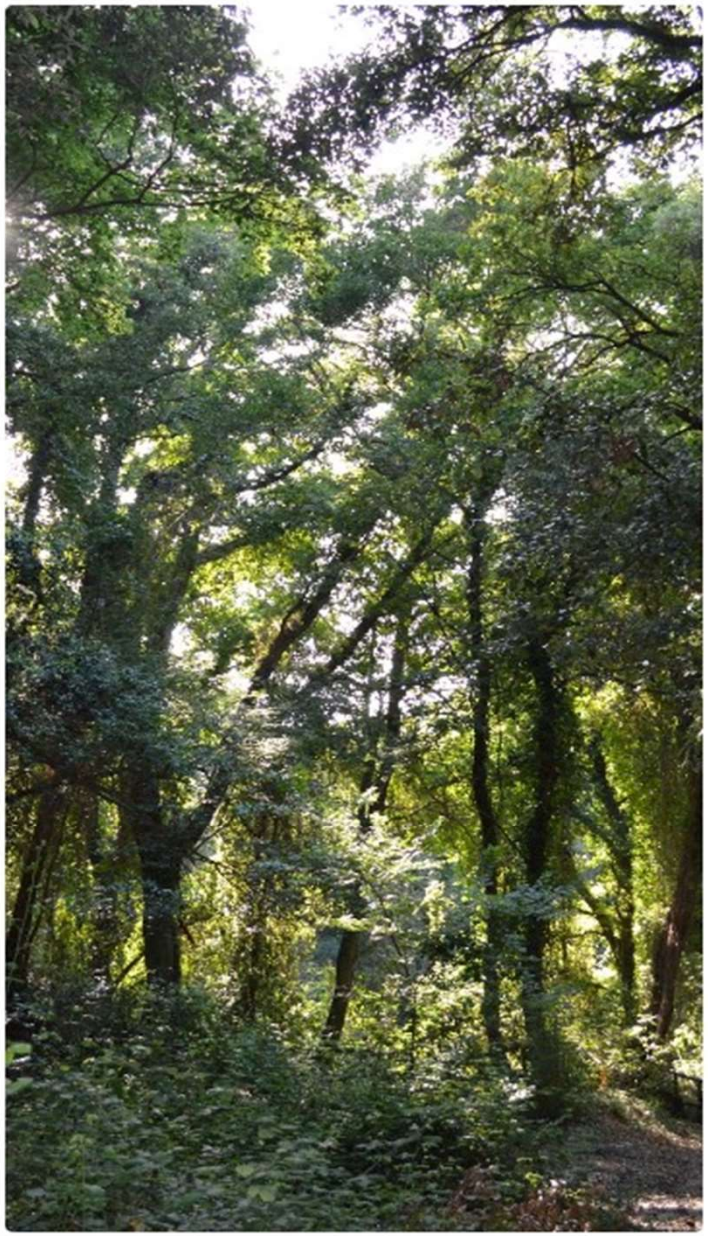
d) Check list of protected habitats: only one annex I: 9340

e) Extent and map of habitat 9340: 100 hectares

f) No data on the conservation status of species and habitats in the area.

BASELINE DATA ARE ESSENTIAL!

SLIDO: QUESTION 4



Multiple choice
0 votes

Poll settings

4. Quantifying adverse effects on protected habitats. WHAT DO WE NEED?

a) There are no protected habitats in the area. 0%

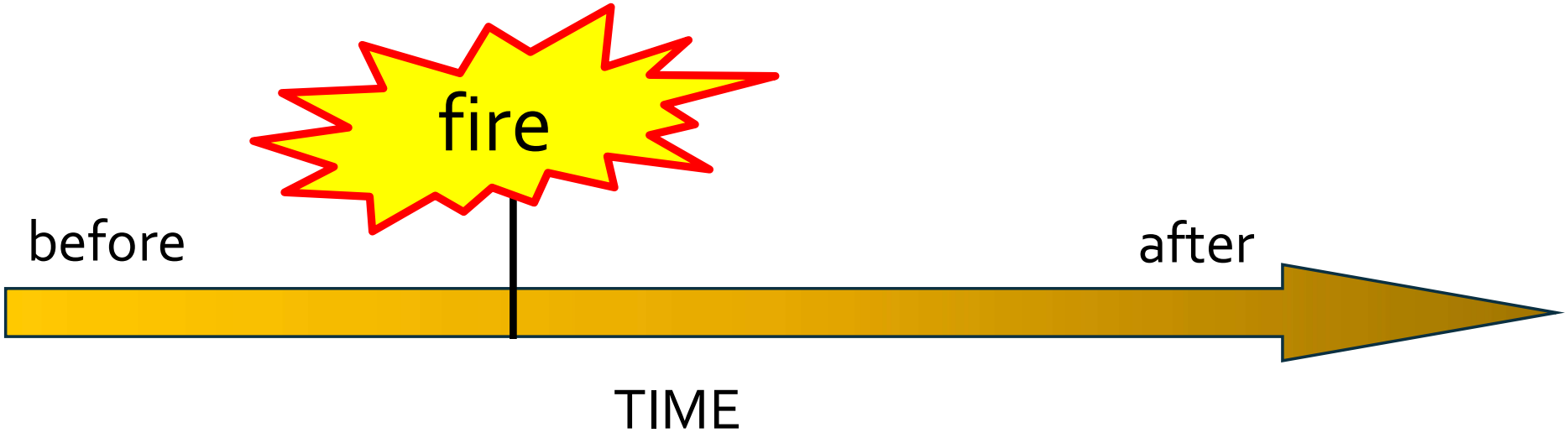
b) A map of each single type of wood, including habitat 9340, before fire and a map of the burnt area. 0%

c) A map of habitat 9340 before fire and a map of the burnt area. 0%

d) None of the above. 0%

+ Add option

Quantifying adverse effects:



we need a map of habitat 9340 before the fire…

… and a map of the burnt area

SLIDO: QUESTION 5

Jessica Peruzzo.
s://commons.wikimedia.org/wiki/File:Imbeccata_picchio_rosso_m
iore_-_Gocciadoro.jpg

Multiple choice
0 votes

Poll settings

5. Quantifying adverse effects on protected species. Can we do this?

a) Yes: for each species we have data on population size and distribution before and after the fire.

0%

b) Yes: species check list is enough, no need of detailed data on population size and distribution are not necessary.

0%

c) No: no data on population size and distribution, no quantification.

0%

d) None of the above.

0%

+ Add option

SPECIES:
no population data *before* the event,
no population data after the event: what can we do?

See Annex I ELD

Significant adverse changes to the baseline condition should be determined by means of measurable data such as:

- the number of individuals, their density or the area covered,
- the role of the particular individuals or of the damaged area in relation to the species or to the habitat conservation, the rarity of the species or habitat [...],
- the species' capacity for propagation [...],
- the species' or habitat's capacity, after damage has occurred, to recover within a short time [...].

SPECIES:
no population data *before* the event,
no population data after the event: what can we do?

See the EU Guidelines on ELD, point n. 118

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021XC0407%2801%29&qid=1617956961808

The second sentence of the first paragraph of Annex I refers to the determination of adverse changes by reference to measurable data, providing examples. This sentence serves to underline that adverse effects concern measurable adverse changes and impairments.

we can't do anything,
UNLESS we decide that the deterioration of the *habitat of a species*
is an evidence of damage, not only a clue.

How to proceed?

1. EVIDENCE of adverse effects only for HABITATS

2. QUANTIFICATION of the adverse effect:

- whole woodland 199 hectares
- habitat 9340 100 hectares
- burnt 75% of the whole woodland
- fire spread uniformly
- we have the map of 9340 before fire and the map of the burnt area

→ then we can easily map the 9340 which was burnt and calculate the hectares that were lost

What is missing?

Is the deterioration of habitat 9340 significant?

Evaluating the SIGNIFICANCE of the adverse effects:

1. did the fire affect the conservation status of the 9340?
2. what is the spatial scale of the evaluation?

1. Yes: even if the holm oak is a resprouter species, it will take tens of years for the typical species of habitat 9340 to come back and "win" against the non- native invasive species, which invaded the area just after fire.
2. See EU guidelines, point 118 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021XC0407%2801%29&qid=1617956961808: "Assessment and determination of significance need to be meaningful at the local level". The destruction of these 75 hectares of 9340 is significant because the woodland was a "island of naturalness" in a huge urban an industrial area.

CONCLUSIONS

1. fire was not natural but human-induced
2. fire started from a professional activity of Annexe III
3. evidence of ELD adverse effect: only for protected habitats (9340)
4. quantification of the adverse effect: YES
5. significance on the conservation status: YES

THEN THE ADVERSE EFFECT IS AN ENVIRONMENTAL DAMAGE

TAKE HOME MESSAGE

looking for evidence for biodiversity damage:

SPECIALISTS needed
(botanist, wildlife specialist, entomologist, marine biologist, geologist and so on)

TIME needed

ecology is a probabilistic science, while environmental damage assessment is a deterministic process

before the event: BASELINE, search for data and information everywhere but be critical

after the event: ON SITE INVESTIGATION is fundamental

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THANK YOU FOR YOUR KIND ATTENTION


Ph. Pietro Tassara. Portofino Marine Protected Area.

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