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# Implementing the 3Rs into ecological research

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Conservation of ecosystems and species gives rise to a paradox in which effective measures often involve very adverse (even lethal) interactions with several animal individuals on behalf of the good for the whole population. Marking and sampling practices include taking blood samples, toe-clipping of amphibians and reptiles, or using implants and subcutaneous dyes. At the moment, techniques that might be painful and induce suffering but do not affect the animal's survival are still deemed acceptable.

The 3Rs principles (replacement, reduction, refinement) can provide scientists with guidelines on the ethical use of animals in research and education. However, the process of incorporating the 3Rs into ecological research has been very slow: while non-invasive techniques are available, their implementation is often lagging behind.

In order to increase awareness of this issue present an overview of the most common invasive practices in ecological research will be presented. I will also provide suggestions for the available non-invasive alternatives that are less likely to negatively affect the animal's welfare, while not compromising the quality of research data.

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