

Detection of terrestrial mammals using environmental DNA during heavy rainfall events and associated influencing factors

ABSTRACT

- Your first sentence can be strengthened to “Recent developments in environmental DNA (eDNA) analyses have facilitated non-invasive and cost-effective ecological monitoring.”
- Line 30: perhaps add “runoff” after stormwater.
- Line 31: should be “... with larger pore size” rather than “pores size”

INTRODUCTION

- Line 51: please change the word “technology” to “method”.
- Line 79: please remove the word “main” to reduce ambiguity in readers’ opinions.
- Line 79: please change the word “were” to “have been”
- Line 83: please change “cannot” to “may not”
- Line 91: rapidly removed eDNA from what? The surface of the plants? The surrounding area? This part is vague.
- Line 96: please change the word “fines” to “fine”
- Line 100: please add “utilizing eDNA sampling” after “Many studies”
- Lines 106-110: This sentence is a bit difficult to follow because it tries to combine several ideas at once (literature background, description of the authors’ sampling, and critique of applicability). To improve clarity, you might want to split it into two or three shorter sentences. For example, you might first summarize how eDNA can be detected in turbid water using centrifugation. Then contrast this with your study’s use of bathing water with unusually high target eDNA concentrations, followed by your point that such conditions differ from natural environments with generally lower eDNA concentrations. This would make the logic and contrast much easier for readers to follow.
- Lines 179-181: I recommend changing the wording to “eDNA metabarcoding of rainwater collected after rainfall events from tree crowns has been used...”
- Line 183: please remove “also” because it’s redundant after “Similarly”
- Line 184: please change the tense in this sentence: “The results show” to “The results of this work showed”
- Line 193: please add “which is” or “a species that is” after “*B. taurus*,” for clarification
- Lines 194-197: it would be easier to read this section if the sentences were combined to be “As a third-generation PCR technology, dPCR allows for the absolute quantification of DNA and is less variable than measurements obtained via qPCR (references).”
- Line 206: I believe that it is better to say “provides” as this basis can be ongoing for other research.

MATERIALS AND METHODS

- Line 264: please start a new paragraph with “Our study” as you are introducing a different topic here.

- Lines 268-269: “And they are confined within enclosures and designated areas.” should either be deleted or incorporated into another one before/after as it is not a complete sentence.
- Line 272: again, I think that “Local regulations...” should be the start of a new paragraph
- Line 321: it may be better to say “due to technical problems” as this spanned across multiple dates/years.
- Line 338: can you add “ “ around “small filter” to show readers that this is the definition of GF/F filters?
- Line 340: same with “large filter”
- Line 365: “DNA extraction” should be a new paragraph
- Line 366: “which is known to ensure low DNA variability...” is confusing - can you reword this?
- Line 383: “Since” should be “since”

RESULTS

- Line 545: please remove the word “The” before “target DNA”
- Line 603: please add a comma between “period” and “three”

DISCUSSION

- Line 634: should “papers” be “pore sizes”?
- Line 639: after “surface runoff”, could you state the mechanism(s) behind this phenomenon?
- Line 686: I suggest starting a new paragraph at “According to”
- Line 689: please reword this sentence to “In the presence of sufficient rainfall, terrestrial eDNA is continuously transported into rivers, potentially compensating the amount of genetic traces that are lost due to dilution.”
- Line 691: please change “high turbidity conditions” to “highly turbid conditions”
- Line 692: Due to sentence fragmentation, please change this sentence to “... caused by the correlation between turbidity and rainfall with rainfall potentially being...”
- Line 699: I suggest starting a new paragraph at “Environmental DNA was consistently...”
- Line 719-720: “But the applicability of these substrates is often limited.” is a sentence fragment - please delete this or incorporate it in another sentence.
- Line 759: please add “Furthermore,” before “Environmental DNA” here

FIGURES/TABLES

- Looks great!