

# Why do anglers choose to release their leftover live baitfish?



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## Discussion:

- The misconception that release of live baitfish would help the environment was the most commonly cited reason for release. On the other hand, belief that proper disposal of leftover live bait was important for protecting the environment was a common reason for NOT releasing bait.
- Convenience was also a very important factor since it was contained in only less response (n=23) than environmental factors (n=24).
- The high number of respondents citing perceived environmental benefits as their motivation for release follows a pattern of behavior found in other recent research that has found that anglers believe that release provides an ecological benefit as baitfish provide forage for the large gamefish that they are ultimately pursuing as anglers<sup>1, 2</sup>.
- These findings suggest that many anglers may perceive of releasing live bait fish into lakes as negligible, compared to personal and perceived environmental benefit.

## Conclusions:

- For anglers who do not recognize the risks of releasing bait into lakes, one possible way to modify their could be to circulate outreach messaging which specifically compares the short term benefit of baitfish release (feeding gamefish) with the long-term impact on the ecosystem (disease, lower biodiversity, invasive fish species competing against gamefish, etc.).
- Social norms were commonly cited as reasons for properly disposing of live bait, suggesting that education about proper disposal methods may spread via social contact among groups of anglers.
- For those individuals primarily motivated by convenience or individuals who know and truly do not care about the risks of invasive species, stronger penalties for bait release could further incentivize proper disposal behaviors.

## References:

1. Drake, D. A. R., Mercader, R., Dobson, T., & Mandrak, N. E. (2015). Can we predict risky human behaviour involving invasive species? A case study of the release of fishes to the wild. *Biological Invasions*, 17(1), 309–326. <https://doi.org/10.1007/s10530-014-0729-7>
2. Wolbers, T., & Donnelly, K. (2019). *Minnesota Department of Natural Resources Aquatic Invasive Species Community-Based Social Marketing Project.*

## Introduction:

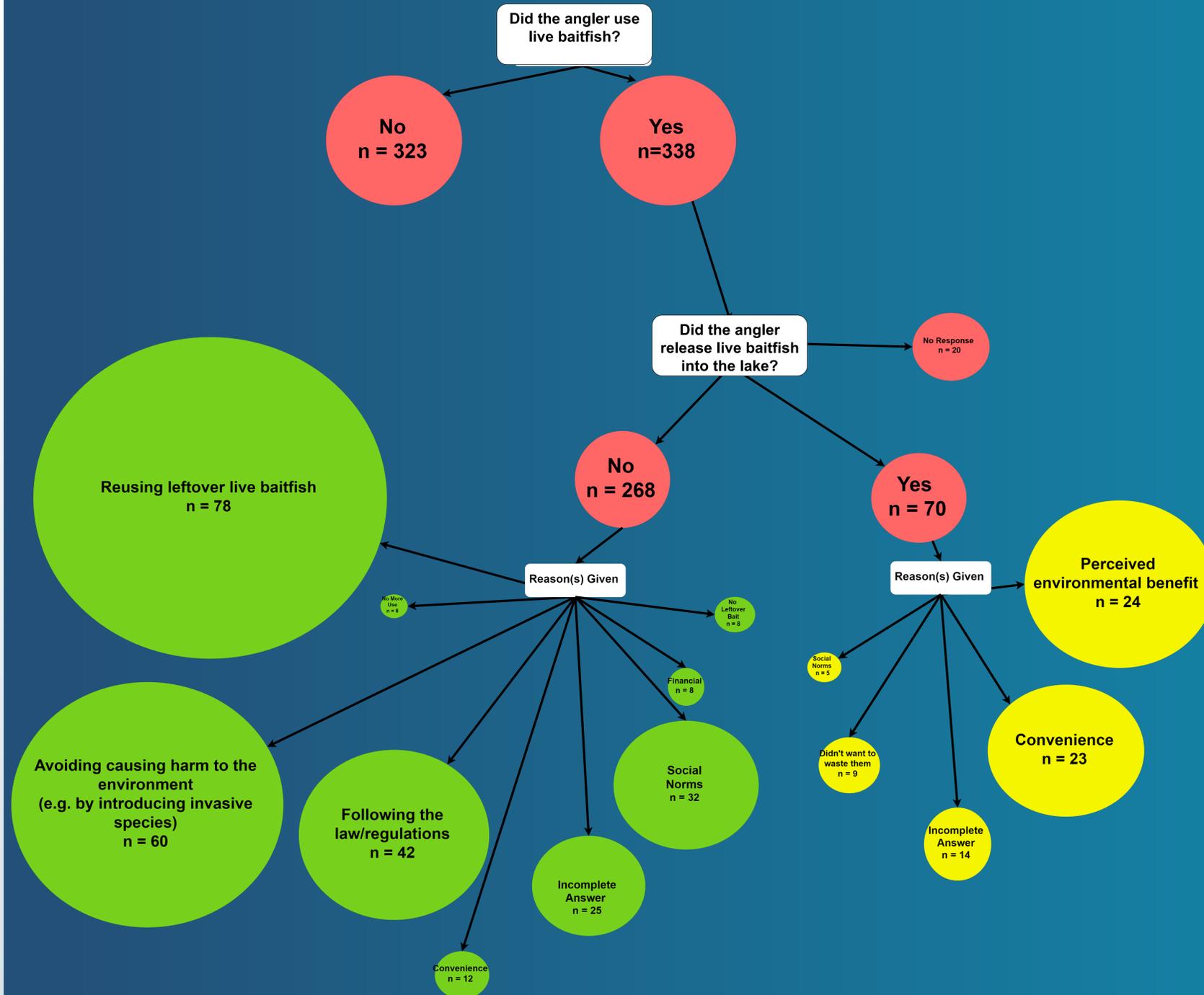
- Human-mediated movements of live animals are a fundamental driver of AIS introduction and spread, leading to increased interest in the social dimensions of AIS management.
- In particular, release of live bait is known to be a significant pathway of non-native aquatic species introduction.
- To understand why anglers choose to engage in risky bait release behaviors, we conducted a survey of licensed anglers in Minnesota to examine what factors shape the decision-making process of anglers when using live bait.
- Specifically we chose to assess what personal or environmental factors influence the decision to release bait.

## Objectives:

- Develop a framework for coding angler responses
- Apply framework to survey responses to identify motivations for release behavior

## Methods:

- 4002 individual survey forms were sent out to a randomly sample of anglers who had purchased an annual Minnesota fishing license.
- Participants were asked to describe the types of bait they used, and how they disposed of leftover bait at the end of their fishing trip, and to explain the reasoning behind their disposal method.
- Coding procedure:
  1. Randomly selected 150 open-ended responses and developed initial coding rules based on themes that emerged from them
  2. Used rules to search all 661 responses for trigger words
  3. If a response was unable to be categorized, Coder #1 used the general rule and coded it and Coder #2 then independently coded it a second time. If codes agreed, then answer was coded. If they did not agree, answer was put in the “uncategorized” group



**Convenience and the perceived environmental benefits of baitfish release were the most commonly cited reasons for release.**