

Interpopulation variability between populations of *Gammarus fossarum*: predation risk, fear and anxiety



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BACKGROUND

Ecology of fear considers ***predator-induced stresses*** as important drivers of ***demographic strategies, behavioral and physiological*** changes.

- **Fear:** an **immediate** consequence of a stress allowing to face adequately an **identified** danger,
- **Anxiety:** a consequence of a stress occurring when the threat is **not clearly identified** and which is generally **sustained** in absence of stimuli or in a new environment.

OBJECTIVES

- To document the effect of ***local predation risk*** on ***antipredator behaviours***.
- To assess **flexibility** of antipredator behaviours according to a ***current predation risk***.

Predation risk proxy: Fish biomass

METHODS AND RESULTS

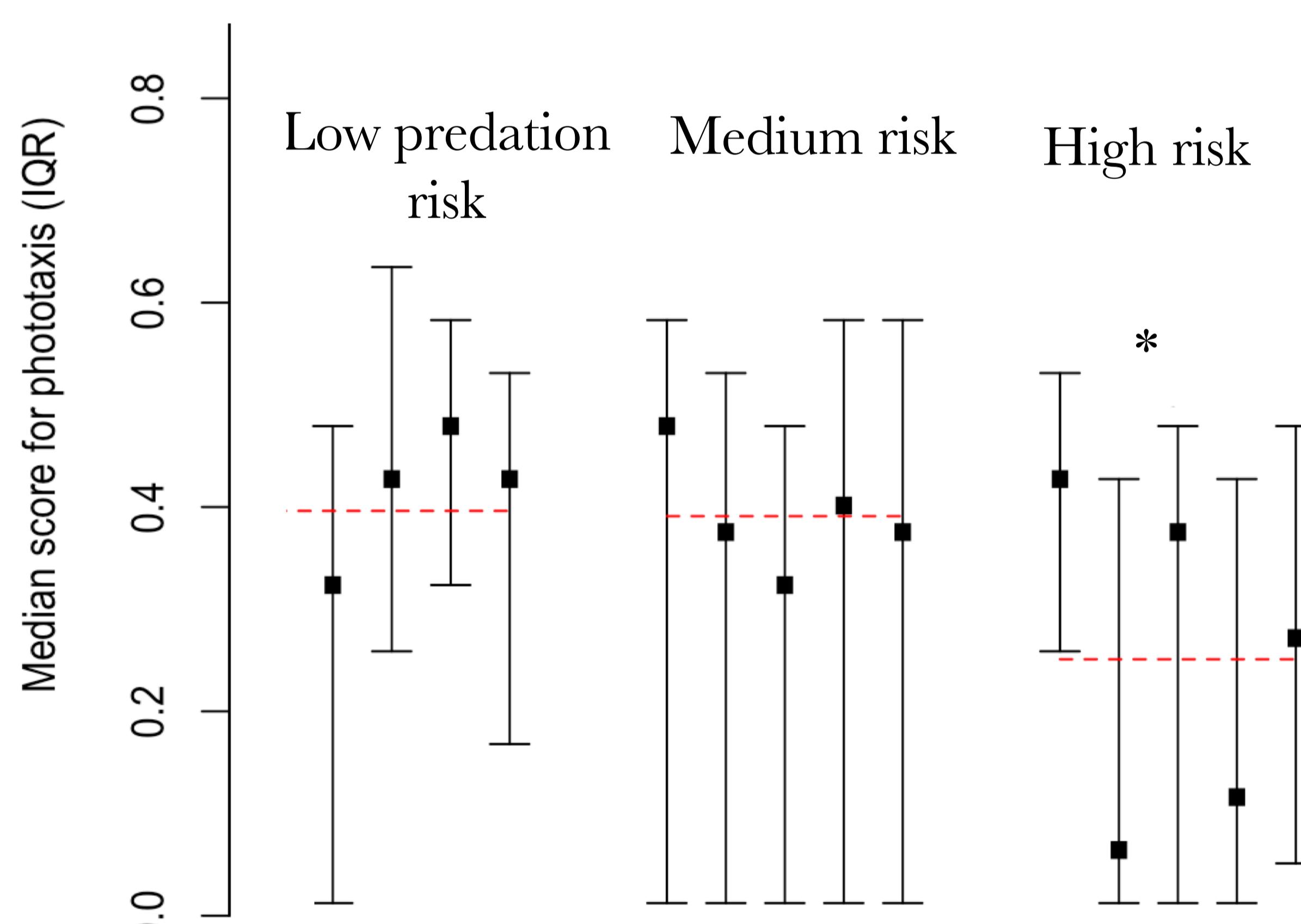
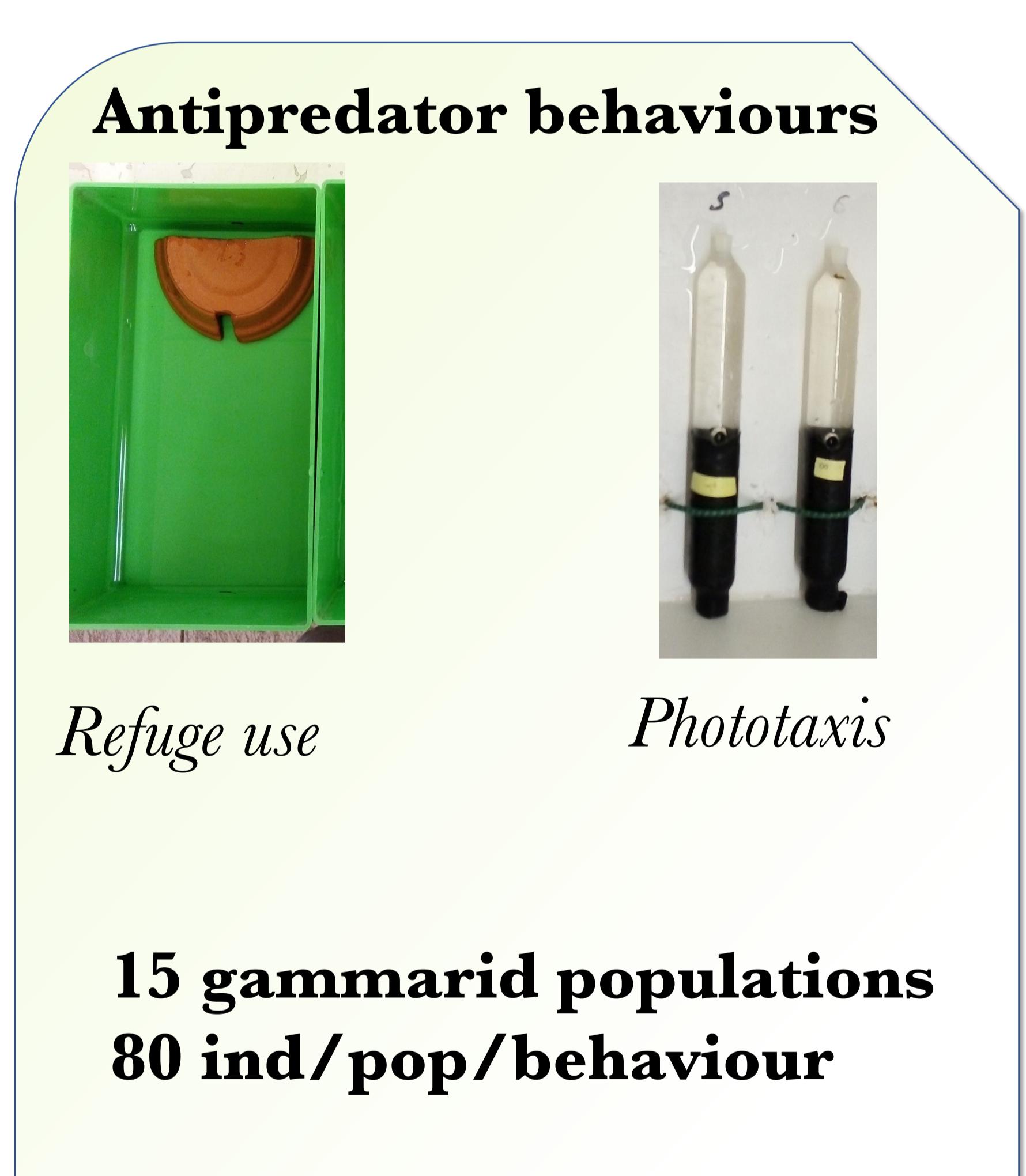


Fig 1. Phototaxis score according to predation risk.
1: always in the light, 0: always in obscurity

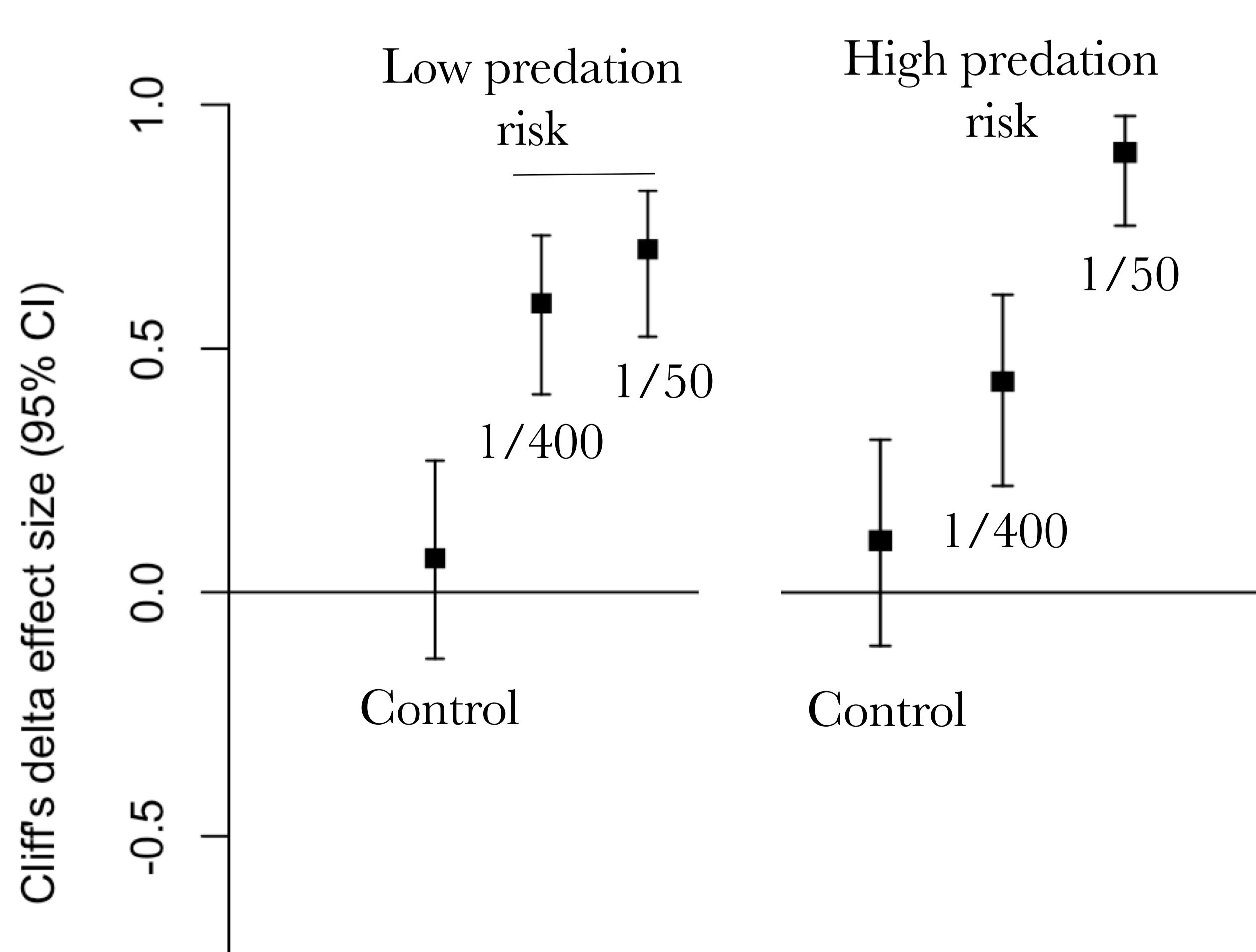


Fig 2. Cliff's delta effect sizes of changes in refuge use after addition of a signal (control or predation signals).

TAKE-HOME MESSAGES

❖ LOCAL PREDATION RISK INDUCES ANXIETY-LIKE STATE

❖ FLEXIBILITY OF ANTIPREDATOR RESPONSE

❖ PATTERNS OF RESPONSES ARE MODULATED BY LOCAL PREDATION RISK