# Two stream reaches

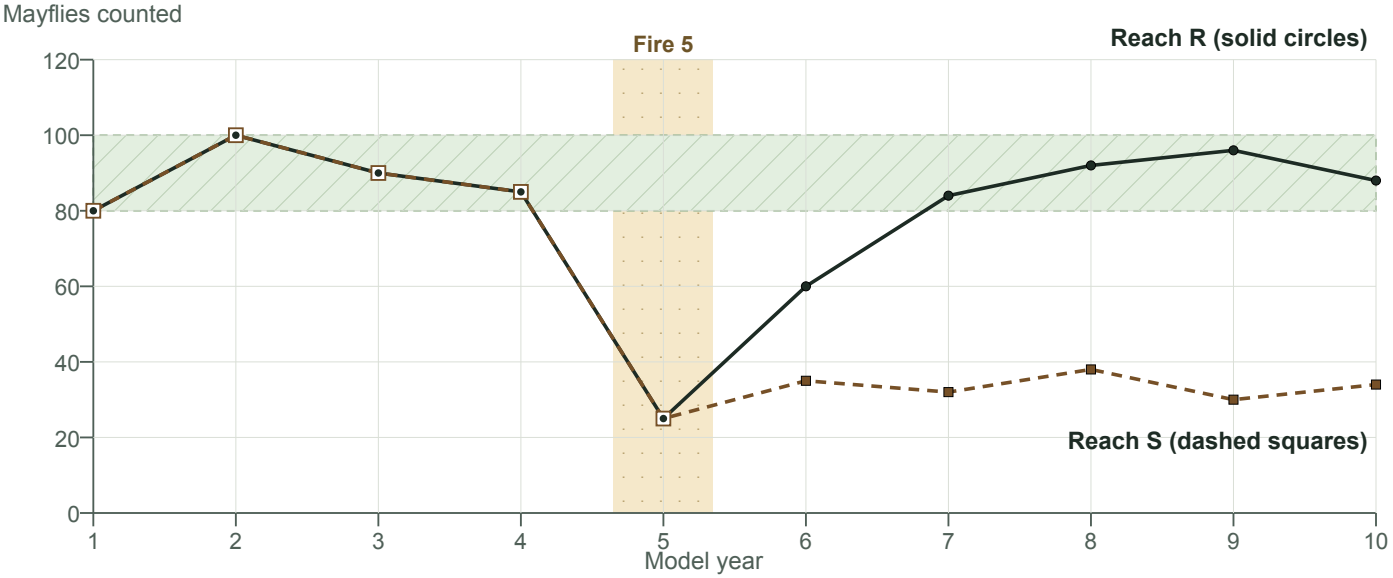
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Name: _____ Student code: _____

Two invented stream reaches, R and S, have baseline Years 1-4 and a fire in Year 5. Evaluate the monitored community at each reach in Years 7-10.

All plots and numbers are invented. Within each model, the area, season and survey effort stay the same each year.

**Figure 6. Stream surveys**




Teaching model - made-up data. Baseline span: 80-100.

The baseline span is the lowest to highest count in the stated baseline years. It is a comparison band, not a universal test for stability.

**Table 4. Stream groups**

| Group | Both: Years 1-4 | R: Years 7-10 | S: Years 7-10 |
|---|---|---|---|
| Mayflies | Yes | Yes | Yes |
| Stoneflies | Yes | Yes | No (not recorded) |
| Algae | Yes | Yes | Yes |
| Midges | No (not recorded) | No (not recorded) | Yes |

Yes = recorded in each survey in that period. No = not recorded; it does not prove absence.

Keep Figure 6 and Table 4 beside the next page. Read counts from the grid. A circle inside a square marks overlapping R and S points in Years 1-5.

# Evaluate the stream records

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Name: _____ Student code: _____

Work independently. Use Figure 6 and Table 4 to answer A, B and C. No hints or answer checks. You may leave a part blank if unsure.

## A. Choose a claim

**Complete a claim about Years 7-10 using Figure 6 and Table 4.**

The records support _____ (1) at Reach R and _____ (2) at Reach S during the monitored period.

**Menu 1: write one letter**

A. recovery
B. a persistent shift
C. no change at any time

**Menu 2: write one letter**

A. recovery
B. a persistent shift
C. no change at any time

## B. Critique the reasoning

**Use Figure 6 and Table 4. A student says, "No stoneflies were recorded at S in Years 7-10, so fire alone permanently eliminated them." Which criticism best identifies the reasoning problem?**

- ○ A. It overstates permanent loss, but the timing after fire establishes the sole cause.
- ○ B. It treats non-detection as permanent loss and assigns a sole cause without a test.
- ○ C. It overstates the sole cause, but four years of non-detection establish permanent loss.
- ○ D. It understates the impact: lower counts and changed groups establish loss of the entire community.

## C. Choose evidence

**Which two observations together best support your claim in Part A? Use Figure 6 and Table 4.**

**Select two correct answers.**

- ☐ A. R stays below the baseline span in Years 7-10, and its baseline groups remain recorded.
- ☐ B. S stays below the baseline span in Years 7-10, and its recorded groups differ from baseline.
- ☐ C. The counts at both reaches fell in Year 5, when the fire occurred.
- ☐ D. R is within the baseline span in Years 7-10, and its baseline groups remain recorded.
- ☐ E. S returns to the baseline span in Years 7-10, and its baseline groups remain recorded.