HS2 Learning Legacy

HS2 Learning Legacy supporting document

| | | Month and eDNA capture method | | | | | | | | | | | | | | |
|------|-----|-------------------------------|-----|---|-----|---|-----|---|----|-----|----|-----|---|-----|---|--|
| Pond | Apr | | Мау | | Jun | | Jul | | | Aug | | Sep | | Oct | | Notes |
| | EP | F | EP | F | EP | F | EP | F | EP | F | EP | F | | EP | F | |
| 1 | | | | | | | | | | | | | | | | No disagreement between eDNA capture methods. |
| 2 | | | | | | | | | | | | | | | | No disagreement between eDNA capture methods. |
| 3 | | | | | | | | | | | | | | | | Filtration kit tested positive for inhibition in September, |
| | | | | | | | | | | | | | | | | thus result was inconclusive as inhibitors could be |
| | | | | | | | | | | | | | | | | responsible for non-detection of GCN DNA. |
| 4 | | | | | | 1 | | | | | | | | | | Positive for GCN (low eDNA score) using filtration kit in June |
| | | | | | | | | | | | | | | | | only. Filtration kit tested positive for inhibition in |
| | | | | | | | | | | | | | | | | September, thus result was inconclusive as inhibitors could |
| | | | | | | | | | | | | | | | | be responsible for non-detection of GCN DNA. |
| 5 | 1 | | | | 1 | | | | | | | | | | | Positive for GCN (low eDNA scores) with ethanol |
| | | | | | | | | | | | | | | | | precipitation kits in April and June only. GCN detection wit |
| | | | | | | | | | | | | | | | | filtration kits also inconsistent albeit high eDNA scores |
| | | | | | | | | | | | | | | | | observed in-season and early out-of-season. |
| 6 | 1 | | | | | | | | | | | | | | | Positive for GCN (low eDNA scores) with ethanol |
| | | | | | | | | | | | | | | | | precipitation kit in April only. GCN detection with filtration |
| | | | | | | | | | | | | | | | | kits consistent until August. |
| 7 | | 12 | | | | | | | | | | | | | | Positive for GCN with ethanol precipitation kits in May and |
| | | | | | | | | | | | | | | | | July only, with low eDNA score in July. GCN detection with |
| | | | | | | | | | | | | | | | | filtration kits consistent until August. |
| 8 | | 1 | | | | | 7 | | | | | | | | | Positive for GCN with ethanol precipitation kits in May and |
| | | | | | | | | | | | | | | | | July only, with low eDNA score in May. GCN detection with |
| | | | | | | | | | | | | | | | | filtration kits consistent until September, excluding |
| | _ | | | | | | | | | | | | | | | negative result in June. |
| 9 | | 7 | | | | | | | | | | | | | | Negative for GCN with ethanol precipitation kit in April only |
| | | | | | | | | | | | | | | | | otherwise GCN detection with both kit types consistent |
| | | | | | | | | | | | | | _ | | | from April to July. |
| 10 | 9 | | | | | | 4 | | 1 | | | | | | | Negative for GCN with filtration kit when ethanol |
| | | | | | | | | | | | | | | | | precipitation kit positive in July only. GCN detection |

Table 1. GCN status of ponds surveyed from April to October using ethanol precipitation (EP) kits and filtration (F) kits. Cells are shaded according to kit result (navy = negative, turquoise = positive, grey = inconclusive), and white cells represent months where a pond was not surveyed due to drying out and/or health and safety concerns. Numbers in turquoise cells indicate eDNA scores for positive kits.

Learning Legacy Paper - Environmental DNA surveys for great crested newts - time for regulatory changes?



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| | | | | | | Month | and eD | | | | | | | | |
|------|----|----|----|------|----|-------|--------|-----|----|-----|----|-----|----|-----|---|
| Pond | Ap | | | /lay | | Jun | | Jul | | Aug | | Sep | | Oct | Notes |
| | EP | F | EP | F | EP | F | EP | F | EP | F | EP | F | EP | F | |
| | | | | | | | | | | | | | | | typically stronger for in-season months compared to out-of- |
| | | | | | | | | | | | | | | | season months. |
| 11 | 2 | | | | | | | | | | | | | | Negative for GCN with filtration kit when ethanol |
| | | | | | | | | | | | | | | | precipitation kit positive in September only. Strong GCN |
| | | | | | | | | | | | | | | | detection in all months, except October. |
| 12 | 6 | | | | | | | | | | | | | | Perfect agreement between kit types from April to |
| | | | | | | | | | | | | | | | September. Strong GCN detection in all months, except |
| | | | | | | | | | | | | _ | | | October. |
| 13 | 12 | | | | | | | | | | | | | | Negative for GCN with filtration kit when ethanol |
| | | | | | | | | | | | | | | | precipitation kit positive in September only. Strong GCN |
| | | | | | | | | | _ | | | | | | detection in all months, except October. |
| 14 | 2 | 8 | | | | | 11 | | 11 | | | | | | Negative for GCN with filtration kit when ethanol |
| | | | | | | | | | | | | | | | precipitation kit positive in July only. Strong GCN detection |
| | | | | | | | | | | | | | | | from April to August. |
| 15 | | | | | | | | | | | 10 | | | | Negative for GCN with ethanol precipitation kits in April and |
| | | | | | | | | | | | | | | | June, otherwise GCN detection with both kit types |
| | | | | | | | | | | | | | | | consistent from April to September. |
| 16 | 12 | | 12 | | | | 12 | | 7 | | | | | | Negative for GCN with filtration kits in April, July and |
| | | | | | | | | | | | | | | | August. Strong GCN detection from April to August. |
| 17 | | 12 | | | | | | | | | | | | | Negative for GCN with ethanol precipitation kit in April. |
| 18 | | | | 1 | | | | | | | | | | | Negative for GCN with ethanol precipitation kit in May. |
| 19 | 2 | 9 | | | | | | | | | | | | | Positive with both kit types in April. |
| 20 | 1 | | | | | | | | | | | 5 | | | Negative for GCN with ethanol precipitation kits in June and |
| | | | | | | | | | | | | | | | September, otherwise GCN detection with both kit types |
| | | | _ | | | | | | | | | | | | consistent from April to October. |
| 21 | 3 | 12 | | 12 | 12 | 12 | | | | | | | | | Negative for GCN with ethanol precipitation kit in May. |
| 22 | 1 | | 8 | | | | | | | | | | | | Perfect agreement between kit types from April to August. |
| | | | | | | | | | | | | | | | GCN detection typically stronger for in-season months |
| | | | | | | | | | | | | | | | compared to out-of-season months. |
| 23 | | 9 | 10 | 12 | | | | | | | | | | | Negative for GCN with ethanol precipitation kit in April. |



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|------|-----|---|-----|---|-----|---------|--------|-------|-----|----|-----|---|-----|---|---|
| Pond | Apr | | Мау | | Jun | | Jul | | Aug | | Sep | | Oct | | |
| | EP | F | EP | F | EP | F | EP | F | EP | F | EP | F | EP | F | |
| 24 | | | | | | | | | | | | | | 2 | Positive for GCN with filtration kit in October. |
| 25 | | | | | | | 12 | 12 | 12 | 12 | 3 | 6 | | 2 | Negative for GCN with ethanol precipitation kit in October. |