1  # Small- and large-scale structure of live fish

2  # movements in Scotland - Electronic Appendix

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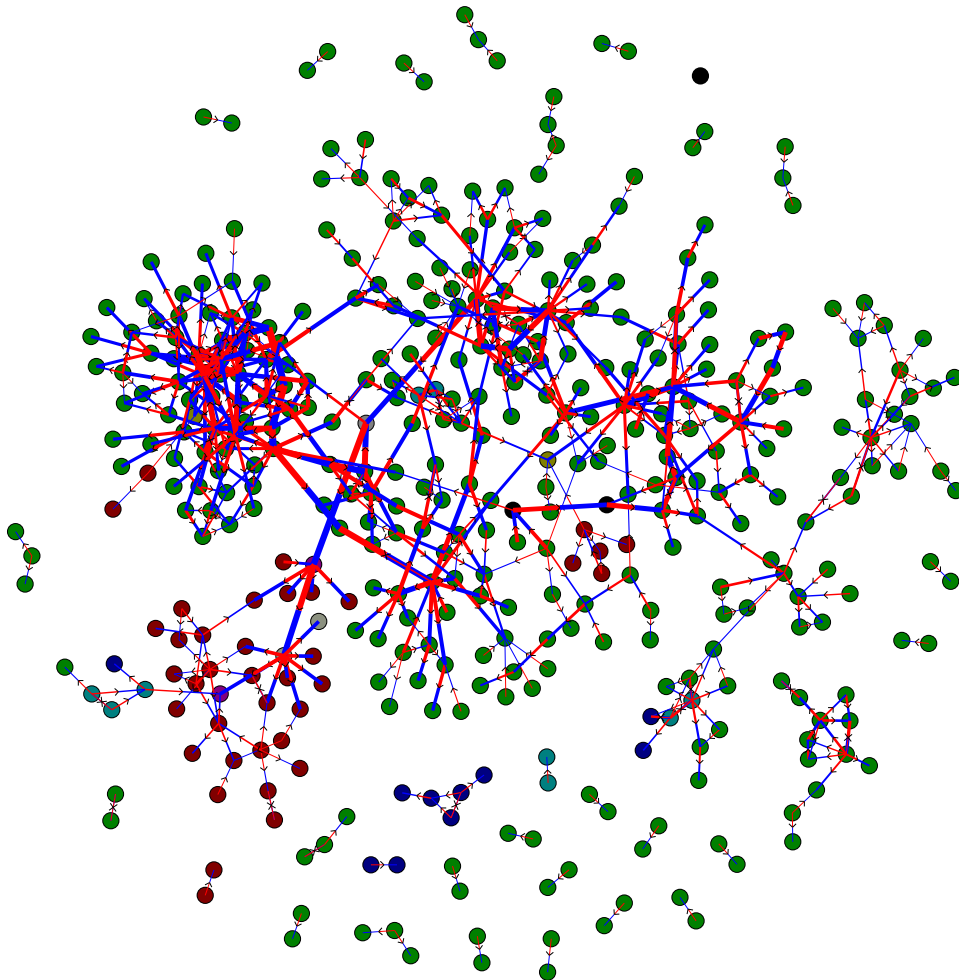# 1 Colour versions of figures



Figure 1: Colour version of figure 1. The 2003 Scottish live fish movement network, with sites coded according to species moved between sites. Green, salmon (S); red, rainbow trout (R); blue, brown trout (T); other colours indicate mixed species. The direction of arcs is indicated by arrows and colour (red half-arc for source), and their relative betweenness ($\log_e$-scale) indicated is by line width.
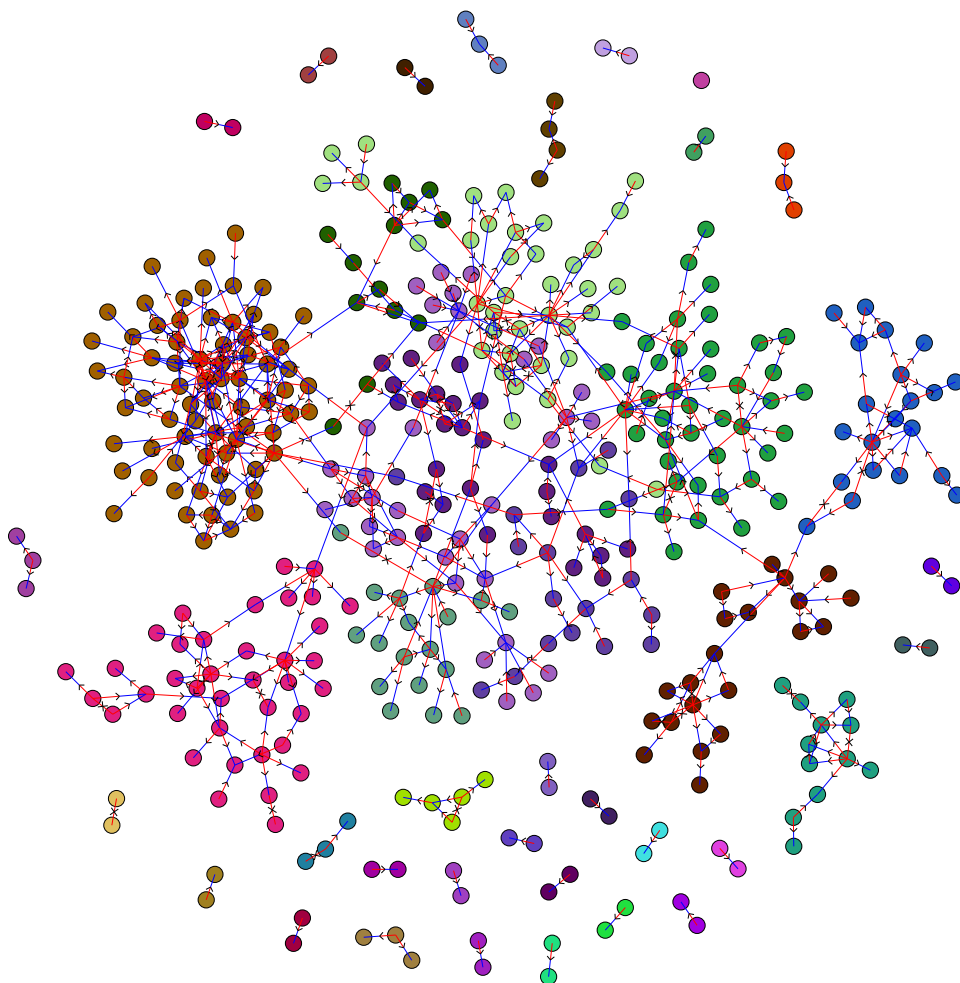
Figure 2: Colour version of figure 3. Community assignment for the live fish movement network for Scotland in 2003. Community membership is indicated by different symbols.
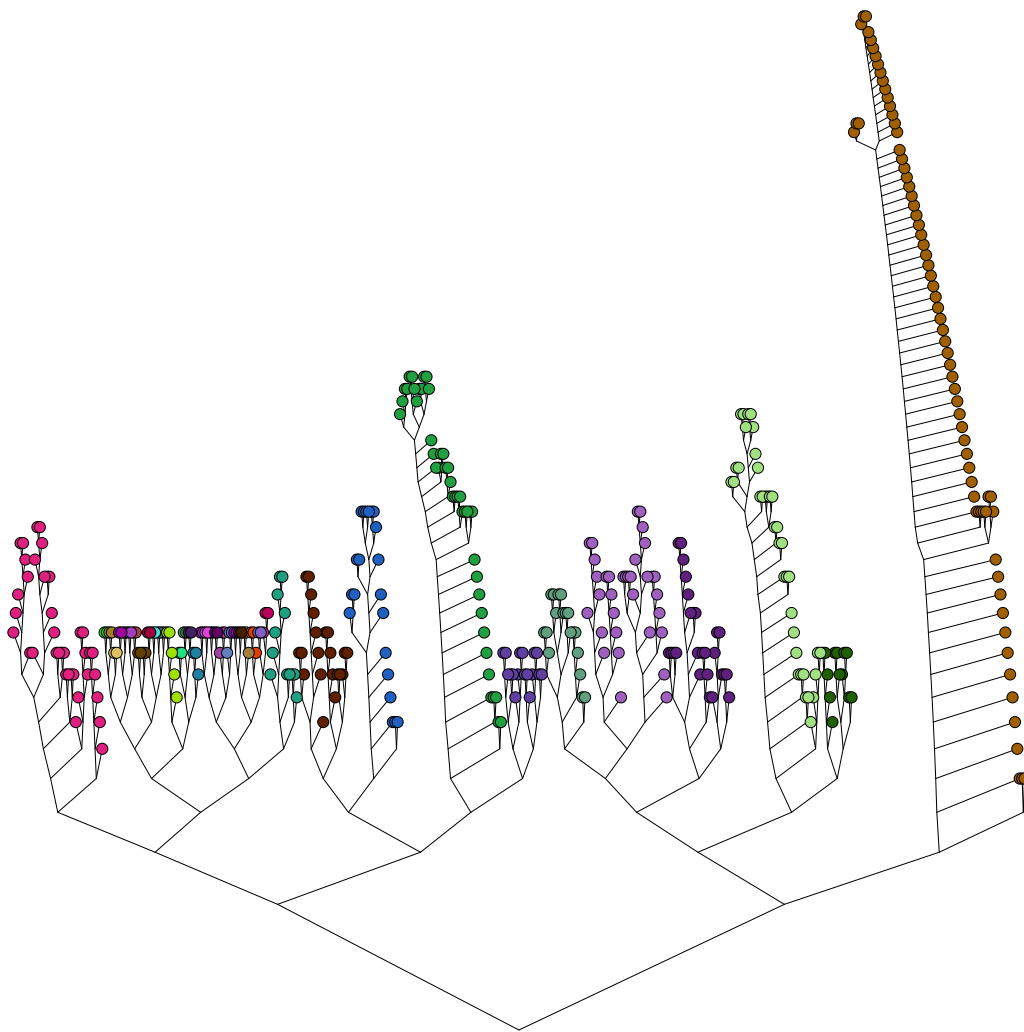
Figure 3: Colour version of figure 4. Dendrogram for the community algorithm. Each branch represents a group of nodes that are merged by the algorithm into the same community before they are merged into another such group. Best-fit communities are as shown on Figure 2.

6 # 2 Additional information

| Species | Eigenvalue | $\langle k^{\mathrm{in}} \rangle$ | $\langle k^{\mathrm{out}} \rangle$ |
|---|---|---|---|
| Salmon | 1.01 | 1.49 | 1.51 |
| Trout | 1.05 | 1.53 | 1.67 |
| Rainbow trout | 0.96 | 1.44 | 1.16 |
| Fresh water | 0.96 | 1.47 | 2.54 |
| Salt water | 1.04 | 1.48 | 0.44 |
| Hatchery, tank | 1.03 | 1.57 | 2.79 |
| Pond, raceway, | 1.11 | 1.52 | 1.65 |
| Cage | 0.98 | 1.44 | 0.87 |

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8 **Table A1** Relative eigenvalues ($\times$ number of nodes, $\beta = \frac{1}{2}$), $\langle k^{\mathrm{in}} \rangle$ and $\langle k^{\mathrm{out}} \rangle$ tabulated

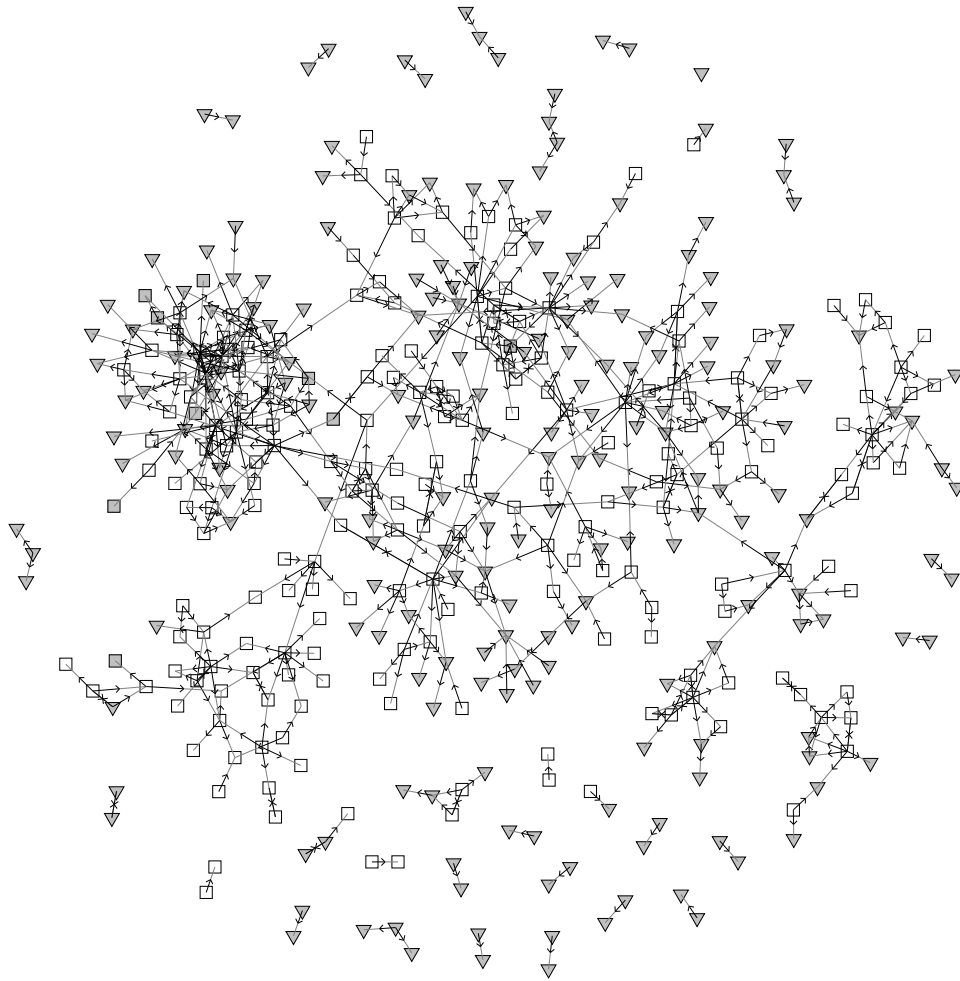9 according to site type as recorded by the FRS Aquadat database.

**Figure A1** The movement graph, showing saltwater (▼) and freshwater (□) sites.
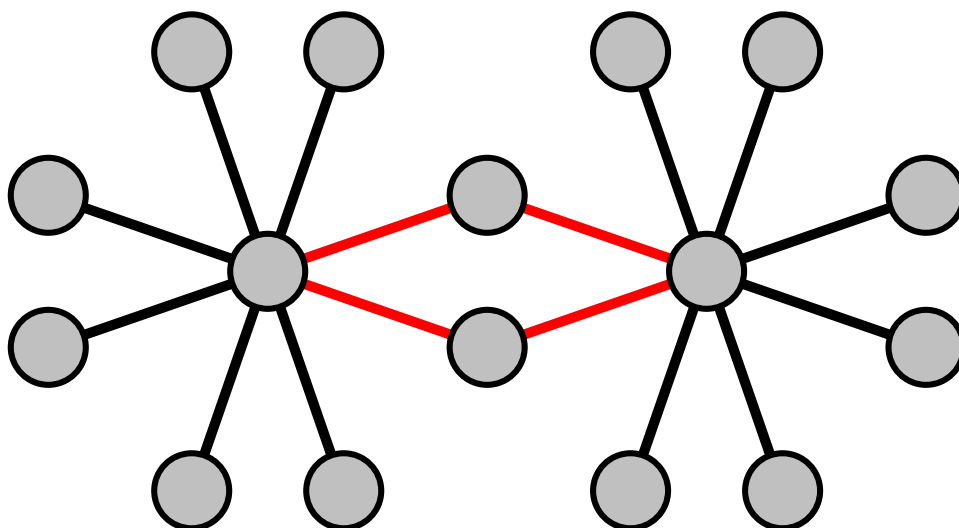
**Figure A2** Demonstration of failing of greedy edge-removal algorithm. Removal of the four red edges quickly breaks the network into smaller components. However removal of a single red edge makes no reduction in largest component size, unlike removing a black edge. Thus, a greedy algorithm for reducing component size is inefficient.