

# A Bloody Red Shrimp

***Hemimysis anomala* distributions and  
impacts in the Shannon River Basin  
District**

**Dan Minchin  
Lough Derg Science Group**

# Insufficient monitoring

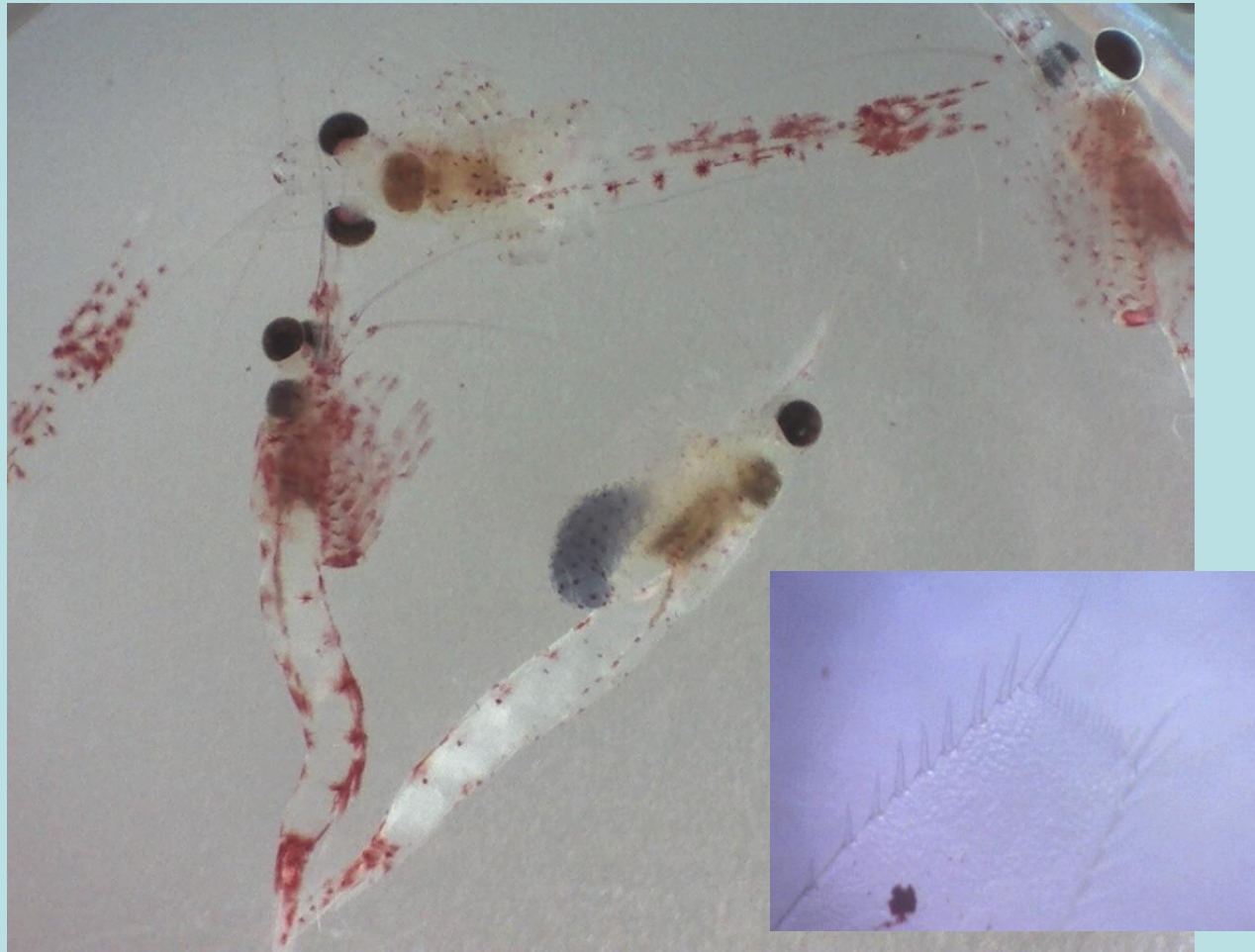
We need to undertake a more regular monitoring of our waters

The bloody red shrimp has probably been present for some years

First found in Lough Derg in April 2008



**Does not look very exciting**





**Not very  
big but  
very  
numerous**



# What is the bloody red shrimp

- Shrimp-like crustacean
- Stalked eyes
- Males 8-10mm; females to 16mm
- Salinities to 18-25psu
- Reddish colouration: changes with age, light and temperature

# Gregarious



**Estimate swarm densities of 4000 to 6000 per cubic metre**

# Can be very abundant

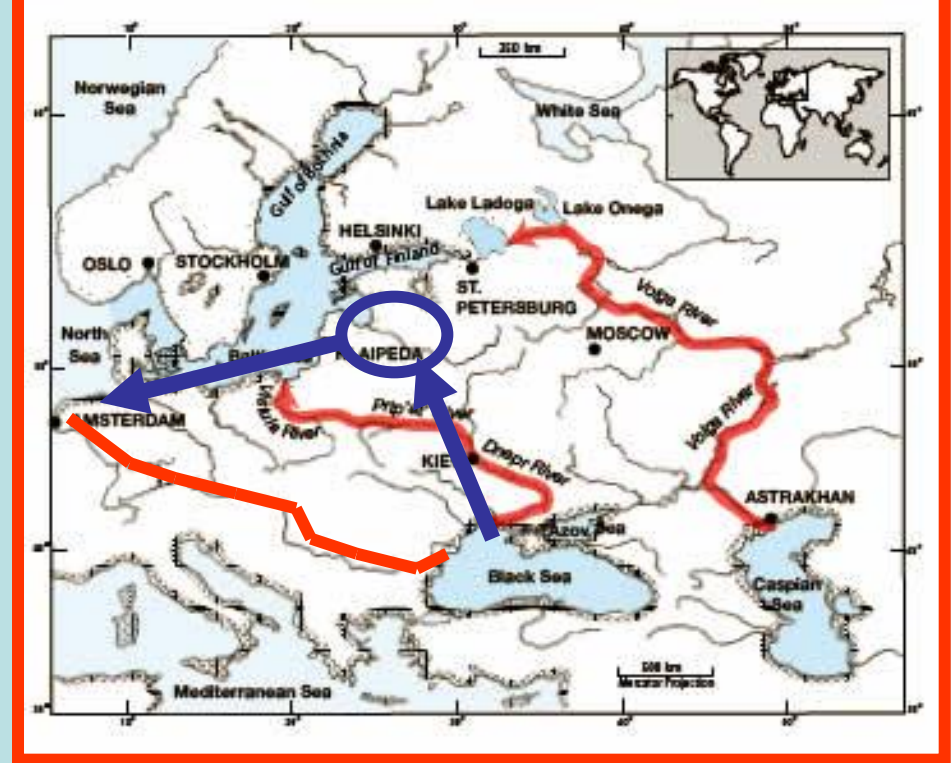
Lough Ree

February  
2009

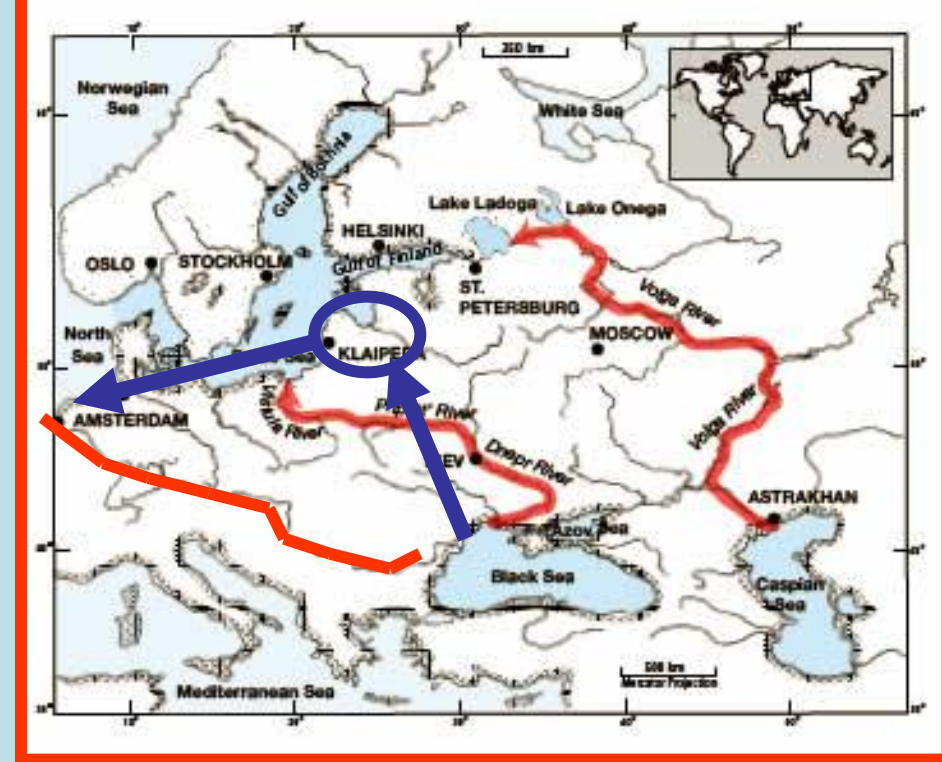


# Where from?

- Black/ Caspian seas
- Stocked in eastern Europe lakes 1950-60s
- Spread *via* Danube Canal?
- To NW Europe 1997-9
- In Britain 2004
- In Great Lakes 2006
- First record Ireland **2008**  
probably present before  
**2007**



# Which route did it take?



- Genetic study underway in Austria
- Samples from 4 Irish lakes sent

# So how did it get to Ireland?

- Level of confidence for pathway involved low.
- Possible pathways
  - Ornamental trade
  - Aquarium trade
  - Leisure craft
  - Shipping
  - Unauthorised stocking

# Life cycle

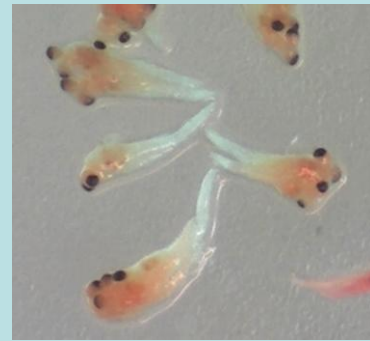
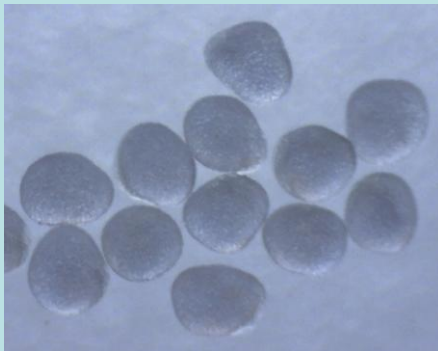
- Breeds on Europe April-October
- 3-4 generations per year
- Can breed in 30 to 45 days from brood release
- Females brood twice
- Females live 9 months
- Clutch size up to 66 eggs (Gt lakes 2-17)
- Swarms to 1500/m<sup>2</sup>



# Sampling

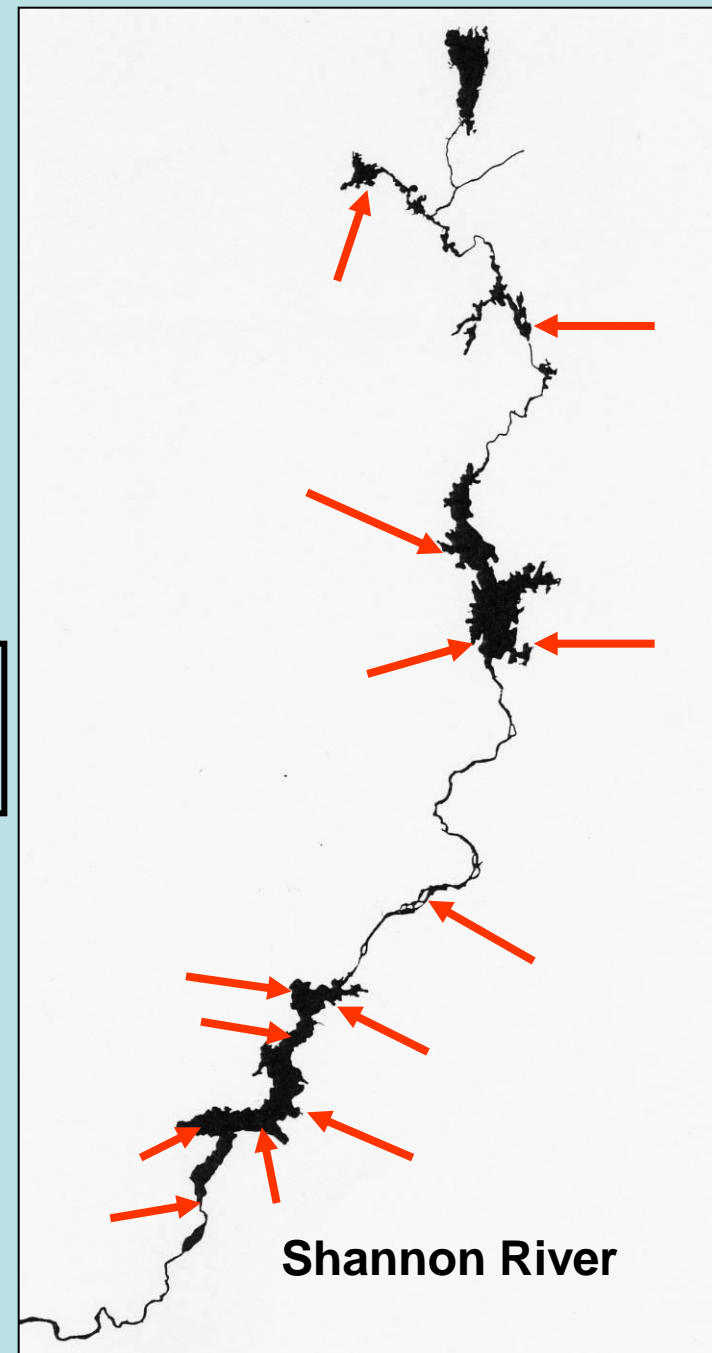
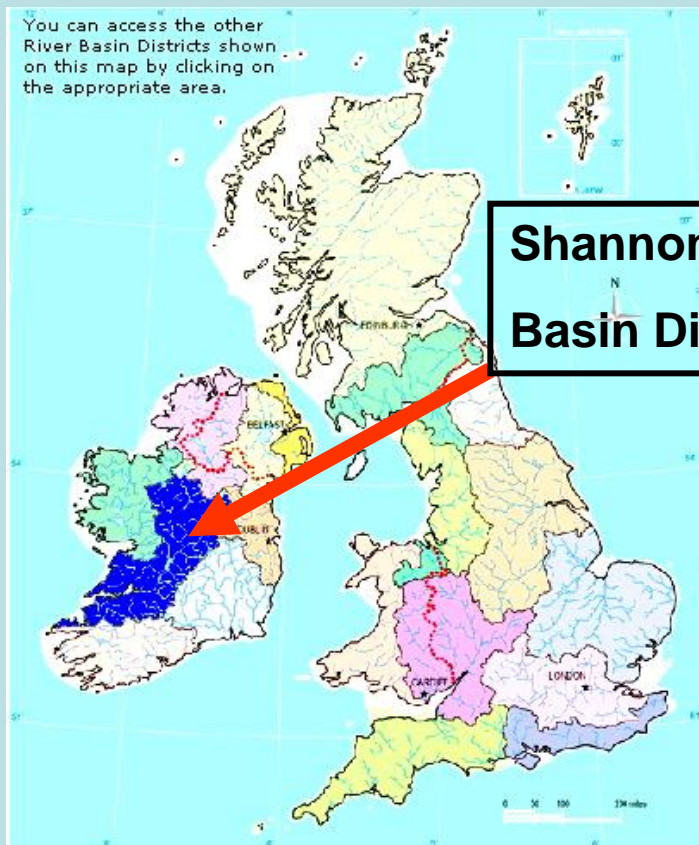
- Traps
- Handnet
- Diving
- Vertical plankton tows
- Oblique net tows
  
- Baited nets
- Spotlighting
- Passive flow nets

**Probably more than 2 generations per year**



**Kevin Gallagher In QUB is working on *Hemimysis* biology**

# Known distribution in Ireland



# Large eyes adapted to low- light levels



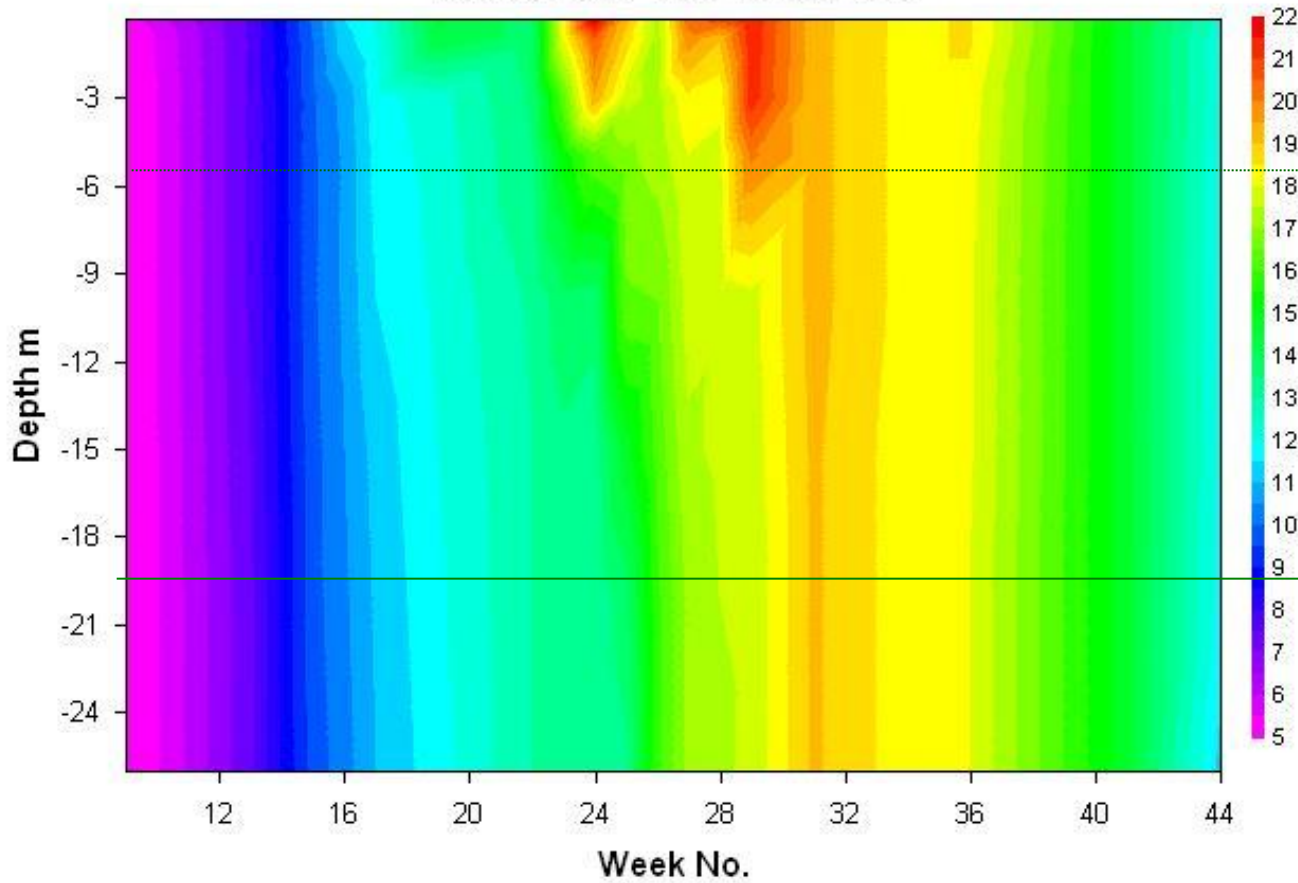
- Contagious distribution
- Swarms mainly at night
- In winter daytime swarms noted
- Associated with aggregates, and shaded areas
- Difficult to quantify abundance

# Native shrimp

- Native to Ireland, possibly a pre-glacial relict
- Found in deep water 15m+ by day
- Near bottom or low in water during day
- Rises to thermocline at night
- Eats algae and zooplankton
- Eaten by pollan, perch



**Dromaan Deep, Lough Derg**  
Temperature Time Series 2006



**Invader**



**Native**



?

# Ecology

- Associated with structures
- Aggregates in spaces between rocks in daytime
- Disperses at night
- Horizontal and vertical migrations
- Mainly over hard bottoms (rocks, shell)
- Avoids soft bottoms overgrown vegetation
- Swarms beside jetties, on exposed rocky shorelines
- Occurs to 50m
- Can not survive for long out of water

# Impacts

## Presently unclear but:

- High biomass is of consequence
- May compete with other species for food
- Known to be fed upon by perch
- Shallow water habit could involve uptake by abstraction and tainting of water
- Overlap with native shrimp a concern

# Some ideas

- Improve sampling methodology
- Monitor for its actual distribution
- Identify potential risk nodes
- Investigate impacts
- Develop a 'shrimp' management group

# How to manage?

- Young released all summer, high risk of spread by humans
- Reduce rate of spread. Risk vectors:
  - Stocking of fish
  - Boat movements
  - Water transfers (canals, animal drinking water, ornamental plants, aquarium releases etc)

## Alien

- Wide depth range
- 3? Generations/yr
- High local densities
- Overlapping distribution
- Seemingly aggressive

## Native

- Deep water
- 1 Generation
- Variable densities
- Juveniles enter shallow water in spring
- Aggressive?

# Acknowledgements

## Thanks to:

- The Heritage Council (Wildlife Grant 16815 of 2009)
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**Thanks for  
Listening**