

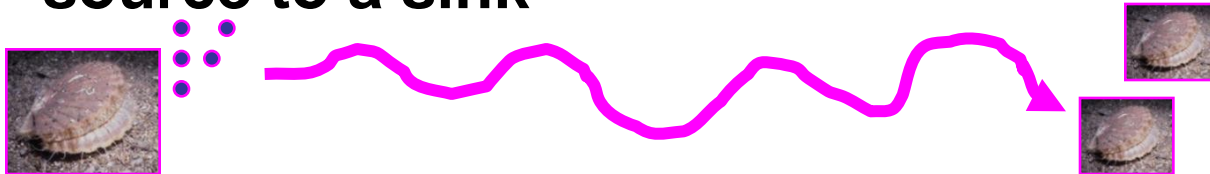


# **Modelling sources and sinks for scallop populations in the Isle of Man**

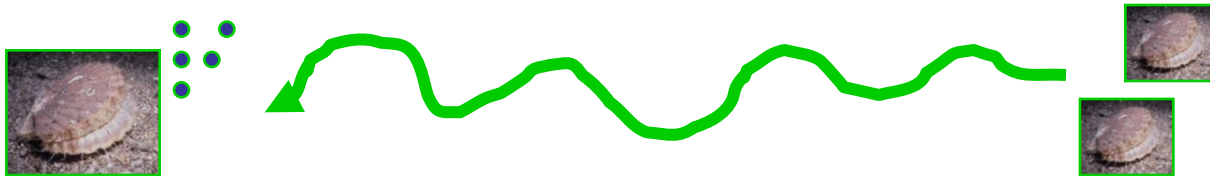
**Simon P. Neill & Michel J. Kaiser**  
**School of Ocean Sciences,**  
**Bangor University**

# Modelling sources and sinks for scallop populations in the Isle of Man

- Modelled the dispersal of larvae from a source to a sink

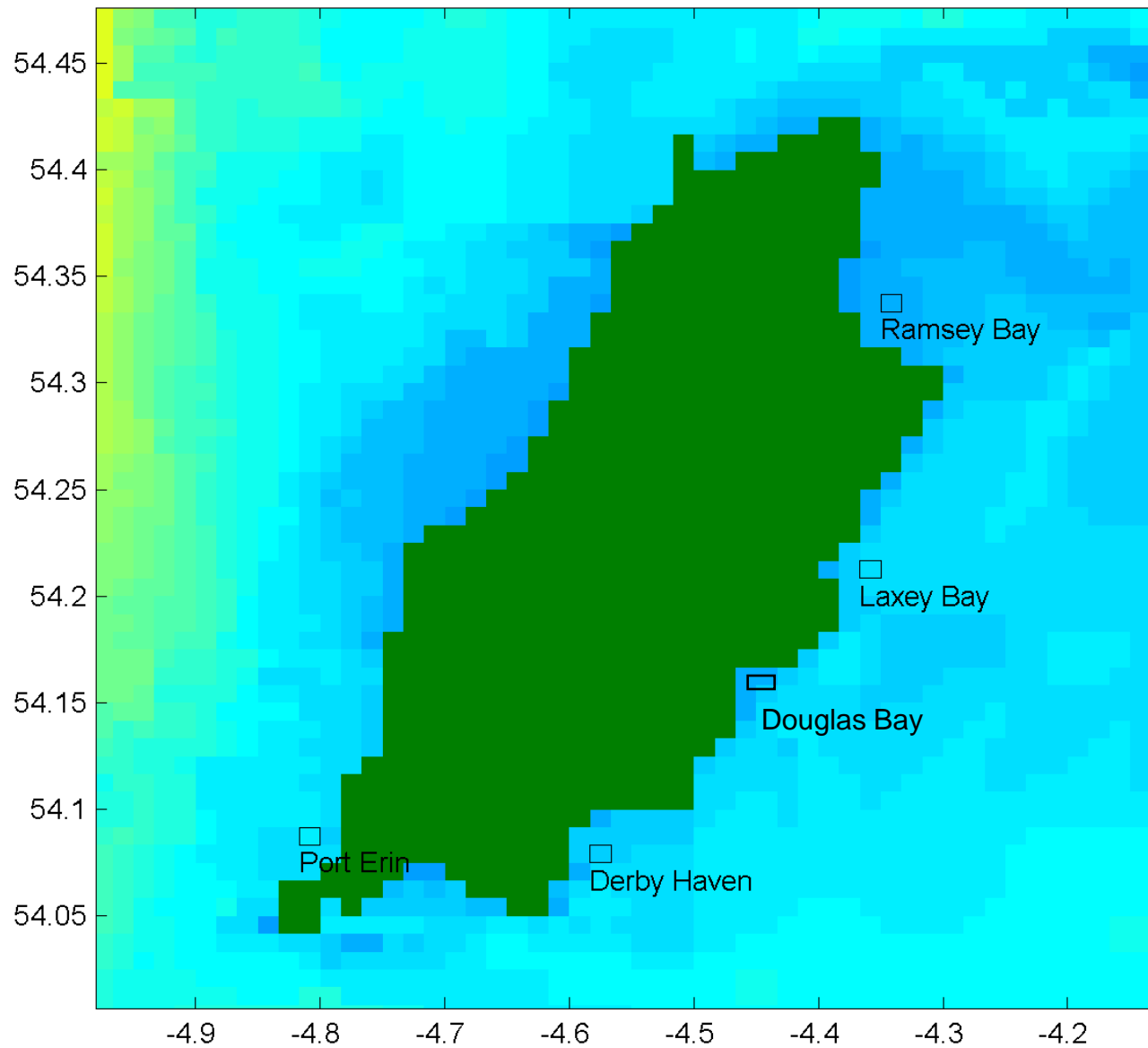


- Modelled the origin of larvae in a sink back to a source



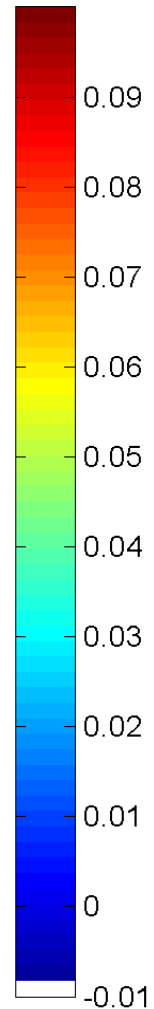
- Assume that larvae spend between 21 – 35 days in the plankton

# Location of 'source' and 'sink' locations

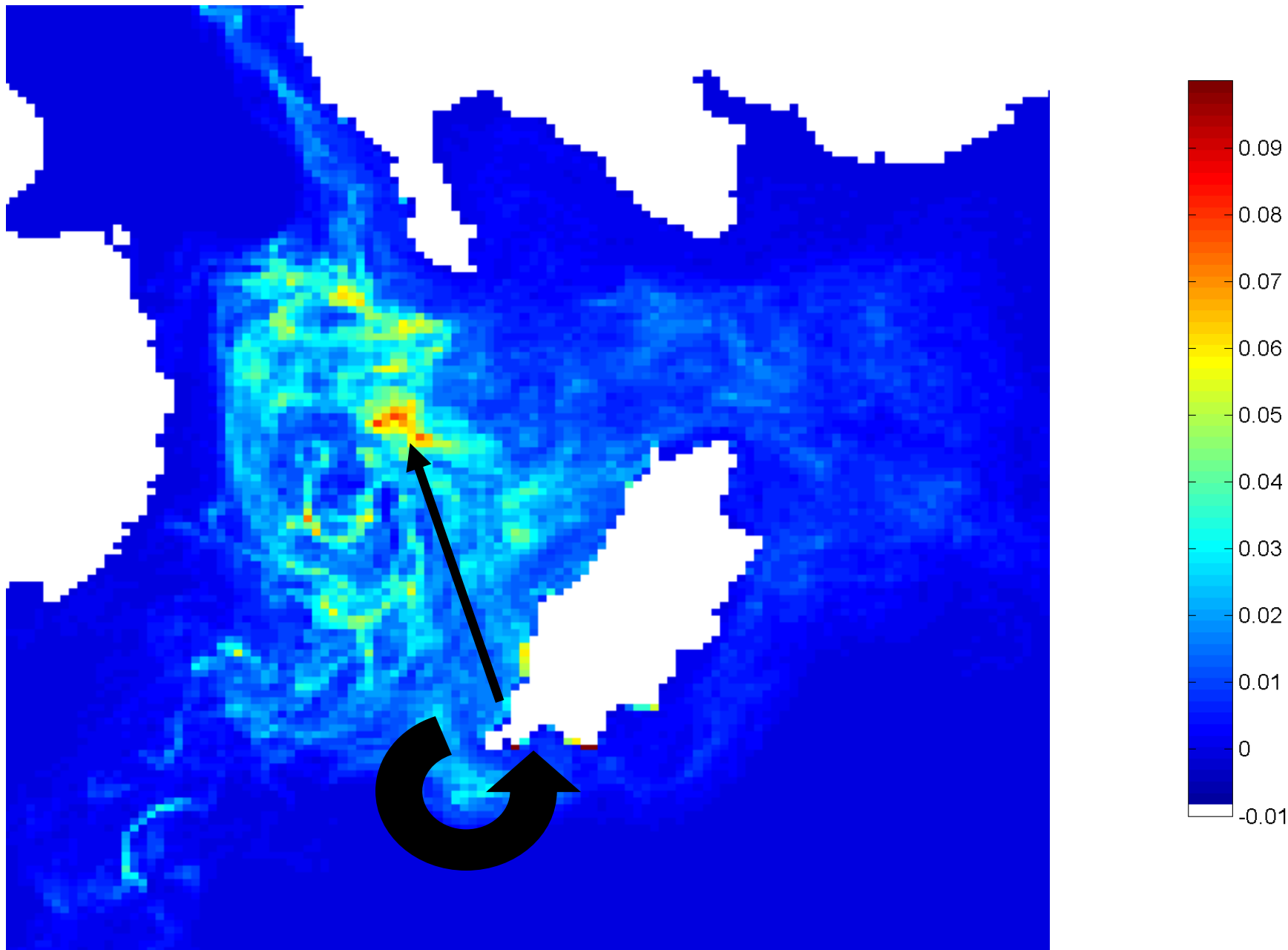


# Interpreting the plots

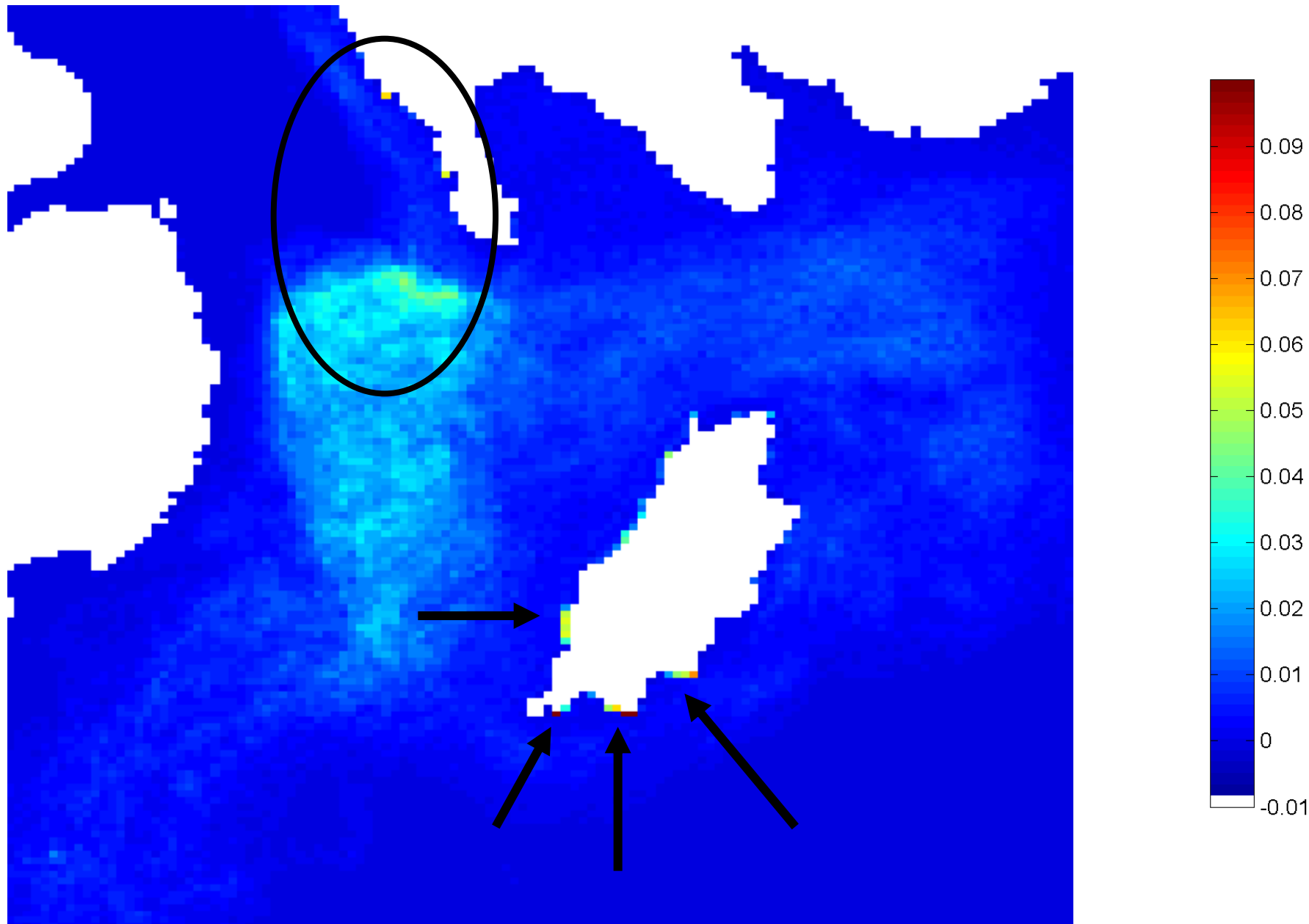
- This is a scale showing the probability that a larva released from point X will arrive at the location shown on the chart.
- The more red the coloration, the higher the likelihood that a larva would arrive at that location.
- Dark blue areas show areas with low or no likelihood of arrival of larvae in that area.



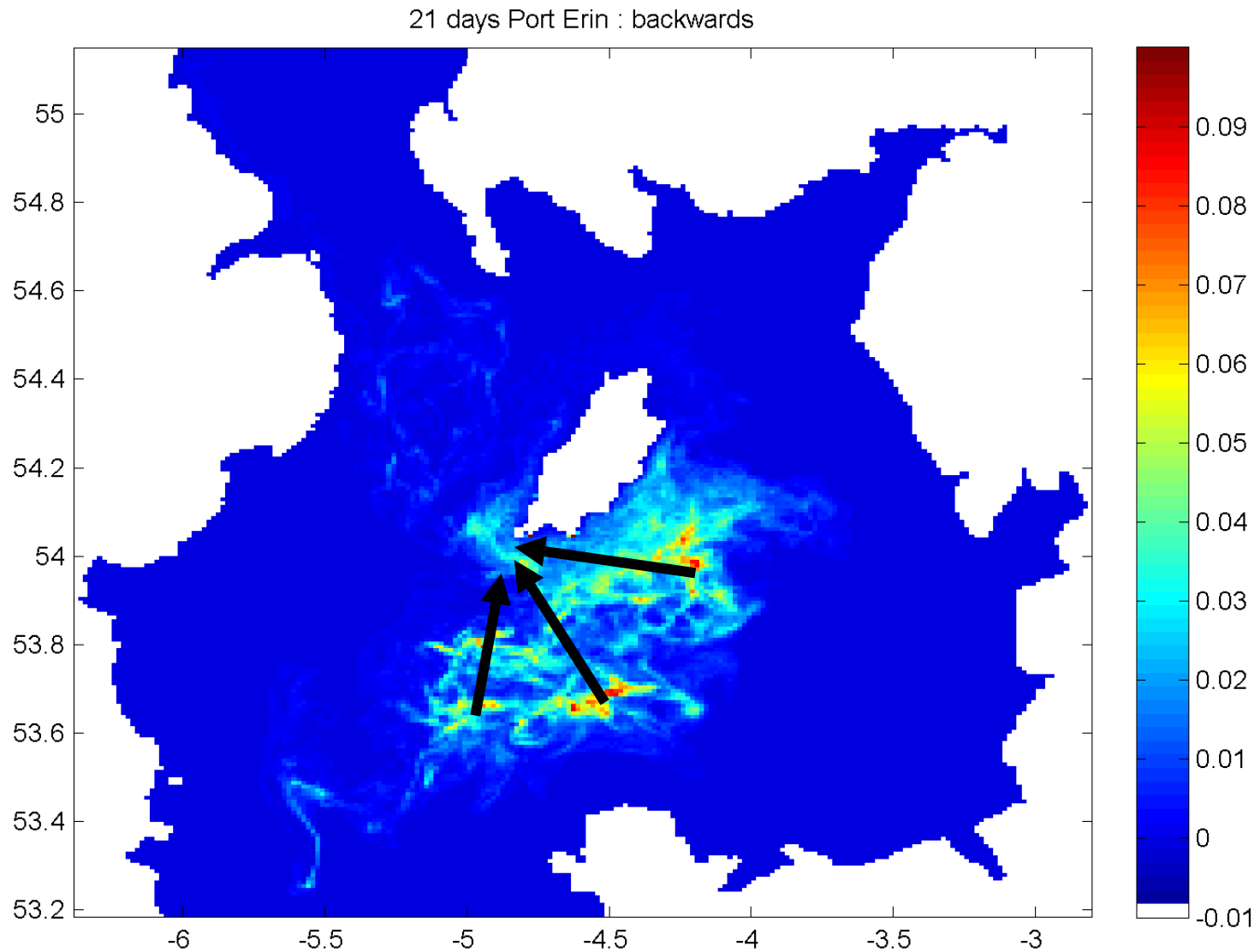
Source: Port Erin – 21 days post release



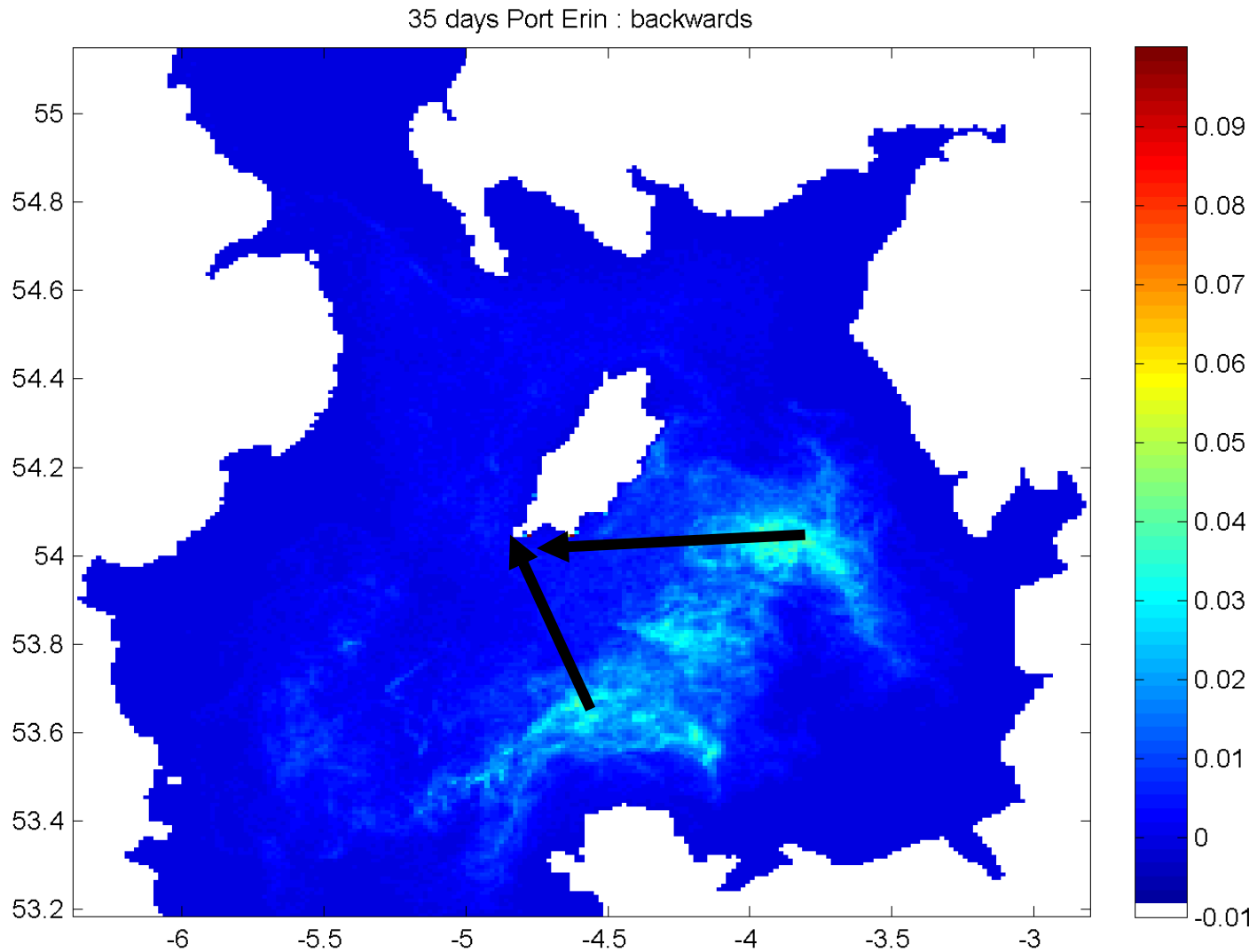
# Source: Port Erin – 35 days post release



# Sink: Port Erin – 21 days in reverse

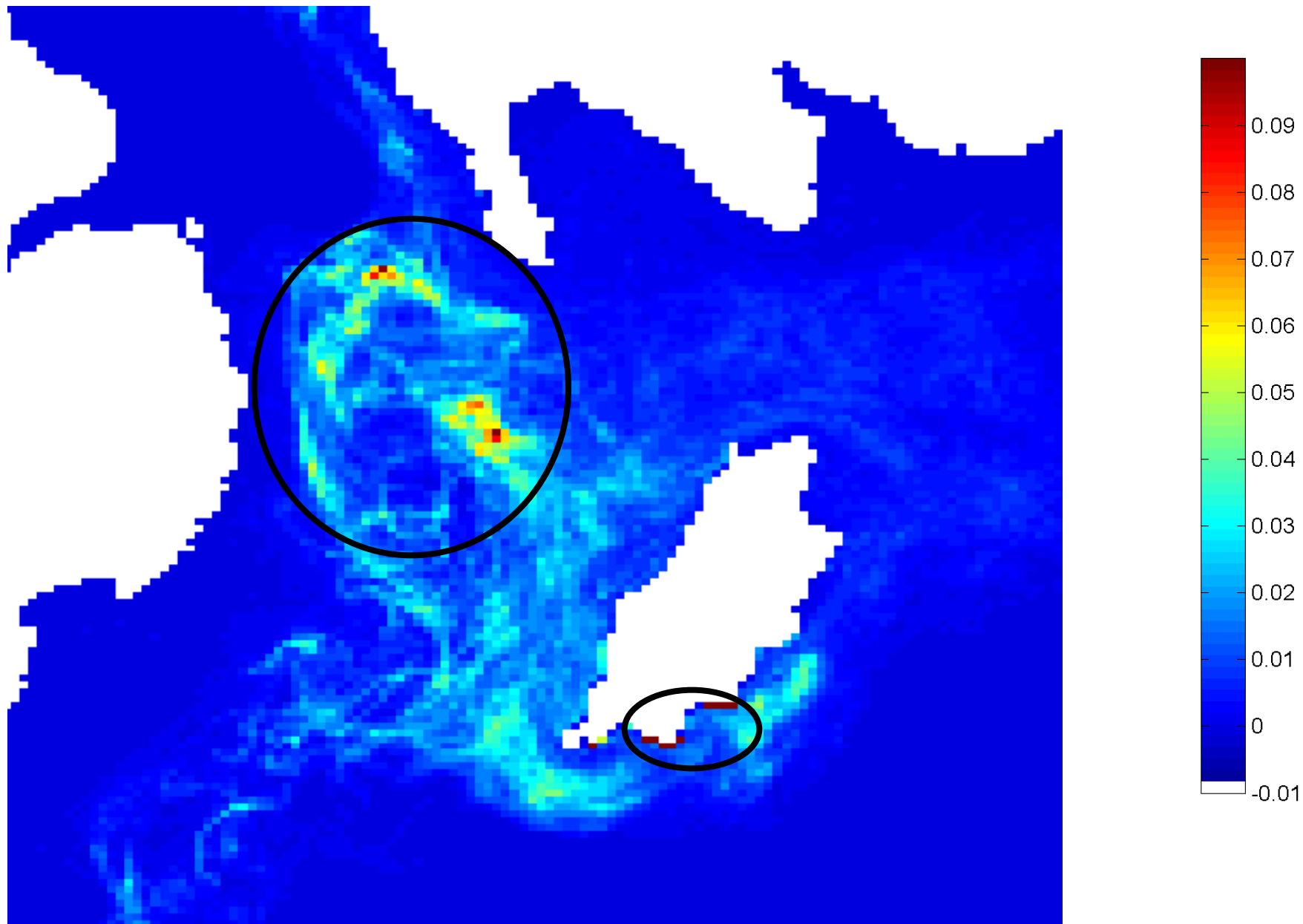


# Sink: Port Erin – 35 days in reverse

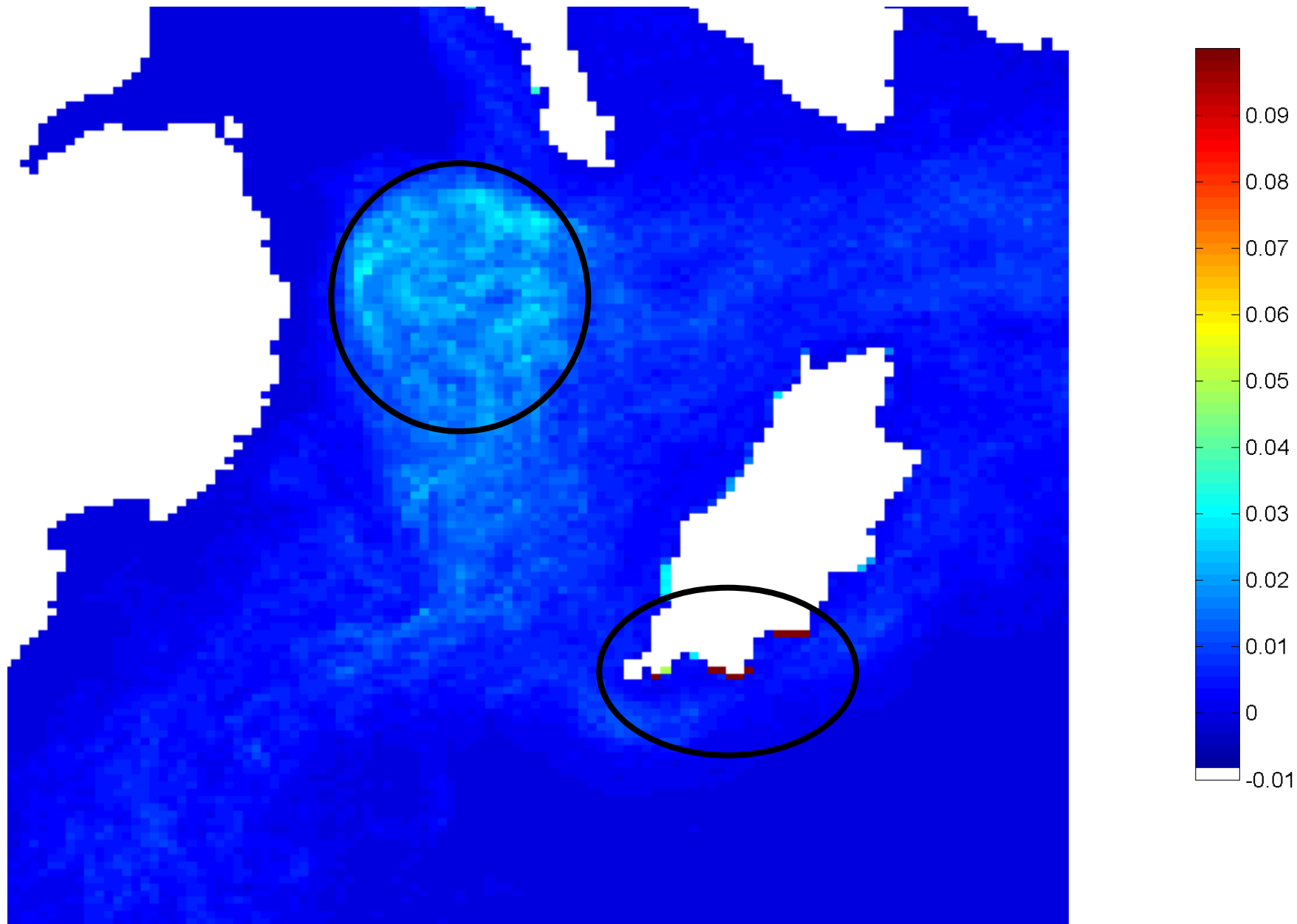




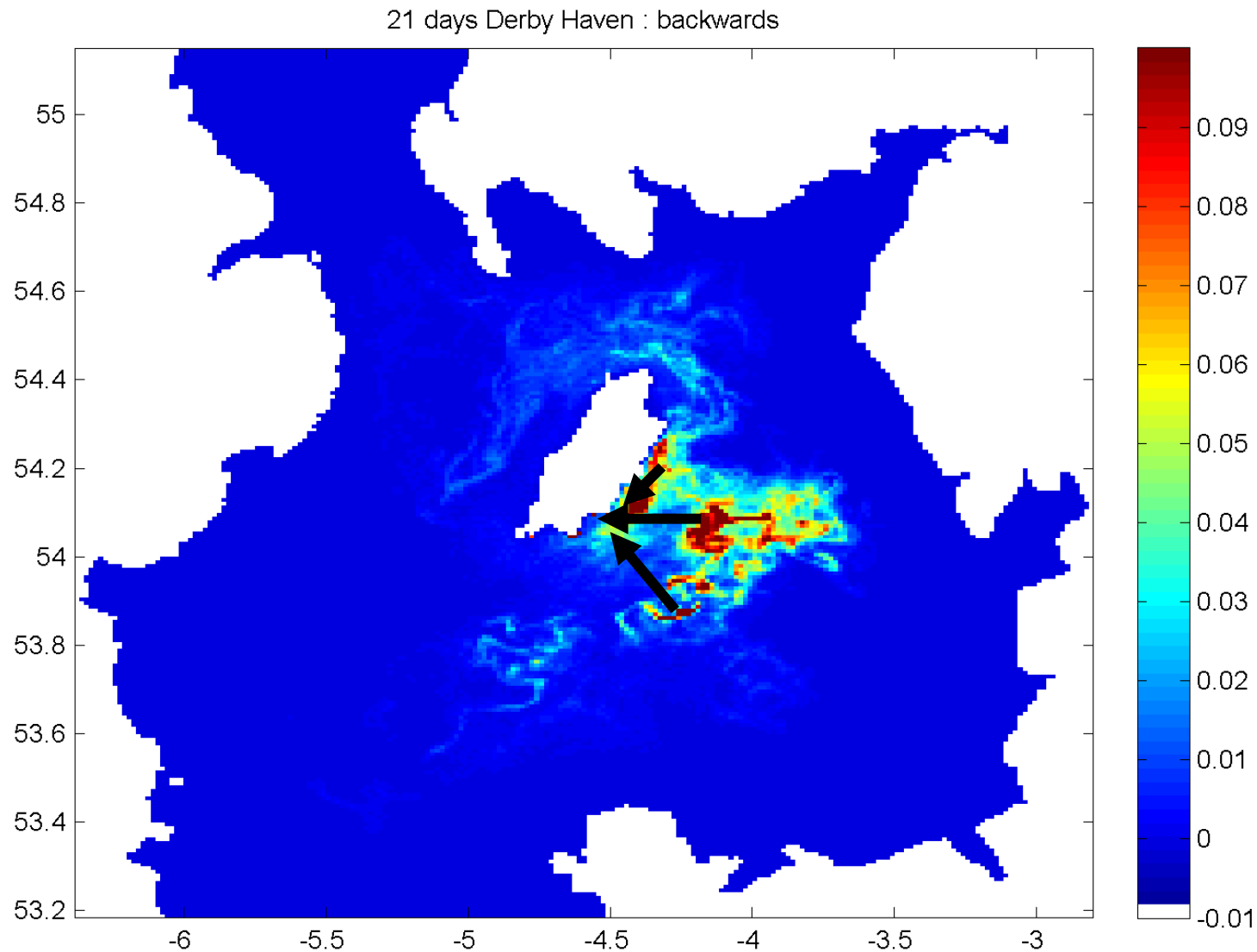
Source: Derbyhaven – 21 days post release



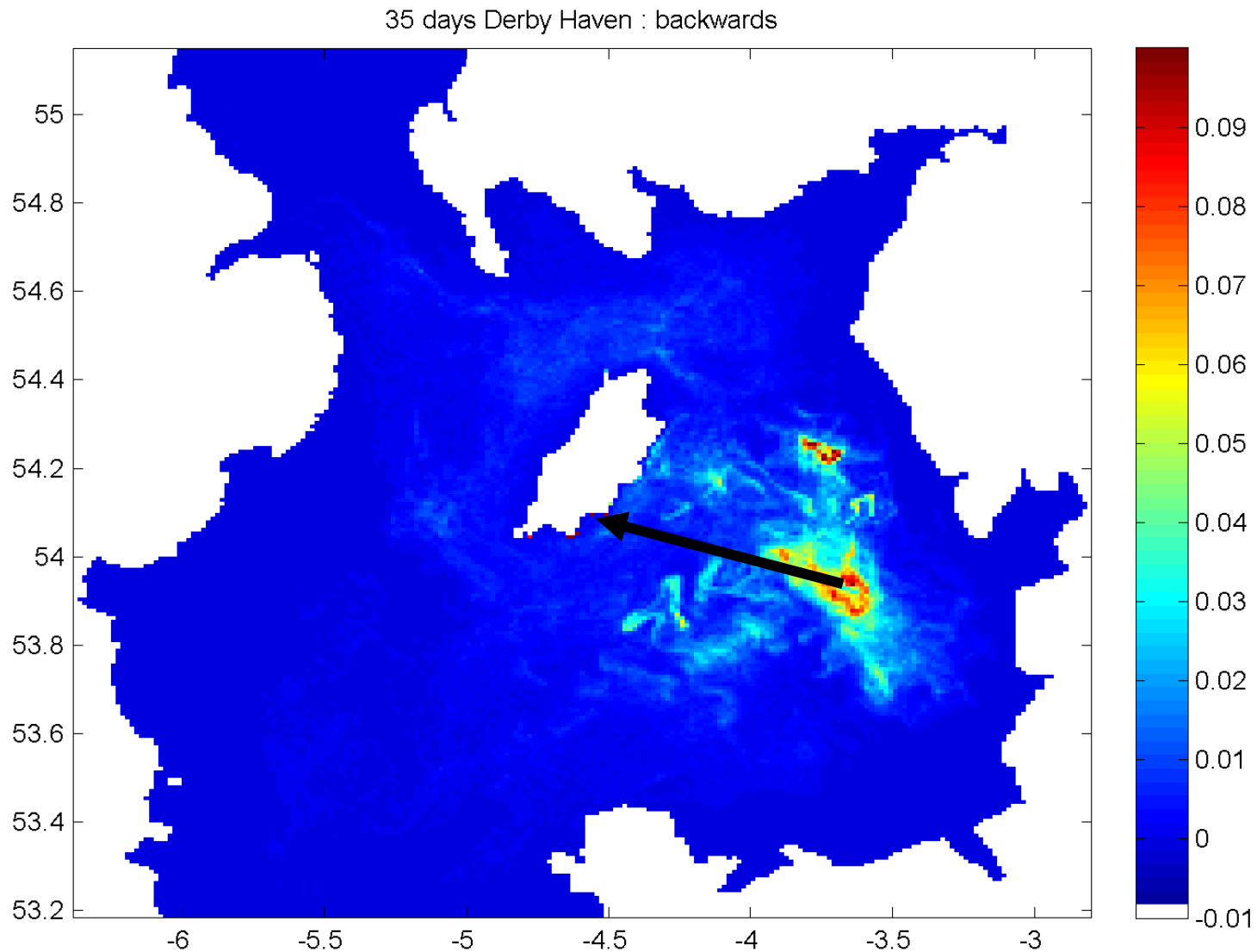
Source: Derbyhaven – 35 days post release



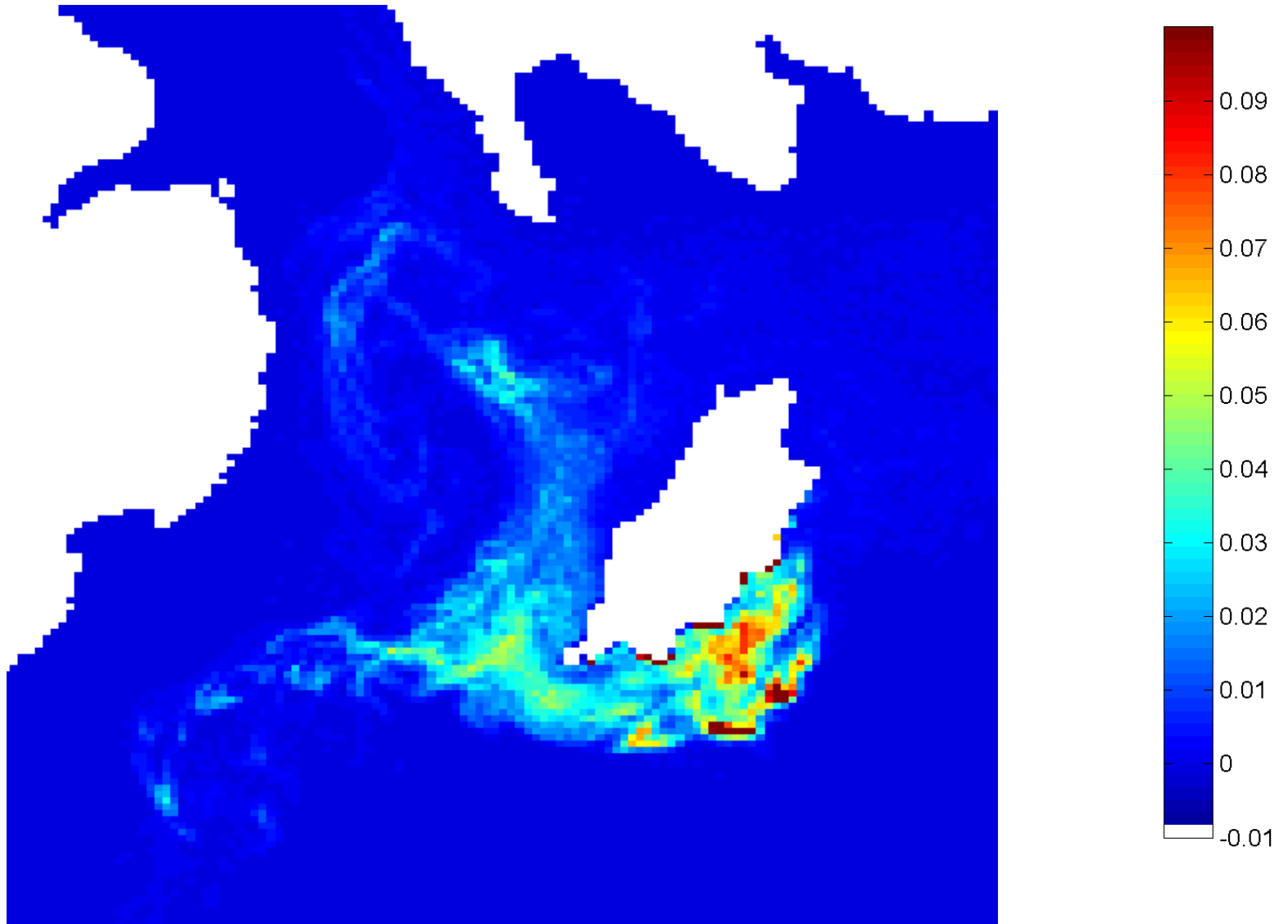
# Sink: Derbyhaven – 21 days in reverse



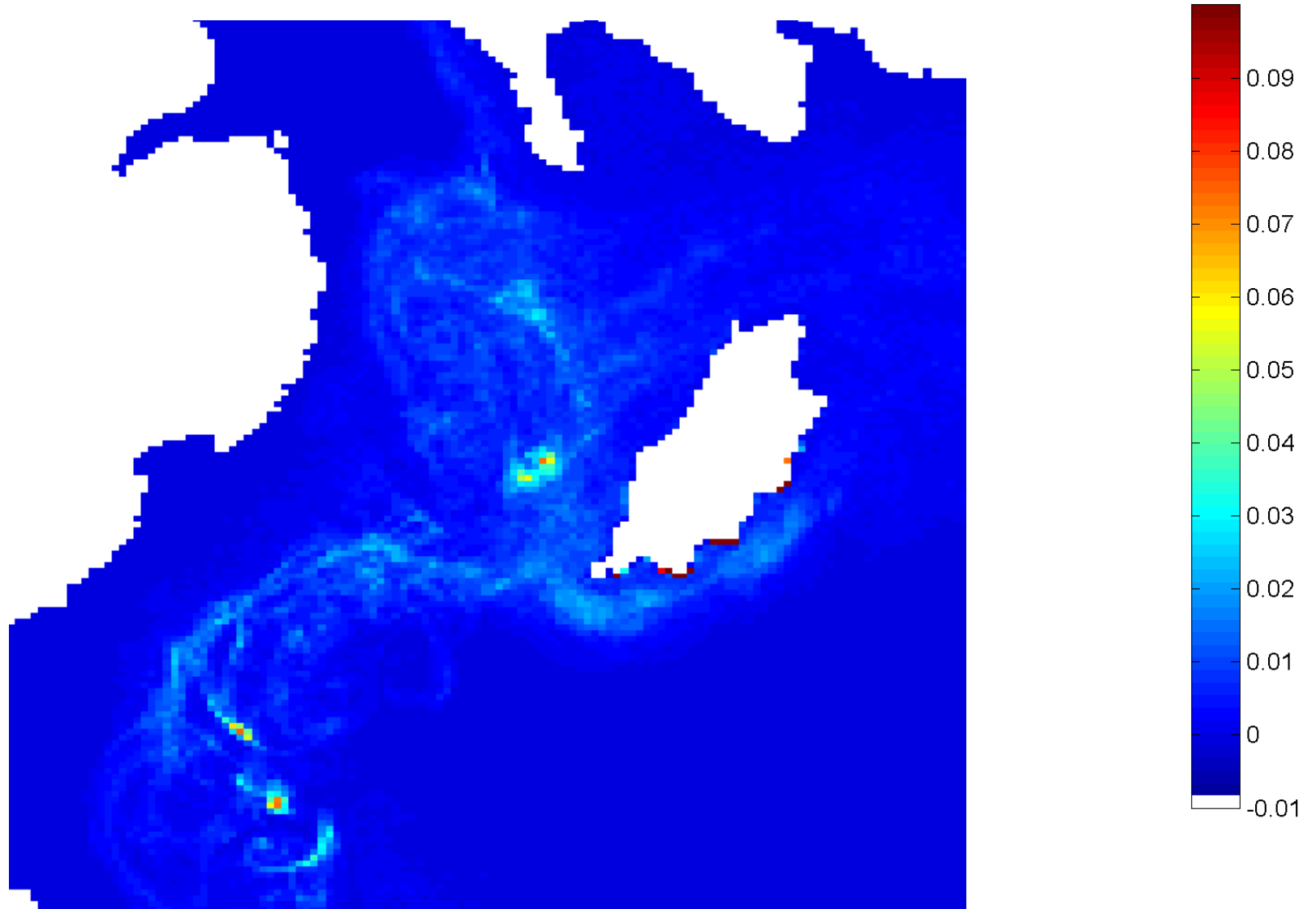
# Sink: Derbyhaven – 35 days in reverse



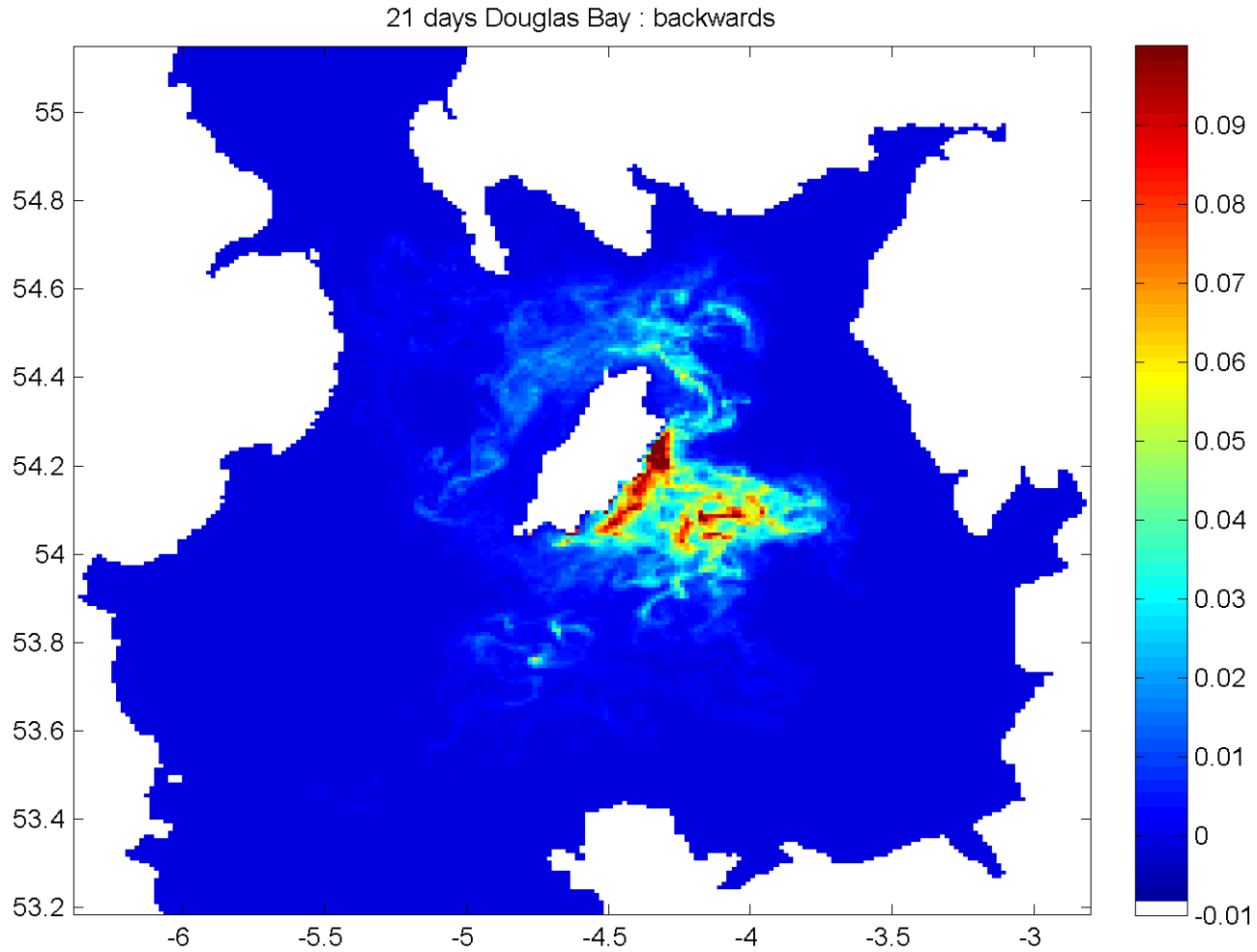
Source: Douglas Bay – 21 days post release



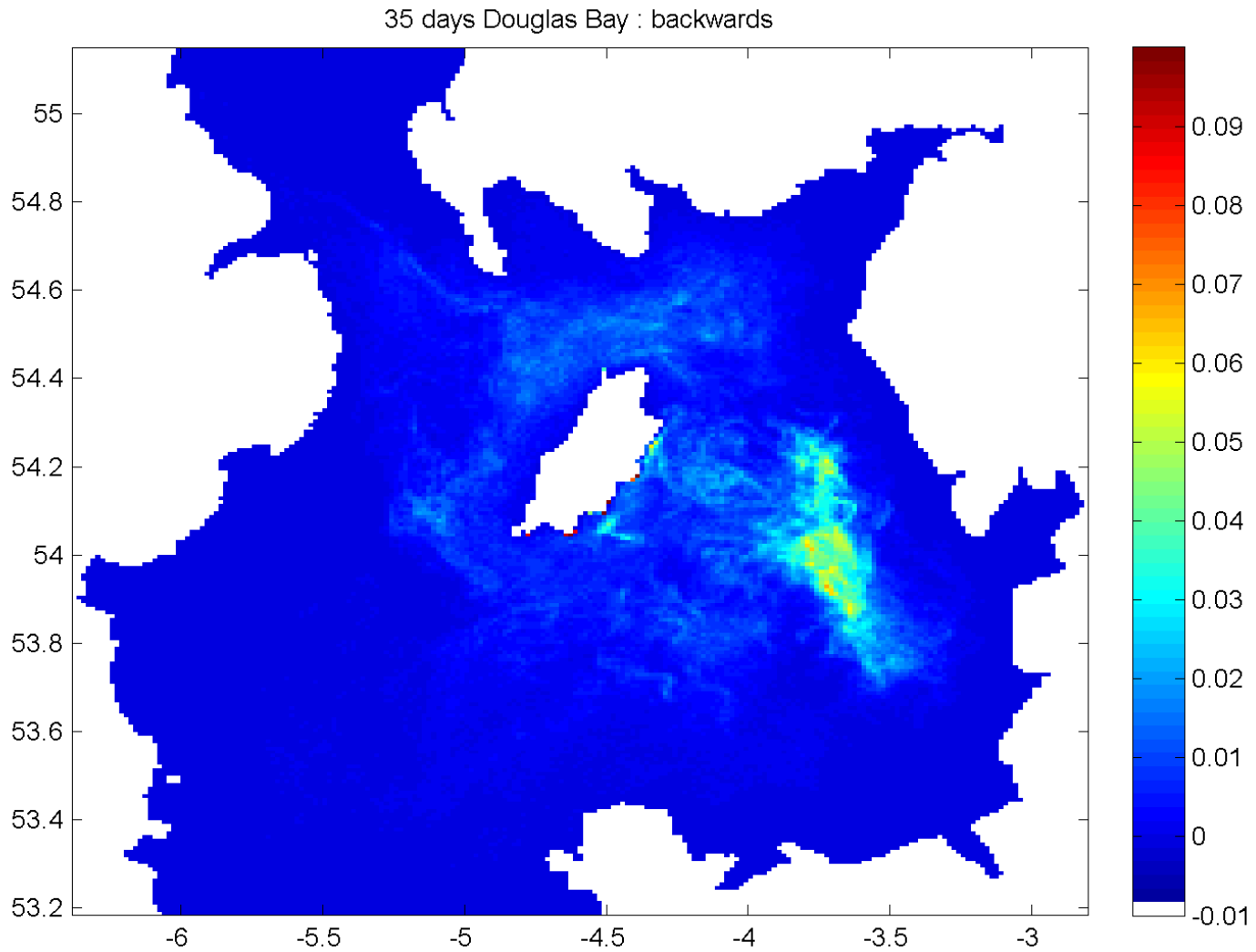
Source: Douglas Bay – 35 days post release



# Source: Douglas Bay – 21 days in reverse

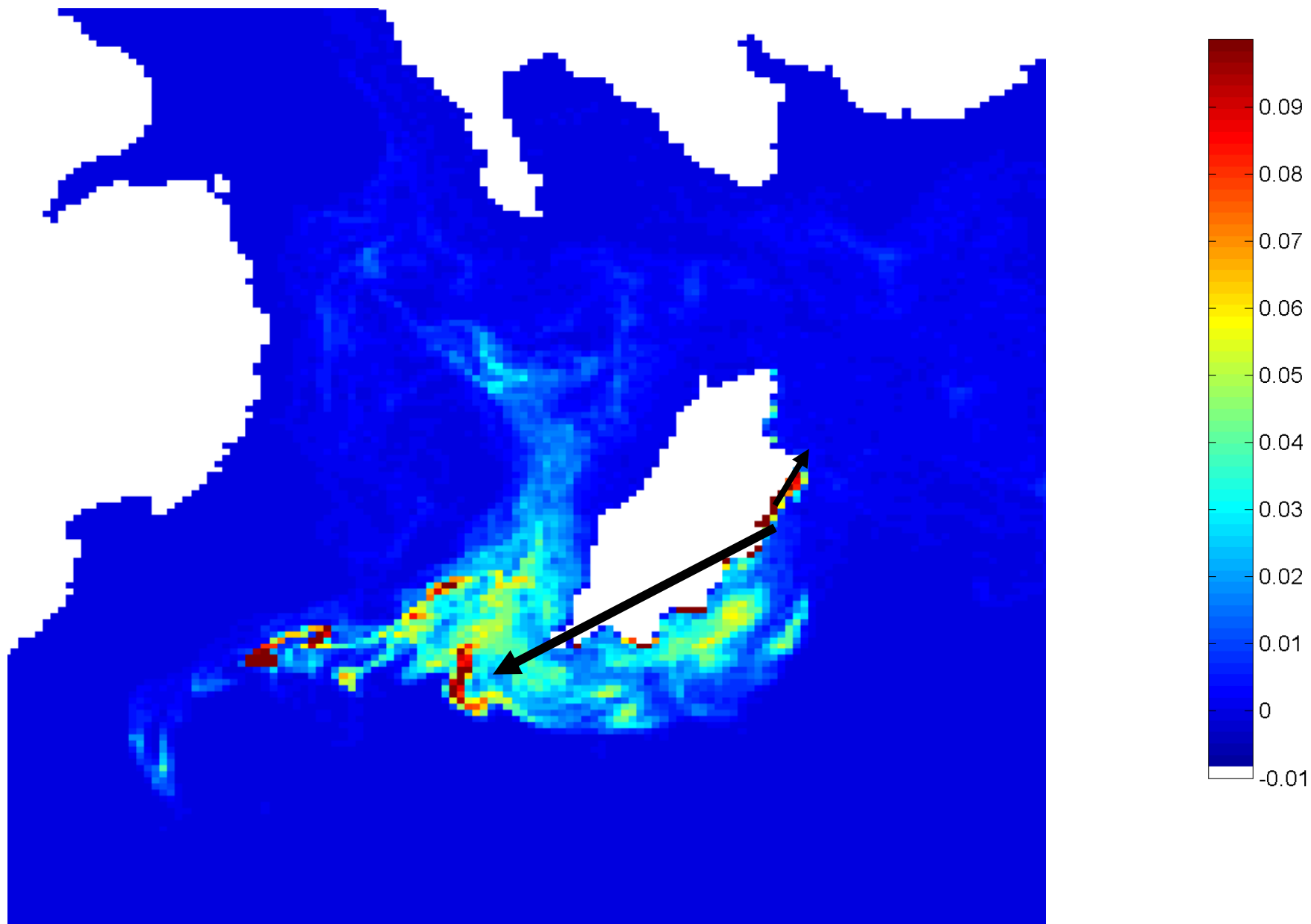


# Source: Douglas Bay – 35 days in reverse

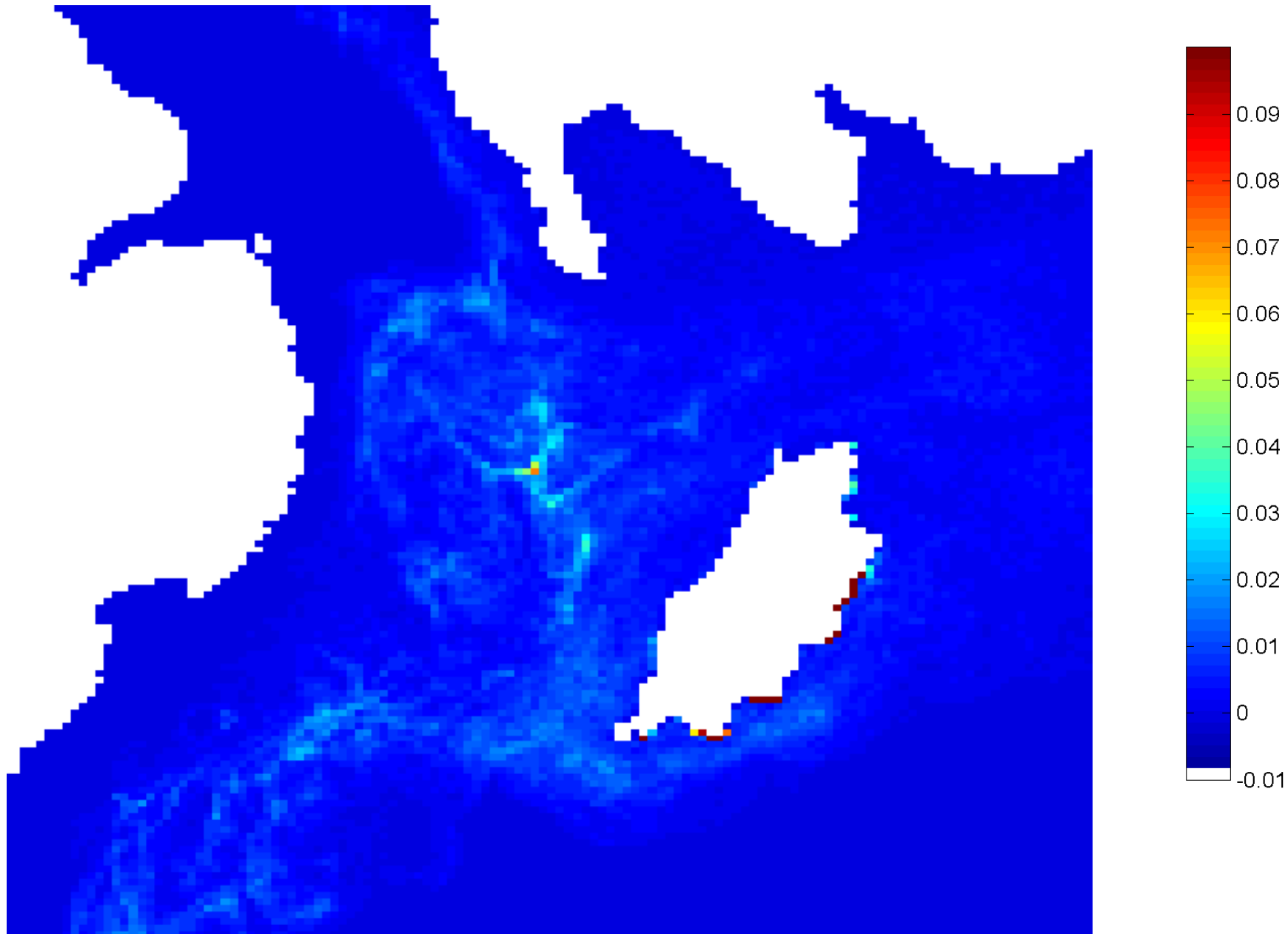




Source: Laxey Bay – 21 days post release

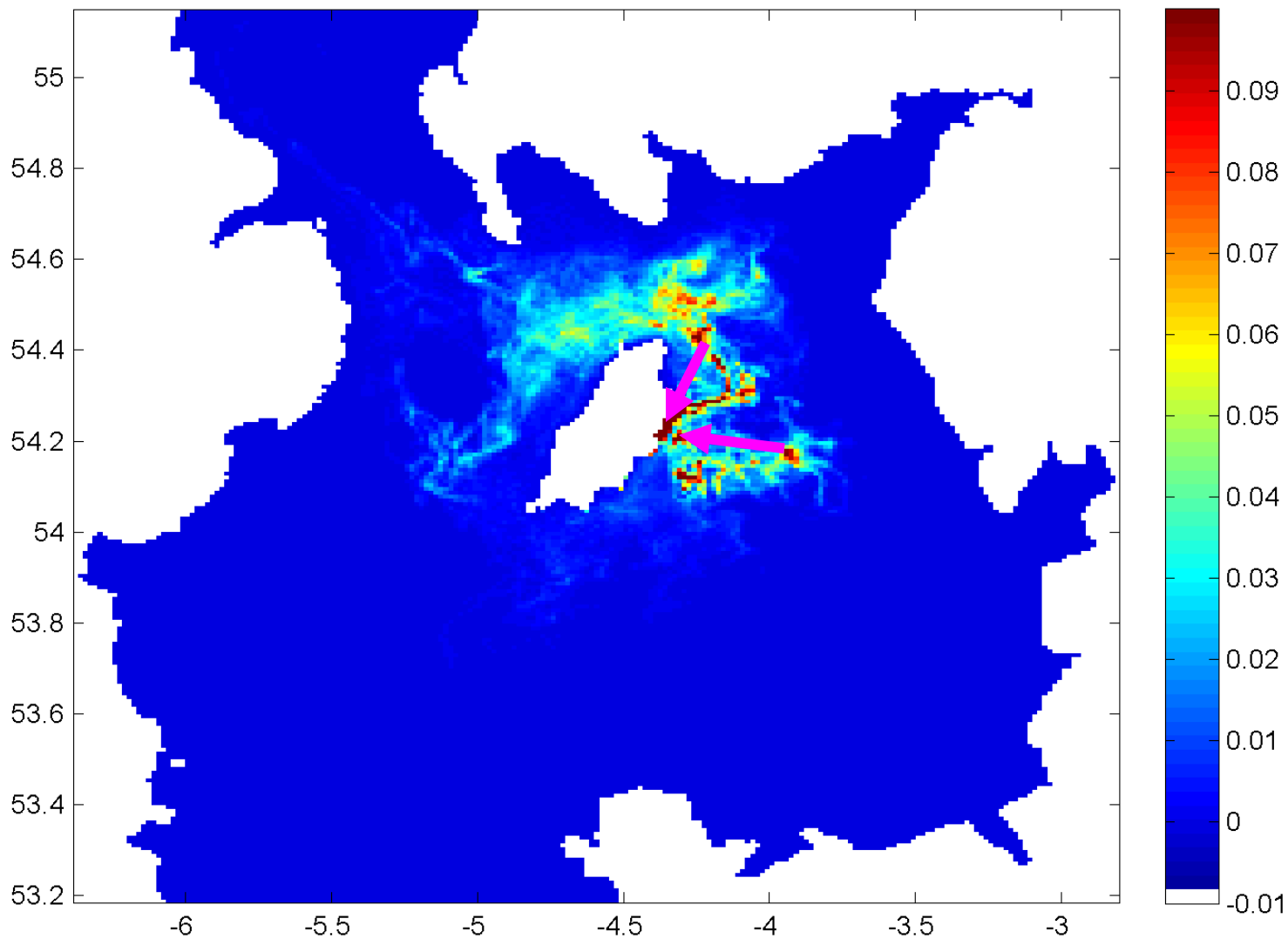


Source: Laxey Bay – 35 days post release

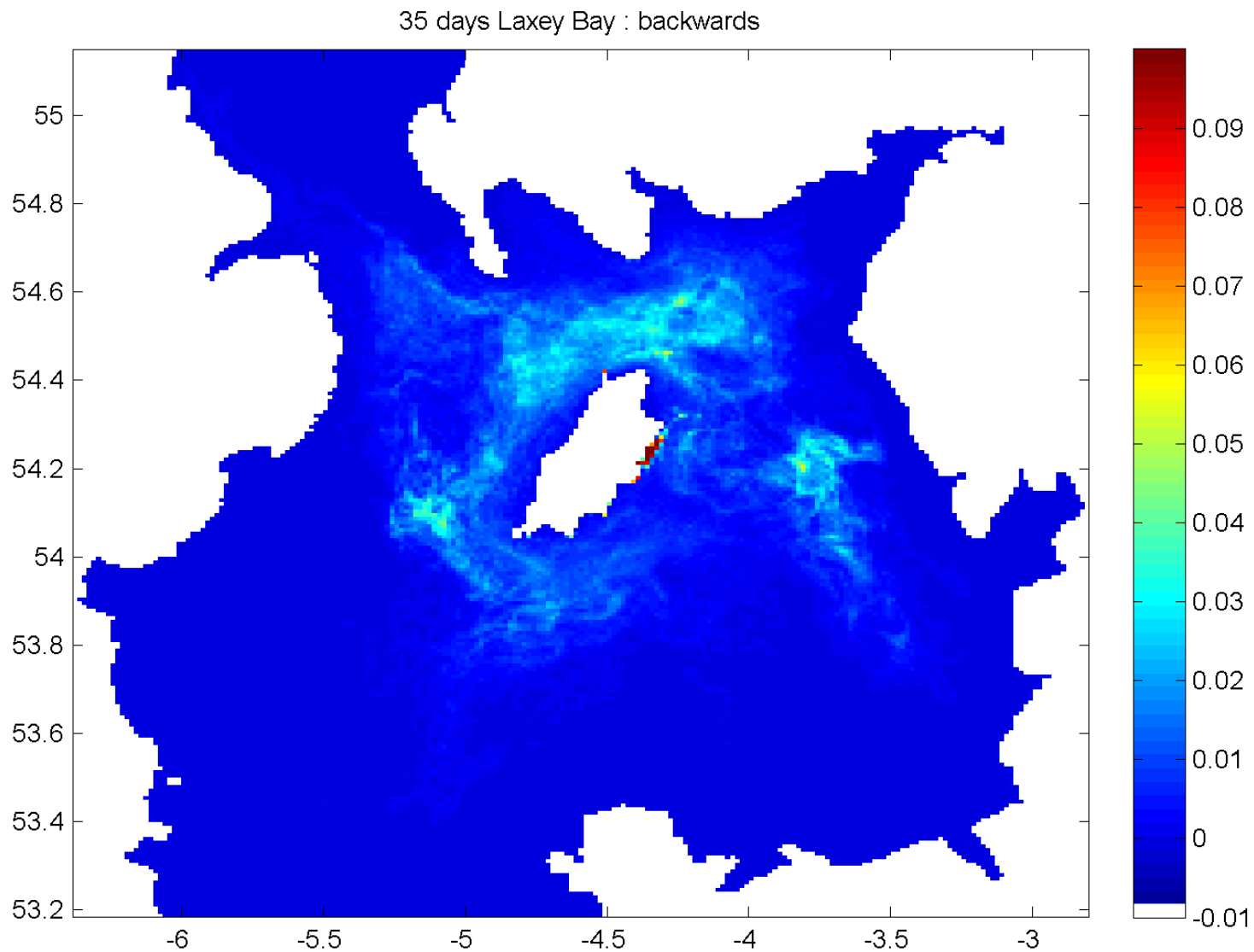


# Sink: Laxey Bay – 21 days in reverse

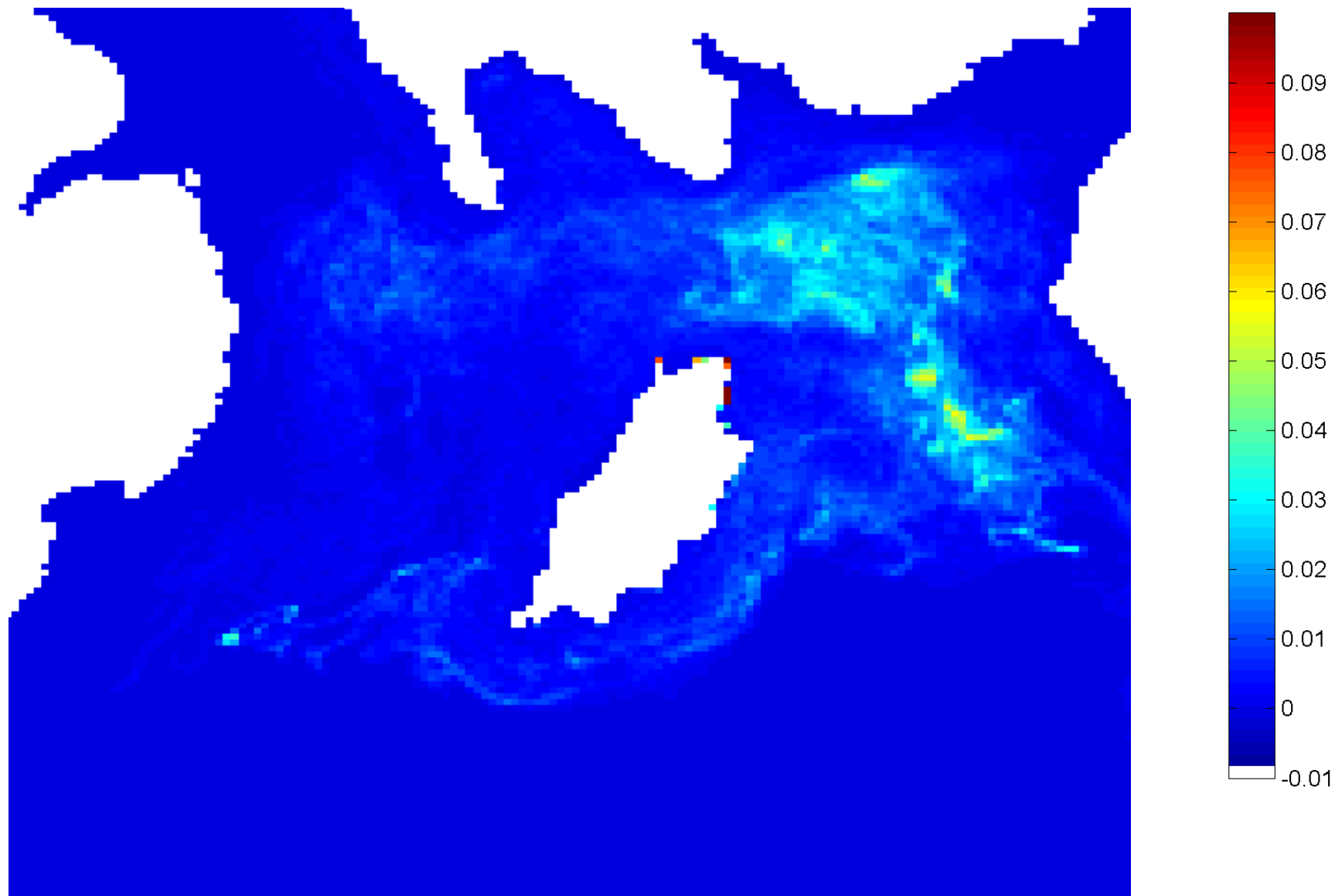
21 days Laxey Bay : backwards



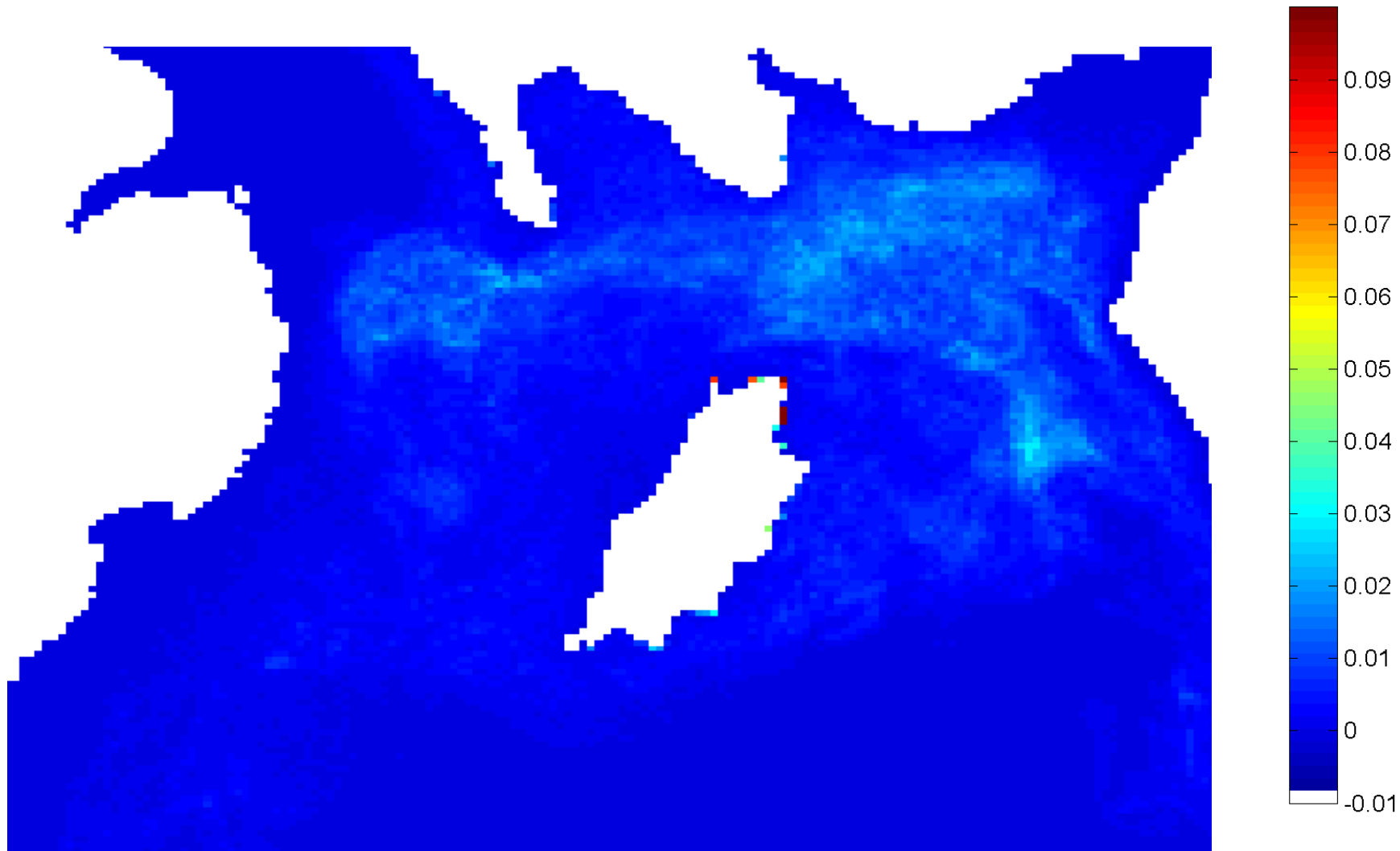
# Sink: Laxey Bay – 35 days in reverse



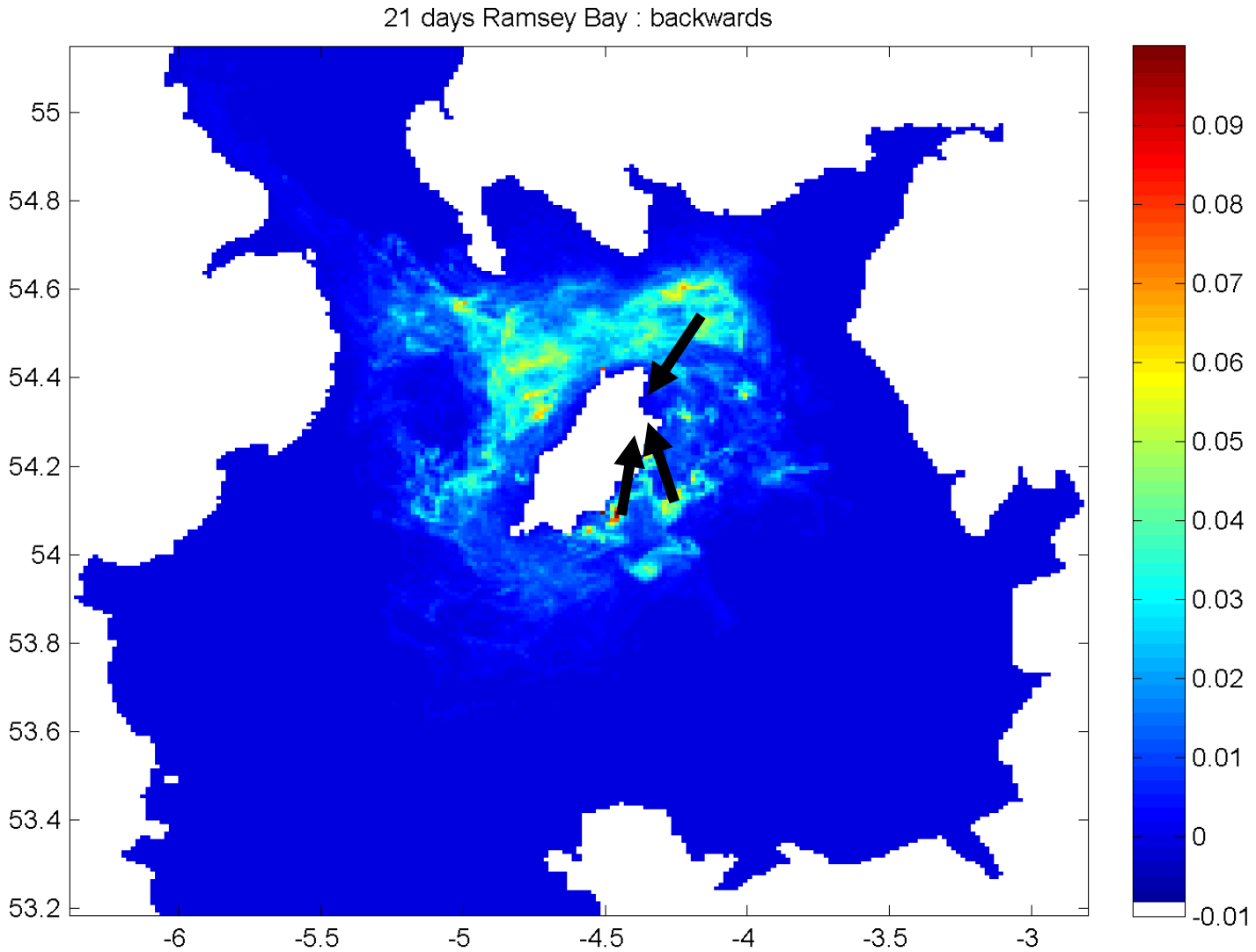
Source: Ramsey Bay – 21 days post release



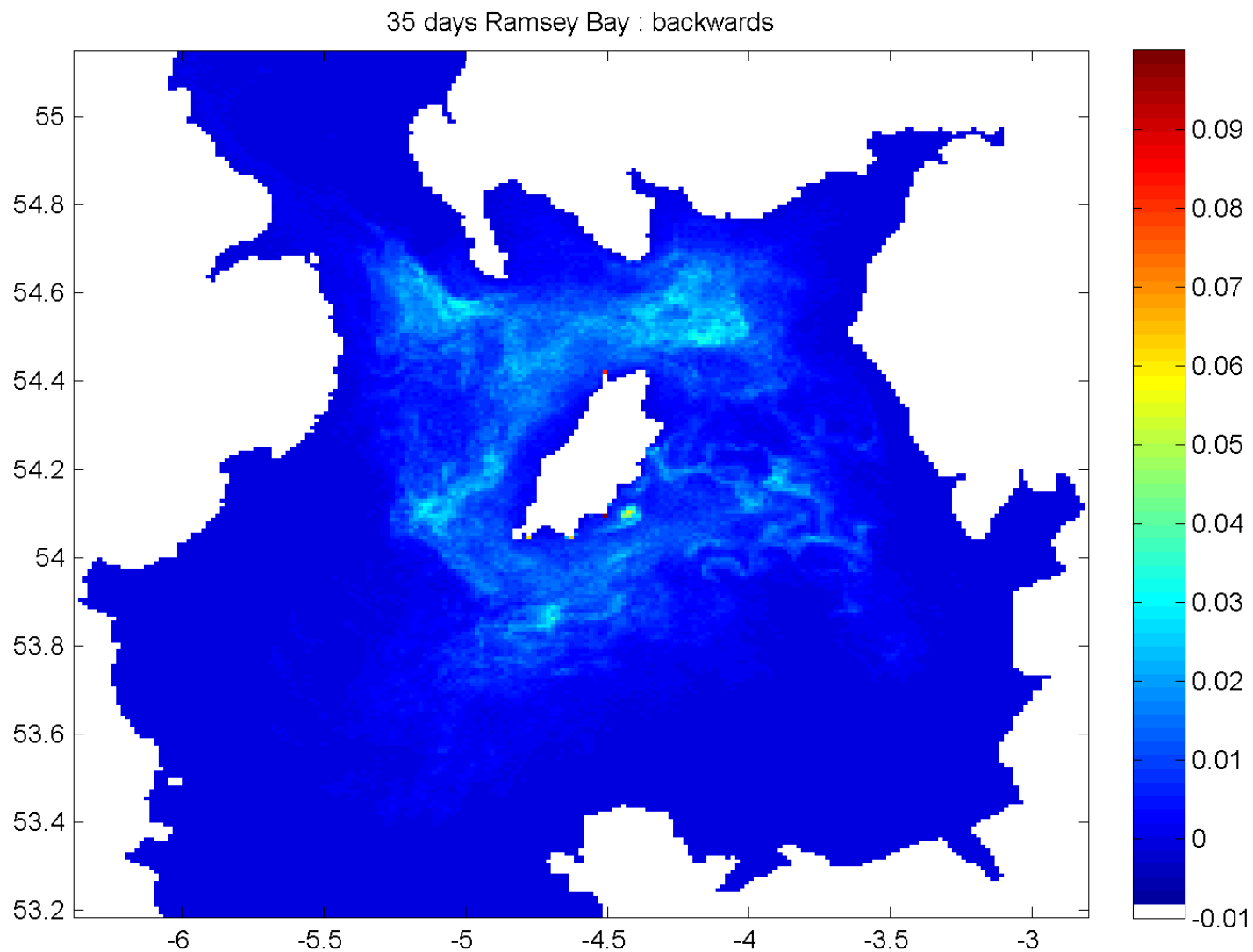
Source: Ramsey Bay – 35 days post release



# Sink: Ramsey Bay – 21 days in reverse



# Sink: Ramsey Bay – 35 days in reverse





# Conclusions

- **Port Erin supplies the Targets and to some extent the south.**
- **Laxey Bay and the surrounding coastal area (e.g. Douglas) seem to supply the southern grounds.**
- **Ramsay seems to be partly self seeding, supplies offshore and north west coastal areas.**
- **Beds to the east and south east of the IoM supply coastal scallop beds in Port Erin and the east coast of the Island.**
- **Closed areas in Laxey, Ramsay and possibly Douglas would increase resilience of the population.**