One way to safeguard Thames biodiversity is to enhance the ecology of river walls.

Audits of species and habitat along the River Thames have shown that river walls can maintain plant communities similar to those found on intertidal foreshores.

Visually, there appears to be a relationship between the physical complexity of walls and the amount of vegetation they support. At Deptford Creek, crevices and ledges created by the installation of timber fenders on sheet piling resulted in the development of plant communities that would typically be found on the intertidal foreshore under more natural conditions.

This physical complexity is also important for supporting faunal diversity. Research looking at the macroinvertebrate diversity of Thames flood defence walls showed that wall construction material influenced the biotic communities found, with the highest levels of diversity found on brick walls and lowest on concrete walls.

Factors such as the construction materials, age, condition, maintenance, size and periodicity of inundation of the river walls are likely to be important in determining the level of biodiversity these habitat features will support. In general, older and more exposed structures likely to support more complex communities.

Leaving the last line of defence against flood risk in a poor state of repair because it is a relatively simple way of improving biodiversity would certainly be negligent. There is reticence on the part of river managers to modify walls for this reason.

Extensive flood defence measures along the River Thames, which include the Thames Barrier and over 300 km of flood defence walls, may no longer suffice given the impacts of climate change. Extreme weather patterns will increase with time as will overall property losses. For example, TE2100 concluded that 350 sq km of estuary lands were at threat from inundation, potentially displacing 1.25 million residents from 500,000 homes at a cost of £200 billion.

Improvements to existing flood defences will be required. If so, why not take these potentially negative flood defence developments (which could further encroach into waterways) and enhance wall materials.
Encourage new developments to assist in creating wildlife to help reinstate an interconnected network of sites throughout the estuary (B2).

Ensure the establishment of an estuary wide network of nature conservation sites (Landscape scale) (B3).

Encourage the development of brownfield sites to embrace existing features of biodiversity, to enhance these where possible, and integrate them with regeneration (B4).

Examples of Delivery

- **Thames Landscape Strategy - 'greening river walls'**
  - Greening on river walls can provide an important educational resource. Green rivers and glimpses of fish will help change public perceptions of water quality, namely that the Thames is a ‘dead river’.
  - Green river walls provide amenity for residents who may not have access to private gardens. The Thames Path invariably follows the river’s edge. An increase in biodiversity provisions creates a healthier and more enjoyable recreation experience.
  - Green river walls can support sustainable urban drainage (SUDS) by absorbing rainfall to reduce flooding (see pictures).
  - A small vegetated test bed (3x1 meters) installed in Sheffield provided average stormwater volume retention of 34% over eleven storm events (average peak reduction of 57%).

- **Fisheries**
  - Greening on river walls can filter diffuse pollution from impermeable-surface runoff.

- **Water quality**
  - Vegetation on river walls can provide refuges for juvenile fish, molluscs and crustaceans. Submerged plastic strips attached to the river wall can provide a place for fish to lay eggs (see left picture).

- **Improving air quality**
  - Vegetation itself can influence air quality by filtering out pollutants.

- **Education and awareness**
  - Evidence from green roof installations in shows that small vegetation provisions can reduce atmospheric pollutants (SO2, NOx, CO, PM2.5) with an economic benefit of US$ 394.07 per hectare (at 2004 prices).

2003

- **'State of the Thames Estuary’**
  - Enhancements to flood defences need to allow for space for biodiversity.

- **'Tidal Thames Habitat Action Plan’**
  - Identify and promote opportunities for new environmental approaches to flood defence design.

2005

- **'Thames Strategy East’**
  - Negative developments should be offset by the creation and/or enhancement of habitats that contribute to strengthening the ecological connectivity.
  - Opportunities should be sought to enhance biodiversity along the river edge and the urban fringe environment through planting, appropriate management and protection of the foreshore (RG 8.7).
  - Protect the vegetation communities established on the sloping, vertical and hard river flood defence walls downstream of Tower Bridge and encourage habitat provision on existing sterile river walls (RG 1.11).

2008

- **'The London Plan: Spatial Development strategy for Greater London’**
  - Developments should make a positive contribution, using green infrastructure, to the protection, enhancement, creation and management of biodiversity (Policy 7.19 C).

2011

- **'Management Guidance for the Thames Estuary’**
  - ‘To maintain and enhance the diversity and populations of habitats and species supported by the Estuary...’

- **'Connecting with London’s nature’ - Mayor’s Biodiversity Strategy**
  - London’s rivers and waterways are important components of green corridors. An expansion of this corridor network will greatly benefit London’s biodiversity.

- **'Tidal Thames Habitat Action Plan’**
  - Encourage the development of brownfield sites to embrace existing features of biodiversity, to enhance these where possible, and integrate them with regeneration (B4).

- **Thames Estuary Partnership**
  - Encourage new developments to assist in creating wildlife to help reinstate an interconnected network of sites throughout the estuary (B2).

- **Ensure the establishment of an estuary wide network of nature conservation sites (Landscape scale) (B3).**

- **Encourage the development of brownfield sites to embrace existing features of biodiversity, to enhance these where possible, and integrate them with regeneration (B4).**

- **'State of the Thames Estuary’**
  - Enhancements to flood defences need to allow for space for biodiversity.

- **'Tidal Thames Habitat Action Plan’**
  - Identify and promote opportunities for new environmental approaches to flood defence design.

1999

- **2002**
  - **‘Connecting with London’s nature’ - Mayor’s Biodiversity Strategy**
  - London’s rivers and waterways are important components of green corridors. An expansion of this corridor network will greatly benefit London’s biodiversity.

- **Enhancements to existing river walls can bring about small scale biodiversity gains. In particular, by designing new waterside developments in a way that increases habitat value.**

2003

- **2005**
  - **'The London Plan: Spatial Development strategy for Greater London’**
  - Developments should make a positive contribution, using green infrastructure, to the protection, enhancement, creation and management of biodiversity (Policy 7.19 C).

2008

- **2011**
  - **'Management Guidance for the Thames Estuary’**
  - ‘To maintain and enhance the diversity and populations of habitats and species supported by the Estuary...’

- **'Connecting with London’s nature’ - Mayor’s Biodiversity Strategy**
  - London’s rivers and waterways are important components of green corridors. An expansion of this corridor network will greatly benefit London’s biodiversity.

- **Enhancements to existing river walls can bring about small scale biodiversity gains. In particular, by designing new waterside developments in a way that increases habitat value.**