

# Thanet Coast's 'Non-native marine species' {School Notes}

Non-native species - sometimes referred to as 'invasive' or 'alien' species - are species that would not naturally occur in a particular ecosystem.

## 1. Introduction to non-native species

**Slipper Limpet** - *subtidal, frequently washed ashore*



**UK:** 50 species – (14 alga, 5 diatoms, 1 angiosperm & 30 invertebrates; 2008) & increasing!

a) Introduced directly (oyster farming) or indirectly (ballast)

How they travel:

Shipping: - ballast water, on ship's hulls or on floating rafts. Estimate 3,000 species transported everyday through commercial shipping and into ports.

## 2. Issues of invasive species

**Sargassum or Japweed** – *found in Walpole Tidal Pool & gullies on the Cliftonville chalk reef*



### Threats

- Disturbance of natural ecosystems
- species competition for food and space (may eat or breed with native species!)
- transfer of disease and physical damage to equipment (eg Toxic alga blooms; or clogging of boating areas)

## 3. Researching or managing 'non-native' species

**Pacific Oyster** – *found extensively over the north Thanet Coast chalk reef, and in Ramsgate*



### Controls:

- Ballast waters treated (filter water; heat treatment; oxygen taken away; chemicals)

Future:

- Suggested it could increase with global warming – exotic species can establish as may now be more suitable!

### Research/Studies

- on presence; distribution; & effects of non-native species

## Other non-native introductions:

Wakame (*Japanese Seaweed*) – found in Ramsgate Harbour, Kent



Eliminus spp (*Australian or Darwin Barnacles*)



Chinese Mitten Crab

Leathery Sea Squirt



**Background:** for species that would not naturally occur in a particular ecosystem.

### Definitions

A **biological invasion** happens when an organism arrives somewhere beyond its previous range of distribution (Williamson, 1996), and impacts upon indigenous ('native') species. Therefore, a biological invasion "produces a significant change in terms of community composition" (Cronk & Fuller 1996).

### Causes

#### Natural expansion:

- Physical or biological barriers disappear. (e.g. through tectonic movements that connect previously separate water bodies)

#### Human origin (anthropogenic):

- Deliberate or accidental releases (e.g. escapes from aquaria, aquaculture activities): Pacific Oyster  
- Human-mediated transport (e.g. ballast water, fouling organisms): Wakame

### Phases

1. **Arrival** - dispersal within a new region.
2. **Establishment** - persists by means of local reproduction, recruitment & may also involve local spread.
3. **Integration** - new invader and new region species respond to each other ecologically and evolutionarily (e.g. competition, new host, hybridisation). Colonises new habitat then – but integration may not occur.
4. **Spread** - increases its geographical distribution within the new region.



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