L.Kraufvelin, C.Pansch, S.Rühmkorff, G. Hattich

After the heatwave

What can happen in Baltic Sea coastal habitats after a marine heatwave?

Blue mussels & clams

Mussels may survive if they can close their shells and reduce metabolism, but prolonged heat can cause mass mortality. Clams **may** burrow deeper to escape heat, but oxygen depletion in sediments can be fatal.

Amphipods & isopods

Some species may die off due to heat or oxygen stress. Others may recolonize quickly when conditions stabilize, especially if predators are reduced.

Fucus vesiculosus (bladderwrack)

May suffer tissue damage or dieback, especially in shallow areas. If weakened, it becomes more vulnerable to epiphytic algae. Loss of canopy reduces shade and shelter, impacting the entire community.

Perch (Perca fluviatilis)

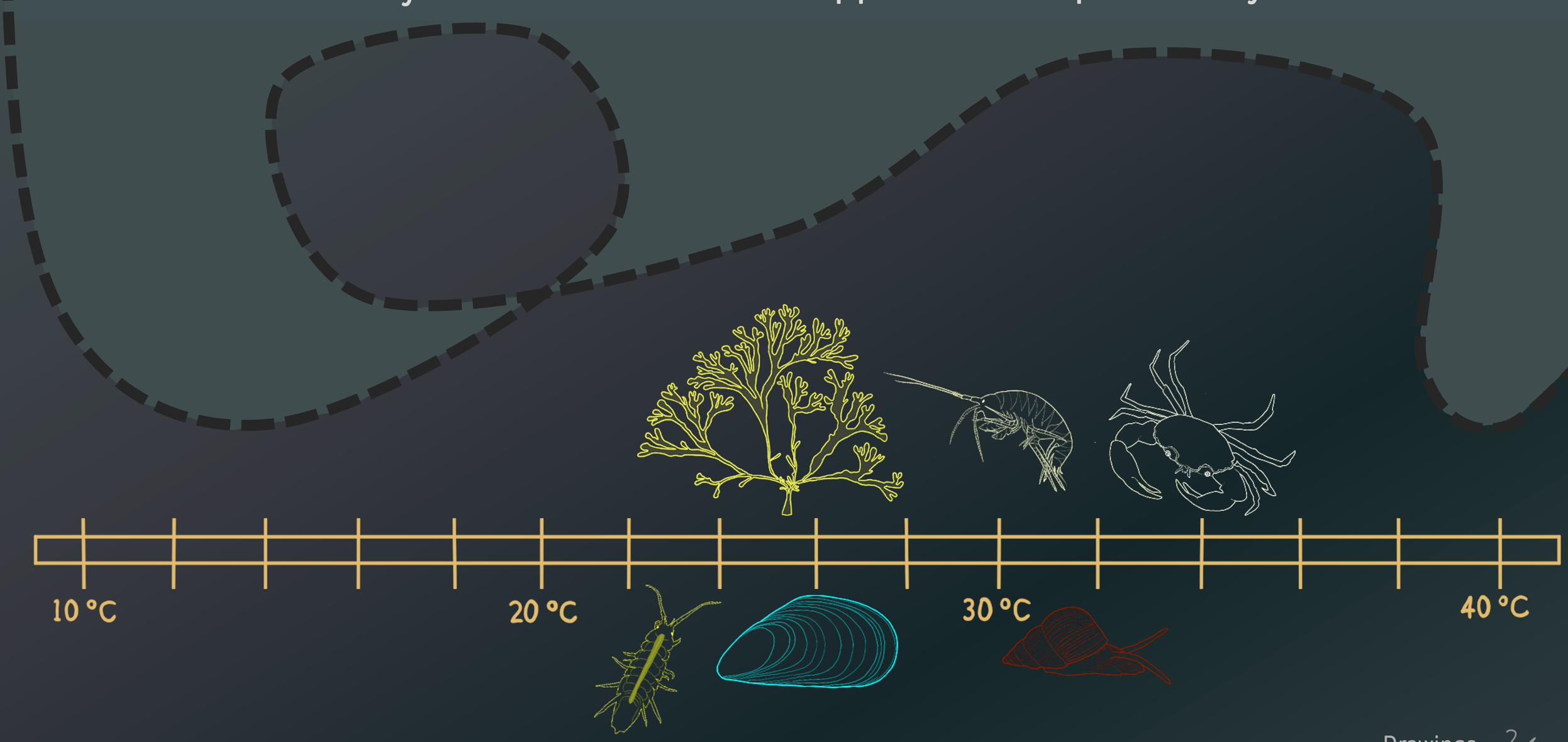
Is very temperature tolerant but likely to move to deeper or cooler waters during the heatwave. May return post-event, but prey availability and habitat structure (e.g., *Fucus* cover) may be reduced.

Non-indigenous mud crabs

Often more heat-tolerant than native species. May gain a competitive edge post-heatwave, especially if predators or competitors decline.

Ecosystem-Level Effects

- Loss of structure: If *Fucus* is damaged, the habitat becomes less stable.
- Algal blooms: Heat and nutrient release can trigger blooms of algae – smothering *Fucus*
- Community shifts: More heat-tolerant or opportunistic species may dominate.



Drawings: