Beach Task

Littorina obtusata (Fjugstad coast, May 3)

Name: Littorina obtusata

Description: Littorina obtusata is also known as flat periwinkle. The biggest Littorina obtusata can get to 13.5mm. The habitat defines the shell's colour – on sheltered shores more uniform, lighter colour like yellow, brown orange or olive green; on exposed shores it is darker and checkered.

Habitat: It's a sea snail in regions where brown seaweeds grow as well, such as the Baltic Sea and European waters. Its habitat is the littoral and sublittoral zone, with rocky shores and piers.

Carcinus maenas (Fjugstad Coast, May 1)

Name: Carcinus maenas

Description: Its body is up to 6 cm long and 9 cm wide. Outside its native area it can be larger. The colour can vary from green, brown, grey to red. This colour depends on environmental factors.

Habitat: This crab is a common crab of the littoral zone. It can be found in the north-east Atlantic Ocean and Baltic sea, but has adapted to Australia, South Africa and the Pacific coasts for example. It is an invasive species. Carcinus maenas can live in areas with different environmental given conditions – estuaries, coasts with mud, sand or rock, marshes - as it can tolerate a wider range of salinity and temperature.

Food: It eats mollusks, worms and small curtaceans.

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Mytilis edulis (Fjugstad Coast, May 1)

Name: Mytilis edulis

Description: Mytilis edulis, also called blue or common mussel is an edible mollusc. They are also grown in aquaculture. It has a somewhat triangular shape with rounded edges. The growth lines are visible on the smooth shell. The colour varies form purple, blue to brown. Blue mussels play an important role by removing bacteria and toxins from the water.

Habitat: The are found around the world. – on the coasts of the North Atlantic and the Pacific in temperate to polar waters. In Europe you might stumble across the empty shells from the French Atlantic coast all the way north to Iceland. They live in intertidal areas, attached to rocks or other hard items.

Food: Mytili edulis are filter feeders, which means that they receive their food by filtering water.

Littorina littorea (Fjugstad Coast, May1)

Name: Littorina littorea

Description: Littorina littorea, also called common periwinkle, is a small edible sea snail. It has a dark, sometimes bended shell. The shell is thick and sharply pointed. The colour can vary from gray to grayish-brown wit dark spiral bands, similar to the inside which is chocolate brown. It does not have a umbilicus. The shell can be around 1cm wide with a length between 16-38mm and a height up to 52mm.

Habitat: Littorina littorea lives in intertidal areas, with rocky shores in the northeaster, northwester Atlantic Ocean, like Spain, France up to Scandinavia or Russia.

Food: It is an omnivore, that feeds an algae or small invertebrates.

Talitrus saltator (Fjugstad Coast, May 1)

Name: Talitrus saltator

Description: Talitrus saltator is a sand hopper. It is characterized by its 'hopping'. They can reach a length from 8.2 – 16.5 mm. Usually males are a bit bigger than female sand hoppers. The body can be grayish-brown or grayish-green in colour with antennae.

Habitat: It is usually found on the sandy coasts of Europe. They are active during night and during the day they are buried in depths of 10-30cm.

Food: Talitrus salatator consume rotting seaweed from the coast.

Venerupis rhomboide (Fjugstad Coast, May 1)

Name: Venerupis rhomboide

Description: It has robust shells with the umbones turned-in.

Habitat: This species can be found in the benthic zone in a range of 0-25m water depth. It can be found in the northeast Atlantic.

Crassostrea gigas (Fjugstad Coast, May 1)

Name: Crassostrea gigas

Description: Crassostrea gigas are also called Pacific oysters. The shell varies with the region that it is found int. The colour is usually whiteish. The mature species can be between 80 to 400 mm long. It is also edible.

Habitat: It is native in the Pacific coast of Asia but has been introduced to North America, Australia, Europe and New Zealand. It can be found in estuaries, intertidal and subtidal zones, up to 40m deep. The also adapt to a more muddy or sandy area when their habitat does not offer the preferred rocks.

Theridiidae (Fjugstad Coast, May 1)

Name: Theridiidae

Description: The webs they web can be very divers, used to trap ants or insects on the ground with a sticky silk trap for example.

Habitat: This species is the most common and globally distributed spider found across the world.

Nassarius reticulatus (Fjugstad Coast, May 1)

Name: Nassarius reticulatus

Description: Nassarius reticulatus are small European sea snails, which get up to 35mm long. The shell is pointed at the top. The colour varies from yellowhis white or reddish with a blackish blue band. It has stripes that go lengthwise as well as around the shell.

Habitat: This species can be found in the northeastern Atlantic, Europe and the Atlantic at the Azores or Canary Islands.

Sepia officinalis (Fjugstad Coast, May 2)

Name: Sepia officinalis

Description: The sepia officinalis is also known as common cuttlefish. It is one of the largest and most well-known cuttlefish. They can be up to 49cm in matle length. (which is their body) The sepia officinalis bury themselves in the sand during the day and are usually inactive. At night they are hunting. The picture shows the cuttlebone of a cuttlefish. It has two eys and eight arms to hold and move prey, two tentacles to capture their prey and radula to rear their prey apart. They are known for their ability to change their colour and texture according to their surroundings – camouflaging.

Habitat: This species is migratory, spending the summer and spring inshore and then the autumn and winter down in a depth between 100 and 200 m. It is native in the Mediterranean, North and Baltic sea. Subspecies have also been found in South Africa.

Food: The common cuttlefish are carnivorous, eating crabs as well as small fish or molluscs.

Chondrus crispus (Fjugstad Coast, May 1)

Name: Chondrus crispus

Description: Chondrus crispus is a red algae which can be found along the rocky shores of the Atlantic coast of Europe and North America. The colour can vary form greenish-yellow, to red, purple and purplish-brown and white. It grows in the intertidan and subtidal zone as well as the ground of the ocean floor. This shows that is able to survive with only a little sunlight.

Fucus serratus (Fjugstad Coast, May 1)

Name: Fucus serratus

Description: Fucus serratus is also known as serrated wrack because of its serrated fronds (leaves). It is very robust and olive-brown. The fronds are flat and about 2 cm wide. It has irregular branches. Fucus serratus can be found along the Atlantic coast of Europe, in the Canary Islands as well as the north-east coast America's.

Fucus spiralis (Fjugstad Coast, May 1)

Name: Fucus spiralis

Description: Fucus spiralis can be found along the Atlantic coasts of Europe and North America in the intertidal zones. It is also called spiral wrack. It is olive brown in colour and grows up to 30cm long. They are usually attached to a rock. It is not serrated and the ends after a lot of sun can be bloated.

Furcellaria lumbricalis (Fjugstad Coast, May 1)

Name: Furcellaria lumbricalis

Description: Is harvested for the production of carrageenan. As it is important as a habitat for many fish species to spawn, the government put restrictions on over-harvesting furcellaria lumbricalis. It can be found on both sides of the North Atlantic. As it can live in low salinity waters it can also be found in the Baltic Sea. Furcellaria lumbricalis has two different forms – loose-lying and attached.

Ulva intestinalis (Fjugstad Coast, May 1)

Name: Ulva intestinalis

Description: Ulva intestinalis is a green algae, which is also known as sea lettuce. It can be found world-wide.

1. *Zoning of animals and plants in littoral zone*

The littoral zone is also called intertidal zone. This is the part of the sea that is affected by the tides. The shoreline is one of the most dynamic environments as the landscape changes several times a day. The organisms living in this area have to be tough and adaptable to these circumstances of tide fluctuation. The shoreline needs to be distinguished by exposed or sheltered, rocky or sandy shores. Sheltered shores could be bays, whereas exposed shores are influenced by full wave activity.
The intertidal zone can be divided into several vertical zones (see Figure 3.16).

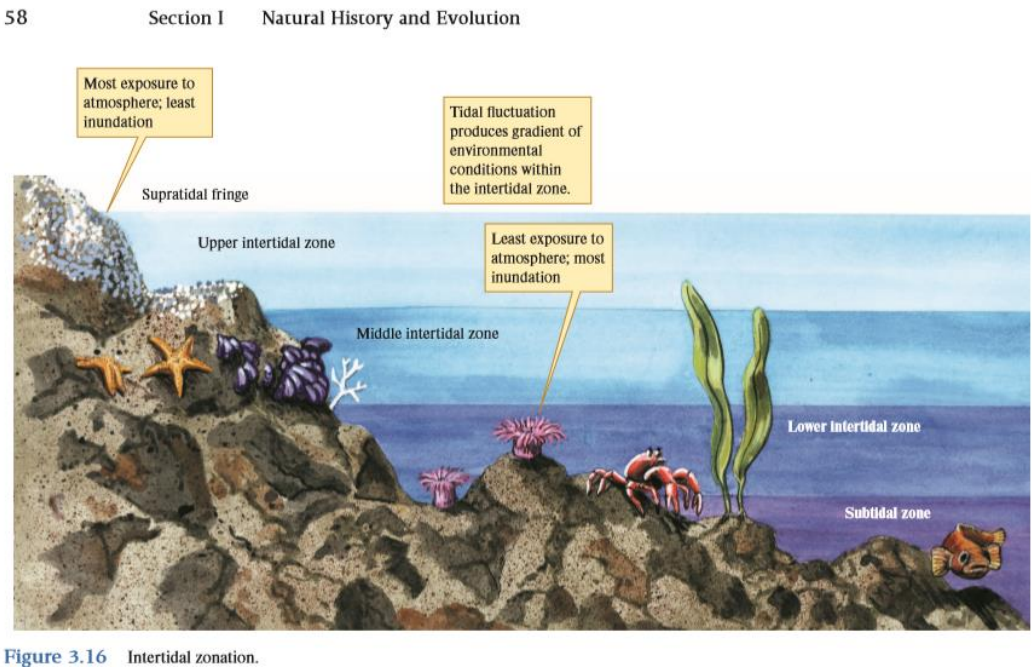

Figure 3.16 Intertidal zonation.

Splash zone = highest zone, seldom covered by high tides, often wetted by waves
Upper intertidal zone = covered during highest tides
Middle intertidal zone = covered and uncovered during average tides
Lower intertidal zone = uncovered during lowest tides
Subtidal zone = covered by water even during lowest tides

The high variability of light and temperature is another consequence of the tidal fluctuation and depending on the zone animals or plants live in, they will have to adapt to different circumstances. During high tide the organisms are exposed to little light, whereas during low tide some might be exposed to the full light of the sun. The temperature changes also depend on the area we look at in the world. Tide pools for example in high latitudes can cool to freezing temperatures during low tides. In tropical and subtropical shores the tide pools can heat to above 40°C. This rapid evaporation during a low tide due to the heat can also increase the salinity of the water.

All these factors lead to a clear zoning of animals and plants. The species that live at the highest level of the littoral zone are exposed at every tide and therefore exposed for the longest period of time. Others living further into the water are only exposed during lowest tides. Some animals can shelter themselves in the mud or sand during low tides on soft grounds. Whereas others at rocky shores cling to the rock.

Examples of plants and animals:
Upper intertidal zone = e.g. barnacles, isopods
Middle intertidal zone = e.g. crabs, sea stars, snails
Lower intertidal zone = e.g. mussels, brown seaweed

2. *Shoreline activity challenges*

Possible challenges:
Strong wave activity, rip currents, colder temperature of water, sudden drop-off the shore, change of weather like sudden rain or thunderstorm, stronger wind

What to do:

- dress warmly, bring extra clothing to change if necessary
- discuss possible dangerous situation with children beforehand
- look out for warning signs at the shore
- be familiar with the area before taking children
- check the weather forecast and stay away from water if thunderstorm starts
- keep an open-eye at all times
- wear life vests if necessary
- take extra adults/caretakers
- wear appropriate, water- and windproof clothing