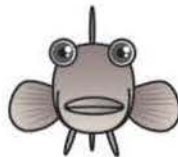
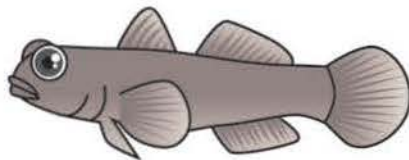


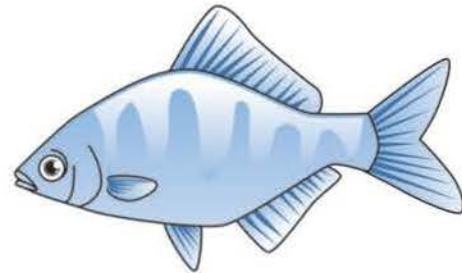
Freshwater stream – Biological adaptation

All wildlife have specialized body features and behaviors to cope with their living environment. Otherwise, they will be eliminated by natural selection. Take a look on the shapes of fishes, those fishes with dorsal-ventrally compressed bodies are usually found the upland stream. Such body feature allow them to cope with the strong current. In contrast, laterally compressed fishes could not cope with the current, thus easily found in lowland stream.

Dorsal-ventrally compressed fish



Laterally compressed fish



Over the past decade, pollution and engineering works (e.g. channelization) impacted the ecosystem of lowland streams greatly. These changes eliminated many native inhabitants, and the spaces were occupied by tough alien species.





15.2.1 Please fill in the blanks with suitable word(s).

Oxygen, Resistance, Carapace, Aquatic plants, Respiratory organ,
Larval, Adult, Breeding season, Hibernation, Streambed, Toes

Situation 1: In hill (upland) streams, animals have to cope with the turbulent water.



Big-headed Terrapin: My flat _____ reduces the _____ of water current, and help me walk against the fast-flowing water.

Hong Kong Cascade Frog: Suckers on my _____ allow me to keep my position on slippery boulders.



Situation 2: In lowland stream or place where water flows slowly and aquatic plants are flourish (oxygen will be consumed by plants at night). Animals have to cope with the low oxygen level.



Hong Kong Paradise Fish: I have a supplementary _____, which is also called labyrinth organ, that allows me to breathe on the water surface.

Larva of Chironomidae: I can tolerate water with low oxygen content, as haemoglobin in my body can hold _____ efficiently.



Situation 3: In wet season, the discharge volume and flowing rate increase spontaneously after prolonged heavy rains. Animals might be washed away and the streambed boulders might be overturned by turbulent water.



Dragonfly: We spend our _____ stage in water. We emerge to become _____ before the onset of wet season, so that we would not be washed away.

Hong Kong Newt: My _____ is after the wet season. In addition, I will deposit my eggs to _____.



Situation 4: In dry season, the discharge volume decrease significantly. Some streams might even dry up.



Oriental Weatherfish: I am capable of breathing in air through the intestine. I bury myself in soaked mud and go into _____ in the cold and dry winter in Hong Kong.

Flat-headed Loach: I bury myself into the _____, so that my skin will not be dried.



