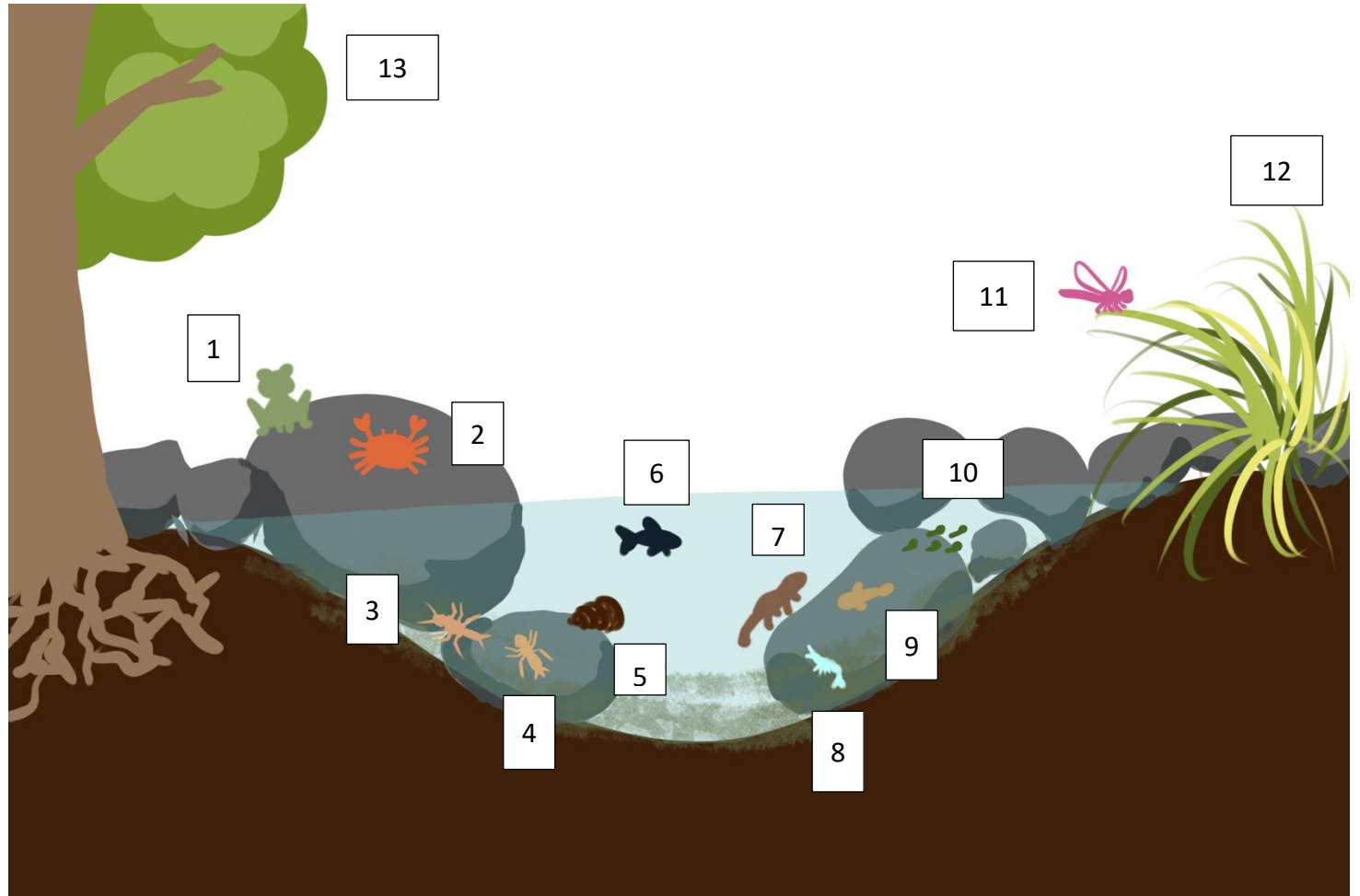


Species Identification Card

Microhabitats in Freshwater Stream

- There are various microhabitats in freshwater streams where the abiotic factors (e.g. water flow, dissolved oxygen level and temperature) are different, hence the biotic communities change.
- The graph below shows the biotic communities that are more likely to be found in each microhabitat.



- 1 Amphibian (Frog)
- 2 Crab
- 3 Insect Larvae
- 4 Odonata Larvae
- 5 Gastropod
- 6 Fish
- 7 Amphibian (Hong Kong Newt)
- 8 Shrimp
- 9 Fish
- 10 Tadpoles
- 11 Adult Odonata
- 12 Grasses
- 13 Tree

Species that you might encounter around site area:

Species Identification Card

Paramesotriton hongkongensis (Hong Kong Newt) 香港瘰螈 **Amphibian**

- The size of an adult is around 14 to 15cm.
- The only tailed semi-aquatic amphibian in Hong Kong.
- Body reddish brown or dark brown, belly black or dark brown with many irregular orange blotches
- Breeding period from September to March, adults migrate from the forest to the water pool in the stream to look for suitable mates. They can be easily observed during winter.
- They eat earthworm, tadpoles and insects.
- Originally named as **Hong Kong** Newt, or *Paramesotriton hongkongensis*, because it is thought to be an endemic species to Hong Kong. However, it is later found out that they also live in other places in Southern China.
- DO NOT touch them. They will excrete toxin when threatened.

Adult



There are discrepancies in colouration for different individuals.



Irregular orange patches in the belly. The pattern of every individual is unique just like human's fingerprint.

Egg



Round and gelatinous eggs are usually laid between two leaves of a submerged plant like *Acorus gramineus* to protect them from predators.

Larva

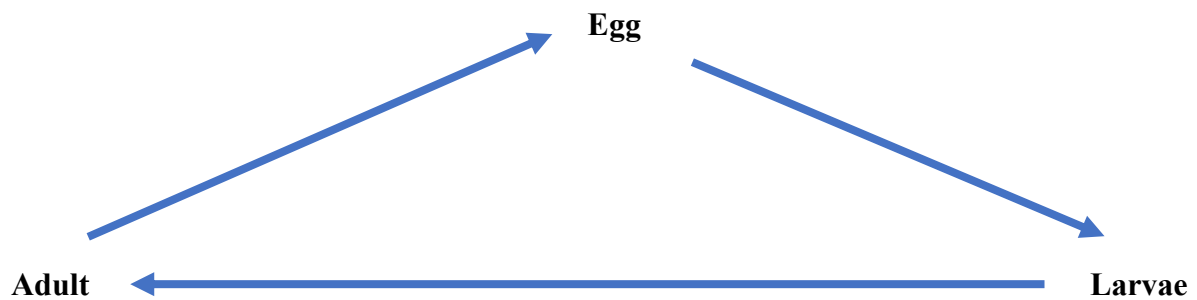


Larva with feather-like external gills for gas exchange. They cannot leave the water in this stage. Therefore, the water quality of the river affects their population.

Life Cycle of Odonanta (Dragonflies and Damselflies)

- They go through three stages in their life cycle: Egg – Larvae – Adult
- Most of them stay in the water during the early stages of larvae. Hence, a clean stream is important for the survival of dragonflies and damselflies.
- Sexual dimorphism: the body of an adult male is often brighter than a female

Example: *Coeliccia cyanomelas* (Blue Forest Damsel) 黃紋長腹扇蟓 Damselfly



Female



Male



Heliocypha perforata (Common Blue Jewel) 三斑陽鼻蟳 **Damselfly**

- The total body length is around 3 cm.
- Widely spread in streams with fast-flowing water.
- Flight period is from March to November
- The only damselfly in Hong Kong whose abdomen is much shorter than its wings

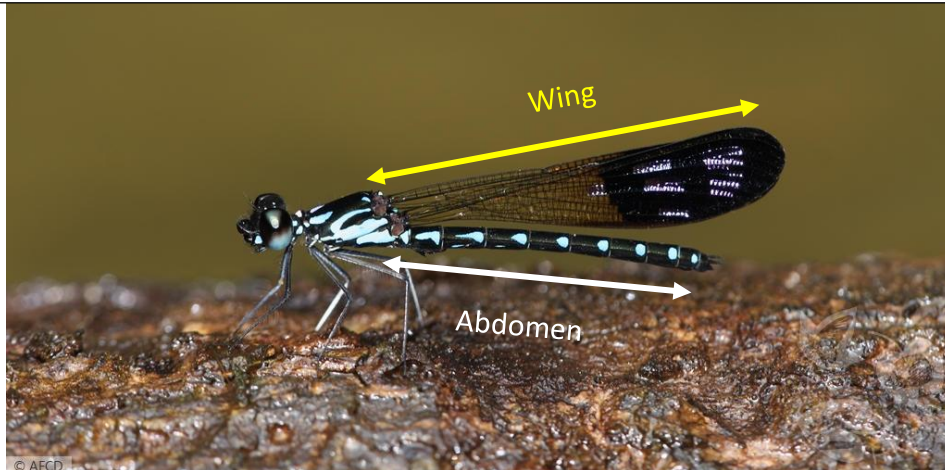
Adult (Male)



Adult (Female)



The only damselfly in Hong Kong whose abdomen is shorter than its wings.



Euphaea decorata (Black-banded Gossamerwing) 方帶溪蟳 **Damselfly**

- The total body length is around 3-4 cm.
- Commonly distributed in streams with high water flow.
- Flight period is from April to November.
- Characterised by an obvious black band on the male's wings.

Adult (Male)



Adult (Female)



Adult (Male) – an obvious black band on the wings



Prodasineura autumnalis (Black Threadtail) 烏微橋原蟳 **Damselfly**

- The total body length is around 3-4 cm.
- Commonly distributed in streams with high water flow.
- Flight period is from April to November.
- Predominately black

Adult (Male)



Adult (Female)



Prodasineura croconota (Orange-backed Threadtail) 朱背微橋原蟳 **Damselfly**

- The total body length is around 3-4 cm.
- Commonly distributed in wooded streams throughout the north-east New Territories
- Flight period is from April to September
- Characterised by bright orange thorax and white appendages

Adult (Male)



Adult (Female)



- The total body length is around 3-4 cm
- Widely distributed in streams throughout Hong Kong
- Flight period: throughout the year
- Characterised by the yellow legs and abdomen end with white appendages in male; abdomen of sub-adult male is white

Adult (Male)



Adult



Sub-adult (Male)



Above: Male; Below: Female

Coeliccia cyanomelas (Blue Forest Damselfly) 黃紋長腹扇蟴 **Damselfly**

- The total body length is around 4 to 5 cm.
- Commonly distributed in woodland stream throughout Hong Kong
- Flight period is from April to September
- Very long abdomen and males with cyan blue terminal segments and anal appendages

Adult (Male)



Sub-adult (Male)



Sub-adult males of some dragonflies and damselflies species have similar appearance to adult female.

Adult (Female)



Ceriagrion auranticum ryukyuanum (Orange-tailed Sprite) 翠胸黃蟴 **Damselfly**

- The total body length is around 3-4 cm
- Widely distributed in weedy ponds, swamps, abandoned fields or grasslands near water bodies in Hong Kong.
- Flight period throughout the year
- Characterised by the orange body, green eyes and thorax

Adult (Male)



Pseudocopteryx ciliata (Black-kneed Featherlegs) 毛狹扇蟴 **Damselfly**

- The total body length is around 4 cm
- Widely distributed in lowland streams, ditches and weedy margins of pond in Hong Kong
- Flight period from April to September
- Characterised by its white legs and tail tip

Adult (Male)



Sub-adult (Female)



Megalogomphus sommeri (Giant Hooktail) 薩默碩春蜓 **Dragonfly**

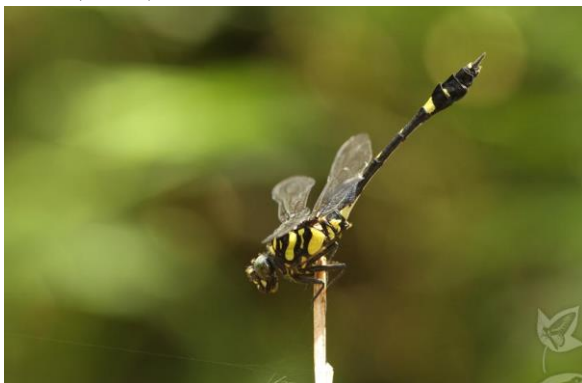
- The total body length is around 8 cm
- Distributed inside the forest near clean streams with sandy substratum and canopy cover in central and northeast New Territories
- Flight period from April to August
- Larvae usually hide under sandy substratum



Gomphidia kelloggi (Chinese Tiger) 克氏小葉春蜓 **Dragonfly**

- The total body length is around 7 cm.
- Distributed in forest stream in northeast New Territories
- Flight period from April to August
- Large yellow spot on 7th abdominal segment and a pair of yellow spot on the 8th abdominal segment

Adult (Male)



Adult (Female)



Ictinogomphus pertinax (Common Flangetail) 霸王葉春蜓 **Dragonfly**

- The total body length is around 7 cm
- Widely distributed in ponds and still water throughout Hong Kong
- Flight period is February to November.
- As hinted by their Chinese name, they are a large and strong dragonfly species.
- Always perched on top of the emergent plants or hovering along pond edges

Adult (Male)



Adult (Female)



Pantala flavescens (Wandering Glider) 黃蜻 **Dragonfly**

- The total body length is around 5 cm.
- The most common dragonfly in Hong Kong, widespread in all types of habitats
- Flight period from April to August
- Dull appearance with pale brown body, no marking on wings
- The English common name is Wandering Glider because of its excellent flying skill.

Adult (Male)



Adult (Female)



Neurothemis fulvia (Russet Percher) 網脈蜻 **Dragonfly**

- The total body length is around 3-4 cm
- Widely distributed in swamps, cultivated land, streams, artificial pools and irrigation ditches, and sometimes even inhabits almost dry swamps
- Flight period from March to November
- Characterised by the red wings and the transparent wing tips in male

Adult (Male)



Adult (Female)



Orthetrum chrysis (Red-faced Skimmer) 華麗灰蜻 Dragonfly

- The total body length is around 4 to 5 cm.
- Commonly found in marshes and pools near streams.
- Flight period from March to December.
- One of the five red dragonflies in Hong Kong, males can be easily identified by the red frons and bright red abdomen

Adult (Male)



Adult (Female)



Similar Species: Common Red Skimmer (Indochinese subspecies) 赤褐灰蜻

Can you tell the difference between these two species?

Common Red Skimmer (Male)

- Dark brown frons



Red-faced Skimmer (Male)

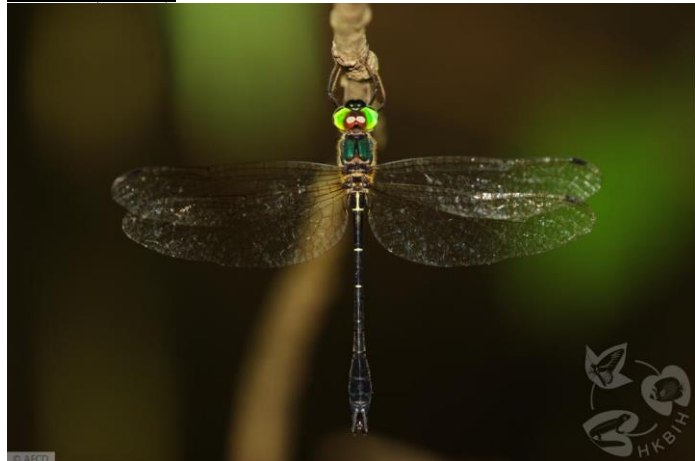
- Red frons



Idionyx victor (Dancing Shadow-emerald) 威異偽蜻 Dragonfly

- The total body length is around 4cm.
- Commonly found in wooded streams in Hong Kong
- Flight period from April to September

Adult (Male)



Adult (Female)



Orthetrum glaucum (Common Blue Skimmer) 黑尾灰蜻 Dragonfly

- The total body length is around 4 to 5cm.
- Wide distribution in Hong Kong
- Flight period is January to November

Adult (Female)



Sub-adult (Male)



The abdomen of sub-adult male is yellowish brown while that of adult male is pale blue.

Adult (Male)



Pseudothemis zonata (Pied Skimmer) 玉帶蜻 Dragonfly

- The total body length is around 4-5 cm
- Widely distributed in woodlands next to ponds, slow-flowing streams, ponds, artificial ponds and swamps in Hong Kong
- Flight period from February to September
- Both sexes have white/ yellow segment on abdomen

Adult (Male)



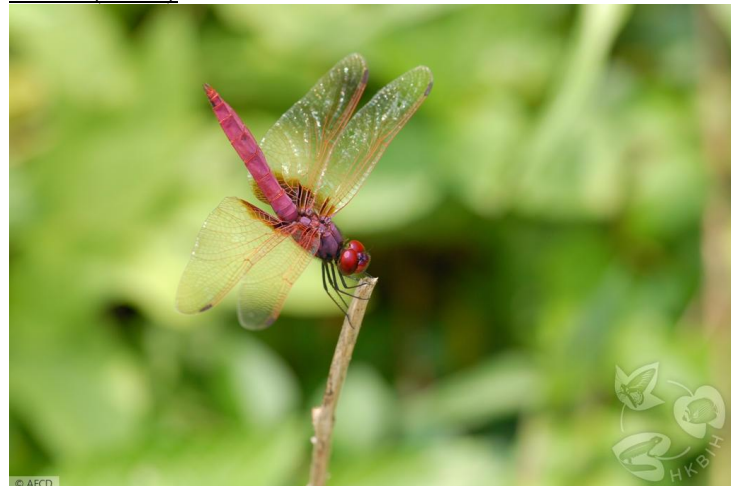
Adult (Female)



Trithemis aurora (Crimson Dropwing) 曉褐蜻 Dragonfly

- The total body length is around 3cm
- Widely distributed in swamps, ponds, streams, and even ponds used as landscaping in urban areas
- Flight period throughout the year
- Male characterised by the brightly coloured scarlet red body

Adult (Male)



Adult (Female)



Trithemis festiva (Indigo Dropwing) 慶褐蜻 Dragonfly

- The total body length is around 3-4 cm
- Widely distributed in streams with slow but strong flow or in small stone ponds in mountain streams
- Flight period from February to December
- Male characterised by the bluish grey body

Adult (Male)



Adult (Female)



Stonefly 石蠅 **Insect**

- Belong to the Order Plecoptera
- Adults are poor fliers that always stay close to the stream. Most of the species do not eat in the adult stages
- Aquatic larvae that share similar appearance as the adults with the absence of wings
- Larvae body flattened with two short antennae and two “tails”, inhabits fast flowing water
- Intolerant of pollutants, the presence of stonefly indicates a clean waterbody
- Commonly found in rocky streams in Hong Kong

Adult



Caddisfly 石蛾 **Insect**

- Belong to the Order Trichoptera
- Aquatic larvae will build their own cases with debris, plants small rocks, sands, silks and etc. to protect them from predators and being washed away by fast-flowing water
- Adults look like a moth and do not eat
- The presence of caddisfly indicates a clean waterbody

Adult



Water Skater 水餃剪 **Insect**

- Belong to the Family Gerridae
- Commonly found in Hong Kong freshwater stream
- Utilising the surface tension of water and their hydrophobic long legs to stay afloat
- Water pollutants like soap and detergents will break the surface tension of the water, which makes water strider hard to float
- The presence of Water Strider indicates a clean waterbody



Order Megaloptera 廣翅目 **Insect**

- This order includes alderflies, dobsonflies and fishflies
- Terrestrial eggs, pupae and adults
- Aquatic larvae that prey on other invertebrates and plants



Caridina cantonensis 廣東米蝦 **Shrimp**

- Size: around 15 mm
- Forage in group for algae or microorganisms on rock surface
- Inhabit in river side or small pool with detritus
- Mating period before wet season



Sulcospira hainanensis 海南溝蜆 **Snail**

- Ecological role: shredder, consume leaf litter
- Commonly found in fast-flowing stream
- Large dark brown snail, old individual with a blunt tip
- The width of shell aperture: 2-16 mm



Liniparhomaloptera disparis (Broken-band Hillstream Loach) 擬平鰍 **Fish**

- Maximum size: 70 mm
- Commonly found in upper streams in Hong Kong
- Body brown with 7 to 9 blackish brown spots on the back and tiny spots at the side
- Adaptive features to facilitate their adhesion to the rock surface in fast-flowing water: flattened belly, streamlined back, horizontally spread pectoral and pelvic fins, suction cup in the bottom
- Inhabit in streams with high DO level
- Food: algae



Schistura fasciolata (Striped Loach) 橫紋南鰍 **Fish**

- Maximum size: 70 mm
- Body color is greyish yellow with 8 to 19 distinctive vertical dark brown to black bars on body
- Commonly found in reservoirs and upper streams
- Food: benthic organisms and detritus



Channa asiatica (Small Snakehead) 月鱧 **Fish**

- Long pairs of dorsal and anal fins
- Distinctive features: a dark brown dot on top of the pectoral fin and the base of caudal fin
- Rarely found in the wild of Hong Kong with few records from North District
- Can be found in the market as cultivated species



Barbodes semifasciolatus 條紋小鯽 **Fish**

- Maximum size: 100 mm
- Common name: Chinese Barb 七星魚
- One of the most common freshwater fish in Hong Kong clear streams
- Distinctive feature: Body yellowish with a high-arched back, characterized by 5 to 7 vertical dark bars
- Pointed head with large eyes
- Food: worms, small crustaceans, insects, plant, plant detritus

Adult



Sub-adult



Parazacco spilurus (Predaceous Chub) 異鱾 **Fish**

- Maximum size: 150 mm
- One of the commonest freshwater fish in Hong Kong clear streams
- Distinctive feature: black mid-lateral band on body and a black spot on caudal fin base, the black band becomes less notable in adult
- Food: zooplankton, small crustaceans, fish

Adult



Macropodus hongkongensis (Hong Kong Paradise Fish) 香港鬥魚 **Fish**

- The only freshwater fish that named after Hong Kong
- Distinctive feature: Black to greyish body with forked caudal fins, male during spawning season has dark black body with the edge of dorsal, caudal and anal fins being blue



Macropodus opercularis (Paradise Fish) 叉尾鬥魚 **Fish**

- Similar body characteristics with Hong Kong Paradise Fish with more coloration (reddish brown and blue vertical pattern on body side) and smaller body
- Distinctive feature: a blue-green dot on operculum
- Male's abdomen becomes dark blue during fights or mating season



Gambusia affinis (Mosquito fish) 食蚊魚 **Fish**

- An exotic species introduced to Hong Kong for mosquito eradication
- Dull grey in colour, tail round
- Widely distributed in streams in Hong Kong



Why is it called an invasive species? What are the differences between invasive and exotic species?

Exotic species are species that is not native to the ecosystem. Invasive species are exotic species that disrupt the balance of the original ecosystem. They usually grow fast, reproduce quickly, have versatile flexibility, and is highly adaptive to different environments to spread their population rapidly.

Rhinogobius duospilus 溪吻鰕虎魚 **Fish**

- Maximum size: 40 mm
- Inhabit in stream with moderate water flow
- Likely to be the goby most commonly found in Hong Kong Freshwater stream
- Body greyish brown with
- Distinctive features: irregular red lines in lower jaws
- Food: Aquatic insects, crustaceans and small fish

Adult (Male)



The male is usually more colourful with dark spots on first dorsal fin and anal fins. Some have light blue dots on the first ray of the first dorsal fin.

Adult (Female)



Pandanus austrosinensis T. L. Wu 露兜草 Plant

- Native species
- Shape: Evergreen herbs.
- Leaf: Linear, subleathery, strap-shaped, margin with hamate spine, can grow up to 1.3m in length
- Flower: May-August
- Fruit: September



Alocasia macrorrhizos (L.) G. Don (Giant Alocasia) 海芋 Plant

- Native species
- Shape: Herb, up to 3 m tall
- Leaf: Leaves spirally alternate, ovate in shape, can grow up to 1m in length and width, base sagittate, apex acute, margin entire
- Flower: May
- Flower: green, white in colour
- Fruit: red or orange berry, glabrous



- Native species
- Shape: Perennial aromatic herb, 150 – 550 mm tall
- Leaf: distichous, apex acuminate, dark green, venation parallel, midrib lacking
- Flower: February-July
- Fruit: July-August



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