

# IMPACTS OF SEDIMENT ON KAHAWAI



Sediment can affect mahinga kai by influencing habitat, behaviour, feeding, growth and survival.

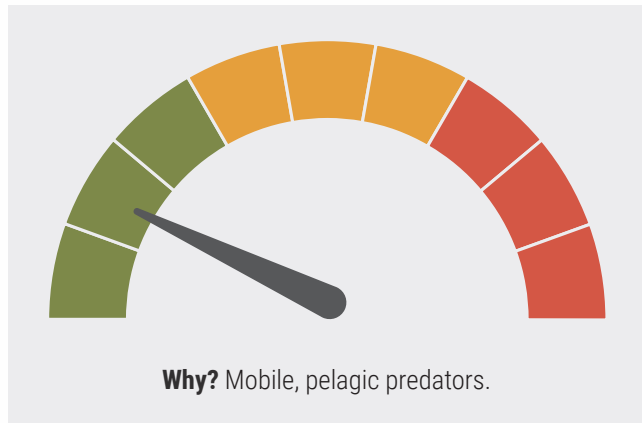
## Background on kahawai (*Arripis trutta*)

Kahawai are found throughout New Zealand waters but are more common around the North Island and on the east coast of the South Island<sup>1</sup>. Kahawai (i.e., 'Australian salmon') are also found in south-eastern Australia<sup>2</sup>. Inshore schools of adult kahawai mainly feed on small, regionally-common, pelagic fish (e.g., smelt, anchovy and sprats) and planktonic crustaceans<sup>3,4</sup>. They also feed on small fishes (e.g., whitebait and yellow-eyed mullet)<sup>5</sup>, benthic crustaceans (e.g. crabs) and molluscs in estuaries and at river mouths throughout the year<sup>6,7</sup>. Kahawai mature at ~400 mm after about five years<sup>8</sup> but they can live for over 25 years<sup>9</sup> with some individuals reaching 790 mm<sup>10</sup> in length.

## Kahawai (*Arripis trutta*)



## Kahawai sensitivity to elevated sediment



Low Medium High

Prepared by Mike Hickford, Michele Melchior and Melanie Mayall-Nahi from NIWA for Our Land and Water National Science Challenge, March 2023. Image of kahawai by NIWA.

For references and further information see [niwa.co.nz/sediment-impacts](https://niwa.co.nz/sediment-impacts)

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## Effects of suspended sediment on kahawai

<b>Habitat</b>	Turbid water may restrict areas where kahawai can feed effectively. Larger kahawai appear to preferentially feed at the mouth of rivers and estuaries <sup>7</sup> . It is possible that better water clarity in these areas improves the feeding success of kahawai <sup>11</sup> , which are visual predators <sup>12</sup> . The effects of turbidity on juvenile kahawai (< 2 years old), which use estuaries and shallow bays as nursery habitats <sup>13</sup> , are unknown but juveniles are very uncommon in turbid, upper-estuary areas <sup>11</sup> .
<b>Behaviour</b>	Kahawai are obligate schoolers <sup>14</sup> ; the feeding success of individuals is improved by schools of kahawai herding and concentrating prey species <sup>15</sup> . This behaviour requires kahawai to be able to see each other and the prey <sup>12</sup> , and the prey to be able to see the schooling kahawai <sup>16</sup> . Turbid water may cause a breakdown in this feeding behaviour.
<b>Feeding</b>	Kahawai are visual predators <sup>12</sup> , so turbid water may reduce their ability to school and their feeding effectiveness. When feeding in schools, kahawai feed mainly on prey in the water column, but when feeding alone, kahawai switch to preying on benthic crustaceans and fishes <sup>17</sup> .
<b>Growth</b>	Direct effects unknown.
<b>Survival</b>	Direct effects unknown.

## Effects of deposited sediment on kahawai

<b>Habitat</b>	Mostly, adult kahawai are schooling, pelagic feeders that take their prey from the water column <sup>17</sup> . It is unlikely that deposited sediments will directly impact their coastal habitats; juveniles are already uncommon in muddy, upper-estuary areas <sup>11</sup> .
<b>Behaviour</b>	Adult kahawai mainly feed by schooling and taking their prey from the water column <sup>17</sup> . It is unlikely that deposited sediments will directly impact their feeding behaviour.
<b>Feeding</b>	Direct effects unknown.
<b>Growth</b>	Direct effects unknown.
<b>Survival</b>	Direct effects unknown.

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## Further information:

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