

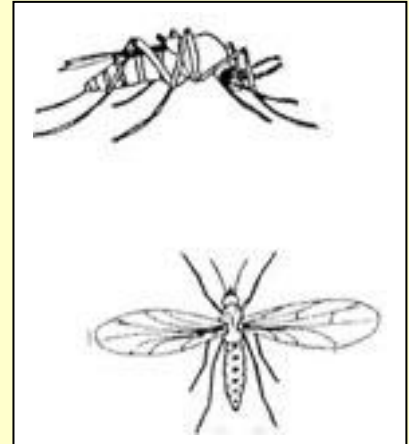
Biting Midges "Sand Flies"

Culicoides subimmaoulatus, Culicoides molestus, Culicoides ornatus

The Biting Midge can be found from Maryborough, north around Australia into Western Australia.

Many elements of the mangrove environment are beneficial to this insect including:

- Salinity
- Shelter from strong winds
- Nectar and plant juices from flowers
- Perches for animals to rest on which provides prey for potential blood meals
- Reducing wave action and tidal currents in the mangrove thicket
- Assists mud to settle and so helps the midge colony to become established



However midge breeding decreases or stops completely in the developing mangrove forest, as the spreading roots, pneumatophores, accumulating sediment and increased leaf litter prevent crabs from tunneling into the sand which would have provided a trench for the midge larvae to live in.

Therefore the clearing of mangroves helps this insect as it leads to more suitable breeding conditions for certain species of midge because it will open up an area, allow more light penetration and makes the intertidal zone more hospitable. In fact, with some of the east coast species, the planting of mangroves may be the best method of dealing with the midge problem.

Midges only really become a 'pest' on still days when they are able to fly large distances inside the mangrove swamp. Of all the pest midges the greatest distance traveled is about 1.6km. (*Culicoides ornatus*)

The adult biting midge is about 1-2mm long and in overcast humid weather they are known to bite all day and all night! They can irritate some people to the level that they have very severe allergies.

People need to be aware of the need to protect themselves by using suitable clothing and insect repellent when visiting places known to be biting midge areas.