

Mosquitoes 101

- Biology
- Control
- Diseases



Species of Mosquitoes

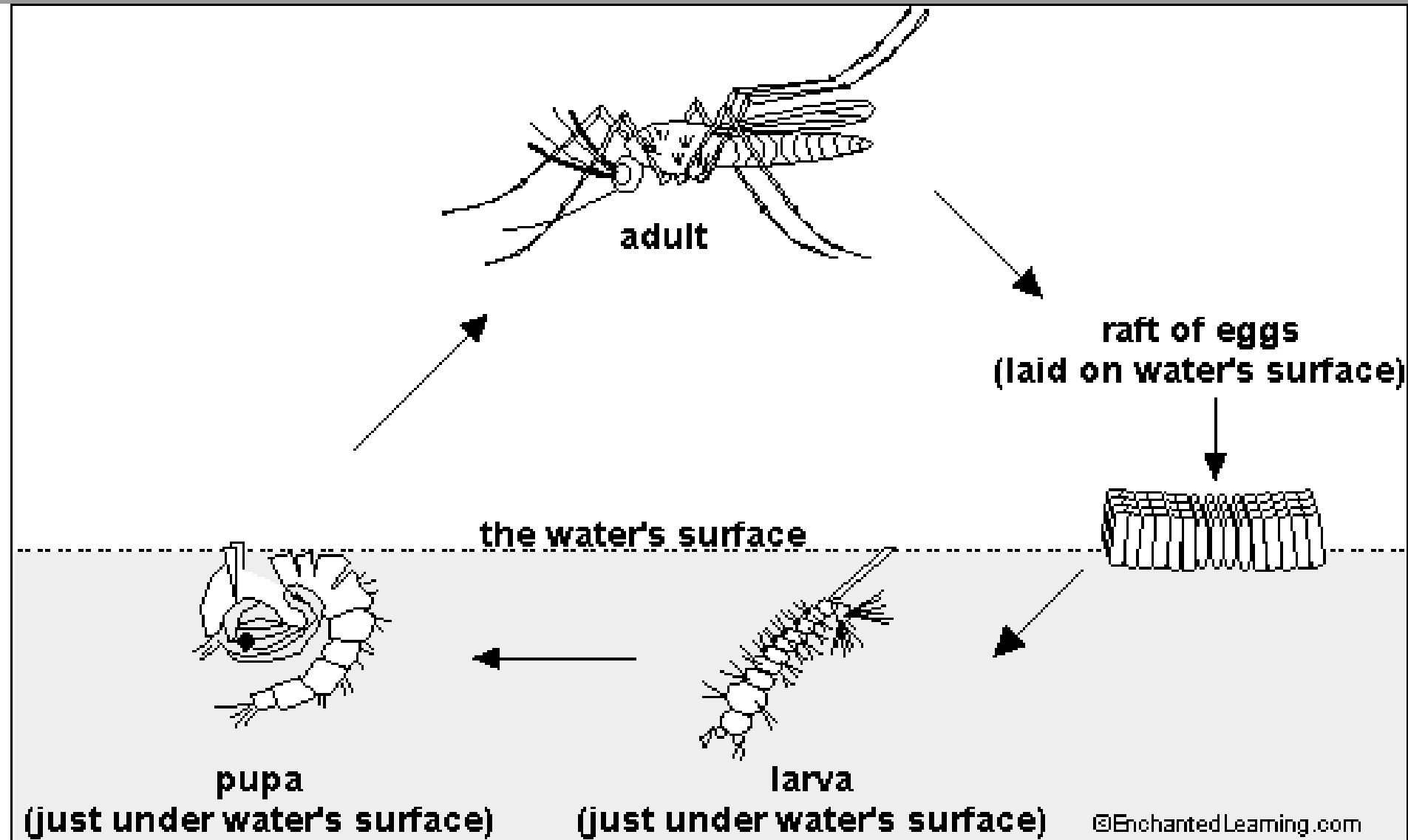
Worldwide – 2,960

United States – 168

Utah – 50

Moab ~ 20

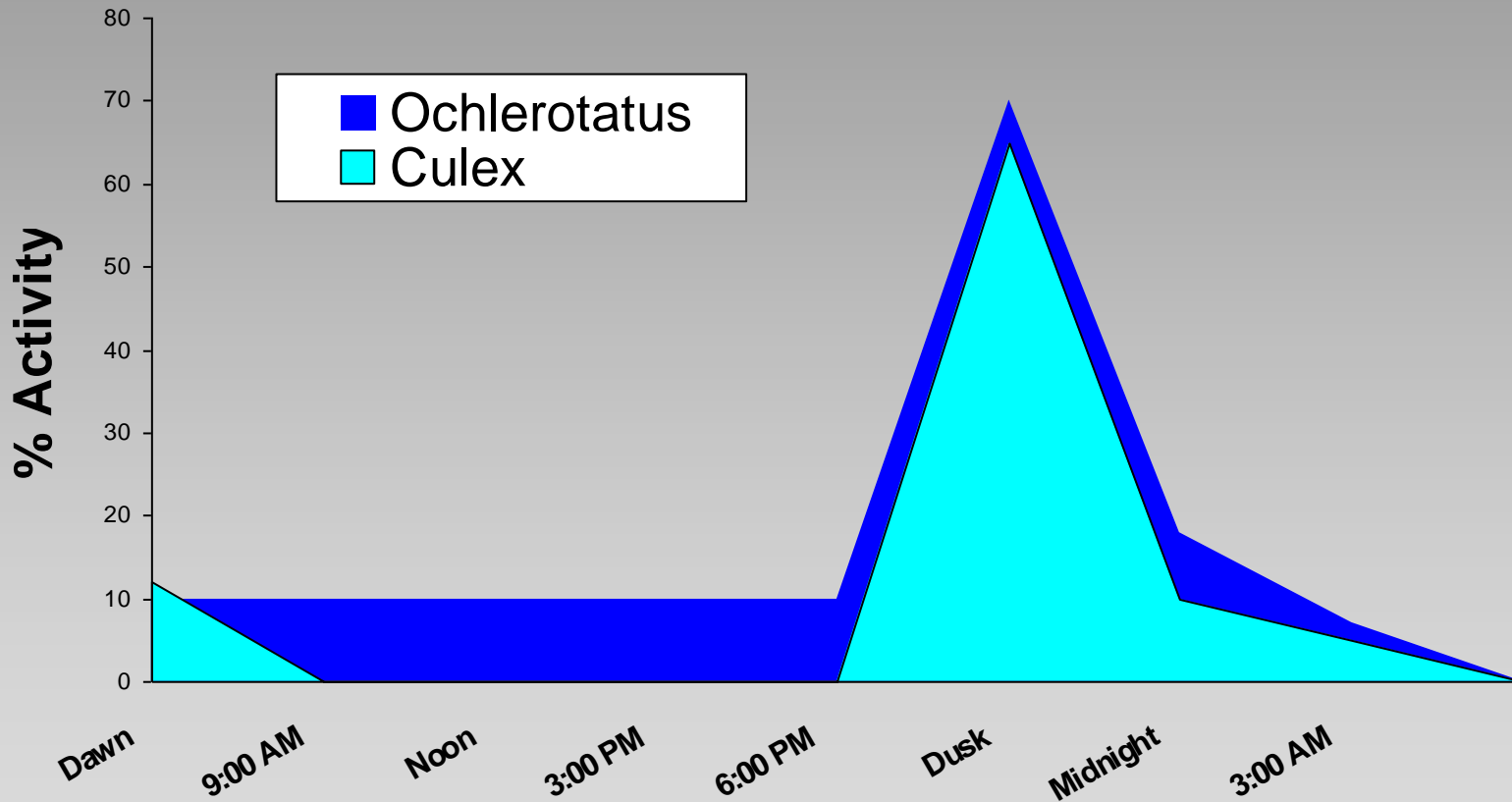
Mosquito Life Cycle



- most female mosquitoes suck blood
- the blood is needed as a protein source to lay eggs
- a blood meal is needed for each batch of eggs



Periods of Biting Activity





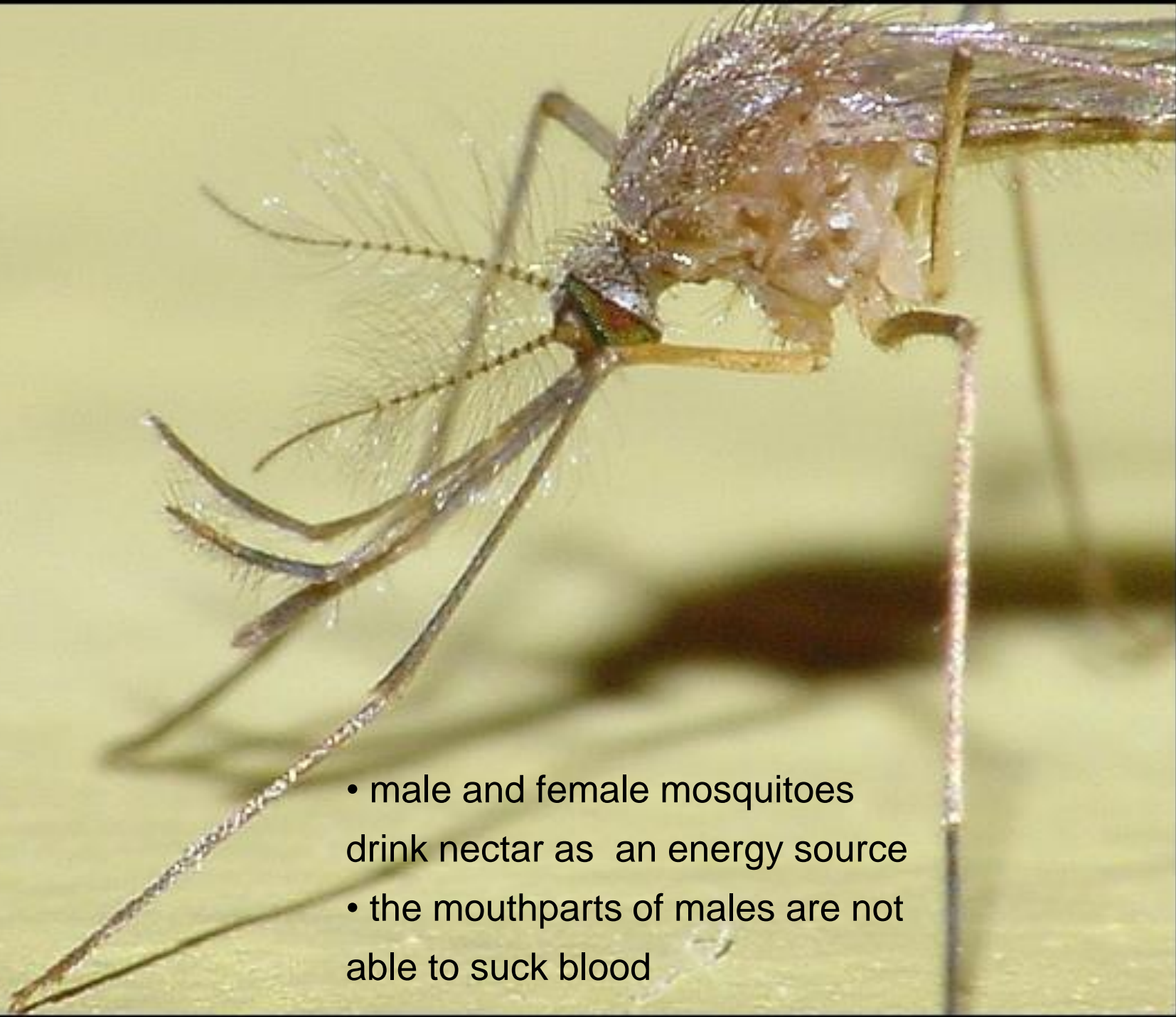
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All species have different feeding patterns.

- some will feed on almost any animal
- others are very specific, i.e. amphibians, birds, mammals, reptiles



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- male and female mosquitoes drink nectar as an energy source
- the mouthparts of males are not able to suck blood

It takes several days for the blood to be digested and eggs to develop.



Eggs are either laid on the water surface or in the moist soil at the edge of a source of water.



A new batch of eggs can be produced every 10 to 14 days.
Approximately 90% of female mosquitoes die after laying eggs.

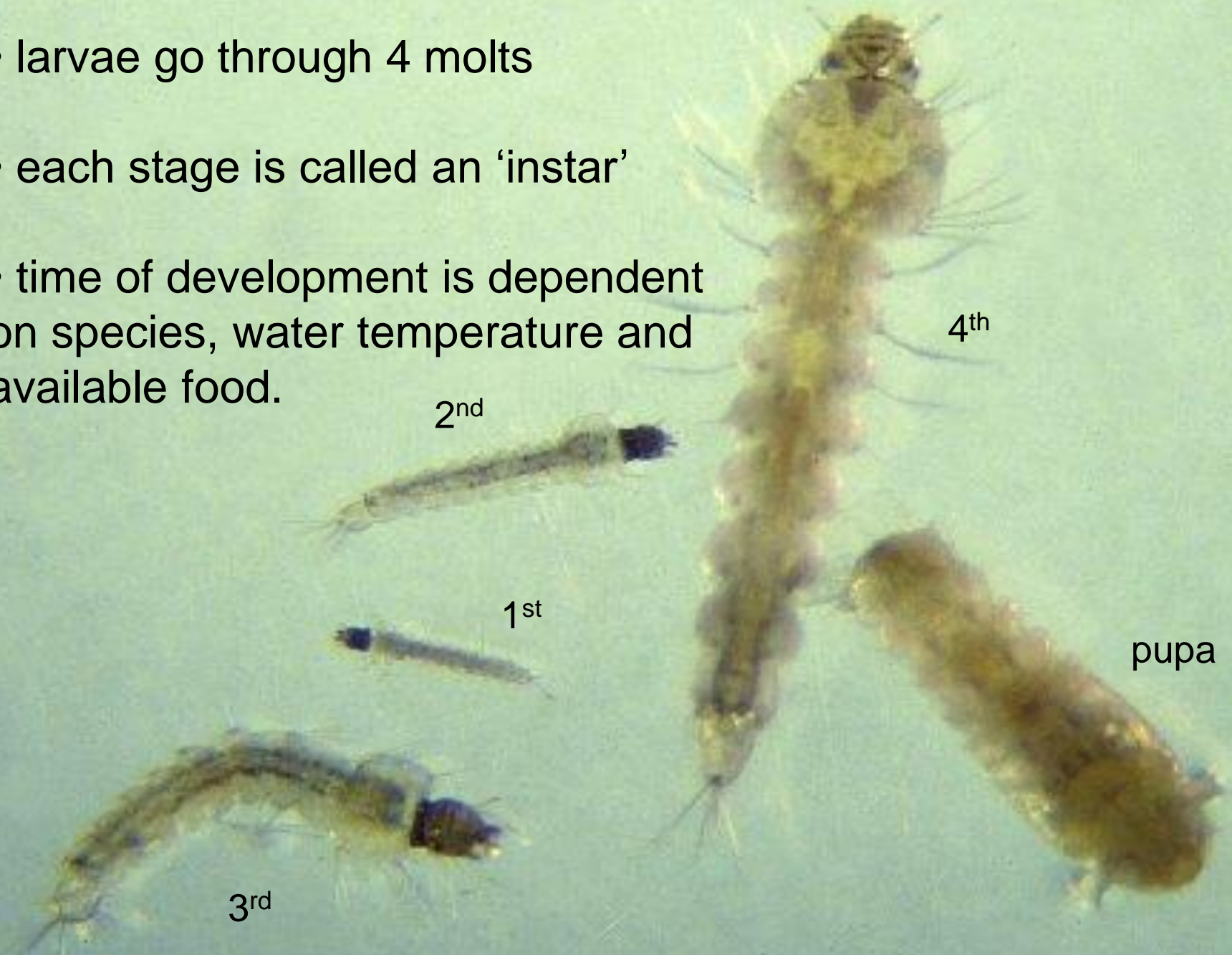


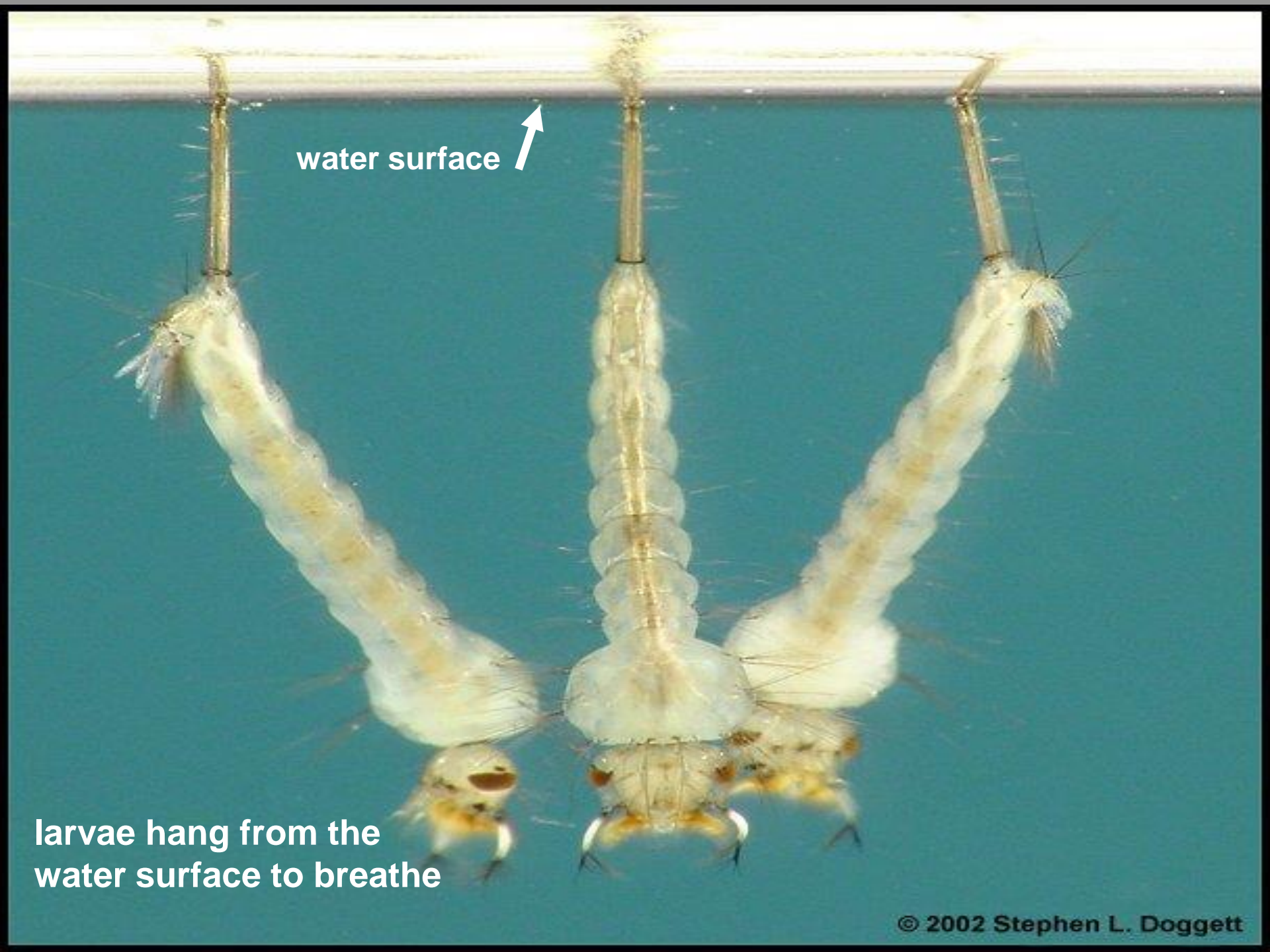
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- Eggs laid on the water surface can be in floating rafts of 200+ or as single eggs.
- Eggs can hatch almost immediately or remain dormant in the soil for years

- larvae go through 4 molts
- each stage is called an 'instar'
- time of development is dependent on species, water temperature and available food.



The image shows three aquatic insect larvae, likely caddisflies, hanging from a horizontal surface (possibly a piece of wood or a metal rod) that is partially submerged in water. The larvae are positioned vertically, with their heads and thoraxes near the water surface and their abdomens extending downwards. The water is a clear, light blue color. The larvae have segmented bodies and visible legs. The text "water surface" with an arrow points to the horizontal line where the water meets the surface.

water surface

larvae hang from the
water surface to breathe



- mouthparts filter microscopic particles to eat.



The pupa is formed when the 4th instar larvae molts.



Pupae, like larvae, breathe from the surface of the water.



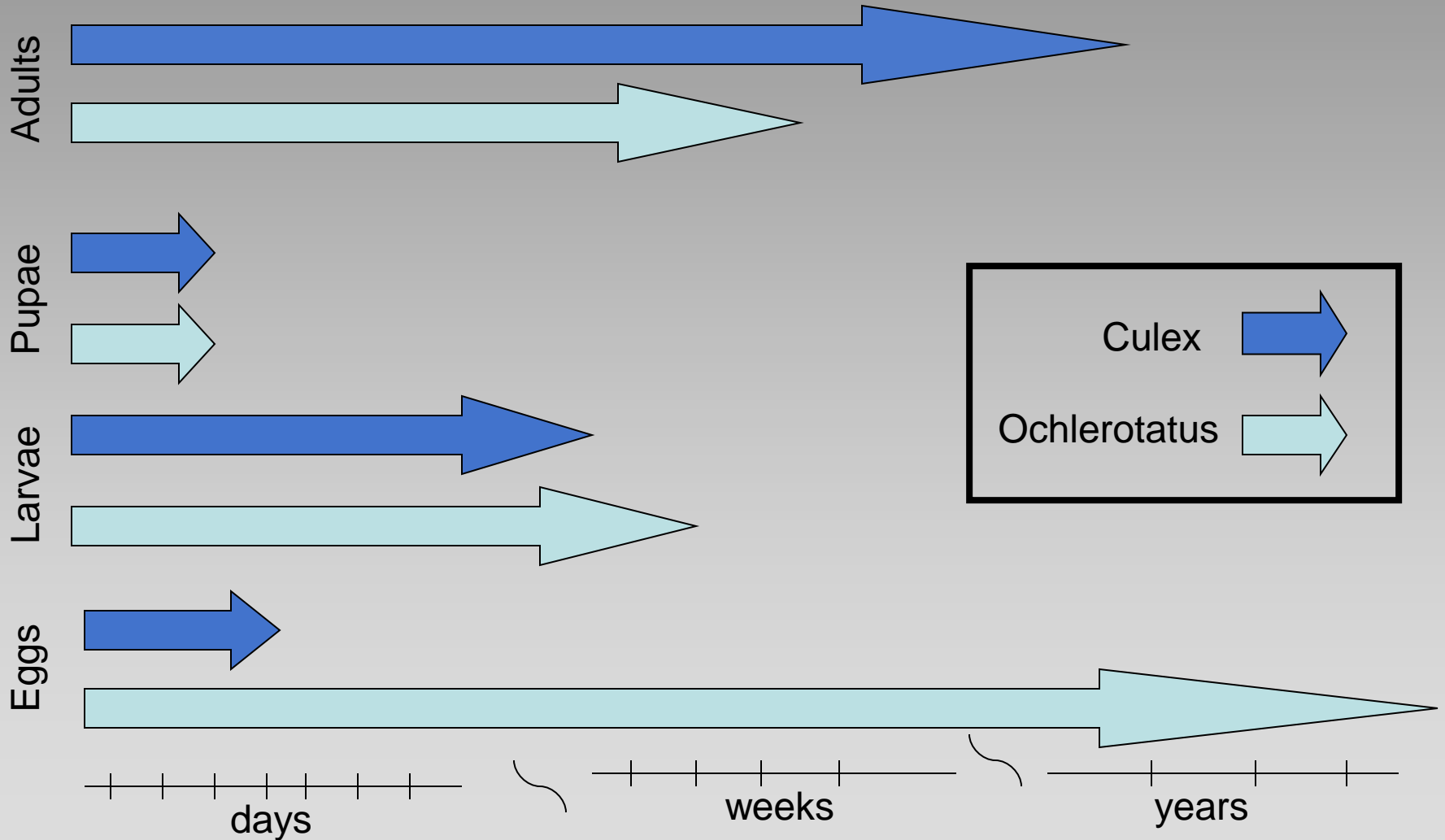
Pupae do not eat, but are very active.

The pupal stage lasts between 2 to 4 days.

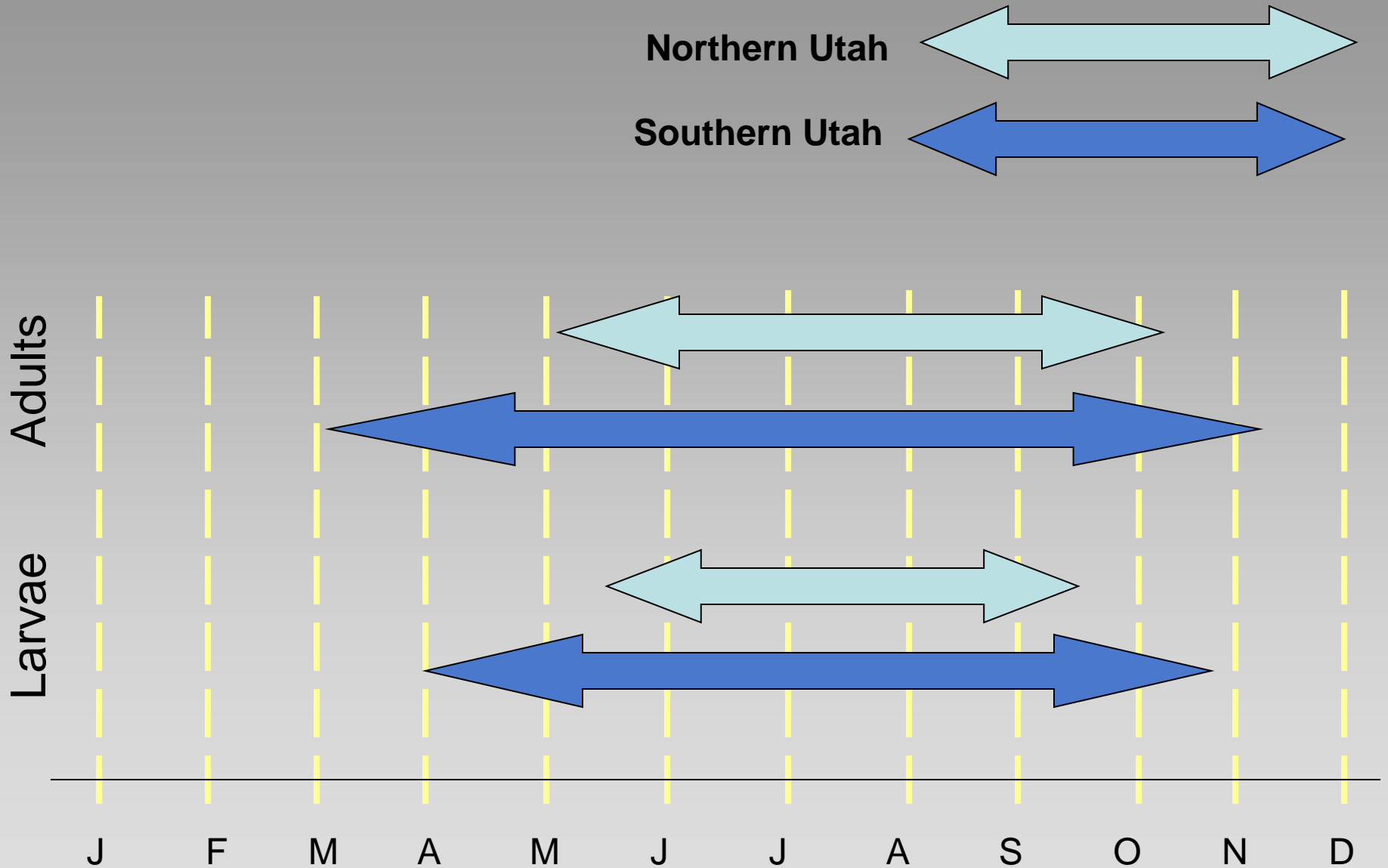
As the adult emerges it is able to stand on the surface of the water.



How Long Do Mosquitoes Live



Culex tarsalis Seasonal Occurrence



Mosquito Control



Nationwide there are more than 345 mosquito control agencies with a combined budget of more than \$230 million, protecting the public health of 97 million US citizens.

Organized Mosquito Control in Utah

22 agencies:

10 - county wide

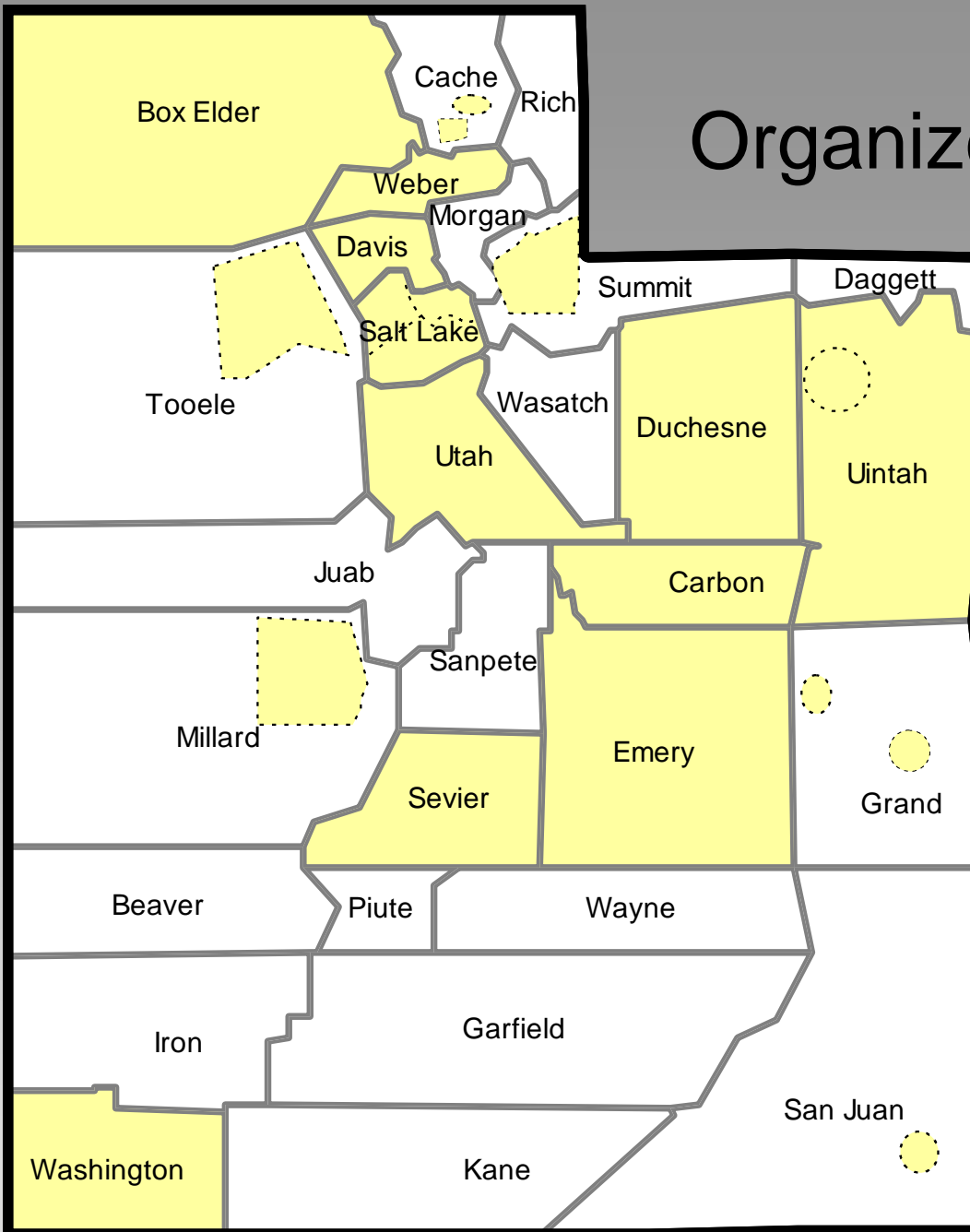
5 - single city

7 - more than

one city, but

not the whole

county

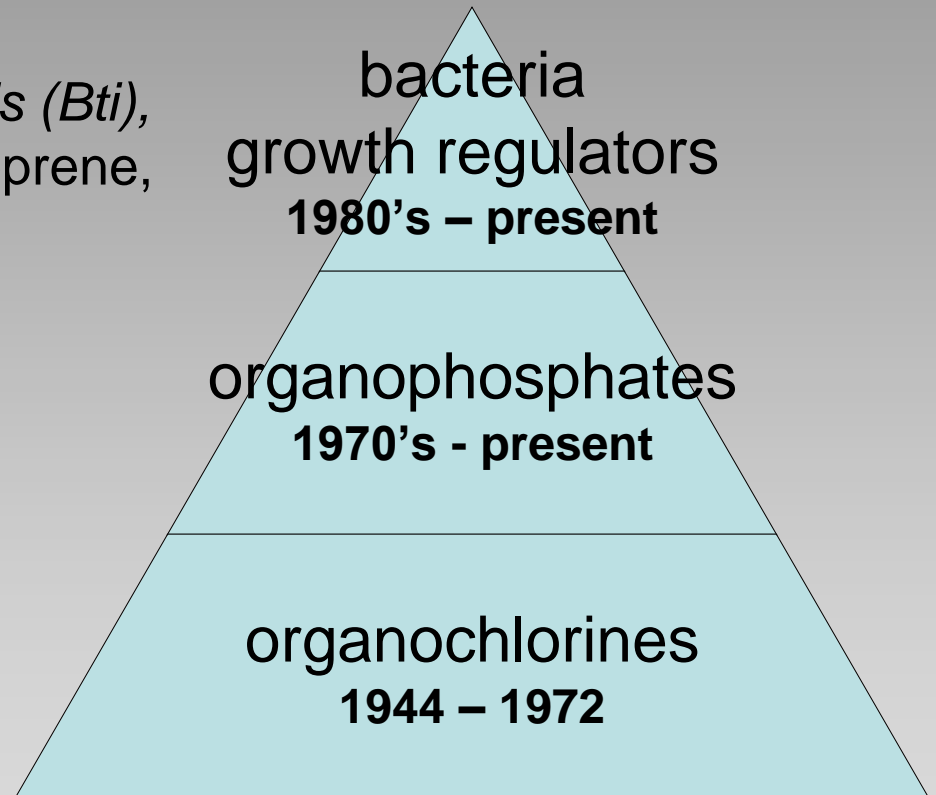


Larval Control

Bacillus thuringiensis israelensis (Bti),
Bacillus sphaericus (Bs), methoprene,
surface films

malathion, parathion,
chlorpyrifos, temephos, etc

DDT, dieldrin, etc.



Eliminate Stagnant Water Around Your House



Wheel Barrow

Trash Cans

Bird Baths

Tires

Ornamental &
Wading Pools

Leaky Sprinklers

To Reduce Your Exposure to Mosquitoes:

- * **Avoid** unnecessary outdoor activity when mosquitoes are most prevalent, such as dawn, dusk and early evening.
- * **Wear** long-sleeved shirts and long pants when going into mosquito-infested areas.
- * **Apply** an insect repellent that contains 20 percent to 30 percent DEET.

