

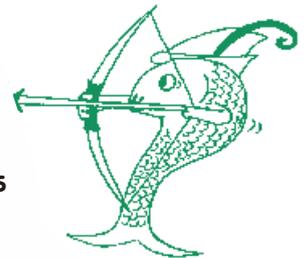
# Nature Notes

Junior Ranger



## ARCHER FISH

Archerfish are so-named for their remarkable hunting ability. They can accurately spit jets of water to dislodge their insect prey, resting above the water. They belong to the Family *Toxotidae* of which there is a single genus *Toxotes* (which means 'archer') and six worldwide species. They live in estuaries and freshwater areas over a wide range, from India through South-east Asia to the western Pacific. In Australia there are four species, three of which are represented in the Top End.

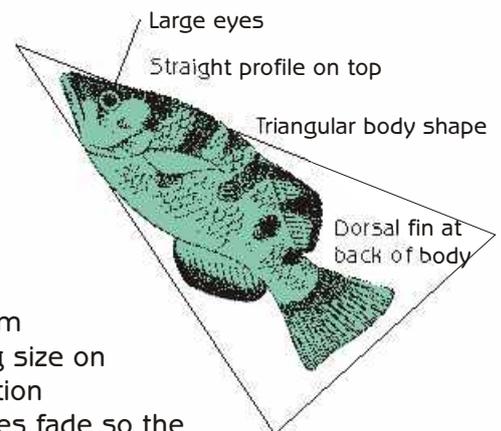


## HIDE AND SEEK ASSASSINS

The Archerfish is an ambush predator, so like a submarine it tries not to be spotted before it fires. It's body shape and colouration helps. The fish have a flattened/straight top and their dorsal fin is located well back on the triangular body. They have a broad, upward slanting mouth with a long lower jaw. This combination allows the fish to swim close to the surface in an almost vertical position without causing a disturbance and alerting insects above the water.

The top of the fish is coloured a dark greenish-brown for camouflage from above. They also have irregular black blotches, bands or spots of varying size on their upper body, depending on the species. During the day this colouration resembles the shadows from overhanging trees. At night the skin patches fade so the fish looks more silvery, like moonlight on the water.

Archerfish have large moveable eyes for scanning for prey and have excellent binocular vision to help them to judge distance.



## STRAIGHT SHOOTER - DEATH FROM AFAR!



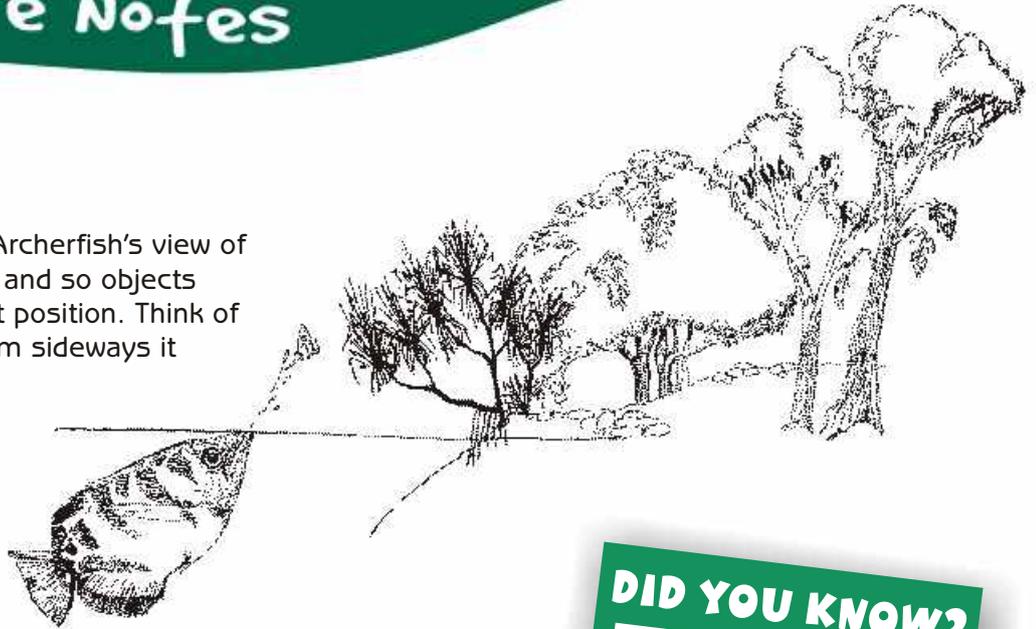
Once they have spotted an insect the Archerfish spits water to try and knock it into the water. Archerfish have a very accurate aim over a distance of about a metre and larger fish are capable of precision shots of up to two to three metres. Along the roof of their mouth is a groove into which the ridged tongue fits forming a tube. Before shooting, the fish raises it's tongue and then, by the quick closing of the gills, propels a 'bullet' of water through this 'barrel'. The tip of the tongue acts as a valve, flicking loose to let the water drops out and up into the air.

### WOW ...

Breeding takes place in the early wet season. The female lays 20 000 - 150 000 floating eggs into the water but many do not survive the 1-2 years needed to become adults.

## WARPED VIEW

Water distorts (refraction) an Archerfish's view of insects. Light is bent by water and so objects appear larger and in a different position. Think of a straw in a glass of water, from sideways it appears bent. This remarkable fish compensates for this distortion by aiming and shooting at insects 'off-target'.



## GOOD CATCHERS!

The Archerfish shoots and as soon as the stricken insect hits the water the fish rushes in to eat it. Scientists think that within a microsecond the assassin Archerfish can quickly calculate the exact landing spot, align their body to it and then swim over in a straight line. They do not seem to watch the falling insect the whole time like humans do when trying to catch a ball. Instead the fish quickly use the insects height and initial velocity to determine the splashdown point. They must get this calculation right and hurry otherwise it may miss out on lunch as the other fish nearby await ready to pounce!

### DID YOU KNOW?

Apart from insects Archerfish also eat other aquatic organisms, including crustaceans (shrimp) and other fishes. Floating fruits and flower buds of land plants are also eaten.

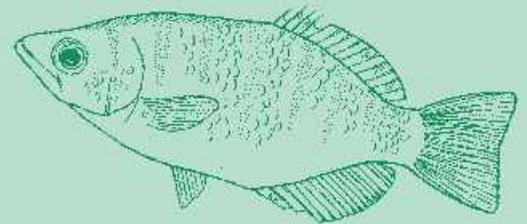
## THE THREE AMIGO'S...

There are three species of Archerfish found in Top End waterways (freshwater and saltwater). Discover their common names by changing each letter to the one that comes before it in the alphabet.

1. D P N N P O      T F W F O T Q P U  
      or      -

Archerfish. This is the most common of the three and it's scientific name is *Toxotes chatareus*.

2. M P S F O U A T  
        or  
 Q S J N J U J W F



Archerfish, *T. Lorentzi*.

3. C B O E F E  
      Archerfish, *T. Jaculatrix*.



Want to learn more about Archer Fish?

Check out the affordable field guide **Field Guide to the Freshwater Fishes of Australia** by G. Allen, S. Midgley & M. Allen.