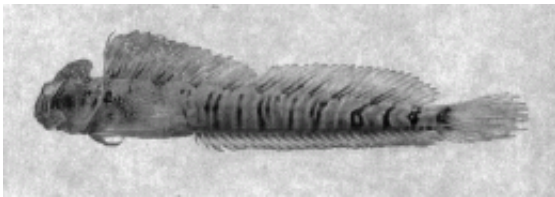


# Landlubber fish leap for love when tide is right

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*Alticus arnoldorum*, Pacific leaping blenny. Image credit: fishbase.org

One of the world's strangest animals – a unique fish that lives on land and can leap large distances despite having no legs – has a rich and complex social life, a new study has found.

The odd lifestyle of the Pacific leaping blenny (*Alticus arnoldorum*) has been detailed for the first time in research findings that throw new light on how animal life first evolved to colonise the land.

The Pacific leaping blenny is a marine fish yet is terrestrial in all aspects of its daily adult life, eking out a precarious existence in the intertidal zone of rocky shores in Micronesia, according to the study published in the journal [Ethology](#), led by Dr Terry Ord, of the UNSW Evolution and Ecology Research Centre.

"This remarkable little fish seems to have made a highly successful transition across the water–land interface, although it is still needs to stay

moist to enable it to breathe through its gills and skin," says Dr Ord, who is an evolutionary ecologist with a special interest in animal behaviour.

"Our study showed that life on land for a marine fish is heavily dependent on tide and temperature fluctuations, so much so that almost all activity is restricted to a brief period at mid-tide, the timing of which changes daily. During our field study on Guam we never saw one voluntary return to water. Indeed, they spend much of their time actively avoiding submersion by incoming waves, even when we tried to capture them for study.

"I can tell you they are very hard to catch and are extremely agile on land. They move quickly over complex rocky surfaces using a unique tail-twisting behaviour combined with expanded pectoral and tail fins that let them cling to almost any firm surface. To reach higher ground in a hurry, they can also twist their bodies and flick their tails to leap many times their own body length."

Working with Toni Hsieh, of Temple University in the US, Dr Ord found that adult blennies shelter in rock crevices at high and low tide, emerging at mid-tide to feed, breed and socialise in surprisingly complex ways – given their brief window of opportunity.

The researchers discovered that males are territorial and use complex visual displays to warn off rivals and attract mates. Females were seen aggressively defending feeding territory at the start of their breeding season, while males displayed a red-coloured fin and nodded their heads vigorously to attract females to their closely defended rock holes. The team filmed females inspecting these holes before entering with a chosen mate.

Little is known of their breeding and development of the young, but it seems that females lay their eggs in a chosen rock hole then play no

further role in parenting, leaving the male to guard the eggs.

"The Pacific leaping blenny offers a unique opportunity to discover in a living animal how a water–land transition has taken place," says Dr Ord.

"We know that our ancient ancestors evolved originally from lobe-finned fish but, today, all such fish are fully aquatic. Within the blenny family, however, are species that are either highly terrestrial, amphibious or entirely aquatic. Remarkably, representatives of all these types can be found on or around Guam, making it a unique evolutionary laboratory."

Provided by University of New South Wales

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