

1: Damselfish - Wikipedia

Damselfishes and Anemonefishes The damselfish family contains a great number of species found in warm seas worldwide. They have a variety of specialized roles as territorial algal farmers, planktivores, or partners living commensally with sea anemones.

Learn more about this article The majority of damselfishes engage in a range of ritualized behavior to attract mates and prepare nest sites. The male, and sometimes the female, begin to groom and tend a rocky surface several days before spawning. He removes invertebrates and algae with his mouth, sometimes allowing certain elements to remain, as is the case with *Hypsypops rubicundus*, a species that weeds out all but red algae from the site. Courtship activities accompany cultivation of the potential nest. Males may give auditory signals; depending on the stage of courtship, species of *Eupomacentrus* emit three different types of chirps and grunts. They may also display visual signals, with most damselfish males assuming distinct colors for courtship, and many executing various movements to entice the female to the nest site. One group of damselfishes, the anemonefishes subfamily *Amphiprioninae*, enter into permanent monogamous pairings and as a rule display a simplified pattern of courtship. Fish in this subfamily are protandrous, a mating system in which male individuals can become female. Ambosexual neither sperm- nor egg-producing tissues are active juveniles live on an anemone with a sexually mature male and female pair. If the female dies, her male partner develops into a female to take her place. The largest juvenile grows rapidly and replaces him as the dominant male. In the subtropics spawning is usually limited to the warmer months of the year, but a few spawn in fall or winter. It is common for reef-dwelling damselfishes to spawn in accordance with lunar rhythms, with greatest activity occurring near the full and new moons. Spawning usually takes place in the morning. Synchronous spawning has been observed, and in some species, the higher the number of individuals in a group, the higher the degree of synchrony. Some damselfishes spawn within their permanent territory, while others planktivorous damselfishes that live in the water column must seek temporary territories for courtship and spawning. Location of a spawning site may involve solitary males or may be a communal activity in which schools of males, juveniles, and females travel until the males form a colony of territories on an acceptable site. Site choice varies according to species and may include rock ledges, cleaned coral branches, algal turf, empty shells, or the roofs of caves. Males typically prepare the site for spawning and then attract gravid egg-bearing females to the nest see **Reproduction:** The male guards the nest from predators and other males while the female lays her eggs in long rows, forming a solid, uniform mass of eggs in a single layer. The eggs are demersal adhere to the substrate, and clutch size varies from to eggs depending on the species. Some damselfish are promiscuous, and still others are monogamous. Polyandry has been reported only in an anemonefish, although monogamy is the general rule for anemonefishes *Amphiprion* and *Premnas*. These fish stay paired for at least a year and sometimes for their entire lifetime. They spawn year-round, usually near the full moon. Hypotheses suggest that lunar spawning occurs because of the increased light for nest tending, the greater currents for larvae dispersal, and the relative abundance of spawning invertebrates as a food source. Anemonefish most frequently live in single pairs, along with a group of sexually immature individuals, in association with an anemone see **Reproduction:** Groups containing several males and females may occasionally occur if the fish population density is extremely high. Spawning occurs at the base of the anemone, on a rock surface, or, if the anemone lives on sand, on a surface the fish drag near the anemone. The male clears the nest site by biting at the tentacles of the anemone until they withdraw, and then leads the female there for spawning, during which both fish quiver and bite the nest surface. They remove detritus, sand, and fungus-afflicted eggs, fan the eggs, and guard against predators. Most become more aggressive when egg-tending, but this is not the case with anemonefishes *Amphiprion* and *Premnas*. In general fry are left to care for themselves after hatching, but in one Indo-Pacific species, *Acanthochromis polyacanthus*, parents guard their school of young near the spawning cave for three to six weeks. The World Encyclopedia of Fishes - second edition. Fishes of the Bahamas and Adjacent Tropical Waters. FishBase World Wide Web. Accessed August 05, at <http://www.fishbase.org/> The Diversity of Fishes. An introduction to ichthyology 4th edition. Upper Saddle

River, NJ: The Ecological Context of Reproductive Behavior. Dynamics and Diversity in a Complex Ecosystem. Reproduction in Reef Fishes.

2: Section: Fish Library: Group: Damselfishes

Damselfishes & Anemonefishes is the much-anticipated fourth volume in Scott Michael's landmark Reef Fishes Series, highly acclaimed by serious marine aquarium hobbyists and professionals around the world.

Damselfishes such as the anemonefishes are sometimes seen on our shores. But most damselfishes live in deeper waters and are more frequently encountered by divers. They belong to Family Pomacentridae. They are mainly found in the Indo-Pacific oceans, some are found in brackish waters. Damselfishes vary widely in size, colour and shape. Some species can grow to 35cm, others are 1cm or smaller. Those that eat algae tend to be duller while plankton-feeders tend to be more colourful. What do they eat? As a family, they eat a wide variety of things. Plankton-feeding damselfishes are believed to play an important role in reefs as they occur in such huge numbers that they effectively filter the currents. Damselfishes that feed on algae are often aggressively territorial, defending their feeding area from all intruders. These tiny damselfishes will vigorously harass larger fishes and even divers. In many species, a nest site is prepared by one or both partners. The eggs are attached by adhesive threads to the site and the male usually guards them until they hatch into free-swimming larvae. Many members of this family are harvested from the wild for the live aquarium trade. Harvesting tropical scorpionfishes for the live aquarium trade may involve the use of cyanide or blasting, which damage the habitat and kill many other creatures. Like other fish and creatures harvested for the live aquarium trade, most die before they can reach the retailers. Without professional care, most die soon after they are sold. Those that do survive are unlikely to breed successfully. Some members of the Family Pomacentridae are listed among the threatened animals of Singapore. Like other creatures of the intertidal zone, they are affected by human activities such as reclamation and pollution. Poaching by hobbyists and overfishing can also have an impact on local populations. Tiny anemonefish in its host anemone. Sentosa, Jun 07 very different from the adults. Tanah Merah, Nov 10 on some of our shores! Pulau Jong, Jul

3: Blueline Demoiselle - Keeping and Breeding Tropical Fish and Salt Water Fish

Together with the anemonefish the damselfishes belong to one of the largest families of reef fishes, the family Pomacentrids, of which the anemonefishes occupies just 30 species.

Habitat[edit] Many species live in tropical rocky or coral reefs , and many of those are kept as marine aquarium pets. Their diets include small crustaceans , plankton , and algae. However, a few live in fresh and brackish waters, such as the freshwater damselfish , or in warm temperate climates, such as the large orange Garibaldi , which inhabits the coast of southern California and the Pacific Mexican coast. Foraging[edit] The domino damselfish D. Larger individuals typically forage higher in a water column than do smaller ones. Damselfish of all sizes feed primarily on caridea and copepods. Males have relatively smaller stomach sizes during spawning season compared to females due to the allocation of resources for courtship and the guarding of nests. When current speeds are low, the damselfish forages higher in a water column where the flux of plankton is greater and they have a larger food source. As current speeds increase, it forages closer to the bottom of the column. Feeding rates tend to be higher when currents are faster. Smaller fishes forage closer to their substrates than do larger ones, possibly in response to predation pressures. Females leave their territories temporarily during spawning in order to deposit their eggs in male territories. This increased mobility subjects them to greater risks of predation , and females typically exhibit higher turnover rates than males do. Male damselfish defend their clutches until the larvae hatch. They do so by continuously swimming in a circular pattern around their nests. Males compete against each other for reproductive territorial space. Smaller and less aggressive individuals are often relegated to secondary or suboptimal habitats and therefore exhibit lesser reproductive success. Some are excluded from establishing territories altogether and usually exist as a floating population. These fish do not take part in breeding and are at the greatest risk of predation. However, they may occupy territories that have been vacated whenever the opportunity arises. These territories provide them with hiding spots, dietary needs, and spawning sites. Individuals in suboptimal territories frequently attempt to relocate, and so those in optimal habitats must constantly monitor territorial occupancy. Territorial aggression is often proportional to territory quality. Movements outside of territorial borders, called forays, are common and may span distances of sixteen meters or more. Three types of forays exist. The shortest-distance ones are involved in foraging. Longer forays usually involve courtship activity and mating. Non-feeding and non-reproductive forays are associated with territorial reoccupation. Courtship[edit] In the species S. Even though large male size can be advantageous in defending nests and eggs against conspecifics among many animals, nest intrusions are not observed in this damselfish species. Females also do not choose their mates based upon the brood sizes of the males. In spite of the increased male parental care, brood size does not affect egg survival, as eggs are typically taken during the night when the males are not defending their nests. Rather, female choice of mates is dependent on male courtship rate. Males signal their parental quality by the vigor of their courtship displays, and females mate preferentially with vigorously courting males. The signal jump involves large amounts of rapid swimming, and females choose mates based on the vigor with which males do so. Females determine the male courtship rates using sounds that are produced during signal jumps. As the male damselfish swims down the water column, it creates a pulsed sound. Male courtship varies in the number and rates of those pulses. Female size is significantly correlated with ovary weight, and males intensify their courtship rituals for the more fecund females. Research has shown that males that mate with larger females do indeed receive and hatch greater numbers of eggs. Among this species, evolutionary selection favors those males that begin mating as soon as possible during spawning seasons even if the most favorable egg clutches are spawned at later times. Shelter sites are essential for the bicolor damselfish in avoiding predation, and females may evaluate the suitability of these sites at a male territory before depositing their eggs. The distance to the territory of a mate influences the number of visits that a female undergoes with a male. At short distances, females make many repeated visits. At longer ones, they may spawn their entire clutch in one visit. This plasticity in mating behavior can be attributed to two factors: Thus, a spawning female should return to

its home as often as possible. However, a greater number of spawning visits increases the chance of being attacked, especially when mating with males that are far away. To minimize overall costs, females change their number of spawning visits depending on male territory distance. Studies have shown it typically consumes over twenty-five percent of its clutches. The males generally consume clutches that are smaller than average in size, as well as those that are still in the early stages of development. Female cortex damselfish tend to deposit their eggs with males who are already caring for early-stage eggs, rather than males with late-stage eggs. This preference is seen particularly in females that deposit smaller-sized clutches, which are more vulnerable to being consumed. For the males, filial cannibalism is an adaptive response to clutches that do not provide enough benefits to warrant the costs of parental care. Social organization, age structure, and population stability". *Journal of Experimental Marine Biology and Ecology*. Lobel 15 February *The Journal of the Acoustical Society of America*. *Behavioral Ecology and Sociobiology*. Effect of Distance to Mates".

4: Damselfishes (Pomacentridae) on the Shores of Singapore

Damselfishes, which include the anemonefishes (Amphiprion and Premnas), range from five to 36 cm, with most specimens less than a foot long. Their bodies tend to be high, oval and laterally compressed, with the lateral line interrupted.

They are one of the more colorful, hardy, small, mostly peaceful, and inexpensive marine fishes. In the wild they are found closely associated with anemones, where they form a commensal relationship. There are 28 species of Anemonefish with the Maroon female Clownfish *Premnas biaculeatus* being the largest at 6. Most are found along coastal protected reefs, generally in shallow waters and usually in small groups near their favorite anemone. Their natural diet consists mainly of zooplankton, and they are generally easily maintained in the aquarium. They accept a wide variety of foodstuffs and most do well in a temperature range of 77 - 82 F 25 - 27 C , unless noted differently. Family members fall into six groups called "Complexes. The Tomato Complex consists of A. The Skunk Complex consists of A. The Clarkii Complex consists of A. The Saddleback Complex consists of A. And finally, the Maroon Complex with its single member, *Premnas biaculeatus*. Color patterns between juveniles and sub-adults of the same species are often similar. Other species, such as A. Most all other anemonefishes have vast differences between growth stages. It should be noted some aquarists find it difficult to tell the difference between A. Both look quite similar except that A. It also has a slightly higher dorsal fin. Generally, its advantageous to place "all" clownfish into the aquarium at one time, i. The first group of clownfishes into the aquarium will head straight for their favorite anemone, if available, and soon make it their home. Fautin and Gerald R.

5: ADW: Pomacentridae: INFORMATION

Florent's Guide To The Tropical Reefs Fish, Corals and Creatures - Damselfishes.

They are found in all tropical seas, mainly the Indo-Pacific oceans. They are one of the most numerous groups occurring on tropical reefs, in terms of both number of species and number of individuals. They are extremely variable in color with many species exhibiting shades of brown, black, blue, green, red, and yellow; a dark spot or ocellus often present on dorsal fin, particularly in juvenile stages. They are recognized by having a single dorsal fin with 7 to 17 stout spines and 9 to 21 soft rays. Their anal fin are with 2 spines and 9 to 16 soft rays. Most species do not exceed a length of about 15 cm. Damselfishes inhabit coral and rocky reefs, but also common in other shallow-water habitats. They are lively and quick, and are usually strongly territorial and aggressive. Their feeding habits are variable. The larger species tend to feed mainly on algae, many others are omnivorous, consuming algae and small invertebrates, while others rely on planktonic items. They are rarely caught for food. The primary fishery value of damselfishes is through the ornamental marine aquarium trade. There are 29 genera and about species of pomacentrids worldwide. About 78 species are found in Malaysia waters. Bengal Sergeant Local Malay Name: Recognized by the rounded tail and narrow bands. Maximum total length about 17 cm. Recognized by the 5 dark bands. Maximum total length about 20 cm. Body and fin silvery grey with small black spot on axilla. Maximum total length about 13 cm.

6: Damselfishes - Pomacentridae - Overview - Encyclopedia of Life

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Damselfishes are "Heroes, Tomboys and fake vegetarians" August 14, by Phum Uncategorized 0 Welcome to the Damselfish Family The Reticulate Dascyllus lives in groups consisting of a male sometimes two males, a group of females and juveniles. Males are usually larger than females, and females always spawn with the largest male. There are approximately 100 species of Pomacentrids, of which the anemonefishes occupy just 30 species. The vast majority of this family is constituted by damselfishes, which are again divided into various genera like the many species of Chromis, Dascyllus, Demoiselles and Sergeants. While the genus Chromis constitutes with 75 documented species the biggest genus of damselfishes, the genus Dascyllus is probably the most studied and best understood so far. Especially concerning their sexual and social behavior many damselfishes are still poorly understood probably many scientists were still shocked by the weird life of the clownfish ladyboys. Like their sisters the anemonefishes, damselfishes are relatively small and depend on an environment providing various hiding places. When threatened they shoot into holes, cracks and crevices. The vast majority lives The Golden Damsel is a solidarity fish living on coral reefs at a depth between 12 and 45 meters. It feeds on zooplankton and often joins groups of other zooplankton-eaters in the water column. Only a few species live in brackish or fresh water. A few species of the genus Chromis are also found in deep-water, down to almost meters Chromis Struhsakeri. Concerning their habitats we can distinguish two groups of damselfishes: The zooplankton-eaters have usually more cylindrical bodies and deeply incised caudal fins, which allows them to swim in stronger currents and flee from predators into the farer hiding places. The other groups are a bit less aerodynamic which in the water should actually be called hydrodynamic, but who is using this term? Fake Vegetarians The Reticulate Dascyllus feeds on algal fragments and zooplankton, but changes to a more algae-rich diet if zooplankton numbers decline. The vegetarian damselfishes scientifically be called herbivores feed on a variety of algae, including green, red and brown algae. However, the main form of their nutrition is constituted by unicellular algae microalgae anyway, probably easier to digest. They defend their algae gardens from other algae-eating fishes, as well as weed out certain slow growing algae and let fast growing algae flourish. Algae which are indigestible for damselfishes are indirectly protected by them too. Interestingly those damselfish algae gardens are a growing spots for bacteria and small invertebrates such as demersal zooplankton organism amphipods and copepods, as well as tiny crabs, worms and brittle stars. Straight and not so straight Carnivores The straight carnivores mainly those in the genera Chromis, Dascyllus and Demoiselle feed mainly on zooplankton mainly copepods, to a lesser degree also amphipods, isopods, crabs and shrimps. Beside zooplankton they were occasionally observed to eat sponges, small snails, nudibranchs, small insects and hydroids. During coral spawning season many damselfish change their diet to coral spawn. A minority of carnivore damselfishes feed also on stony coral polyps Biglip Damsel, soft corals and anemones Black Damsel. Other damselfish eat occasionally fish eggs and fish larvae. Damaging and supporting Coral Reefs Three spot Dascyllus are non-farming algae and zooplankton eaters. Dascyllus have been shown to be beneficial to coral reef growth. How about the interaction of damselfishes and corals? Non-farming damsels, who occasionally feed on algae, may remove the detrimental green organisms, which surely support the growth of coral polyps. But how about the farmers? We know that there algae gardens flourish and that the increased growth of algae is negatively correlated with the growth rate of coral polyps. Some farmers even attack and kill coral polyps directly to make space for a new patch of algae to feed on. On the other hand they protect their coral patches from any intruders. Damselfishes have been shown to be real heroes when it comes to protect their territories from other herbivore and carnivore damselfishes. But they defend their spots vigorously from any intruders, The Bluegreen Chromis lives in relatively shallow depths 1. It is usually found with large heads of Acropora Corals, forming big shoals of hundreds or even thousands of fishes. Damsel often mob or harass even their own predators. It was observed that some species harassed

scorpionfishes, moray eels and lizardfishes. Even barracudas, triggerfishes and octopuses were attacked by brave damselfishes, real heroes. Beside the farmers many damselfishes, especially the zooplankton-eaters have been shown to have a supportive effect on coral growth rates. Their movement among the coral branches helps to circulate fresh, oxygenated water to the inner parts of a coral colony. Also their excrements are rich in ammonium, nitrogen and phosphorus, important nutrient supplements for corals. Studies showed that coral colonies that contained *Dascyllus* damsels grew considerably faster than those without any. The Tomboy *Dascyllus* The Threespot *Dascyllus* adults live solitary or in small groups between 1 and 55 meters. Juveniles are black with three white spots and stay often with sea anemones. What about their sexual life? As mentioned, many species are still poorly understood, but there is plenty of information about the *Dascyllus* available. Most species of the *Dascyllus* genera change from female to male, which means they do exactly the opposite of their clownfish sisters. The most dominant fish is always a male and all other fishes in the group are either female or asexual juveniles. When the male dies or escapes to another place, a big female will change into a male. The mating system of the *Dascyllus* depends on their habitat. If they live among scattered coral heads, a male usually occupies an isolated coral head as its territory. Females and juveniles will join his territory and other males will be attacked and driven away. But on continuous coral reefs the *Dascyllus* follows a more promiscuous mating system. Males will occupy their territories again, but the female usually form feeding groups which roam through several territories of several males. Like the anemonefishes *Dascyllus* deposit their eggs on a hard substrate like a piece of dead coral, a dead shell or a man-made object. The larvae will swim into the water column and join the plankton for 17 to 47 days, considerably longer than anemonefish larvae. When the larvae transformed itself into a fully developed tiny *Dascyllus*, the baby fish will descend to locale a coral colony in which to settle and start a new life cycle.

7: Damselfishes and Anemonefishes: Scott W Michael | NHBS Book Shop

Damselfishes comprise the family Pomacentridae except those of the genera Amphiprion and Premnas, which are the anemonefishes. The largest can grow up to 36 cm (14 in) long, but most species are much smaller.

Podachromis richardsoni Snyder Juvenile here in Mauritius On any given day a handful or two of species are readily available from dealers. As with many cichlid species, the following generalities exist when picking out damsels: Beware of tanks of damsels with individuals hanging, drifting around having "private meetings". Damsels that have been adequately acclimated and held for just a day or two are extremely hardy; just-new ones may die easily. Damselfishes are easy to keep in aquaria; they are not fussy in terms of water chemistry and physics. Most tolerate and enjoy a wide range of salinities. The industry usually keeps theirs in a specific gravity of 1. Any amount of light, dim to bright, seems OK. Natural or synthetic water makes no difference in terms of vitality or reproduction in captivity. Damselfishes are a group that are better to start feeding as soon as possible. Provide coral, shells, plants- some nooks and crannies for social-psychological shelter. Keep the number and type of decorations simple to facilitate removal for cleaning, and possibly netting out livestock. Examples include neon-velvets, dominos, Hawaiian Dascyllus, giant sea of Cortez, garibaldi. Keep your eye on your populations and move those bullies. Maintaining these with larger angels, tangs, most triggerfishes, etc. Measure those lionfishes and basses before introduction. Some damsels are specialized planktivores to herbivores in the wild. In captivity damsels accept all foods greedily. In fact, sergeant-majors are legend for their use in training other shy species to surface feed. Frequent small feedings times per day of a mix of foods sustains them well. Nutritional diseases are all but unknown in this family. Infectious and Parasitic Disease: Damselfishes are parasitized internally and externally by several species of sporozoans, Cryptocaryon, Oodinium, roundworms, flukes tapeworms and crustaceans. The presence, abundance and susceptibility of these pathogens to varying salinities and treatments is complex. Damsels for the most part are disease resistant and if preventative measures have been executed and their environment is optimized you can expect low parasite loads. Most treatable conditions external can be excluded by the freshwater dip treatment and low specific gravity mentioned before. Damselfishes respond well to periodic prophylactic copper treatments. Internal "worm" parasites are sometimes easy to diagnose but difficult to cure. For internal problems, most preventative and treatment therapeutics can only be applied via food; injection or bath for internal parasite control should be avoided for these fishes as they will probably do more harm than good. Territoriality This can be a type of social disease. Keep your stock under-crowded, and observe them daily for extreme interactions. Inter-specific aggression is probably the single largest source of damselfish mortality. How long do they live? Some damsels have been kept in captivity for more than ten years and known to have lived more than twenty in the ocean. Most damsels reproduce like many substrate spawners; their behavior is similar to typical central-American neo-tropical cichlids. Other similarities with their contrasting freshwater cousins include an incomplete lateral line, a toothless palate, single, continuous dorsal fins and territorial behavior. Major areas of interesting damselfish biology will not be explored here. Chemical and sound communication, breeding and other behavior are rich adventures to be explored in a literature search and in you own tanks. *Chromis bitaeniatus* Fowler and Bean, the juvenile of *Abudefduf behni* Bleeker. Damselfishes of the South Seas. How many sergeant majors? *Marine Aquarist* 7 6: Damselfishes of the World. Aquarium Systems, Mentor, Ohio. American Society of Ichthyologists and Herpetologists, Rosentiel School of Mar. Spawning the Dusky Damsel. Successfully selling the popular marines. Damselfishes, saltwater bread and butter. The Conscientious Marine Aquarist. The indomitable damsels- Family Pomacentridae. *TFH* 32 8 Pomacentrids of the Atlantic. Colombo damsel *Pomacentrus proteus* Allen, On photographing the feisty damsels. The black and gold *Dascyllus Dascyllus trimaculatus* var. *Chromis pelloura*; a new species of damselfish from the northern Red Sea. The Beau Brummel damsel. Planktonic duration, distribution and population structure of western and central Pacific damselfishes Pomacentridae. *Copeia* 2 , pp.

8: Damselfishes - Talk About Fish

Florent's Guide To The Tropical Pacific Reefs - Scissortail Sergeant - Abudefduf sexfasciatus - Damselfishes - - Damselfishes - Indo-Pacific, Red Sea -

9: Damselfishes – Heroes, Tomboys and fake vegetarians - Scuba Bangkok

Damselfishes are an extremely important group of ubiquitous, circumtropical coral reef fishes. Along with the clown-anemone fishes (Amphiprion, Premnas) damselfishes make up the family Pomacentridae, with some 28 genera and @ species.

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