



Amphibians in the National Hunting Grounds of Mafra



Background

Urodelo is the name given to a group of amphibians that are characterised by their extended bodies, four similarly sized feet and long tails, such as salamanders and newts. In turn, the Anuros are amphibians with compact bodies, no tails and with the hind feet substantially larger than their front feet, such as frogs and toads.





Iberian Spadefoot Toad

(*Pelobates cultripes*)

Size: 60-80 mm.

Diet: beetles, slugs, ants, grasshoppers, butterflies and insect larvae. In turn, they are prey for water snakes, nocturnal birds of prey and by some mammals. In situations of danger, they bury themselves by their calluses or swell up their bodies so that their predators cannot swallow them and may also issue intense sounds. They display nocturnal habits.

Reproduction: The reproductive season depends on the weather conditions and especially the incidence of rain. The season may occur anytime from mid-autumn through to mid-spring. The males gather on sites of reproduction and sing beneath the water. This is an oviparous species in which the females somewhat randomly lay between 1000-7000 eggs in a long and gelatinous cord that falls to the bottom of ponds or gets attached to plants. In the National Hunting Grounds of Mafra, they abound near the Sunível pond.



The Iberian Ribbed Newt

(*Pleurodeles waltl*)

Size: 150-250 mm (the largest Iberian urodelo).

Diet: insect larvae, amphibian larvae (including its own species), dead animals, newts and small fish. They become the prey for water snakes and some fish. Their defence mechanism consists of arching their body and exposing their ribbed protuberances that then issues toxic substances. This is a nocturnal and crepuscular species with aquatic habits. During the day, they remain on the bottom of ponds and only rising to the surface to breathe.

Reproduction: Between September and July. This oviparous species sees females laying between 150- 800 eggs in small clusters that attach to aquatic plants.

In the National Hunting Grounds of Mafra, examples of this species have been identified in the Sunível pond.



The Fire Salamander

(*Salamandra salamandra*)

Size: 140-170 mm

Diet: insects, snails, slugs, centipedes and spiders. Their predators include water snakes, vipers and some birds. Their primary defence mechanism consists of secreting toxic substances via their parotid glands. They sometimes also arch their body to expose their glands and exhibit their colouring as a means of defence. This is a nocturnal, sedentary and terrestrial species. The fire salamander only seeks aquatic environments for reproducing.

Reproduction: Between September and May. The species is ovoviviparous or viviparous with the female laying some 20-40 larvae in the water. In the National Hunting Grounds of Mafra, they may be observed throughout its extent, at dawn and on rainy days.



Common Midwife Toad

(*Alytes obstetricans*)

Size: 40-50 mm. **Diet:** Centipedes, beetles, flies, spiders and slugs. They are preyed upon by water snakes, carnivorous mammals and barn owls. This toad is active at night and during the dawn but also on cloudy and rainy days.

Reproduction: End of winter or spring. The males

begin singing near to their places of hiding and the females choose the deepest sounding voices as they correspond to the males of the largest size. The female issues a line of around 80 eggs that are then fertilised by the male. Following this step, the male wraps the line of eggs around its hind legs and

carries them for a one to two month period during which the toad does not feed. When the eggs are ready to hatch, the male goes to a body of water and awaits all of them hatching. In the National Hunting Grounds of Mafra, they may be found across all its extent.



The Marbled Newt

(*Triturus marmoratus*)

Size: 160 mm. **Diet:** aquatic insect larvae, worms, slugs, snails and occasionally amphibians larvae. Their predators include vipers, small carnivores, water snakes and fish. As defence mechanisms, they both attempt to flee and secrete toxic substances through their cutaneous glands. They may also adopt behaviours designed to dissuade potential predators, for example raising their tails and moving their hind legs. They take to aquatic habits during the reproductive phase but are otherwise land based. They are essentially nocturnal creatures.

Reproduction: Between October and May. This oviparous species sees the females laying 150-400 eggs that individually get caught up in aquatic plants. The eggs are thus laid in bodies of stagnant water or with only gentle currents and where there is sufficient vegetation. In the National Hunting Grounds of Mafra, they are common in all the tanks during their aquatic season and in the immediate vicinities of pools of water at night and especially when raining.



Bosca's Newt

(*Triturus boscait*)

Size: 65-90 mm. **Diet:** aquatic invertebrates, worms and slugs. They are the prey for water snakes and vipers. To defend themselves, they both attempt to flee and secrete toxic substances through their cutaneous glands. This species is nocturnal during its terrestrial phase and both nocturnal and diurnal during its aquatic phase.

Reproduction: Between November and June. An oviparous species in which eggs are laid over various days to total between 100 and 250 eggs that stick to aquatic plants. Normally, this takes place in stagnant or only slow moving waters. In the National Hunting Grounds of Mafra, they are common to all tanks and coexist with the marbled newt (*Triturus marmoratus*).



The Common Toad

(*Bufo bufo*)

Size: 60-150 mm (largest anura species in Portuguese fauna). **Diet:** centipedes, beetles, flies, butterflies, slugs, worms and even other amphibians. They are in turn the prey of water snakes, vipers, ferrets, otters, the short-toed and booted eagles and of buzzards. In self-defence, adults puff up their bodies, rising up on their legs and lowering their heads and may also release glandular secretions. These secretions may cause irritations to humans when coming into contact with this mucous and or with wounds. They display either nocturnal or crepuscular habits but may also be active on humid and rainy days. **Reproduction:** between November and April. Adult species only resort to water during the reproduction season and may cover various kilometres in search of breeding sites. This is an oviparous species in which the females lay 2000-8000 eggs trapped within gelatinous strings that may run to many metres. This species is common throughout the National Hunting Grounds of Mafra.



Perez's Frog

(*Pelophylax perezi*)

Size: 75-100 mm

Diet: insects, spiders, worms, crustaceans, molluscs and even small fish and amphibians including its own species. Its predators include water snakes, ladder and grass snakes, diverse

species of birds (herons, storks and birds of prey) and otters. Its defence mechanism consists of fleeing to water and burying itself in the sediment. This species is active both nocturnally and diurnally.

Reproduction: during spring. An oviparous species, the females lay between 800-10,000 eggs in large floating agglomerations. In the National Hunting Grounds of Mafra, this frog is found in all of the tanks and ponds.



Mediterranean Tree Frog
(*Hyla meridionalis*)

Size: 50 mm

Diet: ants, beetles, flies, spiders, grasshoppers and other invertebrates. They are the prey for water snakes and a diverse range of birds. Their primary defence mechanism is camouflage based. Their period of activity is both crepuscular and nocturnal although also active during the day in the breeding season.

Reproduction: February to April.

An oviparous species, the females lay 10-30 eggs each time (and in total lay anywhere between 500-1,000 ovos) in among aquatic vegetation. In the National Hunting Grounds of Mafra, they gather in their dozens in the Sunível pond during the breeding season and may also be observed in the other tanks dotted across these grounds.



Common Parsley Frog
(*Pelodytes punctatus*)

Size: 35-45 mm.

Diet: small insects and other invertebrates. They are the prey for water snakes and nocturnal birds of prey. As a defence mechanism, they flee into water and secrete a mucous through their skin. They have both crepuscular and nocturnal habits.

Reproduction: late autumn through to the end of spring, with a particular incidence in the month of February. This oviparous species sees females laying between 1,000-1,600 eggs laid out in strings that wrap around aquatic plants. In the National Hunting Grounds of Mafra, the species has been identified in the Tojeira zone on a rainy day but is likely to inhabit the entire grounds.



Iberian Painted Frog
(*Discoglossus galganoi*)

Size: 45-65 mm.

Diet: insects, spiders, snails, slugs, worms and young members of its own species. Its own predators include water snakes and various different species of bird such as: herons, storks and barn owls. Some carnivorous mammal species, such as the common genet and otter, are also among its predators. Its key means of defence involves fleeing and hiding in among the vegetation. Its activities are mostly crepuscular in nature although also active during the day and especially whenever humid and rainy.

Reproduction: depending on the geographic region, this may extend from early winter through to late summer. The female couples with various males and lays between 20-50 separate eggs and hence another oviparous species. In the National Hunting Grounds of Mafra, this frog is found around the ponds or during early dawn whenever raining.

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