



The **Galápagos Islands**, part of the Republic of Ecuador, are an archipelago (an extensive group of islands) of volcanic islands distributed on either side of the equator in the Pacific Ocean west of continental Ecuador. The islands are known for their large number of endemic species and were studied by **Charles Darwin** during the second voyage of HMS *Beagle*. There are 18 major islands out of 21 total islands.



**Galapagos Mockingbirds:** Few species of birds are known to feed on the blood of living animals, and the occurrence of this behavior in populations of the Sharp-beaked Ground-Finch (*Geospiza difficilis*) on Wolf and Darwin islands, Galapagos, has become notorious. However, Galapagos mockingbirds (*Nesomimus spp.*) on some islands also drink blood from living hosts. Four endemic allopatric mockingbirds species inhabit the archipelago i.e., *Nesomimus macdonaldi* the **Hood or Espanola Mockingbird** on Espanola; *Nesomimus trifasciatus* the **Floreana Mockingbird**, on Champion

and Gardner-by-Floreana; *Nesomimus melanotis* the **San Cristobal Mockingbird**, on San Cristobal; and *Nesomimus parvulus* the **Galapagos Mockingbird** on Darwin, Fernandina, Genovesa, Isabela, Santa Cruz, Santa Fe, Santiago, and Wolf.

**The Galapagos mockingbirds differ only slightly in size, shape, and coloration.**



*Nesomimus macdonaldi*



*Nesomimus melanotis*

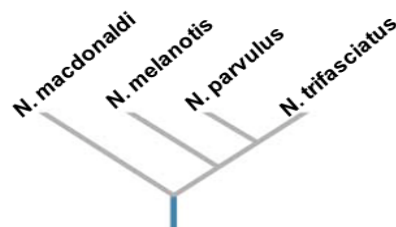


*Nesomimus parvulus*



*Nesomimus trifasciatus*

**Darwin reasoned that they are similar because they share a common ancestor.**



Galapagos mockingbirds have complex social organizations that include group territoriality and cooperative breeding. Mockingbirds in coastal areas of Espanola, where blood drinking is most frequent, live in large groups (up to 17 birds) at high density (9-16 birds/ha); on Santa Crist6bal, where blood drinking is not known to occur, mockingbirds live in much smaller groups (2-3 birds) at lower density (less than 1 bird/ha) (Curry 1987).

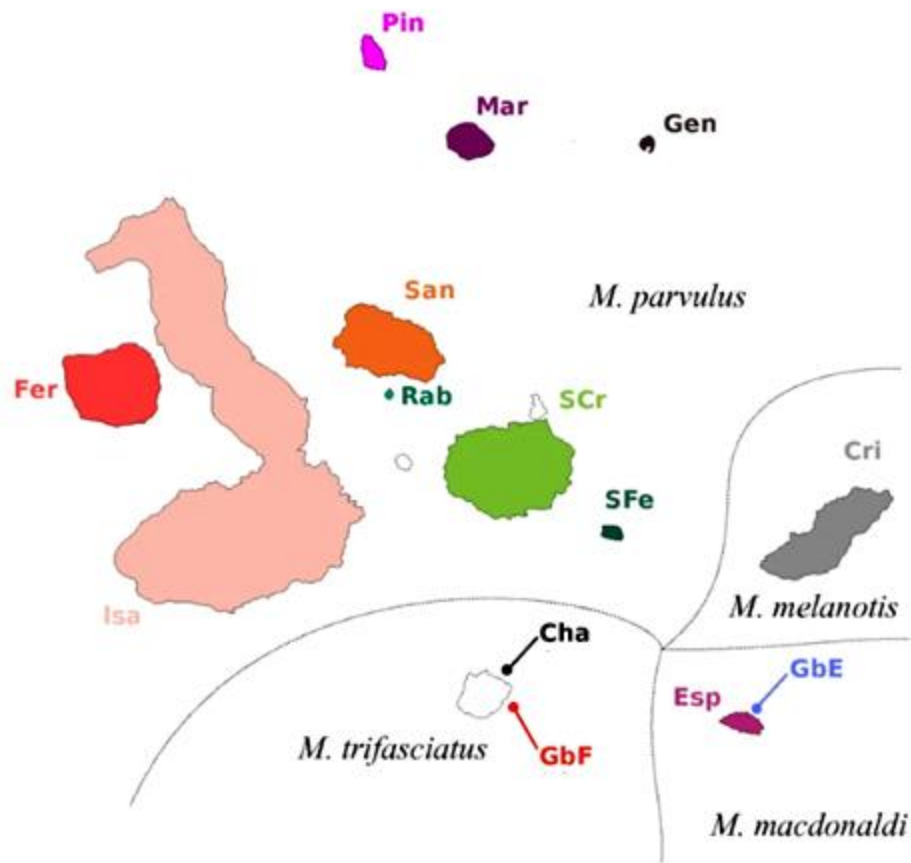


Fig. Distribution of mockingbirds throughout Galapagos

### General features of Hood mockingbird:

Española mockingbird is a species of [bird](#) in the family [Mimidae](#). It is [endemic](#) to [Espanola Island](#). It is found in dry forests and is omnivorous, though it primarily is a carnivore or scavenger. The species has a highly territorial social structure and has no fear of humans. This species has a mottled gray and brown

plumage with a white underbelly and a long tail and legs. Beak is long and thin useful for tapping into the eggs of seabirds. The species has the largest bill of any of the Galápagos mockingbirds.

### Feeding habits:

Hood Mockingbirds (*N. macdonaldi*) on Espanola forage in all habitats, eating fruit and both terrestrial and marine arthropods. Espanola mockingbirds drink blood from living sea lions (*Zalophus californianus*), marine iguanas (*Amblyrhynchus subcristatus*), and nestling Masked Boobies (*Sula dactylatra*).

- ❖ Mockingbirds also frequently obtain blood from seal ion placentas in coastal areas where sea lions give birth. Up to four birds at a time feed from each placenta, eating tissues and drinking from pools of blood on the rocks.



Hood mockingbird pecking at the tail of a marine iguana.



Espanola mockingbird vamping masked booby chick

- ❖ Espanola mockingbirds drink blood from living marine iguanas from a small hole in the iguana's tail until the victim moves into a protected position. *Nesomimus macdonaldi* may create these wounds incidentally while tearing off and eating ticks or skin from marine iguanas, as sometimes occurs when *N. parvulus* pecks ticks from land iguanas on Santa Fe.
- ❖ *N. macdonald* also drinks blood from the ground from Hawk killed iguanas or boobies.
- ❖ Espanola mockingbirds obtain blood more frequently from seabirds than from sea lions or iguanas.

- ❖ Espanola mockingbirds also attack Blue-footed Boobies (*S. nebulosus*) and Waved Albatross (*Diomedea irrorata*) chicks. Attacking mockingbirds gather around each victim and attempt to perch on its back or head to eat tissue and drink blood. Most victims die within 24h of the onset of blood drinking, usually after their vertebral columns and spinal cords become exposed. In these acts mockingbird deaths have also been reported by booby parents.

After Espanola, blood drinking can also be observed on Santa Fe, where mockingbirds (*N. parvulus*) occasionally drink blood from land iguanas (*Conolophus pallidus*) and from marine iguanas wounded by hawks or sharks. Blood drinking is not known to occur in any other Galapagos mockingbird population.

### **Reasons of Blood feeding:**

- ❖ Hood mockingbirds prefer blood drinking predominantly during dry seasons when other foods are scarce.
- ❖ Blood drinking occurs on Espanola and Santa Fe. Espanola and Santa Fe are small, low, and arid islands where mockingbirds are among the longest-billed forms. Potential sources, including sea lions, iguanas, and nesting seabirds occur virtually throughout the archipelago. Additional factors must be invoked to explain why blood drinking is not common to all arid-island populations.
- ❖ Interisland variation in blood drinking may result from differences in the frequency of opportunities to sample blood. Blood should be more often available to mockingbirds on islands where Galapagos Hawks kill or wound large prey such as iguanas or seabirds than on islands without hawks. A role for hawks in mockingbird blood drinking is supported by the observation that hawks are resident on Espanola and Santa Fe where mockingbirds drink blood but hawks are absent from Genovesa, Champion, Darwin, Rabida, San Cristobal, Santa Cruz, Seymour, and Wolf (Harris 1973), islands where mockingbirds are not known to drink blood.
- ❖ However, blood drinking arose simply by chance in just two populations. *N. macdonaldi* on Espanola has evolved an exceptional tendency to exploit blood from any available source.