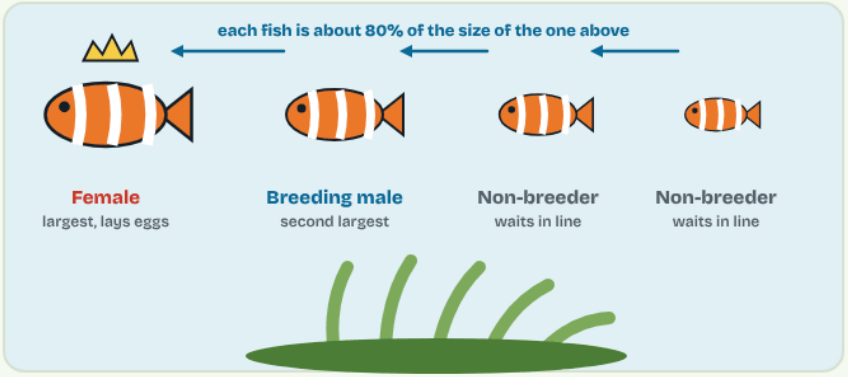
That is why

Why do clownfish change sex?

Every clownfish is born male. Only the biggest fish is female, and when she dies her mate takes her place.

A A line sorted by size



Too big? You're out.

Newcomers put next to a breeding pair (wild clownfish, Papua New Guinea)

Bigger than 80% of the breeding male — evicted 12 of 16

Smaller than 80% — evicted 3 of 16

Staying small keeps you in the group.

B The brain changes first

1. **Minutes to hours**
   One male takes charge and starts acting like a female.
2. **About 6 months**
   The preoptic area, a brain region that runs the gonads, grows to look female.
3. **3 years later**
   Only 3 of 17 had become fully female, and one laid eggs. The rest: female brain, male gonads.

A bigger brain region

In females the preoptic area is much bigger, with roughly twice as many neurons as in males.

C Why start out male?

1. **Born male**
   All young clownfish start as males, and change to female later, as they grow.
2. **Big females pay**
   Breeding success rises with the female's size, not the male's.
3. **Waiting is safer**
   Poor swimmers: a free anemone 0.5 m away was used in 1 of 32 cases.

The biggest fish is the queen, and the next in line becomes her.

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