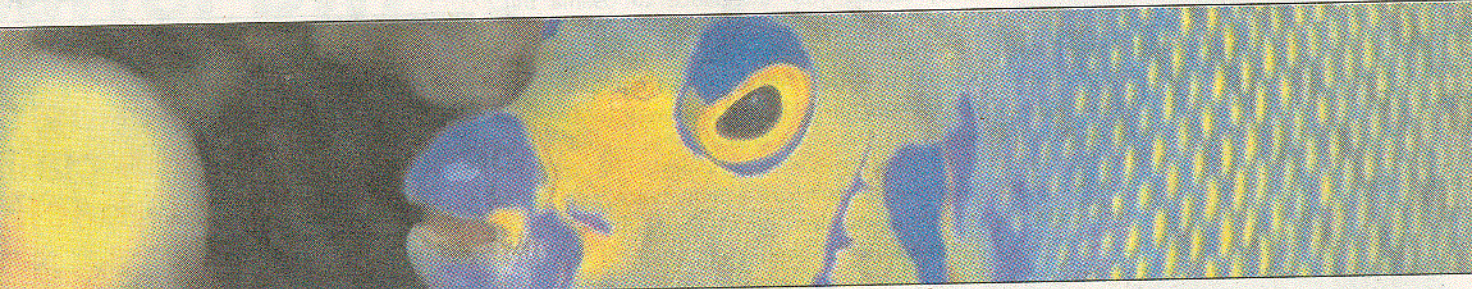


Study provides new insight into why animals change sex

# Animal magic



SOMETHING FISHY: Gordon the goldfish drag queen overrid the make-up on her first night

## Alexa van Sickle

RESEARCH UNDERTAKEN at Edinburgh University's Biology Department has made a significant contribution to discovering why some species change sex.

Data suggests that the reason many animals change sex is fundamentally the same across all species studied, and results will be published in *Popular Science* and *Nature* magazines.

## Molluscs

Animal sex changes were discovered by American Eric Charnov as recently as 2000.

Dave Allsop, current EU biology PhD student, is about to complete a three-year study conducted on a range of different sea species, including shrimp, molluscs, starfish and backboneed fish.

The study supports the existing evolutionary theory that some animals benefit from changing sex.

For example, in some species of fish, the largest male controls large female 'harems',

which means smaller males struggle to obtain mates.

Natural selection will favour those that mature as females and become male when they are older and larger.

## Matings

"The basic reason this can happen among these species and not amongst, say, humans, is that they need a large number of matings per male," explained Mr. Allsop.

"The harem leader enjoys great reproductive success, as his genes are passed on many times.

"A female has less success, but has an opportunity to change her luck."

But how, why and when does a female actually become male?

"The male mates with and defends his harem from other males, but he also stops them from becoming male by suppressing their dominance hormones.

"Were the male to be removed or killed, there would be a hormone cascade which would enable the larger females to rapidly

change sex and take over his role as harem leader."

While this may sound like fun, unfortunately it's unlikely to occur in humans.

"This kind of reproductive success is not possible for humans.

"There was a Prince in Mongolia who fathered 800 children, but I never heard any of his harem taking his place," said Mr. Allsop.

## Shrimp

The findings of this study show that all species studied - from shrimp to large fish - change sex at the same relative body size.

Mr Allsop's supervisor, Dr Stuart West of the Institute of Cell, Animal and Population Biology, said: "I am amazed by the outcome... our result suggests that the underlying factors favouring sex change are remarkably similar in all animals.

"It is amazing that simple theoretical ideas can potentially explain a universal characteristic of growth and reproduction across such different groups."