

Juvenile Fish

by Colin Marshall

We've all seen them. The teenager who is wearing something so weird, often with a haircut that is best described as bizarre, you don't know whether to laugh or cry with despair for the fate of the world. Watching these young oddities, I sometimes ask myself whether there are any similarities between human teenagers and the juveniles of the marine world.

I had a look back in my image files, and found a few examples of the different marine species, in the transition from juveniles to adults. It seems there are plenty of examples of where juvenile marine life is as "weird" as human teenagers, from the perspective of the adult.

This article discusses the possible biological or evolutionary themes regarding why juvenile and adult marine creatures are so different. Then turning to the differences between human teenagers and adults – are there any similarities?

Ridiculous clothes serve a purpose

Many-spotted Sweetlips - Plectorhinchus chaetodonoides

Marine Life : Juvenile marine life often adopt gaudy colors. These bright colors send warnings to potential predators – "don't eat me, don't even touch me". The "look at me!" pattern and wild swimming motion of the sweetlips below is a good example. Making oneself more visible to evade predation seems counter-intuitive. Some suggest this is successful as there are some highly colored



Juvenile Many-spotted Sweetlips - Plectorhinchus chaetodonoides

creatures (generally nudibranchs and flatworms) out there which are known to be highly toxic and these other juveniles are piggy-backing on the well-deserved poisonous reputation of those flashy-but-dangerous critters.

Teenagers : The odd clothes or haircuts that teenagers wear are subconsciously worn to keep people away, as they know that their verbal skills are so poor they won't be able to have a conversation. Or at least a conversation they want to have (which is just about any conversation with an adult). So the message is similar to the fish "Look, but just don't talk to me".

Camouflage is cool

Rockmover Wrasse - Novaculichthys taeniourus

Marine Life : Returning to those juveniles with gaudy colors and patterns. Some of these juveniles tend to spend most of their time in environments that provide them with very effective camouflage, like sea grass or colorful soft coral. In other words,



Adult Many-spotted Sweetlips - Plectorhinchus chaetodonoides



Juvenile Rockmover Wrasse - Novaculichthys taeniourus

those colors may seem bright when seen in blue water but in that protective environment they are very well camouflaged.

Teenagers : We may think that teenagers clothing is similarly gaudy and inappropriate, but in the context of the environments that they like, these outfits fit right in. An adult in a club wearing



Adult Rockmover Wrasse - *Novaculichthys taeniourus*

a 3-piece suit would stick out like a sore thumb; teenagers wearing a pink miniskirt and neon green tank top are everywhere and they easily meld into each other and the background, invisible to hostile and nosy parents.

The other angle is that the adult fish develop some measure of self-protection (as anyone who has been harassed by an adult triggerfish knows), and so they can afford to look drab and boring. Much like human adults really – we tend to dress badly (well, the men at least). We know that we’re not on any predator’s list, we really don’t care what people think and we know how to use lawyers to sue people.

Spots can save your life

Yellow Boxfish - *Ostracion cubicus*

Marine Life : Spots on Juveniles confuse predators, especially as the spots disguise the front of the fish (the boxfish below showcases this – “where’s the eye?”), preventing the predators from



Juvenile Yellow Boxfish - *Ostracion cubicus*

attacking properly, allowing the juvenile to make a getaway.

Teenagers : Teenagers have spots. When they are complaining about their facial blemishes, just tell them it makes them too ugly to be targeted by predators. That will help.

Stripes are just as good as spots

Yellowtail Damsel - *Neoglyphidodon nigroris*

Marine Life : Many juveniles go through a period with pronounced stripes, which often disappear completely. The effect of the stripes is to make them blend into each other and the background, confusing predators. Like zebras evading lions on the plains of Africa.

Teenagers : Teenagers manifest the same principle about having stripes by wearing similar clothes to each other to confuse predators. This makes it more difficult for a vicious predator to see them, as they all appear the same, or at least they cannot be clearly spotted. In this case the “vicious



Adult Yellow Boxfish - *Ostracion cubicus*



Juvenile Yellowtail Damsel - *Neoglyphidodon nigroris*



Adult Yellowtail Damsel - *Neoglyphidodon nigroris*



Juvenile Emperor Angelfish - Pomacanthus imperator

predators” are their parents who potentially could spot them in the mall or on the street, when the kids are doing exactly what they shouldn’t be doing.

Signaling sexual maturity

Emperor Angelfish - Pomacanthus imperator

Marine Life : The change in fish patterns are sometimes coincident with a change in sexual maturity, signaling to potential partners that they are ready to reproduce, a priority for all lifeforms. Clearly, the sooner a species can start the mating process the better, before they get eaten.

Teenagers : Teenage girls wear clothes made from minimal material “because it makes me look hot” (whilst stressing to their parents that “I’m a good girl”). Enough said. The teenage boy who continues to wear his school shorts and cute tie will unlikely be successful with those girls. So he changes his look – just like the fish, he is signaling a sexual maturity by changing his appearance, making



Adult Emperor Angelfish - Pomacanthus imperator

an overt signal to anyone who may be watching. (God knows, he can’t rely on his conversational skills to indicate some kind of maturity).

Invisibility is not just for the movies

Painted Spiny Lobster - Panulirus versicolor

Marine Life : Like the lobster above right, some marine juveniles are nearly completely transparent, obviously for security reasons. If your predators can’t see you, they can’t catch you and eat you.

Teenagers : Remember the highly popular “cloak of invisibility” in the Harry Potter movies? This was to evade capture by various demons (ie adults). (Although allegedly Harry first used the cloak to watch Hermione in the shower). Teenagers seem to have a strong desire to be invisible. Strangely enough, they actually aspire for some kind of “opaque-ness”, rather than transparency

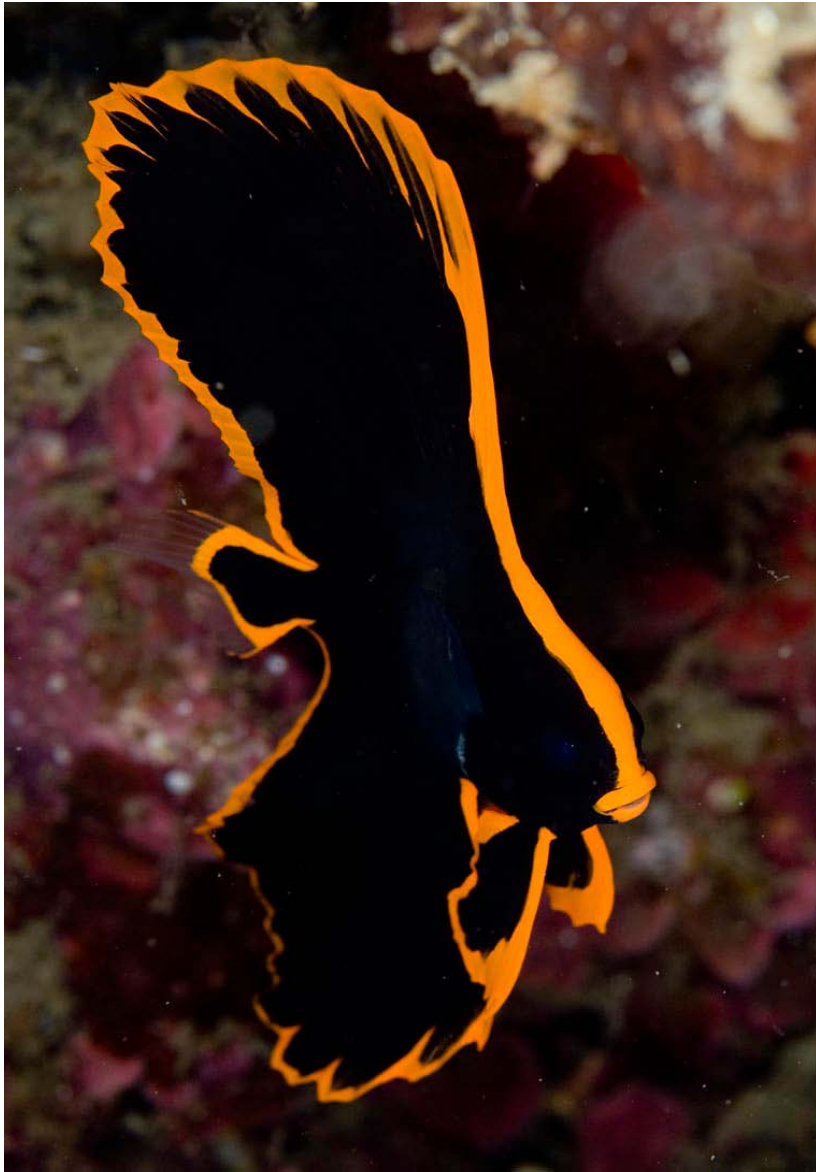


Juvenile Painted Spiny Lobster - Panulirus versicolor



Adult Painted Spiny Lobster - Panulirus versicolor

– think of their reaction when asked a question like “did you get into any trouble last night at the sleepover”? Amusingly teenagers are unable to avoid their genetic coding and they are remarkably transparent – you can see straight through them, just like the lobster.



Juvenile Pinnate Spadefish – Platax pinnatus

Look different to Mom and Dad

Pinnate Spadefish – Platax pinnatus

Marine Life : There is a biological thesis that by looking



Adult Pinnate Spadefish – Platax pinnatus

different to the adults, then predators who normally target the adults will not go for the juveniles, as the juveniles aren't on the predators' menu. So by looking different to your parents,

you won't be picked off by your parents' predators looking for a snack. Note the "looking different" applies to body shape as well as colors and patterns, as in the spadefish below.

Teenagers : Most human parents are not targeted by predators, so it seems difficult to apply the marine creatures logic for human teenagers. But we all know that teenagers would rather die than look remotely like their parents; so what's going on? In fact there is some similarity with the marine creatures looking different to the parents. Teenagers know what their parents do – parents work, they clean the house, they shout at the kids, they are generally fatter and more ugly - and kids want no part of that. So they subconsciously think that if they look different, they won't end up doing all that boring stuff and instead can continue to do really useful things like play video games, watch MTV and dream of being married to Justin Bieber or Miley Cyrus.



Juvenile Yellowtail Coris - Coris gaimard

What a weirdo - no wonder, just look at the parents

Yellowtail Coris - Coris gaimard

Marine Life : Some fish like wrasse and angelfish never seem to mature – even the adults look a little ridiculous. There seems to be a disguise element going on here, especially with the mystifying spots and stripes, along with the “stay away” warning of gaudy colors. Wrasse are the masters of this bizarre coloration, even in the adult phase.

Adults : The human adult equivalent would be the guy who goes to a formal dinner wearing a Hawaiian shirt. Or the fat (male) tourist wearing a thong on the beach, or the fashion victim in a hideous outfit. One is tempted to assume these individuals have a mental issue behind their egotistical and narcissist behavior (or maybe just come from California). But perhaps there is a “biological survival” reason. My theory is these weirdos are displaying a warning along the lines of “I’m crazy and you don’t want to know what I will



Adult Yellowtail Coris - Coris gaimard

do to you”. So whilst we can blame the way the teenagers look on these kind of parents (they must get some ideas at least), unfortunately the children and parents are both simply following a deeply engrained biological survival instinct.

So – is there any connection between how marine creatures change from juvenile to adult stages, and human teenager fashion sense?

Our nearest ancestor from whom both fish and humans evolved was about 400 million years ago. In universe-time terms, that was like the day before yesterday. It is not surprising to me that juveniles and adults in both marine and human species are so similar, as we are so close in terms of DNA. And that explains why my aunt always smelt of fish and my uncle was so greasy.

So returning to the awkward teenagers at the start of this article. Picture the boy trying to look tough (whilst dancing, Bollywood-style, in latex trousers) or the surly “whatever” girl with the “life is so boring” expression. These precious youngsters are the Defenders of our Civilization. The Keepers

of our Destiny. Our Legacy. Before you dissolve into a pool of despair and helplessness at the futility of our species’ survival, perhaps try and convince yourself that our teenagers are simply following some unavoidable evolutionary and biological laws.

These laws have obviously been very successful at maintaining our species – we, like cockroaches, are under no danger of extinction. So we probably owe a debt of gratitude to those bizarre and awkward teenagers. Or, more appropriately, we owe that debt to the marine creatures who created the original survival themes discussed in this article - the themes that our teenagers are now unknowingly, yet slavishly, following.

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The author is the father of a 2 year old girl (ie he has no experience of raising teenagers), with no formal scientific training regarding biology

or evolution. He is, though, highly aware of the fast-approaching inevitable day when some awkward, frustrated teenage boy with one objective in mind will come to take his little princess out on a date. He is telling his wife that prior to the date we will all sit down for a sensible, mature discussion, clearly explaining the biological and evolutionary forces at play. But in reality he plans to simply have a private discussion with the boy, swearing colorfully and brandishing a loaded gun.

