Sea hares in the Aquarium

Julie Van Horn

Most aquarists regard slugs with one idea in mind: algae eaters. It is true that they do eat large quantities of algae, but sea slugs are singular creatures in their own right. First it is important to distinguish among the types of sea slugs. The sea slugs most commonly appearing at an aquarium store near you are likely either nudibranchs or sea hares. Nudibranchs are generally less than a few inches in length, brightly colored and have highly specific dietary requirements. Sea hares are significantly larger, less brightly colored and have more general diet preferences. Responsible aquarium keepers know what they are buying and its proper care. Many people have heard of nudibranchs, but sea hares are a different story.

A sea hare in an aquarium store is likely to be of the genus Aplysia (Photo 1). A sea hare from the species Bursatella is shown in Photo 2. The largest Aplysia is the California sea hare (Aplysia californica), which can grow to 3 feet in length. Not to worry though, this kind of growth is unlikely in a home aquarium. Sea hare growth is limited by the quality and quantity of food they receive. Aplysia are not overly fond of hair algae, but if that is all that is available, it will do. Sea hares are not as attractive as other sea slugs in the aquarium, but with proper care, they will happily and often less belligerently get along with one another.

In the best of circumstances, a sea hare's life expectancy is just over a year. With so little time, reproduction is paramount. Sea hares are hermaphrodites, but this doesn't mean they can reproduce without a partner. Because of the way the plumbing is laid out, they cannot self fertilize. Instead, a second sea hare will act as either a male, female, or the combination of both.

Continued on page 2

Premnas biaculeatus - The Maroon Clownfish

Bob Fenner

Maroon clownfish have got to be one of the most striking of marine tropicals... with apologies to the “Nemo” lovers of the world. With their overall bold salmon red body and fin coloring, demarcated with white to yellow barring. The rest of its coloration is “Spine-Cheek Clownfish”. In photograph 2 you can clearly see the barb on the preoperculum. Another common name for the species is “Spine-Cheek Clownfish”. In photograph 2 you can clearly see the barb on the preoperculum. In photograph 2 you can clearly see the barb on the preoperculum.

Continued on page 4
About Cnidarian Symbionts & Tankmates

Maroons will take on a number of other organisms (and inanimate objects) as symbiotic hosts. Most naturally the Bubble Tip Anemone, Entacmaea quadricolor, is well matched with them... and the matching of captive produced fish with captive produced anemone is especially sweet.

Of all Clownfish species, Maroons are likely the very most changeable, flexible in their behavior, but also the downright orneriest as well. They can easily take on even larger triggerfishes, puffers, basses... and tear up hexacorallian tankmates... corals and anemones especially. The key descriptor in their intelligent care is “keen observation”. You must keep your eye on them, lest they “go ballistic”. It is highly recommended that you intentionally place your Maroon’s last or close to last as fish livestock AND that they be what you want as the “alpha” fish. Even in tanks of a few hundred gallons. “Oh, I’m going to have a few anemones so I can keep different clowns together” Think again... often Premnas will “hog” any and all such symbionts.

Premnas biaculeatus - The Maroon Clownfish

Two spines on the gill cover give this fish its species name “biaculeatus”.

Yes, Premnas will accept “strange bedfellows” like Trachyphyllia (Brain Coral), Flower Pot Coral (Goniopora), Plate Corals (Fungiids), all sorts of soft corals, even faux corals, rocks, powerheads and the like, but they do NOT need these organisms to live healthy, long lives. Tank bred specimens have very likely never been exposed to cnidarians period and many may not take to them in your system.

Systems

This fish gets big, nearly seven inches long in the wild, just slightly smaller in captivity. And can be, to put it mildly, feisty with its own kind and other livestock. I would not place a single individual in any aquarium smaller than a forty gallon, or two fish in a minimum of sixty gallons. If mixing a new individual with an established one, it is strongly suggested to separate them for a solid week, with a partition or my favorite, a floating plastic colander (spaghetti strainer). Put

Reproduction

This fish has been spawned many times commercially over the last few decades. Times were that tank bred/reared Maroons were clearly inferior to wild-caught, with less color, some behavioral anomalies and at times, shortened lifespans. Nowadays, this is far from the case, and except for folks who don’t want to wait to bring up their own small individuals to pair and perhaps reproduce, captive produced individuals are far superior in quality, disease resistance, overall adaptation to aquarium conditions.

Pairs of this species, males are much more red, diminutive in size by comparison, can be purchased as such or if one of yours should perish, another of the appropriate size of the lost one may be introduced (within a few weeks to discount aggression). Raising your own broodstock is not hard to do, with the usual approach of acquiring a handful of small individuals and having them “grow-up together”. This requires either a good-sized system or vigilant observation on your part, to notice pairing behavior and likely removing these to other quarters.

Foods/Feeding/Nutrition

Small to large Maroons will accept all foods with gusto. In the wild, the species principally feeds on zooplankton and macroalgae, but in captivity they will gladly take flakes, pellets, A wild-caught “pair” in a wholesaler’s cubicle. The male is the smaller, lighter colored individual in the foreground.

the “old” one in the colander, allowing the new one to become familiar with the system, AND closely observe them the day of actual fin-to-fin introduction.

Premnas do best in “reef” type settings, irrespective of their tenacious personalities and the possibility of their tearing up sedentary invertebrates. They may dig in the substrate, particularly around a host organism/item, but this is nothing to be alarmed about. They greatly prefer a mix of rocky decoration to cruise about in, and your other agile livestock will appreciate this as well... to get out of sight of the Maroons.

Two spines on the gill cover give this fish its species name “biaculeatus”.

Yes, Premnas will accept “strange bedfellows” like Trachyphyllia (Brain Coral), Flower Pot Coral (Goniopora), Plate Corals (Fungiids), all sorts of soft corals, even faux corals, rocks, powerheads and the like, but they do NOT need these organisms to live healthy, long lives. Tank bred specimens have very likely never been exposed to cnidarians period and may not take to them in your system.

Systems

This fish gets big, nearly seven inches long in the wild, just slightly smaller in captivity. And can be, to put it mildly, feisty with its own kind and other livestock. I would not place a single individual in any aquarium smaller than a forty gallon, or two fish in a minimum of sixty gallons. If mixing a new individual with an established one, it is strongly suggested to separate them for a solid week, with a partition or my favorite, a floating plastic colander (spaghetti strainer). Put

Reproduction

This fish has been spawned many times commercially over the last few decades. Times were that tank bred/reared Maroons were clearly inferior to wild-caught, with less color, some behavioral anomalies and at times, shortened lifespans. Nowadays, this is far from the case, and except for folks who don’t want to wait to bring up their own small individuals to pair and perhaps reproduce, captive produced individuals are far superior in quality, disease resistance, overall adaptation to aquarium conditions.

Pairs of this species, males are much more red, diminutive in size by comparison, can be purchased as such or if one of yours should perish, another of the appropriate size of the lost one may be introduced (within a few weeks to discount aggression). Raising your own broodstock is not hard to do, with the usual approach of acquiring a handful of small individuals and having them “grow-up together”. This requires either a good-sized system or vigilant observation on your part, to notice pairing behavior and likely removing these to other quarters.

Foods/Feeding/Nutrition

Small to large Maroons will accept all foods with gusto. In the wild, the species principally feeds on zooplankton and macroalgae, but in captivity they will gladly take flakes, pellets,
A Premnas with Brooklynellosis.

Frozen/defrosted. The species does best being afforded regular spontaneous feeding through the use of a live sump (refugium) but will also fare well being offered foods twice daily.

Diseases of All Sorts

As clean and easy to keep biologically disease-free as captive produced stock of this species is, the wild-caught is VERY often funky and gunky. Almost all imports are hosts to a species is, the wild-caught is VERY often funky disease-free as captive produced stock of this

Crypt/ich and Amyloinum can be treated with copper based medications and/or environmental manipulation. Brooklynellosis almost never responds to any treatment not containing formalin/formaldehyde. Beware of “reef safe” and “herbal” voodoo and other ingredients label-less treatments - they do NOT work. And do make sure and NOT attempt treatment in your main system... this must remain fish-less (free of hosts) for a good month, while you’re treating your fish livestock (all of them) elsewhere. The logic of quarantine becomes immensely clear to any/all who have suffered these experiences.

Cloze

So... you can read this off like a checklist: Do you have a large enough tank (forty gallon for one, sixty for two minimum), which can use a “boss” fish? W here its hexacoralian organisms might end-up shredded? Lots of time to wait on a beautiful fish or two? W ell, you just might be a candidate for Maroon keeping. Most problems with this fish are self-generated... people trying to keep them in too small a system, not as the alpha fish, buying large wide-caught specimens and not properly quarantining them... Avoid these common mistakes.

Bibliography/Further Reading:


Allen, Gerald R. 1975. Damselfishes of the South Sea. TFH Publications, Neptune City, NJ.


SeaScope® newsletter is now available on-line at www.marineland.com under the News tab. Go to the “What’s New” section and choose SeaScope® newsletter for the most recent issue. Dealers not receiving copies of SeaScope® for distribution to their customers should call Aquarium Systems, Inc. to be added to the mailing list. Telephone: 1-800-822-1100. The SeaScope® newsletter is now available on-line at www.marineland.com under the News tab. Go to the “W hat’s N ew” section and choose SeaScope® newsletter for the most recent issue.

Address comments, questions, and suggestions to:

Dr. Timothy A. Hovanec, Editor.
Marineland, 6100 Condor Dr., Moorpark, CA 93021
or E-Mail: seascope@marineland.com

SeaScope® was created to present short, informative articles of interest to marine aquarists. Topics may include water chemistry, nutrition, mariculture, system design, ecology, behavior, and fish health. Article contributions are welcomed. They should deal with pertinent topics and are subject to editorial reviews that in our opinion are necessary. Payments will be made at existing rates and will cover all author’s rights to the material submitted.

SeaScope® is published quarterly for free distribution through local aquarium dealers. Dealers not receiving copies of SeaScope® for distribution to their customers should call Aquarium Systems, Inc. to be added to the mailing list. Telephone: 1-800-822-1100. The SeaScope® newsletter is now available on-line at www.marineland.com under the News tab. Go to the “W hat’s N ew” section and choose SeaScope® newsletter for the most recent issue.

Future Events and Conferences

IMAC 2005 June 24-26, 2005, Chicago IL.

MACNA XVII September 16-18, 2005 Washington D. C.

Sea Science. Success Solutions.

For more than 40 years, Instant Ocean® and Reef Crystals® Sea Salts have set the industry standard for quality, consistency, convenience, and value in aquarium sea salts. They are the #1 choice of hobbyists, public aquariums and scientific research facilities everywhere - the perfect solutions for the ideal marine environment.
Sea hares in the Aquarium
Continued from page 1

Transferring sperm to the first via an eversible penis located on the right side of the head, or as a female, receiving sperm from the first through a gonopore located in the middle of a sea hare's back. Groups of mating sea hares form loops or chains that can be quite extravagant. Obviously, it's much more fun for the aquarist and the sea hares if more than one are kept.

The end result of all this activity is eggs. Sea hares stick their eggs, which resemble green spaghetti, onto the walls of aquariums. In about a week the eggs will hatch and the egg masses will disappear, releasing microscopic larvae called veligers. Most veligers are removed by the filtration system in fairly short order. Survival in a home aquarium is not likely, as the veligers require phytoplankton food and specific types of algae upon which to metamorphose into adults.

Sea hares are low-key creatures. They don't bother other animals and other animals don't bother them. On the rare occasion that a sea hare is genuinely annoyed however, it is capable of ejecting purple ink. The color is derived from pigments in the diet. Starved or old sea hares release blue ink.

Nearly blind, sea hares depend on their senses of touch and "smell". When food is put into the aquarium, they immediately stop what they are doing and begin casting about with their heads to zero in on the source. The two "ears" on top of a sea hare's head are called rhinophores. The rhinophores, along with the "mustache" or oral tentacles around a sea hare's mouth receive chemical cues from objects in the water of interest to them, namely food or other sea hares. The oral tentacles, combined with the anterior part of the foot are used to grasp and manipulate food.

Sea hares do not have teeth. They grasp their food by means of a rough tongue like structure called the radula. Photos 3 and 4 contrast the radula of the sea hares in the species Aplysia and Bursatella, respectively. Different kinds of sea hares have distinct looking radulas, which are adapted to the type of food they prefer. The radula is lined with rows of radula teeth. Aplysia radula teeth are short and fairly blunt while those of another sea hare, Bursatella, has radula teeth that are long and hooked. Between the mouth and the gizzard is a crop that stores food on its way to a muscular organ called the gizzard. The gizzard is endowed with gizzard teeth made of chitin that serve to further grind up food. Then it's just a short trip through the intestine and out through a siphon in the center of the sea hare's back, posterior to the shell. Because a lot of what they eat is not digestible, the majority passes right through. Frequent bottom siphoning is a must if you insist on a neat aquarium with sea hares.

Some sea hares can swim. They have large wing-like extensions, or parapodia, on either side of their bodies that they beat against the water, lifting them up. Other sea hares cannot swim, and must be content with slow sluglike movement along the sea floor with the aid of the muscular foot.

Although the term slug implies that sea hares are without a shell, in fact, Aplysia does have a shell (Photo 5). It is much reduced and internal, but can be felt in the middle of its back. The sea hare larva, or veliger, always has a shell, but some species lose it as they mature.

Sea hares are not a solution to hair algae. Forcing them to eat it is no fun and they will not thrive. Instead, if you decide to keep sea hares, feed them well and enjoy their slow motion antics as a contrast to the energetic swimming of tropical fish.
Frag Swaps – a beginner’s guide.

Tony Nista

There has been a dramatic increase in the number of new reef aquarium hobbyists in the past few years. This increase has led to a swelling in the number of local “frag swaps” being held in communities across the country. Frag swaps are events typically sponsored by a local aquarium society during which hobbyists will buy, sell, and trade captive grown fragments (frag) of corals, as well as new and used equipment. This article will tell you all you need to know if you will be going to your first swap.

Preparing to attend

Attending your first swap can be an intimidating experience. I always try to arrange trades or purchases in advance of the swap. You can usually find a thread in one of the online boards or on the sponsoring clubs website in which advance trades and sales are arranged. Scan these frequently in the days leading up to the swap. You can also post on these threads with any specific species you are looking to buy or trade for. Remember to arrange a time and/or a place to meet the seller at the swap, as usually it is someone you don’t know. Most swaps issue name tags at the door, but I have found it best to let the seller know that I’ll be wearing a bright red shirt, or some other way to distinguish myself to make locating each other easier.

Possible Fees

There is usually a small fee to attend swaps, and another small fee if you want to set up an aquarium to sell or trade frags from. You will probably not have anything to trade if you are new to the hobby, which means you should bring cash with you. 90% of the people who are selling things will only accept cash, although there will usually be some vendors there taking credit cards. Check with the sponsoring club ahead of time to find out which, if any, vendors will be attending and what forms of payment will be accepted. Usually, these events are held in venues that are a little too small for the numbers of attendees, which will mean some waiting around while the crowd goes from table to table examining the offerings. You should attempt to see all of the offerings before

The Bird Wrasses, Genus Gomphosus

Bob Fenner
WetWebMedia

Almost constantly soaring about like their avian counterparts the brilliantly colored bird wrasses are amusingly shaped, and are on a sharp-eyed look-out for food items, predators, and aquarists.

Bird Wrasses so named for their prominent physical beaks as much as their flitting swimming behavior. These are fast moving, moderate sized (males to about a foot) fishes that do very well in mixed fish species systems.

There are two species in the genus but depending on the geographic location of the aquarist there is little awareness of the other by species. Europeans are readily familiar with The Indian Ocean and Red Sea species Gomphos caeruleus which is almost exclusively traded in European markets. But Americans will only know G. varius which is found in the eastern Pacific Ocean.

Both these species attain about the same size, have similar habits and care requirements. Bird Wrasses are neither small, nor greatly easy going, and are best kept with other mid-sized fishes of an outgoing nature. Small fishes, or ones that are too shy to compete for food, and “bite-sized” invertebrates like small shrimps cannot be easily kept with Gomphos spp.

The Two Species

Gomphos caeruleus (Lacepede 1801), the Blue, or Red Sea Bird Wrasse (Photo 1) is found in the Indian Ocean and Red Sea. Males are dark azure blue, and females white to yellow below and dark greenish blue above. They reach about one foot (30 cm) in length.

Gomphos varius (Lacepede 1801), is the much more common Bird Wrasse in the west. The males are lighter green overall, and females transversely white to black front to back, with an orangish upper “beak”. The common Bird Wrasse is found in Hawaii to the tropical western Pacific Ocean.
The Bird Wrasses, Genus Gomphosus

Continued from page 1

Selection

The Bird Wrasses are NOT easy to collect (all are wild caught), being very quick and smart, avoiding fence nets that are strung up along the bottom to drive marine fishes into. Even once they "hit the net" their capture is not guaranteed, as these are amongst the few species that are wily enough to swim over the "float line" or seek egress from the bottom "lead line". An adept collecting diver will look to hand-netting Gomphosus from the barrier/fence net first to both secure this worthy catch, and also reduce subsequent physical trauma to the specimen. As a potential buyer, you'll do well to check for collateral damage from this process, as well as the harrowing effects of being held in cubicles, tanks prior to shipping, and the difficult process of bagging and shipping. Here are three tips for selecting Bird Wrasses:

1.) Check prospective Bird Wrasses buy carefully for signs of apparent physical damage. Torn fins, missing scales are generally easily repaired over time, but damage to the mouth and eyes should disqualify a purchase. Almost all mouth-damaged and nearly all eye-damaged wrasses perish within days to a few weeks.

2.) As a related matter, don't be overly eager to buy "just arrived" specimens of Gomphosus. Often these fish are only a day or two from being captured, and may well show signs of damage a few days hence. If necessary, ask your wholesaler/dealer if they will hold a given individual for you, perhaps with a good faith deposit, for pick-up in a week or so.

3.) Size matters! Unless you have a very large system (>100+ gallons) with little present livestock, select for smaller specimens to start with. These ship and adapt far better than large males... which brings us to the pertinent fact that these fishes like other wrasses are synchronous (versus simultaneous) protogynous (first females) hermaphrodites. Meaning they start off as females (initial state) and change at a later time (depending on food availability, social circumstances...) into males. So, using a healthy female, you can expect in time to have a male.

Habitat

Even small specimens of Bird Wrasses need room to move. These species are capable of incredible bursts of speed, and can and do easily damage themselves at times by running into the walls of their aquariums. A minimum sized aquarium for them is a two-foot wide by four-foot long system; for mature individuals make that a six foot long aquarium.

Akin to their propensity for rapid movement, their tanks need to be completely covered. MANY end up as so much "floor jerky", having launched themselves out through a small opening or uncovered tank.

Filtration/aeration/circulation need to be brisk. During the day/light period Gomphosus require fully oxygenated water to sustain their aerobic activity. During nights/lights out time, they mainly settle down in a crook/crevice to sleep, possibly even under the substrate.

Providing hiding/sleeping spaces and adequate depth and the proper shape and texture of sand substrate is important. A few caves, arrangements of rock, and smaller diameter coral sand are ideal. If the whole system cannot be fitted with this sand, a given deeper (a few inches) area should be set aside for their use.

Tankmates

Hardy damselfishes, medium to larger marine angels, batfishes, Soldierfishes, basses of good size, these are suitable fishes in terms of compatibility. Anthias, butterflyfishes, most cardinalfishes... will not get enough to eat in a tank with Gomphosus.

Bird Wrasses do not consume stinging-celled animals, preferring mollusks, small fishes, echinoderms and worms mostly in the wild, so strictly speaking they are "reef safe" fishes, though they will consume smaller shrimps given the chance.

Bird wrasses do fine kept one to a tank, and can be kept as "pairs" (one female, one male), or if your system is very large, a group of females, but do maintain just one male per system.

Foods/Feeding/Nutrition

Bird wrasses are far from finicky feeders and will gluttonously consume all formats of foods in great quantities. In fact, there is typically very little, make that no training time required acquainting Gomphosus with novel foodstuffs. As a practical measure, you may well have to feed your Bird Wrasse in one corner while simultaneously trying to get food to your other livestock.

Disease

We have already mentioned the incidental damage and mortalities due to capture trauma and habitat limitation; Bird wrasses are amongst the toughest, most biologically disease-resistant of fishes, though they can fall prey to hyperinfective parasitic disease. Happily, Gomphosus are also susceptible to cure by the usual environmental manipulation and chemical treatments employed for the majority of marine fishes.

Given a few weeks careful quarantine, and/or a pH-adjusted freshwater bath between shipping and placement, it is rare that they will carry pathogens into a new system.

Continued on page 3
The Bird Wrasses, Genus Gomphosus

Continued from page 2

Close

So distinct that most marine aquarists can pick them out by sight, Bird Wrasses have a great deal to offer as larger fish, and rough and tumble fish and invertebrate, even some types of reef systems... given enough space, evenly-matched tankmates, and a setting with hiding spaces and substrate to rest in.

Bibliography/Further Reading:


SALT SCIENCE. SUCCESS SOLUTIONS.

For more than 40 years, Instant Ocean® and Reef Crystals® Sea Salts have set the industry standard for quality, consistency, convenience, and value in aquarium sea salts.

They are the #1 choice of hobbyists, public aquariums and scientific research facilities everywhere - the perfect solutions for the ideal marine environment.

SeaScope® was created to present short, informative articles of interest to marine aquarists. Topics may include water chemistry, nutrition, mariculture, system design, ecology, behavior, and fish health. Article contributions are welcomed. They should deal with pertinent topics and are subject to editorial reviews that in our opinion are necessary. Payments will be made at existing rates and will cover all author's rights to the material submitted. SeaScope® is published quarterly for free distribution through local aquarium dealers. Dealers not receiving copies of SeaScope® for distribution to their customers should call Aquarium Systems, Inc. to be added to the mailing list. Telephone: 1-800-822-1100. The SeaScope® newsletter is now available online at www.marineland.com under the News tab. Go to the "What's New" section and choose SeaScope® newsletter for the most recent issue. Address comments, questions, and suggestions to Dr. Timothy A. Hovanec, Editor. Marineland, 6100 Condor Dr., Moorpark, CA 93021 or E-Mail: seascope@marineland.com

Aquarium Systems is a Division of Spectrum Brands
Frag Swaps – a beginner’s guide.

Continued from page 1

making a purchase, as sometimes there will be large differences in the price of certain species. At one swap, for example, I saw two-inch fragments of blue Acropora tenua selling for $30 from one gentleman and for $100 from another. Remember that negotiating on prices is common practice, and you will sometimes even get a discount for buying multiple pieces from the same person.

Selection and Care

You will typically find that a majority of the species being offered for sale or trade are the more common and easy to keep species. You should always research the care requirements before you acquire a species, though. Ask the seller what type of lighting and water flow the species has been maintained in and how quickly it grows. You will want to be sure that you can provide the proper environment.

Many times you will be tempted by the more difficult to keep species. These are invariably the brighter colored, more aesthetically pleasing corals that you will see at the swap. Be sure that you know all of the care requirements and that you are capable of maintaining the proper conditions for survival. There are few things worse than watching an $80 frag slowly perish in your aquarium, except, perhaps, for explaining how much you paid for that dying “green stick” to your spouse!

Packing your frags

Now that you have secured all of your purchases and trades, it is time for the trip home. I never assume that the seller will have appropriate packing materials, although many do, so I always bring my “frag swap road kit” which contains everything I need to get the corals home. First, you will need something to package the corals themselves. I like to use plastic fish bags or plastic Tupperware-type containers. I also bring plenty of rubber bands, a towel, spare fish bags (in case of leaks), and finally, a good size beverage cooler or a

Styrofoam box to hold all of the corals and keep the temperature stable. In extreme weather, you should also bring either ice packs or small heat packs to keep the temperature in the cooler at an acceptable level. You can get the heat packs at any department store or sporting good store. They are usually sold as disposable hand warmers in the hunting section for a few dollars.

Once you have your corals packed in their bags, place them in the cooler. If needed, the ice pack or heat pack should be wrapped in newspaper so it can’t come in direct contact with the bags. Finally, use the towel or some newspaper to fill in the rest of the cooler to prevent the bags from being jostled around as you drive home.

When you arrive home, acclimate the corals as you normally would, ensuring that the temperature and pH are equalized between the bags and your aquarium. I recommend doing this with the aquarium lights off to reduce further stress on the corals. I like to wait two or three days before permanently mounting any newly acquired frags to ensure they are fully acclimated to my aquarium and to avoid further stress on the animals after all of the handling they went through the day of the swap.

Next Swap

Well, that’s it. You are now a frag swap veteran. When the next swap comes around, you should have some corals of your own to trade. Trading of captive grown corals not only makes the hobby more enjoyable and affordable, but also reduces the impact of collecting wild corals from the reef, captive grown corals have a much higher rate of survival and will almost always maintain their color better and grow faster than their wild caught counterparts.