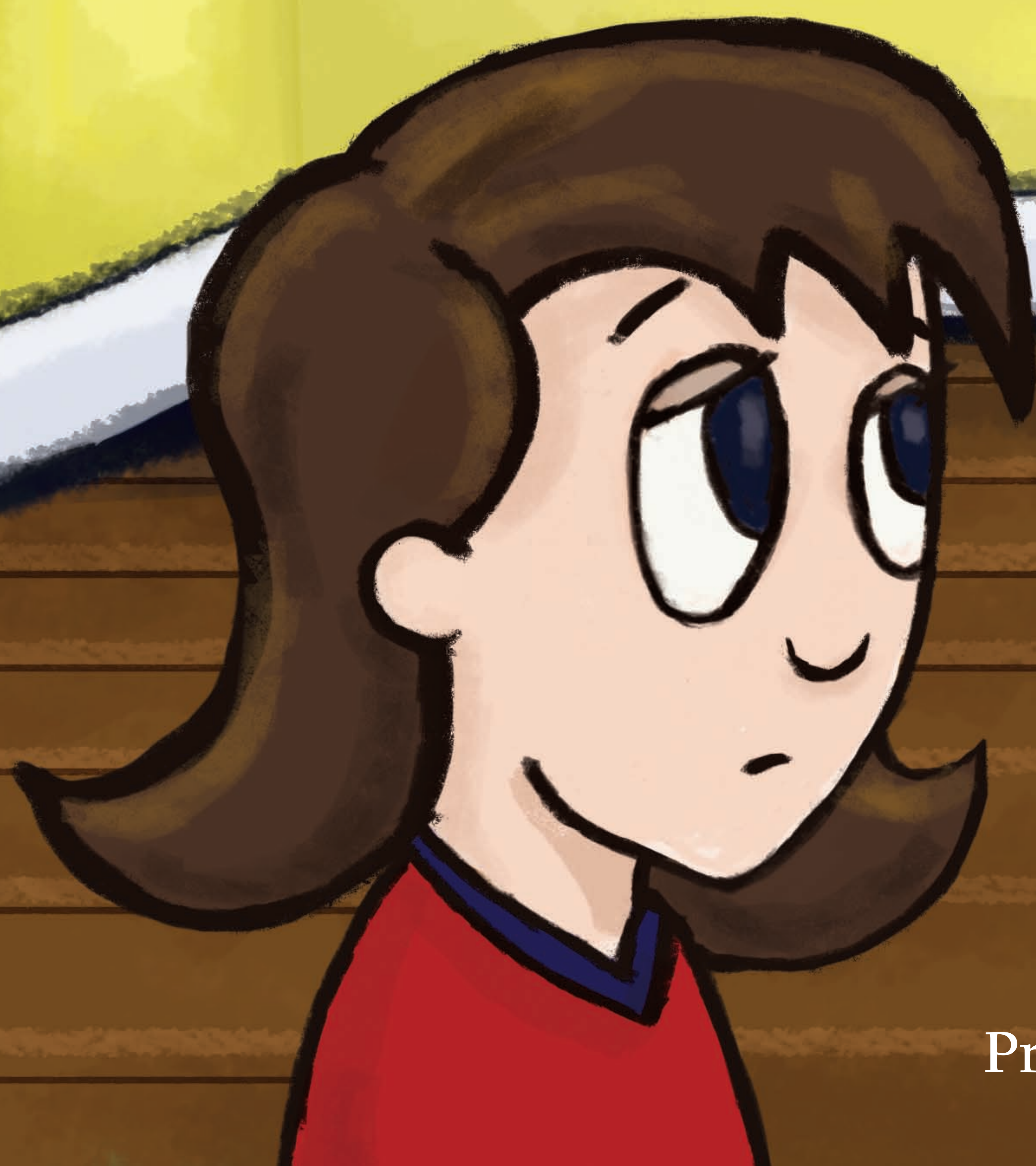


A New Home for an Old Friend

Responsible Aquarium Stewardship



Written by: Suzie Caffery & Diahn Escue
Illustrated by: George Zaleski
Produced by: Dr. Linda Walters & Susan Zaleski

This book was born out of a need to explain to our youngest home aquarium owners the importance of not releasing pets and plants from their fish tanks. As many of the home aquariums in the United States are “owned” by children 12 years old or younger, we consider it imperative to provide scientifically accurate, age-appropriate information that promotes environmental stewardship in the best way possible – by creating storybooks that are fun for families to read together!

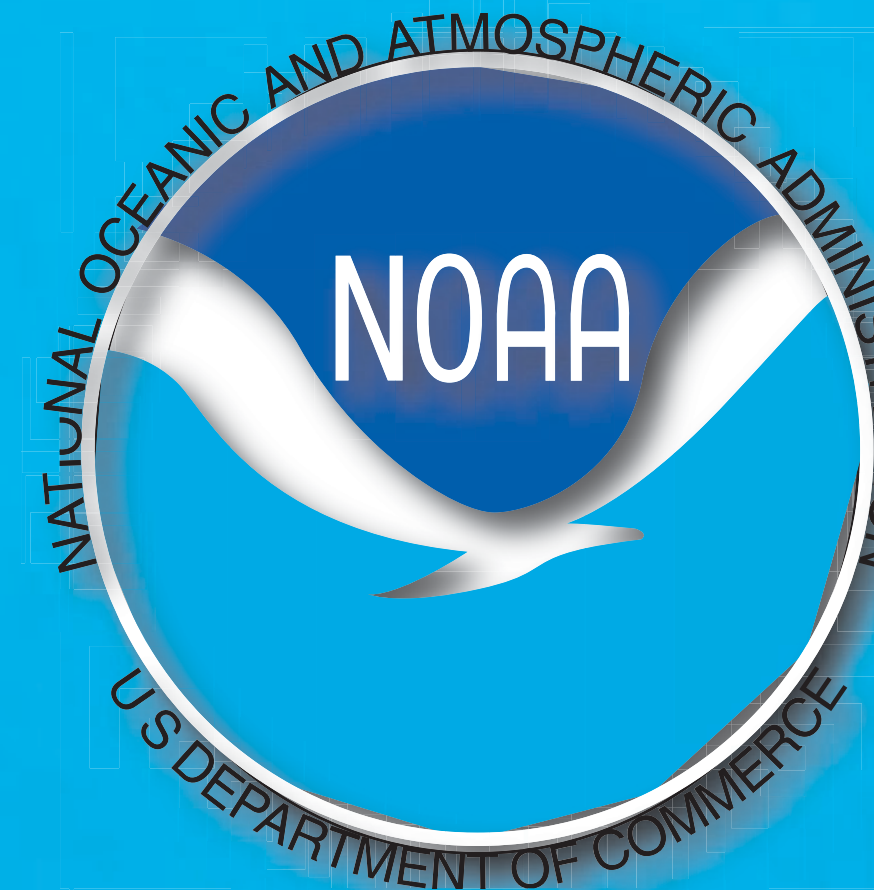
Selected educators were brought together for a week-long workshop in the Florida Keys in 2008 to create two children’s books on “aquarium dumping”. During this workshop, educators were provided with information on two marine invasive species that scientists are convinced were the result of “aquarium dumping”: a feathery, green seaweed (*Caulerpa taxifolia*) and the red lionfish (*Pterois volitans*). Within the week, two amazing books began to take shape.

The book you hold in your hands “A New Home for an Old Friend: Responsible Aquarium Stewardship” was created for pre-school through second grade children. A second book was developed for third grade and higher entitled, “Fish Invaders at Gypsy Point: Katie and George Learn about Alternatives to Aquarium Dumping”. We hope you enjoy both books!

To order copies of these books and to view our larger “Don’t Release” campaign with materials for all age aquarium hobbyists, please visit our website:

<http://www.usc.edu/org/seagrant/caulerpa/index.html>

This book has been produced with support from the University of Central Florida, National Sea Grant College Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, under grant number NA 06OAR4170012, and the United States Fish and Wildlife Service, and Tampa Bay Estuary Program.



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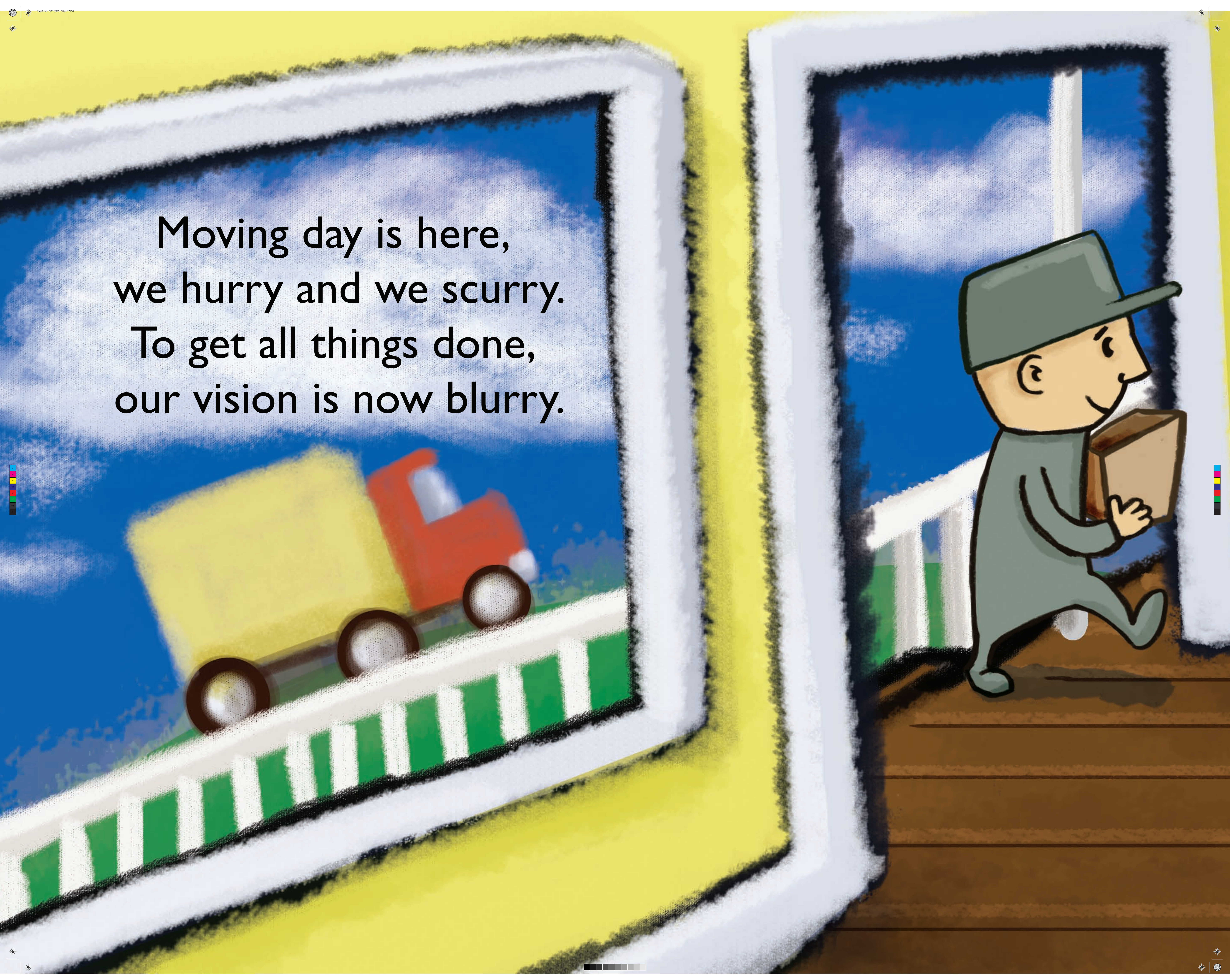
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Moving day is here,
we hurry and we scurry.
To get all things done,
our vision is now blurry.



We're busy and we're dizzy,
but there's something we forgot!
It's our aquarium!
It really weighs a lot!



We can't move this!
Who knows what to do?
Let's just stop a minute,
we must think this through.



How do we move it?
Where does it go?
Do we dump it in the ocean?
That's a big No! No!



Because things in the ocean
all have their place.
For swimming and eating,
they need the right space.





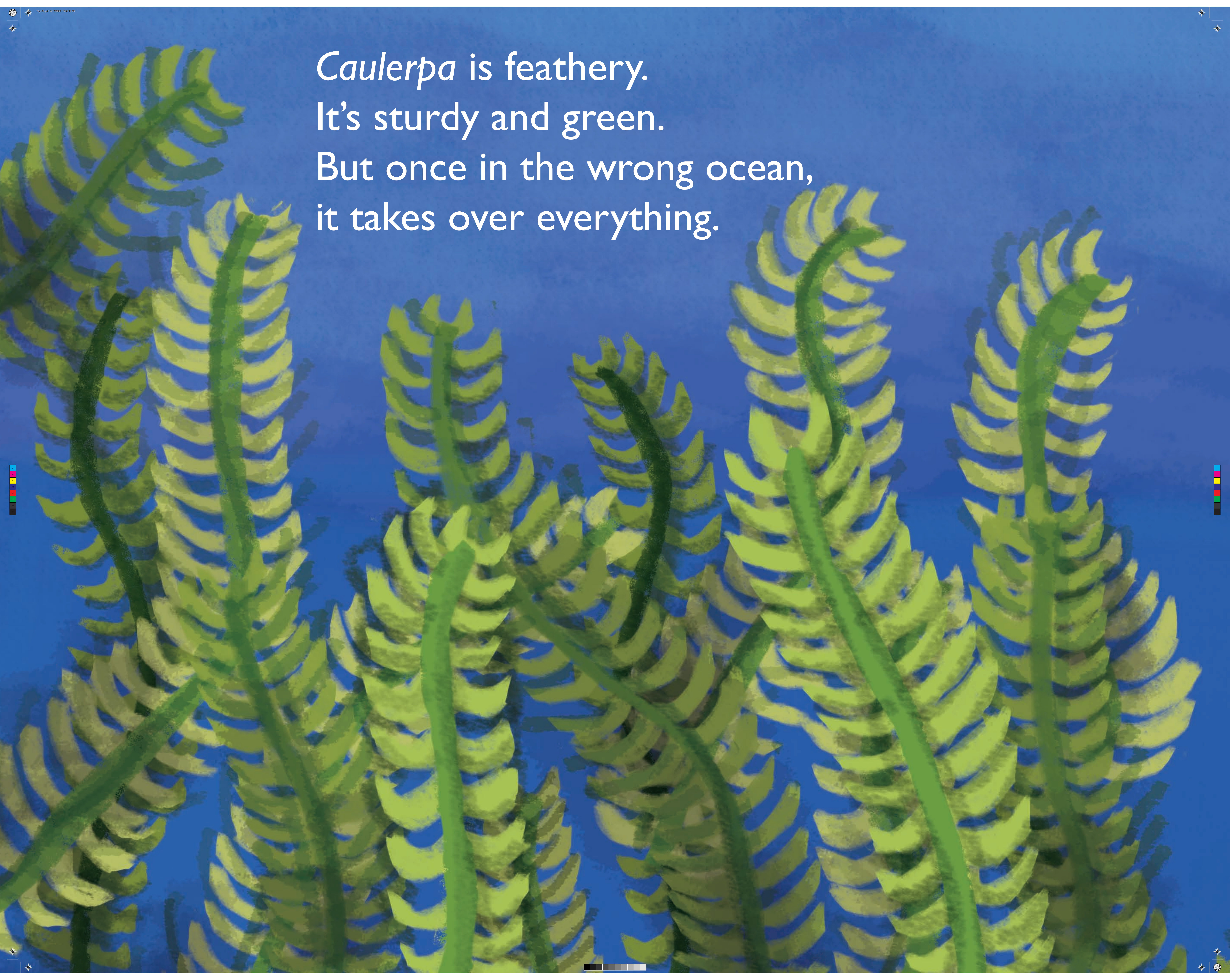
There once were some people
who really didn't think
that dumping their aquarium
would cause such a stink!



Oh the mistakes,
the mistakes that were made
when *Caulerpa* and spiky lionfish
began to invade.



Caulerpa is feathery.
It's sturdy and green.
But once in the wrong ocean,
it takes over everything.



At first it looked pretty.
How could it be bad?
But the fish couldn't eat it!
It made them all so sad.





In our home aquarium,
spiky lionfish was small.
But once in the ocean,
he grew most of all.

The spiky lionfish,
who was far from his home
went swimming and searching
for a place of his own.

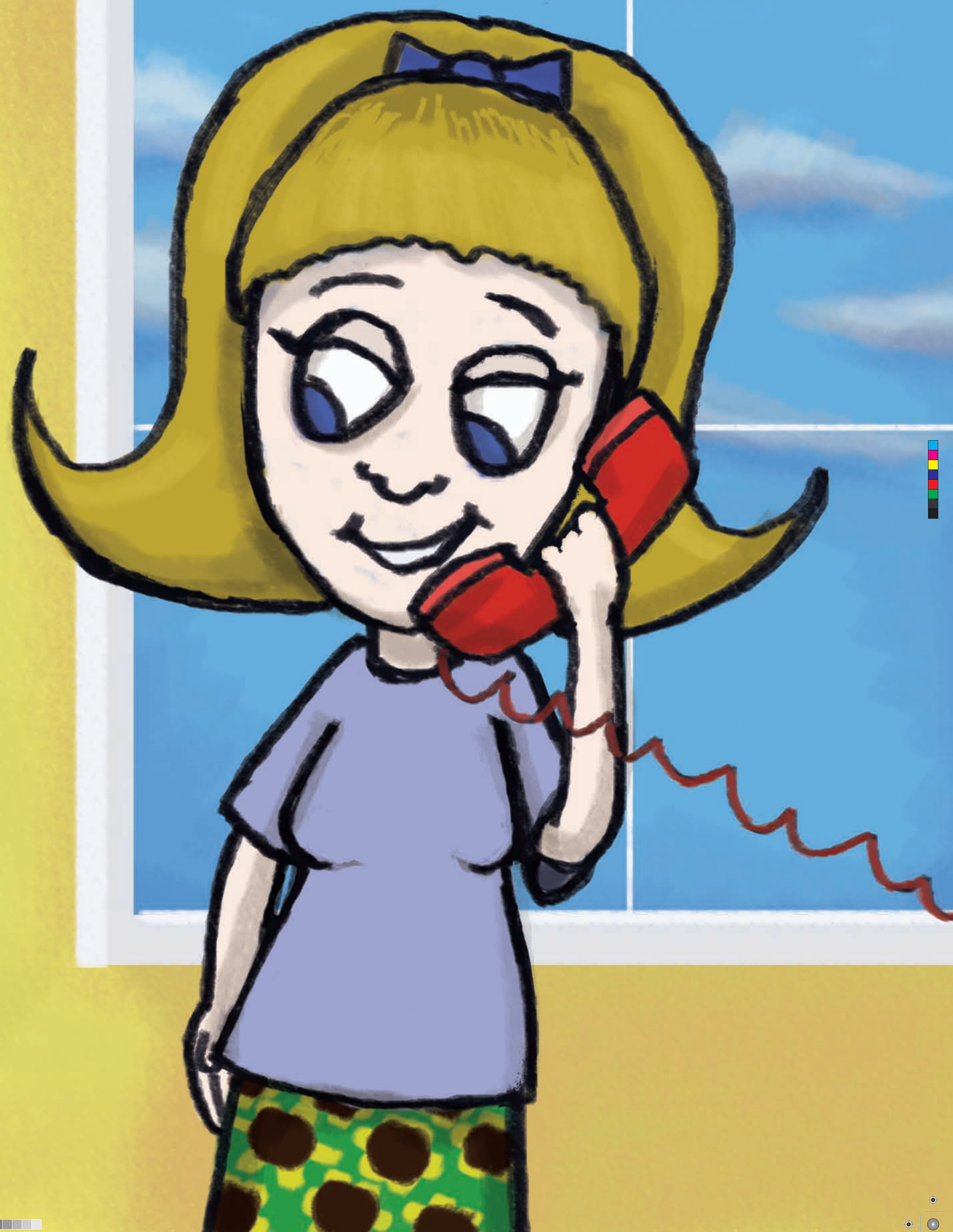
He went looking for dinner,
but the Lionfish was rude!
That bully told the grouper,
“Get out of here, dude!”



Now the problem still remains
to find a home for our friends.
I feel so confused,
will this never end?



Thank goodness for our Mother,
who knew just what to do,
and in no time at all
made a phone call or two.



She called our local pet shop
and talked to Mr. Hank
to see if he would take
all the things in our tank.

We would take your fish,
but right now we have too many.
Give your fish to a friend
who doesn't have any.



We gave our fish to a friend,
which made him very happy.
There's a lot more to do,
so let's make it snappy!



For 24 hours,
put aquarium plants in the freezer.
Then throw them away.
It can't be any easier.



Now strain the water.
Never pour down a storm drain!
Dump the strained water in the toilet.
Protect our food chain.



Friends we leave behind;
new friends we'll make.
But we'll never forget
the friends we can't take!





Caulerpa taxifolia (Feather Algae)



- *Caulerpa taxifolia* (kă-lěr-pă tăx-î-föl-ě-ă) is a bright green, marine (saltwater) seaweed with multiple feathery blades (fronds). Growth in this species is indeterminate, which means that it continues to increase in size until it dies.
- *Caulerpa taxifolia* spreads between locations primarily by fragments. Fragments as small as a few millimeters in length can move with water currents, and when they contact the bottom, they rapidly attach to it with using root-like structures called rhizoids. These fragments then rapidly increase in size. Fragments are produced by natural processes such as storms, humans anchoring their boats in infested locations and herbivores (e.g. fishes) that reject distasteful bites of this seaweed due to the chemicals it produces.

- *Caulerpa taxifolia* is native to subtidal waters (i.e. below the low tide line) in tropical and sub-tropical areas in the Caribbean, Indonesia, Southeast Asia, and northern Australia.
- Because of its beauty and ability to grow from fragments, *Caulerpa taxifolia* is very popular with the aquarium industry (public and hobbyist) and is lumped with other species of *Caulerpa* that are collectively called “feather *Caulerpa*” or “feather algae”.
- All infestations of *Caulerpa taxifolia* are suspected to be the result of accidental or purposeful “aquarium dumping” by either private individuals or public aquaria.
- *Caulerpa taxifolia* invaded the Mediterranean Sea, southern California, and parts of southern Australia. It entered the Sea of Japan but never became established. California spent over seven million dollars to successfully eradicate two infestations between 2000 and 2006.
- In invaded waters, you can find beds of *Caulerpa taxifolia* covering very large areas. *Caulerpa taxifolia* overgrows and smothers native marine species. This seaweed produces little food for invertebrates and fishes, so animals leave invaded areas.
- Because of its impact on marine ecosystems, tourism and local economies, *Caulerpa taxifolia* is classified as one of the 100 worst invasive species on our planet (Source: International Union for the Conservation of Nature).
- Please do not use *Caulerpa taxifolia* in your home aquaria. If you have *Caulerpa taxifolia*, please dispose of it by placing it in a plastic bag in the freezer for at least 24 hours and then putting the closed bag in a trash can.

Pterois volitans (Red Lionfish)



Photo: N. DeLoach

- *Pterois volitans* (těr-îs vôi-î-tăns) has distinctive stripes (bands) covering its body, alternating white and dark (dark red to brown or black). It has fleshy tentacles above its eyes and below its mouth.
- *Pterois volitans* has many sharp spines on its dorsal (back), anal, and pelvic (lower side) fins. Venom glands are located along grooves of each spine. If a spine punctures a victim, the venom enters the wound causing intense pain and swelling. In some cases, it may even cause temporary paralysis. Seek medical assistance if stung!
- With *Pterois volitans*, reproduction can occur year-round in the Atlantic Ocean. Each spawning event can produce tens of thousands of eggs.
- Lionfish are native to the tropical waters of the Western Pacific, Indian Ocean and Red Sea. *Lionfish* usually inhabit coral reefs.
- *Pterois volitans* is one of the most popular saltwater fish species imported into the United States for the saltwater aquarium hobby industry.
- The introduction of lionfish in US waters was likely caused by intentional or unintentional aquarium dumping. The only documented release of lionfish occurred in Florida during Hurricane Andrew (1992) when a home aquarium was flooded. However, the genetic diversity of collected individuals suggests that additional releases have occurred. Additionally, 7% of lionfish are actually a related species - *Pterois miles* (the devil firefish). *Pterois miles* is also native to the Indo-Pacific and also distributed in the aquarium hobby industry.
- *Pterois volitans* can now be found along the U.S. Atlantic coast from the Florida Keys to Rhode Island. Large numbers of individuals have also been observed in Bermuda, the Bahamas, the Caribbean, and Central America.
- *Pterois volitans* eats many species of fishes, shrimp, and crabs, including many that are economically important. *Pterois volitans* is capable of consuming prey up to half their body length by expanding their stomachs over 30 times its normal size!
- In their invaded range, *Pterois volitans* appears to have few predators.
- If you or someone you know has a lionfish, please make sure it is never released into coastal waters or down a storm drain. Please consult your local pet shop or Fish and Wildlife Service for advice if you cannot care for your lionfish any longer.
- If you catch a lionfish while fishing, do not release it back in the water! Without handling the fish, cut the line, and drop the fish into a bucket or cooler. Be careful not to let the spines poke you. Only researchers with permits should bring lionfish back to shore alive.
- If you catch a lionfish while fishing or see one while snorkeling/diving, please report it to the Reef Environmental Education Foundation (REEF) exotic species sighting program website at <http://www.reef.org/programs/exotic/report> or to the U.S. Geological Survey (<http://nas.er.usgs.gov/SightingReport.asp>).

Suzie Caffery and Diahn Escue, the authors of this book, both teach at the University of Central Florida Creative School for Children in Orlando. Combined, they have over 30 years of experience with 3 – 5 year olds. This is their second environmentally-themed book for young children; the first entitled, “An Afternoon in Mosquito Lagoon” is focused on protecting oyster reefs from human impacts.

George Zaleski, the illustrator, was an easy choice for this project as he had previously collaborated on a “Don’t Release” animated video with the same friendly characters. George works in the animation and art industry in Los Angeles, California

Dr. Linda Walters holds a B.S. in Biology from Bates College, and a M.S. and Ph.D. from the University of South Carolina. She is currently a Professor of Biology at the University of Central Florida. Her research centers on human impacts on marine systems, with a focus on tropical seaweeds, oyster reefs, coral reefs, and invasive species.

Susan Zaleski received her B.A. from Hamilton College and her M.S. from California State University at Fullerton. Susan’s M.S. research focused on dispersal of non-native seaweeds via the aquarium trade. Susan now works for University of Southern California Sea Grant Program where she provides outreach and advisory services in the areas of coastal ecosystem health, aquatic invasive species, marine protected areas, public recreation, and other emerging issues along the southern California coast.

We thank the following for contributions to our book, reviewing the book content, and assisting with our 2008 educator’s workshop: L.Adkins (Reef Environmental Education Foundation), Dr. S. Baker (University of Florida), Dr.A. Benson (U.S. Geological Survey), Dr. R. Brumbaugh (The Nature Conservancy), Dr. J. Carlton (Williams College), L. Chilton (University of Southern California), Dr. L. Collado-Vides (Florida International University), R. L. Creswell (Florida Sea Grant), Dr.A. Davis (University of Wollongong), N. DeLoach (New World Publications, Inc.), Dr. L. Drake (Naval Research Laboratory), R. Dudas (University of Southern California), S. Fisher (Winter Park High School), J. Fulbeck, L. Geselbracht (The Nature Conservancy), Dr. D. Gordon (The Nature Conservancy), K. Grablow (University of Central Florida), S. Green (Simon Fraser University), P. Grifman (University of Southern California), S. Hardin (Florida Fish and Wildlife Conservation Commission), R. Hayduk (University of Southern California), L. Haynes (Florida Fish and Wildlife), Dr. E. Hoffman (University of Central Florida), Dr. K. Johnson (Florida Institute of Technology), J. Lee (University of California, Los Angeles), Dr. J. Leverone (Sarasota Bay Estuary Program), Dr. J. Long (National Park Service), M. McGuire (Florida Sea Grant), Dr.A. Millar (Royal Botanic Gardens in Sydney, Australia), Dr. J. Morris, Jr. (NOAA), R. Odom (University of Central Florida), G. Nimnualrat (San Antonio Elementary School and Magnet Center), N. O’Hara (Tampa Bay Estuary Program), Dr. D. Padilla (Stony Brook University), Dr.A. Power (University of Georgia Marine Extension Service), Dr. T. Rose (University of Southern California), Dr. J. R. Ruiz-Carus, Dr. P. Sacks (Winter Springs High School), Dr. D. Schmitz (Florida Fish and Wildlife), Dr. P. Schofield (U.S. Geological Survey), Dr. J. Smith (California State University, Fullerton), L. Sweat (Florida Institute of Technology), J. Tinnell (Florida Fish and Wildlife), Dr. B. Tsukimura (California State University, Fresno), J. Verdesca (Orange County High School), Dr. P.Vroom (NOAA), Dr. R. Walker (University of Georgia Marine Extension Service), R. Woodfield (Merkel and Associates, Inc.), A. M. Wotkyns (J. B. Monlux Math, Science, Technology Magnet School), and G. Zaleski. Florida Institute of Oceanography provided boat time during the educators’ workshop.

Alternatives to Release



- Strain fish tank water to catch any fragments of aquarium plants, and then put all aquarium plants in a bag in the freezer for 24 hours. Next, throw the bag in regular trash.
- Only strained water goes down the toilet. CAUTION: It is unknown if microscopic organisms (plants, animals, bacteria, viruses) that are in the fish tank water can make it through the sanitation process intact if dumped down the toilet. Hence, the absolute safest thing to do with fish tank water is to pour it on your lawn, garden, or shrubs. Do not pour down a storm drain!
- Contact an aquarium store in your neighborhood to obtain advice on transporting plants and animals if you are giving your fish tank contents to a friend.
- Contact an aquarium store in advance to see if they are able and willing to take in your pets and plants.
- If you cannot find a home for your pets and plants, contact your local Fish and Wildlife Service for advice. They often hold "Amnesty Days" to promote responsible pet ownership.

Moving to a new home is always hard. It's even tougher to figure out what to do with the pets and plants in your fish tank if it is not possible to take them with you. In this book we describe the devastating results to the environment when a seaweed and a fish species were released by humans into coastal waters. By producing this book, our hope is that everyone will understand the problems with "aquarium dumping." Please read this book with your family to learn about safe alternatives for the pets and plants in your fish tank if you can no longer care for them. Thanks!

To order copies of these books and to view our larger "Don't Release" campaign with materials for all age aquarium hobbyists, please visit our website:

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