

## **Rock Beauty Angelfish on Shark Bend Reef, Pompano Beach, Florida, U.S.A.**

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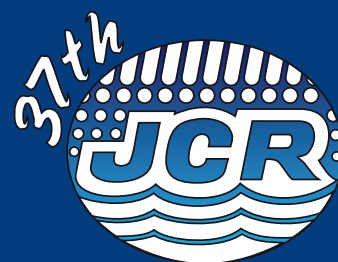
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**Rock Beauty Angelfish on Shark Bend Reef, Pompano Beach, Florida, U.S.A.** The rock beauty angelfish (*Holacanthus tricolor*) is a fish species associated with clear, shallow reef habitats of the tropical western Atlantic Ocean. It can be found from Bermuda to the Bahamas and from Florida down to southeastern Brazil. Their diet consists mainly of sponges, but they have been known to occasionally feed on planktonic animals, small invertebrates, coral, tunicates, algae, and even mucus secreted from other fish. It has a flat, oval black body with trailing black dorsal and anal fins (with yellow and orange margins), a yellow tail, and a yellow face with a black mouth. The juvenile is almost completely yellow, with a black spot on either side that grows slowly to cover most of its body. The lobes of the dorsal, anal, and pectoral fins produce into long filaments as the fish ages. Identification of the rock beauty is based upon the distinctive coloration rather than body morphology. They are most commonly harvested for the aquarium trade, even though their specific diets and territoriality make them a difficult species to keep in captivity.

The behavior of this reef fish is rather unique, as it is extremely territorial, rarely leaving the small radius around its immediate home area. It also develops a long-term monogamous breeding relationship pair with a mate. Often these pairs consist of a large individual and a small individual, perhaps suggesting a sexual dimorphism that may exist within this species. There is, however, no difference in the coloration between the male and female. The pair mates by rising slowly up in the water column, bringing the bellies close together, and releasing large amounts of sperm and eggs into the water. The female can release anywhere from 25,000 to 75,000 eggs each evening, and as many as ten million eggs during each spawning cycle. The eggs are transparent, spherical, and pelagic, each containing a single droplet of oil to provide buoyancy, and hatch in 15 to 20 hours after fertilization. The young enter a sort of pre-larval stage, where they lack functional eyes, fins, and a gut. At this stage, the larvae are still attached to a large yolk sac. The yolk is absorbed within two days, during which time the young become fully functional and free swimming larvae. Growth is then rapid and three to four weeks after hatching, the juvenile rock beauty settles on a spot upon the reef where it will most likely remain its entire life. (Photograph taken September 2020 by Chris Makowski, Coastal Education and Research Foundation (CERF-JCR), Coconut Creek, Florida, USA.)



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Dr. Christopher Makowski is the Senior Vice President and Co-Executive Director of the Coastal Education and Research Foundation (CERF), the official publisher of the international *Journal of Coastal Research* (JCR). He received B.Sc. (Marine Biology), M.Sc. (Marine Ecosystem Diversity), and Ph.D. (Coastal Geoscience and Remote Sensing of Biogeomorphological Resources) degrees from Florida Atlantic University of Boca Raton, Florida, USA, and has worked for over 25 years in the coastal research community, holding titles of Assistant Director (Coastal Planning & Engineering's Marine Science and Biological Research Department), Principal Marine Scientist (Collier County, Florida, USA), and Senior Advisor (International Coastal Symposium [ICS]). Dr. Makowski has published numerous peer reviewed papers, authored multiple chapters, and co-edited various volumes in Springer's Coastal Research Library (CRL) Series and Encyclopedia of Earth Sciences Series (EESS). In addition to these accomplishments, he is professionally recognized by the American Academy of Underwater Sciences (AAUS) and is certified as a Master Scuba Diver Trainer through the Professional Association of Diving Instructors (PADI), having logged over 2,000 underwater dives on six different continents. Other professional registrations, certifications, and accreditations include: Coastal Education and Research Foundation (CERF) Board of Directors (Trustees), BioOne Board of Directors, International Society for Reef Studies (ISRS) Member, Florida Association of Environmental Professionals (FAEP) Chapter Member, American Academy of Underwater Sciences (AAUS) Registered Diving Safety Officer, American Association for the Advancement of Science (AAAS) Member, National Marine Fisheries Service (NMFS) Certified Marine Mammal and Protected Species Observer, Professional Association of Diving Instructors (PADI) Open Water Scuba Diver Instructor, PADI Enriched Air Nitrox Specialty Instructor, Emergency First Responder (CPR/FirstAid/AED) Instructor, PADI Specialty Underwater Photographer Instructor, and Divers Alert Network (DAN) Sustaining Member.

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## International Coastal Symposium (ICS) Official Meeting of CERF-JCR

The International Coastal Symposium (ICS) was originally set up by Per Bruun (deceased) and Charles W. Finkl as the official meeting of the Coastal Education and Research Foundation (CERF) and the *Journal of Coastal Research* (JCR), with one of the first meetings being held in Hilton Head, South Carolina, in 1993. After the repeated success of these meetings, CERF-JCR moved the ICS to an international platform by holding these conferences in conjunction with local sponsors in the United States, Australia, Brazil, Iceland, New Zealand, Northern Ireland, Poland, Portugal, and South Korea. The ICS brings together delegates from all over the world to collaborate and discuss the most current coastal research studies and projects. During the ICS 2014, which was held in Durban, South Africa, a grand celebration took place to mark the 30th Anniversary of CERF and the JCR. For more information, please visit [www.cerf-jcr.org](http://www.cerf-jcr.org).

## CONTENTS

### RESEARCH ARTICLES

|                                                                                                                                                                          |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Impact of Inlet Closures on Water Volumes in Barnegat Bay, New Jersey, U.S.A. ....                                                                                       | 461 |
| ..... <b>Gregory Slusarczyk, Mary A. Cialone, and Norberto C. Nadal-Caraballo</b>                                                                                        |     |
| Assessing Shoreline Change using Historical Aerial and RapidEye Satellite Imagery (Cape Jaffa, South Australia) .....                                                    | 468 |
| ..... <b>Marcio DaSilva, Graziela Miot da Silva, Patrick A. Hesp, David Bruce, Robert Keane, and Claire Moore</b>                                                        |     |
| Improving Training Wall Orientation at River and Estuary Entrances .....                                                                                                 | 484 |
| ..... <b>Kerry P. Black, Krishnamurthy B. Kulkarni, Gopal B. Naik, Mahabala Naik, and Joseph Mathew</b>                                                                  |     |
| Weather-Driven Coastal Dynamics in a Tide-Dominated Area: Cases from Spring 2016 along the West Coast of Korea ....                                                      | 494 |
| ..... <b>Baek-Jin Kim, Dong Eun Lee, Young-Jae Ro, and Kwang-Young Jeong</b>                                                                                             |     |
| Fractionation and Determinants of Sediment Nitrogen and Phosphorus in the Algae-Dominated Moon Bay of Lake Taihu (China) .....                                           | 506 |
| ..... <b>Xiaojun Li, Yanping Zhao, Ruiming Han, and Guoxiang Wang</b>                                                                                                    |     |
| Observation and Analysis of Water and Salt Transports in the North Branch of the Changjiang Estuary .....                                                                | 518 |
| ..... <b>Jinghua Gu, Jianrong Zhu, and Hanghang Lyu</b>                                                                                                                  |     |
| Geomorphological Evolution of the Patagonian Coast Surrounding the Golfo Nuevo (Chubut, Argentina) during Late Quaternary: Overview and New Proposal .....               | 528 |
| ..... <b>M. Paula Bunicontro and Silvia C. Marcomini</b>                                                                                                                 |     |
| Viscous Flow Evolution and Boundary Layer Characteristics during the Head-On Collision of Solitary Waves .....                                                           | 544 |
| ..... <b>Tzu-Chiang Lee, Chih-Hua Chang, and Chii-Jau Tang</b>                                                                                                           |     |
| Comparing Restoration Treatments and Time Intervals to Determine the Success of Invasive Species Removal at Three Coastal Dune Sites in Northern California, U.S.A. .... | 557 |
| ..... <b>Andrea J. Pickart, William R. Maslach, Lorraine S. Parsons, Erik S. Jules, Candace M. Reynolds, and Laurel M. Goldsmith</b>                                     |     |
| How Important Is Coastal Tourism for Island Nations? An Assessment of African and Indian Ocean Islands .....                                                             | 568 |
| ..... <b>Michael R. Brett</b>                                                                                                                                            |     |
| Damage Detection of Pile Foundations in Marine Engineering Based on a Multidimensional Dynamic Signature .....                                                           | 576 |
| ..... <b>Ruihu Zhu, Qiming Wang, Jinhai Zheng, Jingbo Su, and Ning Wang</b>                                                                                              |     |
| Analysis of the Spatiotemporal Differences in the Quality of Marine Economic Growth in China .....                                                                       | 589 |
| ..... <b>Huijuan Yu and Lili Xing</b>                                                                                                                                    |     |
| Benthic Community Responses to the Filling of a Hurricane-Induced Barrier Island Inlet .....                                                                             | 601 |
| ..... <b>Iván F. Rodil, Zachary T. Long, Stephen R. Fegley, Antonio B. Rodriguez, and Charles H. Peterson</b>                                                            |     |
| Vegetation Dynamics, Environmental Changes, and Anthropogenic Impacts on the Coastal Hyrcanian Forests in Northern Iran .....                                            | 611 |
| ..... <b>Fang Gu, Elias Ramezani, Kamaledin Alizadeh, and Hermann Behling</b>                                                                                            |     |
| Market Segmentation Based on Ecotourism Motivations in Marine Protected Areas and National Parks in the Galapagos Islands, Ecuador .....                                 | 620 |
| ..... <b>Mauricio Carvache-Franco, Wilmer Carvache-Franco, and Fanny Manner-Baldeon</b>                                                                                  |     |
| Experimental Investigation on Resistance Reduction for Multiple Service Conditions of Container Ship Bulbous Bow Optimization .....                                      | 634 |
| ..... <b>Xunbin Yin, Lu Huang, Yu Lu, Jin Zou, and Lei Wan</b>                                                                                                           |     |
| Optimal Design of an Integrated Cross-Border Logistics Network for China's Inland Regions .....                                                                          | 644 |
| ..... <b>Hairui Wei</b>                                                                                                                                                  |     |
| Multifunctional Performance of Coastal Structures Based on South Florida Coastal Environs .....                                                                          | 656 |
| ..... <b>Kathleen Sullivan Sealey, Esber Andiroglu, Joel Lamere, James Sobczak, and Prannoy Suraneni</b>                                                                 |     |

### TECHNICAL COMMUNICATIONS

|                                                                                       |     |
|---------------------------------------------------------------------------------------|-----|
| Scour Effects on Cyclic Response of Bucket Foundations under Waves and Currents ..... | 670 |
| ..... <b>Xixi Liu, Xuguang Chen, Jinzhong Liu, Tongshun Yu, and Baoshi Sun</b>        |     |

