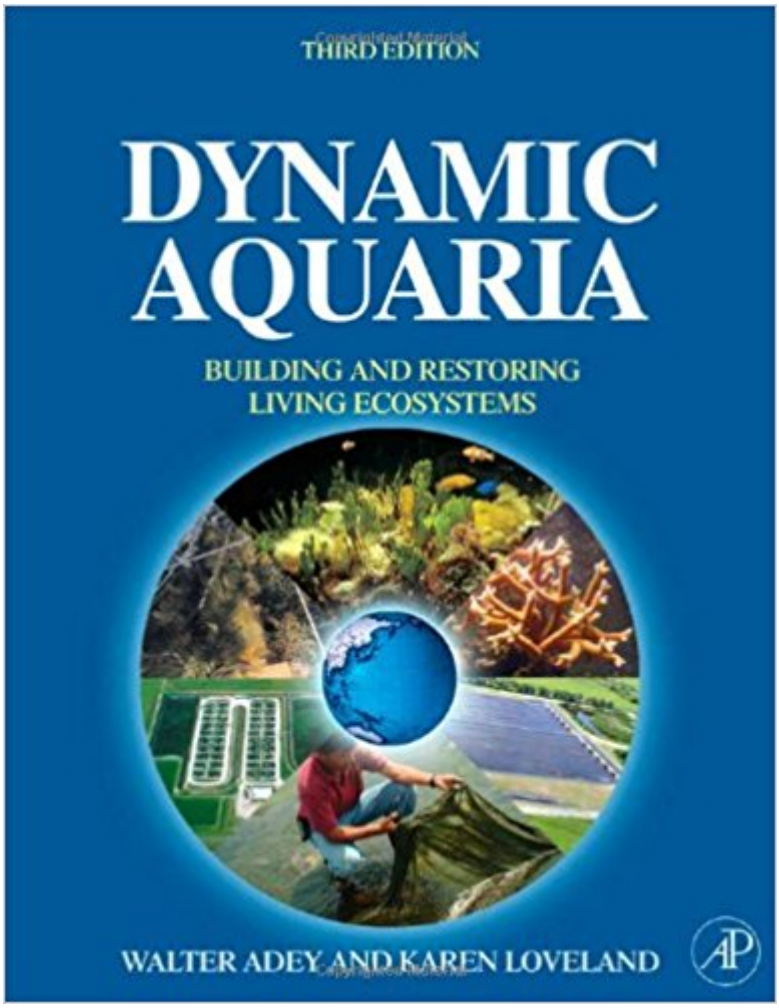
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Dynamic Aquaria, Third Edition: Building Living Ecosystems



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Synopsis

In its third edition, this praised book demonstrates how the living systems modeling of aquatic ecosystems for ecological, biological and physiological research, and ecosystem restoration can produce answers to very complex ecological questions. Dynamic Aquaria further offers an understanding developed in 25 years of living ecosystem modeling and discusses how this knowledge has produced methods of efficiently solving many environmental problems. Public education through this methodology is the additional key to the broader ecosystem understanding necessary to allow human society to pass through the next evolutionary bottleneck of our species. Living systems modeling as a wide spectrum educational tool can provide a primary vehicle for that essential step. This third editon covers the many technological and biological developments in the eight plus years since the second edition, providing updated technological advice and describing many new example aquarium environments.Includes 16 page color insert with 57 color plates and 25% new photographsOffers 300 figures and 75 tablesNew chapter on BiogeographyOver 50% new research in various chapters Significant updates in chapters include: The understanding of coral reef function especially the relationship between photosynthesis and calcificationThe use of living system models to solve problems of biogeography and the geographic dispersal and interaction of species populationsThe development of new techniques for global scale restoration of water and atmosphereThe development of new techniques for closed system, sustainable aquaculture

Book Information

Hardcover: 528 pages
Publisher: Academic Press; 3 edition (February 1, 2007)
Language: English
ISBN-10: 0123706416
ISBN-13: 978-0123706416
Product Dimensions: 1 x 8.8 x 11 inches
Shipping Weight: 3.8 pounds (View shipping rates and policies)
Average Customer Review: 4.5 out of 5 stars 4 customer reviews
Best Sellers Rank: #2,007,366 in Books (See Top 100 in Books) #94 inÃ Â Books > Science & Math > Earth Sciences > Geology > Limnology #779 inÃ Â Books > Science & Math > Biological Sciences > Biology > Marine Biology #1448 inÃ Â Books > Textbooks > Science & Mathematics > Biology & Life Sciences > Ecology

Customer Reviews

Walter Adey received his B.S. in Geophysics from MIT, performed graduate studies at MIT and Harvard in Paleontology and Biology, and obtained his Ph.D. in Marine Botany and Geology from the University of Michigan. Since 1977, he has been the Director of the Marine Systems Laboratory at the Museum of Natural History, Smithsonian Institution. Dr. Adey is an associate editor for Restoration Ecology and The Journal of Ecological Engineering. He has authored numerous publications, and has developed several exhibits and operational mesocosm systems.Karen Loveland is a multi-international award-winning documentary film maker who has produced and directed films for the Smithsonian Institution for over 30 years. In her present position as Deputy Director for Smithsonian Productions, she assists in the management and programming for Smithsonian media activities as well as overseas production and co-production using a wide variety of electronic technologies and formats. She founded the Smithsonians Motion Picture Unit in 1969. She has been the recipient of more than 70 prestigious national and international awards and honors.

I must admit I have not read the third edition of this book,only the second. I anticipate any improvements the authors have considered adding will be worth the time to take in. Reading this book probably demands an appetite for knowledge as broad as Dr.Adey's, and it is clear from the references he offers that he could expand on all the information here without trouble. But what is here! Even if the reader can never manage the resources to develop any of the systems described, the lessons taught amount to a new and comprehensive way to understand how the world biologically and physically works.As someone who had looked for this kind of information, and found it only in bits and pieces,it would be hard for me to overemphasize how valuable this piece of work is. If you are just going about setting up your first aquarium this book will scare you with the science. The information really needs to find it's way into the hobby level through the experience and writing of others who may need to simplify the presentation. Also, the equipment that is necessary to achieve the results described here is simple, but not yet available "off the shelf" It's hard to know if it will ever be, even for those with more professional needs.The ideas are so basic, yet so radical compared to the way aquarium keeping has always been understood, that only the person who is excited by the vision of capturing a real ecological system will be interested for now. I am a serious hobbyist with a science backround. This book, in any of it's editions, should be considered from here on as the definitive work on keeping an aquatic system healthy, whether it's in your home or outside your door.

While best known for describing the use of turf algae as a natural absorber of aquarium pollutants, the book 'Dynamic Aquaria' shines as a plea for the re-evaluation of how we appreciate aquarium systems and their micro-ecologies. Rather than the display of just a few select specimens, it proposes more emphasis on (and therefore replication of) the fascinating interactions between species and environment. It does a splendid job of discussing the difficulties in scaling down nature's beauty to fit an aquarium's limited volume.

This book explores aquarium systems as models of natural eco systems. Adey and Loveland's technique relies on algae scrubbers to reduce nitrate levels in the tank. By removing new growth of algae, one can avoid frequent water changes. The book includes extensive discussion of important aspects of marine eco systems, such as wave motion, light, and food chains, to name just a few.The book is more about the science of building marine microcosms than a cookbook for building home marine aquariums.

Dr. Walter Adey is one of those rare, truly multi-disciplinary scientists. I once heard a list of all his advanced degrees, which ranged from marine biology to botany to geology, but I can't remember them. I came away with the impression that he was in a position to really understand the complexity of a living ecosystem. That breadth and depth of knowledge shines through in Dynamic Aquaria, making this a far more interesting and readable book than the title might indicate. What's more, this book is about the process of recreating living ecosystems, which is the true test of understanding. As such, this book could be considered one of the seminal works of what is now a multifaceted global discipline: restoration ecology. My exposure to Dr. Adey (and to the late reef restoration researcher Wolf Hilbertz) in the mid-90's, when he was Director of the Marine Systems Laboratory at the Smithsonian Institution. This book, and those two men, set me on the restoration path. It led to my writing The Restoration Economy (2002), which was the first book to document the multi-trillion-dollar collection of industries and scientific disciplines that are restoring our natural and built environments. My entire professional life has since been focused on community revitalization and natural resource restoration, culminating in a new book, reWealth (McGraw-Hill, 2008). What I'm saying is that the insights I gained from Dynamic Aquaria helped change my life in a very positive and major way. I don't know what higher praise I could give a book. If you love this blue planet, maybe it can do the same for you.

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