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| Autore                  | Karplus Ilan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Titolo                  | Symbiosis in fishes : the biology of interspecific partnerships / / Ilan Karplus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| Descrizione fisica      | 1 online resource (461 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Disciplina              | 577.8/5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Soggetti                | Symbiosis<br>Aquatic animals<br>Fishes<br>Invertebrates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| Nota di contenuto       | Symbiosis in FishesThe Biology of Interspecific Partnerships; Copyright; Contents; Preface ; Introduction ; One The Associations between Fishes and Luminescent Bacteria; Luminescent Bacteria; Symbiotic Luminescent Bacteria in Fish Light Organs; Flashlight Fishes; Taxonomy and Distribution; The Light Organs; The Eye and the Light Organ; Reproduction, Larval and Light Organ Development; The Photophobic Response; The Use of Light by Flashlight Fishes; School Formation; Territorial Defense; Sexual Signaling; Deep Sea Ceratioid Anglerfishes; Structure, Diversity and Distribution<br>Reproductive StrategiesFacultative Sexual Parasitism; Light Organ Structure and Development: Light and the Mechanisms Controlling its Emission; The Use of Lures by Anglerfishes; Ponyfishes; Structure, Distribution and Taxonomy; The Light Organ System (LOS) and Diversity of the Generated Light Patterns; Sex-Specific Signaling; Inception of the Association between Luminescent Bacteria and Ponyfishes; Sexual Dimorphism of the LOS, Sex-Specific Signaling and the Role of Sexual Selection in the Evolution of Leiognathid Fishes; Specificity of the Partnerships between Luminescent Bacteria and Fishes Optimization of the Benefits to Fishes from their Association with BacteriaThe Evolution of the Partnerships between Fishes and Luminescent Bacteria; References; TWO The Associations between |

Fishes and Sponges ; Sponges; Predator Deterrence by Sponges;  
Multiple Species Assemblages in Sponges; Obligatory Fish Symbionts  
and Adaptations for Living in Association with Sponges; Nutrition,  
Reproduction and Sponge Occupation by Obligatory Symbiotic Fishes;  
Partner Specificity and Sponge Sharing by Obligatory Symbiotic Fishes;  
Evolution of the Partnership Between Obligatory Fish Symbionts and  
Sponges

Sponges as Living Incubators of Fish EggsFacultative Partnerships  
Between Fishes and Sponges; References; THREEThe Associations  
between Fishes and Anthozoans ; Sea Anemones; The Stinging Cells  
and their Release Mechanism; Obligatory Associations with Sea  
Anemones of Fishes of the Genera Amphiprion and Premnas ; The  
Taxonomy, Distribution and Ecology of Host Sea Anemones and their  
Associated Fishes; The Protection of Anemone Fishes from Sea  
Anemones; Recognition, Attraction to and Selection of Sea Anemones  
by Anemone Fishes; Partner Specificity; Host Preference; Competitive  
Interactions

Stochastic ProcessesHabitat Preference; Geographical Overlap;  
Protection from Sea Anemones; Species Coexistence; Adaptations of  
Anemone Fishes for Living with Sea Anemones; Protandric Sex Reversal;  
Monogamy and Mate Recognition; Step-fathering; Social Control of  
Growth and the Tolerance ofNonbreeders by the Breeders; Fish  
Territoriality, Aggressionand the Sea Anemone; Limited Larval Dispersal  
and NatalRecruitment; Benefits and Costs to Anemone Fishes and Sea  
Anemones from being Associated and their Short-term Mutual Impacts;  
The Evolution of the Anemone Fish-Sea Anemone Partnership  
The Facultative Associations Between Fishes and Sea Anemones

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## Sommario/riassunto

Symbiosis in Fishes provides comprehensive coverage of the biology of  
partnerships between fishes and invertebrates, ascending the  
phylogenetic scale, from luminescent bacteria, sponges and  
coelenterates to molluscs, crustaceans and echinoderms. Both  
facultative and obligatory partnerships are reviewed with emphasis on  
the behavioral, ecological and evolutionary aspects of fish symbiosis.  
Each of the eight chapters of this book focuses on a different group of  
partners. The structure, physiology and anti-predatory strategies of  
each group are described to provide the necessary backgro

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