

## BOOK REVIEW

### **The Fish in the Forest – Salmon and the Web of Life**

Dale Stokes. 2014. University of California Press, Berkeley, USA. 159 pages. \$29.95 (hard cover). ISBN: 9780520269200

In *The Fish in the Forest - Salmon and the Web of Life*, author Dale Stokes has provided the curious reader a succinct account of the Pacific salmon (genus *Oncorhynchus*). In his easy to read book, Stokes explains in detail how salmon along the Pacific coast of North America have influenced and sculpted the ecology of the temperate ecosystem.

The book is divided into six sections, each addressing a particular aspect of the salmon and its role ecologically and culturally: The Forest and the Fish, Life and Death of a Salmon, The Salmon Signature, Salmon Gestalt, The Salmon Forest, and Full Circle. In each of these sections, Stokes skillfully connects the salmon with the environment in which it survives. As the story unfolds the reader finds him or herself learning ecological principles, biological terminology, and basic concepts of chemistry. Salmon taxonomy is covered as well as the role of indigenous peoples and their cultural connection to salmon. Scattered throughout the book - almost on every page - are outstanding photos by photographer Doc White. The photos supplement the text by providing a glimpse into salmon day to day life, their predators, and the landscape the fish support. A reference section is included at the end of the book.

A common theme is interlaced throughout the book: how salmon influence the environment beyond the streambed. Salmon are a keystone species, meaning that their presence in the ecosystem supports hundreds of other species, either directly or indirectly. The salmon transport nutrients from the ocean to the temperate forest. These nutrients, such as nitrogen and phosphorus, are used by plethora of other species, from bacteria, invertebrates, and parasites, to bears, wolves, and old growth forests. The conveyor belt of nutrients and energy provided by salmon has created the Pacific forests as we see them today. The environmental interconnectedness between the salmon and other species is profound. For example, plant flowering periods and the life cycles of their pollinators are synchronized more so on the spawning cycle of the salmon rather than other typical factors such as photoperiod and temperature.

On page 130 the author summarizes the concept of salmon ecology rather well:

“The net effect of salmon on an ecosystem is formed from the balance between salmon being sources of enrichment and salmon being forces of disturbance, both roles complicated by the geomorphology of the landscape they live in. The same is true of nearly all creatures in the Salmon Forest and across the earth, including bears and eagles and native fishermen. Ecosystem dynamics in our world are rarely formulated with straightforward links that are easily defined and parameterized, or with a convenient separation between forces abiotic and biotic. Instead those dynamics are entwined under the guiding force of natural selection, linking

hundreds of species in complex networks with often subtle feedback loops that provide hidden stability and that are difficult to ascertain. The salmon in the forest provides a unique window through which to observe the mechanisms that shape our planet.”

*The Fish in the Forest* is a must read for those that appreciate aquatic ecosystems and have an interest in salmon ecology. The co-evolution between salmon and the forests of the Pacific coast represent hundreds of thousands of years of nutrient ebb and flow and the book communicates the interdependence as a result of this relationship. There is a cautionary tale however, that is exposed when reading the book: salmon are in decline and the effects of exploiting rivers by building hydroelectric dams and other structures is having a significant ecological impact on the forests, the fish, and everything else connected. This book is the first step in educating oneself on salmon ecology and making a difference before it is too late.

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