

### “Fish and People”: An innovative fisheries science learning tool for the Pacific

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*Most people know that if you leave a fish stock unharvested for a while, it increases, and that after you start fishing it again, it declines. But history has shown repeatedly that people all over the world have been reluctant to believe that fisheries can be overharvested to the point where they do not recover, such that when stock collapses do happen, we are surprised. The Pacific is no exception. While there is an abundance of traditional institutions to regulate harvests (e.g. customary tenure and taboos), the reason for implementing them has usually had more to do with stockpiling resources for social rituals (e.g. funeral feasts) than with a conscious, collective desire to prevent stock collapse and guarantee food security. Consequently, traditional management institutions have mostly not been able to prevent the collapse of vulnerable and/or high-value export commodity species such as sandfish (*Holothuria scabra*), green snail (*Turbo marmoratus*) and giant clam (*Tridacna gigas*).*

In recent decades fisheries research has provided a wealth of detailed knowledge about key aspects of the life cycle of fish and marine invertebrate species, including many that are economically important. This knowledge, if communicated effectively to fishers and community leaders in the Pacific, could potentially help them to see the importance of the connection between overharvesting adults in a fish stock, and the consequent decline in the production of fertilised eggs, and recruitment of juveniles to the fishery. In a region where language remains an important barrier to the effective communication of scientific ideas, a logical strategy is to make as much use of imagery as possible. Video is an accessible and powerful medium, and there is now a video-based fisheries science education tool specifically made for Pacific Island audiences: “Fish and People”.

The Fish and People DVD explains, in five 12-minute modules, the basics of fishery biology, with particular emphasis on life cycles and scales of larval dispersal of common and economically important Indo-Pacific species. It also explains other aspects of their biology, such as growth rate and longevity, which, along with larval connectivity, are central to understanding how

populations of each species respond to fishing, and protection from fishing, and at what scales in space and time. The video is targeted at high-school students, but has already proved to be popular with a wide range of audiences in many countries.

The product articulates around a series of compelling interviews with Solomon Islanders (fishers, scientists, non-governmental organisation workers, government officials and teachers), who each deliver a key part of the message, in language and context that clearly has salience and immediacy.

The rationale for approaching the impending fisheries management crisis in the Pacific with a high-school level learning tool like Fish and People is straightforward. The assumption is that if a critical mass of young adults acquire a detailed understanding of how overfishing destroys fisheries and food security, they will not only innovate their own, “bottom-up” fisheries management strategies as they assume positions of influence within the community, but they will also be more likely to understand the need for, and therefore comply with, “top-down” management approaches such as size limits, gear restrictions, quotas and moratoria. While many Pacific Islanders can readily describe noticeable declines in the size and abundance of fish and marine invertebrates during their own lifetime, the aim of Fish and People is to help people to incorporate their own, often richly detailed empirical observations into a model of fishery dynamics that will engender a stronger sense of agency in managing fisheries for future food security and livelihoods.

The key feature of this particular learning tool is its rich use of imagery to communicate the science. In addition to a series of powerful interviews with Solomon Islanders, Fish and People also features superlative underwater



Opening frame of the Fish and People DVD.

## NEWS FROM IN AND AROUND THE REGION



*The DVD includes animations about underwater surveys and other monitoring techniques*

cinematography, and many high quality animations, which clearly explain the scientific concepts. The narration is in English, and where interviewees speak Solomon Pijin, an English translation is presented on screen. All key scientific terms, such as *gamete*, *zygote*, *larva*, and *plankton*, are printed in large font on screen as they occur in the narration. The DVD disk also includes a detailed Lesson Plan and Teachers Guide, along with various supporting materials, including still photographs of marine organisms spawning, and microscope

photos of larvae, plus animated computer models demonstrating dispersal of larvae in reef and coastal environments. Fish and People was scripted by myself and Russell Kelley, and assembled and edited by multi-award-winning media professionals at Digital Dimensions and Eco Media Production Group (<http://www.ecomedia.com.au/>). The production was funded by the Australian Research Council, James Cook University and Solomon Telekom Television Ltd.

My collaborators and I plan to redesign and re-edit Fish and People for different audiences, including Solomon Islands villages, along with school and rural village audiences in the Philippines, Indonesia, and other Pacific Island countries. This process will entail keeping most of the animations, shooting new interviews, and creating new, locally voiced, voice-overs. We are also currently testing the impact of the show on the scientific knowledge of Solomon Islands high school students.

The Fish and People DVD modules can be streamed or downloaded from:

<http://www.ecomedia.com.au/fishandpeople.html>

or here:

<https://vimeo.com/channels/fishandpeople>

The Lesson Plan and Teacher's Guide can be downloaded here:

<https://www.dropbox.com/s/l3p65gre6i4mce0/Lesson-Plan-and-Teachers-Guide-small.pdf>

We welcome feedback and suggestions.



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