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The Lucid3 system: a promising tool for creating and deploying identification keys of reef fish larvae and juveniles.

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Understanding the environmental factors that contribute to the local diversity of coral reef fishes requires a better knowledge of the biology and ecology of their larval and juvenile stages. Unfortunately, keys for identifying larvae and juveniles at the species level are generally lacking in the literature. Tools for identifying larvae and juveniles have to be more flexible than traditional dichotomous, generally printed, keys as: 1) diagnostic characters often change during ontogeny of the species; 2) the techniques for validating the identification of specimens at the species level will greatly improve in the near future with the generalization of genetic tools. In this context, only computer based identification keys appear to offer the required flexibility, especially in species-rich areas. Among the available software, Lucid3, developed by the Centre for Biological Information, University of Queensland, is promising as it can run on any Java-enabled operating system for developing keys that can be later distributed on CD-ROM or deployed over the World Wide Web.

This work, presently in its early stage, aims at identifying the larval and juvenile stages of the reef fishes of New Caledonia. It is funded by IRD, the French Oversea Department, and Zonéco program. It will be presented from the acquisition of the information through macro- and micro-photography with digital cameras and digital vector drawings, to the selection of "entities", or characters, that need to be implemented in the Lucid3 Builder for the identification of each species. Some multimedia fact sheets in html format that can provide further information on each taxa through the Lucid3 Player will be also shown.