

## 1 TAXONOMY

### 1.1 *Lethrinus* spp.

Species of *Lethrinus* are often difficult to identify. Many species have very similar colour patterns and most species are capable of rapidly adopting a dark mottled or reticular colour pattern and can switch it off with equal rapidity (Randall et al. 1990). While only sweetlip (*L. miniatus*) and spangled emperor (*L. nebulosus*) are presently of significant commercial and recreational value on the GBR, we have provided notes on all species likely to occur on the GBR to aid in identification of these species.

The maximum sizes and most widely used common names for *Lethrinus* spp. likely to occur on the GBR are given in Table 1. To aid comprehension of this complex group of fishes, they have been divided here into a number of functional sub-groups based on size, colouration and body shape. A key to the names used here and those in the references most likely to be used by workers on the GBR is given in Table 2. The best references to aid in identification of *Lethrinus* spp. on the GBR are Carpenter and Allen (1989) and Randall et al. (1990).

One species whose taxonomic position is not completely clear is worthy of note. *L. choerorhyncus* is a species of major commercial importance in north western Australia (Whitelaw et al. 1991). Whether it occurs on the GBR is unknown. Carpenter and Allen (1989) synonymised this species with *L. nebulosus* and Randall et al. (1990) suggest that this species is a misidentification of *L. laticaudis* but fisheries scientists carrying out studies on all three of these 'species' (Dr Keith Sainsbury of CSIRO and Dr Mike Moran of WA Fisheries) have pointed out to us numerous morphological (see Sainsbury et al. 1984) and ecological differences between the three. Persons working with *L. nebulosus* on the GBR should be aware that '*L. choerorhyncus*' could also occur here.

### 1.2 *Lutjanus* spp.

Five species of *Lutjanus* are of outstanding commercial and recreational importance on the GBR: *L. argentimaculatus*, *L. erythropterus*, *L. johnii*, *L. malabaricus* and *L. sebae*. Smaller species such as *L. carponotatus* are readily caught and good eating and are receiving increasing attention from fishermen (McPherson et al. 1988). For this reason and because of confusion in identification of juveniles, we outline here all species of *Lutjanus* likely to be seen on the GBR.

The maximum sizes and most widely used common names for *Lutjanus* spp. likely to occur on the GBR are given in Table 3. A key to the names used here and those in the references most likely to be used by workers on the GBR is given in Table 4. Taxonomy and identification of species of this genus is less difficult than that for *Lethrinus*. Randall et al. 1990 is a useful guide to identification but Gerry Allen's FAO Species Catalogue (Allen 1985) and Allen and Talbot (1985) are more comprehensive.

### 1.3 *Plectropomus* spp.

A complete revision of species of *Plectropomus* has been prepared by Randall and Hoese (1986). Four species are recognised from the GBR: *P. areolatus* (= *P. truncatus*), *P. laevis* (= *P. melanoleucus*), *P. leopardus* and *P. maculatus*. A single specimen of *P. oligacanthus* was reported from Cape York by Castelnau (1875). This is the only record of this species from Australia (Randall and Hoese 1986). The major difficulty in taxonomy of GBR species has been the identification of *P. melanoleucus*. *P. laevis*, the blue-spot, was for a long time recognised as a separate species but known only as *Plectropomus* sp.. Debate has concerned whether the Chinese Footballer, *P. melanoleucus*, is a separate species or a colour variation of

*P. laevis*. They are now accepted to be colour variations of the same species (see Randall and Hoese 1986, for a discussion).

The maximum sizes and most widely used common names for *Plectropomus* spp. known to occur on the GBR are given in Table 5. A key to the names used here and those in the references most likely to be used by workers on the GBR is given in Table 6. All GBR species (including *P. oligacanthus*) are pictured in Randall et al. (1990) and Myers (1989). The most comprehensive guide to identification is Randall and Hoese (1986).

#### **1.4 Studies in Progress**

None of which we are aware.