Fig. S1. Comparison of retinal cell densities in two species in Myripristinae. Graphs showing that Abercrombie-corrected cell densities are similar between *Myripristis kuntee* and *M. berndti* for each stage and retinal region. INL, inner nuclear layer; GC, ganglion cell.
Fig. S2. The multibank retina in *Ostichthys* sp. Representative transverse section of the ventral retina showing photoreceptor layer with multiple banks of rods (up to approximately 10) in an adult deep-dwelling soldierfish (*Ostichthys* sp). Banks are numbered B₁-n. Scale bar: 30 µm.
Table S1. Details of animals used in study. This study used a total of 20 individuals from the family Holocentridae, 18 of which were collected in the current study and 2 of which were collected in de Busserolles et al. (2021). Locations: LI, Lizard Island; MI, Moorea Island; CM, Cairns Marine. Analyses: Cell densities, cell densities in each retinal region quantified; Histology, rod banking examined in histological sections. Standard length was not recorded for one individual and therefore, is marked as n.a.

| Species           | Life stage       | Standard length (cm) | Location | Eye used | Analyses performed                      | Reference                           |
|-------------------|------------------|----------------------|----------|----------|-----------------------------------------|-------------------------------------|
| Sargocentron rubrum | Pre-settlement larva | 3.1                  | LI       | R        | Histology, Cell densities               | This study                          |
|                   | Pre-settlement larva | 2.6                  | LI       | L        | Histology, Cell densities               | This study                          |
|                   | Pre-settlement larva | 2.8                  | LI       | R        | Histology, Cell densities               | This study                          |
|                   | Settled juvenile  | 3.4                  | LI       | L        | Histology, Cell densities               | This study                          |
|                   | Settled juvenile  | 3.2                  | LI       | L        | Histology, Cell densities               | This study                          |
|                   | Adult             | 13.4                 | CM       | L        | Histology, Cell densities               | This study                          |
|                   | Adult             | 14.0                 | LI       | R        | Histology, Cell densities               | (de Busserolles et al. 2021)        |
| Myripristis kuntee | Settlement larva  | 6.5                  | MI       | R        | Histology, Cell densities               | This study                          |
|                   | Settlement larva  | 5.2                  | MI       | L        | Histology, Cell densities               | This study                          |
|                   | Settlement larva  | 5.6                  | MI       | R        | Histology, Cell densities               | This study                          |
|                   | Adult             | 14.4                 | MI       | R        | Histology, Cell densities               | This study                          |
| Myripristis berndti | Settlement larva  | 4.9                  | MI       | L        | Histology, Cell densities               | This study                          |
|                   | Adult             | 17.7                 | CM       | R        | Histology, Cell densities               | This study                          |
|                   | Adult             | 17.5                 | CM       | R        | Histology, Cell densities               | This study                          |
| Ostichthys sp.    | Adult             | 20.5                 | MI       | L        | Histology                              | This study                          |
| Sargocentron microstoma | Settlement larva | 5.8                  | MI       | R        | Histology                              | This study                          |
|                   | Adult             | 13.5                 | MI       | R        | Histology                              | This study                          |
| Sargocentron diadema | Adult            | 10.0                 | LI       | L        | Histology                              | (de Busserolles et al. 2021)        |
| Myripristis violacea | Adult          | 14.4                 | MI       | R        | Histology                              | This study                          |

References

de Busserolles, F., Cortesi, F., Fogg, L., Stieb, S. M., Luehrmann, M., and Marshall, N. J. 2021. The visual ecology of Holocentridae, a nocturnal coral reef fish family with a deep-sea-like multibank retina, *J Exp Biol*, 224, jeb233098.