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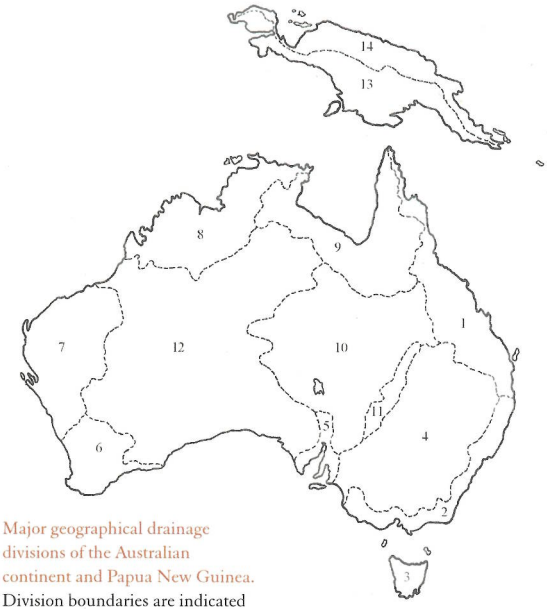
FRESHWATER FISHES OF KAKADU NATIONAL PARK

DAVE WALDEN

BOB PIDGEON



Major geographical drainage divisions of the Australian continent and Papua New Guinea. Division boundaries are indicated by dotted lines. The drainage divisions are:

1 North-east Coast
2 South-east Coast
3 Tasmanian
4 Murray-Darling
5 South Australian Gulf
6. South-west Coast
7 Indian Ocean
8 Timor Sea
9 Gulf of Carpentaria
10 Lake Eyre
11 Bulloo-Bancannia
12 Western Plateau
13 Southern New Guinea
14 Northern New Guniea

Adapted from Bishop *et al* (in press)

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eriss is part of the Science Group of Environment Australia, the environment portfolio of the Australian Commonwealth Government, and is located in Kakadu National Park in the Northern Territory.

Walden Dave & Pidgeon Bob 1998. *Freshwater fishes of Kakadu National Park*. Supervising Scientist, Canberra.

Supervising Scientist
Environment Australia
GPO Box 787 Canberra ACT 2601, Australia

ISBN 0 642 24319 0

Printed by Griffin Press Pty Ltd, Netley, South Australia

Cover photos: centre page – Saratoga from Magela Creek; lower page – Red-tailed Rainbowfish from Kambolgie Creek, upper South Alligator River system

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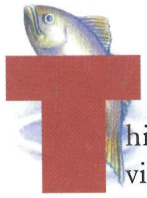
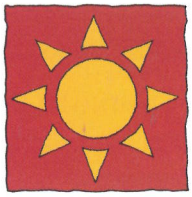


This booklet is designed to give visitors to the region an insight into the rich diversity of the freshwater fishes of Kakadu National Park. The term 'freshwater fish' can be misleading. If we include all fish species that may be found in the freshwaters of the Park we would have about 60 species. Some of these are really marine species that wander into freshwater and can survive there for a while (marine vagrants), whilst some live in freshwater as a regular part of the life cycle but need to return to the estuaries to spawn (catadromous). Other species live and spawn in freshwater and all of these fish have marine ancestry, except for the saratoga which is the only true primary freshwater fish in the Northern Territory.

There are 31 species described here, many of which may be seen by visitors engaged in activities such as angling, or on boat cruises, watching at the waters edge of creeks, waterholes and road crossings, or the ultimate fish watching experience of donning a facemask and swimming in the crystal clear waters of the escarpment gorges and creeks.



In the Dry season fish populations become isolated in billabongs and waterholes some of which may dry up completely. With the coming of the rains the fish spread out and occupy all available habitats. Some species move down from the permanent headwaters and other species move out onto the floodplain from permanent billabongs to take advantage of the great increase in area of available habitat and food supply. Spawning of most species occurs at this time. Late in the Wet season (March–April) some species move upstream, presumably to seek Dry season refuges. The upstream migration in particular can be an awe inspiring sight with sometimes hundreds of thousands of fish every hour moving around road bridges and creek crossings. This migration seems to be more dramatic in Magela Creek than in other streams.

EXPLANATION OF TERMS

Common name(s) Generally used name(s). Often refers to a family or group of fishes, eg catfishes. Common names can be very ambiguous.

Aboriginal name(s) The names given to the species in the Gundjheimi language which is used by most of the local Aboriginal people in Kakadu. In some cases there is more than one name and different names for juveniles (J) and adults (A). Sometimes the same name is used for two or more species of similar shape and size, for example the names Dilebang and Dohlbo seem to refer to small elongate fish.

Scientific name Latin or Greek name used by scientists in all languages. This name often describes a distinguishing feature of the fish, or incorporates the name of the person who discovered or described the species. For example in *Syncomistes butleri* (sharp-nose grunter), *Syncomistes* is a masculine Greek noun meaning 'gatherer' which refers to the habit of grazing submerged logs, roots and rocks for plant material, algae and detritus whilst *butleri* comes from the Australian naturalist

Harry Butler who collected the first museum specimens of this species in a tributary of the South Alligator River.

Distribution The general distribution of the species. When a coastal range is given it may be that the species is not found in *every* river system within that range.

Habitat The zone of the river system within Kakadu in which the species may be found. The zones are of three types:

- **Headwaters** The escarpment plateau and gorges where the streams exit the sandstone country. Characterised by deep pools joined by waterfalls and shallower streams usually with rocky substrates.
- **Lowlands** Zone between the escarpment and the floodplains. Waterways of the lowlands stop flowing in the Dry season and the few deeper permanent billabongs are interspersed along the distance of the dry creek bed. In the woodland country the seasonal creeks of the lowlands generally have sandy substrates and they may have several branches.

- **Floodplains** The floodplains of Kakadu are broad expanses of water in the Wet season with abundant aquatic vegetation. Most of the floodplain comprises grass and paperbark swamps. During the Dry season these dry out leaving permanent water in only a few deeper swamp areas and in select channel billabongs such as Yellow Water. The water is slow moving and billabongs with mud or detritus substrates may be present.

Size The first value is the maximum recorded size. The second value is the size (or size range) at which most specimens are usually found.

Diet Describes the major dietary components of the species in order of importance. The order of importance may change with the season.

Notes Any interesting facts about the fish's biology, ecology and behaviour.

OTHER FRESHWATER FISH SPECIES FOUND IN KAKADU

Freshwater species not discussed in this book include:

Species name	Common name
Arius graeffei	Blue Catfish
Arius midgleyi	Shovelhead Catfish
Neosilurus hyrtlii	Hyrtl's Catfish
Porochilus rendahli	Rendahl's Catfish
Melanotaenia exquisita	Exquisite Rainbowfish
Melanotaenia splendida australis	Red-tailed Rainbowfish
Melanotaenia trifasciata	Banded Rainbowfish
Ophisternon gutterale	One-gilled Eel
Ambassis macleayi	Reticulated Glassfish
Glossogobius aureus	Golden Goby
Glossogobius sp.	Square-blotch Goby
Hypseleotris sp.	Carp Gudgeon
Oxyeleotris nullipora	Dwarf Gudgeon
Oxyeleotris selheimi	Black-banded Gudgeon
Brachirus selheimi	Selheim's Sole

MARINE FISH SPECIES WHICH MAY ENTER FRESHWATERS IN KAKADU

Species name	Common name
Carcharhinus leucas	Bull shark
Pristis microdon	River Sawfish
Dasyatis fluviorum	Brown River Stingray
Nematolosa come	Bony Bream
Hilsa kelee	Black-spot Herring
Gerres sp.	Silver Biddy
Scatophagus argus	Spotted Scat
Scatophagus multifasciata	Striped Scat
Liza tade	Flat-head Mullet
Kurtus gulliveri	Nursery Fish
Prinobutis microps	Small-eyed Gudgeon
Ophiocara porocephala	Snake-head Gudgeon

SPECIES

Common name BANDED GRUNTER
Aboriginal name Mandidi
Scientific name *Amniataba percoides*
Distribution Indian Ocean, Timor Sea, Gulf of Carpentaria, north-east coast and Lake Eyre drainages
Habitat All three habitat types in Kakadu
Size Up to 25 cm, usually 9–10 cm
Diet Insects, plants and small crustaceans

Notes Grunters are so called because they make a grunting noise when taken from the water. The vertical stripes on this fish make it easy to identify. This species has been seen cleaning parasites from the head and gills of eel-tailed catfish.

Common name SOOTY GRUNTER, BLACK BREAM
Aboriginal names Na-gerdmi or Durnbuhmanj
Scientific name *Hephaestus fuliginosus*
Distribution Timor Sea, Gulf of Carpentaria and north east coast drainages; also Papua New Guinea
Habitat Headwaters and lowland creek channels, rare in the floodplain zone
Size Up to 50 cm, usually about 20 cm
Diet Algae, insects, plants and some fish

Notes A popular sport and table fish over much of northern Australia; however in Kakadu almost all its habitat is closed to fishing. In the Wet season this fish moves downstream from the headwaters to the lowlands where it is thought that spawning occurs. Some specimens develop fat lips that give a smiling appearance.

Common name COAL GRUNTER
Aboriginal names Dubang or Dubarrubagon
Scientific name *Hephaestus carbo*
Distribution Patchy, from Cape York in Queensland to the Mary River in the Northern Territory
Habitat Faster water of the headwaters and upper lowlands
Size Up to 20 cm, usually 8–10 cm
Diet Mainly crustaceans and insects

Notes This fish was only recently recorded by scientists in Kakadu in the Jim Jim Creek area and the upper Mary River. Prior to this the western limit of the distribution was thought to be the Goyder River in eastern Arnhem Land. The colouration of the coal grunter is quite striking.

Common name SPANGLED GRUNTER
Aboriginal name Burd
Scientific name *Leiopotherapon unicolor*
Distribution Indian Ocean, Timor Sea and Gulf of Carpentaria drainages; also north east coast, Lake Eyre, Bulloo and Murray–Darling drainage systems
Habitat All three habitat types in Kakadu
Size Up to 26 cm, usually about 10 cm
Diet Insects, plants, fish and crustaceans

Notes A very hardy and abundant fish able to tolerate a wide range of environmental conditions. It is thought that this fish can aestivate (survive in the mud) when the water dries up although this has not been proven. Spangled grunters have been observed attacking fish several times their own size.

Common name SHARP-NOSE GRUNTER
Aboriginal names Na-gerdmi or Durnbuhmanj
Scientific name *Syncomistes butleri*
Distribution Only some Timor Sea drainages, the known eastern limit is the Liverpool River system in Arnhem Land
Habitat Headwaters, sandy lowland waterbodies and streams
Size Up to 32 cm, usually 20–25 cm
Diet Terrestrial plant material, detritus and algae

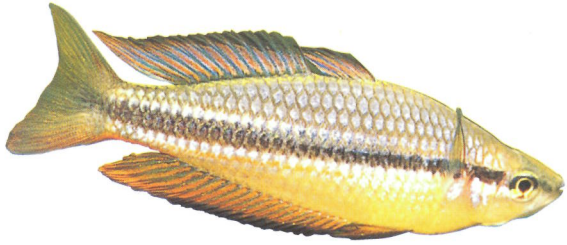
Notes Modified jaws and teeth, and an elaborate intestinal pattern appear to be adaptations for grazing of roots, logs, rocks and sand, hence the herbivorous diet. The sharp-nose grunter has an extended breeding season, from the late Dry to the early Wet.

Common name MIDGLEY'S GRUNTER
Aboriginal name Unrecorded by linguists (possibly Durnbuhmanj refers to this fish as well as Sooty and Sharp-nose Grunters)
Scientific name *Pingalla midgleyi*
Distribution Restricted to the South and East Alligator Rivers and the Katherine River.
Habitat Headwaters and lowland creek channels, rare in the floodplain zone
Size Up to 14 cm, usually about 8 cm
Diet Algae, detritus and insect larvae

Notes First recorded by scientists in the 1970s, this fish is one of only a few restricted to the Top End of the Northern Territory. Like the sharp-nose grunter, Midgley's grunter is also an algae and detritus grazer of rocks, logs and plants. There is a distinctive black blotch on the anal fin.

Common name BLACK-BANDED RAINBOWFISH
Aboriginal name Dilebang or Dohlbo
Scientific name *Melanotaenia nigrans*
Distribution Streams of far northern Australia, including streams on some offshore islands; very patchy within this distribution; also south west Papua New Guinea
Habitat More common in escarpment perennial and seasonal streams, rarer in lowlands and floodplains
Size Up to 12 cm, usually about 4 cm
Diet Insects and algae, fairly opportunistic

Notes The eggs have small threads attached that help them stick to vegetation in faster flowing waters. This is one of the few species that may be abundant on the escarpment plateau. Larger specimens are very colourful, particularly males during the breeding season.



Common name CHEQUERED RAINBOWFISH
Aboriginal name Dilebang or Dohlbo
Scientific name *Melanotaenia splendida inornata*
Distribution Timor Sea, Arafura Sea and Gulf of Carpentaria drainages; also in southern Papua New Guinea
Habitat All three habitat types in Kakadu
Size Up to 12 cm, usually about 5 cm
Diet Algae, insects and small crustaceans; all rainbowfish are opportunistic and have similar omnivorous diets

Notes One of the more common freshwater fish in Kakadu and the Northern Territory. One of the species involved in spectacular upstream migrations. The males have longer and more brightly coloured fins than the females.

Common names SPOTTED BLUE-EYE, GERTRUDE'S BLUE-EYE
Aboriginal names Dilebang or Dohlbo
Scientific name *Pseudomugil gertrudae*
Distribution Timor Sea and Gulf drainages, also found in north-east Queensland; patchy within this distribution
Habitat Lowlands and headwaters, this species tends to prefer smaller streams within these habitats
Size Up to 4 cm, usually 2–3 cm
Diet Algae, small insects and microcrustaceans

Notes During the breeding season the males become more colourful with the tips of the pectoral fins becoming bright yellow-orange. The males have a courting display prior to spawning. Spawning may occur in groups.