

Appendix 9  
Definition of Fish Reproductive Guilds

**Table 1.1. Classification of reproductive guilds of fish species from the Jock River.**

Class		Description	Jock River Species	
A. Non-Guarder	A.1 Open Substrate	A.1.1 Pelagophils	Non-adhesive eggs scattered in open water in areas where current direction is favourable to egg distribution and survival	Emerald shiner
		A.1.2 Litho-Pelagophils	Eggs initially depositive on rocks/gravel but eggs or embryos are carried away from spawning substrates.	
		A.1.3 Lithophils	Deposits eggs on a rock, rubble or gravel bottom. Embryos are highly photophobic	White sucker, silver redhorse, greater redhorse, pearl dace, blacknose dace, longnose dace, walleye
		A.1.4 Phytolithophils	Deposit eggs in clear water on submerged plants or logs, gravel and rocks. Late Hatching, presence of cement glands.	Brassy minnow,
		A.1.5 Phytophils	Scatter eggs with an adhesive membrane that sticks to submerged, live or dead, aquatic plants, or to recently flooded terrestrial plants. Adapted to low-oxygen environments	Northern pike, muskellunge, central mudminnow, northern redbelly dace, golden shiner, banded killifish
		A.1.6 Psammophils	Eggs scattered directly on sand or near fine roots of plants that hang over the sandy bottom. Eggs adhesive	Blacknose shiner, spottail shiner, logperch
	A.2 Brood Hiders	A.2.1 Lithophils	Hide eggs in natural or specially constructed places. In most cases, hiding places are excavated in gravel, with eggs buried under gravel. Clean gravel or rocks and cold, clean fast flowing water or springs are almost essential to assume some exchange of water around eggs to provide sufficient oxygen.	Creek chub, fallfish,

Class			Description	Jock River Species
B. Guardians	B.1 Substratum Choosers	B.1.1 Phytophils	Eggs are scattered onto submerged plants. Male guards and fans eggs.	
	B.2 Nest Spawners	B.2.1 Lithophils	Eggs deposited in single layer or multi layer clutches on cleaned rocks on in pits dug in gravel.	Common shiner, rock bass, bluegill, smallmouth bass
		B.2.2 Phytophils	Nests built on a soft, muddy bottom usually amid algae, plant roots, leaves.	Largemouth bass, black crappie
		B.2.3 Speleophils	Guard spawn in natural holes and cavities or in specially constructed burrows. Frequently eggs are deposited on a cleaned area of the undersurface of flat stones.	Bluntnose minnow, fathead minnow, brown bullhead, Johnny darter, mottled sculpin
		B.2.4 Polyphils	Fishes that are not particularly in the selection of nest building material and substrate. Usually circular nests with sticks and roots left in place. Often among or next to plants growing in muddy or sandy shallows of slow rivers or lagoons.	Pumpkinseed
		B.2.5 Ariadnophils	Skill nest building and parental care remarkably well developed. Nest materials are bound together by a viscid thread secreted by male.	Yellow bullhead, brook stickleback