Glossary

ACIAR	Australian Centre for International Agricultural Research
acid sulfate soils	buried soils derived from decay of ancient marine vegetation, containing iron pyrites and sulfides, highly acidic with the potential to release toxic heavy metal compounds when exposed to air. Common along many areas of Queensland's coastline
alkalinity	concentration of base (expressed as calcium carbonate) in water or soils, measured in mg/litre
amphipods	small, shrimp-like crustaceans occurring as zooplankton in the water column of prawn ponds. Most amphipods are marine, although a few live in freshwater or are terrestrial. Marine amphipods may be pelagic (living in the water column) or benthic (living on the pond bottom).
anaerobic	living or active in the absence of free oxygen, or in pond or water quality conditions without oxygen
anaerobic bacteria	bacteria that can live without oxygen
anoxic	relating to or marked by a severe deficiency of oxygen in tissues or organs
aquifer	underground bed or layer yielding groundwater for wells and springs etc.; groundwater resource that may flow along porous underground layers
benthic	of or relating to or happening on the bottom under a body of water
benthos	organisms (plants and animals) that live at or near the bottom of a sea, or in a pond
biomass	in this manual, standing stock (for example, in kilograms) of a crop of prawns at any particular time
bioremediation	effluent treatment using biological systems, enabling the culture of other species from the effluent water of an aquaculture crop
broodstock	mature prawns used as breeders in a hatchery; could be collected from the wild or be bred in captivity as domesticated broodstock (see spawner)
cod end	the sock-like end of a drain harvest net, with an opening tied off to collect the prawns and opened to empty them into an ice bin, similar to a trawl net cod end used in the fishing industry
copepods	minute marine or freshwater crustaceans occurring as zooplankton in the water column of prawn ponds, usually having six pairs of limbs on the thorax; some are abundant in plankton and others are parasitic on fish.
crusticide	chemical poison used to kill crustaceans (not available in Australia)

cyanobacteria	blue-green algae; predominantly photosynthetic prokaryotic organisms containing a blue pigment in addition to chlorophyll; occur singly or in colonies in diverse habitats; can be a significant component of the phytoplankton in prawn ponds but can also occur as benthic algae (e.g. *Oscillatoria* spp.) forming mats that may lift to the surface and accumulate in the windward corners of ponds.
detritus	decaying organic material on the pond floor, such as dead algae and zooplankton, prawn excreta and uneaten feed
diatoms	a major group of eukaryotic algae occurring as phytoplankton in prawn ponds; one of the most common types of phytoplankton in aquatic ecosystems. Most diatoms are unicellular, although some form chains or simple colonies, encased within a unique cell wall made of silica; usually consist of two symmetrical sides with a split between them, hence the group name.
denitrification	the loss or removal of nitrogen or nitrogen compounds; specifically reduction of nitrates or nitrites commonly by bacteria (as in the water column or in pond sediments) that usually results in the escape of nitrogen into the air
dinoflagellates	marine protozoans occurring as phytoplankton in the water column of prawn ponds, of the order Dinoflagellata, characteristically having two flagella and a cellulose covering and forming one of the chief constituents of plankton. They include bioluminescent forms and forms that produce red tide.
ELISA	enzyme-linked immunosorbent assay, a laboratory test for detecting a pathogen or its antibody, used as a diagnostic test for various viral diseases
endocrine system	gland system providing hormones to the blood
eukaryotic	(single-cell organisms) having cells with 'good' or membrane-bound nuclei
eyestalk ablation	a hatchery technique of macerating or destroying the eyestalk gland in female broodstock prawns to encourage spawning
feed tray	a wire-framed tray covered with small mesh, lowered to the floor of a prawn pond to monitor feed consumption rate
FCR	Food Conversion Ratio — weight of feed used to grow a crop of prawns divided by the weight of prawns harvested
flagella	lash-like appendages used for cellular locomotion by some phytoplankton and zooplankton
GAV	Gill Associated Virus, a virus occurring in the Australian prawn farming industry that can cause diseases such as Mid Crop Mortality Syndrome

HACCP	Hazard Analysis Critical Control Point, program of quality assurance used in seafood processing
hardness	measure of calcium and magnesium concentration in water, expressed as concentration of equivalent calcium carbonate in mg/litre, related to alkalinity
HAT	Highest Astronomical Tide, elevation of land above sea level on the tide zone where the highest tide of the year will reach (may go higher when combined with storm activity)
hepatopancreas	an organ of the digestive tract of arthropods and crustaceans; acts as the digestive gland. It provides the functions which in mammals are provided separately by the liver and pancreas.
haemocoel	internal body cavity of a crustacean, in which most of the major organs of the crustacean body are found. It is filled with the fluid haemolymph (the crustacean equivalent of blood), which is pumped by a heart and which circulates among the organs directly without the use of capillaries.
haemolymph	internal body fluids of a crustacean, similar to blood in mammals
IHHNV	Infectious Hypodermal and Haematopoietic Necrosis Virus, a virus that can cause Infectious Hypodermal and Haematopoietic Necrosis Disease, occurring in the Australian prawn farming industry and overseas shrimp-farming countries
MBV	Monodon Baculovirus, a viral disease occurring in the Australian prawn farming industry
MCMS	Mid Crop Mortality Syndrome, a viral disease occurring in the Australian prawn farming industry
megalopa	a larva, in a stage following the zoea, in the development of crustaceans. In this stage the legs and abdominal appendages have appeared, the abdomen is relatively long, and the eyes are large. Also used adjectively
MoV	Mourilyan Virus, a virus occurring in the Australian prawn farming industry
monk	aquaculture pond outlet structure, with timber boards held in slots to maintain water level but allow overflow through screens to keep prawns in the pond
necrosis	the localised death of living cells, tissue or cuticle (as from infection or the interruption of blood supply) that tend to go black in crustaceans (melanisation)
orthophosphate	a salt or ester of phosphoric acid, considered the 'biologically active' fraction of phosphorus
osmoregulation	a physiological process that occurs in crustaceans for the active regulation of the osmotic pressure of bodily fluids to maintain the homeostasis of the body's water content in response to variable salinities; it keeps the body's fluids from becoming too dilute or too concentrated.
PCR	polymerase chain reaction, a laboratory test for detecting a specific nucleic acid, as a diagnostic test for various viral diseases
pereiopod	walking leg of a prawn, also used to gather food

pH	water chemistry measure for acidity. On a scale of 0–14, less than 7 is increasingly acid, 7.0 is neutral, and greater than 7 is increasingly alkaline.
phytoplankton	photosynthetic or plant constituent of plankton; mainly unicellular algae, microscopic free-living (planktonic) algae, unicellular or multicellular, including blue-green algae
phagocytosis	process in which phagocytes engulf and digest micro-organisms and cellular debris; an important defence against infection
photosynthesis	physiological process in plants using chlorophyll to capture solar energy and convert carbon dioxide and water into carbohydrates (sugars)
postlarvae (PL)	the juvenile stage of prawns, typically in the nursery stage after changing from the zoeal stage in a hatchery. PL is the acronym generally used for post larva(e) purchased from a hatchery. PLs are usually purchased as PL15s (15 days from the megalopa stage).
protozoa	single-celled micro-organisms occurring in prawn pond water column and detritus; can be photosynthetic, can be planktonic or attached.
rostrum	the pointed nose or horn on the head of a prawn
rotifers	minute aquatic multicellular organisms occurring as zooplankton in the water column of prawn ponds, having a ciliated wheel-like organ for feeding and locomotion; constituents of freshwater plankton
turbidity	measure of water clarity or transparency, in pond management expressed as secchi reading in centimetres. A secchi disk is a black and white disk that is lowered into the water until it can no longer be seen; that depth (secchi depth) is then recorded as a measure of the transparency of the water (inversely related to turbidity).
SMV	Spawner Mortality Virus, a viral disease occurring in Australian prawn farming
spawner	broodstock prawn in spawning condition (mature gonad, recently mated female or mature male)
SPF	specific pathogen free, for hatchery-reared postlarvae that have been reared free of a particular disease; may have certification for sale to a farm
TSV	Taura Syndrome Virus; can cause Taura Syndrome, a viral disease occurring in overseas shrimp-farming industries but not in Australia.
vibriosis	infection in prawns caused by various species of bacteria within the genus *Vibrio*
WSSV (WSD)	White Spot Syndrome Virus that can cause White Spot Disease, occurring in overseas shrimp-farming industries but not in Australia
YHD	Yellowhead Disease, a viral disease occurring in overseas shrimp-farming industries but not in Australia
zooplankton	animal constituent of plankton; mainly small crustaceans and fish larvae

'Stress is recognized as a precursor to disease. In prawn farming stress can be caused by many environmental variables….'

This manual is an easy to read guide for running a low disease risk prawn farm in Australia. Using the combined knowledge of Australia's leading scientists, prawn farmers, extensionists and prawn health specialists, this manual captures what is known about the diseases that threaten the Australian prawn farming industry and how the risk of disease outbreak can be minimized.

Funded by the Australian Center for International Agricultural Research and developed in collaboration with the Australian Prawn Farmers' Association, The Queensland Department of Primary Industries and Fisheries and the New South Wales Department of Primary Industries, the manual draws on five years of research conducted across the Australasia region. The contents reflect the knowledge of a wide array of internationally recognized researchers and the wisdom and research gained through the efforts of the Australian prawn farming industry.

"This is a manual that should be on every prawn farm, in our universities and TAFE and marine colleges and should be a first and last read for every prawn farm manager in Australia" . . . Nick Moore, General Manager, Seafarm

NSW DEPARTMENT OF PRIMARY INDUSTRIES

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AUSTRALIAN PRAWN FARMERS ASSOCIATION

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