**Stocking fish in farm dams**

**Information sheet**

In Victoria, many people successfully stock private farm dams with various fish species. Stocking fish in your dam can provide valuable leisure opportunities and a useful food source.

[**You do not require a permit or licence for non-commercial stocking of your farm dam provided you stock it as described at this link.**](https://vfa.vic.gov.au/operational-policy/moving-and-stocking-live-aquatic-organisms/stocking-fish-in-farm-dams)

**Appropriate stocking**

Inappropriate stocking has the potential to cause serious environmental and economic damage.

History has shown that fish species introduced to the wild can become a pest (like carp), making control and elimination extremely difficult and often impossible.

Fish that escape from a farm dam have the potential to compete and displace native species, spread disease and damage the aquatic environment and the associated social and economic benefits derived from that environment.

**Therefore, fish destined for a farm dam must not be stocked into public waters or allowed to escape into these waters.**

‘Public waters’ has the same meaning as the definition for inland and marine waters under Section 5 of the *Fisheries Act 1995* (the Act). Effectively any public waterway, stream, creek, lake, river, billabong, lagoon, water storage, channel, bay, inlet etc.

**Non-commercial stocking**

The following information applies only to non-commercial stocking of farm dams. Proposals relating to commercial aquaculture should be directed to the Licensing & Quota Management Unit, Victorian Fisheries Authority at commercial.licensing@vfa.vic.gov.au.

**Further information**

If you have any questions about translocation and stocking, please contact the Translocation Administration Officer at fish.translocations@vfa.vic.gov.au.

**Disclaimer**

This information may be of assistance to you but the State of Victoria and its employees do not guarantee that the information is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on this information.

**Allowable species**

Only fish native to Victoria, or trout, can be stocked in farm dams. Fish must be obtained from an aquaculture facility licensed under the Act.

**Stocking limits**

A maximum of 300 fish can be stocked per dam, per year.

**Popular Victorian native fish**

**Australian bass**

* Australian bass (*Macquaria novemaculeata*) do best in mature dams.
* The supply of Australian bass fingerlings is seasonal, generally available during summer as very small fish.
* Australian bass will not breed in dams.
* Australian bass are shy predators that do best when the dam environment has an abundance of natural food such as shrimps, yabbies and small fish.

**Golden perch**

* Golden perch (*Macquaria ambigua*), commonly called ‘yellow-belly’, ‘Murray perch’, or ‘callop’ (as they are known in South Australia) are good eating and are a popular sporting fish. They are readily available from commercial aquaculture facilities.
* The supply of golden perch fingerlings is seasonal, generally available during summer as very small fish.
* Golden perch are unlikely to breed in farm dams.
* Golden perch do well in mature farm dams in warm areas.
* Golden perch are predators and will not take artificial food.

**Murray cod**

* Murray cod (*Maccullochella peelii peelii*) grow to a large size, provide good angling opportunities and are an excellent fish to eat. It can take four or more years before they are ready to harvest.
* The supply of Murray cod fingerlings is seasonal, generally available during summer as very small fish.
* Murray cod can breed in farm dams but adults are likely to eat juveniles, especially if other food items are in short supply.
* Murray cod are best suited to large, warm dams of a quarter of a hectare or more.
* Murray cod do best when there is a good supply of natural food such as yabbies and forage fish in the dam.
* Murray cod are territorial as adults and individuals grow best when stocked at low densities.

**Silver perch**

* Silver perch (*Bidyanus bidyanus*) are relatively easy to obtain from commercial aquaculture facilities and are considered a good angling and table species.
* Silver perch are similar to golden perch in appearance and usually require about two years or more to reach a harvestable size.
* Silver perch are unlikely to breed in a farm dam.
* Silver perch feed on a much wider range of items than golden perch, and their diet usually includes some plant and algal material.
* A mix of both silver perch and golden perch in a dam is often more productive than either species by itself.

**Common yabbies**

* Common yabbies (*Cherax destructor*) can withstand waters with low oxygen levels and high temperatures but do best in good quality water.
* The ideal water depth for yabbies during the summer and autumn is between 1 and 1.3 metres. If the water is shallower than this, the water is liable to become too hot. If the water is deeper than this, the water is liable to stratify.
* Stratification of water means that oxygen is prevented from reaching the deeper water so yabbies are restricted to a narrower zone around the edges, as long as temperatures are sufficiently low enough and there is enough oxygen.
* Yabbies are very sensitive to herbicides, pesticides and many chemicals so they will not survive in a polluted dam or one that is close to intensive horticulture activities reliant on chemical use.
* Most waters are naturally stocked by yabbies that have travelled overland or have been transported by birds. Usually, only newly constructed dams need stocking.
* Yabbies breed prolifically and a pair can stock a dam to capacity within a year. If you wish the dam to reach full capacity as quickly as possible, stock adult yabbies during spring.
* The collection of common yabbies from public waters is allowed in accordance with regulations that apply to recreational fishing in Victoria.
* Yabbies can be sourced from any Victorian river basin, except the East Gippsland River basin.
* Yabbies can be purchased from an aquaculture facility authorised under the Act.
* Yabbies can be stocked into private non-commercial dams in Victoria, except in the East Gippsland River basin.
* *Note: Yabbies burrow and can weaken dam walls.*

**Introduced fish**

**Trout**

* Any species of trout (e.g. brown, rainbow, brook, tiger, cheetah) can be stocked in farm dams but brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) are the most popular.
* Trout generally require good water quality and survive best when at least one third of the dam that is deeper than 2 metres when the dam is at its lowest level.
* In a farm dam, there is usually plenty of natural food that trout can forage for without requiring supplementary feeding. Some people, however, enjoy hand feeding their fish as it enables them to see their stock and increase productivity.
* Natural mortality during the first year after stocking is variable, but it is common to lose 50% or more.
* Future restocking should be informed by the outcome of the initial stocking.

**Managing your fish population**

Once you have stocked your dam, watch your fish and see how they grow.

If they are in poor condition and thin (and possibly very easy to catch), it is possible that you have too many fish in the dam for the food supply to support.

Unfavourable environmental conditions may also produce poor condition in fish.

To rectify this problem, you could harvest some of the population to reduce fish numbers, watching for an improvement in condition.

It is important to keep in mind that fish have a naturally high mortality rate. It is common up to 50% or more of your stocked fish each year.

**Farm dams**

The size, shape and depth of your dam, the depth of water remaining during the summer, the amount of inflow, water quality and temperature are the major factors determining what species of fish are best suited for your dam and what level of productivity you can expect.

The following are some general comments that can be made about the ecosystems existing in most farm dams:

* Productivity is usually more dependent on surface area than volume;
* Depth is important as it provides refuge from predators and cooler temperatures for the species that require them, but depth does not contribute to the productivity of the dam;
* Natural food supplies for fish within a dam come from two basic sources:
	+ terrestrial animals that find their way by one means or another into the dam; and
	+ aquatic organisms that are part of the basic food chain within the dam.
* The basis of the food chain in a dam is phyto-plankton (single celled algae), which utilise sunlight and basic nutrients such as phosphorus and nitrogen in the water to grow and breed. These algae are consumed by other organisms in the dam, which are, in turn, consumed by the fish you stock.
* Too high a nutrient input, be it from direct fertilisation or runoff from a dairy or intensively fertilised agricultural crop, can lead to excessive algal growth that may produce dangerously low dissolved oxygen levels;
* Too low a nutrient level will lead to an insufficient food supply, reduced growth rates and poor survival of stocked fish. Stocking too many fish will also result in poor growth rates and poor survival;
* Turbid water will decrease productivity but will provide greater protection of fish from predators. Excessive turbidity can, in some species, clog the gills of the fish, resulting in mortalities; and
* Falling leaves provide nutrients for the food chain, and insects falling into the water give the fish extra nutrition.

Ideally, fish should be stocked into dams from which cattle have been excluded as cattle can damage dam walls and also muddy the water. This is often impractical, however, so an alternative is to fence the dam and restrict stock access to a narrow entry or fence the dam completely and provide a trough with pumped or gravity-fed water for the cattle. Fencing also allows a stock-free area for planting trees to improve the appearance of the dam and stabilise banks.

New dams should be filled and 'aged' for at least three months before stocking. This gives the food chain time to develop, and can be assisted by adding water plants and bugs from other dams on your property.

**Soil erosion**

Apart from wall failure or major leaks, the biggest threat to your dam is an input of sediment. Sediment comes from erosion in the catchment, from eroding gullies, or from the walls of the dam itself.

Excessive sediment will result in a decrease in the storage capacity of the dam, increased pressure on the spillway, increased water temperatures in summer and decreased productivity of the dam.

Good water quality depends on good land management.

**Depth**

For trout, approximately one third of the dam should be at least 2 metres deep during summer.

Most native fish can survive when one third of the dam is 1.5 metres deep during low water levels.

Yabbies require a depth of 1 metre during low water levels.

Please note that these figures are a guide only, and can be varied depending on whether you are in a warmer or a cooler region of Victoria.

The fish that thrive in similar waters in your area are a good guide in selecting the most appropriate species for your dam.

**Feeding**

In properly stocked dams, the natural food supply should be sufficient to support the fish population.

Most native fish have been raised on natural live feed and will not readily accept artificial diets.

Trout will only eat formulated pellets while they are floating or sinking. Once pellets reach the bottom they become, in the long term, very expensive fertilisers. However, some dam owners like to feed pellets to trout to get some idea of the numbers and size of the fish.

If you do this, feed only small amounts, and always feed at the one place at the same time so that the fish will become accustomed to the procedure and be ready to accept the food.

**Forage fish**

Although adding small fish to your dam to provide a food source for your stocked fish may seem an attractive idea, this is not permitted unless they are native and sourced from a licensed aquaculture facility. Many of the native forage species are not available commercially.

Identification of small fish requires specialised knowledge and it is very easy to add predators or pest fish by mistake.

**Aquatic vegetation**

Although vegetation is not a direct source of food for the fish you stock, it is a food source for some of the animals on which fish feed.

Vegetation can also provide shelter for both food organisms and fish.

Most dams will develop aquatic vegetation by natural means.

Generally, vegetation should not cover more than one third of the dam's surface (shallow dams can be completely taken over by vegetation).

Control of vegetation without killing fish is difficult, depending largely on physical removal.

**Fish loss due to escape**

Some species of fish such as rainbow trout, Murray cod, golden perch and silver perch are more inclined to migrate than other species.

As discussed earlier, should fish escape from your dam, they may cause environmental and economic damage.

If your dam overflows you are very likely to lose your fish, particularly once they reach sexual maturity.

For these reasons, dams that are likely to flood (as in a gully) should only be considered for stocking if appropriate flood mitigation is in place, as it can be hard to prevent fish escaping.

For dams that may overflow and carry the risk of escape to adjacent public waters, it will be necessary to have appropriate screens, barriers, nets or other equipment in place sufficient to prevent the escape of fish.

**Predation by fish and pests**

**Fish**

Fish naturally occurring in the dam, or from previous stockings, can have a significant impact on the fish you stock by competing for food and space and by direct predation. Many species of fish are cannibalistic and will prey on smaller members of their own species. It is wise to know what animals are already in your dam before you stock.

Using a wide variety of baits and techniques, you can catch the larger species while dragging a recreational bait net through your dam can find smaller animals that are present.

Yabbies and eels are capable of moving overland to establish themselves in new waters, and some species of galaxiids, young eels and lamprey are capable of climbing near vertical surfaces to move upstream.

**Animals and birds**

Cormorants are the most visible predators of fish, but a wide variety of birds and other animals also prey on fish.

ALL native animals (including cormorants) are protected. Shooting or otherwise destroying animals would in most cases provide only brief and short-term relief, as well as being illegal. Predators will quickly identify where and when the danger comes from and will continue their activities when you are not there.

While birds can take large numbers of small fish in a short period, cormorants are more often feeding on aquatic insects, small yabbies or the smaller slower species of fish rather than the species that you have stocked.

The most effective solution is to provide means for the fish to protect themselves with habitat structure. Lengths of pipe, woody debris, logs, aquatic vegetation, turbidity and deep water will all provide shelter for fish. Dogs or geese near the dam can also keep predators away.

**Common yabbies**

If common yabbies (*Cherax destructor*) occur in your district, it is almost impossible to keep them out of a dam. In areas where dams need to be clay lined, yabbies can cause leaks by burrowing through the lining.

Any chemicals used to kill yabbies will also kill your fish. It is better to control the yabbies by using them as a food source for either yourself or your fish. Yabbies may be harvested according to methods specified in fisheries regulations.

Yabbies are a preferred item of diet for Murray cod and golden perch. Trout will usually only eat small yabbies.

**Algae**

Excessive algal growth can taint water, clog filters, meters and valves, deplete oxygen levels, be a nuisance to swimmers and, on rare occasions, kill stock.

Algae increase in number by the action of sunlight on nutrient rich water. In the long term, control is achieved by reducing nutrient input (for example, by diverting effluent from a dairy away from the dam), or by planting trees that will shade the dam in summer.

Most chemical treatments for algae will kill fish.

**Purchasing fish**

All fish will need to be purchased from an authorised aquaculture facility to help ensure their disease-free status.

Fish prices vary between facilities and also with the species, size and age of the fish. You will need to contact the facility from which you wish to obtain your fish for specific details on availability, price and collection or delivery of your approved order.

Internet aquaculture trade directories and local trade directories will provide you with a current list of suppliers.