

FISHERIES VICTORIA – VRFISH*

Fish Recovery and Relocation Protocol

Background

In late 1998 local anglers and Horsham based DNRE staff informed Fisheries Victoria that Booroopki Swamp was on the verge of drying out. Records showed that this had not occurred for more than 50 years. Booroopki Swamp is located approximately 100 km west of Horsham. Although Booroopki Swamp is outside the natural range of Murray cod, stocking in the late 1960's and early 1970's resulted in the establishment of a viable population that has supported a recreational fishery since the early 1970s. Lake Charlegrark, which is adjacent to Booroopki Swamp, also contains a viable (ie self-sustaining) population of Murray cod. When Lake Charlegrark spills, which it does infrequently, the water flows into Booroopki Swamp. This is another possible source of Murray cod recruitment to Booroopki Swamp.

Because of the value placed on the Murray cod by the community, local anglers and DNRE and its listing on Schedule 2 (Threatened Species) of the *Flora and Fauna Guarantee Act* 1988, a successful recovery operation was mounted. This resulted in 116 Murray cod being translocated to Miga Lake and a further 35 were released into Lake Charlegrark. Some of these cod were up to 115cm in length and weighed an estimated 30kg.

A permit was issued by the Flora and Fauna Branch, under the provisions of the *Flora and Fauna Guarantee Act* 1988, to recover these Murray cod. Parks Victoria, who manage Booroopki Swamp, also approved the recovery and relocation program.

During the 1970's and 1980's the 'policy' of the Department was that it would not become involved in fish recovery operations and when ephemeral waters dried out the dead fish would become part of the nutrient recycling process.

However, with the proclamation of the *Flora and Fauna Guarantee Act* in 1988, the listing of threatened fish species and the events of last year at Booroopki Swamp, it has become apparent that the Department needs to develop a policy and protocol for fish recovery and relocation operations.

Fisheries Victoria Fish Recovery Policy

Fisheries Victoria funded fish recovery and relocation programs will be limited to fish species that:

- (a) are listed on Schedule 2 of the *Flora and Fauna Guarantee Act* 1988; and
- (b) can be legally taken by anglers.

The Fisheries Victoria Fish Recovery Policy is outlined in more detail in Appendix 1.

* **VRFish – Victorian Recreational Fishing Peak Body.**

Departmental fish recovery and relocation programs involving volunteer anglers and other community members may be limited to threatened fish species which are listed on Schedule 2 of the *Flora and Fauna Guarantee Act 1988* and which are also highly valued by recreational anglers.

Schedule 2 currently includes the following fish species of interest to anglers:

Freshwater catfish, *Tandanus tandanus*
Macquarie perch, *Macquaria australasica*
Murray cod, *Maccullochella peeli peeli*
Silver perch, *Bidyanus bidyanus*
Trout cod, *Maccullochella macquariensis*

During the recovery program there may be a bycatch of other 'desirable' angling species, eg. golden perch, *Macquaria ambigua*. These may also be translocated provided this action does not jeopardise the primary aims of the recovery program, for example by diverting fishing effort from the main target species or hampering safe transport of the target species

If 'commercial' fish species (ie species which may legally be sold in Victoria) are present in the water, the Department may consider allowing this resource to be harvested commercially by putting it up for tender by licenced commercial fishers as was done during the Boorooopki Swamp Murray cod Recovery Program. Prior to this program, Lake Lonsdale had been put to commercial tender on two occasions. Part of the purpose of commercial harvesting may be to provide brood fish for the aquaculture industry.

The proceeds of the tender and any aquaculture brood fish sales are to be used for restocking this and/or other nearby waters when conditions are favourable, or other fisheries or fish habitat projects agreed to by Fisheries Victoria, Flora and Fauna (when listed species are involved), the DNRE Regional Fisheries Manager and VRFish. The tender documents are to be developed by DNRE Regional Fisheries staff in conjunction with DNRE Regional Flora and Fauna staff. The tender monies to be held in trust by the DNRE Regional Fisheries Manager.

The DNRE Region will obtain all the necessary Fisheries Victoria, Parks Flora and Fauna, and the relevant land and water managers approvals to recover and relocate the fish.

In addition some of the fish recovered may be made available to the Aquaculture Industry as potential broodfish (see Appendix 2), with proceeds to be held by the DNRE Regional Fisheries Manager for agreed restocking, fisheries or fish habitat projects.

Fish Recovery and Relocation Protocol

1. DNRE Region, in conjunction with local recreational anglers, angling association(s), other interested community groups and the regional Catchment Management Authority (CMA), to identify the water and fish species under threat.
2. DNRE to assess the degree of risk to the survival of fish with the local Water Authority and Land Manager, eg Parks Victoria, Lands Victoria.
3. DNRE Region, in consultation with VRFish, local anglers and other interested community groups, to
 - (a) recommend to the Director of Fisheries an appropriate response (eg remove and relocate, commercial salvage or status quo);
 - (b) identify the DNRE Project Supervisor;
 - (c) at the discretion of the Project Supervisor, identify an angler representative to function as an on-site Operations Supervisor where a fish recovery and relocation program involving only community (including angler) groups and DNRE officers is to be carried out;
 - (d) identify the 'trigger point' at which the fish recovery and relocation program is to be implemented; and
 - (e) identify one or more suitable waters where fish may be relocated if agreed and necessary. The trigger may be water level, water temperature, DO level, etc, or a combination of these parameters which threaten the survival of the target population. The DNRE Regional Fisheries Manager to be the final arbiter if no agreement can be reached on the trigger point.
4. DNRE Region to notify Fisheries Victoria, MaFRI and the Flora and Fauna Division of the potential situation at the earliest possible opportunity and provide regular updates to these bodies on the situation.
5. Should the decision be made to proceed with a fish recovery and relocation exercise, Fisheries Victoria, Parks, Flora and Fauna, MaFRI and the relevant DNRE Region to consult and determine their respective roles and contributions (eg funding, personnel, equipment). The necessary approvals to be issued by Parks, Flora and Fauna, Fisheries Victoria and the land and water managers. Fisheries Victoria, Parks, Flora and Fauna, MaFRI, DNRE Region to:
 - (a) identify what resources and equipment may be needed and are available, and
 - (b) ensure that these will be available, if and when required by the DNRE Region and volunteers.
6. If, in conjunction with the fish recovery and relocation exercise, the decision is made for some (specified) fish to be harvested commercially, the DNRE Project Supervisor will invite tenders from inland commercial fishermen and native fish growers.
7. DNRE Region, in conjunction with local anglers, to identify the receiving water(s).
8. DNRE Region to consult with the appropriate Water Authority and Land Managers and seek approval for the stocking.
9. DNRE Region, in conjunction with local anglers, to monitor the 'threatened' water as well as receiving water(s).

10. When the 'trigger point' is approached, DNRE Region to seek volunteers to assist with the fish recovery and relocation. A list of the non-Departmental people is to be maintained to ensure that volunteers are appropriately identified and insured. If the fish recovery is to involve electrofishing the preferred operators are to be DNRE staff, eg Freshwater Ecology or MaFRI. Any other operator must be accredited as per Australian National Code of Electrofishing Practice or approved by the Department for fish recovery operations.
11. When the 'trigger point' is approached, DNRE Region to notify Fisheries Victoria and MaFRI and a tentative commencement date for the fish recovery and relocation program determined. Necessary staff and equipment to be made available to the DNRE Region. Volunteers to be briefed on fish handling techniques (see Appendix 3).
12. Either the Project Supervisor or the Operations Supervisor is required to be on site during all fish recovery (capture) operations.
13. When the 'trigger point' is reached the fish recovery and relocation program is to commence.

Note: The water may be opened at anytime to 'commercial' harvesting but the timing will be at the discretion of the Project Supervisor.

14. At the completion of the fish recovery and relocation program, a debrief is to be held involving all the DNRE and other businesses involved, anglers and community groups to highlight any deficiencies and to help improve future fish recovery and relocation programs.
15. At the completion of the fish recovery and relocation program and the debrief a report is to be prepared within 4 weeks by the Project Supervisor and copies forwarded to:

Director, Fisheries Victoria,
 Director, Parks Flora and Fauna,
 Regional Water Authority,
 Regional Land Manager,
 DNRE Regional Fisheries Manager,
 Manager, Recreational Fisheries Section, Fisheries Victoria,
 VRFish (2 copies, Chairman plus local representative),
 Regional Angling Association(s), and
 Community Groups

Additional copies may also be provided by DNRE to other people/organisations upon request.

Richard McLoughlin
Director
Fisheries Victoria

Michonne Van Rees
Executive Director
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Patrick Washington
Chairman
VRFish

FISHERIES VICTORIA FISH RECOVERY POLICY

Scope

This policy applies to the wholesale recovery of fish from inland waters where:

- live fish are to be removed from waters where their survival is considered to be in imminent danger*, for example as the result of drying out, or similar conditions; and
- live fish are to be removed and relocated to suitable alternative waters, or harvested commercially (including for sale as brood stock to the aquaculture industry); and
- the fish involved are recreational fishing species including native fish, trout, redfin, carp or other introduced species (the native fish may be species listed on Schedule 2 of the *Flora and Fauna Guarantee Act 1988*).

*The parties and processes involved in the assessment of survival threats and the management of recovery operations are described in a *Fisheries Victoria – VRFish Fish Recovery and Relocation Protocol*.

The policy does not apply to the removal of dead or dying fish or to the relocation of species on Schedule 2 of the *Flora and Fauna Guarantee Act 1988* purely for species conservation purposes.

Policy

The **removal and relocation** of fish, as part of the Victorian Fisheries Program, will be limited to species that may be taken legally by recreational fishers and are listed on Schedule 2 of the *Flora and Fauna Guarantee Act 1988*. These include freshwater catfish, Macquarie perch, Murray cod and silver perch. Other native fish species, such as golden perch, may be included incidentally in a relocation exercise where doing so does not compromise the main objective in terms of the survival of the key target species or the costs of their capture and transport.

The **removal and relocation** of fish will only be undertaken as part of the Fisheries Program:

1. when the target species can be captured and transported in a way that:
 - ensures that fish remain in sound condition throughout capture, transport and release; and
 - can be achieved at a cost acceptable to DNRE and using the resources that can reasonably be made available from DNRE and other parties involved; and
2. where this can be done into a water:
 - that is highly likely to provide a suitable environment permanently; and
 - where the impacts on fish populations in the receiving water are acceptable from both biodiversity and fisheries viewpoints; and
 - that is within a reasonable distance and where it can be confidently expected that the relocated fish will reproduce successfully as well as being accessible for recreational fishing; or
 - within 10 km and where they will be accessible for recreational fishing.

The **removal and relocation** of fish by anglers or other community groups will be considered on a case by case basis. Approved operations will be:

- consistent with the policy (above) on removal and relocation of fish as part of the Fisheries Program; and
- managed and conducted according to the fish recovery protocol being developed jointly by Fisheries Victoria, DNRE Regions and VRFish; and
- undertaken on the basis that participants will meet costs incurred by or on behalf of them.

Commercial salvage of any or all species present will be permitted when:

- no species listed under the *Flora and Fauna Guarantee Act 1988* are involved, or
- there is no realistic or feasible prospect of successfully relocating listed species as outlined above; or
- removal and relocation efforts have been terminated (for instance, due to high mortality rates, unacceptable costs or equipment limitations).

As part of the process of seeking tenders for a **commercial salvage**, DNRE may offer fish as brood fish to the commercial aquaculture sector. Species offered to individual operators will be restricted to those listed on their commercial aquaculture licences.

All funds received from the tendering for commercial salvages and for sale of aquaculture brood fish will be held by the DNRE Regional Fisheries Manager towards the cost of restocking the waters when they recover, or other fisheries or fish habitat projects agreed to by Fisheries Victoria, Flora and Fauna, the Regional Fisheries Manager and VRFish representatives.

Appendix 2. Aquaculture Broodfish

Aquaculturists who receive fish recovered during the program will be required to sign a Surety that they will supply the DNRE Region involved in the fish recovery program with a number of fingerlings based on the species and number of broodfish received.

These fingerlings are to be supplied within two years or two spawning seasons, whichever is the longer period.

Species	Number/broodfish
Murray cod	500
Golden perch*	500
Macquarie perch	500
Silver perch	500
Freshwater catfish	200
Trout cod	Will not be made available to aquaculturists.

* Bycatch

Appendix 3. Fish Handling Techniques

The following is based on an article that was written by Graeme Creed from Native Fish Australia that appeared in the June 1999 edition of the VRFish newsletter "Fishing Lines".

How to handle fish that are to be returned to the water.

Dragging a fish over any dry surface will remove its protective slime coating rendering it prone to infection. Placing a fish on any dry surface whether it is hot or cold will remove the slime coating as will a coarse mesh landing net. Throwing the fish back into the water can also cause undue stress. The fish may swim away apparently unharmed, but with the damage inflicted, its chances of survival are minimal.

Therefore:

- Do not lift the fish and drop it on a hot, dry floor or seat of the boat. Place the fish on a wet towel or cloth if need be. It is preferable to transfer the fish in a container of water, eg fish box, to the transport vehicle.
- Do not handle the fish with dry hands. Wear cotton or woollen gloves and dip your hands in water before attempting to handle any fish.
- Do not use a coarse landing net. Soft knotless netting is preferred. For large fish, some form of 'stretcher' should be used that supports the fish when it is out of the water or swim it into some form of container, eg fish box.
- Minimise the time the fish is out of the water. Extended photo sessions could result in the death of the fish and are therefore not recommended.
- Do not place your fingers in the gills of the fish before releasing it. Support its body at all times.
- Do not throw the fish back into the water. Gently place it in the water supporting its body at all times.
- When releasing the fish place it in the water and insure that it is swimming upright before letting it go.

Following these simple guidelines will reduce stress and damage to the fish which in turn will maximise the chance of survival.