

Biosecurity – Carp – Responding to carp fishing and control enquiries from external stakeholders

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Scope:

The Biosecurity Act 2015 (the Act) promotes biosecurity as a shared responsibility between government, industry, and communities. This procedure is a State Priority for NSW and should be read in conjunction with the Policy: Aquatic Biosecurity Pests and Diseases. This procedure applies to the NSW Department of Primary Industries (NSW DPI) and Local Land Services (LLS), offices within the Department of Regional New South Wales (DRNSW), implementing activities as authorised officers, or to meet other obligations, under the Biosecurity Act 2015 (the Act), as well as roles under the Local Land Services Act 2013. This procedure applies to all staff of NSW DPI and LLS. If a staff member receives a query regarding carp that is outside the scope of the staff member's normal duties, the staff member must refer to Section 2, Further Enquiries, and pass the enquiry on to the appropriate work unit. In particular, media enquiries are to be handled in accordance with the NSW Media policy which involves forwarding all media enquiries to, in this case, the NSW DPI media team.

Management of the biosecurity risk

The common carp (*Cyprinus carpio*) and other related species, along with Eastern gambusia (*Gambusia holbrooki*), have become widespread in Australian waterways and are not listed as a notifiable matter or as prohibited matter under the Act. As such there is no legal requirement to report sightings of these species to an authorised officer under the *Biosecurity Act 2015*.

If these fish are suspected of carrying disease however, they should be reported, and in the case of suspicions of diseases listed as either prohibited matter or notifiable matter, are required to be notified to an authorised officer. For example, ulcerated carp suspected of infection with *Aphanomyces invadens* (Epizootic Ulcerative Syndrome or Red spot disease) or ulcerated goldfish suspected of infection with *Aeromonas salmonicida* – atypical strains (Goldfish ulcer disease), both of which are notifiable matter under the Biosecurity Regulation 2017. Reports of suspected prohibited or notifiable matter can be made via the 24-hour Emergency Animal Disease Hotline 1800 675 888. The general biosecurity duty for everyone to minimise the risks posed by aquatic pests and diseases still applies to these species and it is a requirement for all people who ought reasonably to know, to discharge this duty. Please also see note overleaf for provisions that apply under the *Fisheries Management Act 1994*.

The collection, use and disclosure of information in accordance with this procedure, including any internal or external discussion or distribution of information, must be in compliance with the *Privacy and Personal Information Protection Act 1998* or be exempted by the operation of section 387 of the Act.

Section 387 (2) of the Act provides authority for the disclosure of information about a person, without the consent of the person: to a public sector agency, or to any other person, but only if the disclosure is reasonably necessary for the purpose of exercising a biosecurity risk function. The NSW DPI procedure on Collection, Use and Disclosure of Information should be consulted for further information.

Please note in addition to requirements under the Biosecurity Act 2015 and associated legislation, rules also apply to carp under the Fisheries Management Act 1994 and associated regulations, including that:

- it is illegal to release or allow the escape of carp or any other fish* except immediately at point of capture without a permit to do so
- it is illegal to use live carp or any other live finfish as bait in inland waters
- it is illegal to use any fish* or part of a fish that is not native to the waters of NSW (other than dead carp) as bait in inland waters

*Note: Fish - as per the definition in the Fisheries Management Act 1994, including aquatic invertebrates

Work health and safety

The *Work Health and Safety Act 2011* places an obligation on the agency (NSW DPI and LLS) as an entity conducting a business or undertaking, and on each worker as a person, to provide a safe and healthy workplace. Safe Work Method Statements that support activities included in this policy must be used in identifying, assessing, and controlling risks.

NSW DPI and LLS will work together to create a safe and supportive work environment when undertaking any activities for this procedure.

Contents

Biosecurity – Carp – Responding to carp fishing and control enquiries from external stakeholders	1
Responding to carp fishing and control enquiries from external stakeholders procedure	4
1. Roles and responsibilities	4
2. Initial Advice	4
3. Further Enquiries	13
4. Approvals.....	13
5. Definitions and acronyms.....	13
6. Documentation.....	14
7. Records	15
8. Revision History.....	15
9. Contact.....	15

Responding to carp fishing and control enquiries from external stakeholders procedure

1. Roles and responsibilities

It is the role of all staff from NSW DPI and LLS to provide consistent messaging when responding to reports and enquiries relating to carp from external stakeholders. This procedure outlines the organisational unit that specific enquiries should be forwarded to for appropriate consideration and response.

2. Initial Advice

Any NSW DPI or LLS staff member who receives an enquiry about one of the issues outlined below is to respond in accordance with the relevant section of this procedure. Requests for additional information beyond the scope of this procedure, or on an issue not covered by this procedure, are to be referred to an appropriate staff member in accordance with section 3. It is the responsibility of the staff member receiving the initial enquiry to ensure that the enquiry is directed to an appropriate staff member or source of external expertise for response.

2.1 NSW DPI role in carp control

Staff who receive enquiries relating to NSW DPI participating in carp control activities – including requests to undertake control work or assist with control work in specific locations, or enquiries about the scope of the Department’s involvement in carp control – are to provide the following advice:

“carp are a widespread and established pest and are considered beyond ability to control using existing pest fish methods. “

Beyond that stakeholders are to be provided advice or directed to the appropriate branch, or unit of DPI as follows:

1. Requests for NSW DPI to provide information or advice on carp control
 - NSW DPI has a factsheet [Carp Control in Farm Dams](#), that provides information on how to assist in reducing carp numbers in small private water bodies, though noting that this can only reduce numbers, not be used for permanent removal of carp, which are easily moved during flooding and via bird movements.
 - Some councils have also shown interest in carp control in specific waterbodies within parks and other public spaces within their local government area (LGA).

Stakeholders seeking information or advice on carp control in small waterbodies they own or manage are to be directed to the NSW DPI Aquatic Biosecurity Policy and Programs team (DPI Aquatic Biosecurity). Further advice on general carp control considerations can also be found in section 2.2.

2. NSW DPI participation in carp related research activities
 - NSW DPI is working together with Fisheries Research and Development Corporation (FRDC) and other jurisdictions on the development of the National Carp Control Plan, with the recommendations expected to be handed to the Australian government in early 2022. When enquiries are received about this program, stakeholders should be directed to the NSW DPI (Fisheries Research Branch) or to the FRDC.
 - NSW DPI participates in aquatic habitat rehabilitation and research projects incorporating carp management that may be externally funded. These may include:

- projects integrating a range of aquatic habitat restoration actions such as riparian revegetation, reintroducing large woody habitat, and fish passage works
- demonstration reach projects, and
- carp ‘fish-outs’ or ‘musters’.
- NSW DPI (Aquatic Biosecurity) involvement in carp ‘fish-outs’ or ‘musters’ is primarily for education and advisory purposes including to provide information on how to deal with unwanted pet fish appropriately and on highly invasive species that pose the greatest risks if allowed to establish in NSW waters. Carp ‘fish-outs’ or ‘musters’ are unlikely to have any long-term impact on carp populations (refer to section 2.3).

Former carp projects undertaken by NSW DPI include:

- integrated carp control projects such as the River Revival – Lachlan River Carp Clean-up project (which aimed to significantly reduce carp numbers using a variety of control methods, particularly targeting reproduction ‘hotspots’).
- carp research projects (e.g., to collect baseline population data, determine critical locations for carp recruitment and investigate the effectiveness of different control techniques).
- Carp Strategy for the Macquarie Marshes (which identified carp management options within the Marshes); and
- Carp Tracking and Trapping in the Macquarie Marshes that identified migration pathways of carp and installed a Carp Separation Cage to intercept migrating carp (further information in 2.7).
- A national estimate of carp biomass for Australia: The aim of this project was to develop and apply transparent and robust methods to estimate the biomass of carp in Australia. This information will be used to inform the National Carp Control Plan (Stuart et al. 2021).

NSW DPI (Aquatic Biosecurity) has an extensive aquatic pest advisory program to encourage the public to not dump unwanted fish and to humanely euthanise pest fish, including carp when landed during recreational fishing activities, and not return pest fish to the water live. Methods of humane destruction can be found at www.dpi.nsw.gov.au/animals-and-livestock/animal-welfare/animal-care-and-welfare/other/companion-animal-files/humane-harvesting-of-fish-and-crustaceans

Where stakeholders report there is an opportunity, including external funding, to develop a new project they should be directed to the Freshwater Environment Branch and Freshwater Ecosystems Research Unit.

2.2 Carp control general considerations for waterbody managers

Staff who receive enquiries requesting general information on carp control (such as available options and feasibility) are to provide the following advice:

- NSW DPI recognises that carp is a significant, yet widely established pest species and considered beyond ability to control using existing pest fish methods. While DPI appreciates the common objective of individuals, groups, and agencies to control carp - the options available for the public to effectively control carp, at this time, are limited.
1. Potential local-scale control options that may be considered by the waterbody manager
 - depending on the characteristics of the target area, the aims of the control work and the resources available, potential local-scale control options may include one or more of the following (subject to those involved gaining appropriate permits / approvals):
 - legal recreational fishing methods, including public fishing events
 - harvesting in inland waters by a person who holds a carp endorsement in the Inland Restricted Fishery (IRF)

- installation of Carp Separation Cages on fishways or wetland regulators
 - wetland management (including exclusion screens)
 - aquatic rehabilitation in conjunction with other control measures
 - draining and drying of private water bodies, and
 - stocking of native fish (under a permit if into public waters) in conjunction with other approved control methods.
2. Permits will generally not be supported for some activities
- applications for permits will generally not be supported for the use of:
 - fishing equipment not in compliance with the regulations
 - rotenone (except where authorised and in accordance with Australian Pesticides and Veterinary Medicines Authority (APVMA) permit conditions, and under direct supervision of NSW DPI officers or engaged member of LLS), and
 - other chemicals (such as lime or copper sulphate), electrical devices or explosives.
3. Proponents to consider the following points in planning an application for permit
- proponents must plan how to humanely euthanase and utilise (or appropriately dispose of) captured carp that are not released. Methods of humane destruction can be found at www.dpi.nsw.gov.au/animals-and-livestock/animal-welfare/animal-care-and-welfare/other/companion-animal-files/humane-harvesting-of-fish-and-crustaceans. Carp cannot be taken for sale from waters to which the *Fisheries Management Act 1994* applies unless the person is authorised to do so by an appropriately endorsed commercial fishing licence or an aquaculture permit (please note common carp (*Cyprinus carpio*) is not an authorised aquaculture species in NSW).
 - proponents are encouraged to carefully consider the desired outcomes and likely effectiveness of any control work. In general, one-off, or ad hoc carp removal attempts are unlikely to have a significant impact on the carp population, because:
 - most, if not all, methods only remove a proportion of the population with each attempt
 - carp can have a very high population recovery rate under suitable environmental conditions which enables them to quickly repopulate after control work, and
 - carp are generally sedentary but can be highly mobile; meaning that in permanently or intermittently interconnected waterways depleted populations can be replenished through migration.
 - To maximise the benefits that can be achieved with the resources available, proponents should consider:
 - targeting spawning sites to maximise the impact on the carp population
 - using a variety of methods, where possible, in the one location
 - repeating control efforts over a period of time, and/or
 - combining carp control work with other actions to improve aquatic ecosystem health, for example revegetation, reintroducing large woody habitat, erosion control, restocking of native fish, and community education.

Proponents who wish to obtain further advice on carp control options should be directed to contact the NSW DPI (Aquatic Biosecurity Unit).

2.3 Legal recreational fishing methods – including public fishing events

NSW DPI staff who receive enquiries relating to recreational fishing as a form of carp control – including requests for information, advice, assistance or permits for public fishing events (also known as ‘fish-outs’, ‘musters’ etc.) – are to provide the following advice:

1. Pros and cons of carp fishing events

- recreational fishing, including use of rod and line and landing net, is a legal method of removing individual carp from waterways. If enough individual carp are removed over a period of time, this could potentially reduce the carp population
- however, research and anecdotal evidence suggests that carp fishing events often have limited impact on the carp population given relatively low catches compared to the number of carp in the river system. For example, studies in NSW and Queensland have found the reduction in the carp population from fishing events to be in the order of 0-2% (Norris et al. 2013).
- hence, there is a danger of creating false community expectations if fishing events are promoted as a stand-alone method of carp control. Organisers should take care with the messages they give about the purpose and expected outcomes of the event, focusing on education and participation as well as carp control, and not exaggerating the likely impacts on the carp population
- nonetheless, NSW DPI (Aquatic Biosecurity) does recognise that these events can have a range of positive outcomes including:
 - social and economic benefits for local communities
 - providing an opportunity to raise awareness of a range of issues affecting river health (e.g., land and riparian vegetation clearing, changes to flows, barriers to fish migration, cold water pollution from dams and other pest species) – and the fact that carp is only one part of the problem
 - promoting community stewardship of the environment and engagement in other activities, such as aquatic rehabilitation projects, and
 - promoting fun and responsible fishing.

2. DPI support/assistance for public carp fishing events

- occasionally NSW DPI is funded by external stakeholders to manage or assist with carp fishing events. However, given the number of such events occurring around the State, the Department’s limited resources and the limited evidence for the effectiveness of these events as a form of carp control, NSW DPI does not promote or participate in such events unless it has been specifically funded to do so and has determined that the event provides a worthwhile opportunity for public education
- NSW DPI has an educational program funded by the Recreational Fishing Trust and attends a range of public events, including community fishing events, which provide an opportunity to deliver core messages about responsible and ethical fishing practices to recreational fishers. The decision whether to attend any particular event (including any carp event) is at the discretion of NSW DPI and depends on the availability of staff and the likelihood of reaching key target audiences.

3. Practical considerations

- permits are not required for public carp fishing events. Participants must use lawful fishing methods and be in possession of their valid NSW recreational fishing fee receipt (unless exempt under the *Fisheries Management Act 1994*)
- the event should comply with the NSW DPI Code of Practice for fishing competitions available at: www.dpi.nsw.gov.au/fishing/recreational/resources/event-management/code-of-practice-for-fishing-events-in-nsw

- captured carp that are not released must be killed in a humane manner. Guidance on humane euthanasia of fish is available at www.dpi.nsw.gov.au/animals-and-livestock/animal-welfare/animal-care-and-welfare/other/companion-animal-files/humane-harvesting-of-fish-and-crustaceans
- wherever possible, retained carp should be utilised for personal use (such as for human consumption, pet or stock feed or fertiliser) noting carp cannot be sold unless taken by a commercial fisher. Where there are no options for utilisation, retained carp must be disposed of appropriately e.g., in general waste
- organisers may contact the NSW DPI Recreational Fisheries Management Unit for additional advice on running a successful fishing event, the recreational fishing rules and regulations, and the Code of Practice for fishing competitions, or to request attendance of Recreational Fishing Trust-funded education officers.

2.4 Commercial harvesting

Staff who receive enquiries relating to commercial harvesting as a form of carp control are to provide the following advice:

- the Inland Restricted Fishery (IRF) is the only commercial fishery in NSW authorised to harvest carp from inland waters (water not subject to tidal influence) for sale. It is a small-scale fishery, with a limited number of fishers currently holding endorsements
- IRF endorsement holders may use commercial fishing gear to remove carp, subject to the conditions on their endorsement. Permits issued under section 37 of the Fisheries Management Act 1994 are routinely utilised in the carp sector of this fishery to allow the use of non-regulated fishing gear or to use the gear in areas where its use is not otherwise authorised. For example, the use of fishing gear such as gill nets, meshing nets, hauling nets or fish traps may be appropriate when taking carp in some carefully controlled circumstances. However, their use in inland waters is not authorised by the regulations and therefore a section 37 permit under the *Fisheries Management Act 1994* is required for their use. These permits are considered and implemented in consultation with Fisheries Compliance as Fisheries Officers provide valuable input in regard to local knowledge of a water body
- subject to the issue of, and conditions of, a permit under section 37 of the *Fisheries Management Act 1994*, a person who holds an endorsement in the Estuary General Fishery may take carp by lawful methods within the waters of that fishery
- as with any other method of carp control, commercial harvesting may only remove a proportion of the carp present in an area, hence, sustained effort over a period of time may be required to substantially reduce the carp population in that area
- an agency or business may engage an IRF endorsed commercial fisher to remove carp from a water body which it manages. Any such arrangement must be made directly between the agency/business and the commercial fisher
- if requested, NSW DPI will forward the details of the interested agency/business to IRF endorsed commercial fishers via email for their consideration. Interested parties should contact the Commercial Fisheries Manager (Inland Restricted Fishery) for further information.

2.5 Catch and release of carp

Staff who receive enquiries relating to catch-and-release of carp – including the legality of releasing captured carp, coarse fishing or establishing businesses based on carp fishing – are to provide the following advice:

- the release of live carp is not an offence under the *Fisheries Management Act 1994*, provided they are immediately returned to the waters from which they were taken (see section 216 of the

Fisheries Management Act 1994) or the release is otherwise authorised under an appropriate permit issued by the department. However, as carp are a pest fish in NSW, it is important to send a strong and consistent message that carp are an undesirable species. NSW DPI (Aquatic Biosecurity) encourages recreational fishers to retain and utilise or appropriately dispose of any captured carp rather than returning them live to the water

- under the Fisheries Management (General) Regulation 2019, no permits or licences are currently required for individuals or businesses to guide recreational fishers in public freshwater, although the normal recreational fishing rules and regulations (including NSW fishing fee requirements and bag limits) apply to all participants
- those wishing to operate a business which involves charging for the right to fish in a private water body (including dedicated facilities for catch-and-release fishing) should be referred to Aquaculture Management for further advice. Such activities may be classed as aquaculture and require a Class F permit, as specified in the Fisheries Management (Aquaculture) Regulation 2017 (see clause 4 of the Fisheries Management (Aquaculture) Regulation 2017).

NSW DPI staff who receive enquiries from the public about why NSW DPI staff are sometimes observed releasing captured carp should provide the following advice:

- sometimes NSW DPI researchers do return captured carp to the water as part of research programs, for example to determine the size of the carp population; determine the effectiveness of control techniques using tag/recapture studies; to understand carp movements and migrations using Passive Integrated Transponder, radio or acoustic tagging; to aid targeted carp removal using radio-tagging of individual 'Judas' carp to help locate schools of carp for removal; or as part of fish community studies. This work is always performed in accordance with a research project and permit issued under section 37 of the *Fisheries Management Act 1994*.

2.6 Water for the environment (Water management)

NSW DPI staff who receive enquiries from the public about water for the environment (often called environmental flows/watering) as it relates to carp spawning and recruitment should provide the following advice:

- delivery of water for the environment is managed in NSW by Environment Energy and Science (EES) and the Commonwealth Environmental Water Office (CEWO), who both work collaboratively with other NSW agencies (including DPI Fisheries).
- water for the environment is used to re-establish more natural and variable river flows, by reconnecting rivers with floodplains and wetlands and creating the right conditions to support healthy populations of native fish, birds, vegetation, and overall river health.
- Carp populations benefit much more from natural flooding events, than small, targeted environmental watering actions.
- Carp breed at a wider range of temperatures than native fish and without complementary measures, such as physical removal or bio-controls it is impossible to prevent carp from breeding if conditions are suitable.
- Water for the environment is delivered at times and locations that will preferentially benefit native fauna and flora. Although any benefit to carp from managed events is likely to be small, if a risk assessment indicates that the benefits to carp will outweigh the benefits to native species based on best available information at the time, then the water managers are unlikely to go ahead with the watering event.

2.7 Carp Separation Cages

Staff who receive requests for information on installing Carp Separation Cages (CSC) on fishways or wetland regulators are to provide the following advice:

- CSCs, designed to trap carp for removal while allowing passage of native fish, are significant pieces of infrastructure which can only be installed on an existing structure (fishway/regulator)
- the installation of a CSC requires a section 37 permit under the *Fisheries Management Act 1994*, and the sale of any captured carp requires a commercial licence and an IRF endorsement
- in addition to the upfront capital costs for construction and installation, CSCs require a major ongoing operating/maintenance program
- CSCs should only be installed where reliable ongoing arrangements can be made (not relying exclusively on volunteer labour) to maintain and operate the device. There should be a site-specific operational plan detailing the frequency with which the cage will be checked, and carp removed, and how carp will be disposed of
- periodic release of native fish should be automated and should occur at least daily
- frequency of carp removal may vary by season or other factors affecting the biomass of migrating carp, but should be sufficient to ensure carp are not left in the trap for excessive periods and that the capacity of the trap is not overloaded during peak migration periods (September to December)
- CSCs have not yet been trialled in any coastal rivers and their use in any such location would require further research and development (e.g., to avoid bycatch of mullet/eels), and
- any organisation wishing to obtain further information or discuss a proposal should contact Freshwater Environment Branch. Freshwater Environment Branch staff will liaise with Freshwater Ecosystems Research and other experts and authorities (e.g., Murray-Darling Basin Authority) as required.

2.8 Draining and drying of private water bodies

Staff who receive requests for information on controlling carp in farm dams or ponds on private property are to provide the following advice:

- if eradication is desired, the only available option for privately owned water bodies is draining/dewatering and drying
- draining and drying may require the completion of a Review of Environmental Factors (REF) and/or a permit through a relevant local government authority; therefore, local councils must be consulted regarding any requirements before attempting this method
- careful consideration must be given to the potential impact on native fish and other flora and fauna when implementing the draining and drying method, especially in wetland areas and associated water bodies where acid sulphate soils are known to occur
- if a landholder is to drain a dam and the preferred method of dewatering is irrigation onto pasture, DPIE Water and the Natural Resource Access Regulator (NRAR) may require a new or amended approval and water access licence for the irrigation component
- some approvals/licences authorise dams on rivers or creeks. In some of these cases, there are flow conditions attached to the approvals/licences that require the passage of flow downstream. If the dam was to be emptied, this may contravene an approval/licence condition
- landholders must not drain carp-infested waters into adjacent creek lines or rivers, either directly or indirectly. Release of live fish into such waters (except under the authority of a permit issued by the Minister) is prohibited by the *Fisheries Management Act 1994*
- alternatively, to reduce (but not eradicate) carp from a farm dam, landholders may use lawful fishing gear
- landholders must collect and dispose of all fish in a manner that is humane and prevents pollution of land or waters

- landholders should also consider that carp are likely to re-infest the dam if carp are present upstream of the dam or in an adjacent irrigation structure or river from which water is pumped to fill the dam
- once a dam has been drained to eradicate carp and refilled, it is advisable to stock with suitable native fish which are endemic to the local area, and
- more information is available in the NSW DPI Factsheet 'Carp control in farm dams'. Information on water licences and approvals is available from DPIE Water and NRAR.

2.9 Wetland management including exclusion screens

Staff who receive requests for information on controlling carp in wetlands are to provide the following advice:

- a Review of Environmental Factors (REF) and any necessary section 37 permit under the *Fisheries Management Act 1994* is required for approval to install exclusion screens in regulated and non-regulated wetlands.
- in regulated wetlands, as a minimum a carp exclusion screen should be installed on the regulator during each filling phase to prevent entry of adult carp. Installation of a Carp Separation Cage may be even more beneficial (as it captures carp for removal while allowing passage of native fish), however, this may not always be feasible as these cages have significant capital as well as ongoing maintenance costs
- regulated wetlands should be allowed to dry completely at least every third year to destroy any carp that may have entered as juveniles prior to spawning
- NSW DPI does not advise installation of carp exclusion screens in unregulated wetlands as they will have no positive effects on carp control and may possibly have a negative impact on native species
- management of filling/drying cycles and use of exclusion screens may be complemented with other methods of carp control, such as commercial harvesting
- the South Australian Research and Development Institute has produced a guide on options for carp control at wetland inlets/outlets to which wetland managers may wish to refer, and
- any organisation wishing to obtain further information regarding the installation of carp exclusion screens in regulated and non-regulated wetlands should contact NSW DPI Freshwater Environment Branch.

2.10 Aquatic habitat rehabilitation in conjunction with other control methods

Staff who receive requests for information on aquatic habitat rehabilitation as a strategy for carp control are to provide the following advice:

- the long-term degradation of aquatic habitat and riparian vegetation in NSW waterways has been scientifically demonstrated to lower the abundance and diversity of most native fish species. Changes in catchment management, altered flow regime, increased pollution as well as the destruction and fragmentation of aquatic habitat has provided an environment more suited to carp
- strategic aquatic habitat rehabilitation activities may assist with controlling carp, while at the same time assist in the recovery of native fish populations
- activities that need to be undertaken to improve aquatic habitat include protection and enhancement of waterways at a catchment scale, improved management of riparian zones, re-introduction of large woody habitat, management of flow regimes to benefit native fish and the remediation of man-made barriers that prevent movement of native fish. Where possible these activities should be conducted to complement other control activities outlined in this procedure

- funding to conduct aquatic habitat rehabilitation activities is available from many sources including the NSW Freshwater Recreational Fishing Trust and NSW Saltwater Recreational Fishing Trust, and
- any organisation wishing to obtain further information or discuss a proposal should contact the NSW DPI Freshwater Environment Branch.

2.11 Stocking of native fish in conjunction with other control methods

Staff who receive requests for information on stocking native fish for carp control are to provide the following advice:

- stocking native fish may have an impact on juvenile carp numbers, however the extent of the impact is unknown
- NSW DPI supports several departmental and community stocking programs and will consider any stocking request in accordance with the Freshwater Fish Stocking Fishery Management Strategy. However, until research demonstrates quantitative evidence of the impacts of stocking on carp populations, native fish will not be stocked with the primary objective being to control carp numbers. Any proposal to stock fish in public waters must be submitted to NSW DPI for consideration and approval in accordance with the Act. The release of live fish into any waters is prohibited unless under the authority of a permit issued by the Minister or an aquaculture permit. Those who release live fish in waters without a specific permit may be subject to a fine, and
- any proponent wishing to obtain further information or discuss a proposal to stock fish should contact NSW DPI Recreational Fisheries Management.

2.12 Control options not supported

Staff who receive enquiries relating to a control method which is not in accordance with legislation are to advise the person that this is the case and if necessary, provide the following justification:

- use of fishing gear except in accordance with the Fisheries Management (General) Regulation 2019
- NSW DPI does not generally issue permits to external stakeholders for the use of nets, traps, or other fishing gear except in accordance with the Fisheries Management (General) Regulation 2019 because:
 - they require training to operate properly
 - there can be significant bycatch of non-target native species
 - some methods are unsafe (e.g., dragging nets in muddy rivers).

Rotenone

Rotenone is a naturally occurring chemical, obtained from the roots of several tropical and subtropical plant species, which is widely used as an insecticide and pesticide. It also kills fish, however it is not approved for general use as a piscicide (fish poison).

NSW DPI is authorised by the APVMA to use rotenone to eradicate pest fish under a specific permit. This permit restricts rotenone use to appropriately qualified employees of those State and Territory government departments responsible for eradication of pest fish. There is also a range of permit conditions that must be complied with including dosage rates, site studies to identify risks, avoidance of potable water supplies and exclusion of the public during treatment. These conditions are designed to minimise the risks associated with exposure to this hazardous chemical.

Other chemicals, electrical devices, and explosives

- there is no APVMA permit for the use of any substance other than rotenone to kill pest fish. Therefore, NSW DPI cannot recommend the use of any other chemical to control pest fish

- taking fish by means of electrical devices or explosives without a specific permit from NSW DPI issued in accordance with the Fisheries Management Act 1994 and/or Fisheries Management (General) Regulation 2019 is illegal – heavy fines apply.

3. Further Enquiries

If the person making the enquiry wishes to obtain further advice or assistance on a particular approach, the staff member should refer them to one of the following:

- Freshwater Environment Branch – Freshwater.Environment@dpi.nsw.gov.au: regarding opportunities to undertake carp control with existing aquatic rehabilitation projects or develop new projects.
- Recreational Fisheries Management – Nowra or Newington (02 4424 7414): regarding responsible fishing practices, the Code of Practice for fishing events, organising a successful public fishing event, or to request attendance of Recreational Fishing Trust-funded education staff at a fishing event (02 9741 4847).
- Recreational Fisheries Management – Albury (02 6042 4200): for freshwater fish stocking or general inland fishing enquiries.
- Commercial Fisheries Management (Carp) – (02 6691 9682): for contact details of IRF endorsement holders for contract work.
- Aquatic Biosecurity – Port Stephens (02 4916 3900): for advice on Carp control options
- To report carp in new areas (though not a legal requirement) or to request further advice on carp control contact NSW DPI (Aquatic Biosecurity); aquatic.biosecurity@dpi.nsw.gov.au, or (02) 4916 3900
- To report suspicions of prohibited and notifiable matter (including carp suspected of carrying disease) call the 24-hour Emergency Animal Disease Hotline 1800 675 888. Suspicions of prohibited matter are to be reported immediately and of notifiable matter as soon as possible and within one business day.
- Freshwater Ecosystems Research – Batemans Bay (02 4478 9111): regarding research and development of carp control options, including exclusion screens, and
- Fisheries Research and Development Corporation - 25 Geils Court Deakin, ACT 2600 (02 628504000; regarding the National Carp Control Plan and biological control of carp.

4. Approvals

Involvement of staff in any Carp control activity is at the discretion of the relevant Director.

5. Definitions and acronyms

APVMA: Australian Pesticides and Veterinary Medicines Authority

Authorised officer: A person who is appointed as an authorised officer under the Biosecurity Act 2015

Coarse fishing: A term, used mainly in the United Kingdom and Ireland, to describe fishing for any freshwater fish other than salmon and trout. Fish are returned to the water alive and unharmed.

Carp Endorsement: An endorsement on a commercial fishing licence that authorises a person to take fish for sale in a restricted fishery or to take fish in a share management fishery.

CSC: Carp Separation Cage

Estuary General Fishery: The shared management fishery of that name, as described in Schedule 1 of the Fisheries Management Act 1994.

IRF: Inland restricted fishery - The restricted fishery declared under Division 3 of Part 9 of the Fisheries Management (General) Regulation 2019.

NSW DPI: NSW Department of Primary Industries

LLS: Local Land Services

Pest fish: A species that has been declared a pest fish under the provisions of the Biosecurity Act 2015

REF: Review of Environmental Factors

Rotenone: A naturally occurring chemical, obtained from the roots of several tropical and subtropical plant species, which is widely used as an insecticide and pesticide (Derris Dust is one form).

6. Documentation

Carp control in farm dams Factsheet (Primefact 1248)

Gehrke, P C., Brown, P., Schiller, C. B., Moffatt, D. B., and Bruce, A. M. (1995). River regulation and fish communities in the Murray–Darling River system, Australia. *Regulated Rivers: Research and Management* 11:363-375.

Harris JH (1997) Environmental rehabilitation and Carp control. In: Roberts J and Tilzey R. (eds) *Controlling Carp: exploring options for control*, CSIRO Land and Water.

Murray-Darling Basin Commission 2002: Draft Native Fish Strategy for the Murray-Darling Basin. Canberra, Murray-Darling Basin Commission.

Biosecurity Act 2015

Biosecurity Regulation 2017

Fisheries Management Act 1994

Fisheries Management (General) Regulation 2019

Fisheries Management (Aquaculture) Regulation 2017

Fisheries Management (Estuary General Share Management Plan) Regulation 2006

Protection of the Environment Operations Act 1997

Policy - Aquatic Biosecurity – Pests and Disease

Policy - Biosecurity collection, use and disclosure of information

Policy - Records Management (IND-I-177)

Policy - Information Security (IND-I-197)

Policy - Classified Information (IND-I-196)

Policy -Government Information (Public Access) (IND-I-178)

Procedure - Biosecurity collection, use and disclosure of information

Procedure - Aquatic pests and diseases – responding to reports

Stuart, I.G., Fanson, B.G., Lyon, J.P., Stocks, J., Brooks, S., Norris, A., Thwaites, L., Beitzel, M., Hutchison, M., Ye, Q. and Koehn, J.D., 2021. Continental threat: How many common carp (*Cyprinus carpio*) are there in Australia?. *Biological Conservation*, 254, p.108942

NORRIS, A., CHILCOTT, K. & HUTCHISON, M. 2013. The Role of Fishing Competitions in Pest Fish Management. In: CENTRE, I. A. C. R. (ed.). *PestSmart Toolkit Publication*. Invasive Animals Cooperative Research Centre, Canberra.

NSW DPI Code of Practice for fishing competitions available at <https://www.dpi.nsw.gov.au/fishing/recreational/resources/event-management/code-of-practice-for-fishing-events-in-nsw>

Industry and Investment NSW (2010), Carp Reduction Strategies for the Macquarie Marshes, NSW. Prepared for Central West Catchment Management Authority. Industry and Investment NSW, Dubbo. (Found in CM9 at PUB10/144).

Environment Energy and Science (EES) webpage
<https://www.environment.nsw.gov.au/topics/water/water-for-the-environment>

7. Records

The Aquatic Biosecurity team will record any reports of carp and other pests and diseases in the aquatic pests and diseases reporting database, along with any relevant photographs in the CM9 folder V17/5152: Biosecurity - Investigations - Aquatic Biosecurity - Pest and Disease Reporting Database.

8. Revision History

Version	Date issued	Notes	By
1.0	01/07/2017	Substantially revised procedure in response to the <i>Biosecurity Act 2015</i>	Animal Biosecurity and Welfare
2.0	24/06/2022	Routine review of procedure, including update of relevant contacts and work being undertaken by each group	Aquatic Biosecurity Policy & Programs team

9. Contact

Aquatic Biosecurity – General Enquires via the Port Stephens Fisheries Institute switchboard on (02) 4916 3900 or via email on aquatic.biosecurity@dpi.nsw.gov.au

Reports of suspected prohibited matter and notifiable matter to be made on the 24-hour Emergency Animal Disease Hotline **1800 675 888**, noting that it is not a legal requirement to report sightings of carp, koi carp, or goldfish (or Eastern gambusia) unless a disease is suspected.