

# NSW recreational bowfishing for Carp in selected inland waterways guide



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NSW recreational bowfishing for carp in specific inland waterways guide

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#### More information

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# **Bowfishing for Carp in NSW**

#### What is bowfishing?

Bowfishing is a fishing technique where anglers use specialised archery equipment to shoot and retrieve fish. Bowfishing equipment includes an upright bow with a specialised arrow attached by a line and reel to the bow. Bowfishing is particularly effective at targeting larger fish species that inhabit surface waters, like Carp.

In NSW, bowfishing is a legal activity only when targeting Carp (*Cyprinus carpio*) in inland waterways. Carp are an introduced noxious pest and the only species that may be taken using bowfishing equipment.

Bowfishers must hold a current NSW Recreational Fishing Fee Receipt (more commonly known as a fishing licence) before they can bowfish.

To ensure the safety of native species that are often active at night, bowfishing at night or with the aid of artificial light is prohibited.

# **Bowfishing or hunting?**

Bowfishing and hunting are two different activities, and you must keep hunting equipment separate from bowfishing equipment. Bowfishing equipment must only be used for bowfishing of Carp.

You must not have any bowhunting equipment with you or attempt to hunt game or feral animals like deer, rabbits or goats on any public waterways while bowfishing.

Hunting equipment includes regular hunting arrows with target or broadheads and bows without bowfishing equipment attached.

A Restricted Game Hunting Licence (R-Licence) does not give you legal authority to bowfish; you must also hold a current NSW Fishing Fee Receipt if you alternate hunting with bowfishing.



Bowfishing uses equipment specific to harvesting fish and cannot be interchanged with hunting equipment.



A young bowhunter.

#### Where can I bowfish?

Most inland waterways across the state, except declared trout waters, are available for bowfishing, with many impacted by large populations of the noxious fish Carp.

Bowfishing is strictly prohibited in tidal waters, including:

- entrances to rivers and lakes
- coastal lagoons

- all offshore and estuary waters
- all NSW coastal beaches.

The possession, carriage or use of bowfishing equipment is also strictly prohibited on any National Park Estate in NSW.

DPI Fisheries officers regularly patrol inland waterways, and heavy penalties apply for anyone undertaking fishing activities without a valid fishing fee receipt.

#### REPORT ILLEGAL BOWFISHING

via the Fishers Watch Phoneline

1800 043 536

www.dpi.nsw.gov.au/fishing/compliance/report-illegal-activity

#### **Bowfishing rules**

To bowfish for carp in NSW, you must hold a valid NSW Recreational Fishing Fee Receipt, also known as a NSW Fishing Licence.

Bowfishers must also:

- use an upright bow and arrow with the arrow attached to the bow by means of a reel
- only use a flightless bowfishing arrow with a fishing head attached
- have a maximum of 30 metres of line attached to the bowfishing reel
- only target Carp
- not bowfish in the following locations:
  - all waters specified in Schedule 4 of the Fisheries Management Act 1994, as for spearfishing.
  - any beach, including the headlands and any offshore waters.
  - any tidal river or stream downstream of its tidal extent.
  - any waters declared as 'trout waters' under Section 8 of Act.
  - any National Park Estate in NSW
- not bowfish within 100 metres of a person, vehicle or vessel that is not part of your bowfishing party
- not bowfish within 100 metres of a dwelling, picnic area or campsite
- not bowfish outside of 30 minutes before sunrise and 30 minutes after sunset

not use any bowfishing equipment aided by lights.
If you are found breaking these rules, heavy penalties may apply.

In serious matters, you may have to face court and have the matter determined by a magistrate.

Note – while persons under the age of 18 are exempt from paying the fee, they must comply with all other rules for bowfishing in inland waters.

# **NSW Recreational Fishing Fee**

#### When do I need to pay?

When you are fishing in NSW waters, both fresh and saltwater, you are required by law to carry a receipt showing the payment of the NSW Recreational Fishing Fee, unless you are exempt. This applies when line fishing (rod or handline), spearfishing; bowfishing for carp; bait collecting or when collecting invertebrates using methods such as hand gathering, digging, pumping, trapping and prawn netting.

In freshwater, it applies when fishing in inland (non-tidal) waters of NSW and when in possession of fishing gear in, on or adjacent to waters. It does not apply when fishing in a dam on private land if the surface area of the body of water at full capacity does not exceed 2 hectares.

Always check whether you need to pay the fee before going fishing.



How much is the fee?
\$7 for 3 days
\$14 for 1 month
\$35 for 1 year
\$85 for 3 years

#### Where do I pay the fee?

You can pay at many outlets throughout NSW, such as most fishing tackle shops, caravan parks, local shops, service stations, many Kmart stores, using the NSW DPI FishSmart app, via onegov.nsw.gov.au/new/categories/recreational-fishing or by calling 1300 369 365.



#### Digital fee receipt on your phone

If you own a smartphone, you can now link your NSW Fishing Fee Receipt with the Service NSW smartphone app, which will enable you to hold a digital fishing fee receipt on your smartphone. Always check whether you need to have paid the fee before going fishing.

#### How do I obtain a plastic receipt?

If you pay for a one year or three-year period online, over the phone, at a Touch agent or if you renew your licence using your renewal letter, you will receive a plastic receipt (card) in the post. For all other payment methods, you will receive a paper receipt.

#### Interstate and overseas visitors

Recreational fishing licences issued by other states, territories or countries are not valid for fishing in NSW waters. All visitors must pay the NSW Recreational Fishing Fee (unless exempt).

#### **Exemptions**

A fifty per cent concession applies to people who only fish in the tidal waters of the Tweed River and prescribed adjacent beach areas.

If you go fishing aboard a charter vessel or with a fishing guide, you may find that your skipper or guide holds an exemption certificate that covers you as well.

Exempt individuals include:

- persons under the age of 18
- an adult assisting persons under the age of 18 to take fish using a single rod per child or to take prawns using a single dip or scoop net per child
- a person fishing in a private dam with a surface area of two hectares or less
- an Aboriginal person
- the holder of a:
  - current Pensioner Concession Card issued by Centrelink.
  - current Pensioner Concession Card issued by the Department of Veterans' Affairs.
  - Department of Veterans' Affairs Gold Treatment Card endorsed 'Totally and Permanently Incapacitated'.
  - Department of Veterans' Affairs Gold Treatment Card endorsed 'Extreme Disablement Adjustment'.
  - letter from the Department of Veterans' Affairs stating that you receive a disability pension of 70 per cent or higher, or an intermediate pension.

These exemptions only apply to the primary cardholder.



Recreational fishers must have these cards in their possession to be exempt. Please note that senior's cards, health care cards and repatriation health cards do not exempt you from paying the NSW Recreational Fishing Fee. This information is current at the time of publication, although fisheries regulations may change. It is the responsibility of fishers to ensure they are acting within the law at all times.

If you are unsure about whether you need to pay the NSW Recreational Fishing Fee, check our website at www.dpi.nsw.gov.au/fishing.

#### Replacement fee receipt

Cost for a replacement fee receipt is \$8.00.

Call **02 4424 7499** to obtain a replacement or download a form from www.dpi.nsw.gov.au/fishing.

There is no fee to replace a digital fee receipt. Use the replacement form and select the digital option if you don't know your fee receipt number.

## **Bowfishing for Carp on inland waterways**

Bowfishing may only occur on inland waterways in NSW and only for the noxious species Carp.

#### What are inland waterways?

Inland waterways are freshwater, non-tidal waters.

NSW inland waterways are any waterway above the tidal limits, including:

- the whole of the Murray River to the South Australian border (excluding the waters of Lake Hume)
- all parts of Lake Mulwala from Yarrawonga Weir wall upstream to the point where the Ovens River enters the Murray River at Bundalong boat ramp, and
- when fishing on the NSW side of the Dumaresq, MacIntyre and Barwon Rivers (a midstream border applies to these rivers).

Note: Hume Weir is managed by the Victorian Department of Environment and Primary Industries, A Victorian fishing licence is required and Victorian fishing laws apply when fishing in Lake Hume on the Murray River arm upstream to the junction with Seven Mile Creek and on the Mitta Mitta River arm upstream to its source. Please check with local authorities before bowfishing along border rivers.

#### **Trout waters**

There are four types of trout waters and each has different rules to help protect breeding populations and provide shared access for fishers. Bowfishing is not permitted in any inland water that is classified as trout water.

A list of trout waters can be found in the NSW recreational freshwater fishing guide or at www.dpi.nsw.gov.au/fishing.

#### Carp

Carp are an introduced freshwater fish that are a noxious species in NSW. Carp, along with Goldfish (Carassius auratus), Roach (Rutilus rutilus) and Tench (Tinca tinca), belong to the Cyprinidae family. Where they are introduced, they can significantly impact freshwater ecosystems as they damage vegetation, compete with native fish, and degrade water quality.

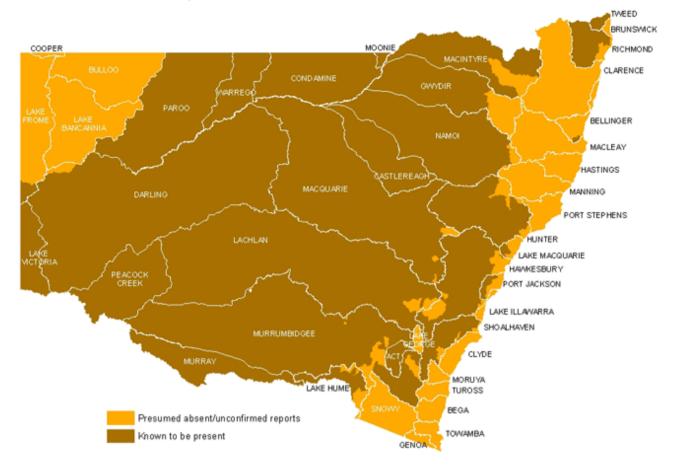
As Carp are noxious in NSW, DPI recommends that bowfishers not return harvested fish to the water and instead utilise or dispose of them.

All state governments and territories try to control the spread of Carp. The NSW Carp Control Plan outlines actions to stop further spread of the pest species, control the size of Carp populations and increase the community's involvement in their removal from our waterways. Visit www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/pests-diseases/freshwater-pests/finfishspecies/carp for more information.

#### Where are carp in NSW?

The distribution of Carp in NSW includes most of the Murray-Darling Basin and many coastal river systems, particularly in the central section of NSW from the Hunter in the north to the Shoalhaven (including the Southern Highlands and Tablelands) in the south. They are now the most abundant fish species in many NSW rivers, accounting for up to 90 per cent of fish caught in areas of the Murray-Darling Basin.

#### Distribution of Carp in NSW by catchment



# Access to inland waterways for bowfishing

Anglers and bowfishers have a legal right to fish from a boat or while walking within the bed of a river or stream, even if the bed is not public land. This law does not apply to some lakes, within fisheries closures or declared special areas. Wherever you choose to fish, please ensure that any rubbish, including fishing lines and plastic bags, are taken with you and disposed of responsibly.

You must comply with all official signage while bowfishing. These are two common signs that you may see while bowfishing.





#### Crossing private property to access bowfishing waterways

Bowfishers should always request permission from landholders to cross privately owned or managed lands. It is illegal to trespass on private property.

If right of entry is granted, make sure you use formed tracks to access the water and take care not to interfere with any stock or pastoral activities.

When traversing or accessing private or public land to access bowfishing areas, you must follow all reasonable directions of the landholder or land manager and always ensure that your bowfishing equipment is in an unloaded state.

#### **Angler access strategy**

In inland NSW, it is estimated that there are over 200,000 locations where rivers, streams and lakes can be accessed by public land. Identifying and promoting access locations for anglers, including bowfishers, is a key priority.

DPI's angler access program provides anglers with information to assist in accessing fishing locations. An online resource showing access locations and site details is available via the DPI website. Additionally, angler access signage has been installed at public roads and reserves adjacent to rivers. Keep an eye out for the angler access symbol, which shows places of free legal fishing access.

For any queries on angler access or more information about the access program, visit www.dpi.nsw.gov.au/fishing/recreational/resources/angler-access, **02 6051 7769** or email angler.access@dpi.nsw.gov.au.

#### Accessing public land areas with bowfishing equipment

#### **NSW Crown land**

Crown land in NSW is managed by the Department of Planning, Industry and Environment under the *Crown Lands Act 2016*.

There are different types of Crown land with many other uses, such as parks, reserves, roads and cemeteries. The Department is responsible for the sustainable and commercial management of NSW Crown lands and provides access for community, commercial and recreational purposes while ensuring land is sustained for future use.

Crown land can be managed by local councils, trusts, community groups or other government agencies. In most cases, crown land offers a legal means of access to waterways.

Visit www.industry.nsw.gov.au/lands/access/recreational-use for more information on accessing Crown lands for fishing.

#### State forests

The Forestry Corporation of NSW manages more than two million hectares of State forest for economic and environmental benefit to NSW. State forests are available to the whole community, with a range of recreational activities, including fishing and bowfishing occurring alongside forestry operations.

Visit www.forestrycorporation.com.au/visit for information on access and fishing opportunities in NSW State forests.

#### National park estate

NSW National parks, reserves and conservation areas are public lands managed and reserved under the *National Parks and Wildlife Act 1974*.

# The possession, carriage or use of bowfishing equipment through any National Park Estate is strictly prohibited.

# **Bowfishing code of conduct**

All bowfishers must practice their activity to a high standard.

The following code applies to anyone attempting to target Carp with bowfishing equipment.

Your actions matter: unethical behaviour discredits and damages the reputation of anglers, bowfishers and hunters.

- Always consider the safety of yourself and your bowfishing party.
- Consider the safety of other water users.
- Know and obey the legislation specific to bowfishing.
- Follow and obey the bowfishing regulations by:
  - holding a NSW Recreational Fishing Fee Receipt
  - only targeting Carp species and their hybrids
  - never bowfishing within 100 metres of others
  - never bowfishing within 100 metres of a dwelling or campsite
  - only bowfishing in inland waters and only for Carp
  - using the correct bowfishing equipment
  - not possessing hunting equipment while bowfishing.
- Respect the environment by taking all rubbish with you.
- Respect the fish you are targeting by always taking a humane shot.
- Always cooperate with regulatory officers performing their duties.
- Show consideration towards landholders, other land users and other fishers.
- Dispatch Carp quickly and humanely.
- Dispose of Carp thoughtfully.

# **Bowfishing safety**

- Always check your equipment before each bowfishing trip.
- Clean and disinfect your equipment when attending different waterways.
- Plan ahead: always let friends or family know where you are going, when you will be back and leave them a plan of your route if possible.
- Fish with a mate or two: having someone nearby makes good sense in case of an accident or injury.
- Use extreme caution when entering the water to retrieve lost arrows or snagged fish; if the location looks dangerous, don't fish there.
- Take a communication device: consider buying or hiring an emergency beacon for backcountry trips where you may not have mobile service.
- Observe first, fish later: check weather and water conditions before you start fishing and be aware that conditions may change dramatically in a short period.
- Never attempt to bowfish in or near flooded or swollen rivers.

- Keep yourself warm and dry, and leave the water if you start to feel cold to avoid hypothermia.
- Make sure your line is not tangled or caught on yourself or your bow before bowfishing.
- Make sure your arrow is not damaged before every shot.
- Ensure the safety slide on your arrow is working correctly.
- Always wet your line before your first shot to reduce the risk of tangles and to prevent it from snapping.
- Do not walk while at full draw.
- If you miss and the arrow is stuck on something in the water, do not rapidly tug the string as the arrow may fly back and hit you.
- Always wear eye protection.
- Always be sure of your shot before releasing your arrow.
- Always identify your target beyond all doubt.

# **Bowfishing recommendations**

NSW DPI recommends the following:

- Use an arrow point that is explicitly designed to hold soft flesh fish such as Carp.
- Wear an article of blaze orange on your upper body while bowfishing.
- Choose an appropriate draw weight for bowfishing, between 25 lbs (11 kgs) and 45 lbs (20 kgs); higher draw weights may cause the arrow to penetrate through the fish entirely, making retrieval more difficult.
- Complete the hunting with bows category of the R-Licence Accreditation Course.
- Become a member of a reputable hunting or fishing club/association that undertakes bowfishing.
- Move at least 100 metres away from any livestock while bowfishing.
- Ensure minors under the age of 18 are supervised by an experienced adult and do not bowfish on their own.

#### **Bowfishing from a vessel**

Using a boat or pontoon is an ideal way to access remote waterways or get close to fish in deeper water. Special care must be exercised when bowfishing from any type of vessel.

- Leave a plan with family or friends with details about the boating portion of your trip. It should include your planned route and when you plan to return.
- Be sure the boat is large enough to carry your fishing party and your gear safely.
- Load gear low in the boat and distribute the weight evenly.
- Ensure your bow is unloaded, arrows are safely stored in an appropriate container, and the line is secured in the reel.
- Have each person on board wear a personal flotation device or life jacket.
- Have personal flotation devices on board in case someone falls overboard.
- Always carry communication devices and visual distress signals.

- Display a triangular red flag when bowfishing from a watercraft or vessel so that you can be easily identified.
- Travel slowly on inland waters and keep an eye out for submerged tree limbs and roots.
- Check an up-to-date weather forecast before heading out.
- Cancel your trip if wind and water conditions aren't safe.

It is important to stay safe when out on the water. Detailed advice on safe boating is available in the Roads and Maritime Services publication 'Boating Handbook'. Visit www.rms.nsw.gov.au/maritime or phone Maritime on 131 236 for more information.

#### **Boating on inland waters**

Boating on rivers, creeks, dams and other inland waterways demands special care. Submerged trees, shallow sand bars and other snags may be encountered.

Inland waterways such as lakes, dams, other impoundments and rivers are often murky with frequent changes to water level and flow rates.

You must be aware of possible dangers and obstructions, which may be hidden just below the surface.

Always maintain a safe speed and a proper lookout. Strong winds can occur at any time and create dangerous wind waves on open lakes and dams. Familiarise yourself with an area before attempting any high-speed activities and avoid dam walls and spillways.

Exercise caution following heavy rain or flooding, where floating trees, branches and other debris are present, as they may cause severe damage or injury if collision occurs.

# Getting started in bowfishing

Bowfishing is a safe and fun outdoor activity that provides an opportunity to remove pest species from inland waters. Before you begin bowfishing, make sure you are familiar with the information contained in this guide and always comply with the rules and regulations.

To become a successful bowfisher, you must dedicate time to practice your technique and understand how to aim at a subject beneath the water's surface.

Bowfishing equipment does not need to be expensive. Old hunting and target bows can be easily converted for bowfishing. Other equipment can be purchased separately or as a kit. Talk to a bowfishing expert at your local fishing or hunting store to help you set up your bow.

#### The bowhunting module from the NSW R-Licence Accreditation Course

NSW DPI recommends that bowfishers complete the hunting with bows module of the NSW R-Licence Accreditation Course.

This course provides fundamental education for anyone using archery equipment when hunting. which can also be applied to bowfishing. Completing this course will ensure that you gain valuable knowledge to be a safe, ethical and responsible archer.

Having broad knowledge in the use of archery equipment will help to minimise the risk of an accident occurring while you're bowfishing.

More information about completing the R-Licence Accreditation Course can be found at www.dpi.nsw.gov.au/hunting or www.hunterleap.com.au.

#### **Bowfishing equipment**

You must have the right bowfishing equipment before you attempt to bowfish.

- Bows must be handheld and capable of propelling an arrow, however they cannot be a crossbow or speargun.
- Bow type can be compound, longbow or recurve.
- All bows must have a bowfishing reel attachment that is either a hand wrap or retriever reel.
- The recommended draw weight of your bow should be between 25 lbs (11 kg) and 45 lbs (20 kg).
- Arrows must not have fletching.
- Arrowheads must be fishing specific, have a point, and a minimum of two rear-facing barbs – powerheads and broadheads are prohibited.
- Fishing line must be braid or nylon with a sufficient breaking strain to hold Carp, 40 lb line is recommended.
- Arrows must be attached to the bow with a maximum of 30 metres of suitable line.
- The line must be on a suitable bowfishing reel attached to the bow and fixed to a safety slide attached to each arrow shaft.





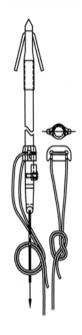


Hand wrap reel



Retriever reel





Arrow heads

Safety slide

Note: Spincast reels are not recommended due to their large line capacity.

#### Shooting a bow

The following information has been adapted from the NSW Hunter Education Handbook 2021.

Bowfishing and bowhunting have many similarities. It is important to understand the correct technique for shooting a fishing bow.

You may need to alter these steps to suit the type of bow you are using.

#### Step 1: stance

Regardless of which stance you choose, it should be comfortable and solid. Start by placing your feet about shoulder-width apart with your body weight distributed evenly between your lower back and the heels of your feet.

Most bowfishers use the open stance, which starts by positioning your toes at 90 degrees towards the target. Then take a half-step backwards with your leading foot.

This stance essentially places the chest more toward the target and allows for greater bowstring clearance along the bow arm and chest.

#### Step 2: grip

Keep a relaxed grip on the bow. Resist the urge to tighten your fingers around the bow. Instead, let your fingers naturally drop around the handle. This will eliminate unwanted torque and cam-lean, which result in the bow slanting to one side.

Your wrist should be slightly bent upwards and outwards, with the main pressure point of the riser being somewhere in the joint between your thumb and index finger. This grip will form a natural pocket, as seen in the diagram below marked 'Y'.



If your knuckles look white from a tight grip, you are not holding the bow correctly. Remember to keep your fingers loose and relaxed.

#### Step 3: drawing the bow

Drawing a bow uses all the muscles that keep your form correct, and mainly the back muscles.

When drawing the bow, start by keeping your elbow high and in line with your jaw. Then, begin drawing the bow by pulling straight back, using your back muscles and not your bicep muscle.

The hand that is gripping the bow should be directly in line with your shoulder at full draw. Also, your drawing hand and elbow should be level with each other.

Some bowfishers feel more comfortable if the elbow is slightly higher than the shoulder, and the forearm should be level with the arrow at full draw.

When drawing a bow, you should never raise the bow above shoulder height.



#### Step 4: anchor point

An anchor point is a spot that is touched by the draw hand or string when the bow is fully drawn and ready to shoot, usually a point on the archer's mouth, chin, jaw or nose.

By continuously using the same anchor point or points, the archer has a better chance of reproducing the same shot every time.



#### Step 5: follow through

Follow through is vital for accurate shooting. Once an arrow is released, you hold your bow arm in the same position until the arrow reaches its target. It takes the arrow a split second from release to clearing the arrow rest. Any movement of the bow arm or body during this time will greatly affect the impact point of the arrow.

#### Aiming at underwater targets

Refraction is the biggest obstacle bowfishers face. Light bends when it hits the water's surface, making fish appear closer to the surface when they may not be. This optical illusion requires the bowfisher to adjust their point of aim to allow for refraction.

Even at close ranges, fish will be deeper in the water than they appear. To compensate for this, you must aim lower to ensure an accurate shot and a humane kill. To accurately adjust your point of aim, you must know how far away you are from the fish and how deep the fish is in the water.

These three tips will help you adjust your aim:

- try to get ahead of the fish and take the shot as it swims by
- aim low a good rule is to aim 10 centimetres below the fish for every 30 centimetres of water depth
- lower your aim another 10 centimetres for every three metres of distance between you and the fish.

The best way to learn how to aim at Carp is to practice your technique regularly. Filling old drink bottles with water and shooting at them is a cheap and effective way of practising your aim. Submerging them underwater while you practice your shots will help you understand refraction effects and build your confidence when aiming at a Carp.

Always clean up after yourself and dispose of all bottles and targets once you have finished practising.

# **Tips for bowfishing Carp**

Practice is the best way to learn about aiming at targets in water. Remember that refraction will make the fish appear in a different position than where it actually is.

The following are some general tips for bowfishing for Carp:

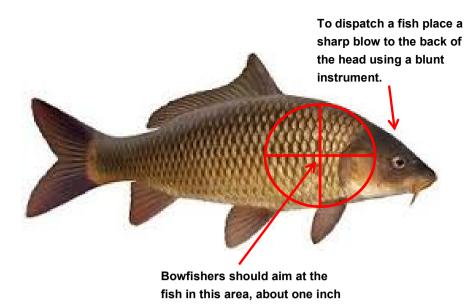
- sight your bow using a single pin at five metres
- the spring spawning season or hot, humid summer evenings have the best opportunities for Carp
- look for them in still or slow-moving, shallow water
- reeds, submerged logs and overhangs are good places to find them
- stalking the edge of the waterways is usually the best strategy
- approach the fish quietly as sound resonates very well through water
- wear polarised sunglasses to help you see more fish
- keep an eye out for Carp gulping at the surface for air
- when arrowed, allow the fish to run until it relaxes
- try to utilise the fish that you shoot; Carp are a culinary delicacy in many countries
- dispose of your catch thoughtfully.

#### **Humane bowfishing**

#### Aiming and dispatch

Bowfishers should always aim for the vital zones ensuring a quick and humane kill. Even though Carp are a pest, it is unethical to waste them or treat them inhumanely.

Landed fish that have not been killed should be hit with a sharp blow to the head in the area just above the eyes (the area adjacent to the brain) using a special tool such as a heavy wooden handle or a fishing priest. When applied correctly, the fish's gill covers should stop rhythmically moving and the eye should remain still.



#### **Landing your Carp**

Both arrows and fish can be lost if care is not taken when placing your shot and retrieving your catch. If you pull at the line, you may tear the arrow out of the fish. If you hold onto the line, the fish might wriggle its way off the barbed arrowhead.

As the fish is arrowed, its body will begin to tense, and it will instinctively dart away from the direction of the arrow.

behind the gills.

- It will usually try to dive into deeper waters.
- Retrieve the fish as soon as it is arrowed to avoid it becoming tangled in snags.
- If a fish is still alive at landing, immediately apply blunt force trauma to the top of its head.
- For bigger fish, a landing net may be required to secure your catch.

#### Disposing of your catch

- Carp are a noxious pest and should not be returned to the water.
- Fish that are hit with an arrow are almost always killed in the process. Those not killed will have a very low chance of survival and must be euthanised as quickly as possible and before any other fish are shot.
- You are encouraged to use the Carp you catch. You can eat them or use them as compost or fertiliser.

Any fish that you do not take with you must be disposed of appropriately.

#### **Utilising Carp**

Many people enjoy eating finfish and invertebrates they catch. If you intend to eat your catch, following these important tips will help you enjoy your bounty and avoid illness.

Like all fresh food from animals, you should handle your catch in a certain way to minimise the risk of food poisoning.

#### Tips for keeping your catch safe

Keep fresh catch cold and cover by putting on ice or in a refrigerator straight away.

- Keep your equipment and surfaces clean.
- Don't let your catch or bait drip onto other food.
- Only catch or collect when the water quality is good. Remember that water quality can change, and not all harmful things can be seen with the naked eye.
- Check the waterway's current status for known algal 'red alerts' via local signs, local media or by visiting www.water.nsw.gov.au or phoning 1800 999 457.

#### Tips for safe eating

- Always cook your recreational catch thoroughly.
- Don't eat fish that have washed up on shorelines. Mass fish kills can sometimes mean large numbers of dead or dying fish along the shoreline. The cause of death is often unknown, and eating these fish is a health risk.
- Remember that cooking will not destroy or remove toxins present in species caught in poor quality waters. Eating catch contaminated with toxins can result in severe illness or death.

#### Red alert algal warnings and visible blooms

 Clean and rinse freshwater finfish thoroughly in uncontaminated water and dispose of their internal organs before consumption as they are likely to contain toxins. The toxin could also be present in the flesh.

For more information on the risks of toxic algal blooms, visit www.whoi.edu/redtide.

For more information about consuming the Carp you catch, visit www.foodauthority.nsw.gov.au or phone the NSW Food Authority on **1300 552 406**.

#### **Cooking Carp**

#### Preparing the fish

Carp can provide delicious and nutritional flesh when prepared correctly.

Carp must be killed quickly and humanely to reduce the stress that can cause the fish to taste muddy once cooked. Bowshot carp will not need to be bled if the arrow has penetrated the fish behind the gills.

If the fish needs to be bled, follow these steps.

- 1. Take a heavy knife and point the blade down towards the belly.
- 2. Push the knifepoint into the top of the gills and through the opposite side of the fish.
- 3. Using force, slice down through the gills until the knife cuts all the way through the belly.
- 4. Allow the fish to bleed for five to ten minutes.

#### Removing the fillets

Carp have thick scales, so make sure you're using a heavy bladed knife.

- 1. Lay the fish flat and cut down into the fish behind the gills until you reach the spine. You may be required to use some force to cut through the scales.
- 2. Take the knife and make a parallel cut along the top of the fish between the spine and the dorsal fin.
- 3. Swipe the blade of the knife along the ribcage to remove the front portion of the fillet.
- 4. Once you have passed the ribcage, poke the knife through the fish and continue to work the blade towards the tail.
- 5. The fillet should now be free from the fish.
- 6. Repeat these steps for the other fillet.

#### Skinning the fillet

The skin is covered in thick scales and a protective mucus which gives the fish a slimy appearance. Removing the skin will also remove the 'fishy' smell.

- 1. Using a filleting knife, cut into the flesh side of the fillet down towards the skin.
- 2. Do not cut through the skin.
- 3. Once the blade meets the skin, turn the knife parallel to the skin and coax the skin away from the flesh.

#### Using the fillet

Carp fillets contain many small bones that are very difficult to remove. The belly flap found along the bottom of the fillet has no bones and is the best part for eating.

Cut the belly flap away from the rest of the fillet. The belly flap is generally a softer flesh and lighter in colour, making it ideal for frying.

The remaining fillet contains the bones and bloodline, which must be removed. Using a fork, gently pry away as much flesh as possible from the bones. This flesh is best suited for making fish cakes.

# Biosecurity - tips to remember

Protecting the environment will ensure healthy and diverse habitats remain for native species of fish and animals.

- Travelling at low speed near riverbanks prevents your boat wake from undermining them.
- Snags are habitat for fish, not for use as firewood.
- Use established access points to launch and retrieve your boat or to access waterways by foot.
- Take all rubbish home or dispose of appropriately, including fishing line and gear.
- Take care not to transport fish, water or weeds from one waterway to another:
  - wash down your boat, trailer and bowfishing gear to avoid spreading pests
  - soak gear in a hot water solution of five per cent household bleach; alternatively, soak gear in washing detergent for 45 minutes.
- Dispose of fish carcasses thoughtfully.

# Other safety considerations

#### **Weather safety**

The weather plays a major role in every type of outdoor activity. In most instances, mild weather changes won't disrupt your bowfishing activities. But severe weather events such as bushfires, flash flooding, severe storms and gale-force winds can potentially put you in a dangerous situation.

Many parts of NSW that provide the ideal environment for Carp feature semi-arid landscapes, extensive floodplains and expansive river systems. These lowland areas are subject to dominant winter rainfall that can result in flash flooding.

#### Know the weather

Accurate weather information is easily accessible online. Checking the type of weather you should expect during your trip is the first step in planning a safe and enjoyable experience. The Bureau of Meteorology website offers official weather updates and other usual information.

Monitor the weather up until the day you leave home, as unexpected changes can happen. It's also a good idea to listen to the news and weather updates on your car radio as you are driving to your location.

#### What to do when the weather changes

When a severe storm is approaching:

- stop bowfishing and immediately move away from rivers, creeks and other water bodies as you exit the area
- if you are camping, move to a more secure shelter; If there are no safe or permanent shelters available, make sure your camp is well away from all waterways and large, sick or dead trees
- your car or truck might be the safest place to ride out the storm; Remember to keep away from large trees at risk of falling.

When there is a risk of flash flooding:

- make sure your camp is on high ground away from any rivers, creeks or water bodies
- head to higher ground if you are at risk from rising water
- never attempt to cross any waterways
- if possible, leave the area and move to the closest town
- show extra caution at night when your visibility is hampered
- never walk or drive through flooded tracks or roads.

#### Flooded rivers

Waterways can begin to rise and flood very quickly. Rain events and high tides that are hundreds of kilometres away can have an effect on rising rivers. Never attempt any type of water activities, including bowfishing when there is a risk of flooding.

If you are trapped by rising floodwater, seek refuge at the highest landmark you can find. Stay there and call '000' (triple zero) or activate your emergency beacon if you need rescue.

Never drive or walk through floodwater. Floodwater is extremely dangerous and may be faster flowing and deeper than it appears.

#### What to do if you fall into water?

If you fall into water that is difficult to get out of, follow these simple tips:

- always learn how to swim
- don't panic and remember that you can get out of the water safely when you're calm.
- · call out for help and remember to always bowfish with a buddy
- let go of your bowfishing equipment so both your hands are free to help you reach safety.
- do not attempt to stand up too quickly; check your footing and the waterbed to make sure it's stable
- if the waterbed is slippery or muddy, try crawling towards the bank
- never fight the current; allow it to take you downstream while you angle yourself towards the bank.
- when the water is too deep, take a deep breath and push yourself off the bottom towards the bank until you reach safety

• if a fast current is pushing you downstream, move into a semi-sitting position with your feet pointed forward; this will help you avoid hitting submerged trees and rocks.

#### First aid basics

The majority of anglers and hunters will injure themselves during a bowfishing trip at one time or another. Most of the time, these injuries are not life-threatening and can be treated in the field with a basic first aid kit.

#### Treating minor cuts and abrasions

Follow these three steps when treating minor cuts and abrasions.

- 1. Clean wound with soap and fresh water.
- 2. Apply antibacterial cream.
- 3. Apply a sterile dressing.

#### Insect bites and stings

Inland waterways are breeding grounds for biting insects such as mosquitoes which may carry arboviruses that can be passed onto humans. If you know that you are allergic to certain insect bites or stings, be sure to bring along any medicine you require, such as antihistamines or an EpiPen.

It is best to regularly apply a strong insect repellent before and during your hunt. Wear long, loose fitting clothing to prevent insect bites.

For common stings and bites, relieve the discomfort by applying something cool to the affected area, such as a wrapped cold pack. This will help reduce inflammation. Cold packs should be wrapped in a towel and placed directly on the affected area.

If you are not feeling well after an insect sting or bite, seek medical help as soon as possible.

#### **Snake bites**

All snake bites must be treated as potentially life-threatening and you should call 000.

It is best to identify the type of snake that has bitten you, however that can be difficult sometimes. If any kind of snake bites you, you should apply the same first aid treatment until a medical professional can assess your condition.

Apply the following treatment to any snake bite.

- Try and keep the victim calm and reassure them that help is on the way; if you are alone, try to remain calm and slow your breathing and heart rate as movement and panic may allow the venom to travel faster through the body.
- Apply a broad pressure bandage to the bite site as soon as possible, then:
  - wrap a bandage from below the bite site, upwards and over
  - extend it as high as possible (e.g. to the groin or armpit)
  - be careful not to cut off circulation to the fingers or toes
  - keep the limb still (e.g. don't remove trousers)
  - use the same tightness as for a sprained ankle
  - use a shirt or other clothing if you have no bandages
  - mark the area of the bite on the bandage.
- Follow by applying a heavy bandage to immobilise the entire limb.

- Splint either side of the bite to help keep the limb from moving.
- Keep the person completely still and continue to reassure them.

#### **Heat exhaustion**

Bowfishing for Carp is most popular during late spring and early summer. Most parts of NSW are known for extreme dry heat and high temperatures, making anglers and bowfishers susceptible to heat exhaustion.

Heat exhaustion occurs when the body is unable to cool itself down. A person experiencing heat exhaustion will exhibit an increased body temperature, faintness, rapid heartbeat, a pale or greyish appearance, cold and clammy skin as well as nausea. You can do any or all of the following to help the person experiencing heat exhaustion, but most of all, seek medical help as quickly as possible.

- Move the person to a shady or air-conditioned location.
- Have the person lie down and elevate their feet slightly.
- Ensure they drink fluids slowly.
- Loosen or remove their clothing.
- Use a fan to help cool the person down.
- Seek medical help.

# Non-target species

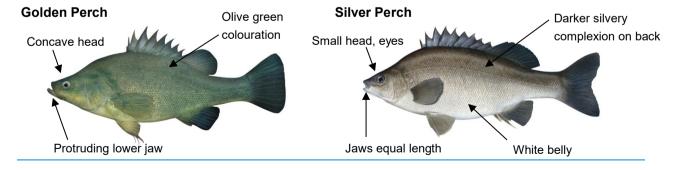
Carp is the only species allowed to be taken with bowfishing equipment. It is prohibited to take any other fish species.

It is crucial that you can recognise other fish species that may live in the same waterways. Do not harass or harm other species while bowfishing.

#### Common freshwater species you may encounter

#### **Golden Perch and Silver Perch**

Small Golden Perch are often confused with small Silver Perch. Distinguishing features of Golden Perch are their olive green colouration, their yellow belly, their distinctly concave forehead above the eyes and their lower protruding jaw. In contrast, Silver Perch have a more silvery darker complexion on the back, are paler on the sides, have a white belly, have a smaller beak-like head, have a small mouth and small scales and their jaws are of equal length.

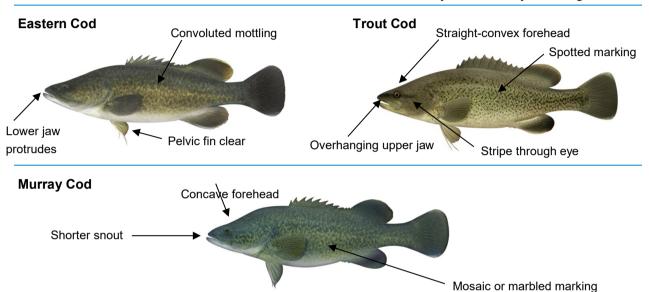


# Eastern (Freshwater) Cod, Trout Cod and Murray Cod

The Eastern Cod was once common in northeastern NSW but wild spawned fish are now considered rare. Eastern Cod are similar to Murray Cod and Mary River Cod. They can vary from pale green to golden with heavy black or green convoluted mottling. The pelvic fin is clear and relatively long. The lower jaw protrudes.

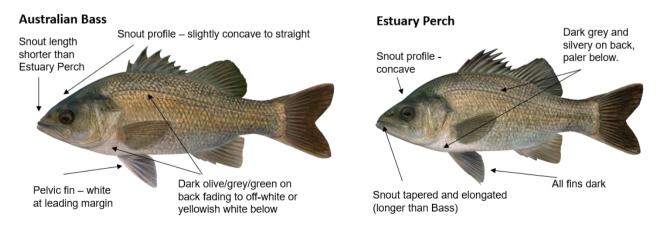
Trout Cod have the following features which distinguish the species from Murray Cod:

- Blue-grey colour with well-defined dark spots and dashed markings, whereas Murray Cod are generally greenish in colour with dark marbled markings.
- The snout and upper jaw is usually longer than the lower jaw. In Murray Cod the jaws are level or the lower jaw is longer.
- The forehead profile is straight or slightly convex whereas in Murray Cod the forehead profile is slightly concave.
- The snout and forehead of Trout Cod are usually clear of any markings.



#### **Australian Bass**

Australian Bass vary in colour from silver, green and bronze. The fish migrate downstream to the estuaries to breed between May and August and a fishing closure has been introduced at this time, to protect this species. Females are much larger than males. Adult fish are carnivores. The Bass has a back profile that is arched from above the eyes to the tail with only very slight tapering of the snout. They are sought after sport fish with bait, fly and artificial lure. Although considered excellent eating, the majority of fish are returned to the water unharmed.



#### **Redfin Perch**

Redfin Perch is an introduced medium sized freshwater fish and can be identified by their bright red lower fins and tail. Redfin are voracious predators of native fish and invertebrates and can adversely affect native species such as Macquarie Perch by carrying Epizootic Haematopoetic Necrosis (EHN) virus. Redfin can also out-compete other species in enclosed water bodies. Redfin are a notifiable species and it is illegal to be in possession of live Redfin in NSW. If anglers are retaining caught Redfin the fish must be stored dead (e.g. on ice in an esky). It is also illegal to use live or dead Redfin as bait in NSW.



#### Southern Shortfin and Longfin Eels

The Longfin Eel is closely related and very similar to the Southern Shortfin Eel. However, the dorsal fin on the Longfin Eel extends well forward of the anal fin. Often incorrectly referred to as Conger Eel in Victoria and NSW they may also resemble Lampreys, especially when small.

#### Southern Shortfin Eel

Longfin Eel have a dorsal fin that extends markedly forward of the anal fin. They are uniform olive/green to brown colour and distinctly blotched or mottled.



#### Longfin Eel

Shortfin Eel has a dorsal fin that extends slightly forward of the anal fin. They are uniform olive/green to brown colour with no distinctive markings.



#### Freshwater Catfish (Eel-tailed)

Freshwater Catfish, also commonly known as Eel-Tailed Catfish, is an Australian native species that is listed as endangered in parts of NSW. These catfish inhabit rivers, creeks, lakes and billabongs and prefer slow flowing water with rocky or gravel beds. They can be found around aquatic vegetation and underwater root masses.

Eel-Tailed Catfish is a medium-sized fish with a large head and a compressed rear portion of the body. The second dorsal, caudal (tail) and anal fins are joined to form a characteristic eel-like tail that extends over the rear half of the body. They also have a small, down-turned mouth surrounded by large barbels (whisker-like organs) and no scales. It is important that bowfishers can identify this species and must not harm or harass them during bowfishing activities.



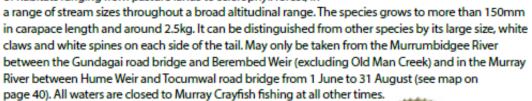
#### All freshwater threatened species

These species cannot be harmed or harassed under any circumstances.

#### Murray Crayfish Euastacus armatus

Conservation status: Vulnerable species.

The Murray Crayfish is endemic to the southern tributaries of the Murray-Darling Basin. Murray Crayfish can be found in a variety of habitats ranging from pasture lands to sclerophyll forest, in



#### Trout Cod Maccullochella macquariensis

#### Conservation status: Endangered species.

Once widespread throughout the lower Murray-Darling system,

only one natural breeding population now remains in NSW. Trout Cod are distinguished from Murray Cod by their blue/grey colour with well-defined spots and dashed markings; the snout and upper jaw are usually longer than the lower; the forehead profile is straight or slightly convex and the snout and forehead are usually clear of any markings. All fishing methods for any species of fish is prohibited in the Murray River and its tributaries between Yarrawonga Weir and the Tocumwal Road Bridge from September to November inclusive to protect breeding Trout Cod populations. Catch and release fishing is permitted in Talbingo Dam.

#### Silver Perch Bidyanus bidyanus

#### Conservation status: Vulnerable species.

Once widespread throughout most of the Murray-Darling Basin. Remnant populations remain in some areas such as

the central Murray River and parts of the Edward River system. Prefers river, lake and reservoir habitats and areas of rapid flow. May only be taken from listed stocked impoundments (see page 43).

#### Fitzroy Falls Spiny Crayfish Euastucus dharawalus

#### Conservation status: Critically Endangered

The Fitzroy Falls Spiny Crayfish is endemic to a small location on the southern highlands. The species is found in Wildes

Meadow Creek, surviving as a remnant population, restricted to a small length of waterway upstream from Fitzroy Falls. Often confused with the common Yabby (Cherax Destructor) but can be distinguished by its larger size and the presence of short robust spikes on its claws and abdomen while the Yabby is smooth shelled. It is an offence to take, harm or be in possession of Fitzroy Falls Spiny Crayfish.

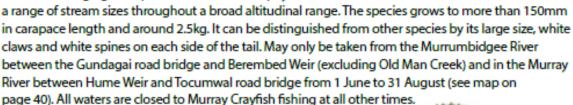
#### Other freshwater species

A number of small bodied native fish species are listed as threatened in NSW. However, freshwater fishers are unlikely to encounter them when carrying out normal fishing activities. Some of these species are Darling River Hardyhead (Hunter River population) Craterocephalus amniculus, Oxleyan Pygmy Perch Nannoperca oxleyana, Murray Hardyhead Craterocephalus fluviatilis, Southern Pygmy Perch Nannoperca australis, Olive Perchlet (western population) Ambassis agassizii, Purple Spotted Gudgeon Mogurnda adspersa, and Flathead Galaxias Galaxias rostratus.

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#### Water rats

Water rats (Hydromys chrysogaster) are an animal you might commonly see while bowfishing.

These shy rodents inhabit permanent fresh waterways and swamps but can also be found in brackish and low oxygenated water. The Water rat has a distinctive large body and a thick whitetipped tail. Partially webbed hind feet help it swim through the water. They also have water repellent fur and an abundance of large, thick facial whiskers. Colours can vary from slate grey to black with an almost white underbelly.





It is strictly prohibited to harass or harm Water rats. Photo: Healesville Sanctuary.

#### **Platypus**

Platypuses live in many permanent freshwater rivers, lakes and streams in NSW. There's a high chance you'll see one in the water or on a water bank where they dig burrows.

Platypuses are very shy and tend to dive underwater if disturbed. They can stay submerged for up to 10 minutes if they feel threatened.

It is crucial that bowfishers can identify a platypus. Look for these common features:

- an average length of 50 centimetres from bill to tail
- dark brown fur on their back with a lighter underbelly
- a long course dark coat that repels water
- a flat, streamlined body with short, stout legs
- a duck-like bill that is grey/blue in colour and very flexible, soft and sensitive.



#### Freshwater turtles

NSW is home to seven species of native freshwater turtle and two introduced species.

Freshwater turtles spend most of their time in rivers, lakes, swamps and ponds, including farm dams. Turtles also come onto land to move between water bodies or to build nests during the mating season.

Some species have been known to lay dormant for up to four months, buried in soil or dry riverbeds. They're not able to feed out of water though.

It's thought freshwater turtles can live up to 50 years of age.

Turtles can be easily identified by:

- a dark brown to black shell made up of shields or panels
- yellow shields on the underside of its shell
- webbed feet
- floating on the water's surface or bedded in the sediment
- diving into the water if disturbed

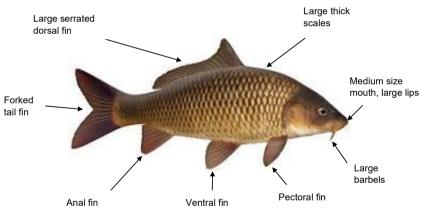


If you encounter a Water rat, Platypus or Freshwater turtle while bowfishing, relocate at least 50 metres away from its location.

# **Getting to know Carp**

# **Identifying Carp**

There are three varieties of Carp found in NSW waterways.







Koi carp Mirror carp

#### **Common Carp**

Legal length: None Bag limit: None

Possession limit: None

Habitat: Still or slow flowing lowland rivers or lakes. Tolerant of a wide range of habitats and

can survive in very low oxygenated water.

Size: Average 4-5 kg (can grow to a maximum of 60 kg).

Bowfishing equipment: Attached fishing arrowhead must have a minimum of two rearfacing barbs (fixed or mechanical). Arrow must have an attached safety slide and reels must have a maximum of 30 metres of suitable bowfishing line made of either braid or nylon.

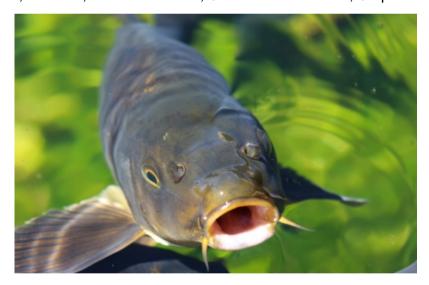
#### Carp ecology

This information is reproduced from www.dpi.nsw.gov.au/fishing/aquatic-biosecurity/pestsdiseases/freshwater-pests/finfish-species/carp.

Carp are a large freshwater fish native to central Asia. They can be found in most countries including Europe, the Middle East, Asia, United States, Canada, New Zealand and Australia and are the most widely distributed freshwater fish in the world. They are extensively farmed in Europe, Asia and the Middle East; however, in North America, Canada and Australia, Carp are

considered a significant pest.

Carp are very versatile and can live in a wide variety of habitats, including waterways that other species cannot survive in. Over the past few decades, Carp have spread across most of Victoria and New South Wales. They are now the most abundant large freshwater fish in some areas, including most of the Murray-Darling Basin, contributing to the degradation of our natural aquatic ecosystems.



Although small Carp can be mistaken for goldfish, they are distinguished by a pair of barbels (whiskers) at each corner of their mouth. They have small eyes, thick lips, a forked tail and a single dorsal (top) fin with strongly serrated spines.

The colour of Carp varies greatly, from olive green to bronze or silvery in colour with a paler underside. Koi (or Japanese) carp are a domesticated, ornamental variety of Common carp and show a much broader range of colours including red, orange and white.

#### Carp habitats

Carp are usually found in still or slowly flowing waters at low altitudes, especially in areas where there is abundant aquatic vegetation. They are also found in brackish lower reaches of some rivers and coastal lakes.

They are capable of surviving in a broad range of conditions. They have a greater tolerance of low oxygen levels and polluted waters than most native fish and can survive in degraded habitats, including stagnant waters.

Changes to water flows, declining water quality and other changes to river habitats over the past few decades have negatively affected many native fish while favouring Carp.



#### Reproduction

Under suitable conditions, Carp are highly prolific breeders. They mature as early as one year for males and two years for females. The females produce large numbers of sticky eggs (up to 1.5 million for a 6 kilogram fish).

Carp migrate to and from breeding grounds during the breeding season and can travel hundreds of kilometres.

Most eggs and larvae die before they reach maturity although survival is increased if environmental conditions are suitable. Severe floods seem to provide especially favourable conditions for reproduction as well as supplying an abundant food source.



#### Feeding

Carp are omnivorous, and their diet varies depending on what is available. They consume a range of small food items such as worms, molluscs, crustaceans, insect larvae, algae and seeds. They also consume plant material and general organic matter, especially when other food sources are not available (such as during winter).

Carp rarely eat fish but may consume fish eggs and larvae if they disturb breeding sites.

Carp continually browse on all types of foods which they crush using their powerful pharyngeal teeth. They suck up a mix of food, mud and water from the bottom and filter it through their gill rakers



Image: CARPology magazine

Adult Carp have no natural predators. Large predatory native fish, such as Murray cod, Golden perch and Bass may consume juvenile Carp, although they are not a favoured prey item.

#### **Introduction of Carp**

Carp were introduced into Australia deliberately, in an attempt by the first settlers to imitate the European environment, and accidentally, by the escape of ornamental fish.

In NSW, the earliest known introductions occurred near Sydney in 1865. Fingerlings were used to establish several wild populations of Carp around Sydney in the early 1900s, including in Prospect Reservoir (where they are still present).

Since then, populations of Carp have successfully established throughout the Murray-Darling system, including in Queensland and South Australia as well as New South Wales and Victoria. They are also found in Lakes Crescent and Sorrell in Tasmania.

Many NSW coastal catchments also contain Carp, most commonly Koi carp that have escaped from backyard ponds or were deliberately released.

#### **Impacts of Carp**

Because of their adaptability, Carp have been very successful in their colonisation of new environments.

Most notably, they are the prime culprits for reduced water quality in our waterways. Their destructive feeding habits have detrimental effects on native aquatic plants, animals and general river health.

Carp contribute to poor water quality by uprooting vegetation and stirring up sediments during feeding, leading to increased turbidity (cloudiness). This in turn reduces light penetration, which can make it difficult for native fish that rely on sight to feed. Reduced light can also decrease plant growth and suspended sediments can smother plants and clog gills.

Carp have also been associated with the spread of disease and a range of parasitic and fungal bacteria.

By analysing all of these factors, it is evident that Carp are detrimental to native freshwater fish species. Through competition for food, habitat and their aggressive feeding habits, there has

been well documented evidence that native species such as Golden perch, Murray cod, Silver perch and Freshwater catfish are in decline in waterways where Carp are present.

# **NSW Recreational Freshwater Fishing Guide**

You must be familiar with all the regulations that apply to freshwater fishing as well as boating regulations (if you will be bowfishing from a watercraft). Read the NSW Recreational Freshwater Fishing Guide available at www.dpi.nsw.gov.au/fishing/recreational/fishing-rules-andregs/freshwater-recreational-fishing-quide for more information about fishing in inland waters.

# Report Illegal bowfishing

If you want to report illegal or suspect bowfishing activity call the Fishers Watch on 1800 043 536 or report online at www.dpi.nsw.gov.au/fishing/compliance/report-illegal-activity.

Report illegal activity as soon as you suspect it is happening, even after hours. After hours calls are received by an interactive voice response system that allows callers to record a message and this will be sent to a fisheries officer.

Fisheries officers in the identified area will be immediately notified of all illegal fishing reports, including those made after hours.

When lodging any report be prepared to provide the following information:

- type of activity
- time, date and location of the activity
- number of people involved, their identity if known and descriptions
- registration numbers of any boats or cars involved and their descriptions
- your own name and contact details to further substantiate your report and so you can be contacted for follow up information.

Reporting illegal bowfishing can be done from within the FishSmart app available for smartphones.

Where information is given in good faith, all identifying details will be treated as confidential. Where an immediate response is not possible due to conducting other operations or for safety considerations, information received will be used in targeting ongoing surveillance and enforcement activities

#### REPORT ILLEGAL BOWFISHING

via the Fishers Watch Phoneline

1800 043 536

www.dpi.nsw.gov.au/fisheries/compliance/report-illegal-activity

# **Inland Fisheries NSW Offices**

Region			
Central Tablelands	Research Station Drive, Bathurst 2795	02 6331 1428	0408 220 875
Hume	5/620 Macauley Street, Albury 2640	02 6051 7763	0419 185 548
Far West	Agricultural Research and Advisory Station, Silver City Highway, Dareton 2717	03 5019 8408	0427 429 579
Macquarie	Cnr Hampden and Cobra Streets, Dubbo 2830	02 6881 1208	0438 410 585
Monaro	Kosciusko Road, Jindabyne 2627	02 6451 3402	0427 460 226
Inverell Research Station	7023 Gwydir Highway, Inverell NSW 2360	02 6721 9845	0419 185 532
Peel	4 Marsden Park Road, Calala 2340	02 6763 1132	0417 480 933
Riverina	449 Charlotte Street, Deniliquin 2710	03 5881 9928	0427 897 145
South West Slopes	64 Fitzroy Street, Tumut 2720	02 6941 1404	0408 484 299

## **Glossary**

**Arrowhead** – The front end of an arrow also known as the head, point or tip.

**Bowfishing** – A method of harvesting fish by using a specialised bow and arrow.

**Bowfishing reel attachment** – A hand wrap or a retriever reel that is fitted to the bow.

**Compound bow** – A modern bow that uses a system of cables and pulleys.

**Drawing** – The act of pulling the string attached to the bow back ahead of firing.

**DPI** – Department of Primary Industries.

**Finger tab** – A small leather patch that protects the archer's fingers.

Fletching – The stabilising fins or vanes of an arrow.

GLU - Game Licensing Unit.

**Grains** – a measurement of weight that is specific to archery and hunting.

**Landing** – The process of bringing something to the land or shore from the water.

**Longbow** – A tall, wooden bow with a D-shaped cross-section that is approximately the same height as the archer, without significant recurve (tips that curve away from the archer).

NSW Recreational Fishing Fee Receipt - A receipt or licence required by law when participating in recreational fishing activities in NSW.

**Nock** – The act of setting an arrow in a bow.

Quiver – A container that holds arrows.

**Recurve bow** – A type of bow that has unstrung tips, which curve away from the archer.

**Refraction** – A bending of the light that occurs as it passes across the water's surface.

**Release** – The act of relaxing the fingers to free an arrow from a bow.

**Riser** – The handle section of a bow.

**Rest** – A device used to hold the arrow against the bow until it is released.

R-Licence – A NSW Restricted Game Hunting Licence, required when hunting on public land and hunting game species on private land.

**Shaft** – The main element of an arrow that other elements are attached to.

**Shooting glove** – A protective glove for an archer's fingers.

**Stabiliser** – A weight used to provide balance to a bow.

Safety slide – A small ring attached to the fishing line that moves freely along the arrow shaft.

Attached arrow - An arrow that is fixed to a line.

Waterways – These include rivers, lakes, dams, creeks, stream, catchments and compounds.

## Carp recipe

The recipe has been adopted from the NSW DPI - Carp recipe booklet

#### Carp fillet with spicy topping

#### Ingredients

- 2 tbsp. olive oil
- 8 pieces Carp fillets bones removed skin on
- 280g green olives drained seeded and halved
- 4 cloves garlic sliced
- ¼ cup baby capers drained
- ½ cup white wine
- 1 stalk lemongrass chopped
- 2 tbsp. white wine vinegar
- 30g butter diced
- 2 tbsp. chopped parsley

#### Method

- 1. Rub half the oil into the fish pieces and season well.
- 2. Mix together olives, garlic, capers, lemongrass and remaining oil.
- 3. Cook fish fillets on a preheated barbecue plate skin side down for 5-6 minutes turn and cook for a further 3 minutes.
- 4. Cook olives, garlic, capers and lemongrass on hotplate stirring for 2-3 minutes until garlic is golden.
- 5. Heat wine and vinegar in a small pan on high until boiling, boil for 5 minutes or until reduced by half. Reduce heat to medium.
- 6. Add butter one piece at a time constantly whisking until all butter is incorporated and sauce is glossy.
- 7. Remove from heat.
- 8. Stir through parsley.
- 9. Top fish pieces with the olive mixture, spoon sauce over fish pieces to serve.