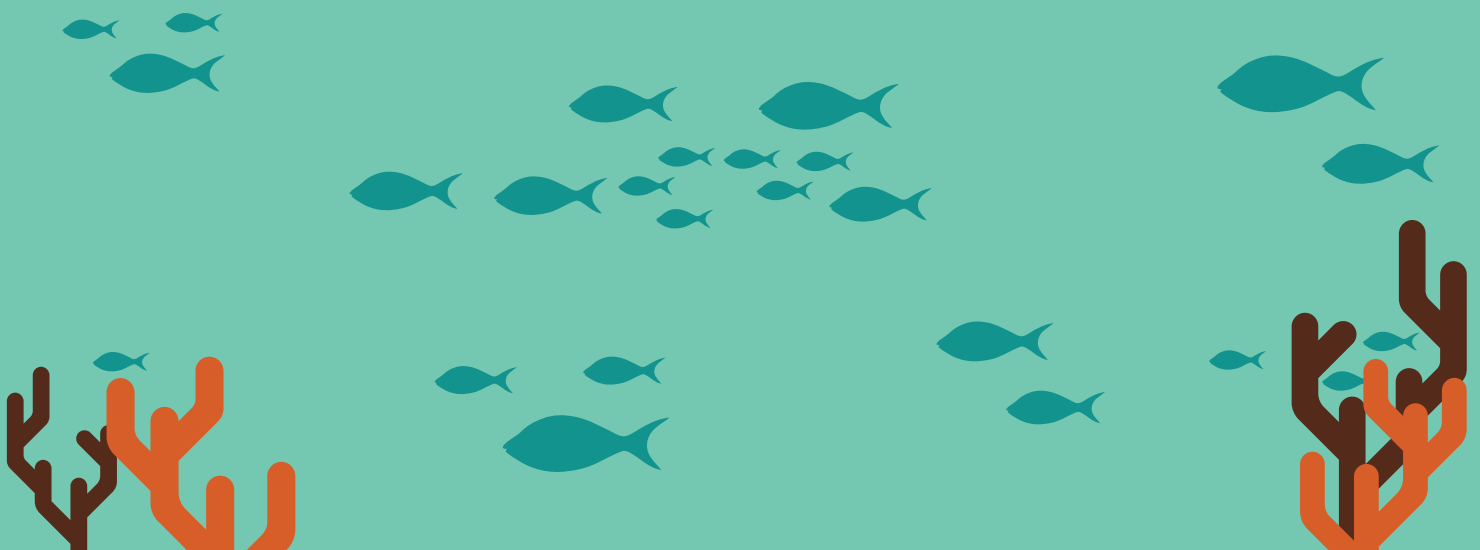


THE RESPONSIBLE ANGLER

Guidelines for responsible recreational fishing in South Africa



RECREATIONAL ANGLING

Whether marine or estuarine, angling is a popular pastime enjoyed by more than a million people across South Africa. While the number of recreational fishers has increased substantially over the past century, catch rates have steadily decreased. Despite the popular belief that anglers have a lesser impact than commercial fishing industries, the collective impact of the number of anglers has taken its toll on fish populations.

Today anglers can play a critical role in reversing the actions of past generations who did not have the knowledge available today. They can become responsible, aware anglers and ambassadors to ensure a sustainable future for the health of our oceans.

These guidelines present the qualities and principles that every responsible angler should strive for, as well as information on how to take action in the best interest of the ocean, its marine life and other users of the sea.

THE RESPONSIBLE ANGLER:

- A - Adheres to regulations**
- N - Negates harm to fish**
- G - Gathers information**
- L - Leaves the area in a better state**
- E - Encourages best practice**
- R - Role model to others**





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ADHERES TO REGULATIONS

A responsible angler always has a valid recreational angling permit; adheres to regulations; uses legal roads and tracks when accessing fishing areas; and reports illegal activities such as environmental damage and pollution.

Why does it matter?

Our rich South African coastal waters support thousands of jobs and contribute millions of rand to the economy every year. For this reason, policies and laws are put in place to manage marine resource use and ensure healthy levels of fish stocks.



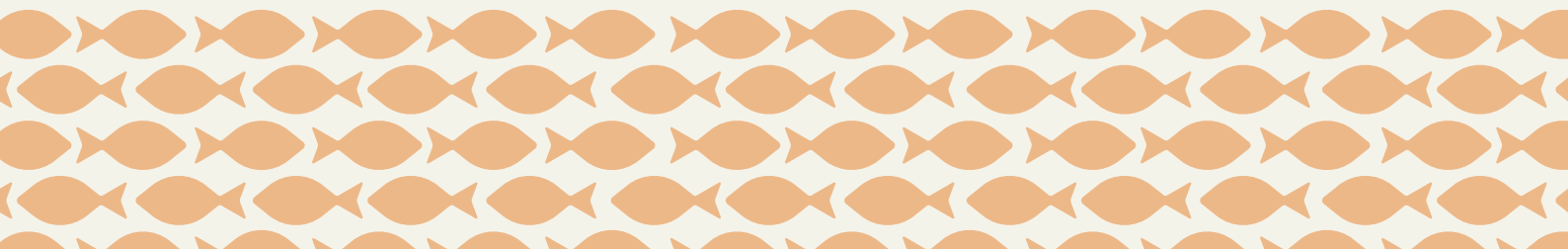
However, these regulations can sometimes be the cause of tension between commercial and recreational line fishers, who often target the same species and blame one another for declining catches. Responsible anglers only fish once they have a valid fishing permit.

What is the difference between commercial and recreational catch limits?

The commercial line-fishery is managed by a Total Allowable Effort (TAE) that limits the number of vessels and crew participating in the fishery. Meanwhile, daily bag limits are implemented to manage recreational fishing. To avoid competition with the commercial fishing sector, fish caught by recreational permit holders may not be sold.



Effective implementation of these management systems should ultimately result in sustainable fishing and ensure healthy oceans for all.



Where can I get a permit?



Annual or temporary permits for the various recreational fishing activities can be purchased at the South African Post Office. Visit the Department of Agriculture, Forestry and Fisheries' (DAFF) website at www.daff.gov.za and view the Marine Recreational Activity Information Brochure for more information about permit regulations and fees.

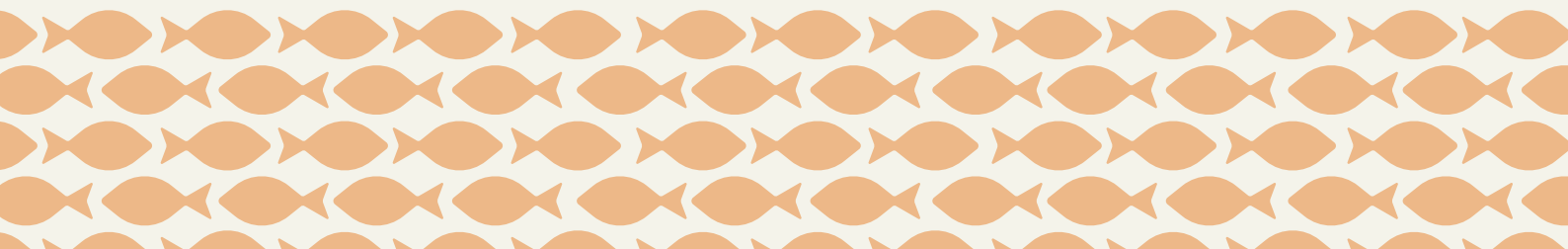
Where can I fish?

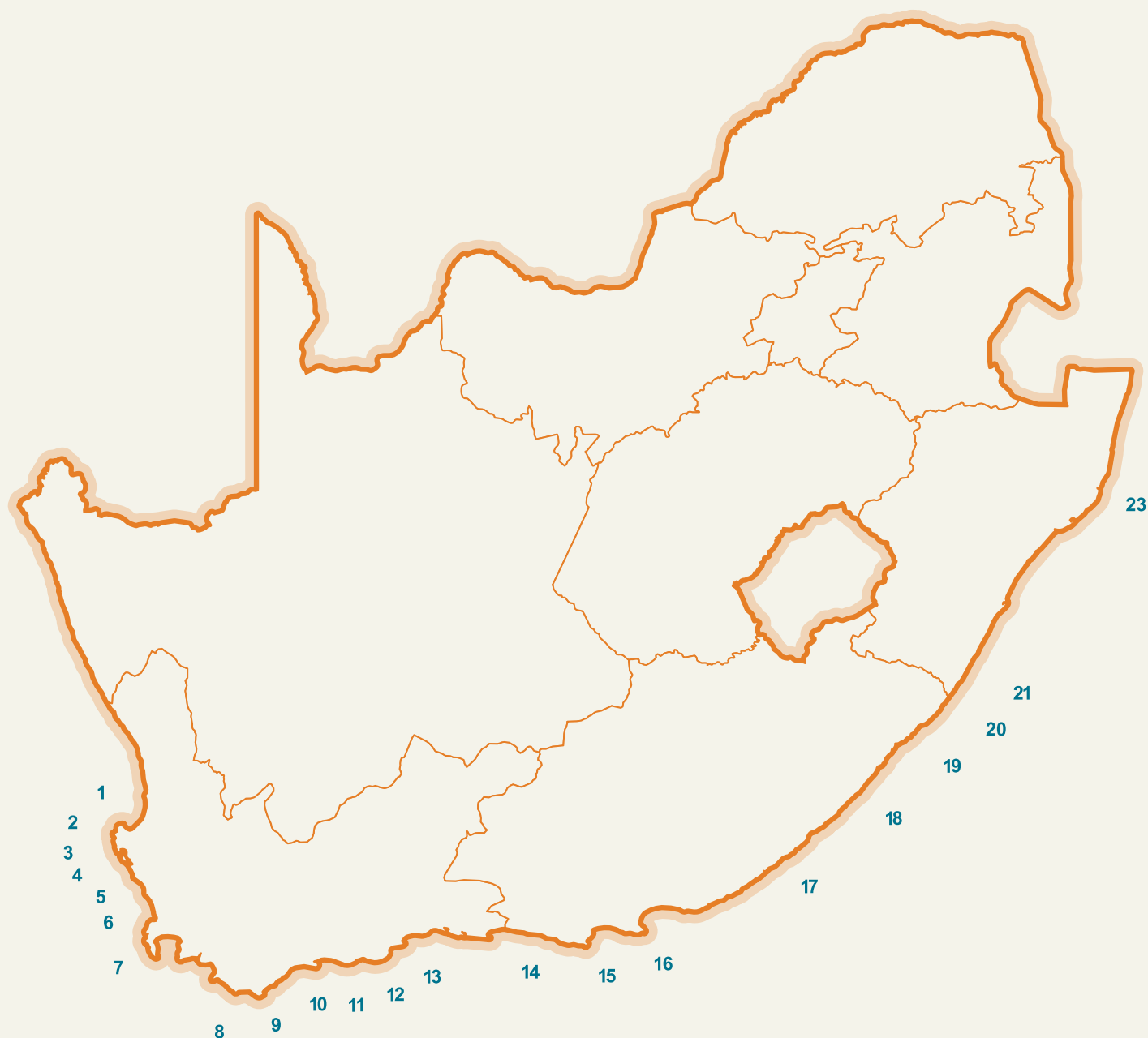


Where you fish is as important as having a fishing permit. Various laws govern the areas where you are allowed to fish and how you would access those areas. Whether it is driving on the beach or accessing protected areas, the relevant permits and permissions are required.

There are 24 Marine Protected Areas (MPAs) in South Africa. These include a range of 'no-take' zones where no fishing is allowed, and 'controlled' areas where limited fishing is allowed. South Africa's MPAs currently protect 21–23% of the coastline and 0,5% of the exclusive economic zone in terms of area.

Responsible anglers should know where these MPAs are located and should only fish in areas where fishing is permitted.





Marine Protected Areas in South Africa			Key	
1. Rocherpan			CONTROLLED ZONE: 	Also known as 'Open' areas. You are allowed to extract and harvest marine life, on condition that you have a valid permit.
2. Marcus Island				
3. Malgas Island				
4. Jutten Island				
5. Langebaan Lagoon				
6. Sixteen Mile Beach				
7. Table Mountain National Park				
8. Helderberg				
9. Betty's Bay				
10. De Hoop				
11. Stilbaai				
12. Goukama				
13. Robberg				
14. Tsitsikama				
15. Sardinia Bay				
16. Bird Island				
17. Amathole				
18. Dwesa Cwebe				
19. Hluleka				
20. Pondoland				
21. Trafalgar				
22. Aliwal Shoal				
23. Isimangaliso Wetland Park				

Key

CONTROLLED ZONE:

Also known as 'Open' areas. You are allowed to extract and harvest marine life, on condition that you have a valid permit.

RESTRICTED ZONE:

Commonly known as 'No Take' areas. The extraction and harvesting of all marine and plant life is prohibited. Some MPAs have demarcated areas that are both Restricted and Controlled Zones.

NEGATES HARM TO FISH

A responsible angler handles all species in a way that ensures their best chance of survival; quickly and humanely kills retained fish to ensure the least amount of suffering; and uses equipment and tackle that minimise stress and injury to fish.

Do fish feel pain?

An animal's state of distress or comfort can be judged by its ability to freely perform natural behaviours without pain, fear or stress. A fish that is caught and released may survive the process, but reproduction, feeding and growth may be negatively affected owing to the energy required to recover from the associated injury and/or stress.

The humane treatment of fish, including live bait, reflects a high moral standard in the recreational fishing community.

Anglers are encouraged not to retain species that are considered to be endangered, vulnerable or threatened. However, where fish are retained, the most humane way to kill a fish is to knock the fish unconscious with a blow to the head and then cut through the base of the gills so that it can bleed out. To reduce spoilage, retained fish should be gutted and cleaned as soon as possible and stored in a cool place, preferably with ice.



How can I most effectively catch and release a fish?

As soon as a fish is hooked, a fishing companion should help with landing and releasing the fish to optimise release time. Keep these tackle box essentials within close reach to ensure that fish are released as quickly as possible and with the least amount of harm:



- **Long-nose pliers:** Useful for removing a hook set in the jaw and for squashing barbs.
- **Side-cutters:** To cut through a line or steel trace if the hook is swallowed.
- **Measuring tape:** To record the length of the fish, which can be converted to weight using an online species length/weight relationship or downloadable app.
- **Measuring mat:** Useful when measuring fish, especially smaller skates and rays to avoid sand entering the gills on their underside (always ensure that the mat is wet and cool before placing fish on it).

What if a fish has swallowed a hook?



Research performed on dusky kob (*Argyrosomus japonicus*) by Australian scientists revealed that removing a swallowed hook leads to much higher levels of mortality than a swallowed hook that is simply cut off and left in the fish.

Hook injuries



Hook size and type greatly influence catch rates and are the main source of injury and mortality in caught and released fish.

	Hook removed (mortality rate)	Line cut (mortality rate)
Swallowed hook	72,7%	16%
Hooked in mouth	4,3%	15,8%



Hooks

BARBLESS
HOOKS

- Barbless hooks reduce injury and handling.
- Use long-nose pliers to flatten barbs, or file them off.
- To remove a barbed hook that is well set in the lip or jaw of the fish, push the point of the hook through and flatten the barbs when they protrude.
- If a fish is hooked in the gills or throat, or if the hook is swallowed, cut the line as closely as possible to the hook and release the fish as normal.
- A swallowed barbless hook can be spat out or pass safely through the fish's digestive system.
- Evaluate the health of a gut-hooked fish, and retain the fish as part of the daily bag limit if the species is of legal size and in season.

DEEP
HOOKING

- Using the right size hook reduces the chance of deep hooking and other injuries.
- Smaller hooks are more likely to be swallowed or deep-hooked.

CIRCLE
HOOKS

- Circle hooks cause less physical damage and are seldom swallowed.
- When using a circle hook, do not strike to 'set' the hook. This may result in losing, foul hooking and injuring the fish.
- Lifting the rod while simultaneously reeling in and applying firm pressure will set the hook.

BARBLESS
CIRCLE
HOOKS

- Barbless circle hooks are ideal if you plan to release fish caught.

LURES AND
ARTIFICIAL
BAITS

- Lures and artificial baits reduce extractive pressure on bait populations and are less likely to be swallowed by fish.
- For most species, hard lures, spinners or plugs are less likely to result in deep hooking than soft artificials or natural baits.
- Lures with multiple hooks can cause unnecessary injury.
- Removing the middle hook from a multiple hook lure can reduce injury without affecting catch rates.
- Hooking injuries are more prevalent when more than one hook is used per line.

TREBLE
HOOKS

- Treble hooks can be replaced by inline single hooks, which are designed not to influence the lure's action.
- One or two hook points on a treble hook can be removed using side-cutters.

How do I reduce the mortality of released fish?



Often fish will need to be released, whether because of a conscious decision or because it is an unwanted catch that is undersized, out of season or a prohibited species.

Every hooked fish should be treated in a way that will ensure its survival if it is released. There are many ways a hooked fish can be fatally injured during hooking, landing and release, and less obvious stressors can affect the natural biological functioning of the fish.

What techniques minimise trauma?

Trauma caused	Technique
Lactic acid build-up During a long fight time lactic acid levels accumulate in the fish's muscles, leading to a longer recovery time, higher mortality rates and reduced flesh quality in retained fish.	• Allow fish to tire a bit before landing it to reduce the amount of flapping around on rocks, sand or the boat deck. • Opt for a heavier line and leader to reduce fight time and avoid light tackle when targeting large fish. • Use a strong fishing rod and a good quality reel. • Fishing reels should be serviced regularly to ensure a smooth drag and optimal pulling power.
Air exposure Fish suffer from hypoxia (oxygen deprivation) when they are out of the water for extended periods of time. Hypoxia greatly increases the likelihood of death.	• If possible, keep the fish in the water while removing the hook. • If you are unable to do so or if you want to take a photograph, work quickly and ensure that all the required tools and equipment are nearby. • If fishing from shore, fish should be immediately placed in a bucket of fresh seawater. • A good de-hooking tool can reduce the time of air exposure and injury. • If possible, the fish should not be kept out of the water for more than 30 seconds.
Physical injury during landing If it is necessary to remove a fish from the water during landing, take care and apply the necessary precautions.	• Use a wet cloth when picking up the fish (this also protects the angler against harm from sharp spines and scutes). A plastic fish stretcher or a soft, knotless landing net is useful when landing a fish, although care must be taken not to injure the fins and tail when using a landing net. • Place the fish on a wet piece of mattress foam or towel. Cover its eyes to protect it from bright light. This will also allow it to calm down to prevent injury from excessive flapping. • Do not get lures or hooks tangled in the landing net so as to minimise air exposure while hooks are being untangled. • Large-mouthed or sharp-toothed species (e.g. barracuda) can be landed using a lip-grip attached to the lower jaw while the other hand is used to support the weight of the fish as it is lifted from the water. • As a last resort, a small sharp gaff inserted into the lower lip of the fish can be used to land it.



Trauma caused	Technique
Injury and stress during handling A layer of protective slime covers the skin and scales of fish. This protective layer prevents bacterial and fungal infection, but can be damaged by excessive handling. The gills and eyes are sensitive organs and care should be taken not to touch or damage them. Work with the fish in the water but take great care when handling sharks and stingrays as this can result in serious injury to the angler.	• Fishing from shore: never drag fish over the rocks or sand. This is particularly harmful to stingrays and sand sharks – they have gills on the underside that may become filled with sand. • Keep handling to a minimum. • Use wet hands or a soft wet cloth to lift and return fish to the water. • Do not turn stingrays upside down to remove hooks. This damages the animal's internal organs and may result in death. • Never drag flatfish by the spiracles (small openings behind the eyes for breathing on the sea floor). Use the groove in the top lip to lift the head and gills from the sand before moving the fish. • Do not drag sharks by the tail or leave them to lie on the sand for long periods. Their cartilaginous skeleton is not strong enough so their internal organs will be crushed by their own body weight.
Gaffing injuries Try to avoid gaffing a fish because gaff injuries and bleeding greatly reduce the fish's chances of survival.	• Never gaff fish in the stomach, gills or head. • For sharks, skates and rays, try and gaff in the jaw area. If this is not an option, gaff in the muscle below the dorsal fin. • Do not gaff skates or rays in the wing area as this tears easily. • If fishing from a boat, rather use a knotless landing net or a lip-grip to boat fish.
Barotrauma Barotrauma can affect species caught in water more than 20 metres deep. It is easily recognisable by the fish's inverted stomach protruding from the mouth. This is caused by the decrease in water pressure and inflation of the fish's swim bladder. Species such as roman and slinger are more susceptible to barotrauma and will float on the surface unable to return to the depth to which they were caught.	• To use the weighted downrigger method, use a short piece of line to tie a heavy weight or downrigger ball, heavy enough to counteract the buoyancy of the fish, to the eye of a large (8/0–10/0) inverted barbless hook. • Attach a heavy fishing line, long enough to reach the depth at which the fish was caught in, to the bend of the hook. • Place the hook gently but firmly in the top lip of the fish with the hook pointing downwards. • Release the fish and allow the weight to take the fish down to the bottom as smoothly as possible. • Once the fish has descended to the bottom, sharply tug the line to dislodge the hook and weight, which can then be retrieved.

What do I do if a fish needs reviving?

Hold the fish head first into the current, do not move it backwards and forwards in the water or restrict the flow of water through the mouth and gills. If the fish shows no sign of recovery, move the fish gently forwards through the water so that oxygenated water can flow over the gills. It may take a few minutes for the fish to recover its balance and swim away unaided.



GATHERS INFORMATION

A responsible angler seeks information on the status of marine resources and the impacts of angling on species; embraces recommendations from informed researchers and fishery managers; and records details of their catch.

Why does the status of a species matter?

In order to continue to experience the joy of fishing in the future, the harsh reality of the state of stocks and resources should remain top of mind every time you head to the coast. Over the years, overfishing, poor compliance, lack of law enforcement, habitat destruction, pollution and illegal fishing have all contributed to the decline in fish stocks.

Therefore, responsible anglers should be aware of the population status of our fishery resources, particularly the heavily targeted species – in their own best interests and that of the broader recreational fishing community.

How do I find information on the status of a species?

Anglers are encouraged to avoid retaining species considered to be endangered, vulnerable or threatened. The following guides can be used to determine the sustainability of a species:



- WWF's Southern African Sustainable Seafood Initiative (WWF-SASSI) list: wwfsassi.co.za/sassi-list
- International Union for Conservation of Nature (IUCN) Red List of Threatened Species: iucnredlist.org
- South African National Biodiversity Institute's (SANBI) National Biodiversity Assessment: sanbi.org/nba
- Southern African Marine Linefish Species Profiles: ori.org.za

How can I contribute to science and research?

The responsible angler can contribute by correctly reporting the recapture of a tagged fish or by supporting other citizen science projects that seek to better understand the impact made by recreational fishers.

Where can I log my catch online?



FishforLife: FishforLife is a citizen science project funded by the WWF Nedbank Green Trust. Under this banner, through the FiSHTORY project, anglers can submit old and new fishing photographs online (fishtory.co.za). This can help to develop a better understanding of historical declines in fish stocks in South Africa.



CatchReport: Anglers can visit the CatchReport website (catchreport.co.za) to record and view their catch data. Registration is free. The website offers useful downloadable catch report tools for anglers and fishing clubs, as well as species catalogues and marine charts for boat fishers.



Sea Fish Atlas: Through the iSpot website (ispotnature.org) anglers can submit photographs of rare species along with the date and location. These sightings will help to develop a National Fish Atlas, aimed at mapping marine fish distribution in South Africa.



ORI Co-operative Fish Tagging Project: The Oceanographic Research Institute (ORI), a division of the South African Association for Marine Biological Research, manages South Africa's only Co-operative Fish Tagging Project (ORI-CFTP). Information about growth rates, movement patterns, habitat preferences and the ability of tagged and released fish to survive will give anglers a better understanding of the biology and ecology of various species. Email oritag@ori.org.za or visit the website at oritag.org.za

How do I record a tagged fish?

Tags come in different shapes, sizes and colours but will usually contain information that must be recorded and reported to the Oceanographic Research Institute (ORI).

- **Species:** Record the species. If you're uncertain, take a clear photograph to help identify the fish.
- **Length:** Measure the exact length of the fish, i.e. from the tip of the nose to the fork or the end of the tail. If a measuring tape is not available, use a piece of fishing line, cut it off at the relevant point and measure it later.
- **Location of recapture:** Record the exact location where the fish was recaptured.
- **Date:** Record the date of the recapture.
- **Details:** Provide the angler's name and contact details. State whether the tagged fish was kept or re-released.
- **Tags:** A unique tag number that is usually duplicated on the top and the bottom end of the tag is normally preceded by a letter (A, B, D or M). If the tag number is illegible, try to carefully remove the tag before you release the fish.



LEAVES THE AREA IN A BETTER STATE

A responsible angler disposes of fishing line and plastics appropriately, leaving the environment and fishing area in the same or a better condition than when he or she arrived.

What can affect the environment?

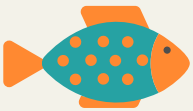
Many fishing activities can have negative impacts on the environment, but since they take place under water, they remain 'out of sight' and 'out of mind'.

- **Anchors:** When using an anchor, ensure that the correct weight and anchor design are used to prevent the anchor from dragging across the substrate and causing damage to sensitive habitats such as coral reefs and seagrass beds. Be aware that in some sensitive areas no anchoring is permitted.
- **No-wake zones:** These are areas where vessels are required to travel at idle speed, or slowly enough so that the boat, or its wake (waves) cannot cause injury or damage to sensitive habitats (e.g. mud flats), other persons, boats or property. No-wake zones can be put into place to protect nesting or foraging birds, sensitive habitats and other water users. When fishing in an estuary, ask the locals about management zones.
- **Unintentional catches:** Occasionally the capture of a completely untargeted animal (e.g. a seabird or a turtle) occurs. Treat these species with the same respect you would show your favourite catch. If you do accidentally catch a seabird, cover the whole bird with a towel, hold it down firmly and gently remove the hook before safely releasing the bird.
- **Tackle loss:** Tackle loss, especially loss of baited hooks, can lead to what is known as 'ghost fishing'. Areas with dense kelp, rocks and redbait can lead to high levels of snagging (getting hooked up) at certain tides and/or sea conditions. When this happens, it is best to move to a new site to avoid high levels of tackle loss/snagging. Research has shown that barbed J-hooks tend to hook onto substrates such as redbait and kelp more readily than barbless circle hooks.
- **Pollution and litter:** Littered beaches are hazardous to marine life and people. Discarded waste can attract problematic wildlife and disease. Use dedicated cleaning stations (if available) to clean retained fish and pack a few garbage bags so bait packaging, food wrappers, discarded tackle and other waste can be taken away with you when you leave. The straps used to secure bait boxes also threaten marine life as many seals have been found with these straps stuck around their necks. Cut the box strap in half before throwing it away. Sea birds, mammals and turtles become entangled in discarded fishing line. Fishing line can also damage coral reefs by becoming entangled in corals and stimulating algal growth that kills coral polyps. Cut the line into short pieces before it is discarded.

ENCOURAGES BEST PRACTICE

A responsible angler does not sell fish; collects bait with the minimum disturbance to the environment; and acts responsibly when exposed to activities that will negatively affect the conservation of marine resources.

Why is environmental best practice important?



Many popular target fish species are slow growing with complicated life histories and are therefore not resilient to harvesting pressures. Anglers often release fish for multiple reasons, be it as part of the fishing regulations (e.g. undersized, over the bag limit or during a closed season) or as a voluntary decision made by conservation-minded anglers. It is crucial that any released fish has the best chance of survival to ensure that recreational angling remains sustainable. Years of dedicated research has resulted in the collection of scientific knowledge that can be translated into a number of practical steps to improve responsible angling.

How do I collect bait responsibly?



Bait species that live in the sediment, such as sand and mud prawns, often co-exist with other smaller organisms that make their habitats extremely productive. Unsustainable harvesting, habitat destruction and disturbance can seriously affect other animals such as birds, crabs and fish that use these habitats as feeding grounds.

- Make sure you have the necessary bait-collecting permits.
- Adhere to the daily bag limits.
- Store bait in a manner that ensures the least amount of waste.
- Use only legal tools for collecting bait to limit the destruction caused.
- Avoid seagrass beds in estuaries which are important nursery grounds for fish.

Fish intended for use as live bait should be kept in a large enough live-well, out of direct sunlight and well oxygenated with a battery-operated air pump that is kept running continuously. Refresh the live-well water regularly to ensure good water quality.

- Excess live bait should be released, or euthanised and frozen for future use.

ROLE MODEL TO OTHERS

A responsible angler is a role model to other anglers and leads by example; educates others – especially younger anglers – about sustainable fishing practices and is considerate of other legitimate marine users.

Why is it important to set the standard?

A responsible angler can take the lead in helping to conserve our environment by following these practical guidelines, share knowledge of the benefits of sustainable and best fishing practices and contribute to the joy of recreational fishing for future anglers.

How can I be a considerate angler?

When the holiday peak season arrives, many tourists, locals and fishers head to the beach or the harbour to spend time near or at sea. For recreational fishers, our beaches can become quite crowded.

Whether it is the peak holiday season or simply a good beach or fishing day, the responsible angler is always mindful of their surroundings – how you interact with fellow anglers and holidaymakers, and the state in which you leave the area where you've been fishing.

Be respectful, and look out for and help fellow anglers if the need arises. Don't be afraid to speak up about illegal activities that can be harmful to people and our marine heritage.

In these simple ways responsible anglers can unite as a community that endorses a legacy of sustainable fishing to ensure thriving oceans and marine resources for generations to come.



Where and how do we share knowledge?



For many people, recreational angling is a fun and respected pastime that is passed down through generations. It creates bonds through shared wisdom, education and science. Responsible anglers not only teach younger anglers the basics of how to cast lines and unhook fish but should also impart knowledge of responsibility, the value of conserving marine resources and the proper way to fish to ensure that fishing is sustainable.

Today, technologies give us access to shared knowledge more quickly. You can share these guidelines on your social media channels, refer them to family and friends who love to fish as much as you do, and live the principles every time you head to the coast.

What do I do if I see an illegal activity taking place?

Responsible anglers can contribute to the conservation of marine resources by reporting illegal or prohibited activities. This could include fishing in an area that is declared a no-take zone, driving on a beach with a 4x4 vehicle where this is not allowed, or carrying out a restricted activity (such as angling) involving a species recognised as a Threatened or Protected Species (TOPS), as defined in section 97 of the National Environmental Management: Biodiversity Act, without a valid permit issued in terms of that Act.

When reporting a crime, remember to:

- Take note of the number of people involved
- Note what illegal activities they were involved in
- Note the time, date and exact locality that the activity took place
- Record the registration number if a vehicle, boat or trailer is involved
- Always make your own safety a priority.



Useful contacts



- If you see a fellow angler in trouble on the shore or at sea, contact the National Sea Rescue Institute (NSRI) by calling 112 from your cellphone.
- Report illegal activities and environmental crime to the Green Scorpions Hotline: 0800 205 005
- Report recaptured fish to: 079 5290711 or oritag@ori.org.za or visit ori.org.za/ori

Contributors



- South African Shark Conservancy



- Oceanographic Research Institute



- South African Institute for Aquatic Biodiversity



- Rhodes University



- WWF Nedbank Green Trust funded this project

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Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.wwf.org.za