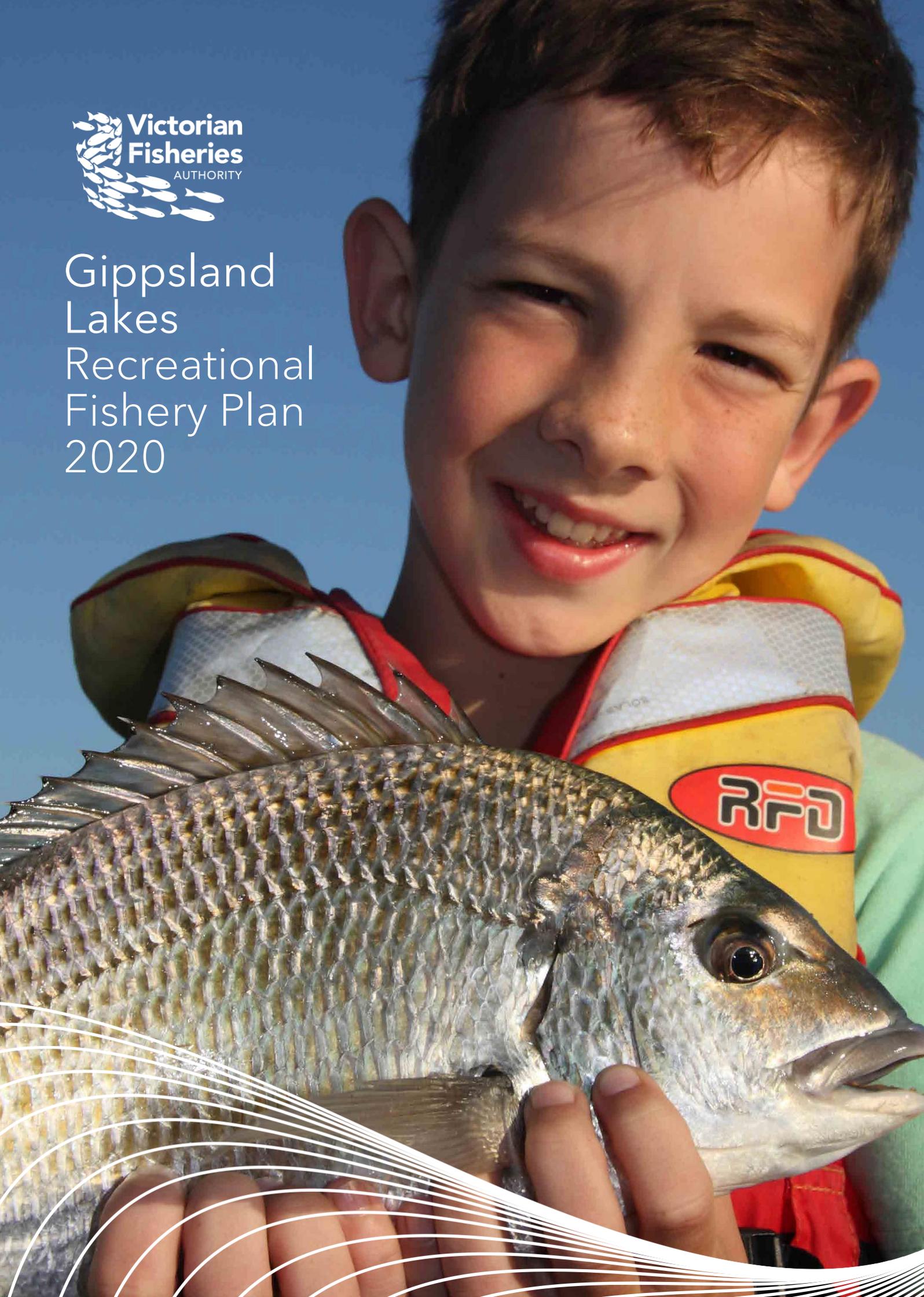




Gippsland Lakes Recreational Fishery Plan 2020



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Minister's foreword



I acknowledge the Gunaikurnai people as Traditional Owners of the Gippsland Lakes and surrounds and support their calls for sustainable management and use of the Lakes and surrounding lands.

The Gippsland Lakes are a network of beautiful lakes, marshes and lagoons in east Gippsland, covering an area of about 354 square kilometres. The system is one of our State's most important marine and estuarine assets.

Recreational fishing in Gippsland has been measured to contribute \$350 million to the Victorian economy and supports more than 1700 full time jobs. However, there is more to be done if we want to see the Lakes reach their full potential.

The status of key fish stocks, such as black bream have been in decline and sadly, due to multiple factors, including climate change and if no action is taken the state of these stocks will continue to decrease in the years ahead.

Removing commercial netting from 1 April 2020 ahead of schedule, along with an \$9.4 million compensation scheme for the 10 licence holders represents an important first step in rebuilding fish stocks in the Gippsland Lakes and will also help to restore the region as a recreational fishing mecca, attracting thousands of visitors to the region and injecting valuable economic stimulus into motels, restaurants and local businesses.

The removal of commercial net fishing for scale fish species also means another 180-200 tonnes of fish will remain in the Lakes system each year. This positive outcome will be complemented by targeted strategies and actions contained in this 5-year recovery plan. They will be delivered by fishery managers, catchment managers, recreational fishers, angling clubs and the community.

In addition to these actions, a recreational fishing tourism plan is being developed for Victoria with a focus on community events and marketing in regions and towns such as Lakes Entrance. Furthermore, we are also investing \$1.5 million into a new on-water café on Bullock Island in partnership with the Lakes Entrance Fishermen's Co-operative Society that will boost local tourism and jobs in Lakes Entrance.

None of this will be possible without the continued commitment of recreational fishers to do their bit to contribute to the recovery of fishing in Lakes. The angling community have demonstrated a great example of stewardship and is very much in line with the Government's aim to return the Lakes system back to recreational fishers and the community.

I'd like to thank everyone who has contributed to this recovery plan, especially the Victorian Fisheries Authority, Gunaikurnai Land and Waters Aboriginal Corporation, East and West Gippsland Catchment Management Authorities, Victorian Recreational Fishing Peak Body, Futurefish Foundation, angling clubs, recreational fishers and the general public.

A handwritten signature in black ink, appearing to read 'Melissa Horne'.

The Hon. Melissa Horne
Minister for Fishing and Boating



Vision

To restore the Gippsland Lakes as a recreational fishing mecca, with growing fish stocks in a heathy environment, supporting local jobs in the region.



Introduction

The Gippsland Lakes are a network of lakes, marshes and lagoons in the East Gippsland region of Victoria. They cover an area of about 354 square kilometres and the largest of the lakes are Lake Wellington, Lake King and Lake Victoria.

Surrounded by the traditional lands of the Gunaikurnai people, the lakes have great cultural importance to aboriginal people. The lakes are collectively fed by the Avon, Thomson, Latrobe, Mitchell, Nicholson and Tambo rivers comprising a catchment of approximately 2 million hectares, or about 10% of the area of Victoria.

The fishery of the Gippsland Lakes therefore contains the six rivers, estuaries where the rivers intersect with the lake, freshwater and saline wetlands and lagoons, saline lakes such as Lake Coleman and the major lake bodies such as Lake Wellington, King and Victoria. It is a complex system that requires different management, dependent on the asset or value being managed. A one-simple-solution approach will not work in such a complex and variable environment.

The State Government committed to ending commercial netting in the Gippsland Lakes by 1 April 2021, and all fishers elected to exit 12 months prior on 1 April 2020.

This is one of several commitments that aim to improve recreational fishing opportunities and the environment, contributing to the Government's aim of increasing the number of anglers in Victoria.

Shifting commercial catch quotas to recreational fishers and the environment will have multiple benefits. This is expected to improve recreational catch rates, angler satisfaction and tourism visitation to the region and rebuild fish stocks. A 5% increase in recreational fishing visitation to East Gippsland would equate to an extra \$20 million to the local economy.

The status of the Gippsland Lakes black bream fishery has been an ongoing concern for several years. Over the last 5 years the average annual reported commercial black bream catch was 34 tonnes, which equates to 72,000 fish. Black bream is one of the iconic species in the Lakes and commercial catches have declined to an all-time low and are now classed as 'depleting' by the Fisheries Research and Development's fish status report¹.

The removal of commercial net fishing is an important first step to facilitate future stock rebuilding for species such as black bream and dusky flathead. The initial removal of fishing commercial pressure will result in a major increased fish abundance and will support further boosts to natural recruitment processes for resident fish stocks, such as black bream and dusky flathead on a grand scale over the following decade.

It is a key part of a six-point 'learn by doing' plan to restore fish populations and create improved recreational fishing opportunities include:

1. Involvement of recreational fishers, Traditional Owners and community partners
2. New regulations for recreational fishing, including changes to size limits for iconic species such as black bream
3. Fish stocking throughout the Lakes system
4. Improving fish habitat and waterway health
5. Monitoring the success of our actions
6. Review our processes

The concept of learn by doing, also known as experiential learning is a proven technique used in teaching and education but also other disciplines, including natural resource management.

¹ <https://www.fish.gov.au/report/231-Black-Bream-2018>



Background

The Gippsland Lakes and surrounding lands are of significant importance to Gunaikurnai people. The Lakes are special to our traditional custodians who believe in only taking what you and your family need for food, shelter and survival.

Recreational fishers have also expressed a desire to help lead the recovery and custodianship of the Gippsland Lakes fishery. During September and October 2020, the VFA conducted an online survey of recreational fishers to better understand fisher preferences on how the Gippsland Lakes should be managed into the future. The survey also included several questions on preferences for changes to black bream recreational fishing size and catch limits to support the recovery of the stock. A large majority of fishers responding to the survey conveyed their support for proposals to change black bream fishery regulations. Fishers responding to the survey indicated they fished more for black bream and dusky flathead compared to other species, such as King George whiting, estuary perch and prawns. Most fishers responding to the survey indicated they fished the Gippsland Lakes between two and five times per year.

Key results from the 2020 VFA online survey included:

- Just under 4,400 fishers participated in the 10-question online survey
- The most important target species were dusky flathead (71.6%), black bream (63%), King George whiting (53%)
- Approximately half (47%) of respondents were satisfied with their overall fishing experience in the Gippsland Lakes during 2019. 14% sat somewhere on the spectrum of being dissatisfied
- Most (82.1%) fishers supported the introduction of a slot limit via a maximum size limit of 40cm for black bream
- Most (79.2%) fishers supported a reduction in the bag limit for black bream and nominated from 10 to 5 fish per day
- Fishers ranked improving habitat and waterway health as their highest priority for restoring recreational fishing in the Gippsland Lakes, followed by fish stocking and fishing regulation changes

These survey results were largely consistent with a survey of 700 fishers conducted by the Victorian Recreational Fishing Peak Body (VRFish) in 2019. Results of the VFA survey indicated a higher level of satisfaction and given the timing of the two surveys, this can likely be attributed to the early removal of commercial netting in the Lakes.



Additional management responses favoured by the majority of responding fishers included more: research and monitoring of fish stocks, fisheries officers and education programs. From a list of other possible actions taken for improving recreational fishing in the Gippsland Lakes the highest to lowest priority order were: restoring fish habitat, establishing a fish stocking program for black bream, dusky flathead and estuary perch, reviewing recreational fishing management and improving environmental flows.

Climate change impacts for fish stocks in the Lakes are also an important aspect of this recovery plan. Climate change predictions for the East Gippsland region are for reduced rainfall and increased evaporation, which is likely to lead to reduced river inflows that may negatively affect bream populations². Management strategies to reduce the vulnerability of fish stocks and increase their resilience are a goal and form part of the actions in this plan.



²Jenkins, 2010 Fisheries Adaptation to Climate Change - Marine Biophysical Assessment of Key Species. Fisheries Victoria Research Report Series No. 49.



"The Futurefish Foundation congratulates the Government for its landmark reform to return the Lakes to recreational fishers and the community. This plan is testament to the fact that anglers care about having fish for the future generations to enjoy."

David Kramer, CEO Futurefish Foundation



"We heard from recreational fishers that more could be done to help recover the Gippsland Lakes back to a vibrant and exciting fishing destination. We look forward to continuing this important conversation with recreational fishers through consultation of the draft recovery plan and working in partnership during the implementation of the final plan."

Mike Burgess, EO VRFish



"The goal to remove commercial nets from the Gippsland Lakes was inspired from the writings of the late Lynton Barr, a passionate local angler, who advocated for nearly 20 years to return the lakes to an abundant fishery. We strongly endorse this fishery recovery plan and congratulate the Victorian State Labor Government for legislating the removal of commercial nets from the Gippsland Lakes. We believe this plan is an important next step in returning the Gippsland Lakes to a significant recreational fishery with the flow on economic benefits to the region."

David Warren, Gippsland Lakes recreational fishing advocate

Fishery recovery strategies

The removal of commercial net fishing means a significant reduction in fishing pressure on fish stocks. It will mean a significant number of fish will now remain in the system to breed and assist the increase in natural recruitment processes. This positive outcome will be complemented by targeted strategies and actions in this recovery plan. To be fully effective, an integrated approach is needed that can be delivered by fishery managers, catchment managers, recreational fishers, angling clubs and the community.

These include:

1. Involvement of recreational fishers, Traditional Owners and community partners from day one

Beginning with this plan, we want involvement from stakeholders to ensure we have as many custodians for the Gippsland Lakes as possible, all working together to improve this precious fishery.

To this end we will:

- Establish a Steering Committee of recreational fishing representatives, GLaWAC, VFA, EGCMA and WGCMA to oversee implementation of the plan.
- Hold regular angler forums and surveys to gain input to plans for improvement and monitor our progress.
- Regularly report to anglers and the broader community about the fishery and the health of the Lakes through mediums such as VFA, Love our Lakes and VRFish websites and social media.
- Continue to engage with the broader community regarding different management strategies for popular species such as black bream.



2. Revised regulations for recreational fishing, including changes size limits for iconic species such as black bream

More conservative fisheries management controls for recreational fishing is an important part of this recovery plan and will increase the resilience of key fish stocks.

The VFA consulted with the recreational fishing community over a six-week period from 16 September to 28 October 2020 on a proposal to introduce changes to fishery regulations for black bream. These changes included introduction of a slot limit via a maximum size limit, in a similar approach used for dusky flathead and Murray cod. A 'slot limit' would provide a window for fishers to take a catch home for the dinner table, whilst also protecting larger breeding female black bream that produce a higher proportion of eggs at spawning time. For example, larger black bream above 38cm can be approximately 20 years old and produce around 2 million eggs each spawning season. Consultation by the VFA, including a stakeholder survey of almost 4,400 fishers, together with a 2019 survey of 700 fishers by VRFish, demonstrated a high level of support for the introduction of a slot limit for black bream. The VFA proposes to give effect to a slot limit via a 38cm maximum size limit. This change is due to come into effect by 1 April 2021 by way of a Fisheries Notice. This will be accompanied by a communication and education campaign targeting black bream fishers in 2021.

Support for a bag limit reduction was also evident from public consultation and the need for these regulation changes will be reviewed within the first two years of the plan in response to the performance of the fishery. It is important that the fishery be given a chance to respond to the significant changes already implemented over the next 2 years, namely the early removal of commercial net fishing and recent positive recruitment events.



3. Fish stocking throughout the lakes system to increase the biomass of dusky flathead and black bream

Fish stocking is often used as an effective management tool to rebuild fish populations, especially for species that have challenges with their natural recruitment. The Government has committed to a record fish stocking target of 10 million fish by 2022. This commitment includes both inland and marine fish across the State.

The two target species most desired by recreational fishers in the Gippsland Lakes are dusky flathead and black bream. Initial stocking trials of these popular species will be undertaken to speed up population recovery.

Species such as estuary perch and Australian bass will continued to be released into the Lakes system tributaries to accelerate recovery of fish populations. Estuary perch were once common in the Lake, especially near river mouths and efforts will be made to re-establish these populations. Fish stocking will be given a high priority by the VFA under this plan.

4. Improving fish habitat and waterway health

For the past five years the Victorian Government has provided \$12.5 million additional investment into the Gippsland Lakes. This investment has supported Government agencies, interest groups and individuals to deliver, and get involved in, activities to help improve the health of the Gippsland Lakes. Projects have involved more than 40 regional management partners and many community groups including the Lower Tambo Landcare Group, Latrobe Catchment Landcare Network, Romawi Landcare Group, and the Nungurner Community and Coast Action Group.

The Victorian Government remains committed to improving the health of the Gippsland Lakes, recognising the important environmental, social, cultural and economic values that it provides. Recreational fishing and improving habitat for native fish is a critical focus for future work on the Gippsland Lakes. We know recreational fishers are committed to do their bit to contribute to the recovery of fishing in Lakes and that restoring fish habitat is a high priority for anglers. There are already many examples of anglers working in partnerships with the VFA, East and West Gippsland CMAs and OzFish Unlimited to plant trees on riparian land and improve instream habitat for native fish. Continuing these partnerships into the future will further improve the recreational fishing experience in the Gippsland Lakes.



Key successes to date include:

- i. Development of the Gippsland Lakes Priority Plan (the plan) by the Gippsland Lakes Coordinating Committee to guide investment in a wide range of on-ground works.
- ii. Involvement of over 40 different agencies and groups, all working on common objectives for the Gippsland Lakes.
- iii. Increased interest in the Love our Lakes website
- iv. Ability to coordinate catchment scale investment for improving the environment. In 2018/19 alone \$15.7 million was spent by partners to improve the health of the Lakes and catchments.

Some specific actions underway and planned relevant to fish recovery include the following:

- v. Healthy seagrass is regarded as being critical to the maintenance of stocks of black bream and a past drop in abundance of the species in the Gippsland Lakes coincided with loss of seagrass in Lake Victoria and Lake King occurred in the early-mid 1900s. A subsequent recovery of black bream stocks coincided with recovery of seagrass (Coutin et al. 1997)³. A new method has been developed for ongoing sea grass monitoring which will provide consistent information on the condition and extent of seagrass.
- vi. Gippsland Ports are trialing new boat moorings designed to reduce seagrass damage from moored vessels in the Lakes. Other techniques to restore seagrass are also being researched from practices underway in other states.
- vii. Anglers have advised that snag and reef structures are important fish habitat they want to see returned to the estuaries and lakes. The VFA will work with the recreational fishing community, EGCMA, WGCMA, The Nature Conservancy and OzFish Unlimited to increase the number of recreational fishing reefs and snags
- viii. Wood and rock reef structures are already being installed by EGCMA at the mouths of the Nicholson and Tambo rivers, with involvement from local angling clubs.

Other works that also provide benefits for native fish include:

- ix. Marine life monitoring and pest animal monitoring and control is ongoing with invasive species such as the Northern Pacific seastar.
- x. Water quality monitoring is also underway.
- xi. Stock exclusion and revegetation programs are underway on riparian land for all inflowing rivers and the lake shoreline. This vegetation provides shelter and food for all fish, ensuring a better chance for fish survival and increased numbers.
- xii. Wetland improvement and protection works in all parts of the catchment are improving fish habitat needed especially for small fish to shelter, breed and grow.
- xiii. West Gippsland CMA plays an important role in environmental water management for tributaries and wetlands of the Gippsland Lakes and this benefits many native fish
- xiv. Sediment and nutrient reduction programs are underway in priority areas of the catchment to continue a path of improving water quality to the Lakes.



³Coutin, P., Walker, S., and Morison, A. E. (1997). Black bream - 1996. Compiled by the Bay and Inlet Fisheries and Stock Assessment Group. Fisheries Victoria Assessment Report No. 14. Fisheries Victoria, East Melbourne.

Communication of Traditional Owner cultural values has begun around the shoreline of the Lakes in the past few years. Further work will be undertaken by GLaWAC and partners to increase communication and public interpretation of the cultural importance of the Lakes.

Fresh water flows, especially in late winter and spring, are important for breeding cycles of black bream, Australian bass and estuary perch and many other fish species. Anglers have expressed the need to achieve the best possible outcome from fresh water flows possible.

5. Monitoring the success of the plan's actions

Measuring the performance of the action undertaken in this recovery plan is important. This will be the role of the VFA and the Steering Committee that will oversee implementation of the plan.

The VFA has several independent fish stock and fishery monitoring programs in place that will be enhanced and applied to evaluate the success of this plan.

Key measures of success will include:

- Increased catch rates
- Increased fish size in catches
- Improved levels of angler satisfaction
- Increased fishing participation
- Increased economic return to Gippsland
- Improved angler stewardship of the Gippsland Lakes.
- Improved iconic species sustainability



The following studies will be applied to monitor the impact of this plan:

Recruitment monitoring

The abundance of many inshore fish species has been shown to vary depending on spawning success. In Victoria, this has been shown to be true for black bream, sand flathead, King George whiting and snapper. Annual monitoring of juvenile black bream abundance in the Gippsland Lakes has been undertaken by VFA since 2010 and will continue for the foreseeable future. This provides the ability to measure relative year class strength through time, and the ability to predict what catch rates will be once the juveniles recruit to the fishery (at the recreational legal minimum size).

Juvenile black bream monitoring indicates that the fishery in the Gippsland Lakes is expected to improve in the coming years due to stronger year classes detected in 2017, 2018 and 2019 (Figure 1) that will enter the fishery. Black bream take, on average, 6 years to reach the legal minimum size of 28cm. So we expect the timing of these year classes to influence the fishery to be as follows: the 2017 year class from 2023/24; the 2018 year class from 2024/25 and the 2019 year class from 2025/26.

The VFA will investigate the feasibilities of introducing annual recruitment surveys for dusky flathead and undertaking electronic tag movement monitoring of key species such as black bream, dusky flathead, King George whiting and tailor within the Gippsland Lakes. This monitoring would help build knowledge on movement patterns to provide better information when making future fisheries management decisions and deciding on habitat and stocking improvements.

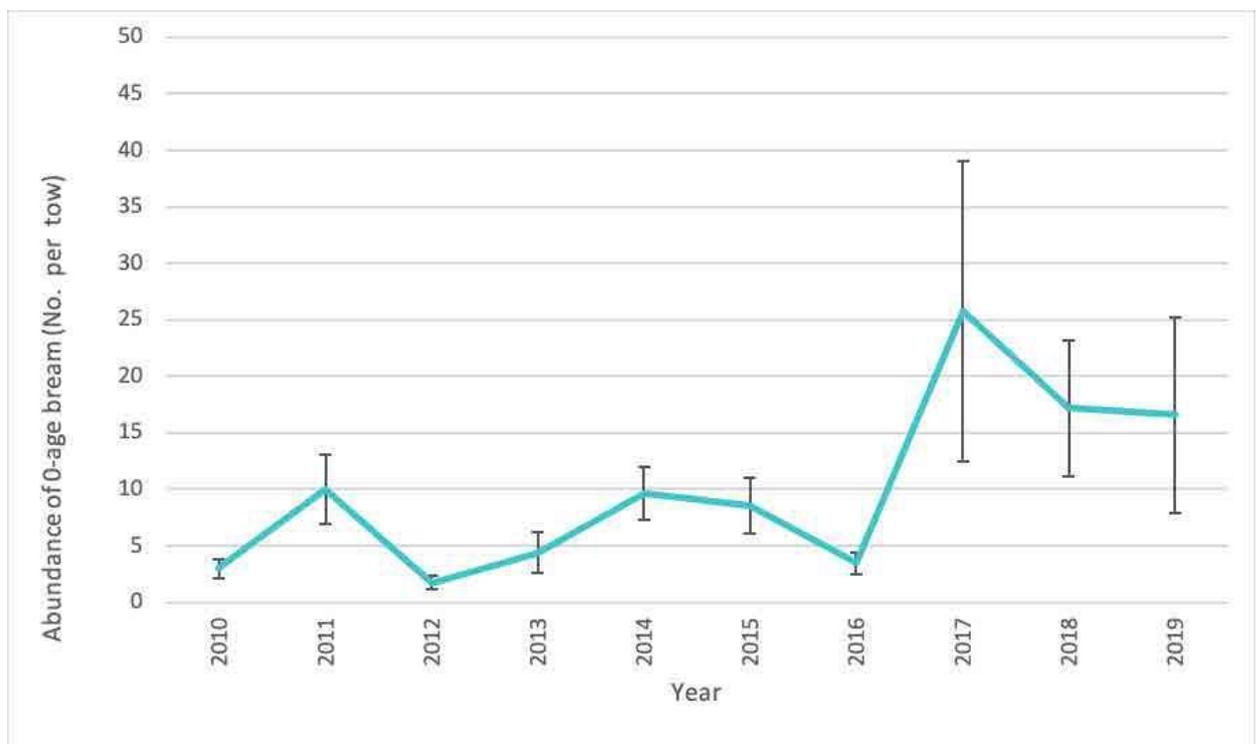


Figure 1. Juvenile black bream abundance in the Gippsland Lakes (mean \pm SE). Juvenile fish surveys comprise ~50 demersal trawl shots throughout the rivers and lakes of the system.

Creel surveys

Angler catch surveys (creel surveys) of recreational fishers have been undertaken in the Gippsland Lakes from 1979- 1983, 1996-2012 and 2015 to present. During these surveys, anglers are interviewed about their catches, fishing practices and socio-economic factors, including overall satisfaction with their fishing experiences. These surveys provide an index of catch rates and the size composition of the stock through time that can be used as a proxy for the abundance of target species (e.g. black bream). It also enables the effects of bag and size limit management strategies to be assessed.

For example, over the last three years (2017-2019) catch surveys were undertaken with just under 500 boat fishers soon after they had completed their fishing trips and returned to the boat ramp. Analysis of this data showed that if a 5 bream limit was it place the number of bream kept by these fishers would have been reduced by 18 %. Applying a slot limit of 28-38cm equates to a 12% reduction in recreational catch and this is preferred by the VFA at this time given the recent positive recruitment and significant reduction in overall fishing pressure from the early removal of commercial net fishing ahead of schedule.

Fishing activity over time is also monitored in conjunction with these creel surveys through counts of fishers and boat trailers at key fishing locations. As part of this plan this monitoring approach will be enhanced by installing camera- based systems to count boat launches at highly utilised boat ramps.



Angler diary program

The VFA has run an angler diary program in the Gippsland Lakes since 1998. In the program, local avid anglers record where and how they fish along with their catch, providing an additional time series of catch rate, and hence proxy for abundance. Additionally, a select group of angler diarists, with a strong fishery stewardship, termed "research anglers" fish in a structured fashion that involves returning to specific sites, using specific gears (i.e. a range of hook sizes and baits) that is designed to sample the entire black bream population. These research fishers record the lengths of all the fish they capture providing unbiased information on the size structure of the stock that can be used to inform mortality and the relative strength of the cohorts in the stock.

Future enhancements

GoFishVic application - The introduction of the VFA GoFishVic app, presents a new and innovative method for monitoring the Gippsland lakes recreational fishery into the future.

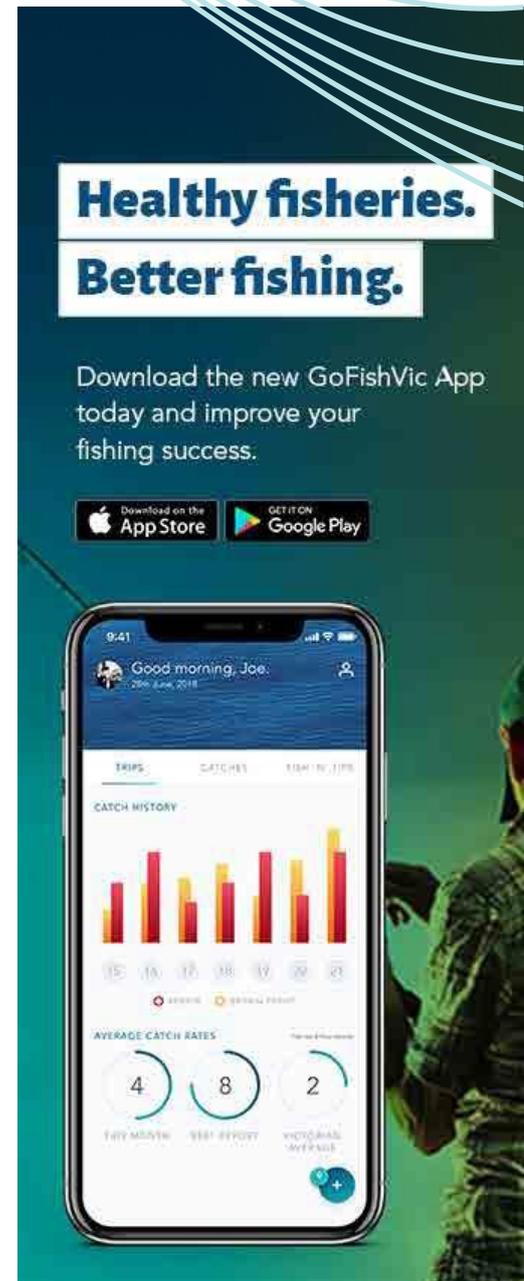
Under the Victorian Government's Target One Million Plan to improve recreational fishing, the Victorian Angler Diary Program is being expanded via creation of a smartphone app and the recruitment of avid anglers to record fishing data across the State's most popular waters, such as the Gippsland Lakes.

Angler diary smart phone 'apps' are being implemented worldwide and show promise as a cost-effective and angler engaging method of collecting valuable recreational fishing catch and effort data. Scientific studies have shown that smartphone app data can complement and supplement existing recreational fishery monitoring data such as from creel surveys.

The GoFishVic app is a digital revolution pitched at improving individuals fishing success and allowing them to contribute recreational fishing catch and effort data through citizen science, to better monitor recreational fishery performance, and assess fisheries management interventions.

It is hoped that these data can be used in conjunction with traditional recreational fishery data collection methods (e.g. creel surveys) in the development of harvest strategies for more transparent recreational fisheries management.

For more information about the GoFishVic app visit:
<https://vfa.vic.gov.au/recreational-fishing/gofishvic>



Healthy fisheries.
Better fishing.

Download the new GoFishVic App today and improve your fishing success.

Download on the App Store | GET IT ON Google Play



The smartphone screen shows the GoFishVic app interface. At the top, it says "Good morning, Joe." and "20th June 2018". Below that, there are tabs for "TRIPS", "CATCHES", and "TRIP HISTORY". The main section is titled "CATCH HISTORY" and features a bar chart with red and yellow bars representing catch data over time. Below the chart, there are three circular gauges labeled "AVERAGE CATCH RATES": "TRIP MONTH" with a value of 4, "TRIP EFFORT" with a value of 8, and "WATERWAY AVERAGE" with a value of 2. A blue plus sign icon is visible in the bottom right corner of the app screen.



Fisher satisfaction surveys

As part of this plan VRFish will undertake an online survey of Victorian recreational fishers every two years to measure changes to satisfaction levels by anglers fishing the Gippsland Lakes. These surveys will be of a broad group of fishers and will also be important in providing feedback on the actions implemented and gauge the level of stewardship for the Gippsland Lakes.

VRFish will undertake to work with GLaWAC to help understand the Traditional Owner fishing community satisfaction.

Social economic impact assessment

Prior to the end of this 5-year plan, the VFA will commission or undertake an economic impact assessment of recreational fishing in East Gippsland, including fisher-based tourism and visitation. This will also be covered in the upcoming Recreational Fishing Tourism Plan, which is a key Target One Million Phase II commitment to be led by Visit Victoria in partnership with the VFA.

6. Evaluation of the plan's processes

The implementation of this plan will be monitored annually by the VFA and the Steering Committee and include a formal review and report each year. The plan will also be formally reviewed after 5 years in consultation with recreational fishery stakeholders and the public.





