



Snobs Creek Advisory Board

Snobs Creek Annual Report 2019



Target One Million
More Victorians fishing, more often

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Aboriginal acknowledgement

The Victorian Government proudly acknowledges Victoria's Aboriginal community and their rich culture and pays respect to their Elders past, present and future.

We acknowledge Aboriginal people as Australia's first peoples, and as the Traditional Owners and custodians of the land on which we work and live.

We recognise the strength of Aboriginal people, Traditional Owners and their communities, and value the ongoing contribution of Aboriginal people to Victorian life, through their daily work, their application of Aboriginal knowledge and practice, and at key events; we recognise how this enriches us all.

We recognise that Aboriginal cultures and communities are diverse, and should be celebrated.

We acknowledge that the land and water is of spiritual, cultural and economic importance to Aboriginal people. We embrace the spirit of reconciliation, guaranteeing equality of outcomes and ensuring an equal voice.

We have distinct legislative obligations to Victorian Traditional Owner groups, related to cultural and natural heritage, that are paramount in our responsibilities in managing Victoria's resources in partnership with Traditional Owners.

A year in review - a message from our Advisory Board Chair



"On behalf of the Snobs Creek Advisory Board and staff, it is with great pleasure that I provide you with this Annual Report for the Snobs Creek Hatchery."

Snobs Creek has once again operated to its full capacity in producing yet another record-breaking year of production. Together with purchases of fish from other production facilities, the Snobs Creek team have also stocked a record number of fish into Victorian waterways; providing every day Victorian families with fantastic opportunities to go fishing. Many new waters have been stocked this year, particularly metropolitan lakes with native fish species; delivering on one of the state government's commitments to get more people fishing more often.

In September 2018, the Advisory Board prepared a fish production and stocking plan which provides a high-level strategic vision, including key goals and priorities for fish production and stocking at Snobs Creek Hatchery for the next decade. The Plan aims to secure the supply of stocked fish and guide investment in fish production and stocking, ensuring that all fish stocked in Victorian waterways are grown in Victoria. The plan also includes a major new effort to bring back Macquarie perch and trout cod fisheries and also contributed to the Victorian Government recognising that a new native fish hatchery will be needed in the

future to secure the supply of increasingly popular target species as well as to assist rebuilding threatened species. Our Board was extremely pleased to see a commitment made to build a \$7 million native fish hatchery near Shepperton.

This year also saw us bid farewell to our hatchery manager Steve Vidler. Steve has been instrumental in improving native fish production to record levels, and has led the team during the most successful era of Snobs Creek history.

Congratulations to the entire Snobs Creek team on another great year and continued efforts in enabling more people to go fishing in more places, more often.

A handwritten signature in blue ink, likely belonging to David Kramer, the Chair of the Snobs Creek Advisory Board. The signature is stylized and cursive.

David Kramer
Chair – Snobs Creek Advisory Board

Message from our Chief Executive Officer



"I am proud to present the Snobs Creek annual report in 2018-19. The Snobs Creek hatchery is an outstanding facility with a dedicated, and hard-working team who continue to deliver fish stocking and production outcomes."

This report tells the story of one part of the Victorian Fisheries Authority which operates to improve fishing outcomes across Victoria. This is achieved in many ways, from the production of fish at the Snobs Creek facility and stocking of world class Victorian waterways, to involvement in community events such as our Vic Fish Kids program. Our goal is to stock more fish into more Victorian waters than ever before.

The Snobs Creek hatchery team continue to push boundaries and strive for excellence in how we operate and are committed to developing innovative production methods that will allow the Victorian Fisheries Authority to deliver on its ambitious fish

stocking targets for years to come. In short, we aim to increase our overall production numbers without reducing the quality of the fish we stock.

It's an exciting time at the Victorian Fisheries Authority and I would like to acknowledge and thank the Snobs Creek team for all their hard work over the past year.

A handwritten signature in black ink, appearing to read 'Travis Dowling'.

Travis Dowling
CEO, Victorian Fisheries Authority

Future directions

Over 2019-20 we will:

- ✓ Continue to work with the Future Fish Foundation, VRFish, the Australian Trout Foundation, Native Fish Australia and other recreational fishing stakeholder groups to continue to improve stocking outcomes.
- ✓ Upgrade the staffing complex and visitation amenities at Snobs as a priority.
- ✓ Seek funding for infrastructure improvements to the trout brood pond area to safeguard fish supply into the future.
- ✓ Actively seek out new waterways to expand stocking outputs as we move towards the ambitious target of stocking 10 million fish by 2022.
- ✓ Build on our safety culture at the Snobs Creek hatchery and ensure staff safety is always put first.
- ✓ Continue to drive improvement and build on best practice principles.
- ✓ Increase data collection to provide insights into Snobs Creek operations.

Meet the Snobs Creek Advisory Board

"Our advisory board is made up of people drawn from business, government, and the fishing industry who bring executive expertise to the table. Their role is to provide strategic advice on the efficiency of fish production and stocking operations into the future. Passionate about recreational fishing, our board members are committed to ensuring all Victorians enjoy great fishing now and for years to come."

David Kramer – Chair, Snobs Creek Advisory Board



David Kramer - Chair

David works in the recreational fishing industry as General Manager of two of Australia's largest fishing tackle stores. A Director of the Futurefish Foundation since 2006, David also hosts a weekly recreational fishing television program in Melbourne.

David has previously held roles on the Victorian Government Fisheries Co-Management Council, Fisheries Revenue Allocation Committee and Statewide Fisheries Roundtable, and has extensive experience in fisheries management and policy development.



Anthony Forster

Anthony has worked for the Victorian Fisheries Authority (formerly Fisheries Victoria) for twenty-two years and currently manages the Victorian Fisheries Authority's Inland Fisheries program. Majoring in aquaculture, Anthony graduated from Tasmania University in 1986 and worked for almost a decade as one of the pioneering trout and salmon farm managers on the south east coast of Tasmania.

He then went on to work as a fisheries consultant to Victoria's trout farming sector before joining Western Australian Fisheries as an Aquaculture Extension Officer. During this time, he helped develop WA's burgeoning abalone farming sector. Anthony joined Fisheries Victoria in 1996 as an Aquaculture Development Officer. Since then, he has managed the VFA's Aquaculture Program, Snobs Creek Hatchery, and delivered a long-list of significant recreational and aquaculture projects.

Anthony is a passionate recreational fisher who draws on his love of fishing to inspire his work with the VFA.



Barbara Power

Barbara has had a long and successful career as an international research scientist working on cancer treatments with CSIRO, The University of Melbourne, and international companies. She is currently Director of her own Cheesemaking company, PowerHouse Cheese.

Barbara is a Graduate Member of AICD (Australian Institute of Company Directors), and has been guiding several organisations in governance and compliance over the last few years.

Her previous board memberships include:

- Board member at Patrys Limited (2007-2010), an International antibody development company for cancer treatment;
- Secretary at Stem Cells Australia (2013-2017), an Australian-wide research consortium;
- Director at AntiboZ (2007-2013), scientific consultants and International conference organisers;
- Board member at Go Girls Foundation (2016-2018), a non-for-profit organisation to help disadvantaged women.

Barbara is also a keen angler who has travelled around the world chasing different fresh and salt water species. She is passionate about ensuring the recreational fishing opportunities she enjoyed as a child continue to be available to young people today and in the future.



Dr Cleola Anderiesz

Cleola is the General Manager of Service Development and Clinical Practice at Cancer Australia - the Australian Government's national cancer agency. She is an experienced senior executive who has worked across the academic, not-for-profit, and public sectors.

Cleola joined the Australian Government in 2006, and has held a range of national leadership roles in research, clinical trials, knowledge management, and service development and has held a number of positions on state, national and international committees.

Cleola holds a Bachelors Degree in Science with Honours, a PhD in Medicine, a Graduate Certificate in Health Economics, a Senior Executive MBA, and is a graduate of the Australian Institute of Company Directors.

Cleola is a passionate recreational angler with over 30 years fishing in Victoria's marine and freshwater fisheries. She is an avid fly fisher and has great respect for the social, cultural and economic benefits of recreational fishing.



Brian Mottram

Brian has worked for the Victorian Fisheries Authority (formerly Fisheries Victoria) for thirteen years and currently manages the Recreational Fishing Improvements division. After studying Agricultural Science at Longerenong, Brian began his career in farm retail sales before stepping up to the role of Senior Agronomist at Tasco Rural in 1994. Three years later, he joined the Victorian Department of Primary Industries and has since spent the last two decades working within government in various management and executive roles in agricultural, environmental and fisheries project planning and implementation.

During Brian's time with the Department he has continued to engage in learning opportunities covering project management, executive training and a Graduate Diploma in Sustainable Agriculture with Charles Sturt University.

Brian brings a wealth of diverse expertise including, stakeholder relations and engagement experience, and high-level project management skills to the Snobs Creek Advisory Board. He is a calm and effective leader, and a strategic thinker with proven experience administering multi-faceted, complex projects that improve recreational fishing opportunities.



Rob Loats

Rob is a primary production business manager from rural Victoria. He has extensive knowledge of natural resource and water management legislation, and decades of experience working with government and non-government agencies to represent the needs of local, regional, and state based anglers.

Rob has provided long-term representation for his local club as president and secretary, long term representation of two local angling associations as president and is a past member of the state Fisheries Co-Management Council. He is a current member of the Recreational Fishing Licence Working Group, the Murray Darling Basin Murray Cod Fishery Advisory Group, the North Central Catchment Management Authority Natural Resource Management Committee and is the regional representative at both the North West and South West Victoria Fish Stock and Cons meetings.

He is a current member of the DELWP Riparian Advisory Group and Life Member of the Mid Northern and Wimmera Angling Associations and Donald Angling Club. Rob's efforts have also earned him the National Mal Ramsay Lifetime Achievement Award 2012.

Program Manager – Snobs Creek

Board position vacant.

Welcome to Snobs Creek Hatchery

"Our mission is simple: to rear and stock native and salmonid fish in the most effective way possible to improve recreational fishing opportunities for all Victorians."

Brian Mottram, Director - Recreational Programs, Victorian Fisheries Authority.



Snobs Creek Hatchery is a freshwater fish production facility that was established in 1948 that is owned by the State Government and managed by the Victorian Fisheries Authority. Today, we continue to develop and implement the latest expertise and technology to produce native and salmonid fish that are stocked in over 200 locations across the state.

Located in north east Victoria alongside Snobs Creek, the site was originally chosen because the cool, clean water of the creek, and gradient of the landscape ensured a constant flow of water through the system without pumping. Over the past 70 years, the site infrastructure has changed significantly, new equipment has been installed, and advances in technology and techniques have allowed us to draw water from the Goulburn River (when needed) and increase our production capacity.

Snobs Creek has two hatcheries onsite – a native fish hatchery and a salmonid hatchery. In our native hatchery, we successfully breed Murray cod, Macquarie perch, and trout cod. We are continually researching ways to improve breeding native freshwater fish species. In our salmonid hatchery, we successfully breed rainbow trout, brown trout, and Chinook salmon.

Every year, we stock fish from the Snobs Creek Hatchery into many of Victoria's inland lakes, impoundments, and rivers to support the conservation of threatened species and to improve recreational fishing opportunities. The direction of annual stockings is informed with input from key stakeholders and representative angler groups. These groups include the Victorian Fisheries Authority, Victorian Recreational Fishing body (VR Fish), the Australian Trout Foundation (ATF), Native Fish Australia (NFA), Water Management Authorities, Catchment Management Authorities (CMAs), Department of Environment, Land, Water and Planning Primary Industries (DELWP), other Recreational Fisher Groups and Local Government shires.



We also run annual open days at Snobs Creek and Fishing Festivals to show anglers and their families where licence fees go and how we're working hard to provide them with more fishing opportunities.

Snobs Creek has a legacy of innovation and success. From pioneering native fish breeding techniques, to bringing endangered species back from the brink of extinction, we pride ourselves on being at the forefront of improving Victoria's freshwater fisheries. This year, in March 2019, for the second year in a row, we had yet another big reason to celebrate! ... we managed to smash our stocking record by stocking 6.9 million fish over the last 12 months. We will continue to build on the success of this year's result as we deliver on the State Government's Target One Million commitment to stock 6 million fish in the 2020 financial year.

This year was a particularly challenging time for staff at Snobs Creek with several key team members taking up other opportunities throughout the year. Thanks to the dedicated and talented team these vacancies had limited impact on production and stocking in 2019. With production already underway for the 2020 stocking year, the future looks bright for Snobs Creek.

Fish stocking targets in 2018-19

"Guided by our strategic plan and the Snobs Creek Advisory Board team, we have continued to deliver on our commitments in 2018-19. In 2020 we will continue to expand our data collection, allowing for more robust reporting as we continue to move towards the ambitious target of stocking 10 million fish by 2022. Here are some of the highlights we're celebrating in 2019."

Brian Mottram, Director - Recreational Programs, Victorian Fisheries Authority.

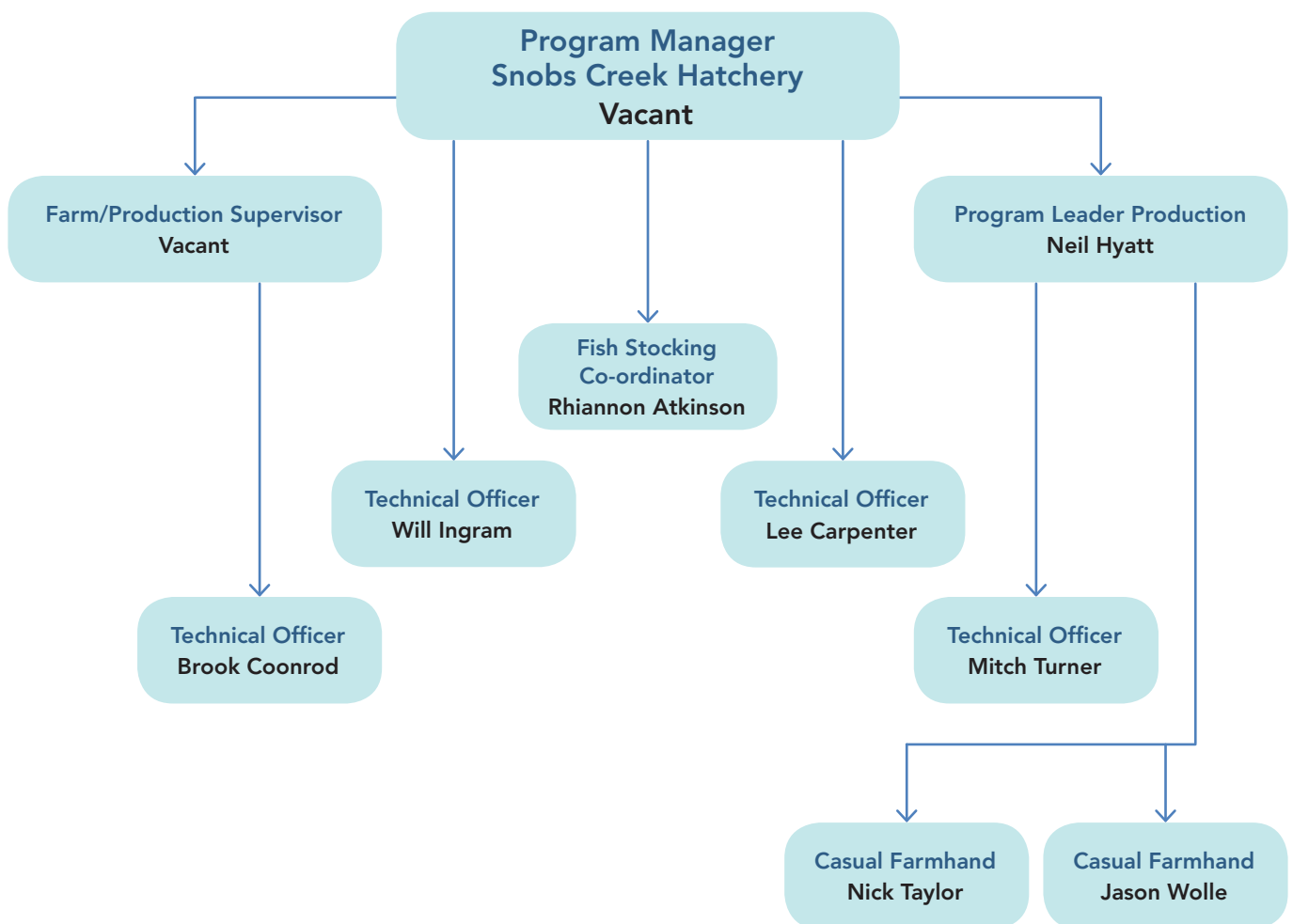
Stocking target	Result	Account
Stock 5 million fish	Over 6.9 million fish stocked	This outstanding achievement was a result of several environmental and economic factors including improved production conditions at Snobs Creek, and increased survival in the grow out phase.
Stock 212 waterways in Victoria	219 waterways in Victoria	We are continually reviewing new locations for stocking and expect the number of waterways to again grow in 2019/20.
Stock 861,150 salmonids in Victorian waters in 2018/19	1,022,400 salmonids stocked	Increased waterways and events provided an opportunity to increase salmonid stocking after a favourable production season.
Stock 4,120,000 native fish into Victorian waters in 2018/19	5,974,816 native fish stocked	Good conditions for rearing native fish in Victoria and New South Wales led to increased availability of native fish. As a result, we smashed our native fish stocking target by 1,896,716.



The team

"Over the past two years Snobs Creek has experienced great conditions for rearing fish. As a result, the Snobs Creek team produced record numbers of native and salmonid fish. What we know is that no two year's conditions are the same and when conditions change, we have a dedicated team that use best practice principles to achieve successful fish production outcomes."

Brian Mottram, Director - Recreational Programs, Victorian Fisheries Authority.



Vacant, Program Manager

Neil Hyatt, Program Leader



Neil has been working at Snobs Creek for more than 15 years and leads salmonid production at the hatchery. Neil has decades of experience within the Australian aquaculture industry with various species including everything from Australian bass to abalone, and a stand out career in the salmonid field.

Neil has stepped up during the second half of 2019 as acting Program Manager at Snobs Creek, during which time he has provided leadership to the team.

Vacant, Farm Supervisor – Native Fish

Rhiannon Atkinson, Fish Stocking Coordinator



Rhiannon joined the Snobs team in June 2019 and has a degree in Catchment and Land Management, Environmental Science (Marine Biology), and Environmental Science (Honours). Rhiannon has experience in freshwater and marine science, both within the laboratory and out in the field, where she focused on understanding the importance behind habitat on fish assemblages for her honours project. She has already drawn on her prior experience to hit the ground running with the management of the logistics of stocking millions of fish across the state.



Will Ingram, Technical Officer

Will has been with us for just over 24 months and is a key member of the production and stocking team. When he's not diligently tending to our native and salmonid fish or assisting in stocking deliveries, he's taking great snaps of all our operations to be shared on social media with all our fishers.



Lee Carpenter, Technical Officer

Lee has extensive fish farming experience, particularly in the local area where he managed the Eildon Trout Farm for well over a decade. Lee is an exceptionally competent aquaculture professional and brings significant expertise to the role.



Mitchel Turner, Technical Officer

Mitch has been with the VFA for over a year following his completion of a Bachelor of Science (with a double major in marine science) at the University of Newcastle. During his studies, Mitch worked as the Assistant Manager at Taylor Made Fish Farms. We're delighted to have him on board and believe his academic and practical experience is an asset to the team.



Nick Taylor, Farm Hand

Nick has been with us for over ten years. A plumber by trade, he has great practical ability and knows the farming operations at Snobs Creek like the back of his hand. He leads essential weekend duties and assists with every aspect of production in both the salmonid and native fish hatcheries. Nick is a great operator and a go to for getting things on the ground done.



Jason Wolle, Farm Hand

Originally from Alaska, Jason spent seven years researching wild salmon for the Alaskan Department of Fish & Game before moving to Australia in 2010. Jason joined us in 2015 and brings a wealth of fisheries knowledge to his role of overseeing native fish and salmonid production. A positive and enthusiastic member of the team, Jason is always happy to help wherever he is needed in the hatchery.



Defining success at Snobs Creek

"This year, we have continued to deliver on the vision set by the Snobs Creek Advisory Board in the Snobs Creek Fish Production and Stocking Plan. Importantly we continue to improve our processes and grow robust and healthy fish"

Brian Mottram, Director - Recreational Programs, Victorian Fisheries Authority.

Exceeding on the Victorian Government's *Target One Million* stocking commitment by an additional 1.9 million fish

Target One Million is a Victorian State Government initiative that aims to grow participation to one million anglers by 2020. As part of this initiative, the State Government committed to increasing fish stocking to 10 million fish per year by 2022.

This season (2018-19), the Snobs Creek Hatchery stocked more than 6.9 million fish. Below is a breakdown of what we stocked.

Salmonid Fish 2018 Species and Region Breakdown

Species	Barwon South West	Gippsland	Grampians	Hume	Loddon Mallee	Port Phillip	Grand Total
Brown trout	84,934	14,500	74,665	87,529	239,349	5,000	505,977
Chinook Salmon	76,346						76,346
Rainbow trout	112,425	33,600	108,846	96,104	50,500	38,602	440,077
Salmonids total	273,705	48,100	183,511	183,633	289,849	43,602	1,022,400

Native Fish 2018-19 Species and Farm Breakdown

Species	Barwon South West	Gippsland	Grampians	Hume	Loddon Mallee	Port Phillip	Grand Total
Australian bass	5,000	286,875					291,875
Estuary perch	75,000	67,500				133,000	275,500
Golden perch	300,000		450,000	1,128,986	1,350,400	5,200	3,234,586
Macquarie perch				7,510			7,510
Murray cod	300,020		90,343	925,751	537,394	50	1,853,558
Silver perch			40,000	33,090	186,400	18,000	277,490
Trout cod				34,297			34,297
Natives total	680,020	354,375	580,343	2,129,634	2,074,194	156,250	5,974,816

In the last year, more than one million trout and salmon were released alongside nearly six million native fish such as Murray cod (1.8 million), golden perch (3.2 million), Australian bass (291,875), silver perch (277,490) and Trout cod (34,297).

The majority of the trout and Murray cod were grown at our Snobs Creek Hatchery, near Eildon, which is funded by fishing licence fees and Target One Million.

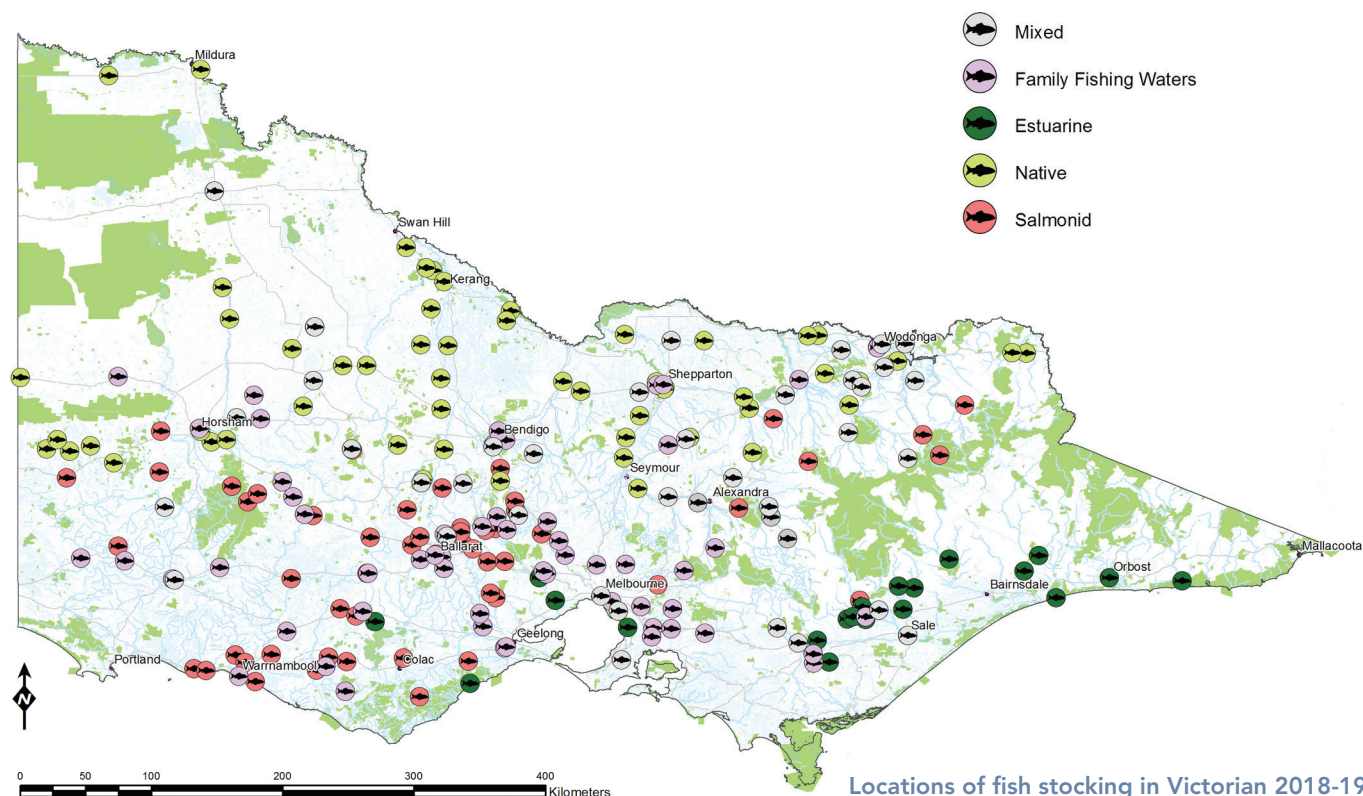
Lakes Eildon (60,087), Hume (60,025), Purrumbete (58,571), Wendouree (23,650) and Tullaroop Reservoir (45,000) received 247,333 trout and salmon, most of which were one-year-old fish.

Over five million Murray cod and golden perch fingerlings, only a few months old and averaging one gram each, were stocked into lakes and reservoirs such as Eildon (730,780), Hume (256,000) and Eppalock (328,282), Rocklands (600,020) and Cairn Curran (260,444) reservoirs, and Gunbower Creek (120,000).



We also stocked many other lakes and waterways across Victoria in 2018-19 and the map below illustrates the breadth of locations stocked by Snobs Creek hatchery.

For a full list of fisheries stocked in 2018-19, please visit: <https://vfa.vic.gov.au/db>



Improving infrastructure and safety at Snobs Creek Hatchery

The health and wellbeing of all staff and the public is at the forefront of everything we do at the VFA. A safety audit was conducted this year which identified priority projects to improve safety at the Snobs Creek Hatchery and ensured staff have the necessary skills to perform their jobs safely.



Raceway and pond improvements

In line with the recommendations of the Snobs Creek Safety Audit, fifteen new aluminium ladders have been installed and will allow staff to safely enter and exit from all raceways and ponds, removing the need for staff to physically shift ladders between raceways.

Infrastructure

Planning is well underway for an upgrade to the Snobs Creek staffing complex. The VFA has engaged architects for the development of a concept plan with technical schematic design on track to be complete in 2019-20.

Native fish building fire system improvements

The existing fire system in the native fish which consisted of a fire hydrant and hose reel in the building and two fire hydrants around the outside of

the building were not compliant with fire standards because they did not discharge enough water. The previous system was removed, a new hydrant and hose reel were installed, and the fire system was connected to the main building system (which has electric and diesel booster pumps).

Stocking vehicle improvements

New easy to manoeuvre portable ladders allow staff to safely and easily climb aboard our stocking vehicles. Each year Snobs Creek staff spend over 470 cumulative days on the road in stocking vehicles. These upgrades are an important part of improving the everyday wellbeing and safety of staff.

Staff Training

All Snobs Creek staff have now completed a 4WD driver training course which increased staff knowledge on 4WD fundamental skills.

Delivering fish and harnessing the passion of our community

Over the past 12 months, our Snobs Creek team have spent a total of 470 person days on the road and travelled 208,305 kilometres stocking fish.



We know our efforts are appreciated by many anglers because of the positive feedback we get and the help we often receive releasing fish on stocking days.



While we don't have official data, we estimate that clubs, volunteers, and stakeholder groups have given up thousands of volunteer hours this financial year to help us stock fish to improve recreational fishing opportunities.

The following is a list of just some of the folks who've helped us this year.

Ballarat District Anglers Association, Bemm River Angling Club, Calder Fly Fishing Association, Camperdown Angling Club, Cann River Angling Club, Casterton Angling Society, Corryong Angling Club, Derrinallum Anglers Club, Heyfield & District Angling Club, Kiewa Valley Fishing Club, Knox Boat Fishing Club, Lake Purrumbete Angling Club, Lake Tyers Beach Angling Club, Lismore Angling Club, Mallacoota District Angling Club, Mansfield & District Flyfishers Club, Maryborough Angling club, Midland & North Central Angling Association, Nathalia Angling Club, Northern Metro Sport Fishing Club, Sea Lake Angling Club, Skipton Angling Club, Strathbogie-Euroa Angling Club, Sunshine Fly Casting Club, Tatong Anglers Group, Yarra Valley Fly Fishers



Producing fish at Snobs Creek, including a record number of native fish this year

In 2018/19, a record 6.9 million fish were stocked across Victoria, of which 1.9 million were grown at Snobs Creek hatchery and the remainder purchased from private fish hatcheries, mainly in New South Wales.

Here, we'll summarise the breeding cycle of salmonid and native fish before discussing what we're doing to secure fish production and supply in the future.

Salmon breeding cycle and production summary

The salmonid breeding season at Snobs Creek generally lasts for about 12 weeks over autumn and winter.

Female and male rainbow and brown trout broodstock are selected, sedated (with an approved, plant-based derivative), and handled carefully to harvest eggs and milt (sperm) from the fish. After eggs and milt have been removed, they are returned to holding tanks to recover before they are released as ex-brood stocked into lakes or impoundments.

With Chinook salmon, the females and males are euthanised and the eggs removed from the body cavity and then fertilised with male broodstock milt. We euthanise Chinook salmon because their condition deteriorates rapidly after spawning and they will die – this is a function of their biology and something that occurs naturally in the wild too.

The fertilised eggs are quickly placed in incubator jars and supplied with temperature controlled water (<10°C).



It takes about 4-6 weeks for salmonid eggs to hatch, and another 4-6 weeks for the alevins (baby salmonid fish) to exhaust the contents of their yolk sac and move onto artificial feeds.

Stockings of newly bred Chinook salmon will begin as early as November into the crater lakes (Purumbete and Bullen Merri) of the western districts. Similarly, with trout, some stockings occur as early as October within the same year of breeding. However, most salmonid stockings occur in May in the following year when the fingerlings reach an average weight of around 30 grams. Therefore, for the purposes of this publication that focuses on reporting activities within the financial year 2018-19, we will be reporting on fish produced in the 2018 breeding season.

We produce the majority of all the salmonids that we stock at the Snobs Creeks facility, with only a small proportion of what we stock sourced from other hatcheries.

For the 2018 salmonid production season, we have the following production information on hand.

Salmonid production data 2018

	Brown trout	Rainbow trout	Chinook Salmon
Female brood stock	610	570	119
Male brood stock	98	64	92
Eggs	812,005	724,167	208,074
Fingerlings produced & used for stocking	505,976	440,277	76,346



Native fish breeding cycle and production summary

At the Snobs Creek hatchery, the core native species produced are Murray cod followed by Macquarie perch and trout cod. The native fish breeding season at Snobs Creek commences in October when on-site brood pond water temperatures increase.

Trout cod typically spawn first, followed by Macquarie perch, and finally Murray cod in December.

Native fish have different spawning strategies relative to each other that we consider when developing our captive breeding program.

While we do have occasional natural spawning occur in trout cod in our brood ponds, most of the trout cod, and all Macquarie perch, are bred artificially using hormone induction techniques.

After fertilisation, the eggs are moved to incubators that differ depending on the species. Trout cod produce large adhesive eggs that attach to screens and are incubated and provided with a constant flow of well aerated water in Ewos troughs. Macquarie perch produce semi-demersal, non-sticky eggs that are incubated in Macdonald Jars. These jars are designed for well aerated water to be injected in a way that

causes the perch eggs to continually roll and tumble – something that's required to keep them clean and free from fungal infection.

It takes about 5-10 days for trout cod and Macquarie perch eggs to hatch. It then takes another 3-5 days for Macquarie perch, and 10-15 days for trout cod, to exhaust their yolk sacs and start eating live feed. Both species feed on *Artemia* nauplii – also known as sea monkeys.

The little hatchlings are then moved to earthen ponds that have been fertilised to encourage plankton blooms. The hatchlings then spend around between 4-10 weeks feeding on cladocerans, copepods, and chironomids before being recovered when they're around 70mm in length and used for stocking.

All our Murray cod are bred using natural spawning methods. This involves putting nesting boxes (made to imitate the structure of the hollow old snags Murray cod use in the wild) in brood ponds (one box per pair) and collecting the eggs for incubation in the hatchery. Like trout cod and Macquarie perch, Murray Cod hatchlings feed on *Artemia* nauplii and are transferred to plankton ponds to grow out to a stocking size of around 70mm.



Unlike salmonids, native fish stocking starts within the same breeding year and ceases at the end of summer in the next year. Therefore, for the purposes of this publication that focuses on reporting activities within the financial year 2018-19, we will be reporting on fish produced in the 2018/19 breeding season. In total, we produced 895,315 native fish – a record for Snobs Creek.

Native fish production data 2018-19

	Trout cod	Murray cod	Macquarie perch	Additional information
Spawned broodfish	6	41	14	Macquarie perch females came from Dartmouth and the Yarra River
Eggs	36,900	975,500	121,000	
Larvae purchased from private supplier		100,000		
Fingerlings produced at Snobs and used for stocking	34,297	853,508	7,510	

Securing fish supply in the future

Snobs Creek hatchery is currently operating at full capacity, and we are experiencing challenges securing the supply of native fish from private hatcheries because of increased demand from overseas buyers. This situation is a risk to creating great inland fisheries and rebuilding threatened species.

In response to this risk, the Snobs Creek Advisory Board has produced a Inland Fish Production and Stocking Plan. This plan provides a high-level, strategic vision of fish production and stocking for the next decade.

In 2018 the State Government committed \$7 million to build a new native fish hatchery in northern Victoria as part of its Target One Million plan to get more people fishing, more often. The hatchery project involves a range of key steps including; groundwater investigation, site selection, hatchery design and costings, business-case, site acquisition, hatchery construction and commissioning. The Snobs Creek Board are proud to provide advice and feedback on the project as part of the Northern Native Fish Hatchery Project Reference Group.



Creating new recreational fishing opportunities – success stories in 2018-19

Over the last 12 months we have stocked over 6.9 million fish to create some great fisheries in Victoria. Here, we'd like to share some case studies and celebrate some of the highlights.

Quarry Lake, Ferntree Gully – June 2019

Ferntree Gully is a suburb of Melbourne at the foothills of the Dandenong Ranges, located 32 kilometres east of Melbourne's Central Business District with a population of around 27,000 people.

For over 100 years the site was used as a rock quarry with operations ceasing in 1996. The quarry remained unused until its rehabilitation by Knox City Council as a parkland with open fields and walkways, which provide great access to the 11-metre deep lake.

On 12 June, in a Victorian first the Victorian Fisheries Authority stocked Quarry Lake with hundreds of catchable size rainbow trout, Murray cod and golden perch. The instant fishery will allow tourists and families alike to come down, cast in a line and have a good chance at landing a fish year round.

Australian bass fingerlings will be released in December when they become seasonally available from the hatchery.



Barkers Creek Reservoir – April 2019

Barkers Creek Reservoir is located 30 kilometres from Bendigo and is popular with local anglers looking to try their luck at catching a rainbow trout. As part of the State Government's Target One Million Phase 2 initiative designed to get more Victorians fishing, more often, the reservoir was opened to canoes and kayaks with electric motors.

For the first time, Snobs Creek staff stocked Barkers Creek Reservoir with 30,000 golden perch in March 2019, with a further 200 on-grown Murray cod stocked in April 2019.

We plan to stock more natives next season and will continue to stock trout through the winter, creating an exciting year-round fishery for trout in winter and native fish in summer.



Willow Lake – April 2019

Willow Lake is located in the heart of Hopetoun, approximately 400 kilometres north-west of Melbourne in the Southern Mallee region. Willow Lake was created using the shell of the decommissioned town water reservoir and is being maintained with piped water from Lake Lascelles. Willow Lake features two new 9-metre fishing platforms and picnic facilities, perfect for families to spend quality time together.

In April 2019, Willow Lake was opened for recreational use and Victorian Fisheries Authority staff were joined by local school children who helped with the inaugural stocking, bucketing 20,000 golden perch fingerlings into the lake's margins.

The new fishery was created thanks to the hard work of the Lake Lascelles/Corrong Committee of Management, the Hopetoun Angling Club, the Hopetoun Ski Club and Yarriambiack Shire Council.



Snobs Creek Hatchery Financial Report 2018-19

The operation of the hatchery at Snobs creek and the purchase and delivery of all fish across the state is funded from a combination of state government revenue and funds raised from the sale of recreational fishing licences.

The table below summarises the key areas where funds are spent and the revenue sources.

Expenditure type	RFL Trust Account	State Revenue	Total
Fish Purchases	\$1,664,672	\$298,843	\$1,963,515
Employee and Salary related expenses	\$280,834	\$419,101	\$699,935
Hatchery Operating Costs (Rent, Maintenance)		\$211,321	\$211,321
Agency Staff		\$134,093	\$134,093
Feedstock		\$146,209	\$146,209
Laboratory, Farm & Livestock Expenses - Misc	\$3,400	\$10,914	\$14,314
Contractors	\$20,575	\$73,353	\$93,928
Farm Inventory & Supplies		\$96,235	\$96,235
Vehicle Costs (Registration, Insurance, Fuel, Tolls, maintenance and Repair)	\$1,248	\$24,219	\$25,467
Communications	\$20,194	\$1,898	\$22,092
Asset < \$5,000		\$10,981	\$10,981
Consultation Services	\$100,000		\$100,000
Total	\$2,090,923	\$1,427,167	\$3,518,090

Note: The total 2018-19 operational expenditure for Snobs Creek came in under the \$3.6 million budget set by the VFA.



*"Our vision is to make fishing in Victoria
better tomorrow than it is today."*

Travis Dowling,
CEO, Victorian Fisheries Authority



Target One Million
More Victorians fishing, more often

vfa.vic.gov.au