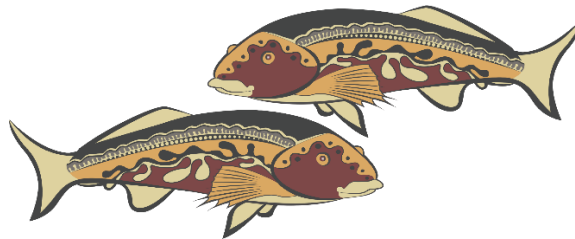


# **Maintaining cultural practices and building knowledge and capacity to support sustainable fishing of the Gynburra on Narungga Sea Country**



**Southern Fishery and Ecosystem Solutions**

**Wiri Miya Aboriginal Corporation**

**August 2023**

**FRDC Project No 2021/050**

## Maintaining cultural practices and building knowledge and capacity to support sustainable fishing of the Gynburra on Narungga Sea Country

2021/050

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In submitting this report, the researcher has agreed to FRDC publishing this material in its edited form.

# Foreword

Narungga people of Guuranda (Yorke Peninsula) are known as the Butterfish mob. To the best of our knowledge the Narungga are the only Australian Aboriginal people with an extensive history of having a single species of bony fish as their totemic marine animal of highest cultural importance. Storylines suggest Gynburra or butterfish was once a prolific species in shallow, inshore coastal waters. The species is now considered to be less abundant and even depleted in some areas. Gynburra grow to large sizes and modern accounts of these fish in the past century were reported through story during this project to be as large or larger than men. Gynburra has been taken by Narungga using traditional and modern spearfishing, fish trap and netting methods for a range of purposes and contexts for a long time. Some of the purposes for catching the fish include to provide food security, for ceremonies, for medicine, for sharing among kin and as a rite of passage and learning by young men, and more recently as the basis to celebrate during the cultural festival known as the Gynburra Festival during which the Clem Graham Memorial spearfishing competition takes place. Until recently there has been limited recording of information on the traditional take of Gynburra, which has been consistent with the lack of data on all fishing by Aboriginal people across southern Australia. There is no commercial market for the Gynburra in Australia. Notably, this species is not vulnerable to the hook and line gear types as it rarely takes baits. Exploitation in commercial and recreational fisheries is low and the species has only represented occasional bycatch during previous decades (prior to extensive netting closures) in large mesh gillnet and haul net gear types, which predominantly led to most of them being released. Aims of the project were to: i) Build knowledge and capacity in fisheries science and ecology techniques to support sustainable fishing of the Gynburra on Narungga Sea Country, ii) Use ecological information on the Gynburra to enhance and build self-management practices, demonstrate, and strengthen our cultural ownership by extending the findings to the broader community. This report lays the foundation for Narungga Elders and communities to continue with baseline monitoring and recording of the spearfishing catches and baited underwater video drops and to build a modern basis for understanding the status and important habitats that are needed to preserve the totemic fish that supports their cultural practices. Beneficiaries of this project include the Narungga people, other Aboriginal peoples, educators, the broader community, fishers, ecologists, governments, and their policy-makers.

# Contents

<b>Foreword</b> .....	<b>2</b>
<b>Contents</b> .....	<b>3</b>
<b>Acknowledgments</b> .....	<b>4</b>
<b>Executive Summary</b> .....	<b>5</b>
<b>Introduction</b> .....	<b>7</b>
Background .....	7
Need .....	8
<b>Objectives</b> .....	<b>9</b>
<b>Method</b> .....	<b>10</b>
Biological sampling and data collection at the Gynburra Festivals .....	10
Location of juvenile nursery areas .....	10
Development of information and extension for the festival and the Aboriginal school .....	11
Integrating the new science with the traditional cultural knowledge.....	11
<b>Results</b> .....	<b>13</b>
Biological sampling and data collection at the Gynburra Festivals .....	13
Location of juvenile nursery areas .....	15
Miri Gudlas Men’s Group .....	15
<b>Extension and Adoption</b> .....	<b>16</b>
A summary and links to media, communication and extension outputs .....	16
Development of information and extension for the festival and schools .....	16
Integrating the new science with the traditional cultural knowledge.....	17
<b>Discussion</b> .....	<b>18</b>
<b>Implications</b> .....	<b>19</b>
<b>Recommendations</b> .....	<b>19</b>
<b>Project Coverage</b> .....	<b>22</b>
<b>Project materials developed - images</b> .....	<b>25</b>

## Acknowledgments

We acknowledge the following people for supporting and contributing to this project: Djaran Goldsmith, Narungga Traditional Fisher, Jake Jones, Narungga Traditional Fisher, Allan Jones, Narungga Traditional Fisher, Blayne O'Loughlin, Narungga Traditional Fisher, Neville O'Loughlin, Narungga Traditional Fisher, Robbie Young, Narungga Traditional Fisher, Garry Goldsmith Snr, Narungga Traditional Fisher, Shannon Goldsmith, Narungga Traditional Fisher, Ben Huckstepp, photographer/videographer, Gynburra Fisher, Cyril Kartinyeri, Narungga Elder, Narungga Traditional Fisher, Miri Gudlas Men's Group, Douglas Milera, Narungga Elder, Narungga Traditional Fisher, Miri Gudlas Mens Group, Klynton Wanganeen, Narungga Elder, Narungga Traditional Fisher, Miri Gudlas Men's Group, Henry Humes, Narungga Traditional Fisher, Miri Gudlas Mens Group, Josh Baker Narungga Traditional Fisher, Miri Gudlas Men's Group, Gino Iliuano, Miri Gudlas Men's Group, Paul Stockley, Miri Gudlas Men's Group, Andrew Hall, Miri Gudlas Men's Group, Joshua Smith, Narungga Traditional Fisher, PIRSA Fisheries, Tom Rundle, PIRSA Fisheries, Darcy Scherger, PIRSA Fisheries, Nicole Newstead, PIRSA Fisheries, Aaron Jakaitis, PIRSA Fisheries, Joshua Smith, Narungga Traditional Fisher, PIRSA Fisheries, Caroline Dean – Department for Education, Lisa Perre – Department for Education, Professor Kaye Price – Department for Education. We recognise the level of positive cooperation and support by state government agencies (PIRSA and Landscape SA) that has been taking place at the Gynburra festivals.

## Executive Summary

- This project was completed by Southern Fishery and Ecosystem Solutions and Wiri Miya Aboriginal Corporation in conjunction with the Aboriginal community.
- Project activities mostly took place in the Port Victoria and Point Pearce area, in Guuranda Country in the summer and autumn of 2022 and 2023.
- We collected and shared new biological information about Gynburra to build knowledge and capacity to support sustainable fishing on Narungga Sea Country.
- We sought to: enhance and build self-management practices and demonstrate and strengthen our cultural ownership by extending the findings to the broader community to ensure Gynburra are culturally preserved through the understanding of biological and environmental changes.
- The health of the project team and the project schedule were significantly impacted twice by the COVID-19 pandemic.
- Information was collected from a size representative sub-sample (40 fish; 19%) of Gynburra (Total = 214 fish; n=140 in 2022 and n=74 in 2023) collected at two spearfishing competitions in 2022 and 2023, and from aligned cultural fishing activities.
- We also sourced maximum size data for winning fish taken during competitions held during previous years. These fish were consistently large and ranged between 780–1040 mm TL from 2014–2023.
- Approaches used to collect the information included informal fisher interviews and dissection of fish following fishing trips, spearfishing and Baited Remote Underwater Video (BRUVS).
- Importantly, we developed light, portable and cost-effective BRUVS units that were easily deployed and retrieved from the shore using snorkel and mask.
- Skills necessary to use the BRUVS were shared with the Miri Gudlas Men’s Group during a cultural fishing camp.
- Key project findings included:
  - Gynburra sampled during the main part of the spearfishing season in December – February were of large size but not sexually mature.
  - No fish sampled and dissected were in or near spawning condition.
  - This demonstrated the cultural importance and sustainability of the Gynburra fishery in that the main fishing activity and target effort period does not align with the spawning or pre-spawning period for the species, which is when aggregations are likely to be more vulnerable to being caught.
  - Juveniles as small as 340 mm TL were mixing in the same depth habitats (1.5-4.5 m) as the larger fish up to 960 mm TL.
  - People at the spearfishing competition worked with the scientists, fisheries officers and educators and assisted with collecting the first biological information on Gynburra.
  - Outputs include the first cultural synergy of biological information of the totem species for Narungga, the availability of this information for school curriculums, and the cultural knowledge on the species, and improved understanding, respect and value of Gynburra within the community, by other sectors and policy-makers.

- Implications for relevant stakeholders:

Communities benefit through education, valuing new knowledge on the species, recognising that Gynburra represents a unique and valuable totemic species.

Managers or policy-makers will gain confidence in and respect for Narungga people through understanding and recognising the non-commercial and non-recreational benefit and value of the Gynburra beyond the western context, which is as an occasional spear-fishing target species.

Schools and educators will benefit from this project by having baseline information on the species and through integration of cultural information and South Australian Aboriginal Sea Country learnings in their curriculum.

- Recommendations for further work include: the engagement of commercial dive-based industries to assist with training of Narungga people to gain their dive qualifications and become skilled on surface supply dive equipment. This would allow for extension of the diver-based survey work across a broader range of depth ranges to better understand the nursery and spawning habitats of the Gynburra.
- We also recommend that monitoring of the traditional take of fish at the Gynburra Festival continues to be supported. The community, fishers and government are cooperating with this initiative, and there is considerable scope to continue to collect seasonal traditional capture information through community-based monitoring and self-management.
- Several other specific recommendations are provided in this report.

# Introduction

## Background

Narungga people are the traditional owners of Guuranda or Yorke Peninsula and have a strong link with the marine ecosystem. Many of their totem species that are important to cultural values, spiritual connection to Country and dreamings are from the sea. The Gynburra (pronounced Kyn-burra) is the traditional name for the Strongfish or Dusky Morwong (Butterfish) and is an important food source for Narungga people, as well as an important ceremonial species.

Narungga people are well known to the wider Aboriginal community and more recently even to non-Aboriginal Australians as the 'Butterfish Mob'. Narungga have been eating Gynburra for generations and it forms a staple part of our diet during the warmer months. This fish provides food security, health (communal and medicinal), and wellbeing and is important to identity. Information and stories passed down by Elders show the people have always caught Gynburra with traditional harpoon and fish traps on the incoming tide when the Gynburra eat from the intertidal reefs.

This project is in line with the principles of the historic Buthera Agreement with the State of South Australia for the Narungga Nations people and their right to evolve and maintain their culture, and in this case through Traditional fishing, recognised by PIRSA in an official agreement that identifies Gynburra as significant and understanding the biology of the species that sustains their culturally important activities, ceremonies and learnings passed down through generations.

The project addresses several priorities of the FRDC Indigenous Reference Group including: a) Primacy for Indigenous People, b) Acknowledgement of Indigenous cultural practices, c) Self-determination of Indigenous rights to use and manage cultural assets and resources, d) Capacity building opportunities for Indigenous people are enhanced.

This project is in line with the principles discussed with Aboriginal peoples from around Australia during FRDC project 2018-016, which included to enable and scientists to engage appropriately and effectively, have greater understanding and to get support for communities to build capacity and knowledge around the culturally and sustainability focused aspects of the biology of the Gynburra. The Gynburra Festival forms part of an annual celebration where we hold a cultural festival with the broader community and government departments, including PIRSA Fisheries and Compliance, local council, National Parks (DEW) and Landscape SA.

The Narungga people of Yorke Peninsula developed the historic 10-year Buthera Agreement that was signed with the SA Government in 2018. This agreement aims to provide capacity- building support for the



Narungga Nation Aboriginal Corporation to drive development, economic enterprise, and collaborative engagement with government agencies on Guuranda. Initiatives in the Agreement include projects relating to health, education and cultural studies, in partnership between government and the Narungga people.



Former South Australian Premier, Hon. Steven Marshall, Narungga Nation Aboriginal Corporation Chair Ann Newchurch and Board of Director, Doug Millera at the official signing of the Traditional Fishing Agreement in Parliament House, March 2020.

## **Need**

There is very little known about Gynburra from scientific, biological, and environmental viewpoints. Narungga people would like to know about the fishery biology and ecology of this culturally significant species to understand the whole life cycle of this culturally significant beautiful, elegant, and powerful fish. This will ensure Narungga people are able to pass down traditional and scientific knowledge to our younger generations to ensure Gynburra sustainability into the future and highlight the important cultural and social value of the species. We also have a significant need to develop the skills to allow our people their equal right to develop skills, capabilities, and capacities in the areas of fishery science and stewardship in ways that link directly to our Sea Country and in line with the cultural values underpinned by the Buthera Agreement with the South Australian Government.

The South Australian Department for Education has partnered with South Australian Aboriginal Nations, including the Narungga Nation, to incorporate Aboriginal knowledge and ways of knowing into the South Australian Science Curriculum. The Gynburra fish (Butterfish, Dusky Morwong) is utilised to emphasise the Narungga People's deep connection to Country. Students gain an understanding regarding the fish's biology, ecology, and its role in the ecosystem. By involving students in learning about Gynburra's cultural significance, traditional practices, and sustainable fishing methods, the educator's resources foster an

appreciation for the importance of preserving and protecting the species. This educational approach promotes a sense of stewardship and responsibility among students, encouraging them to consider possibilities for future approaches to sustainable fishing practices of Gynburra on Narungga Sea Country. Educating and learning in schools about contemporary scientific research practices, and implications and considerations for cultural heritage, contribute to the development of future scientists and informed, responsible citizens.

Teaching Narungga Traditional Ecological Knowledge about Gynburra in schools enriches the educational experience with an authentic context and supports Narungga students' ability to see themselves, their identities, and cultures reflected in the curriculum. By incorporating Narungga knowledge into the curriculum, schools contribute to the revitalisation and preservation of Narungga culture and allow all students to engage in reconciliation, respect, and recognition of the world's oldest continuous living cultures. Ocean literacy, implicit in learning about Gynburra, is important for our students and for all humans because it fosters a deeper understanding of the ocean's ecological significance, promoting responsible and sustainable practices that ensure the well-being of both present and future generations. It also cultivates a sense of connection to the ocean, enriching cultural heritage, and fostering a sense of stewardship for this vital resource.

## **Objectives**

- Building knowledge and capacity in fisheries science and ecology techniques to support sustainable fishing of the Gynburra on Narungga Sea Country.
- Use the fisheries ecological information on the Gynburra to enhance and build self-management practices, demonstrate, and strengthen our cultural ownership by extending the findings to the broader community.
- To provide cultural and scientific information to the Narungga community to ensure Gynburra are culturally preserved through the initial understanding of the Gynburra biological and environmental changes.

# Method

## **Biological sampling and data collection at the Gynburra Festivals**

During the Gynburra Festival in 2022 the data collection was limited to numbers of fish taken as the project team contracted COVID-19 and could not mix effectively with the community to collect the fish biological data. Biological information was collected at the Gynburra Festival in 2023. This included size and sexual maturity assessment of fish landed at the boat ramp at Port Victoria.

## **Location of juvenile nursery areas**

Prior to the Gynburra festival in January 2022 we aimed to locate the areas near Pt Pearce, Port Victoria and Corny Point that were used by juvenile Gynburra. We used compact baited remote underwater video setups (BRUVS) that use Go-pro™ cameras. This equipment used PVC pipe to extend a bait basket into the field of view of the camera and had a plastic frame (Fig. 1). The units were deployed from the shore and baited with crushed Goolwa cockles and squid.

Spearfishing transects were done in locations and depths where the juveniles were previously found to determine if there was a depth relationship with fish size.

During the Gynburra festival in 2023 we used the fish speared by participants to teach them about the biological dissection and reproductive assessments. We used these fish and worked with the PIRSA Fisheries officers and educators to incorporate the biology of the fish into some discussions about sustainable use of the fish, accuracy and precision of information collected. Samples including gonads were used to determine the size at sexual maturity and if there were colour variants or other morphological features that could be used later to identify the sex of live fish underwater.



Figure 1. Portable baited video setup used from the shore during the project.

### **Development of information and extension for the festival and the Aboriginal school**

Following the locating of the juveniles and the biological assessments of the fish prior to and during the Gynburra Festivals, we collated the biological information for extension materials on our findings. These materials will be shared at the local schools on Yorke Peninsula and talks will be given to inform the children and educators about the importance of the species to our cultural fishing and for the future sustainability of the Gynburra. We designed and developed t-shirts with a cultural storyline and some biological information to provide to the children and educators. Other t-shirts will be provided with the project messaging to community members so they can wear them at the Gynburra Festivals.

### **Integrating the new science with the traditional cultural knowledge - Miri Gudlas Men's Group**

We will integrate the new information we collect on the Gynburra biology and ecology with the traditional cultural knowledge on the species by incorporating the stories on the species into existing Narungga storylines, conversation and artworks. In the future Gynburra festivals and hunting trips to collect the fish for food, we aim to use what we learn to keep building on the information in this project and pass it down to build the skills and knowledge in community.

The Miri Gudlas Men's Group meaning 'Salty Dogs' was an informal conversation of an Elder that wanted to see more men and boys camp and practice cultural on country. The group was formed 12 years ago and has an informal membership of around 120 men that have attended camp and activities on Guuranda (Yorke Peninsula). Many of the camps are voluntary to attend and assist in the logistics and set up. Miri Gudlas Men's group have had camp over two and three days in various location along the coast from Dhibla Guuranda (Innes National Park), Waraldi (Wardang Island) and Balgowan to name a few. We have many activities including spearfishing, netting, intertidal hunting and reel and rod activities for food for the camp but also to take back to family. We also discuss our kinship, language and traditions ensuring we can become a stronger group of men to be able to pass onto future generation whilst still enjoying our own spiritual and cultural wellbeing as Narungga men.

We hope to continue to grow and gain support from other sources including our involvement in any research projects relating to Sea and Land Country.

# Results

## Biological sampling and data collection at the Gynburra Festivals

The Gynburra Festival on 21-23 January 2022 presented significant challenges for the project team. There was a decadal rainfall and thunderstorm and lightning event during the competition in the middle of the spearfishing event. The Primary Investigator, several family members and competition participants contracted COVID-19. This led to challenges within the team, including the need to isolate so as not to interact with competitors, and then not being able to access PCR testing on Yorke Peninsula, Clare Valley or upper Spencer Gulf and being instructed on the phone by healthcare professionals to not leave vehicles, and return to Adelaide to be tested as soon as possible. During the Gynburra Festival in 2022, data collection was therefore limited to counts of numbers of fish speared and reported. Despite the COVID-19 outbreak situation in the community, the competition was able to occur at a reduced capacity with a total of 107 participants signing up for the event. A total of approximately 140 Gynburra were taken and weighed during the spearfishing contest. Some very large fish were taken, including the winning fish that was ~800 mm and ~5.5 kg.

Due to the impact of the COVID-19 outbreak during the first festival, the project was extended with FRDC's permission to incorporate an additional summer-autumn inclusive of the 2023 Gynburra Festival period.

The Gynburra Festival and spearfishing competition covered during the project was held on 27-28 January 2023. Fish speared by participants were used to teach fishers through conversation about the biological dissection and reproductive status assessments. Narungga people learned how to accurately measure, dissect and determine the sex of Gynburra. We used these fish and worked with the PIRSA Fisheries officers (Kane and Luke) to incorporate the biology of the fish into on-the-spot discussions about sustainable use of the fish. Samples including gonads were used to determine the size at sexual maturity and determine if there are colour variants or other morphological features that can be used to identify the sex. This was made challenging by the variable times since landing, so colour was deemed to be of little value as a predictor of sex.

Biological information was collected for 40 fish in 2023. A total of 74 fish were recorded that were landed at the boat ramp at Port Victoria, or from the other sites that were accessed including Balgowan and several spots accessed by boat around Wardang Island. Of the subsample measured the 300-400 and 500-600 mm size classes were the most common (Fig. 2). There were equal percentages of 600-700 mm through to 800-900 mm size classes and no fish observed and measured were >1000 mm. From the fish

measured in 2022-23 the average size was 572 mm. It was possible that some level of selection bias occurs for fish under 300 mm, however further gear-type independent information is required to confirm this.

Gynburra sampled had ovaries and testes that were macroscopic stage 1 and 2 and not sexually mature. No fish examined had gonads indicating any physical signs of spawning activity. Males dissected were only very immature fish (Stage 1). None of the fish sampled and dissected during the Gynburra Festival were sexually mature or in spawning condition. As a result of this lack of maturity in any of the fish observed and subsampled, no further reproductive assessment was completed.

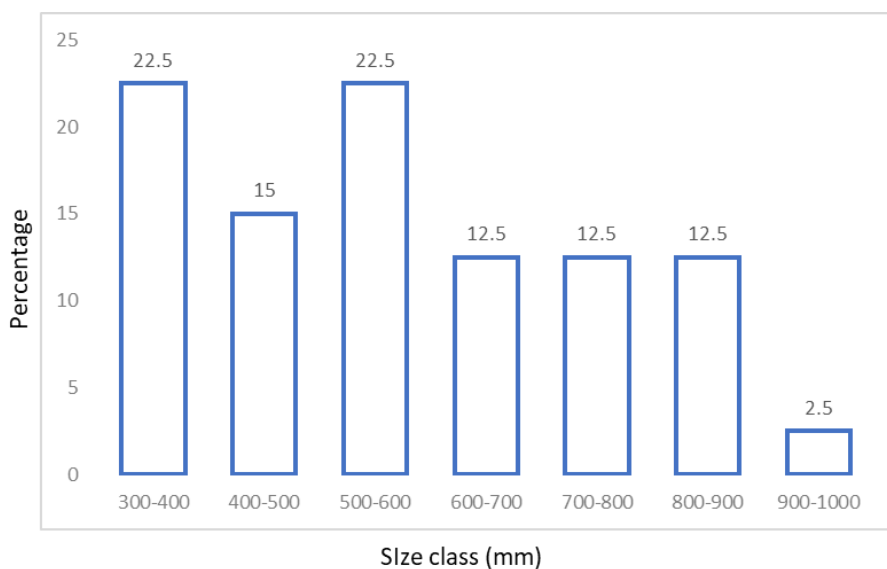


Figure 2. Gynburra percentage size classes during 2023.

Table. 1. Size and locations of Gynburra taken in the Open Men Biggest Fish – Butterfish King. Clem Graham Memorial Butterfish Competition Gynburra from 2014 – 2023.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Size (mm)	890	780	840	920	880	840	960	910	1040	860
Location	Green Island	Green Island	Cultural Spot	Green Island	Balgowan	Wardang Island	Balgowan	Wardang Island	Balgowan	Balgowan

## **Location of juvenile nursery areas**

The project team and family did spearfishing transects along the inshore reefs at Corny Point on 21 January 2022 and sighted three Gynburra. One small Gynburra of 445 mm TL was speared and retained. With this fish we conducted some fish dissection training and measured the lengths, and identified it was an immature female.

The mini-BRUVS units were trialled successfully on an inshore reef at Corny Point on 21 January with one Gynburra visiting the camera as soon as it was deployed.

During the 2023 Gynburra Festival and spearfishing competition the juvenile fish as small as 340 mm were mixing in the same habitats (1.5-4.5 m depth range) as the larger fish up to 960 mm.

## **Miri Gudlas Men's Group**

A traditional men's camp of the Miri Gudlas was run on Narungga Country from 14-16 April 2023. We did some spearfishing, netting and reel and rod fishing for food for the camp. We discussed our kinship, spoke our language, and talked about traditions and family business passing down onto future generations of Narungga men. During this Miri Gudlas trip, the two mini-BRUVS were deployed by shore-diving at Renowden Rocks and assessed for footage. The inshore fish population was very inactive with only weedy whiting and silver drummer observed on an hour of BRUVS footage. No Gynburra were observed. A single medium-sized (760 mm) fish was speared nearby. The ecosystem looked exposed and abandoned providing little cover and activity for Gynburra to be attracted to; the species tends to be attracted to areas where other species are feeding.



# Extension and Adoption

## A summary and links to media, communication and extension outputs

Article during NADOC Week - <https://www.frdc.com.au/capturing-culture-and-science-iconic-fish>

ABC news <https://www.abc.net.au/news/2022-06-27/gynburra-butterfish-yorke-peninsula-research-preserve-protect/101186756>

Yorke Peninsula Country times article <https://www.ypct.com.au/news/project-to-protect-gynburra-species>

ABC North and West SA, Posted Mon 27 Jun 2022 at 3:41pm - <https://www.abc.net.au/news/2022-06-27/gynburra-butterfish-yorke-peninsula-research-preserve-protect/101186756>

South Australian Native Title Service Aboriginal Way – Winter Edition 2022 - <https://www.nativetitlesa.org/aboriginal-way-editions/>

Port Victoria Progress Association Through the Porthole – Bimonthly Edition August/September - [PDF Available](#)

ABC North and West, Port Pirie - News bulletin, 7.30am, News bulletin, 8.30am, 27 June 2022.

ABC Eyre Peninsula and West Coast, Port Lincoln, News bulletin, 6.30am, News bulletin, 7.30am, 27 June 2022.

Bimmera Bippera Media, Cairns - National Talkblak, 11.48am, 5 July 2022.

World Indigenous People Conference on Education (WIPCE 2022) – Presenting on the DECD Gynburra Science Elaboration and the importance of the FRDC Gynburra Project aims.

## Development of information and extension for the festival and schools

Following the locating of the juveniles and the biological assessments of the fish prior to and during the Gynburra Festivals we collated the biological information to develop some extension materials and PowerPoint presentations on our findings. These materials are to be shared at the local schools on Yorke Peninsula through talks to educate the children and teaching staff about the importance of the species to our cultural fishing, and for the future sustainability of the Gynburra. We designed fishing t-shirts with a cultural storyline and some biological information to provide them to the children and teachers. Other t-shirts with the project messaging will be given to community members so they can wear them at the future Gynburra Festivals.

## **Integrating the new science with the traditional cultural knowledge**

We will integrate the new information we collect on the Gynburra biology and ecology with the traditional cultural knowledge on the species by incorporating the stories on the species into the final report and adding the new scientific information in a way that complements the existing Narungga story-lines. In the future Gynburra festivals and other hunting trips to collect the fish for food, we aim to use what we learn to keep building on the information in this project and pass it down to build the skills and knowledge in community.

Information gathered during the project could be shared to provide a better understanding of Traditional take by SARDI and PIRSA. It should be noted that the recreational fishing logbook techniques used by these agencies are unlikely to collect information on the Gynburra at the scale collected during this project.

## Discussion

This project stems from the principles of the historical Buthera Agreement with the State of South Australia for the Narungga Nations people and their right to evolve and maintain their culture through Traditional fishing. This agreement was recognised by PIRSA in an official agreement that identifies Gynburra as significant along with understanding of the biology of the species that sustains culturally important activities, ceremonies and learnings passed down through generations of current and emerging Elders.

The historical importance of the species substantially pre-dates European settlement, making it one of Australia's first single-species inshore fisheries. This project has supported the first collection of biological data required to support proactive and sustainable cultural management of the species, and in doing so also provides an example of how to collaborate with and learn from Traditional Owners in other regions and states. Prior to this project, there was no published information on the biology and ecology of the Gynburra in South Australia. This included a lack of baseline information on the size structure of the population, the spawning seasonality and the spatial patterns in distribution by size and maturity. During this project, we build new knowledge about the species and shared it with the community. We taught Narungga mob about fisheries science techniques, including how to accurately measure and determine the sex and maturity of fish, and how to passively monitor the distribution of fish using BRUVS. These are vital skills for setting up future monitoring of the spearfishing competition and to continue to support sustainable fishing of Gynburra on Narungga Sea Country.

By collecting representative information on cultural Gynburra fishing we were able to demonstrate ability to build self-management practices at the community level. This project will form an example to use in the future and support Narungga to develop primacy for seeking support funding and setting up sustainable practices for self-management of their culturally important species. Through speaking with Elders and the young people at the Gynburra festivals, and the Mens camps we demonstrate and strengthen cultural ownership by extending the findings to the broader community through language. The power of word of mouth, media and talks in spreading the importance of the project concepts is central to sharing of the Gynburra's cultural and scientific information to the Narungga community to ensure Gynburra are culturally preserved through the initial understanding of the biological and environmental changes.

Narungga people worked with the investigators and PIRSA fisheries officers to collect information on Gynburra at the spearfishing competition in 2023. Key findings included that the Gynburra sampled were not sexually mature despite being of large size (to 960 mm) – none of those assessed were in spawning condition. In terms of habitat use the juveniles as small as 340 mm TL were mixing in the same habitats (1.5-4.5 m depth) as the larger fish up to 960 mm TL. Smaller cryptic juveniles of 120-200 mm have been observed previously in shallow (1-2 m) Ecklonia kelp habitat. Importantly, we demonstrated that the main

part of the traditional spearfishing season that takes place from December to February when water temperatures are moderate to warm does not align with the spawning or pre-spawning period for the species.

Communities will benefit from this project through the availability of science and cultural knowledge-based education materials and information sharing, and through the sharing and valuing of new knowledge on the species, as well as better recognising this unique and valuable totemic species. Policy and land managers, other sectors, and local government will gain confidence in and respect for Narungga people through understanding and recognising the non-commercial and non-recreational benefit and value of the species (Gynburra) beyond its limited western context, which has largely been as an occasional spear-fishing target species.

## **Implications**

This project provides the first baseline information on a species that is the primary focus of Traditional owners unique to Australia in that whilst they take other species, they primarily target and identify with one species of totemic fish. The project provides an important snapshot into what is otherwise poorly understood Traditional take in South Australia, which is information used in sector-specific allocation of resources and management of South Australian fisheries.

Discussions were had during the project regarding the potential to develop approaches to collect Traditional fishing information by the community to support self-management of stocks where there may be concern for sustainability. This was in light of evidence from Elders suggesting the size of the largest fish has declined over recent decades. Impacts of climate change and sea levels have been identified as having notable impacts of the fish species hunted in shallow water habitats, as many of those habitats that used to act as natural entrapment points for target species of fish, now either cease to exist, are degraded in their quality and quantity, or threatened by climate change stressors and associated impacts on coastal ecosystem health.

## **Recommendations**

We recommend that monitoring of the traditional take of fish at the Gynburra Festival continues to be supported through the development of an annual monitoring plan in consultation with the community and Elders. The community and fishers are cooperating with this initiative, and therefore there is considerable scope to continue to collect this seasonal traditional capture information through independent monitoring with the view towards self-management and sustainable management of the stock for traditional and ceremonial purposes and cultural learning.

Specific recommendations for further work include:

- Engagement with dive-based industries to assist with training of Narungga to gain experience and qualifications needed to become skilled on surface supplied and scuba equipment. This would allow for extension of the diver-based survey work across a broader range of depth ranges to elucidate the nursery and spawning habitats of the Gynburra, as well as gaining of capabilities that can cross-over to other areas of interest.
- Develop and present the findings of the study in a small fact sheet to be distributed to the Narungga and wider community on all media.
- Present and engage with schools, Miri Gudlas men's group, PIRSA, Narungga organisations on our findings and provide updates on new research project aims.
- Host men's and boy's camps to discuss Narungga Sea Country cultural dreamings, values and traditions especially on the iconic Gynburra, our ecosystems and to collate their input into managing, protecting and conserving these for future generations. (Referencing recent discussions including equality for Narungga women's and girls' Gynburra).
- Scoping and proposal to support co-contribution funding and support from Commonwealth and state government agencies under the Buthera Agreement for training and operations to further study Gynburra and habitats. Training could be supported for inshore coxswains, commercial dive, research, marine safety, and food handling.
- Research on the deeper habitats of the Gynburra in Spencer and St Vincent Gulfs using cameras and possibly divers to locate, tag, capture and dissect the fish to examine ages, anatomy, diet and sexual maturity in front of, and recorded for interested Narungga and wider community members. All Gynburra caught will be filleted and donated to families.
- Continue to engage Narungga and wider community members that hunt Gynburra to record basic data.
- Engage with other fisheries to discuss and agree on Gynburra bycatch donation and data collection processes.
- Compare and combine the data and findings from both research projects to present to the Narungga, FRDC and wider community for education purposes.
- Use a social media platform to share knowledge of the Gyburra project, photos, videos and communication for further research information, e.g. spawning and groups of Gynburra. This could be used to offer Narungga and the wider community unwanted Gynburra for consumption and could also be an opportunity to provide methods and recipes of cooking Gynburra.
- Desktop and initial research and science about the impacts of climate change on water level, chemicals and other factors on the intertidal zone of Gynburra habitat within certain Guuranda (Yorke Peninsula) waters.

- Explore possible resources for children to read and understand Gynburra and the importance of this species to us as Narungga.
- Commission and create a one metre Gynburra model for educational purposes and a Gynburra mascot for Gynburra Festivals to promote the cultural importance of the fish to Narungga.

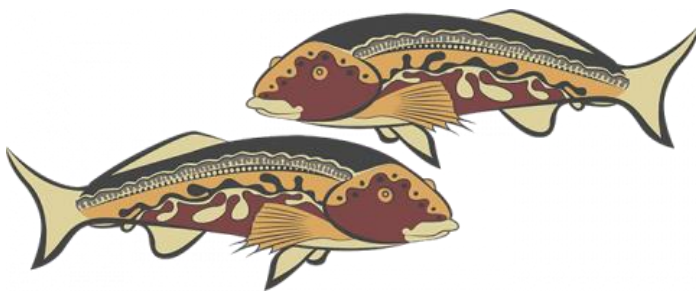
## Project Coverage

2 June 2022

### Capturing the culture and science of an iconic fish

<https://www.frdc.com.au/capturing-culture-and-science-iconic-fish>

Work has begun on a project that will be the first to capture cultural and scientific knowledge about the iconic fish species of the Narungga people, traditional owners of Guuranda, South Australia's Yorke Peninsula.



Gynburra provide food security, communal and medicinal health, wellbeing and cultural identity for the Narungga. Artwork: Garry Goldsmith.

The project is funded by FRDC and focussed on the Gynburra, also known as the Dusky Morwong or butterfish. The Narungga community are known as the "Butterfish Mob" because Narungga men traditionally waded in the incoming tide and attracted Gynburra by stirring up sediments of sand.

"Maintaining cultural practices and building knowledge and capacity to support sustainable fishing of the Gynburra on Narungga Sea Country" is led by Garry Goldsmith in collaboration with his community on Guuranda, and by Dr Paul Rogers from Southern Fishery and Ecosystem Solutions.

Garry is passionate about Gynburra and explains that the fish provides food security, communal and medicinal health, wellbeing and cultural identity for the Narungga.

"Narungga people have a strong relationship with Sea Country. Narungga totem species include sea and land animals that are centrally important to our cultural values, connection to Country and dreaming," he says.

"This project will help to enhance traditional knowledge and practices to support Narungga to preserve and sustain the Gynburra as a species of cultural and ecological importance.

“We’re aiming to build foundational knowledge and capacity in fisheries science and ecological techniques to support sustainable fishing of the Gynburra. The ecological information will build self-management practice and demonstrate and strengthen cultural ownership by extending findings to the broader community.

“We want to pass down specific traditional and scientific knowledge to our younger generations to ensure the Gynburra is sustainable into the future and to highlight the species’ cultural and social value.

Garry says the Narungga used to catch Gynburra as big as 1.5 m long which could feed a whole community, making them an important part of the culture’s tradition of sharing.

“They also used to eat the fat from the gut of the fish, to improve their resistance to respiratory diseases like colds and influenza,” he says.

Gynburra can be found in seagrass beds and near rocky outcrops. They feed on algae, marine worms and crustaceans.

Garry says there is anecdotal evidence that stocks of the species are declining.

“Over the last 10 years, we have seen a drastic reduction in the numbers of fish and the size of them,” he says.

“There are a number of possible reasons behind it, which includes climate change heating up the water and land-based runoff could be affecting the food source and environment.

“A lot of the nurseries used to be in corkweed in the intertidal zone, but we are also noticing that the fish don’t appear to be breeding in those areas or accessing their usual environments.”

The project encompasses techniques to locate nurseries, biological sampling and examination of speared fish during the annual cultural season and Gynburra Festival.

The Gynburra was traditionally hunted with harpoons on reefs with the incoming tide. Men would wade in the water and often make slight movements with their feet to stir sand which would attract the inquisitive and somewhat docile fish. As the fish circled and ventured closer, the men would harpoon them with spears.

The tradition of hunting Gynburra continues and has been celebrated for the past 50 years by the Clem Graham Senior Memorial Butterfish Competition for Narungga men and boys, which recently opened up to the broader community. The tradition is also celebrated by the Gynburra Festival at Port Victoria which offers activities for all and will be a drawcard on 27-28 January 2023, when interim results from the project will be presented.





Narungga men and boys take part in a workshop on making traditional spears to hunt Gynburra. Photo: Garry Goldsmith

Educational materials will be developed for the SA School Curriculum via the Department of Education’s South Australian Aboriginal Context in Science Initiative.

The project addresses the priorities of FRDC’s Indigenous Reference Group, including: primacy for Indigenous people, acknowledgement of Indigenous cultural practices, self-determination of Indigenous rights to use and manage cultural assets and resources, and capacity building opportunities for Indigenous people.

“FRDC’s support is invaluable to this process of helping our community find out as much as we can to preserve this species and its environment,” Garry says.

“We want to ensure future generations continue to have connections to Sea Country as our ancestors have for thousands of years. The success of this fish will be the success of our community.”

The project will support skills development in fishery science and stewardship for Narungga people. It aligns with the Narungga Nation Traditional Fishing Agreement and the Buthera Agreement between the SA state government and the Narungga Nation Aboriginal Corporation.

## \*Project materials developed - images

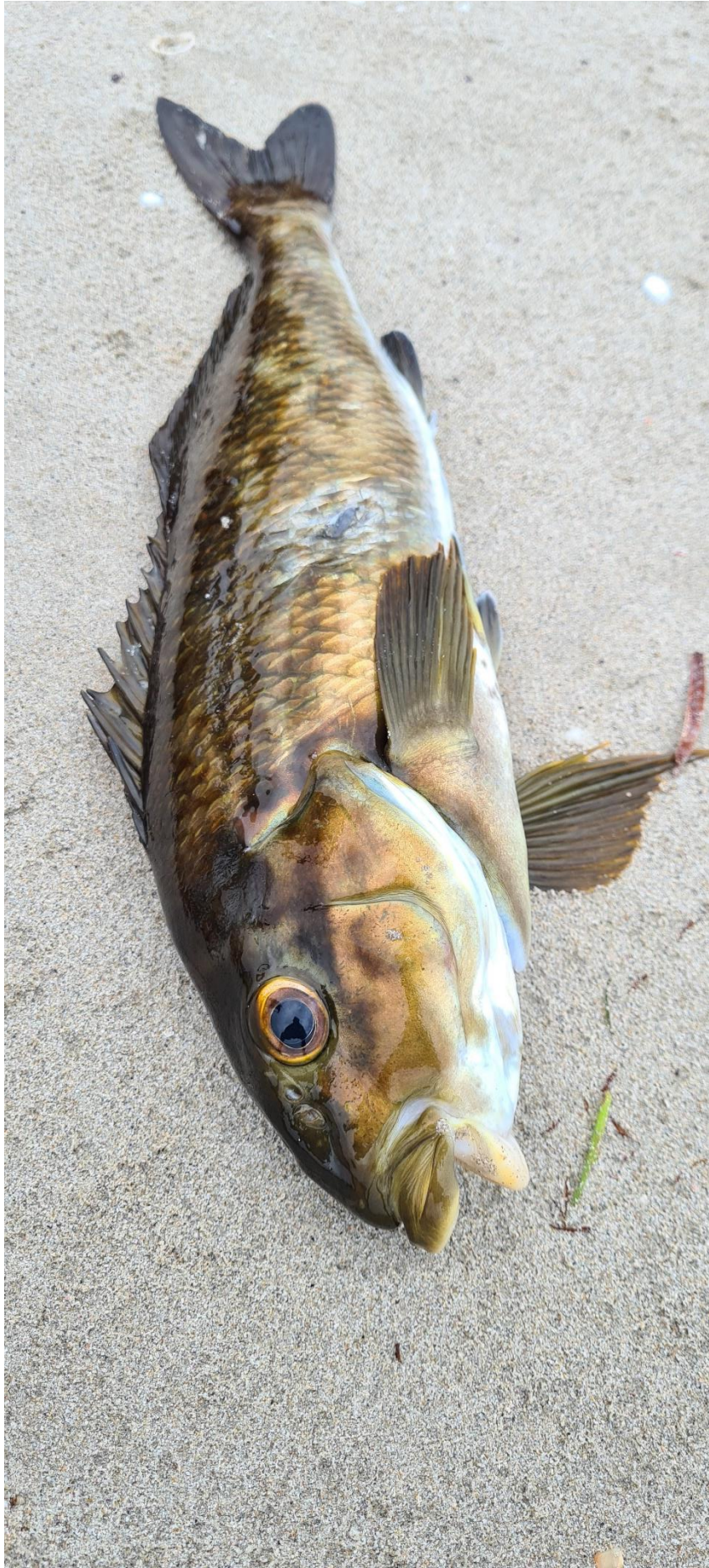


- Names can be provided upon request.





























**Gynburra**  
**January 27 & 28 2023**  
 Narungga Country,  
 Port Victoria,  
 South Australia

**Free Event!**  
**Everybody Welcome!**

- Family Fun Day
- Cultural Performances
- Live Entertainment
- Stalls
- Foreshore Movie Night
- Butterfish Competition
- Women's Pamper Day
- Fireworks

For more info visit:  
[www.gynburra.com](http://www.gynburra.com)

Logos at the bottom:  
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Dear Dr Piddocke

I write to you in support of the Narungga Nation Aboriginal Corporation's (NNAC) grant application to research both the cultural and scientific aspect of the Gynburra (Butterfish-Dusky Morwong).

The Department of Education's South Australian Aboriginal Context in Science Initiative (SAACSI) has been working collaboratively with Garry Goldsmith, Lead Investigator, Gynburra and other NNAC representatives to include Narungga context in the Australian Curriculum: Science 7-10 statewide curriculum resources.

Resources developed collaboratively with NNAC to date include Fish traps (Year 7), Classification (Year 7), Stone Tools (Year 8) and Gynburra (Years 7 and 9).

The Gynburra curriculum resources are part of the Year 9 Ecosystems unit. These resources highlight the importance of Narungga Peoples' deep connection to Country as a context for students to learn about the components and interactions within an ecosystem.

We support this research because it would add significant value to the science curriculum in the areas of science inquiry skills, scientific understanding of an ecologically significant species and student understanding of the interdependent nature of scientific collaboration between stakeholders.

If you have any queries about the South Australian Aboriginal Context in Science Initiative (SAACSI) partnership with the Narungga Nation Aboriginal Corporation, please contact Lisa Perre, Senior Policy Manager at [lisa.perre3@sa.gov.au](mailto:lisa.perre3@sa.gov.au) or on (08) 8463 5935

Yours sincerely

Deonne Smith  
Director Curriculum Development  
Department for Education