Fisheries and Forestry
Department of Primary Industries and Regional Development

The NSW Commercial Fisheries Port Monitoring Program

Data summary report for 2022/23

Department of Primary Industries and Regional Development

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Compiled by:

John Stewart, Jim Craig, Anne-Marie Hegarty, Caitlin Young, Antony Gould, Chantelle Clain

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More information

Dr John Stewart, Fisheries Resource Assessment, Sydney Institute of Marine Science, Mosman. www.dpi.nsw.gov.au

Acknowledgements

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Introduction

The Port Monitoring Program is a long-term collaboration between the commercial seafood industry (fishers, regional co-operatives and the Sydney Fish Markets) and NSW DPI (Fisheries). Port monitoring of the landed commercial catch has been an important component of fisheries assessments in NSW for more than 70 years, and the time series of data generated provide considerable insight into the dynamics of the stocks and the fisheries that exploit them, far beyond what is achievable through simple logbook catch and effort data. For example, age and size composition samples are used to calculate indicators such as age composition, mortality rates or the fraction of fish smaller than a threshold length. These indicators are used, along with indicators of relative abundance such as catch rates, to make inferences about current levels of fishing pressure and relative biomass – the two requirements for the national Status of Australian Fish Stocks (SAFS) exploitation status assessments. Monitoring the size and age composition of the commercial catch is also a cost-effective option to insure against deficiencies of commercial catch per unit effort data. In addition to providing essential data for stock assessment and management, the program promotes industry co-ownership of monitoring data and supports the ongoing social licence to fish.

The Port Monitoring Program directly contributes to:

- Stock status assessments in terms of the current composition of, and long-term changes in, the size and age compositions in landings.
- Validation of commercial logbook records.
- Information on species compositions in species complexes (e.g. the trawl whiting species, Balmain bugs, unspecified catch categories).
- Baseline data on biology (e.g. morphometric relationships such as length/weight and fork length/total length, reproductive biology, age and growth, diet etc.).
- Assessment of recovery programs.
- Analyses of the impacts of management changes (e.g. changes to minimum legal lengths).
- Stakeholder engagement – DPI staff at co-operatives liaise with commercial fishers and co-op staff and are at the front line of communications.
- Various externally funded projects with commitments to provide data on commercial landings.
- Unplanned events – e.g. prawn white-spot monitoring.
- Assisting the commercial fishing industry to maintain a social licence to operate through transparency in operations and co-operation with government.

This data summary report is designed to be a source of information for Fisheries Resource Assessment scientists responsible for stock assessment, as well as fisheries managers, industry and interested stakeholders. Review of the performance of the program is essential to maintain confidence in the data collected and to provide an opportunity for the scientists responsible for each species to refine the sampling protocols. The report also proves transparency around expenditure from the Commercial Trust that funds the operating budget and salaries of casual staff.

Methods

The NSW commercial fisheries port monitoring program is a collaboration between industry and government. The Sydney Fish Markets and various key places of landing (including the Ballina, Iluka, Maclean, Coffs Harbour, Newcastle and Nelson Bay Fishermen's Co-operatives) allow DPI-Fisheries monitoring staff access to landed catches prior to being sold.

The port monitoring program utilizes a spatially and temporally stratified sampling design in order to generate representative estimates of the landed commercial catch. The base units of sampling are generally monthly and commercial fishing reporting zone; however, these may vary depending on advice from fisheries scientists primarily responsible for the assessment (species' leads) and/or management. Sampling protocols are established for each species to optimize the likelihood that representative samples of the landed catch are obtained from a port (fishing reporting zone) on each day sampled. The number of days sampled each month and area may differ between species and are based upon advice from each species' lead within the Resource Assessment Unit, as well as the dynamics of the fishery and the capacity of the program.

The relative importance of landings from each month/fishing zone are dependent upon the reported commercial landings provided by the commercial fishing logbooks. These data are used to reweight and combine the sampled length frequency data in each base unit of sampling (e.g., month/fishing zone) in order to provide estimates that are representative of the entire fishing fleet in NSW. The Department has developed efficient computing applications to automate these processes. The project has also moved largely to electronic data collection. Electronic measuring boards have made data available in real time and largely removed the need for paper-based records and the associated data entry expense and potential data entry errors.

Process for selection of species to monitor

Species to be included in the port monitoring program are selected each year through a rigorous process involving all DPI-Fisheries stock assessment scientists. The process utilizes the Species Priority List (SPL) for Resource Assessment (see Appendix B) to rank species of relative importance, followed by the Data and Monitoring Plan (DMP) to rank species for which port monitoring has been identified as being important for assessment purposes. Within the DMP the requirements of a port monitoring program for each species needs under a base case scenario required to inform a reliable assessment are also identified and ranked. These requirements being potentially biology, length composition and/or age composition. Following the identification and ranking of species requiring port monitoring the list is sent to all relevant assessment scientists who are designated 'leads' for each species for their recommendations. This is an important step in the process as the DMP is currently outdated and the SPL is outdated and was not designed specifically to be used for Port Monitoring. Under an environment limited by resources it may not be suitable to rely on the SPL as being totally prescriptive. Species leads may also be aware of other programs collecting similar data, therefore allowing the group to make more balanced and practical decisions on allocation of port monitoring resources to species.

Generally, between 10-15 species are monitored for length compositions each year, with the numbers being dictated by sampling designs, sampling logistics and the resources available. In addition, a few (generally between 3 and 5) species are sampled for age composition. Port monitoring staff assess the feasibility of successfully sampling each identified species based on the

temporal and spatial distribution of the fishery, the operations of the fleet and how they land catches, and the resourcing of the program. Once a final list of proposed species to monitor for lengths and ages has been compiled it is sent for endorsement by the relevant scientists.

Fish assessed for age are purchased directly from either the Fishermen's co-operative or the Sydney Fish Markets. Where it is considered cost-effective (e.g. for high value species such as large Snapper and Mulloway), the fish have their otoliths removed and are resold to recoup costs.

Details of the prioritisation and justification, sampling aims, reported landings and sampling data for 2022/23 are presented below for each species separately. Stock status is based on the most recent SAFS reports (https://fish.gov.au/). A brief commentary on how well the sampling met the aims is provided for each species.

Bluespotted Flathead

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	**Sustainable**	Catch, effort, standardised CPUE, length and age compositions, biomass depletion and harvest rate estimates

Prioritization and justification

Species Priority Ranking for 2022/23: **3**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **2**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **2**

Rank for ages – **2**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the NSW commercial fishery.

Sampling design

Length frequency data were collected through Maclean/Iluka, Coffs Harbour and the Sydney Fish Markets. For each location, all catches from a selected ocean zone that were on the floor on the day of sampling were sampled. Bluespotted Flathead were measured from the tip of the nose to total length (nearest cm rounding down).

Bluespotted Flathead sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

A sample of 15 fish from ocean zone 2, 5 and the Sydney trawl fleet (zone 6 and 7), with opportunistic samples from south coast, were purchased each month for ageing. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Sampling graded catches

Almost all Bluespotted Flathead catches are graded, generally into XL, L, M, S or U. All grades are sampled from a catch. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software.

Results

Table 1. Reported landings (kg) heat map of Bluespotted Flathead by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													63624.7

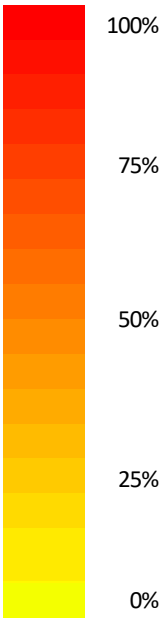

Table 2. The number of days sampled for Bluespotted Flathead by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	2	7	2	2	10	2	9	5	4	3	4	3	53
Zone 3	3	4	2	4	5	2	6	5	6	3	7	5	52
Zone 4													
Zone 5	1	2	2	1		1	1	4		1	1	1	15
Zone 6	1	3	1	3	1	1	2			1		1	14
Zone 7	1	1			2							1	5
Zone 8							1	2					3
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	8	17	7	10	18	6	19	16	10	8	12	11	142
Total	8	17	7	10	18	6	19	16	10	8	12	11	142

Table 3. The number of catches sampled for Bluespotted Flathead by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	3	15	2	3	14	3	9	5	5	3	4	5	71
Zone 3	10	5	7	8	5	4	6	6	8	6	12	7	84
Zone 4													
Zone 5	1	2	3	1		1	1	4		1	1	1	16
Zone 6	1	3	1	3	1	1	3			2		1	16
Zone 7	1	1			2							1	5
Zone 8							1	2					3
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	16	26	13	15	22	9	20	17	13	12	17	15	195
Total	16	26	13	15	22	9	20	17	13	12	17	15	195

Table 4. The number of fish sampled for Bluespotted Flathead by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	41	935	121	89	401	116	344	348	190	18	113	248	2964
Zone 3	377	190	175	237	210	285	111	169	183	115	475	223	2750
Zone 4													
Zone 5	37	142	318	55		68	59	383		42	55	39	1198
Zone 6	31	281	160	255	49	164	207			211		11	1369
Zone 7	38	130			505							241	914
Zone 8							51	366					417
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	524	1678	774	636	1165	633	772	1266	373	386	643	762	9612
Total	524	1678	774	636	1165	633	772	1266	373	386	643	762	9612

Table 5. The number of fish sampled for ageing Bluespotted Flathead by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2						15							15
Zone 3	15	15	15	15	15		15	15	15	15	15	15	165
Zone 4													
Zone 5	15	15	15			15	15	30		15	15	15	150
Zone 6				15	14	15				15			44
Zone 7	15	15			15							15	60
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	45	45	30	30	44	45	30	45	15	45	30	45	449
Total	45	45	30	30	44	45	30	45	15	45	30	45	449

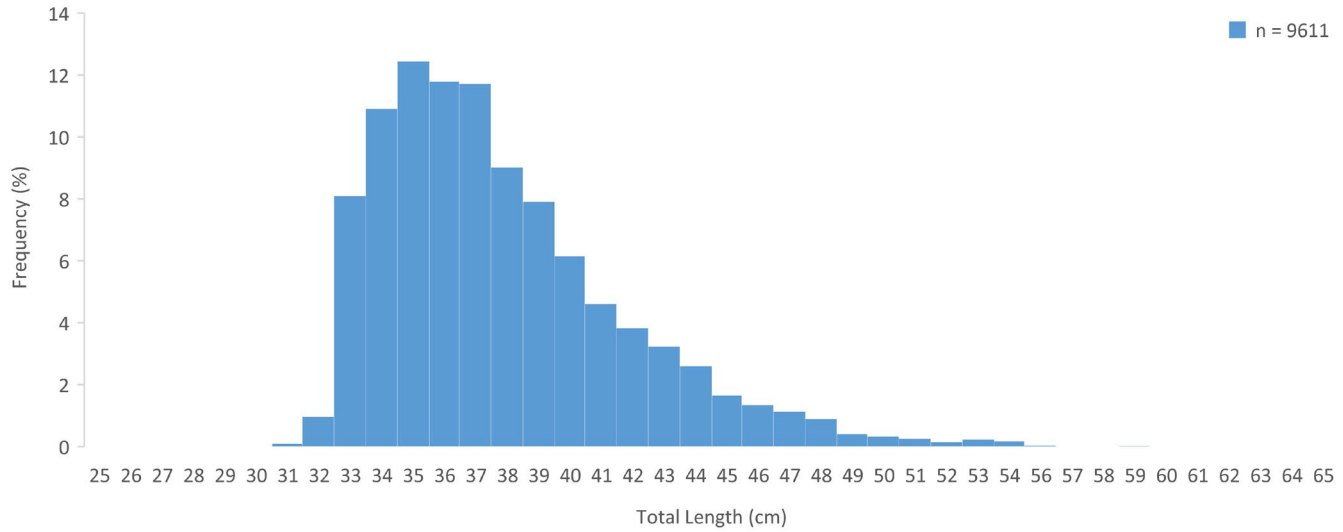

Figure 1. Length composition of Bluespotted Flathead landed by the commercial fishery during 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Comprehensive sampling was achieved for Bluespotted Flathead during 2022/23, with the distribution of sampling effort being similar to the spatial and temporal operations of the fishery.

Eastern School Whiting

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	**Sustainable**	Catches, standardised CPUE, lengths, ages, discards, biomass depletion estimates (stock synthesis)

Prioritization and justification

Species Priority Ranking for 2022/23: **4**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **3**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **3**

Rank for ages – **3**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data representative of the NSW commercial fishery.

Sampling design

Length frequency data were collected through Maclean/Iluka, Coffs Harbour and the Sydney Fish Markets. For each location, all catches from a selected ocean zone that were on the floor on the day of sampling were sampled. For each subsample taken, the species split of Eastern School Whiting and Stout Whiting was recorded and used to estimate the proportion of the total catch weight allocated to each species. Eastern School Whiting were measured from the tip of the nose to fork length (nearest cm rounding down).

A sample of 10 fish from ocean zones 5, 20 fish either 6 or 7 and 10 fish from the south coast were purchased at the Sydney Fish Market each month for ageing. Ten fish from Maclean/Iluka co-op and 10 fish from the Coffs Harbour co-op were also purchased for ageing. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Export box sampling was also done at Iluka and Coffs Harbour Fishermen's co-operatives, where length frequencies were recorded along with the species split of Eastern School Whiting and Stout Whiting. A small number of each species (10 fish) were also processed for ageing. One 5-8 kg export box was purchased each month from each location.

Eastern School Whiting sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Eastern School Whiting catches are graded, generally into XL, L, M, S or U. All grades are sampled during a sampling event. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software.

Results

Table 6. Reported landings (kg) heat map of Eastern School Whiting by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													755178

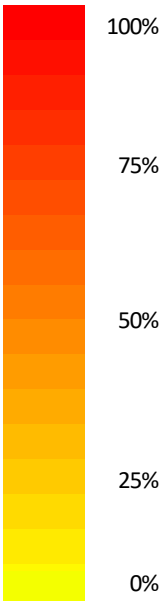

Table 7. The number of days sampled for Eastern School Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1				1									1
Zone 2	1	2	1	3	4	1	2	2	2	2	2	5	27
Zone 3			2		1			2	2	1	2	2	12
Zone 4													
Zone 5	2	2	3	1	1		2	2	1	1	2	1	18
Zone 6	1	1	1	3		2	3		1	2			14
Zone 7	2	1	2	1	2	2		1	1	1	1	3	17
Zone 8	1			1	1		1	1	1		1		7
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	7	6	9	10	9	5	8	8	8	7	8	11	96
Total	7	6	9	10	9	5	8	8	8	7	8	11	96

Table 8. The number of catches sampled for Eastern School Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1				1									1
Zone 2	1	2	1	3	4	1	2	4	4	2	2	5	31
Zone 3			2		2			2	2	1	2	3	14
Zone 4													
Zone 5	2	3	3	2	1		2	3	1	1	3	1	22
Zone 6	1	1	1	5		2	3		1	3			17
Zone 7	2	1	2	1	2	2		1	1	1	1	4	18
Zone 8	1			1	1		1	1	1		1		7
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	7	7	9	13	10	5	8	11	10	8	9	13	110
Total	7	7	9	13	10	5	8	11	10	8	9	13	110

Table 9. The number of individuals sampled for Eastern School Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1				146									146
Zone 2	1	138	130	428	479	159	133	234	357	85	277	403	2824
Zone 3			273		413			227	283	114	409	418	2137
Zone 4													
Zone 5	200	155	217	192	60		146	164	100	116	262	60	1672
Zone 6	140	70	103	441		260	212		110	245			1581
Zone 7	242	120	293	154	232	301		117	180	134	112	615	2500
Zone 8	90			154	161		197	102	120		52		876
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	673	483	1016	1515	1345	720	688	844	1150	694	1112	1496	11736
Total	673	483	1016	1515	1345	720	688	844	1150	694	1112	1496	11736

Table 10. The number of fish sampled for ageing Eastern School Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2		20	10	38	20	20	20	30	30	9	21	42	260
Zone 3			20	10	10		1	20	20	20	20	30	151
Zone 4													
Zone 5	10	10	10		10		10	10	10		10	10	90
Zone 6	20	10		10		31				20	10		101
Zone 7		11	30	10	20	10		10	20	20	20	25	176
Zone 8	10				10		10	10	10		10		60
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	40	51	70	68	70	61	41	80	90	69	91	107	838
Total	40	61	70	68	70	61	41	80	90	69	91	107	848

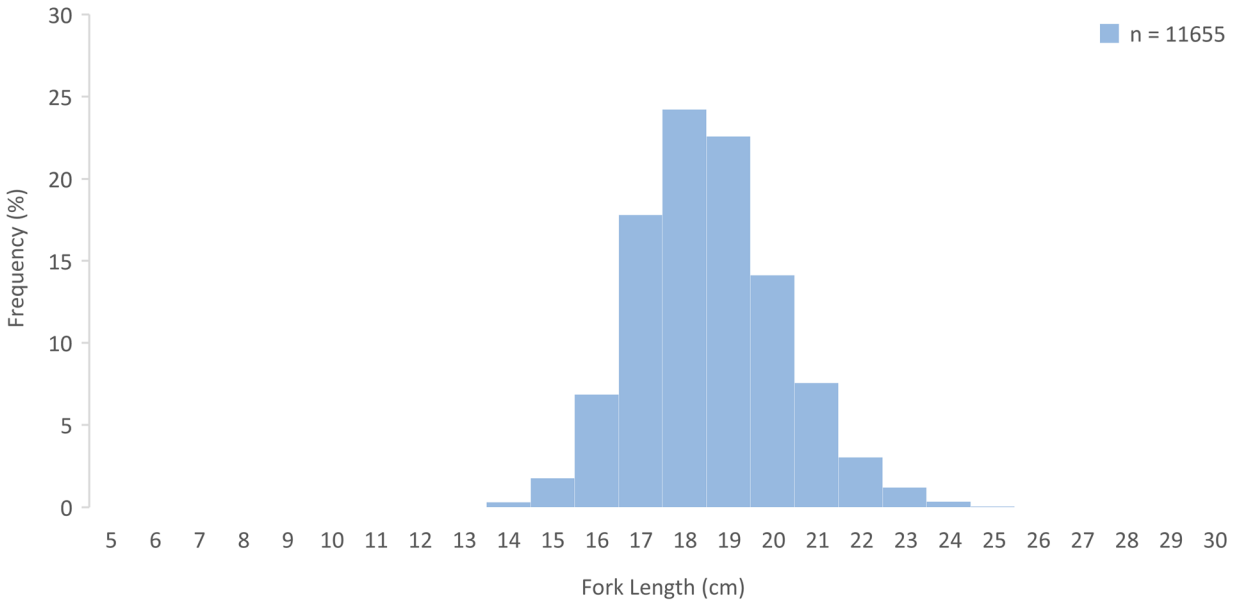

Figure 2. Length composition of Eastern School Whiting landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Comprehensive sampling was achieved for Eastern School Whiting during 2022/23, with the distribution of sampling effort being similar to the spatial and temporal operations of the fishery.

Total numbers of area known and total numbers sampled for ageing in August differ by 10 individuals, as a commonwealth catch was accidently sampled.

Eastern Sea Garfish

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	**Sustainable**	Spawning stock biomass, fishing mortality rate, age composition, catch, effort

Prioritization and justification

Species Priority Ranking for 2022/23: **26**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **17**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **12**

Rank for ages – **7**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the commercial landed catch for NSW.

Sampling design

Most sampling is done at the Sydney Fish Markets; however, some sampling is done at the Forster boat ramp and a fisher's processing shed near Forster. Sampling instructions sent to field staff are in Figure 3. Sea Garfish are measured from the lower jaw to fork length to the nearest cm rounding down.

Both the Ocean Hauling and Estuary General Fisheries are monitored.

Twenty Sea Garfish per catch were purchased for ageing. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Sea Garfish sampling is based on monthly and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Sea Garfish catches are graded, generally into XL, L, M, S or U. All grades are sampled during a sampling event. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly using the PISCES software.

Sea Garfish *(Hyporhamphus australis)*

Sample days

- Opportunistically up to 4 days per month

Lengths required

- Sea garfish are almost always graded by size. Sample from **each grade 80-100 fish** (approx. 3-10kgs depending on size). Make sure you weigh the sub-sample taken from each grade. If whole catch is ungraded then only need to do one sample of 80-100 length measurements
- Measure catches as fork length (FL - from the tip of the top jaw to the fork in the tail – see figure below) to the nearest whole cm below true length.
- You will need to record the total catch weight, total weight of each size grade and the total weight of the fish measured from each size grade.
- Try and measure from as many different fishermen as time allows.

Otoliths required

20 otoliths per catch taken proportionately from each grade. Collect ototliths from 2 catches per month; 40 otoliths in total per month.

Field code **NB-Ha 1**

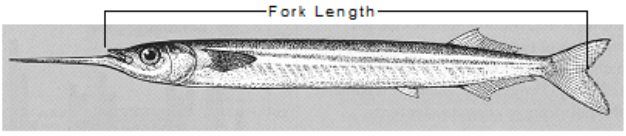

Figure 3. Sea Garfish sampling instructions for field staff.

Results

Table 11. Reported landings (kg) heat map of Eastern Sea Garfish by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													18550.4

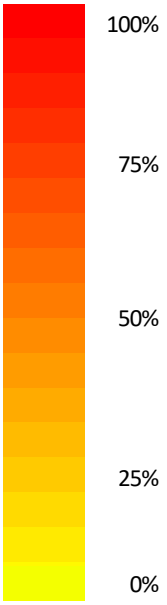

Table 12. The number of days sampled for Eastern Sea Garfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5								3	7	4	1		15
Zone 6													
Zone 7								2	1				3
Zone 8										1			1
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								1		1			2
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	6	8	6	1	0	21
Total	0	0	0	0	0	0	0	6	8	6	1	0	21

Table 13. The number of catches sampled for Eastern Sea Garfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5								3	9	4	1		17
Zone 6													
Zone 7								2	1				3
Zone 8										1			1
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								1		1			2
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	6	10	6	1	0	23
Total	0	0	0	0	0	0	0	6	10	6	1	0	23

Table 14. The number of fish sampled for Eastern Sea Garfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5								453	928	501	113		1995
Zone 6													
Zone 7								405	248				653
Zone 8										169			169
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								185		159			344
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	1043	1176	829	113	0	3161
Total	0	0	0	0	0	0	0	1043	1176	829	113	0	3161

Table 15. The number of fish sampled for ageing Eastern Sea Garfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5								80	160	82	20		342
Zone 6													
Zone 7								20	20				40
Zone 8										22			22
Zone 9													
Zone 10										22			22
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4										20			20
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	100	180	146	20	0	446
Total	0	0	0	0	0	0	0	100	180	146	20	0	446

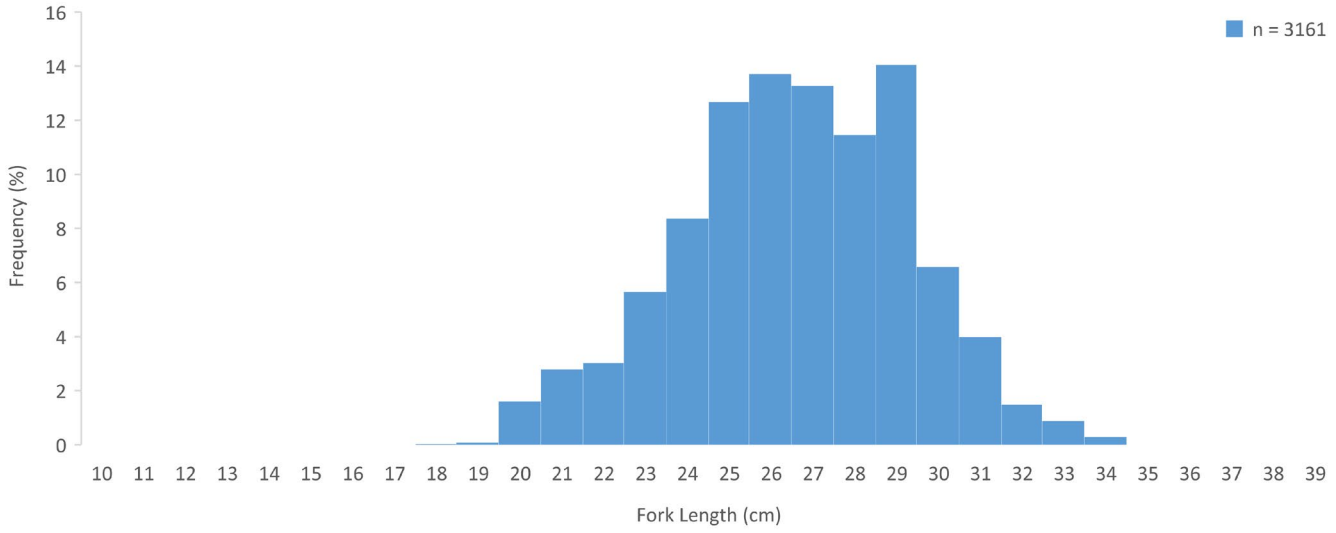

Figure 4. Length composition of Eastern Sea Garfish landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES.

Commentary

Comprehensive sampling of Sea Garfish was achieved during 2022/23, generally reflecting the spatial and temporal operations of the fishery, with the exception of fish from ocean zone 10. Sea Garfish from ocean zone 10 are sometimes sent to Melbourne for marketing, making them unavailable to sample through the current port monitoring program.

Giant Mud Crab

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Estuary General Fishery	**Sustainable**	Catch, catch rate, biomass, fishing mortality

Prioritization and justification

Species Priority Ranking for 2022/23: **16**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **9**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **8**

Rank for ages – **not required**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch from the Clarence River and Coffs Harbour Fishermen's Co-ops.

Sampling design

Length frequency data were collected through the Clarence River (Maclean) and Coffs Harbour Fishermen's co-operatives. Giant Mud Crab were measured as carapace length (CL) to the nearest mm, rounding down, and all crabs on the floor on the day of sampling were measured unless the catch exceeded 50 individuals in which case sub-sampling was done. A separate length frequency was recorded for each sex and stage of maturity.

Sampling is based on month and estuary region strata for data expansion using reported commercial landings for each month and estuary region. These expansions are done using the PISCES software.

Sampling graded catches

Giant Mud Crab catches are graded according to their size and density. All grades are sampled during a sampling event.

Results

Table 16. Reported landings (kg) heat map of Giant Mud Crab by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													78119.2

Legend
Percent of Max Value
100%
75%
50%
25%
0%

Table 17. The number of days sampled for Giant Mud Crab by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2	1	2			2	2	2	2	3	2	2	1	19
EG Region 3	3	2	2	2	4	3	2	2	3	3	3	3	32
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	4	4	2	2	6	5	4	4	6	5	5	4	51
Total	4	4	2	2	6	5	4	4	6	5	5	4	51

Table 18. The number of catches sampled for Giant Mud Crab by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2	1	2			10	8	6	6	6	7	2	2	50
EG Region 3	6	2	2	3	10	5	3	4	5	5	4	3	52
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	7	4	2	3	20	13	9	10	11	12	6	5	102
Total	7	4	2	3	20	13	9	10	11	12	6	5	102

Table 19. The number of Giant Mud Crabs sampled by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2	10	14			228	214	327	164	317	232	129	16	1651
EG Region 3	123	37	72	66	197	257	151	174	384	289	125	149	2024
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	133	51	72	66	425	471	478	338	701	521	254	165	3675
Total	133	51	72	66	425	471	478	338	701	521	254	165	3675

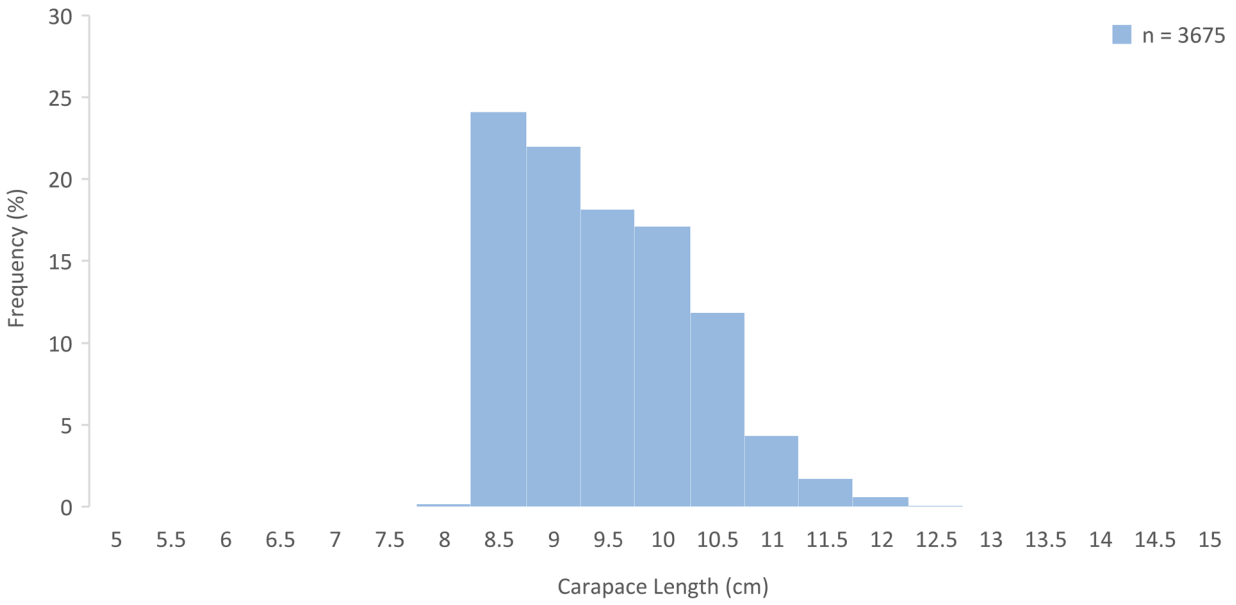

Figure 5. Length composition of Giant Mud Crab landed by the commercial fishery for 2022/23. Crabs were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES.

Commentary

Excellent coverage was achieved for the main fishery in regions 2 and 3; however, greater sampling in Estuary General Regions 1 and 4 would increase coverage of the fishery. Ongoing issues in accessing landings at the Wallis Lake co-op continue to inhibit monitoring and assessment.

Gloomy Octopus

Prioritization and justification

Species Priority Ranking for 2022/23: **122**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **102**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **18**

Rank for ages – **11**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch.

Sampling design

There was a dedicated FRDC project on Gloomy and Māori Octopus during the 2022/23 sampling year, and all sampling from Ballina, Maclean/Iluka and Coffs harbour coops as well as the Sydney Fish Market was done by the FRDC-funded technician. For each sampled catch, length frequencies were recorded along with the species split. Gloomy Octopus were measured as dorsal mantle length (DML), from the top of the mantle to the crease above the eyes, to the nearest mm, rounding down. The species split was used to estimate the proportion of the total catch weight allocated to each species.

Where possible, a sample of 10 individuals from Maclean/Iluka co-op, 10 individuals from Coffs Harbour co-op and 5 individuals from both ocean zones 5 and 6 were collected each month for ageing.

Gloomy Octopus sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Octopus catches are not graded.

Results

Table 20. Reported landings (kg) heat map of Gloomy Octopus by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													2113.7

Legend

Percent of Max Value

100%

75%

50%

25%

0%

Table 21. The number of days sampled for Gloomy Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			1	1				1					3
Zone 2				1	2	2	1	2	2	1	2	2	15
Zone 3		1	3		1		1	1	2	2	2	2	15
Zone 4													
Zone 5	1							1	2	3	2	2	11
Zone 6					1		1			1		3	6
Zone 7					1					1		1	3
Zone 8													
Zone 9				1									1
Zone 10				1									1
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								1		3	2	1	7
EG Region 5													
EG Region 6													
EG Region 7											1		1
Total (area known)	1	1	4	4	5	2	3	6	6	11	9	11	63
Total	1	1	4	4	5	2	3	6	6	11	9	11	63

Table 22. The number of catches sampled for Gloomy Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			1	1				1					3
Zone 2				1	3	2	1	4	6	1	3	5	26
Zone 3		1	3		1		3	1	5	3	4	6	27
Zone 4													
Zone 5	1							1	5	5	5	5	22
Zone 6					1		1			1		3	6
Zone 7					1					1		3	5
Zone 8													
Zone 9				1									1
Zone 10				1									1
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								1		4	2	1	8
EG Region 5													
EG Region 6													
EG Region 7											1		1
Total (area known)	1	1	4	4	6	2	5	8	16	15	15	23	100
Total	1	1	4	4	6	2	5	8	16	15	15	23	100

Table 23. The number of individuals sampled for Gloomy Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			1	1				16					18
Zone 2				3	9	5	5	27	12	3	8	9	81
Zone 3		1	5		6		33	44	52	29	27	28	225
Zone 4													
Zone 5	4							47	109	173	85	54	472
Zone 6					5		3			1		8	17
Zone 7					1					11		18	30
Zone 8													
Zone 9				1									1
Zone 10				1									1
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4										26	9	18	53
EG Region 5													
EG Region 6													
EG Region 7											2		2
Total (area known)	4	1	6	6	21	5	41	134	173	243	131	135	900
Total	4	1	6	6	21	5	41	134	173	243	131	135	900

Table 24. The number of individuals sampled for ageing Gloomy Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2				3	10	5	5	27	13	2	7	11	83
Zone 3		1	36		7	1	16	29	32	26	37	33	218
Zone 4													
Zone 5								5	16	11	5	5	42
Zone 6							2						2
Zone 7					6							2	8
Zone 8						2							2
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4								10		5	14	11	40
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	1	36	3	23	8	23	71	61	44	63	62	395
Total	0	1	36	3	23	8	23	71	61	44	63	62	395

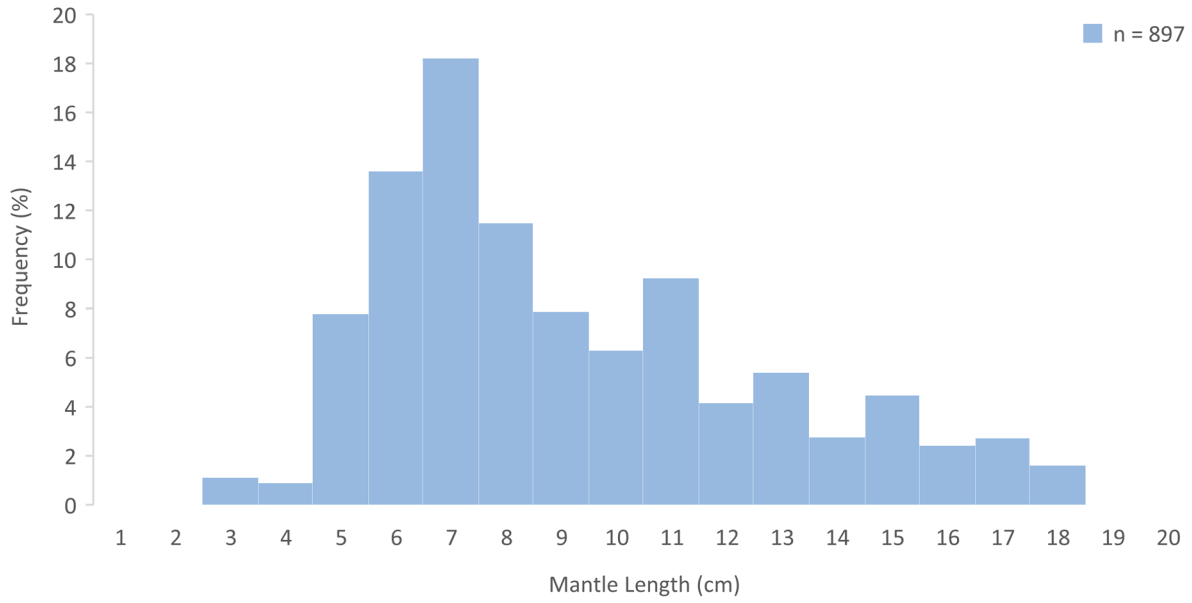

Figure 6. Length composition of Gloomy Octopus landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling for Gloomy Octopus during 2022/23 followed the agreed protocols, however misreporting and combined reporting of octopus species by commercial fishers is reflected in the difference between distribution of catches sampled and the reported commercial landings heat maps.

Sampling a greater number of catches from EG Region 4 (Wallis Lake and Tuggerah Lakes) may improve the precision of the length frequency estimates.

In the more northern ocean zones and estuaries, catches were mainly made up of Hammer Octopus (*Octopus australis*), Eye-cross Octopus (*Amphioctopus* cf *kagoshimensis*), and Gloomy Octopus (*Octopus tetricus*). In the more southern ocean zones and estuaries there were less Hammer, Eye-cross and Gloomy Octopus and more Maori Octopus (*Macroctopus maorum*) and Pale Octopus (*Octopus pallidus*).

Grey Morwong

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	Depleted	Catch, Catch rates, size structure, age structure, fishing mortality

Prioritization and justification

Species Priority Ranking for 2022/23: **9**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **5**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **5**

Rank for ages – **not required**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch for NSW.

Sampling design

Length frequency data from the commercial fishery were collected for as many ocean zones as possible through the Clarence River (Maclean) and Coffs Harbour Fishermen's co-operatives and the Sydney Fish Markets. For each location, all catches from an ocean zone that were on the floor on the day of sampling were attempted to be sampled. Grey Morwong were measured from the tip of the nose to fork length (nearest cm rounding down).

Grey Morwong sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Grey Morwong catches are graded, generally into XL, L, M, S or U. All grades are sampled during a sampling event, and because catches are relatively small, all fish in each catch are usually measured.

Results

Table 25. Reported landings (kg) heat map of Grey Morwong by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													19529.8

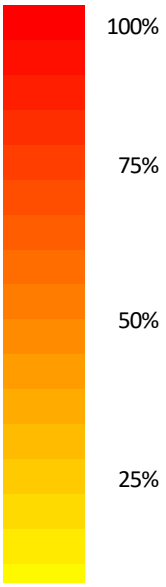

Table 26. The number of days sampled for Grey Morwong by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					7	2	1	5	2	2	3	2	24
Zone 3	3	3	1	2	1	2	1	1	2	4	2	3	25
Zone 4										1			1
Zone 5													
Zone 6	2		2	1	1	2	2	3	2	1	1	3	20
Zone 7	1												1
Zone 8								1					1
Zone 9							1	2			1	2	6
Zone 10	3	1											4
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	9	4	3	3	9	6	5	12	6	8	7	10	82
Total	9	4	3	3	9	6	5	12	6	8	7	10	82

Table 27. The number of catches sampled for Grey Morwong by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					7	2	1	5	2	2	3	2	24
Zone 3	3	3	1	2	1	2	1	1	2	4	2	3	25
Zone 4										1			1
Zone 5													
Zone 6	2		5	1	1	3	4	3	2	1	1	4	27
Zone 7	1												1
Zone 8								1					1
Zone 9							1	2			1	2	6
Zone 10	4	2											6
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	10	5	6	3	9	7	7	12	6	8	7	11	91
Total	10	5	6	3	9	7	7	12	6	8	7	11	91

Table 28. The number of fish sampled for Grey Morwong by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					112	143	65	58	92	56	140	70	736
Zone 3	15	40	30	32	38	103	22	28	74	92	29	29	532
Zone 4										28			28
Zone 5													
Zone 6	33		183	25	8	183	94	88	61	17	38	85	815
Zone 7	3												3
Zone 8								42					42
Zone 9							10	37			68	29	144
Zone 10	163	88											251
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	214	128	213	57	158	429	191	253	227	193	275	213	2551
Total	214	128	213	57	158	429	191	253	227	193	275	213	2551

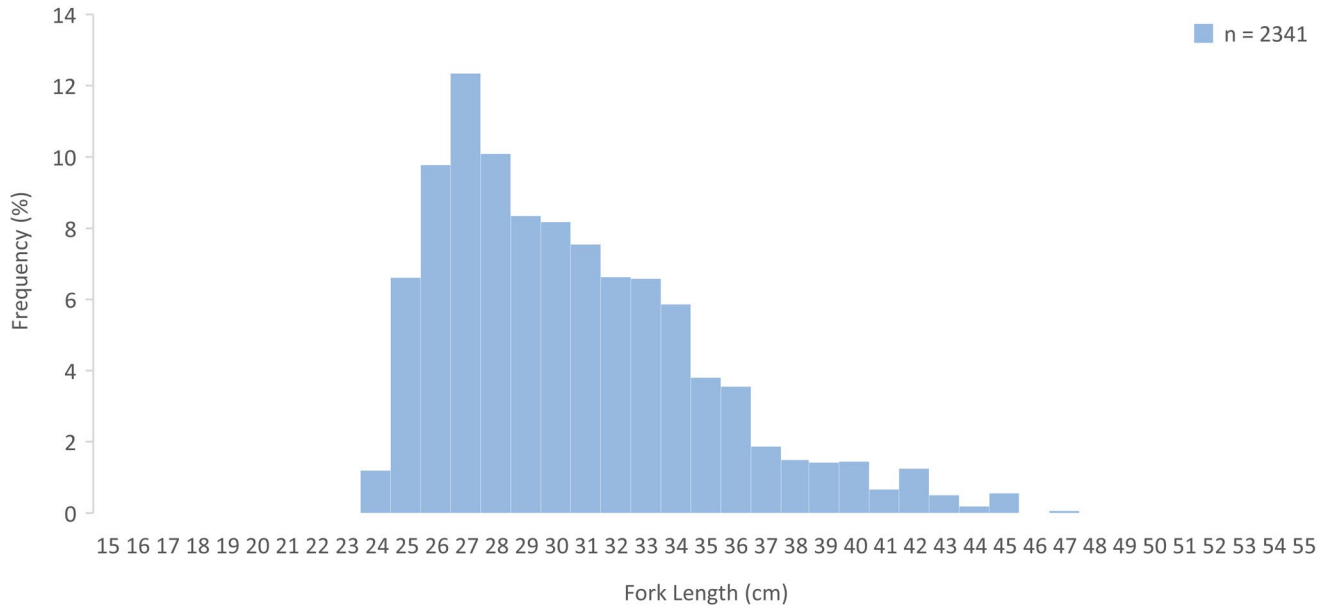

Figure 7. Length composition of Grey Morwong landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. The number of lengths used to create the Figure may differ slightly from the number of lengths measured due to length rules in the PISCES software.

Commentary

Sampling for 2022/23 was reasonably comprehensive, noting that greater sampling for lengths from fish from the far south coast (ocean zones 9 and 10) would provide better alignment with the spatial operation of the fishery.

Hammer Octopus

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Sustainable	Catch, effort, standardised CPUE

Prioritization and justification

Species Priority Ranking for 2022/23: **117**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **101**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **17**

Rank for ages – **10**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch.

Sampling design

Sampling of octopus from Ballina, Maclean/Iluka and Coffs harbour coops as well as the Sydney Fish Market was done by the FRDC-funded technician. For each sampled catch, length frequencies were recorded along with the species split. Hammer Octopus were measured as dorsal mantle length (DML), from the top of the mantle to the crease above the eyes, to the nearest mm, rounding down. The species split was used to estimate the proportion of the total catch weight allocated to each species.

Hammer Octopus sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Octopus catches are not graded.

Results

Table 29. Reported landings (kg) heat map of Hammer Octopus by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													74014.7

Legend
Percent of Max Value
100%
75%
50%
25%
0%

Table 30. The number of days sampled for Hammer Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			1	1				1					3
Zone 2		1	1	1	2	2	1	2	2	1	2	2	17
Zone 3		2	2	1	1		1	1	2	2	2	2	16
Zone 4												1	1
Zone 5	1	2	1	1				2	2	3	2	2	16
Zone 6				1		1	1					3	6
Zone 7					1							1	2
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	1	5	5	5	4	3	3	6	6	6	6	11	61
Total	1	5	5	5	4	3	3	6	6	6	6	11	61

Table 31. The number of catches sampled for Hammer Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			1	1				1					3
Zone 2		1	2	2	3	2	1	4	6	2	7	9	39
Zone 3		3	3	1	1		3	1	5	3	4	5	29
Zone 4												1	1
Zone 5	1	5	1	1				2	5	5	5	3	28
Zone 6				1		1	1					3	6
Zone 7					2							2	4
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	1	9	7	6	6	3	5	8	16	10	16	23	110
Total	1	9	7	6	6	3	5	8	16	10	16	23	110

Table 32. The number of individuals sampled for Hammer Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1			32	9				94					135
Zone 2		40	58	11	54	55	51	151	218	87	231	385	1341
Zone 3		259	201	87	157		103	37	220	95	161	99	1419
Zone 4												72	72
Zone 5	10	285	96	39				116	127	259	283	286	1501
Zone 6				32		73	11					319	435
Zone 7					24							60	84
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	10	584	387	178	235	128	165	398	565	441	675	1221	4987
Total	10	584	387	178	235	128	165	398	565	441	675	1221	4987

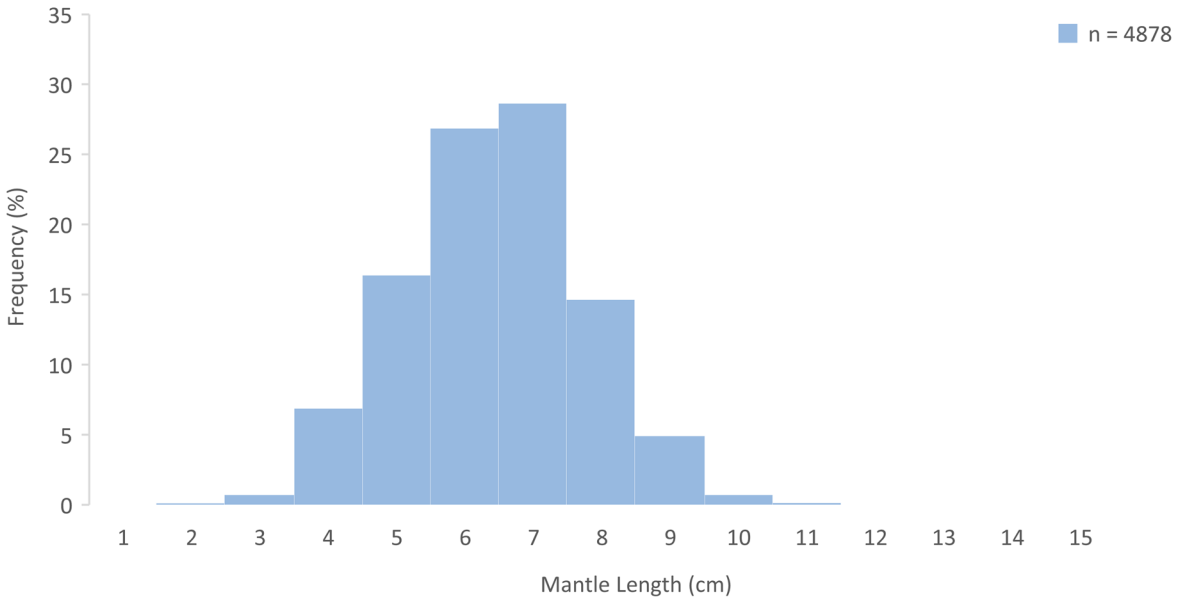

Figure 8. Length composition of Hammer Octopus landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling for Hammer Octopus during 2022/23 followed the agreed protocols and aligned reasonably well with the spatial and temporal operation of the fishery.

In the more northern ocean zones and estuaries, catches were mainly made up of Hammer Octopus (*Octopus australis*), Eye-cross Octopus (*Amphioctopus* cf *kagoshimensis*), and Gloomy Octopus (*Octopus tetricus*). In the more southern ocean zones and estuaries there were less Hammer, Eye-cross and Gloomy Octopus and more Maori Octopus (*Macroctopus maorum*) and Pale Octopus (*Octopus pallidus*).

Māori Octopus

Prioritization and justification

Species Priority Ranking for 2022/23: 136

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **103**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **19**

Rank for ages – **12**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the commercial landed catch.

Sampling design

There was a dedicated FRDC project on Gloomy and Māori Octopus during the 2022/23 sampling year, and all octopus sampling from Ballina, Maclean/Iluka and Coffs harbour coops as well as the Sydney Fish Market was done by the FRDC-funded technician. For each sampled catch, length frequencies were recorded along with the species split where occasionally Maori Octopus were combined with other octopus species. Māori Octopus were measured as dorsal mantle length (DML), from the top of the mantle to the crease above the eyes, to the nearest mm, rounding down. The species split was used to estimate the proportion of the total catch weight allocated to each species.

Where possible, a sample of 5-10 individuals from the south coast were collected each month for ageing.

Māori Octopus sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Octopus catches are not graded.

Results

Table 33. Reported landings (kg) heat map of Maori Octopus by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													43168.5

Legend

Percent of Max Value

100%

75%

50%

25%

Table 34. The number of days sampled for Māori Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5	1								2		1		4
Zone 6						1		1	1	1		1	5
Zone 7												1	1
Zone 8													
Zone 9							1	1				1	3
Zone 10	1		3	2									6
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	0	3	2	0	1	1	2	3	1	1	3	19
Total	2	0	3	2	0	1	1	2	3	1	1	3	19

Table 35. The number of catches sampled for Māori Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5	1								2		1		4
Zone 6						1		1	1	1		1	5
Zone 7												1	1
Zone 8													
Zone 9							1	1				1	3
Zone 10	1		4	2									7
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	0	4	2	0	1	1	2	3	1	1	3	20
Total	2	0	4	2	0	1	1	2	3	1	1	3	20

Table 36. The number of individuals sampled for Māori Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5	2								24		1		27
Zone 6						2		9	2	17		1	31
Zone 7												1	1
Zone 8													
Zone 9							3	21				2	26
Zone 10	2		30	6									38
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	4	0	30	6	0	2	3	30	26	17	1	4	123
Total	4	0	30	6	0	2	3	30	26	17	1	4	123

Table 37. The number of individuals sampled for ageing Māori Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6							1		2	5			8
Zone 7													
Zone 8						4							4
Zone 9			10			5	3	5				2	25
Zone 10	2		7	4									13
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	0	17	4	0	9	4	5	2	5	0	2	50
Total	2	0	17	4	0	9	4	5	2	5	0	2	50

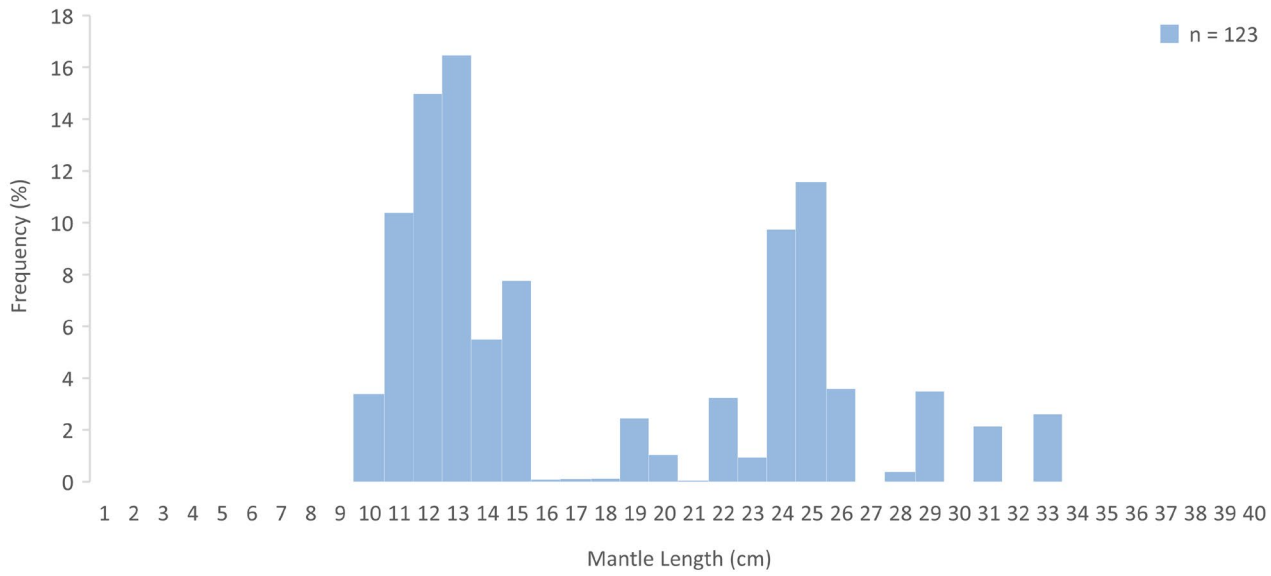

Figure 9. Length composition of Māori Octopus landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling a greater number of catches from ocean zones 9 and 10, specifically from July through to December, may improve the precision of the length frequency estimates.

In the more northern ocean zones and estuaries, catches were mainly made up of Hammer Octopus (*Octopus australis*), Eye-cross Octopus (*Amphioctopus* cf *kagoshimensis*), and Gloomy Octopus (*Octopus tetricus*). In the more southern ocean zones and estuaries there were less Hammer, Eye-cross and Gloomy Octopus and more Maori Octopus (*Macroctopus maorum*) and Pale Octopus (*Octopus pallidus*).

Mulloway

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	**Depleted**	Catch, Catch rates, Size Composition, Yield-per-recruit, Mortality Rates, Spawning Potential Ratio

Prioritization and justification

Species Priority Ranking for 2022/23: **12**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **7**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **7**

Rank for ages – **6**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the commercial landed catch for NSW.

Sampling design

Length Frequency data were collected through the Ballina, Clarence River (both Iluka and Maclean), and Coffs Harbour Fishermen's co-ops and the Sydney Fish Markets. Landings from all commercial fisheries were monitored. For each location sampled on a day, all catches that were available were attempted to be sampled. Mulloway were measured from the tip of the nose to total length (nearest cm rounding down).

Mulloway otoliths were opportunistically sampled from gilled and gutted fish coming through the co-ops.

Mulloway sampling is based on month, estuary region and ocean zone strata for data expansion using reported commercial landings for each month and area. These expansions are done using the PISCES software.

Sampling graded catches

Mulloway catches are often graded, generally into XL, L, M, S or U. All grades are sampled on a sampling event, and because catches are often relatively small in terms of numbers of fish, all fish in each catch are usually measured.

Results

Table 38. Reported landings (kg) heat map of Mulloway by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													98318.9

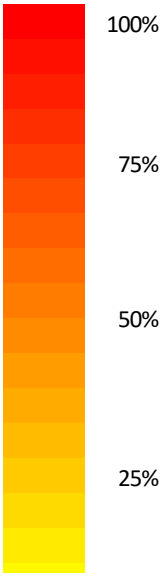

Table 39. The number of days sampled for Mulloway by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1	1										1		2
Zone 2		3											3
Zone 3	2				7	3	5		2	1	3	4	27
Zone 4													
Zone 5								2	3	1	2		8
Zone 6							1		1		2		4
Zone 7			2		1								3
Zone 8				1									1
Zone 9													
Zone 10													
EG Region 1												1	1
EG Region 2	9	8	4	3	1	1	1	5	9	5	13	8	67
EG Region 3	3	5		1				3	1	1	3	2	19
EG Region 4	5	2	3	1	4	1	2	2		2	4	3	29
EG Region 5	1	1	1	2	1	1	2	4	1	3		3	20
EG Region 6				1	2			1	1		1		6
EG Region 7													
Total (area known)	21	19	10	9	16	6	11	17	18	13	29	21	190
Total	21	19	10	9	16	6	11	17	18	13	29	21	190

Table 40. The number of catches sampled for Mulloway by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1	1										2		3
Zone 2		3											3
Zone 3	2				7	3	6		2	1	3	5	29
Zone 4													
Zone 5								2	3	1	2		8
Zone 6							1		1		3		5
Zone 7			2		1								3
Zone 8				1									1
Zone 9													
Zone 10													
EG Region 1												1	1
EG Region 2	11	10	4	4	1	1	1	5	14	8	16	8	83
EG Region 3	3	5		1				3	1	1	4	2	20
EG Region 4	12	2	7	2	4	1	3	3		2	4	4	44
EG Region 5	1	1	1	2	2	1	3	4	2	3		4	24
EG Region 6				1	2			1	1		1		6
EG Region 7													
Total (area known)	30	21	14	11	17	6	14	18	24	16	35	24	230
Total	30	21	14	11	17	6	14	18	24	16	35	24	230

Table 41. The number of fish sampled for Mulloway by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1	2										14		16
Zone 2		5											5
Zone 3	2				27	4	9		4	2	20	8	76
Zone 4													
Zone 5								2	29	3	3		37
Zone 6							3		4		4		11
Zone 7			66		2								68
Zone 8				4									4
Zone 9													
Zone 10													
EG Region 1												4	4
EG Region 2	41	61	12	8	6	4	1	5	31	12	63	28	272
EG Region 3	7	12		1				9	1	2	12	3	47
EG Region 4	123	18	27	48	17	1	7	4		27	21	37	330
EG Region 5	17	7	3	51	8	2	56	69	9	17		15	254
EG Region 6				5	5			3	3		1		17
EG Region 7													
Total (area known)	192	103	108	117	65	11	76	92	81	63	138	95	1141
Total	192	103	108	117	65	11	76	92	81	63	138	95	1141

Table 42. The number of fish sampled for ageing Mulloway by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2		3											3
Zone 3	2				17	4	6		3	2	18	8	60
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1												4	4
EG Region 2	48	61	18	8	6	4	1	4	31	12	51	25	269
EG Region 3	7	12		1				9	1	2	9	3	44
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	57	76	18	9	23	8	7	13	35	16	78	40	380
Total	57	76	18	9	23	8	7	13	35	16	78	40	380

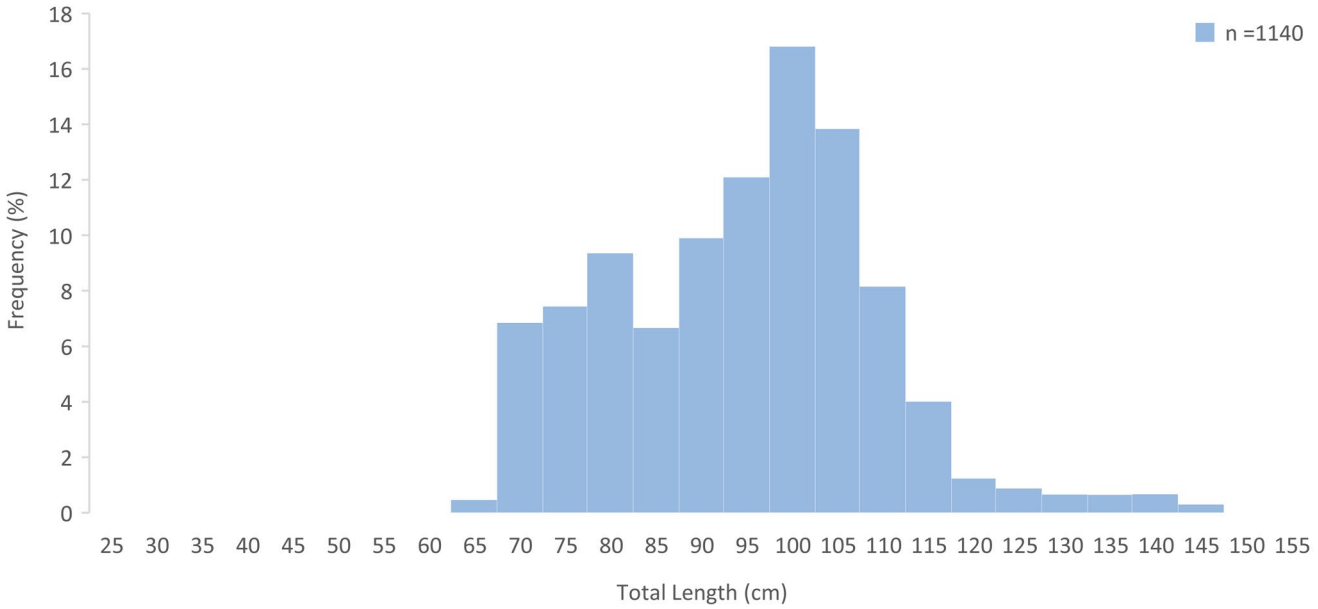

Figure 10. Length composition of Mulloway landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling for Mulloway was comprehensive during 2022/23. The distribution of sampling was similar to the spatial and temporal operation of the fishery.

Pale Octopus

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Negligible	

Prioritization and justification

Species Priority Ranking for 2022/23: **139**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **104**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **20**

Rank for ages – **13**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch.

Sampling design

Sampling of octopus from Ballina, Maclean/Iluka and Coffs harbour coops as well as the Sydney Fish Market was done by the FRDC-funded technician. For each sampled catch, length frequencies were recorded along with the species split. Pale Octopus were measured as dorsal mantle length (DML), from the top of the mantle to the crease above the eyes, to the nearest mm, rounding down. The species split was used to estimate the proportion of the total catch weight allocated to each species.

Pale Octopus sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Octopus catches are not graded.

Results

Table 43. Reported landings (kg) heat map of Pale Octopus by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													1342.2

Legend
Percent of Max Value
100%
75%
50%
25%

Table 44. The number of days sampled for Pale Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6												1	1
Zone 7													
Zone 8													
Zone 9				1				1					2
Zone 10			1	1									2
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	1	2	0	0	0	1	0	0	0	1	5
Total	0	0	1	2	0	0	0	1	0	0	0	1	5

Table 45. The number of catches sampled for Pale Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6												1	1
Zone 7													
Zone 8													
Zone 9				1				2					3
Zone 10			1	1									2
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	1	2	0	0	0	2	0	0	0	1	6
Total	0	0	1	2	0	0	0	2	0	0	0	1	6

Table 46. The number of individuals sampled for Pale Octopus by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6												1	1
Zone 7													
Zone 8													
Zone 9				83				74					157
Zone 10			47	38									85
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	47	121	0	0	0	74	0	0	0	1	243
Total	0	0	47	121	0	0	0	74	0	0	0	1	243

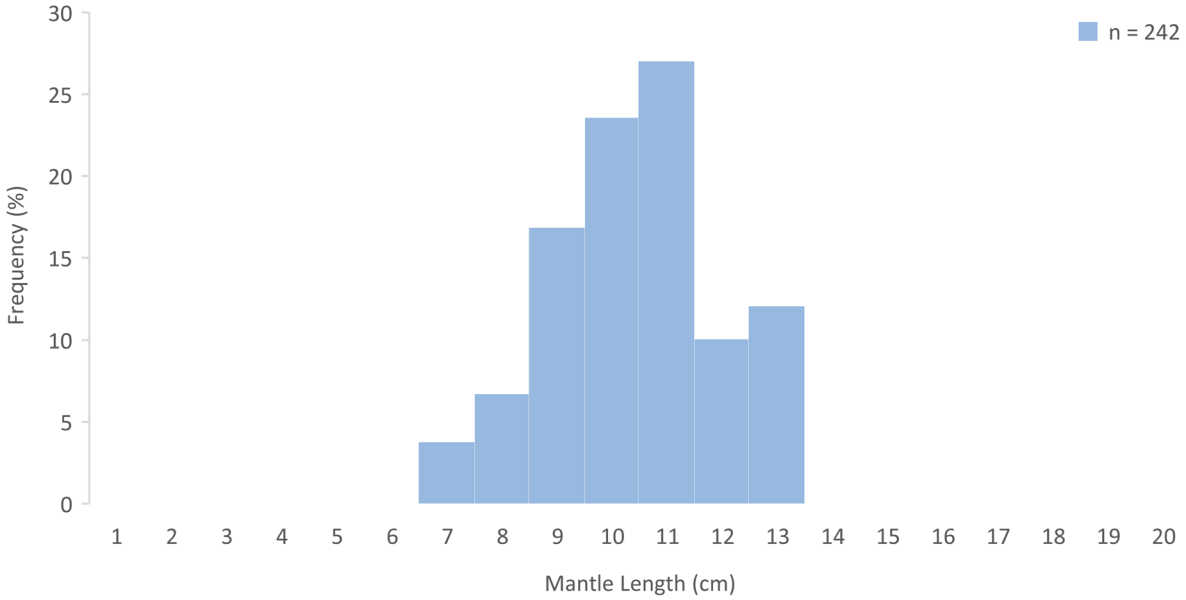

Figure 11. Length composition of Pale Octopus landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling for Pale Octopus during 2022/23 followed the agreed protocols. Sampling a greater number of catches, especially from ocean zones 6 and 10, may improve the precision of the length frequency estimates.

In the more northern ocean zones and estuaries, catches were mainly made up of Hammer Octopus (*Octopus australis*), Eye-cross Octopus (*Amphioctopus* cf *kagoshimensis*), and Gloomy Octopus (*Octopus tetricus*). In the more southern ocean zones and estuaries there were less Hammer, Eye-cross and Gloomy Octopus and more Maori Octopus (*Macroctopus maorum*) and Pale Octopus (*Octopus pallidus*).

Pearl Perch

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	**Depleted**	Biomass, Standardised Catch Rate, Fishery-Dependent Length and Age Frequency, Estimates of Total Mortality Rate, Catch and Effort

Prioritization and justification

Species Priority Ranking for 2022/23: **25**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **16**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **11**

Rank for ages – **not required**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch for NSW.

Sampling design

Length Frequency data were collected for ocean zones through the Ballina, Clarence River (both Iluka and Maclean) and Coffs Harbour Fishermen's co-operatives. For each location, all catches that were on the floor on the day of sampling were attempted to be sampled. Pearl Perch were measured from the tip of the nose to fork length (nearest cm rounding down).

Pearl Perch sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Pearl Perch catches are ungraded, however, where there was more than one grade, all grades were sampled. Because there are so few numbers of fish in each catch, subsampling is rarely needed.

Results

Table 47. Reported landings (kg) heat map of Pearl Perch by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													6853.89

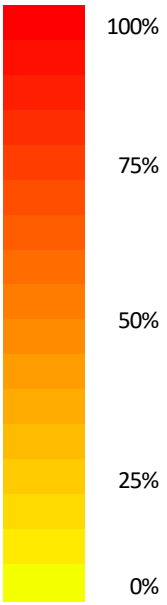

Table 48. The number of days sampled for Pearl Perch by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					3	2	1	3	2	2	3	1	17
Zone 3		4	2		2	1	3		3	6	4	2	27
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	4	2	0	5	3	4	3	5	8	7	3	44
Total	0	4	2	0	5	3	4	3	5	8	7	3	44

Table 49. The number of catches sampled for Pearl Perch by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					3	2	1	3	2	2	3	1	17
Zone 3		6	2		2	1	3		3	6	4	2	29
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	6	2	0	5	3	4	3	5	8	7	3	46
Total	0	6	2	0	5	3	4	3	5	8	7	3	46

Table 50. The number of fish sampled for Pearl Perch by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					32	37	153	44	25	30	60	48	429
Zone 3		79	22		13	2	10		79	58	43	15	321
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	79	22	0	45	39	163	44	104	88	103	63	750
Total	0	79	22	0	45	39	163	44	104	88	103	63	750

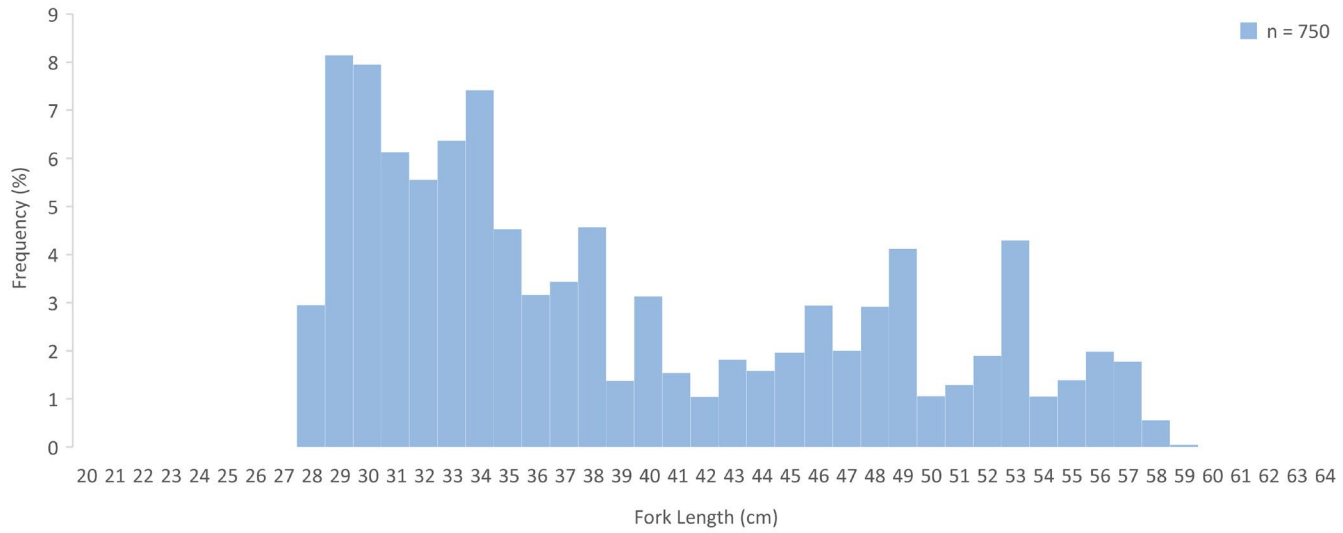

Figure 12. Length composition of Pearl Perch landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES.

Commentary

Given the very small nature of the commercial fishery (approximately 7 t in 2022/23) the port monitoring coverage was fairly balanced and adequate to inform the length structure for the fishery, however, greater sampling in Ocean Zone 1 would have improved this.

Pipi

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Sustainable	Catch, Standardised catch rates, estimated biomass

Prioritization and justification

Species Priority Ranking for 2022/23: **19**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **12**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **10**

Rank for ages – **not required**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch for NSW.

Sampling design

Length Frequency data from the Estuary General Fishery were collected from ocean zones 4 and 5 through the Sydney Fish Market and ocean zones 1 and 2 through Ballina Fishermen's Cooperative. All catches that were on the floor on the day of sampling were attempted to be sampled. Pipis were measured for maximum shell width (nearest 0.5 cm rounding down).

Pipi sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Pipi catches are ungraded, however, where there was more than one grade, all grades were sampled. Approx. 100 individuals were measured from each grade.

Results

Table 51. Reported landings (kg) heat map of Pipi by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													99781.3

Legend
Percent of Max Value
100%
75%
50%
25%
0%

Table 52. The number of days sampled for Pipi by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1									2		1		3
Zone 2									3				3
Zone 3													
Zone 4	1	4	1	2									8
Zone 5		1	1										2
Zone 6													
Zone 7													
Zone 8									1	1			2
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	1	5	2	2	0	0	0	0	6	1	1	0	18
Total	1	5	2	2	0	0	0	0	6	1	1	0	18

Table 53. The number of catches sampled for Pipi by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1									2		2		4
Zone 2									10				10
Zone 3													
Zone 4	2	5	1	3									11
Zone 5		1	1										2
Zone 6													
Zone 7													
Zone 8									1	1			2
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	6	2	3	0	0	0	0	13	1	2	0	29
Total	2	6	2	3	0	0	0	0	13	1	2	0	29

Table 54. The number of individuals sampled for Pipi by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1									90		150		240
Zone 2									821				821
Zone 3													
Zone 4	518	549	50	150									1267
Zone 5		130	50										180
Zone 6													
Zone 7													
Zone 8									106	50			156
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	518	679	100	150	0	0	0	0	1017	50	150	0	2664
Total	518	679	100	150	0	0	0	0	1017	50	150	0	2664

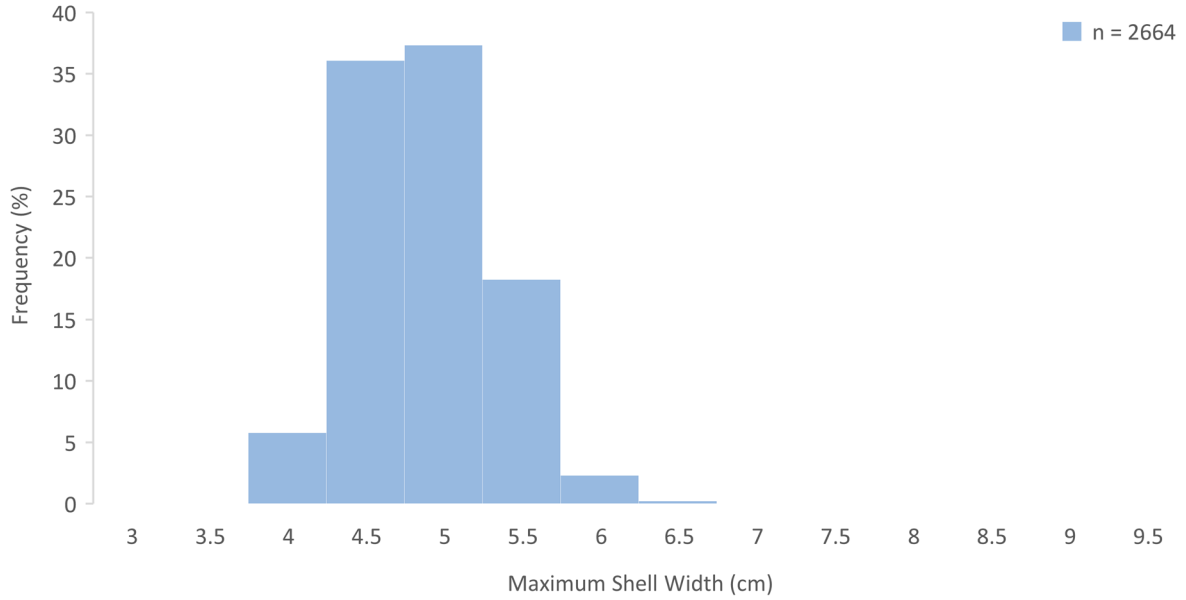

Figure 13. Length composition of Pipi landed by the commercial fishery for 2022/23. Pipis were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES.

Commentary

Comprehensive sampling was done from the Ocean Zone 4 region during 2022/23, with opportunistic sampling from other zones.

Sea Mullet

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales, Queensland	Eastern Australia	Sustainable	Spawning stock biomass, Catch, CPUE, Length and age compositions

Prioritization and justification

Species Priority Ranking for 2022/23: **18**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **11**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **9**

Rank for ages – **7**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the commercial landed catch during the spawn-run fishery for NSW.

Sampling design

All sampling was done during a 2-week period in May through Markwell Fisheries in Chinderah. For each catch sampled, length frequency data from an ungraded subsample of approximately 120kg was collected. A separate length frequency was recorded for each sex. Sea Mullet were measured from the tip of the nose to fork length (nearest cm rounding down).

For each catch, a subsample of 15 randomly selected males and 15 randomly selected females were processed for ageing.

Sea Mullet sampling is based on monthly and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Results

Table 55. Reported landings (kg) heat map of Sea Mullet by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													2235522

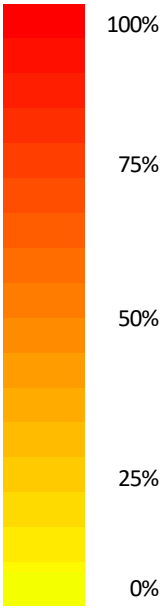

Table 56. The number of days sampled for Sea Mullet by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1											7		7
Zone 2											1		1
Zone 3											5		5
Zone 4											3		3
Zone 5											1		1
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2											1		1
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	0	0	0	18	0	18
Total	0	0	0	0	0	0	0	0	0	0	18	0	18

Table 57. The number of catches sampled for Sea Mullet by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1											8		8
Zone 2											1		1
Zone 3											6		6
Zone 4											5		5
Zone 5											1		1
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2											1		1
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	0	0	0	22	0	22
Total	0	0	0	0	0	0	0	0	0	0	22	0	22

Table 58. The number of fish sampled for Sea Mullet by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1											1012		1012
Zone 2											112		112
Zone 3											817		817
Zone 4											637		637
Zone 5											107		107
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2											114		114
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	0	0	0	2799	0	2799
Total	0	0	0	0	0	0	0	0	0	0	2799	0	2799

Table 59. The number of fish sampled for ageing Sea Mullet by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1											239		239
Zone 2											60		60
Zone 3											180		180
Zone 4											152		152
Zone 5											30		30
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	0	0	0	0	0	0	0	0	0	0	661	0	661
Total	0	0	0	0	0	0	0	0	0	0	661	0	661

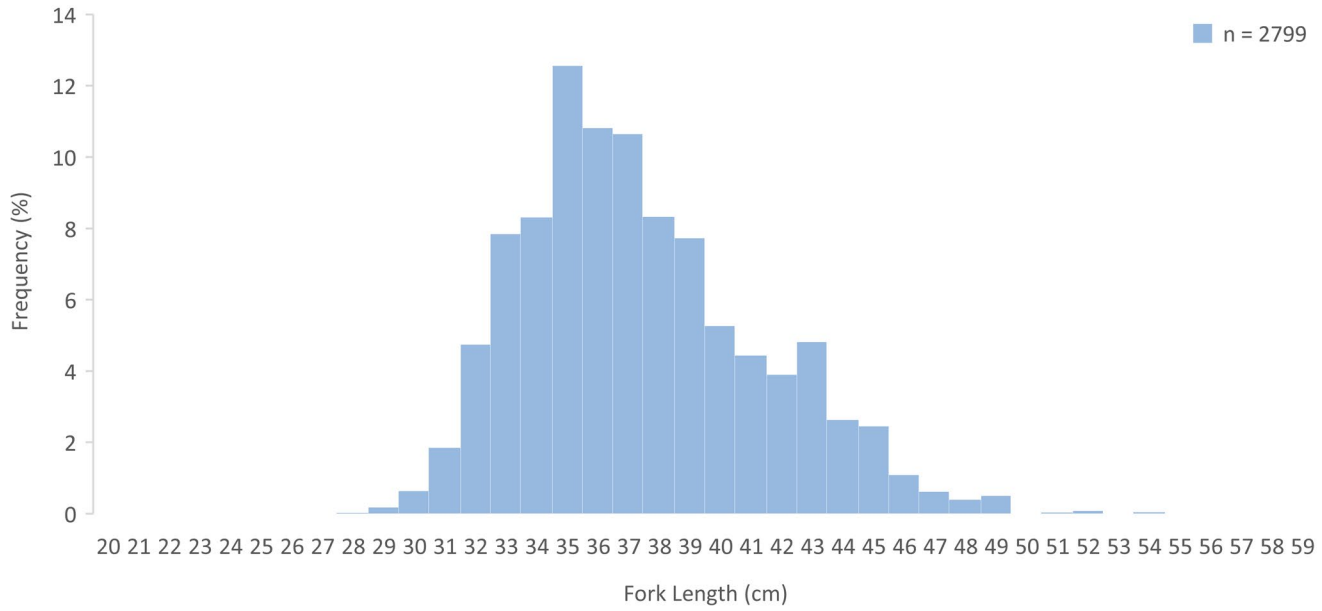

Figure 14. Length composition of Sea Mullet landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES.

Commentary

Sampling for 2022/23 spawning-run season was reasonably comprehensive.

Silver Trevally

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Depleted	Catch, CPUE, biomass, fishing mortality, spawning potential, length and age structures

Prioritization and justification

Species Priority Ranking for 2022/23: **1**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **1**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **1**

Rank for ages – **1**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch for NSW.

Sampling design

Length Frequency data from all state fisheries were collected through the Sydney Fish Markets and Coffs Harbour Fishermen's Cooperative. For each location, all catches that were on the floor on the day of sampling were attempted to be sampled. Silver Trevally were measured from the tip of the nose to fork length (nearest cm rounding down).

Silver Trevally sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Silver Trevally catches are generally graded into XL, L, M, S or U. All grades are sampled. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software. Because catches are relatively small, all fish in each catch are usually measured.

Results

Table 60. Reported landings (kg) heat map of Silver Trevally by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													38538.7

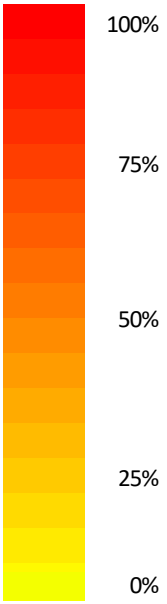

Table 61. The number of days sampled for Silver Trevally by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					2	1	2	3	2	2	3	1	16
Zone 3	2	5	1			1	2			2	2	1	16
Zone 4													
Zone 5	1	1						1					3
Zone 6	2	2	2	1	2	2	2			3	3	2	21
Zone 7				1	1	1							3
Zone 8												1	1
Zone 9											1	2	3
Zone 10	1												1
EG Region 1													
EG Region 2										1			1
EG Region 3		1											1
EG Region 4	1					1							2
EG Region 5			1				1	1	1			1	5
EG Region 6		1			3	1			1	1	3	1	11
EG Region 7								1	1	1			3

Total (area known)	7	10	4	2	8	7	7	6	5	10	12	9	87

Total	7	10	4	2	8	7	7	6	5	10	12	9	87

Table 62. The number of catches sampled for Silver Trevally by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					2	1	2	3	2	2	3	1	16
Zone 3	2	5	1			1	2			2	2	1	16
Zone 4													
Zone 5	1	1						1					3
Zone 6	5	3	5	1	2	3	3			5	3	2	32
Zone 7				1	1	1							3
Zone 8												1	1
Zone 9											1	2	3
Zone 10	1												1
EG Region 1													
EG Region 2										1			1
EG Region 3		1											1
EG Region 4	1					1							2
EG Region 5			1				1	1	1			1	5
EG Region 6		1			4	1			1	1	3	1	12
EG Region 7								1	1	1			3

Total (area known)	10	11	7	2	9	8	8	6	5	12	12	9	99

Total	10	11	7	2	9	8	8	6	5	12	12	9	99

Table 63. The number of fish sampled for Silver Trevally by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2					22	6	49	29	48	39	32	16	241
Zone 3	7	202	30			8	6			50	14	42	359
Zone 4													
Zone 5	28	30						49					107
Zone 6	129	59	87	45	44	67	77			104	54	50	716
Zone 7				60	30	22							112
Zone 8												98	98
Zone 9											41	161	202
Zone 10	39												39
EG Region 1													
EG Region 2										3			3
EG Region 3		10											10
EG Region 4	22					6							28
EG Region 5			64				45	42	22			25	198
EG Region 6		49			167	36			46	15	225	11	549
EG Region 7								144	25	96			265
Total (area known)	225	350	181	105	263	145	177	264	141	307	366	403	2927
Total	225	350	181	105	263	145	177	264	141	307	366	403	2927

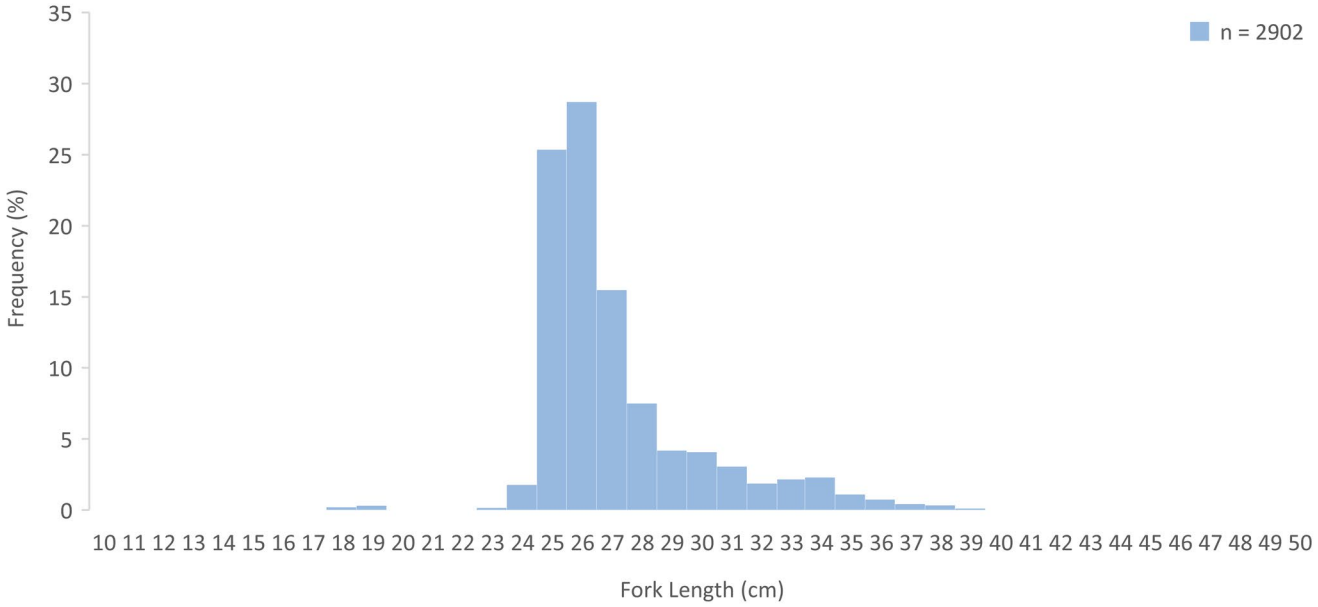

Figure 15. Length composition of Silver Trevally landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Port monitoring for Silver Trevally during 2022/23 adequately covered the spatial and temporal operation of the fishery. The shift towards the total harvest comprising a greater proportion of estuary landings was captured through our sampling protocols.

Snapper

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	New South Wales	Sustainable	Estimated biomass, standardized catch rates, catch, effort, size and age composition

Prioritization and justification

Species Priority Ranking for 2022/23: **36**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **22**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **1**

Rank for lengths - **14**

Rank for ages – **9**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the NSW commercial fishery landings.

Sampling design

Length Frequency data from the Ocean Trap and Line Fishery were collected for all ocean zones through Ballina, Iluka/Maclean, Coffs Harbour, and the Sydney Fish Markets. For each location, all catches from the Ocean Trap and Line Fishery that were on the floor on the day of sampling were attempted to be sampled. Snapper were measured from the tip of the nose to fork length (nearest cm rounding down).

Snapper sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Fish were also purchased each month from Ballina, Maclean and Coffs Harbour Fishermen's co-operatives and the Sydney Fish market (targeting all NSW locations not covered by Maclean and

Coffs Harbour sampling) for ageing. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Sampling graded catches

Almost all Snapper catches are graded, generally into XL, L, M, S or U. All grades are sampled during a sampling event. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software.

Results

Table 64. Reported landings (kg) heat map of Snapper by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													150622

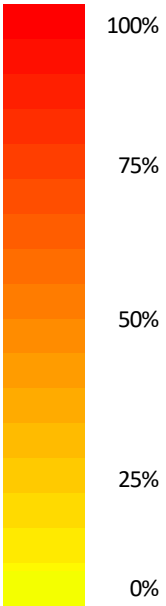

Table 65. The number of days sampled for Snapper by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	1	6		1	7	2	4	5	1	2	5	2	36
Zone 3	7	7	3	3	10	7	5	4	6	7	5	4	68
Zone 4		1											1
Zone 5										1		1	2
Zone 6	2	4	3	2	3	4	4	4	5	3	2	2	38
Zone 7					1	1					1		3
Zone 8				1				1		1		1	4
Zone 9				1	1		1	3				2	8
Zone 10	3	2	2										7
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5							1	2		1			4
EG Region 6													
EG Region 7													
Total (area known)	13	20	8	8	22	14	15	19	12	15	13	12	171
Total	13	20	8	8	22	14	15	19	12	15	13	12	171

Table 66. The number of catches sampled for Snapper by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	1	10		2	8	2	4	5	1	2	5	2	42
Zone 3	12	8	4	3	13	11	11	5	9	7	6	4	93
Zone 4		1											1
Zone 5										1		1	2
Zone 6	2	7	7	4	8	7	8	9	8	7	4	3	74
Zone 7					1	1					1		3
Zone 8				1				1		1		1	4
Zone 9				1	1		1	3				2	8
Zone 10	4	3	2										9
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5							1	2		1			4
EG Region 6													
EG Region 7													
Total (area known)	19	29	13	11	31	21	25	25	18	19	16	13	240
Total	19	29	13	11	31	21	25	25	18	19	16	13	240

Table 67. The number of fish sampled for Snapper by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	204	447		65	739	127	232	683	188	90	327	198	3300
Zone 3	375	402	274	162	242	358	329	236	331	299	162	124	3294
Zone 4		10											10
Zone 5										13		20	33
Zone 6	181	250	346	266	157	504	477	218	315	514	270	241	3739
Zone 7					157	54					119		330
Zone 8				26				31		31		2	90
Zone 9				16	21		119	505				345	1006
Zone 10	357	142	133										632
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5							11	24		13			48
EG Region 6													
EG Region 7													

Total (area known)	1117	1251	753	535	1316	1043	1168	1697	834	960	878	930	12482
Total	1117	1251	753	535	1316	1043	1168	1697	834	960	878	930	12482

Table 68. The number of fish sampled for ageing Snapper by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	10	20		20	20		20	20		20	40	9	179
Zone 3	20	20	20	20	29	31		20	40	20	12	20	252
Zone 4													
Zone 5													
Zone 6	20	20	20	20	20	20	21	18	26	20	20	20	245
Zone 7					11						10		21
Zone 8										10			10
Zone 9							10	10				10	30
Zone 10	20	10	10										40
EG Region 1													
EG Region 2											8		8
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													

Total (area known)	70	70	50	60	80	51	51	68	66	70	90	59	785
Total	70	70	50	60	80	51	51	68	66	70	90	59	785

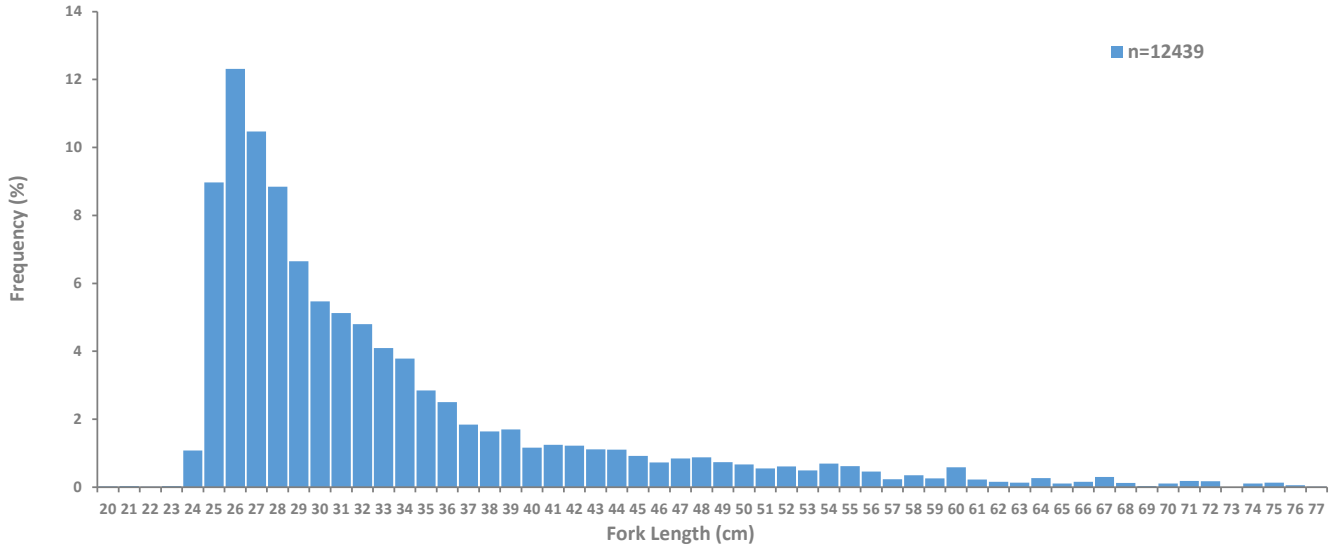

Figure 16. Length composition of Snapper landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Port monitoring for Snapper during 2022/23 provided comprehensive length and age information that aligned with the spatial and temporal operation of the fishery. With the exception of ocean zone 1 due to staff shortage, the major ocean zones for landings (being ocean zones 2, 3 and 6) had very good sampling coverage.

Stout Whiting

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	**Sustainable**	Standardised CPUE, age composition

Prioritization and justification

Species Priority Ranking for 2022/23: **6**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring: **4**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths - **4**

Rank for ages – **4**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the commercial landed catch.

Sampling design

Length frequency data were collected through Maclean/Iluka, Coffs Harbour and the Sydney Fish Markets. For each location, all catches from a selected ocean zone that were on the floor on the day of sampling were sampled. For each subsample taken, the species split of Eastern School Whiting and Stout Whiting was recorded and used to estimate the proportion of the total catch weight allocated to each species. Stout Whiting were measured from the tip of the nose to fork length (nearest cm rounding down).

A sample of 10 fish from ocean zones 5 or 6 was purchased opportunistically at the Sydney Fish Market each month for ageing, as well as 10 fish from Maclean/Iluka co-op and 10 fish from the Coffs Harbour co-op. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Export box sampling was also done at Iluka and Coffs Harbour Fishermen's co-operatives, where length frequencies were recorded along with the species split of Eastern School Whiting and Stout Whiting. A small number of each species (10 fish) were also processed for ageing. One 5-8 kg export box was purchased each month from each location.

Stout Whiting sampling is based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Stout Whiting catches are graded, generally into XL, L, M, S or U. All grades are sampled during a sampling event. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software.

Results

Table 69. Reported landings (kg) heat map of Stout Whiting by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													217929

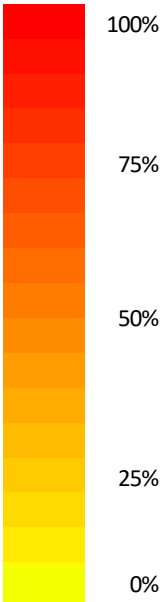

Table 70. The number of days sampled for Stout Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	2	2	1	3	3	1	2	2	2	1	1	3	23
Zone 3			1		1			2	2				6
Zone 4													
Zone 5		1	1					3		1	2		8
Zone 6			1	1	1				1	1			5
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	3	4	4	5	1	2	7	5	3	3	3	42
Total	2	3	4	4	5	1	2	7	5	3	3	3	42

Table 71. The number of catches sampled for Stout Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	2	2	1	3	3	1	2	5	4	1	1	3	28
Zone 3			1		1			2	2				6
Zone 4													
Zone 5		1	1					3		1	3		9
Zone 6			1	1	1				1	1			5
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	2	3	4	4	5	1	2	10	7	3	4	3	48
Total	2	3	4	4	5	1	2	10	7	3	4	3	48

Table 72. The number of individuals sampled for Stout Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	195	264	22	211	53	143	189	544	482	121	181	122	2527
Zone 3			151		63			143	57				414
Zone 4													
Zone 5		80	85					268		82	240		755
Zone 6			60	94	50				160	73			437
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	195	344	318	305	166	143	189	955	699	276	421	122	4133
Total	195	344	318	305	166	143	189	955	699	276	421	122	4133

Table 73. The number of fish sampled for ageing Stout Whiting by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2	15	20	11	35	10	20	20	30	30	10	9	20	230
Zone 3		15	12		10			20	20				77
Zone 4													
Zone 5		20	10	10				10		10	20		80
Zone 6					10								10
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	15	55	33	45	30	20	20	60	50	20	29	20	397
Total	15	55	33	45	30	20	20	60	50	20	29	20	397

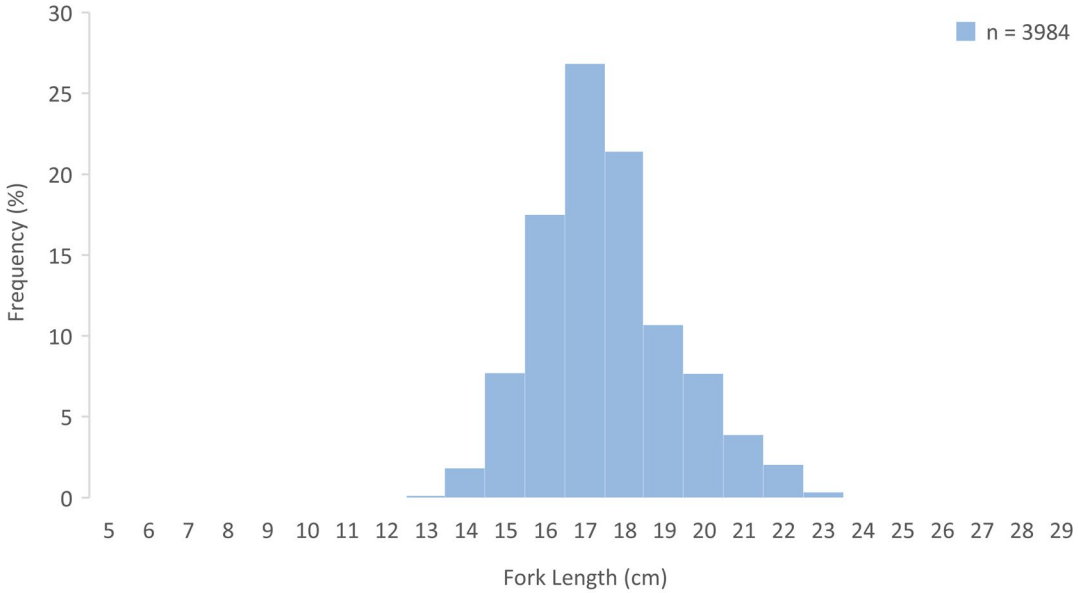

Figure 17. Length composition of Stout Whiting landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software PISCES. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling for Stout Whiting during 2022/23 aligned reasonably well with the spatial and temporal operation of the fishery.

Yellowtail Kingfish

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
New South Wales	Eastern Australia	**Sustainable**	Catch, CPUE, size composition, fishing mortality, yield per recruit analysis, spawning potential ratio

Prioritization and justification

Species Priority Ranking for 2022/23: **43**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **24**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths – 15

Rank for ages – **not required**

Aim of the Port Monitoring sampling for 2022/23

To collect size composition data that are representative of the commercial landed catch for NSW.

Sampling design

All sampling from ocean zones 4 to 10 was done at the Sydney Fish Markets, with sampling from Coffs Harbour co-operative covering ocean zones 2 and 3. All catches that were on the floor on the day of sampling from a particular area/month strata were attempted to be sampled. Yellowtail Kingfish were measured from the tip of the nose to fork length (nearest cm rounding down).

Yellowtail Kingfish sampling is based on monthly and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions are done using the PISCES software.

Sampling graded catches

Almost all Yellowtail Kingfish catches are ungraded; however, where there were more than 1 grade, all grades were sampled. Because there is so few numbers of fish in each catch, subsampling is rarely needed. When this does occur, sub-samples are weighed and the total weight of each grade recorded and the sample scaled up accordingly using the PISCES software.

Results

Table 74. Reported landings (kg) heat map of Yellowtail Kingfish by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													71957

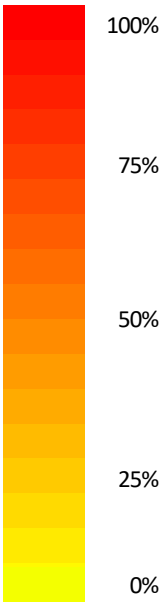

Table 75. The number of days sampled for Yellowtail Kingfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2				1	1		1						3
Zone 3	2	5	3	5	1	1		1		1	3	3	25
Zone 4													
Zone 5	1												1
Zone 6			1	1		2	1	2			2		9
Zone 7	1	1			1			2	3	3	3	2	16
Zone 8	2	4	2		1			2		1	2	3	17
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4		1									1		2
EG Region 5												1	1
EG Region 6													
EG Region 7													
Total (area known)	6	11	6	7	4	3	2	7	3	5	11	9	74
Total	6	11	6	7	4	3	2	7	3	5	11	9	74

Table 76. The number of catches sampled for Yellowtail Kingfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2				1	1		1						3
Zone 3	3	9	5	8	1	1		1		3	4	5	40
Zone 4													
Zone 5	1												1
Zone 6			1	2		3	1	3			3		13
Zone 7	1	1			1			2	3	5	4	2	19
Zone 8	3	4	2		2			2		1	2	3	19
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4		1									1		2
EG Region 5												1	1
EG Region 6													
EG Region 7													
Total (area known)	8	15	8	11	5	4	2	8	3	9	14	11	98
Total	8	15	8	11	5	4	2	8	3	9	14	11	98

Table 77. The number of fish sampled for Yellowtail Kingfish by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2				4	5		2						11
Zone 3	62	214	107	138	11	17		1		64	134	216	964
Zone 4													
Zone 5	30												30
Zone 6			23	9		21	2	5			9		69
Zone 7	66	29			9			63	100	91	241	98	697
Zone 8	66	365	42		9			19		5	28	99	633
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4		3									24		27
EG Region 5												12	12
EG Region 6													
EG Region 7													
Total (area known)	224	611	172	151	34	38	4	88	100	160	436	425	2443

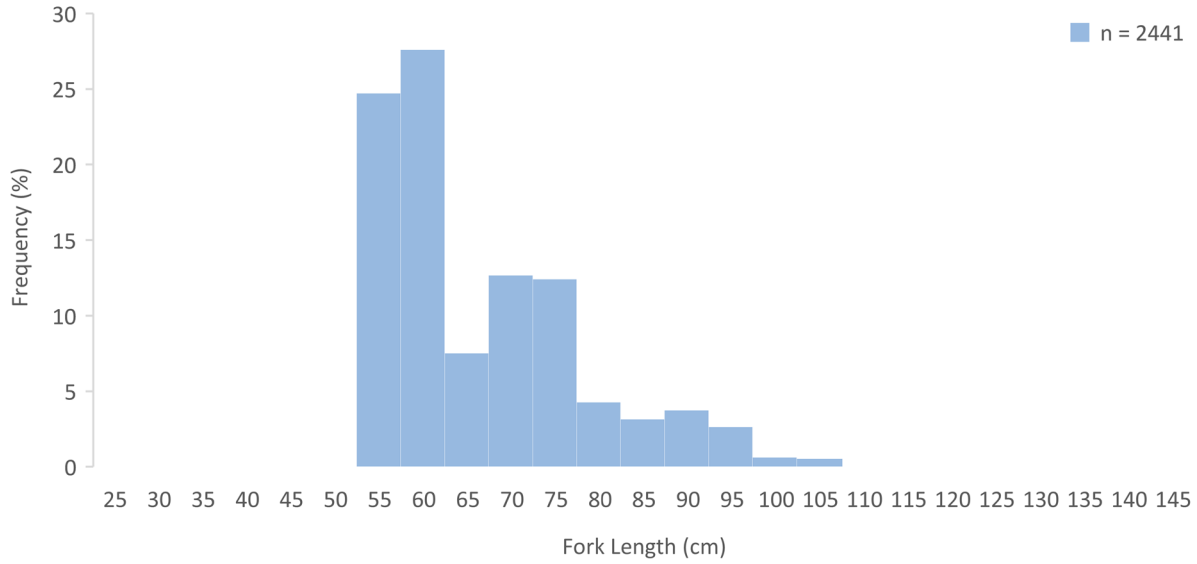

Figure 18. Length composition of Yellowtail Kingfish landed by the commercial fishery for 2022/23. Fish were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Sampling during 2022/23 reflected the distribution of commercial landings, with the majority of landings coming from ocean zone 3. Unfortunately, it was not possible to collect biological data through the port monitoring program with the existing resources.

Yellowtail Scad

STOCK STATUS OVERVIEW (2020)

Stock status determination			
Jurisdiction	Stock	Stock status	Indicators
Commonwealth, New South Wales, Queensland	Eastern Australia	**Sustainable**	Historical catch and effort data, natural mortality, fishing mortality, fishing gear selectivity.

Prioritization and justification

Species Priority Ranking for 2022/23: **11**

Data and Monitoring Plan for 2022/23

Ranking for Port Monitoring **6**

Base case port monitoring required to inform a reliable assessment:

Rank for biology – **not required**

Rank for lengths – **6**

Rank for ages – **5**

Aim of the Port Monitoring sampling for 2022/23

To collect size and age composition data that are representative of the NSW commercial ocean-hauling fishery landings.

Sampling design

Length Frequency data from the purse seine fisheries off Wollongong and Ulladulla (ocean zones 7 and 8) were collected from the Sydney Fish Markets. For each location, all catches were attempted to be sampled on any given day. Yellowtail Scad were measured from the tip of the nose to the fork length (nearest cm rounding down).

A sample of 20 fish from ocean zones 7 and 8 were also purchased at the Sydney Fish Market each month for ageing. Fish were selected from each grade in the approximate ratio of each grade in the total catch by weight.

Yellowtail Scad sampling was based on month and ocean zone strata for data expansion using reported commercial landings for each month and ocean zone. These expansions were done using the PISCES software.

Sampling graded catches

Almost all Yellowtail Scad catches are graded, generally into XL, L, M, S or U. All grades were sampled. Approximately 10 times the number of size classes per grade are measured (as tallied by the electronic measuring board software). These sub-samples were weighed and the total weight of each grade recorded and the sample scaled up accordingly, using the PISCES software.

Results

Table 78. Reported landings (kg) heat map of Yellowtail Scad by month and area during 2022/23.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6													
Zone 7													
Zone 8													
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total													408951

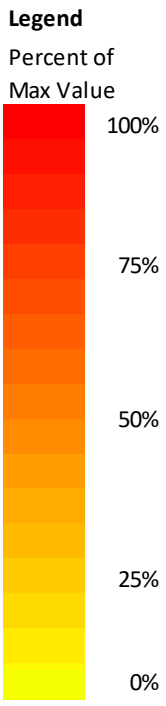

Table 79. The number of days sampled for Yellowtail Scad by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6							1						1
Zone 7	3	4	4	3	4	4	3	2	4	3	4	3	41
Zone 8				1	1	1	2		2	1		1	9
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	3	4	4	4	5	5	6	2	6	4	4	4	51
Total	3	4	4	4	5	5	6	2	6	4	4	4	51

Table 80. The number of catches sampled for Yellowtail Scad by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6							2						2
Zone 7	5	6	6	4	5	7	4	5	9	5	7	5	68
Zone 8				1	1	1	2		2	1		1	9
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	5	6	6	5	6	8	8	5	11	6	7	6	79
Total	5	6	6	5	6	8	8	5	11	6	7	6	79

Table 81. The number of fish sampled for Yellowtail Scad by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3													
Zone 4													
Zone 5													
Zone 6							200						200
Zone 7	362	531	502	486	439	683	351	449	634	419	621	285	5762
Zone 8				110	94	131	261		175	60		50	881
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	362	531	502	596	533	814	812	449	809	479	621	335	6843
Total	362	531	502	596	533	814	812	449	809	479	621	335	6843

Table 82. The number of fish sampled for ageing Yellowtail Scad by month and area during 2022/23. The shaded heat map represents the reported commercial landings.

Month-->	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total by Area
Ocean Zone/EG Region													
Zone 1													
Zone 2													
Zone 3										40			40
Zone 4													
Zone 5													
Zone 6						20	20						40
Zone 7	38	60	20	20	41	60	40	20	20	40	60	20	439
Zone 8				20			20		20	20			80
Zone 9													
Zone 10													
EG Region 1													
EG Region 2													
EG Region 3													
EG Region 4													
EG Region 5													
EG Region 6													
EG Region 7													
Total (area known)	38	60	20	40	41	80	80	20	40	100	60	20	599
Total	38	60	20	40	41	80	80	20	40	100	60	20	599

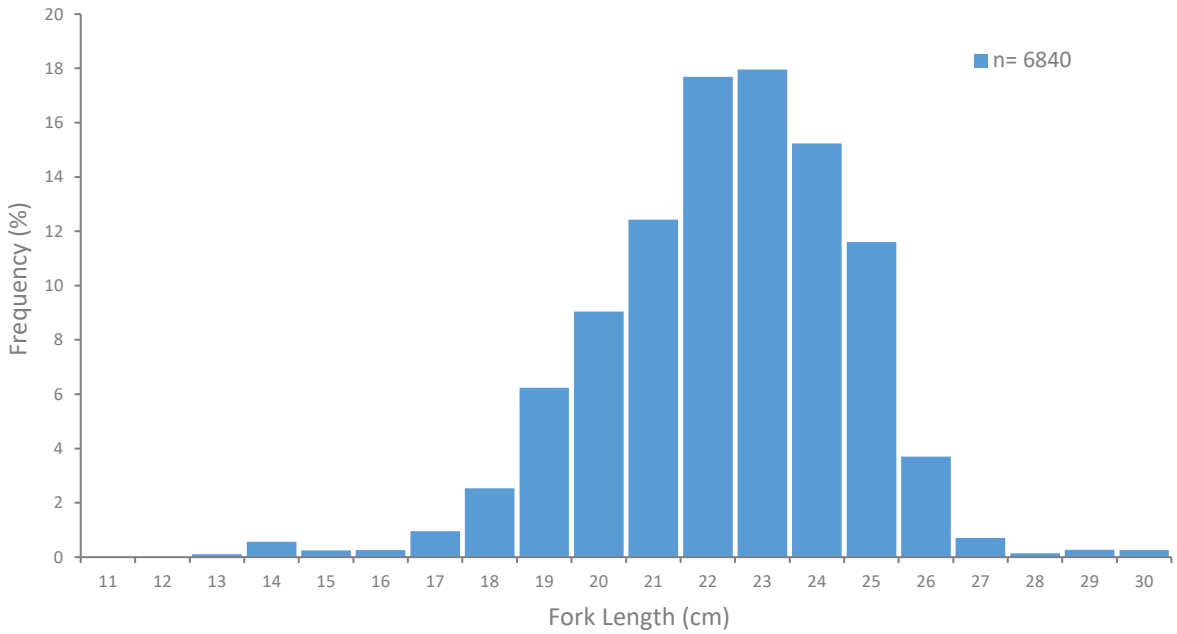

Figure 19. Length composition of Yellowtail Scad landed by the commercial fishery for 2022/23. Yellowtail Scad were sampled through the Port Monitoring program and combined according to the reported commercial landings in each sampling strata using the software. Number of lengths used to create figure may differ slightly from number of lengths measured due to length rules in PISCES software.

Commentary

Overall sampling aligned well with the spatial and temporal operation of the fishery.

Appendices

Appendix A -Staff

Core funded

John Stewart

James Craig

Anne-Marie Hegarty

Caitlin Young

Antony Gould

Chantelle Clain

Commercial Trust funded

David Barker

Glen Cuthbert

Glenn Campbell

Chantelle Clain

Holly Gunton

Nick Meadows

Kyle Goodman

Appendix B - Species Priority List 2021/2022

Species priority list for research for 2021/2022, ranked highest to lowest. The multi-criteria decision analysis (MCDA) was based on commercial and recreational management weightings. Species selected for port monitoring in 2021/2022 are highlighted.

MCDA rank	Common Name	MCDA rank	Common Name	MCDA rank	Common Name
1	Silver Trevally	51	Gummy Shark	101	Australian Anchovy
2	Gemfish	52	Shovelnose Rays	102	Periwinkles (Turban Shell) - other
3	Bluespotted Flathead	53	Loligo Squid	103	Eastern Blue Groper
4	Eastern School Whiting	54	Spanish Mackerel	104	Mako Sharks
5	Eastern Rock Lobster	55	Bass Groper	105	Longtail Tuna
6	Stout Whiting	56	Royal Red Prawn	106	Cunjevoi
7	Blue Mackerel	57	Common Jack Mackerel	107	Estuary Perch
8	Tiger Flathead	58	Crimsonband Wrasse	108	Freshwater Shrimp
9	Grey Morwong	59	Tailor	109	Australian Bass
10	Spanner Crab	60	Long Spined Sea Urchin (Purple/Black)	110	Bastard Trumpeter
11	Yellowtail Scad	61	Spotted Mackerel	111	Bluethroat Wrasse
12	Mulloway	62	Blacktip Sharks (Common)	112	Spangled Emperor
13	Blue-eye Trevalla	63	Sandbar Shark	113	Snook
14	Australian Sardine	64	Cobia	114	Short Spined Sea Urchin (Green)
15	Eastern King Prawn	65	Dusky Whaler	115	Angel Sharks
16	Giant Mud Crab	66	John Dory	116	Eastern Pigfish
17	Red Sea Urchin	67	Mirror Dory	117	Trawl Octopus
18	Sea Mullet	68	Yellowfin Tuna	118	Wobbegong Sharks
19	Pipi	69	Jackass Morwong	119	Greentail Prawn
20	Redfish	70	Murray Cod	120	Red Gurnard and Latchets
21	Blacklip Abalone	71	Estuary Cobbler	121	Mackerel Tuna
22	Eastern School Prawn	72	Golden Perch	122	Gloomy Octopus
23	Yellowfin Bream	73	Dart	123	Red Morwong
24	Blue Swimmer Crab	74	Mahi Mahi	124	Frigate Mackerel
25	Pearl Perch	75	Leatherjackets-other	125	Diamondfish
26	Eastern Sea Garfish	76	Whaler Sharks - other	126	Striped Perch
27	School Shark	77	Yabby (freshwater)	127	Bigeyes
28	Southern Bluefin Tuna	78	Mangrove Jack	128	Hammerhead Sharks
29	Luderick	79	Australian Herring	129	Tiger Shark
30	Ghost Nipper	80	Sawsharks	130	Tilefish
31	Dusky Flathead	81	Teraglin	131	Boarfish
32	Pink Ling	82	Rock Blackfish	132	Blue Shark
33	Sand Whiting	83	Goulds (Arrow) Squid	133	Mantis Shrimps
34	Blue Warehou	84	Ribaldo	134	Ghostsharks
35	Trumpeter Whiting	85	Elephantfish	135	Banded Morwong
36	Snapper	86	School Mackerel	136	Maori Octopus
37	Silver Sweep	87	Striped Marlin	137	Catfish
38	Beachworms	88	Silver Warehou	138	Tiger Prawn (Brown)
39	Eastern Australian Salmon	89	Flounders	139	Pale Octopus
40	Dogfish	90	Red Mullet		
41	Hapuku	91	Soles		
42	Ocean Jackets	92	Whitebait - Sandy Sprat		
43	Yellowtail Kingfish	93	Sand Mullet		
44	Southern Calamari	94	Cuttlefish		
45	Australian Bonito	95	Eastern Red Scorpionfish		
46	River Eels	96	Black Bream		
47	Balmain Bugs	97	River Garfish		
48	Common Silverbiddy	98	Banded Rockcod		
49	Tarwhine	99	Hairtail		
50	Goldspot Mullet	100	Southern Maori Wrasse		