

Fishery independent otter trawl survey

Preliminary results

Summary

The fishery independent otter trawl survey was completed in October 2020. One objective of the survey is to determine abundance and recruitment of scallops. Three chartered commercial vessels sampled 326 sites between Yeppoon and Double Island Point over 29 nights. The survey was spread out over 18 different survey areas including the scallop replenishment areas. Scallops were less abundant in 17 out of 18 survey areas compared to the 2019 survey. For many of the survey areas, the 2020 scallop abundance was the lowest in the recent time series (2017-2020).

Methods

Survey design

The survey is conducted prior to the end of the winter closed season—when fishers aren't allowed to take scallops. The scallop fishery is broken up into smaller survey areas (see Figure 1). The number of sites sampled within a survey area is determined by the commercial catch and effort reported in that area.

Sites are randomly selected and sampling consists of a one nautical mile tow, using common east coast commercial prawn trawl fishery net configurations. Survey staff count every Scallop.

Vessel calibration

Side-by-side trawls are completed to enable comparison of catch rates from each of the different boats. In 2020, 11 sites were sampled within the Hervey Bay A SRA. The data was used to calculate the vessel adjustment factor for each vessel and is based on the vessel (Vessel 1) with the longest history in undertaking the survey.

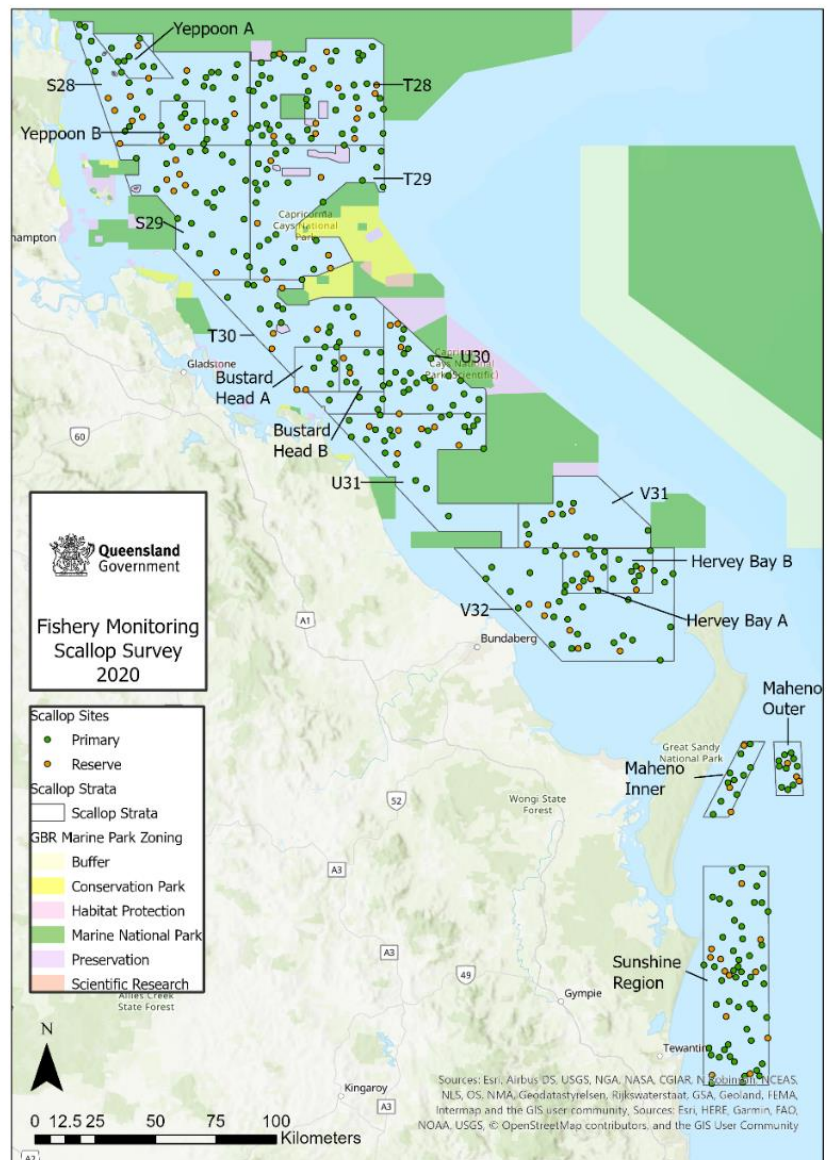


Figure 1 - Randomly selected sites within each 2020 survey area (Green dots), red dots are reserve sites.

Results

The vessel specific calibration multiplier was applied to the total catch of scallops at each site (see Table 1). The number of Scallops caught at each site were adjusted (based on the vessel adjustment factor), then added together to get a total for each survey area (see Table 2).

Table 1- Estimated mean density of scallops during calibration shots and adjustment factor (2020 survey).

	No. of calibration trawls in Hervey Bay A	Mean total density (number/ha)	Adjustment factor
Vessel 1	11	41.843	1
Vessel 2	9	25.384	1.648
Vessel 3	10	33.315	1.256

Table 2 – Adjusted total catch of Scallops and number of shots completed within each survey area, 2017-2020.

Survey area	2017		2018		2019		2020	
	Shots	Scallops caught	Shots	Scallops caught	Shots	Scallops caught	Shots	Scallops caught
Yeppoon A	14	11642	7	5262	13	5078	7	124
Yeppoon B	4	5123	8	7346	7	10767	7	5933
S28	45	28358	30	19195	31	8012	30	4546
T28	52	11721	42	3809	35	1163	34	717
S29	18	5020	27	10076	22	4819	23	1950
T29	14	452	22	4788	23	4208	17	2709
T30	19	2301	15	2043	18	3214	15	874
U30	6	82	22	1616	17	373	17	362
Bustard Head A	9	3420	8	8262	3	651	7	620
Bustard Head B	6	2448	8	31342	7	5525	8	887
U31	11	2810	17	9689	23	520	22	303
V31	10	272	9	1821	11	851	9	8
Hervey Bay A*	33	32745	31	48621	32	37555	30	7077
Hervey Bay B	6	597	7	690	7	1449	7	446
V32	25	13943	17	8413	17	1344	24	1198
Maheno Outer	9	577 [^]	9	183	9	527	9	435
Maheno Inner	<i>see above</i>		17	2531	15	8423	10	179
Sunshine Region	36	22464	37	6191	40	15250	50	17245
Totals	317	143975**	333	171878	330	109729	326	45613

[^] 'Maheno' survey area superseded by Maheno Inner and Maheno Outer survey areas from 2018

* Hervey Bay A survey area is the calibration location (i.e. multiple shots occurred through same sites)

** Total shots and scallops caught in 2017 does not include two MNP survey areas

Contact:

Eddie Jebreen
 Director, Assessment and Monitoring
 Fisheries Queensland

☎ 13 25 23

✉ fisheriesmonitoring@daf.qld.gov.au