FishWise Recreational Scallops Surveys

Introduction

The Tasmanian SCUBA Diving Club (TSDC) received funding through the Fishwise Community Grants program to conduct recreational scallop surveys. The project was initially to be conducted prior to the 2006 scallop season from January to March 2006. The TSDC received the final confirmation it was successful with its application on the 22 February 2006. The delay receiving final confirmation meant the project start date was delayed until prior to the 2007 season.

The aim of the TSDC recreational scallop survey project was to supplement surveys conducted by TAFI in the D’Entrecasteaux Channel and to conduct wider ranging surveys throughout the south east of Tasmania. Members of the TSDC thought that for the ongoing success of the recreational scallop fishery, areas beyond the D’Entrecasteaux channel needed to be identified and surveyed. Scallops have historically occurred throughout south east Tasmania’s sheltered bays and members of the TSDC were keen to visit some of these bays to conduct exploratory scallop surveys.

Prior to the commencement of the project, TAFI scientists indicated they would not be conducting pre-season surveys and would be solely concentrating on post season surveys in the D’Entrecasteaux Channel. Through further discussions it was agreed that the TSDC could conduct the pre-season surveys under the FishWise funded recreational scallop survey project.

Method

The project was conducted in two phases. Phase one involved conducting exploratory scallop surveys outside the D’Entrecasteaux Channel and phase two involved conducting the pre-season scallop surveys in the D’Entrecasteaux Channel.

Exploratory surveys undertaken outside the D’Entrecasteaux Channel utilised a timet swim method. Two divers conducted the survey searching and collecting scallops over a set time period usually 10 or 20 minutes. Sites were chosen to maximise the likely chance of finding scallops, based on experience of TSDC members or anecdotal information. Depth ranges of between 5-20m were surveyed throughout most areas. The GPS location of survey sites was recorded where a vessel had a GPS.

Pre-season surveys conducted in the D’Entrecasteaux Channel utilised the methodology in Zacharin 1991, where 100 metre transect lines were layed out from the boat usually following a depth contour or set into the current. Scallops were collected one metre either side of the line, by a pair of divers. On some occasions where scallops were numerous, the entire transect line was not completed. Where this occurred the distance travelled along the line was recorded. The location of surveys in the Channel was provided by TAFI, and were divided into four regions, with two sites in region one Conningham, seven sites in region two Barnes Bay and Kettering, 26 sites in region 3 Great Bay down to Gordon, five sites in region four Satellite Island and Little Taylors Bay.

Scallops were brought to the surface sorted by species where shell length was measured and recorded. The scallops were then returned to the water within the general vicinity of their capture.
Figure 1. The location of Scallop Surveys in the D’Entrecasteaux Channel

Results

Phase one exploratory surveys outside the D’Entrecasteaux Channel. Exploratory surveys were generally conducted in Frederick Henry Bay, Norfolk Bay, North Marion Bay and Great Oyster Bay. A total 59 dives were conducted, with eight dives conducted in Great Oyster Bay, seven dives at North Marion Bay, 22 dives in Fredrick Henry Bay, 19 dives in Norfolk Bay and two dives out of Port Arthur.
Fredrick Henry Bay – very few scallops were found during surveys of Fredrick Henry Bay. A total of 10 commercial scallops were measured with all being under the legal minimum limit, all scallops were sampled in the vicinity of Sloping Main. Surveying in Fredrick Henry Bay was often problematic due to poor visibility.

Norfolk Bay- despite the number of dives conducted no scallops were found in Norfolk Bay.

North Marion Bay- of the areas surveyed outside the D’Entrecasteaux Channel north Marion Bay had the highest abundance of scallops, though the bed was very localised. A total of 57 scallops were measured with 90% over 100mm shell length.

Great Oyster Bay- the surveys in Great Oyster Bay were significantly curtailed due to poor weather. A few sites out in the middle of the bay were dived with very few scallops found. The only area where scallops were consistently found in GOB was around Refuge Island and in Promise Bay. Here the scallops were sub-legal with small doughboys being very abundant. A total of 187 scallops were sampled of these 95 were small doughboys. Areas down towards Schouten Passage were not sampled due to the weather.

Phase Two Pre Season Surveys D’Entrecasteaux Channel
Pre-season surveys of the D’Entrecasteaux channel were conducted from January through to April 2007. A total of 39 dives were conducted throughout the Channel with 3700 scallops measured.

Area One- area one consisted of three sites around Conningham of which two were sampled. No scallops were found in this area. Area one received a high level of fishing effort in 2005 when the recreational fishery first reopened.

Area Two- area two consisted of seven sites of which 5 were sampled. A further two sites were added by TSDC members. A total of 394 scallops were measured from area two of which 390 were commercial scallops. Very few scallops were found to be under the 100mm size limit. Below is a length frequency distribution of scallops from area two of the D’Entrecasteaux Channel.

![Length Frequency Distribution](image)

**Figure 2:** Commercial Scallops Length frequency distribution area two D’Entrecasteaux Channel.

Area Three- area three consisted of 26 sample sites of which 25 were sampled. A total of 2948 scallops were sampled from area three. Of these 1958 were commercial scallops, 554 were queen scallops and 436 doughboys. Queen scallops were largely restricted to those sites in the channel off Gordon where the tidal current was often noticeable.
A wide range of length classes was recorded for commercial scallops sampled in area three. Sites north of Simpson’s Point, small scallops less than 30mm in shell length were present in large numbers representing a recent recruitment event. This recruitment event was not widespread throughout the channel and was largely restricted parts of Simpsons Bay, Missionary Bay and Great Bay. Survey participants reported it was impossible to collect all small scallops encountered where they were found in large numbers and estimated that one in 10 scallops was collected. Below is a length frequency distribution for scallops sampled in area three.

**Figure 3:** Length frequency distribution Scallops area 3 D’Entrecasteaux Channel
**Area Four**—area four consisted of 5 sites in Little Taylors Bay and off Satellite Island. A total of 314 scallops were sampled from area four of which 130 were commercial scallops, 122 were queen scallops and 62 were dough boys. Scallops sampled in area four were largely restricted to sites around Satellite Island, sites in Little Taylors Bay yield few scallops. The Commercial Scallops from Satellite Island were by far the largest sampled in the Channel region. Below are length frequency distributions for scallops sampled from area four.

**Figure 4:** Length frequency distribution scallops area three D’Entrecasteaux Channel.
Summary

Very few scallops were found at sites sampled outside of the D’Entrecasteaux Channel. Though not extensively surveyed Great Oyster Bay showed some signs of past recruitment, after a large mortality event in 2005. The only area were significant quantities of scallops was found outside the D’Entrecasteaux Channel was North Marion Bay.

Commercial scallops were the most common species of scallop sampled during surveys of the channel. Queen Scallops were largely restricted to the lower half of area three and around Satellite Island (area four). With Queen Scallops being most abundant off Gordon. Queen scallops were generally large with very few scallops sampled below the legal minimum size of 100mm.

Area one in the D’Entrecasteaux Channel has shown no sign of recovery since heavy fishing pressure in the 2005 season.

A recent recruitment event was identified in the Channel but was largely restricted to the northern half of area three where large quantities of scallops were found between 20-30mm shell length. Survey participants reported that one in ten newly recruited scallops were sampled, so figures presented here would represent an underestimation in the extent of the recruitment event.

Scallops sampled in areas two and three were represented by commercial scallops greater than 100mm, the legal minimum length. Very few sub-legal scallops were found throughout these areas. Scallops encountered off Satellite Island were the largest sampled throughout the Channel.