Introduction

Diversification of the Newfoundland and Labrador fishing industry has been ongoing since the downturn in the groundfish fishery in the early 1990’s. Many enterprises have taken advantage of opportunities in the snow crab fishery, and more recently, shrimp. The majority of these new entrants into the inshore northern shrimp fishery use otter trawl technology; however, some of the smaller vessels have opted to use beam trawl to participate in this fishery.
Over the past decade, the Labrador fishing fleet has developed and diversified into other species such as snow crab, scallop, whelk, and more recently, sea urchin. The largest fleet growth has been taking place in the 34'11" fleet sector. This fleet has expanded from three enterprises in 1998 to 62 in 2002. Recent cuts in the snow crab TAC (total allowable catch) and an apparent continued decline in the stock, combined with a drop in scallop prices, has made the sustainability of this fleet questionable.

The ever-increasing shrimp biomass adjacent to the coast of Labrador provides ample opportunity for Labrador fishers to participate in this fishery. The purpose of this exploratory activity was to determine if suitable bottom conditions, catch rates and counts per pound existed in close enough proximity to the Labrador coastline to make a beam trawl fishery using vessels <35’ practical.

Active participation in the <35' northern shrimp fishery has eluded most Labrador fishers. In an effort to promote options to these fishers, the Department of Fisheries and Aquaculture (DFA) conducted exploratory surveys along the North and South Labrador Coast in 2000 and 2001. Further to this, two fishers were selected to participate in a gear demonstration project using beam trawl in 2001 and 2002.

The objective of this project was to demonstrate the effectiveness of beam trawling and pot technology along the North and South Labrador Coast, and to determine the commercial viability of a shrimp beam trawl fishery adjacent to the Labrador Coast using vessels <35’.

Methodology

The exploratory survey portion of this project used experienced shrimp beam trawl fishers to conduct exploratory fishing activity along the North and South Labrador coast. The gear demonstration portion of this project was designed as a partnership between DFA, DFO and interested fishers. Fishers were selected through a Request for Proposal process to participate in this project.

The survey area for this project extended from north of Hopedale along the North Coast to the 2J3K boundary along the South Coast. The survey area was divided into survey blocks 10º x 10º in size. Tow sites were selected from within each block from a combination of nautical chart references and on-site sounder information at the direction of the vessel’s captain in consultation with the project officer.

Results

North Coast Activity

The North Coast project was conducted by Mr. Olonzo Bailey of Old Bonaventure using his 42’ beam trawler, "Aaron and Marcella". This survey began on August 29, 2000 and continued for 11 days until mechanical problems with the chartered vessel caused the survey to be cancelled for the season. The project resumed on August 18, 2001 and continued for 15 days. During this survey, 53 tows were made. A total of 3,570 pounds of northern shrimp was landed, with an average of 59.5 pounds per tow.

The average tow time for this project was 11.85 minutes. The best results were found near Hopedale and Makkovik where catches from a 15-minute tow ranged from 240 to 480 pounds. When extrapolated to a commercial tow duration, it can be assumed that catches in the vicinity of 1,920 to 3,840 pounds per two hour could be achieved in this area. These amounts are well within acceptable levels for beam trawl fishing. Shrimp size varied throughout the survey, ranging from 43 to 157 per pound and averaging 86 shrimp per pound.
South Coast Activity
The South Coast project was conducted by Mr. Donald Kippenhuck of Charlottetown, Labrador, using his 34’11” vessel, "Bonnie & Charlene II". This survey began on September 08, 2000, when it was postponed until 2001 due to poor weather. The project resumed on July 15, 2001 and continued for 10 fishing days. During this survey, 26 tows were made. A total of 682 pounds of shrimp was landed, an average of pounds per tow. The best catch rates were found in the area adjacent to Black Tickle. Catches here ranged from 120 to 240 pounds per 15 minute tow. When extrapolated, these figures translate into 960 to 1,920 pounds per two-hour, commercial-length tow. Shrimp size varied throughout the survey area; however, the majority of the shrimp sampled was between 74 and 100 per pound. An average count of 87.6 shrimp per pound was achieved.

Gear Demonstration Activity
Following the survey activity conducted along the North and South Labrador Coast in 2000, fishers began to express interest in participating in the shrimp fishery using beam trawl. DFA issued a Request for Proposals during the winter of 2001 and engaged two fishers to participate in a beam trawl gear demonstration project.
The rationale for this component of the project was to demonstrate effectiveness of beam trawling and attempt to transfer this technology from established fishers in Newfoundland to Labrador fishers.

Winston Clarke and Calvin Russell, both of Port Hope Simpson, Labrador were selected to participate in this project. Vessel gear-up and fishing trials began in July of 2001. This was completed with Technical Advisor assistance. Two trips were made by each fisher.

During the first trip from August 13 to August 15, 2001, Calvin Russell landed 747 pounds of shrimp from three tows with an average count of 80 shrimp per pound. During the second trip, Mr. Russell's net winch failed, and his activity was cancelled for the season. No landings were reported from this trip 2.

Winston Clarke also made two trips recording landings from both. During the first trip from July 20 to July 31, 2001, two tows were made before the trip ended due to poor weather. A total of 704 pounds were landed during this trip with an average count of 103 shrimp per pound. The second trip took place from September 08 to September 10, 2001. Three tows were made during this trip before the net winch failed. A total of 642 pounds of shrimp were landed with an average count of 78 shrimp per pound.

As a result of the equipment failure during the winter of 2002, fishers were provided with two newly designed and manufactured net drums.

Calvin Russell made one trip in 2002. All gear components worked effectively. Several tows were made with no reported catches as weather prevented Mr. Russell from fishing on good shrimp grounds. Continued poor weather forced the cancellation of all activity in October of 2002.

Conclusion

Survey results indicated varying levels of abundance of Northern Shrimp throughout the survey area. Average catch rates per 15-minute tow in both the North and South Coast survey areas indicated possible commercial potential in these areas. Counts per pound were relatively consistent throughout the survey area at 82 and 87 shrimp per pound in the North and South Coast respectively.

Although catches in both areas demonstrated possible commercial potential, distance from land in the South Coast survey may be an inhibitive factor to the development of a beam trawl fishery in this area. Along the North Coast, fishing areas are closer to shore; however, the absence of processing facilities in this area pose a separate set of challenges for the development of this fishery.

Based on the results of this project, several options are worthy of consideration:

- Continuation of gear demonstration project along Southeast Labrador Coast.
- Encourage local fishers to participate in gear demonstration project.
- Encourage utilization of nearshore shrimp resource adjacent to North Coast 5 resident fishers.

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