

STANDARDIZATION OF FISHING EFFORT OF THE TAIWANESE PAIR TRAWL FISHERY OFF NORTHERN AUSTRALIA¹

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ABSTRACT

The continental shelf off northern Australia is one of the most important fishing grounds for the Taiwanese pair trawlers since 1971. After the proclamation of 200-mile Australian Fishing Zone (AFZ) in 1979, however, the historic right of fishing in the AFZ by the Taiwanese vessel can only be assured through Sino-Australia bilateral agreement signed annually.

In order to provide more convincing fishing effort data for groundfish stock assessment in this area, this paper made an investigation on the relationship between different size classes of Taiwanese pair trawlers and their fishing efficiency from 1974 to 1979, and evaluates a standardized CPUE for the pair trawlers. The relative fishing power of the Taiwanese pair trawlers were estimated as 0.751, 0.828, 1.000, and 1.018 for four Gross Registered Tonnage classes: 200-250 mt, 251-300 mt, 301-350 mt, and 351-400 mt, respectively.

INTRODUCTION

The Taiwanese pair trawl fishery on the continental shelf off northern Australia began in 1971 when 3471 mt of demersal catch were taken from the neritic region off Port Darwin. In 1972, the yearly catch soared to 30,212 mt as the fishery rapidly expanded northwardly to cover almost all of the Arafura Sea (Liu and *et al.* 1978). Since then the trawling grounds off the northern Australia have become one of the most important fishing areas for the Taiwanese pair trawl fishery.

Further expansion of the fishery southwardly to the Timor Sea in the following years resulted in a peak catch of 83,220 mt in 1974. In 1975, due mainly to the escalation of oil price, the fishing activity in the areas of the Arafura and Timor Seas decreased drastically. Annual catch of the year also down to a level of about 20,000 mt and remained approximately the same level through 1980 except there was a slight increase to a level of 33,550 mt in 1979 (Fig. 1).

After the proclamation of 200-mile Australian Fishing Zone (AFZ) on November 1, 1979; the historic right of fishing in the AFZ by the Taiwanese vessel can only be assured through Sino-Australia bilateral agreement signed annually. In the annual bilateral meetings, an assessment on the condition of the groundfish resources is inevitable.

In order to provide more precise and convincing fishing effort data for demersal fish stock assessments, this paper made an investigation on the relationship between different size classes of Taiwanese pair trawlers and their fishing efficiency from 1974 to 1979, and evaluates a standardized CPUE for the pair trawlers.

AREA STUDIED AND SOURCE OF DATA

The area defined here is from 123°E along the continental shelf of Australia eastwardly until 138°E and extending northward up to 5°S. It comprises the Timor Sea and the Arafura

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