Modelling Overfishing in a Limited Entry Fishery

Kelly Neill
Independent Economics

Akihito Asano
Faculty of Liberal Arts
Sophia University

Satoshi Yamazaki
School of Economics and Finance
University of Tasmania

January 2012

Abstract: We introduce a modified version of the standard Gordon-Schaefer fishery model. Standard theoretical models usually treat fleet redundancy and capital stuffing together when they discuss the overfishing problem, *i.e.* two ways in which the *effort* can be increased are not modelled in isolation. We attempt to describe the overfishing problem in a limited entry fishery, isolating capital stuffing from fleet redundancy. Our model predicts no capital stuffing in a limited entry fishery so long as fleets under operation face no other restrictions, although the overfishing problem will still be present in this case because each fleet operates for too many days. When the vessels face some other restrictions, such as a constraint on days they can operate, then the overfishing problem arises because of capital stuffing.