

# Bycatch

## A General Overview

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# What is Bycatch?

- ▶ Incidental catch (Marasco and Terry 1982) or unintended fisheries catch (NOAA 1997).
- ▶ Any catch of species (fish, shark, marine mammal, turtles, seabird, etc.) other than the target species (Bailey et al. 1996).
- ▶ Unwanted species or individuals caught during fishing operations (Hall 1996).
- ▶ The unwanted portion of the catch taken while fishing for specific target species (Isaksen and Valdermarsen 1994).
- ▶ The harvest of fish or shellfish other than the species for which the fishing gear was set (Wallace and Fletcher 2000).
- ▶ Portion of the catch returned to the sea as a result of economic, legal, or personal considerations, plus the retained catch of non-targeted species (McCaughran 1992).

# What is Bycatch?

- ▶ According to the Magnuson-Stevens Act (1996):
  - The term “bycatch” means fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. Such term does not include fish released alive under a recreational catch and release fishery management program.

# What Causes Bycatch?

- ▶ Fish capture is imperfect.
- ▶ Bycatch may result from the limited selectivity of certain fishing gear (Alverson 1998; NOAA 1998).
- ▶ A product of fish behavior and distribution that results in a mixture of species occupying the ocean space subject to a fishery or fisheries (Alverson 1998).
  - *i.e.* co-occurrence of many groundfish species.
- ▶ Management programs have the potential to generate bycatch; outcome of the need to regulate fisheries.
  - *i.e.* quota system.

# Types of Bycatch

## ▶ Regulatory discards:

- Fish harvested in a fishery which fishermen are required by regulation to discard whenever caught, or are required by regulation to retain but not sell (MSA 1996).
- The species caught may be below legal size or in excess of established bycatch or catch quotas.

## ▶ Economic discards:

- Fish which are the target of a fishery, but which are not retained because they are of an undesirable size, sex, or quality, or for other economic reasons (MSA 1996).

# Types of Bycatch

- ▶ Fish of the wrong species (non-target species).
- ▶ Fish are of the wrong size (regulated species below legal minimum landing size).
- ▶ Fish are of the wrong sex.
- ▶ Fish are damaged.
- ▶ Quota is reached.
- ▶ High-grading (species of low market value or damaged or poor quality fish):
  - Certain attributes of a fish make it more marketable and therefore more valuable than another and the less valuable is discarded – this is often related to size and occurs in a quota fishery (Clucas 1996).
- ▶ Prohibited species – any species which must by law be returned to the sea (*i.e.* marine mammals, turtles, birds, and other fish).