Genetics in support of fisheries and aquaculture management

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Understanding "Units" in fisheries science

Ernesto Jardim

Joint Research Centre

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Unit ?

An individual thing or person regarded as single and complete but which can also form an **individual component** of a larger or more complex whole.
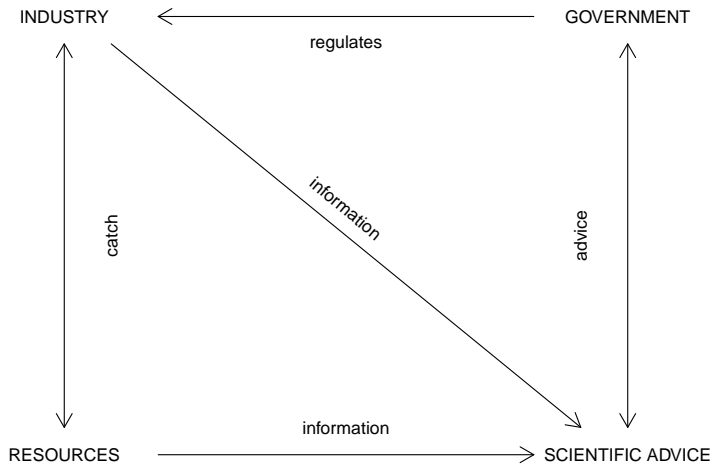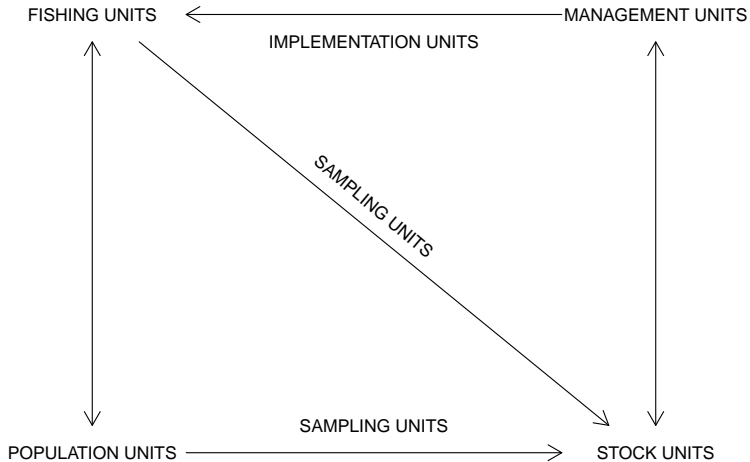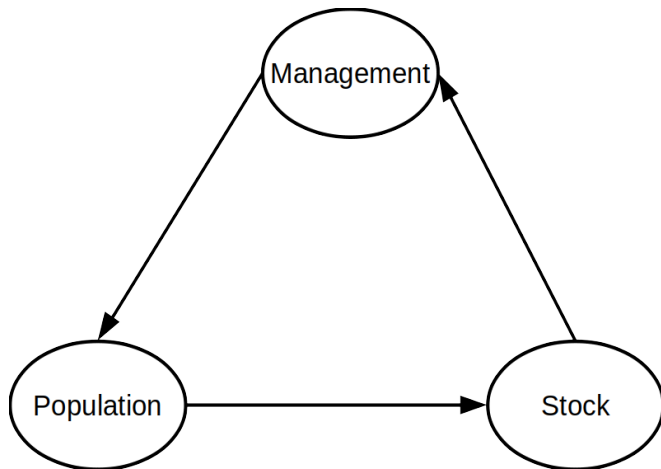
Figure: Management cycle

INDUSTRY ←———————————— GOVERNMENT
         regulates

catch   information   advice

RESOURCES ——————————→ SCIENTIFIC ADVICE
          information
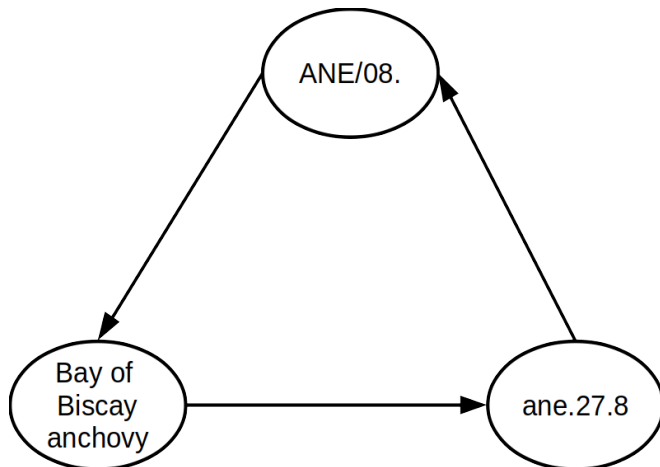
Figure: The many units of our interest

Units in fisheries science ?

➔ Population: A group of fish of one species which shares common ecological and genetic features.

➔ Stock: The part of a fish population which is under consideration from the point of view of actual or potential utilization.

➔ Management units: stock in a fisheries management zone (FMZ).
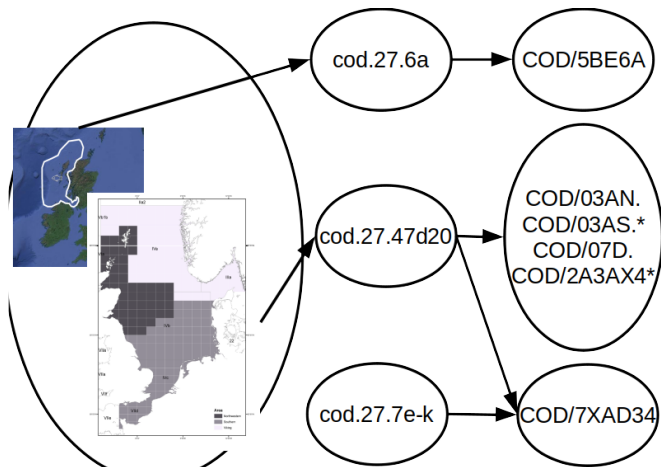
Ideal world

Ideal world (?) example
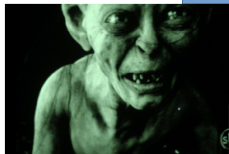
A more common reality: cod in the north sea
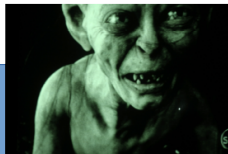
Why does it matter ?

Why does it matter:

→ Stock assessment models assume stocks are **closed populations**.

→ Connectivity is **very** difficult to model.

→ **Sub-optimal** exploitation and higher risks.

→ Miss local **depletion**.

→ . . .

Brexit: what can go wrong ?

Mine, all mine !

Mine, all mine !

Brexit: what can go wrong !

The tragedy of the commons
(Hardin, 1968)

Questions !?