Assessing commercial fishery costs and benefits related to MPA network design

Remi Daigle

November 17, 2015

Everything is open-access

Documentation
Case Study Paper
Code
Data

The question:

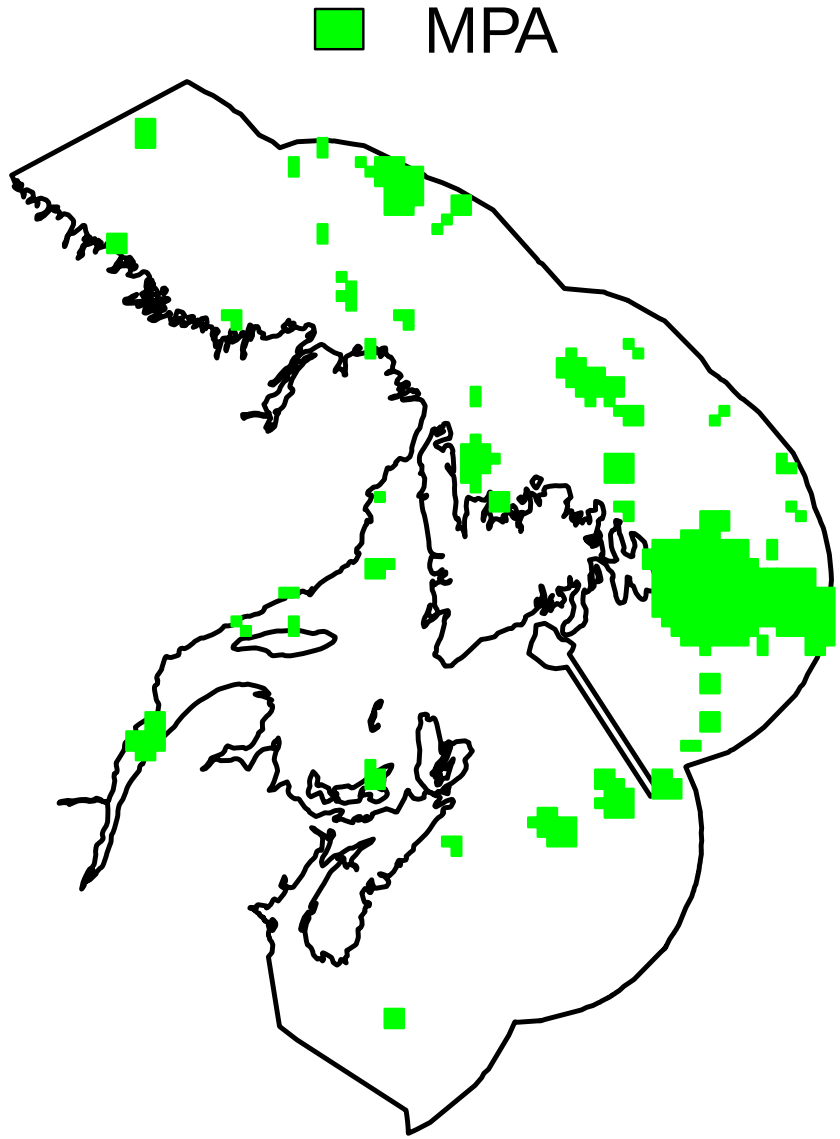
If MPA networks follow designn protocol X, Y, or Z, does the fishing industry stand to suffer or benefit financially?
Atlantic cod case study scenarios:

- Status Quo
- Maximum Distance
- Fixed Distance
- Targeted

Scenario 1: Status Quo

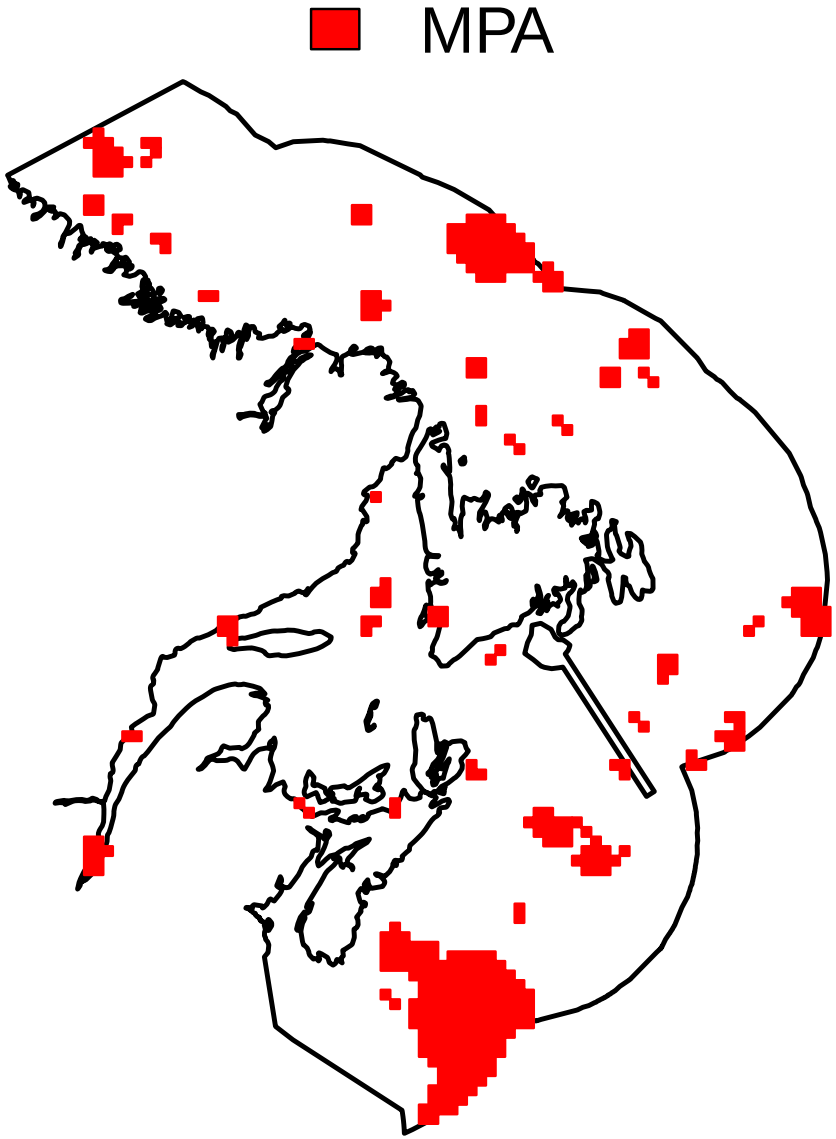
- only includes currently established MPAs

Scenario 2: Maximum Distance



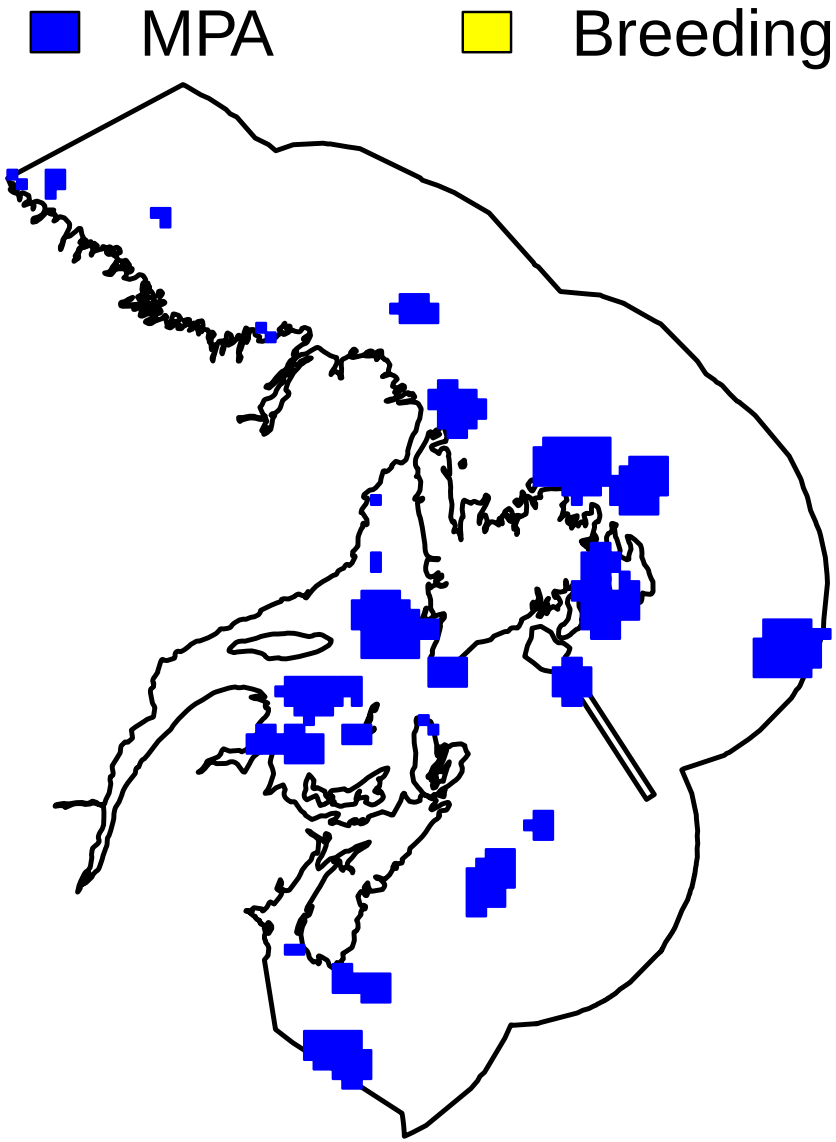
- minimizes population connectivity
- places MPAs as far as possible from nearest neighbours

Scenario 3: Fixed Distance



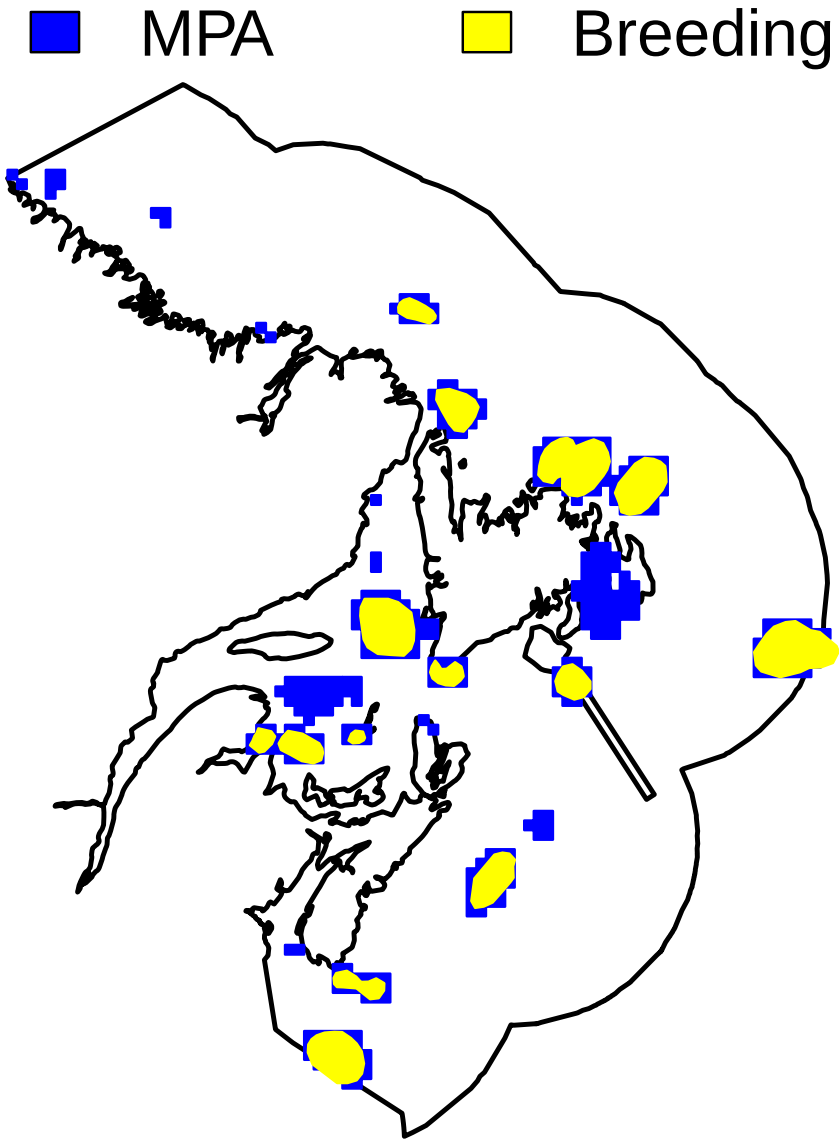
- optimizizes population connectivity
- places MPAs at a fixed distance from the nearest neighbours

Scenario 4: Targeted



- maximizes biological relevance
- protects “breeding areas” by default

Scenario 4: Targeted



- maximizes biological relevance
- protects “breeding areas” by default

The model

The input: Spatial Base Layer

Shapefiles:

- EEZ
- Species' habitat
- Species' breeding areas
- Protection scenarios