Innovations in Fisheries Certification

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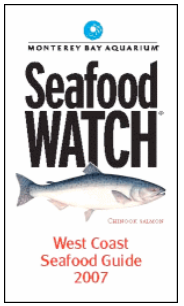
Why Seafood Certification?



Benefits for:

- **Consumers** – allows informed decisions
- **Fishermen** – higher prices, market access, long-term security from a sustainable resource
- **Fish/Ecosystem** – provides incentives to improve overall management of the fishery

Certification Challenges

- Costly and lengthy process
- Requires data-rich stock assessments
- No quantitative credit for many sustainability measures (e.g. MPAs)

- These challenges are recognized by MSC
- No concrete & scientifically coherent solution

Certification in California

- AB1217: A mandate to certify CA's fisheries
- Existing certification methods (e.g. MSC) may not apply broadly
  - *Develop "add-on" methods?*
- Innovations already developed and implemented in CA could help solve this problem (e.g. MLPA modeling)



Overcoming Certification Challenges

1. Reduce uncertainty about stock status
   - Obtain new data, better use of existing data
2. Assign credit for implemented MPAs
   - Protect a portion of the stock
3. Explore changes to fisheries management
   - Make the management system more sustainable

Reduce Uncertainty about Stock Status

- Assessing stock status essential to certification
  - Relies on data-intensive model based approaches
- New cheap assessment methods in development
  - Decision tree to incrementally alter fishing intensity
  - Reach a target Spawning Potential Ratio
  - Based on size composition of the catch
- $10K rather than $100K-$1M usually required

Assigning credit for MPAs

- MPAs play important role in sustainability
  - Counted only qualitatively in MSC scoring
- Traditional stock assessments ignore space
  - Do not properly account for MPAs
- Spatial bioeconomic models assess stock sustainability
  - Explicitly account for MPAs, other management
  - Developed & implemented in MLPA

Explore changes to management

- Collaborate with fisheries to evaluate alternatives to management to enhance sustainability
- Management Strategy Evaluation (MSE) can predict consequences of management changes

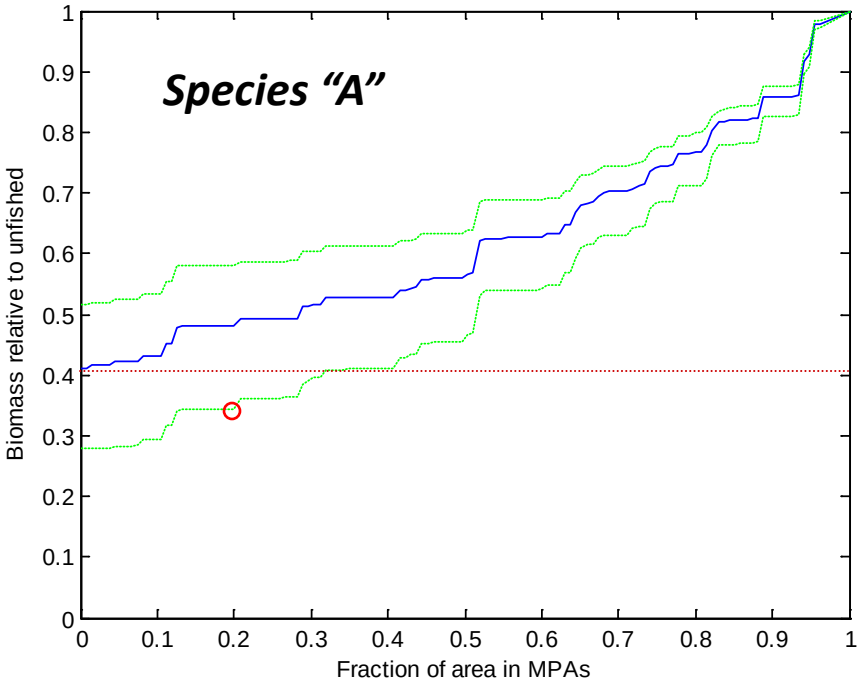
Ideally, reducing uncertainty about stock status, implementing MPAs, and improving fisheries management are coupled into a coherent approach to certification.

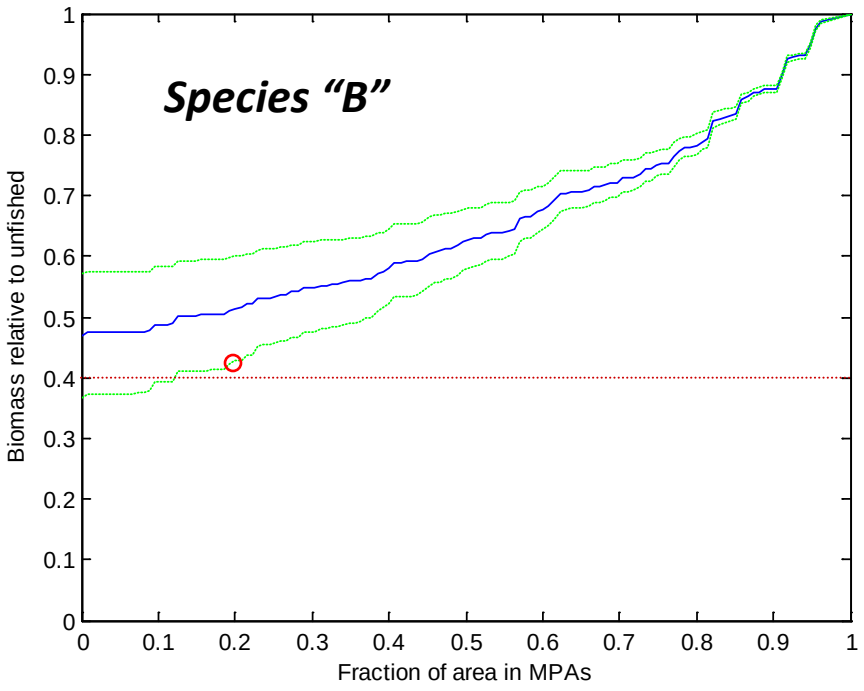
Example: certification credit for southern CA fisheries

- Use similar simulation model to one used for south coast MLPA process
- Hypothetical case: certifier must be at least 95% confident that the biomass is greater than 40% of unfished biomass (B_0)
- Examine three approaches to achieving certification biomass target (40% of B_0):
  - Reduce uncertainty around biomass assessment
  - Increase amount of habitat protected by MPAs
  - Change management (e.g. reduce fishing effort)

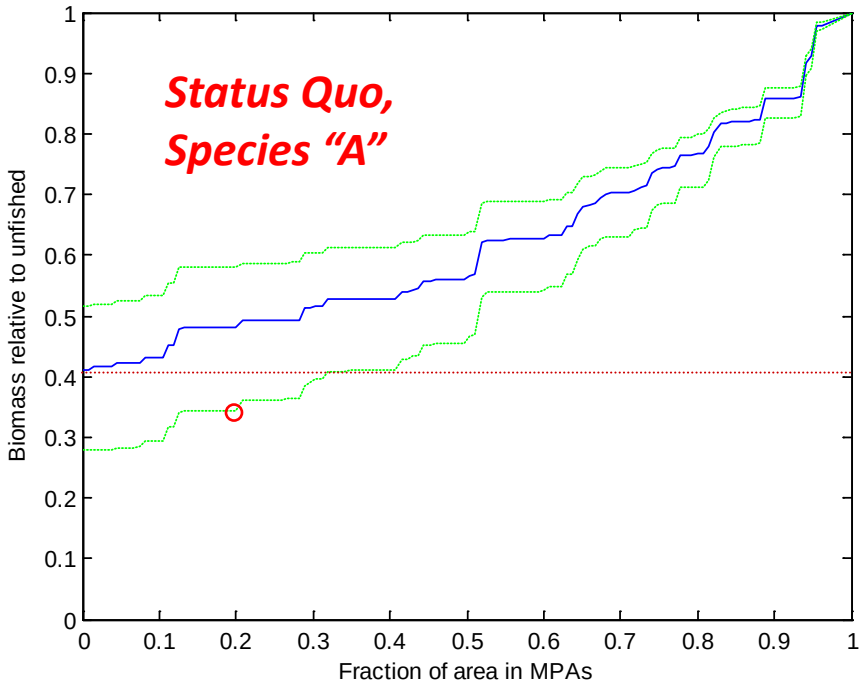
Hypothetical assessment of status quo

- Certification criterion: must be 95% confident that biomass is > 40% of unfished biomass = ---------
- MPA network that closes 20% of the region, lower 95% CL = O

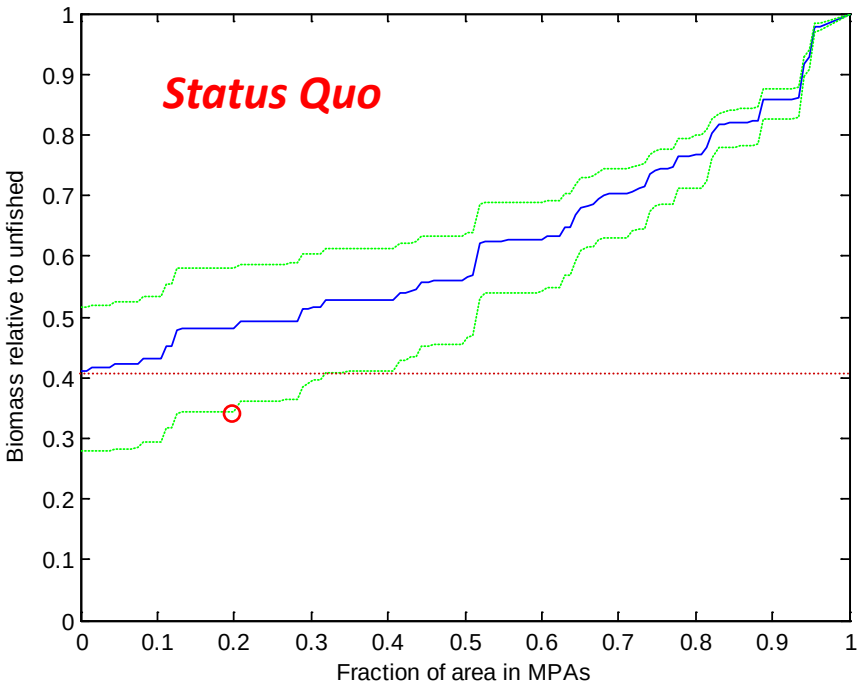


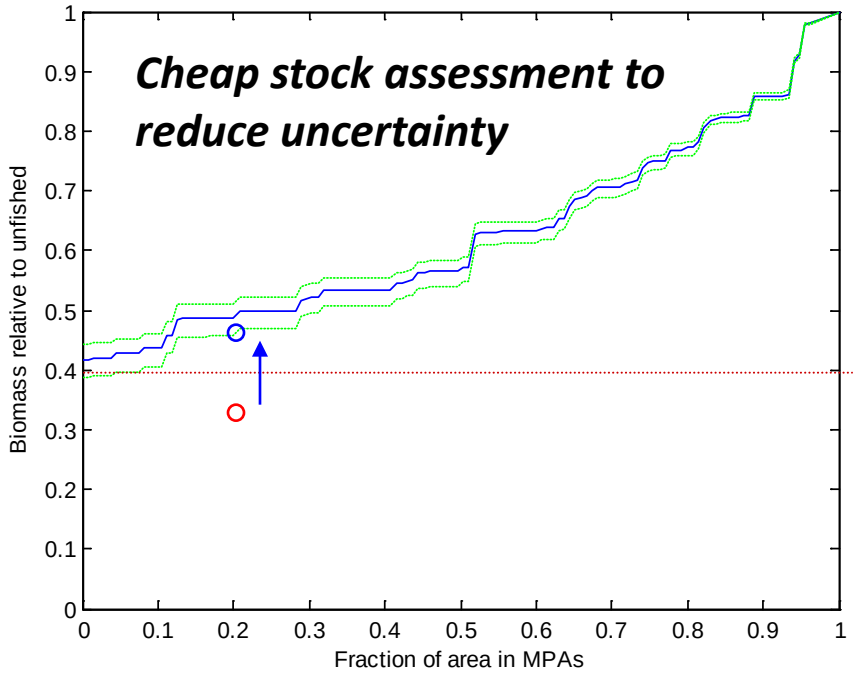


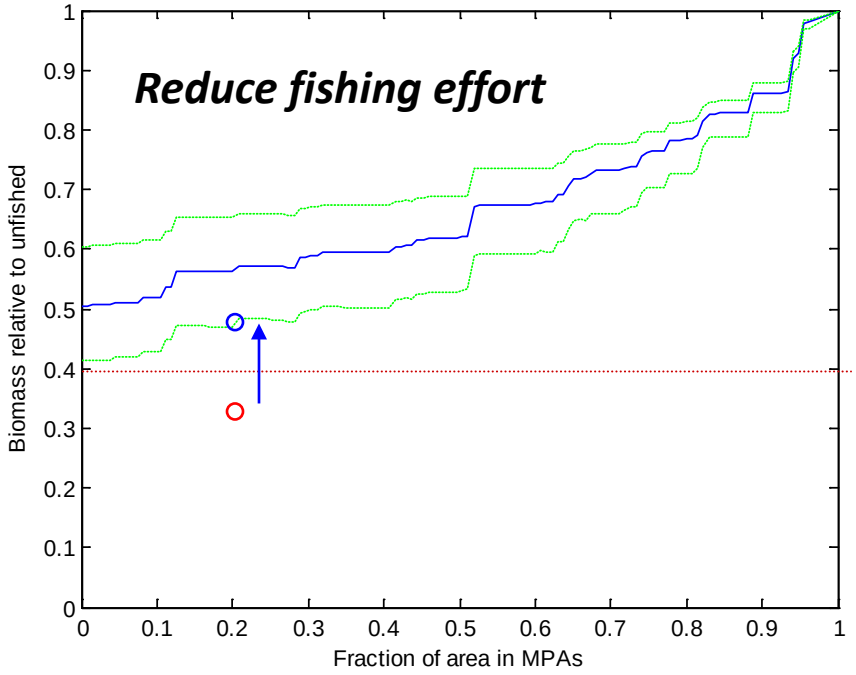
- Species "A" has biomass of >34% of unfished levels (REJECTED)
- Species "B" has biomass of >43% of unfished levels (CERTIFIED)

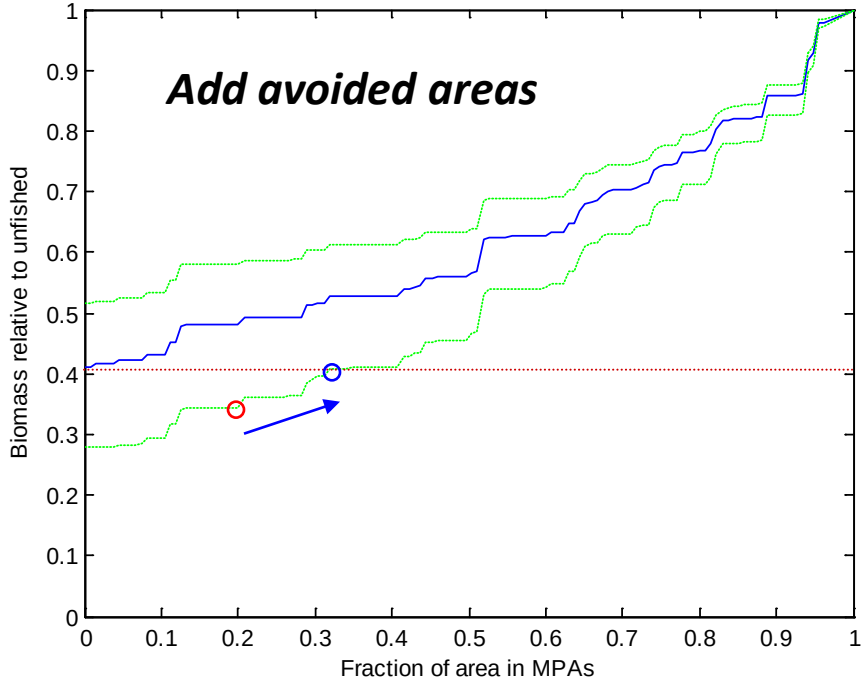


How can species "A" get over the certification hurdle?


Status Quo
Biomass relative to unfished
Fraction of area in MPAs


Cheap stock assessment to reduce uncertainty
Biomass relative to unfished
Fraction of area in MPAs


Reduce fishing effort
Biomass relative to unfished
Fraction of area in MPAs


Add avoided areas
Biomass relative to unfished
Fraction of area in MPAs

Next steps for CA and AB1217?

- This approach is quantitative, transparent, and scientifically defensible.
- Certifying CA fisheries under existing MSC-type approach would require huge subsidies.
- MSC recognizes need for a new approach, providing an opportunity for CA to be a pioneer.
- One option: select 1-2 pilot ports to test the approach with collaboration between managers, fishermen, researchers. Then expand statewide.