



*Working towards healthy, self-sustaining populations
for all Atlantic coast fish species or successful
restoration well in progress by 2015*

Considering Uncertainty in Fisheries Management

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Overview

- **Scientific Uncertainty**
- **Management Uncertainty**
- **Risk**



MSRA Provisions

- **Biological and Ecological**
- **Management Approaches**
- **Scientific Knowledge**
- **Monitoring Capacity**
- **Overlap in Management Jurisdiction**
- **Resource Users**



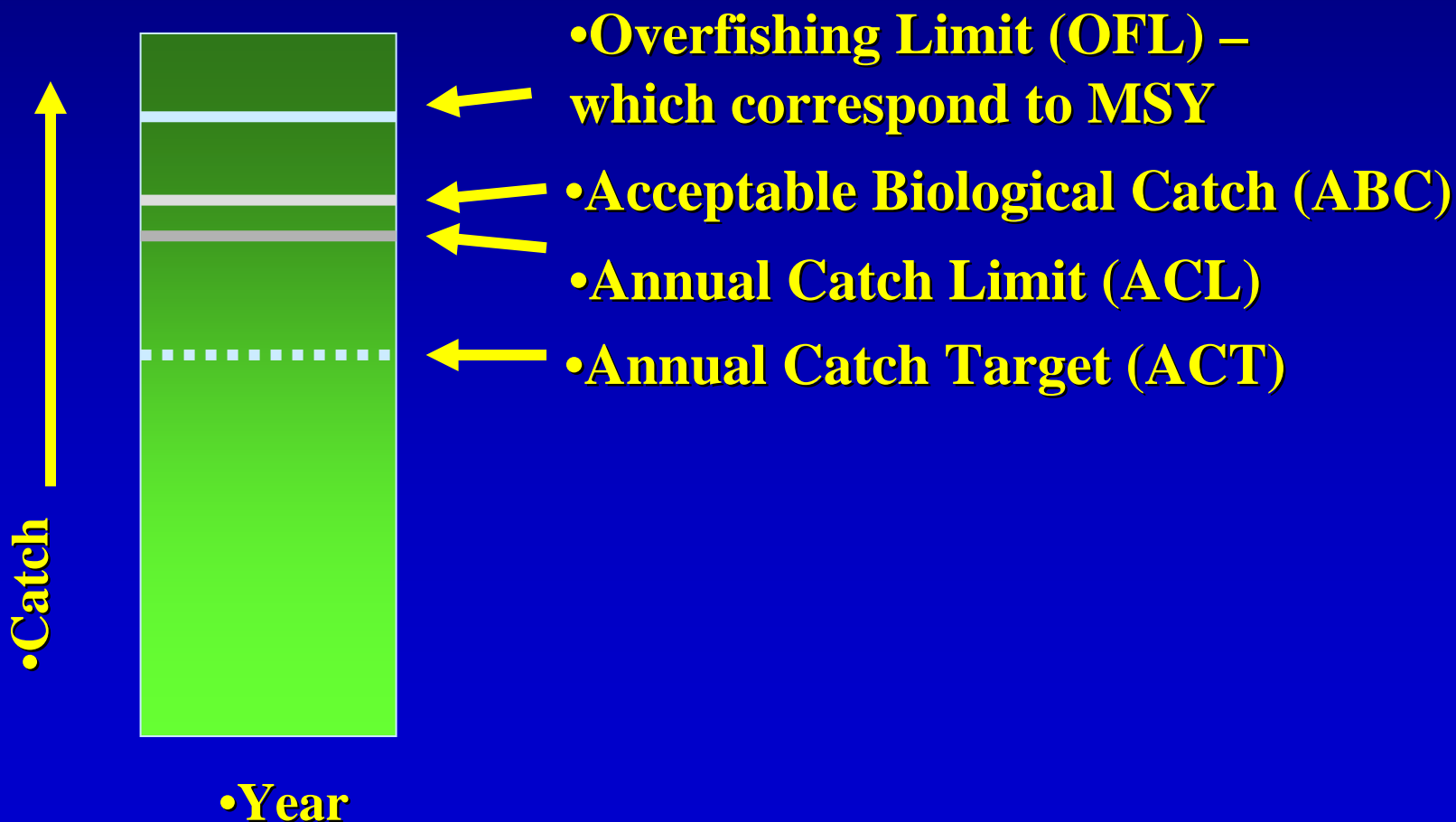
Scientific Uncertainty

- **Uncertainty in Assessment**
 - **Limitations of Data**
 - **Assumptions in Models**
 - **Confounding Signals in Data**
 - **Survey Methodology**



Accounting for Uncertainty

Definition Framework: $OFL \geq ABC \geq ACL$





Management Uncertainty

- **Ability to Control Catch**
 - **Effectiveness of Measures**
- **Quantifying True Catch**
 - **Lack of Landings Data**
 - **Untimely Data Availability**



Black Sea Bass

- **Preliminary Data Indicated Overage**
- **NMFS Closes Fishery October**
- **Final Data Modest Overage**
- **2010 Recreational Measures ??**



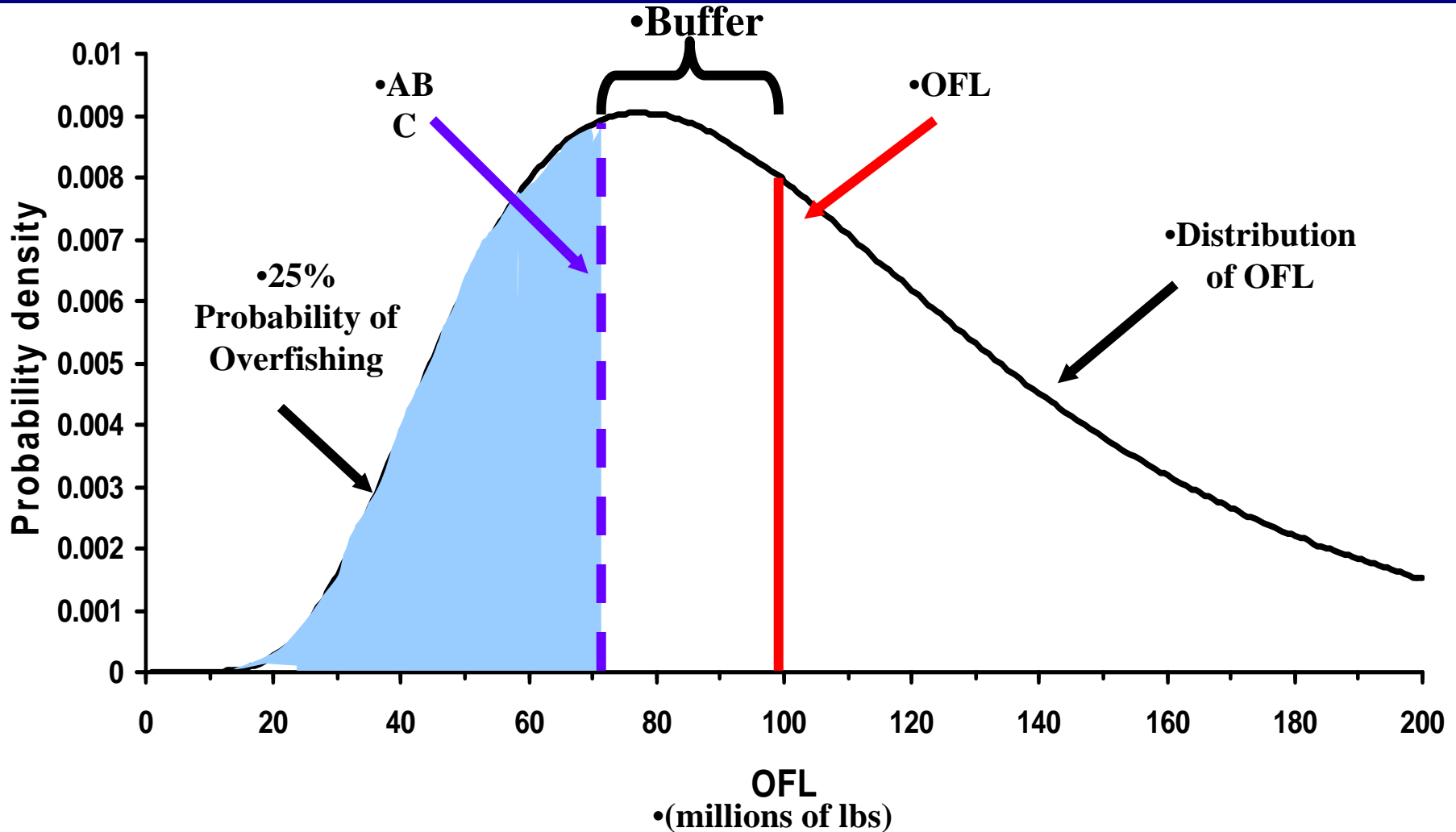
Risk

➤ **Consequences of Being Wrong**

- **Current Stock Status**
- **Life History of Species**
- **Quota Too High**
- **Quota Too Low**

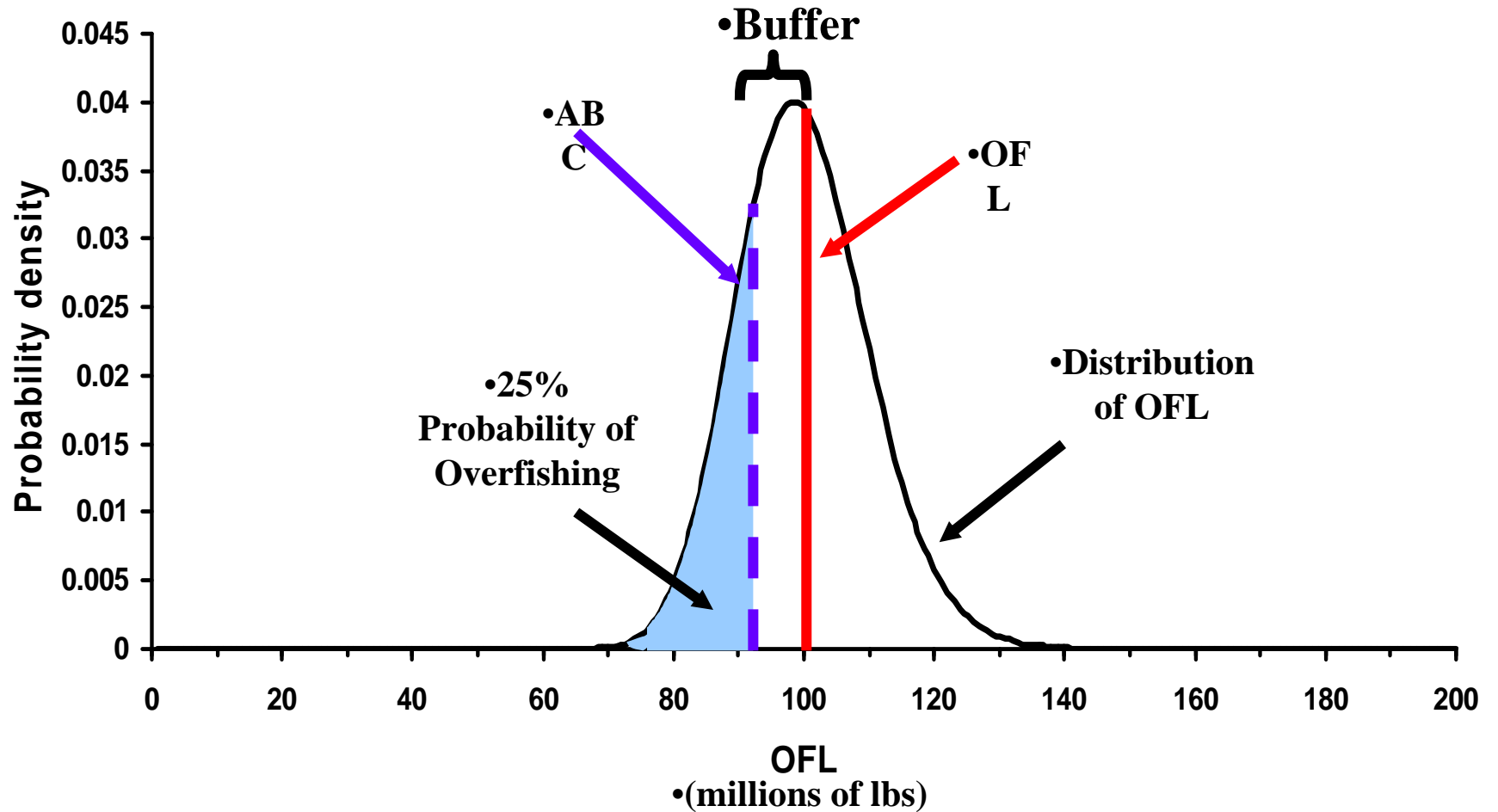


Risk





Risk





Summary

- **Multiple Sources of Uncertainty**
- **Need Consistent/Clear Message**
- **Present Risk of Being Wrong**