

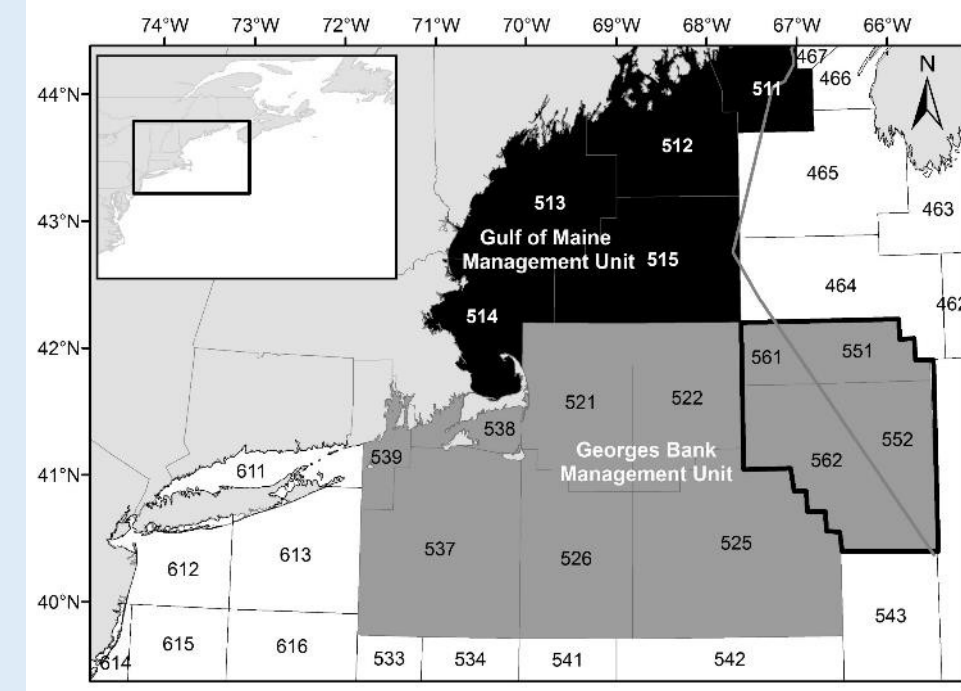
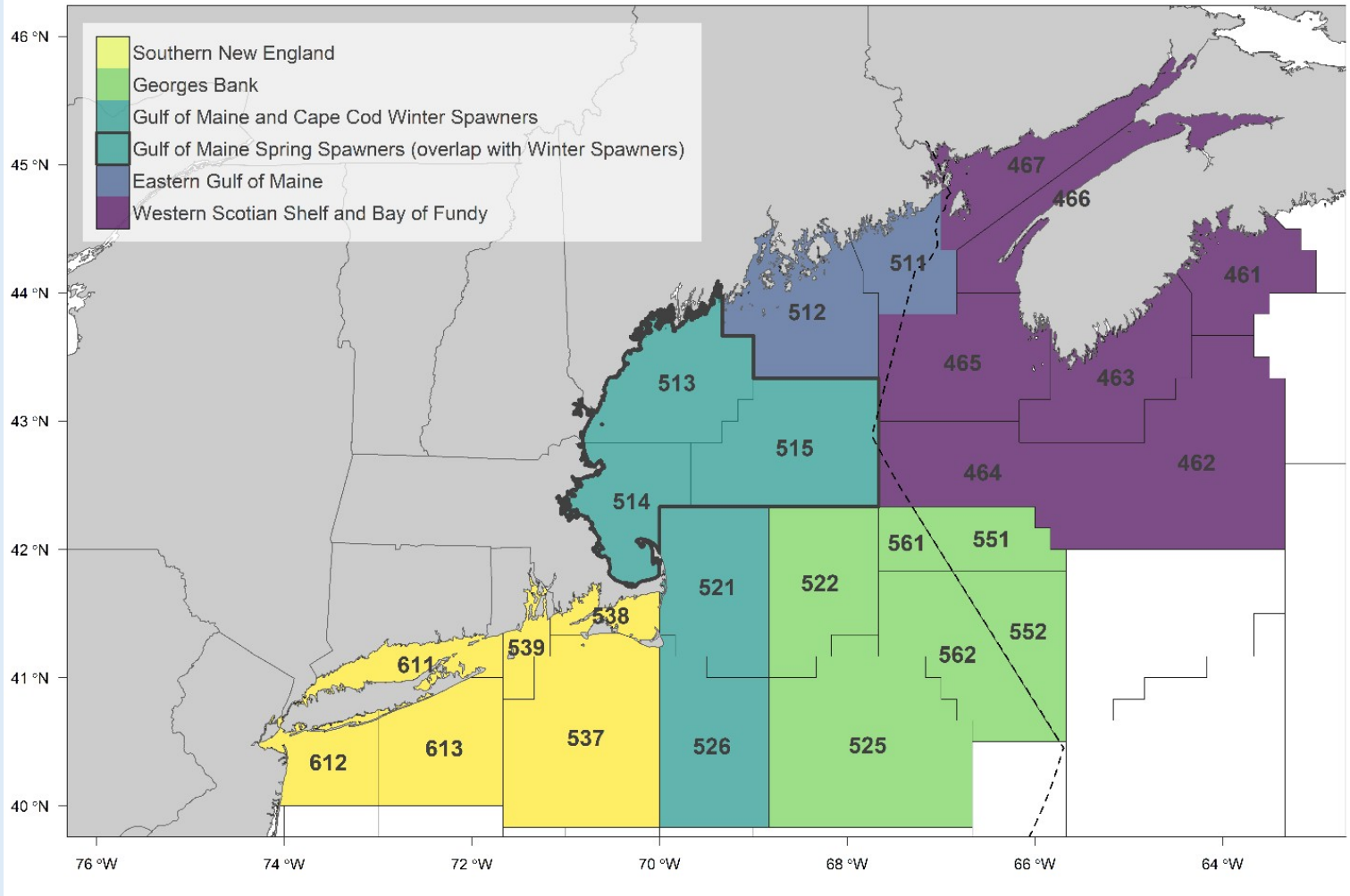
Initial Steps (Phase 1 and 2A): Atlantic Cod Stock Structure Working Group and Science/Assessment Workshops



Atlantic Cod Stock Structure & Stock Assessment Timeline

	Stock Structure Working Group (ACSSWG)	Science/Assessment and Management Working Groups	Research Track Stock Assessment
2018	ACSSWG Formed		
2019	ACSSWG Report Completed		
2020	ACSSWG Peer Review (May)		
2021		Science/Assessment Workshops (June-July) Management Workshops (Aug-Sept)	Research Track Working Group Formed (August)
2022			Research Track Working Group conducts the Stock Assessment
2023			Research Track Peer Review (March)

5 US cod stocks proposed



This proposal accounts for:

- Within unit variation
- Between unit connectivity
- Winter/spring sympatry

Phase 2: Science/Assessment and Management Workshops

Science/Assessment Workshops

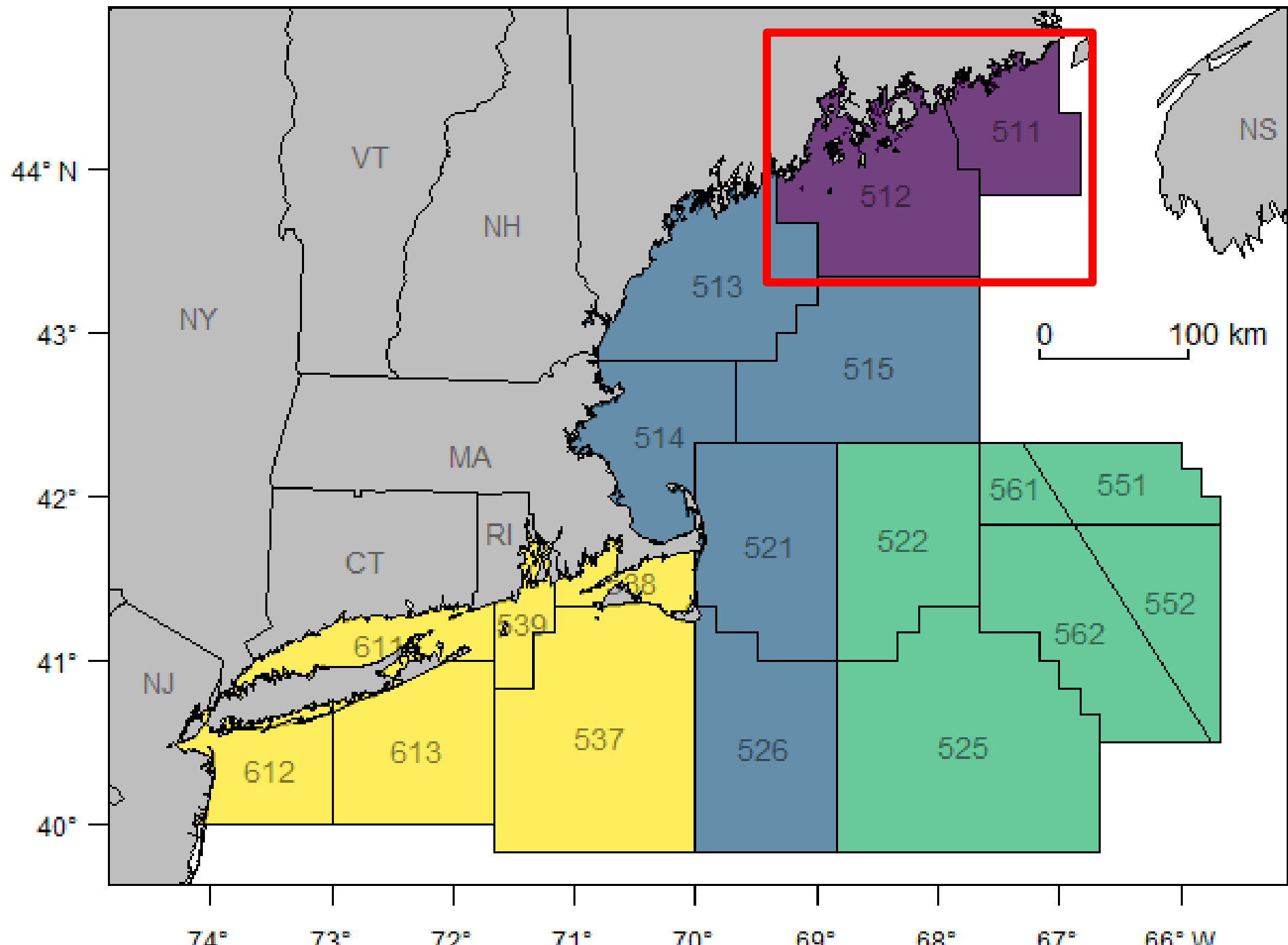
- Three workshops held in June 2021

Management Workshops

- Five workshops to be held in August/September 2021

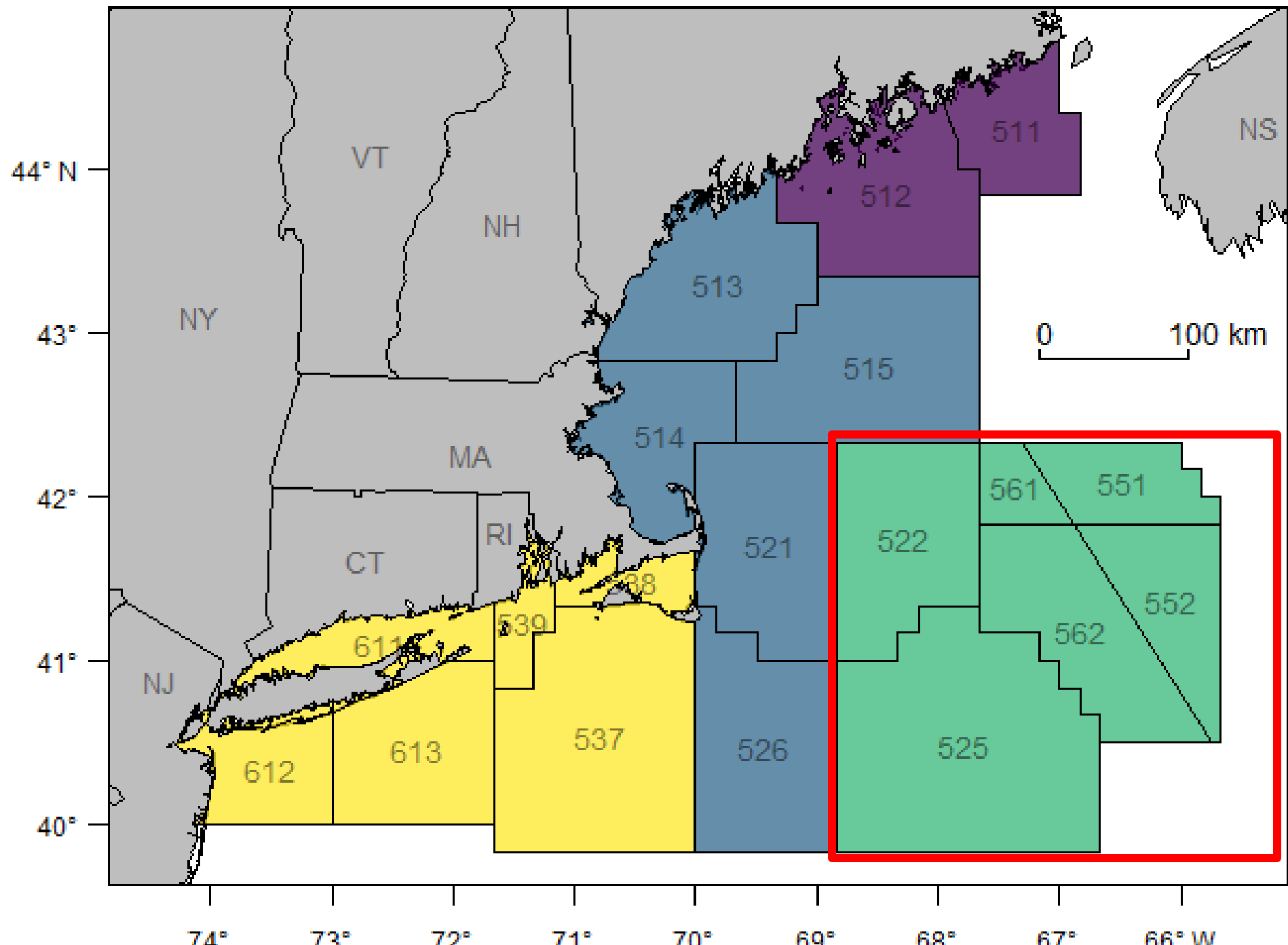
Atlantic Cod Science & Assessment Workshop Objectives

- Summarize the historical and current data availability for each of the five proposed stocks/management areas
- Provide a summary of stock assessment prospects based on data availability
- Identify additional data that is available or upcoming research that could be used to inform the assessments for each of the proposed stock/management areas
- Generate initial data gaps and ideas for research to improve the assessment prospects
- Learn how management strategy evaluation (MSE) could be applied to Atlantic cod decision making and the data needed to support this effort



Key Conclusions: Eastern Gulf of Maine

- **Catch (Commercial and Recreational Landings and Discards):**
 - Commercial landings and discards data is very sparse, especially in recent years.
 - Sampling of landings and discards is almost non-existent in recent years.
 - Recreational landings and discards are also sparse, due to difficulties in intercepting infrequent catches
- **Survey Data:**
 - NEFSC survey consistently samples this stock, but recent catches (last 15 years) are sparse making it difficult to characterize the size and age composition of the stock
 - The Maine-New Hampshire Inshore survey samples the inshore portion of the stock, but again, catches are sparse and generally are comprised of younger sizes/ages
- **Stock Assessment Prognosis**
 - Independent assessment would be difficult and perhaps not informative
 - Two trawl surveys and the Sentinel Hook survey can detect if stock conditions improve



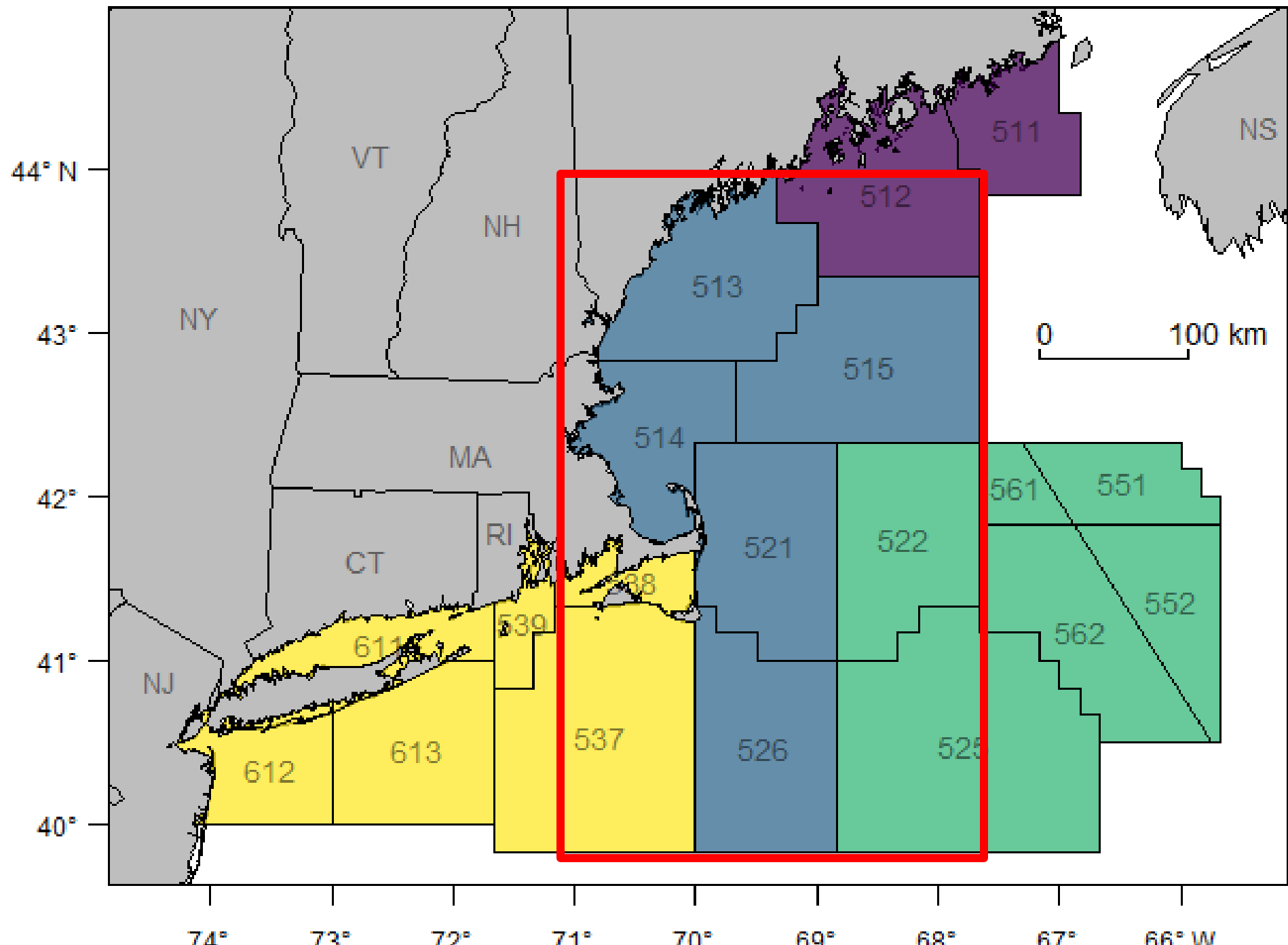
Key Conclusions: Georges Bank

- **Proposed Management Area includes current TRAC management area plus two statistical areas (522 & 525)**
- **Catch (Commercial and Recreational Landings and Discards):**
 - Commercial landings and discards data is more abundance historically, but have declined to low levels in recent years.
 - Sampling of landings and discards is robust for Canadian catch, but more limited for U.S. catch.
 - Recreational landings and discards are insignificant
- **Survey Data:**
 - NEFSC Spring and Autumn and Canadian Spring bottom trawl surveys have consistently sampled this management area through time

Key Conclusions: Georges Bank

- **Stock Assessment Prognosis:**

- Current TRAC stock assessment is using data limited approach to set U.S. and Canadian quotas due to issues related to the analytic (age based) assessment
- The data considered would be broader with the inclusion of Statistical Areas 522 and 525, but catch and catch sampling from these areas is limited
- Neither country has accepted the proposed modified management area. This is a political decision, not a science decision.
- The Research Track assessment process is likely to focus on attempting to reconstitute an analytic (age based) stock assessment for this area.



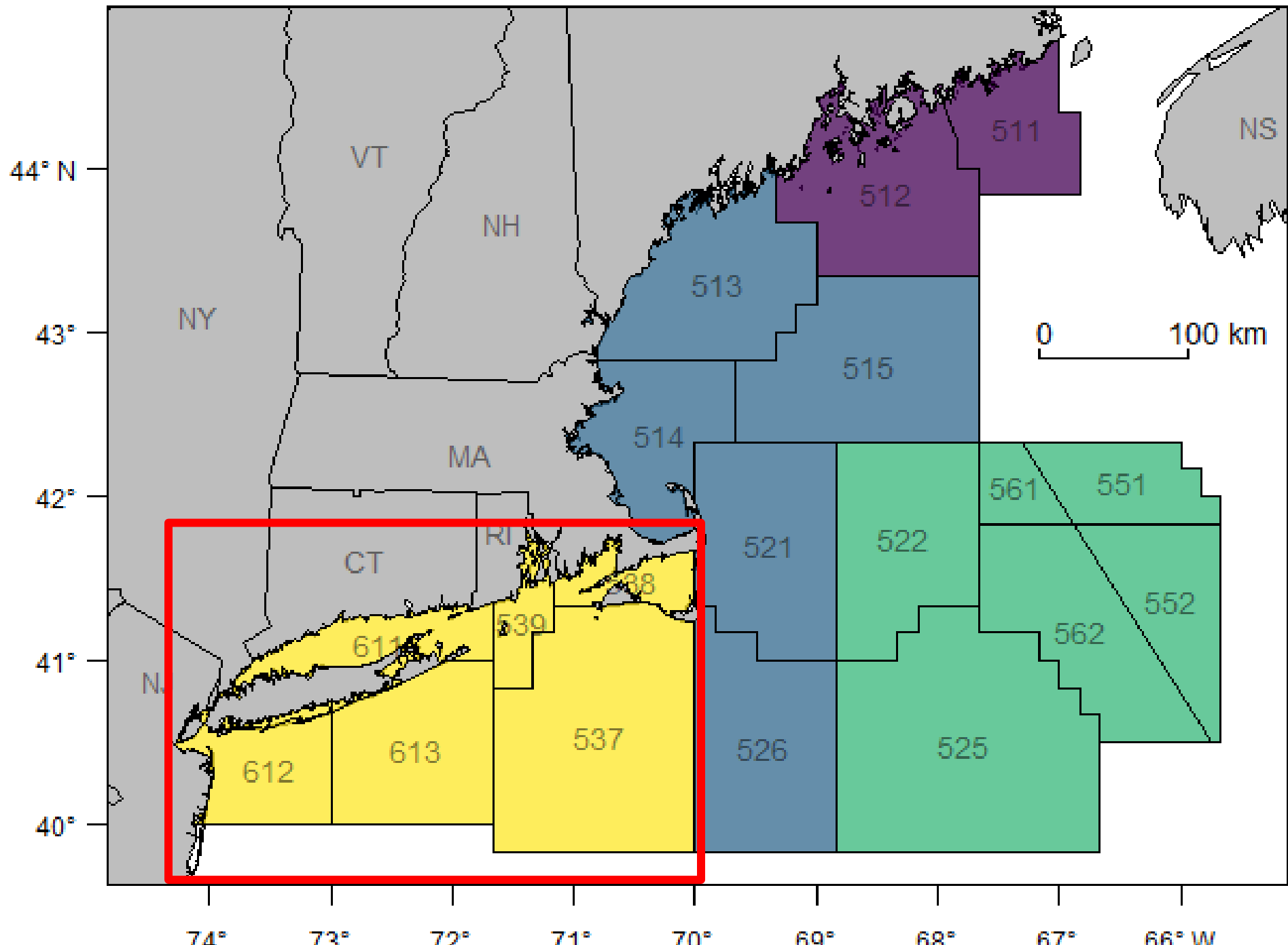
Key Conclusions: Gulf of Maine/Channel

- **Proposed Management Area includes the Western (and possibly the Eastern Gulf of Maine, plus the Great South Channel area (Statistical areas 521 & 526))**
- **Catch (Commercial and Recreational Landings and Discards):**
 - Data Rich: The majority of U.S. catch and catch sampling comes from Statistical Areas 515 and 521.
 - Recreational Data: more problematic in parsing Massachusetts data
 - Should be possible to construct a catch at age that is reflective of the resource
- **Survey Data:**
 - NEFSC Spring and Autumn and the Massachusetts Inshore Spring and Autumn bottom trawl surveys have consistently sampled this area

Key Conclusions: Gulf of Maine/Channel

- **Stock Assessment Prognosis:**

- Current TRAC stock assessment is an analytic assessment
- The data considered would be broader with the inclusion of Statistical Areas 521 and 526, resulting in additional information being considered for the assessment.
- The Research Track assessment process is likely to focus on continuing to model the resource in this management area using an analytic (age based) stock assessment, and attempting to incorporate environmental factors into the assessment.



Key Conclusions: Southern New England

- **Proposed Management Area includes all areas south and west of the Great South Channel**
- **Catch (Commercial and Recreational Landings and Discards):**
 - Data Poor: Commercial catch has been limited and is poorly sampled.
 - Recreational Data: problematic due to limited sampling in the winter and the potential effects of rare events
 - It will not be possible to construct a catch at age that is reflective of the population
- **Survey Data:**
 - Many surveys cover this area, but none seem to gauge the full size and age composition of the population

Key Conclusions: Gulf of Maine/Channel

- **Stock Assessment Prognosis:**

- If this is assessed/managed as a separate management area, the assessment would likely need to resort to a data limited assessment approach
- The Research Track assessment process would explore approaches for assessing or indexing the resource in this management area

Science/Assessment General Conclusions

- Splitting the historical data collected under the two management area design and then partitioning it for use to assess 3-5 management areas results in inadequate assessment data for some areas
- The proposed Southern New England and Eastern Gulf of Maine proposed stock areas were particularly data deficient in terms of the representativeness of fishery independent surveys and biological sampling of the catch required to characterize commercial and recreational landings and discards.

Questions?