

# MACHC Regional Band 1 ENC Scheme – Nov 2021

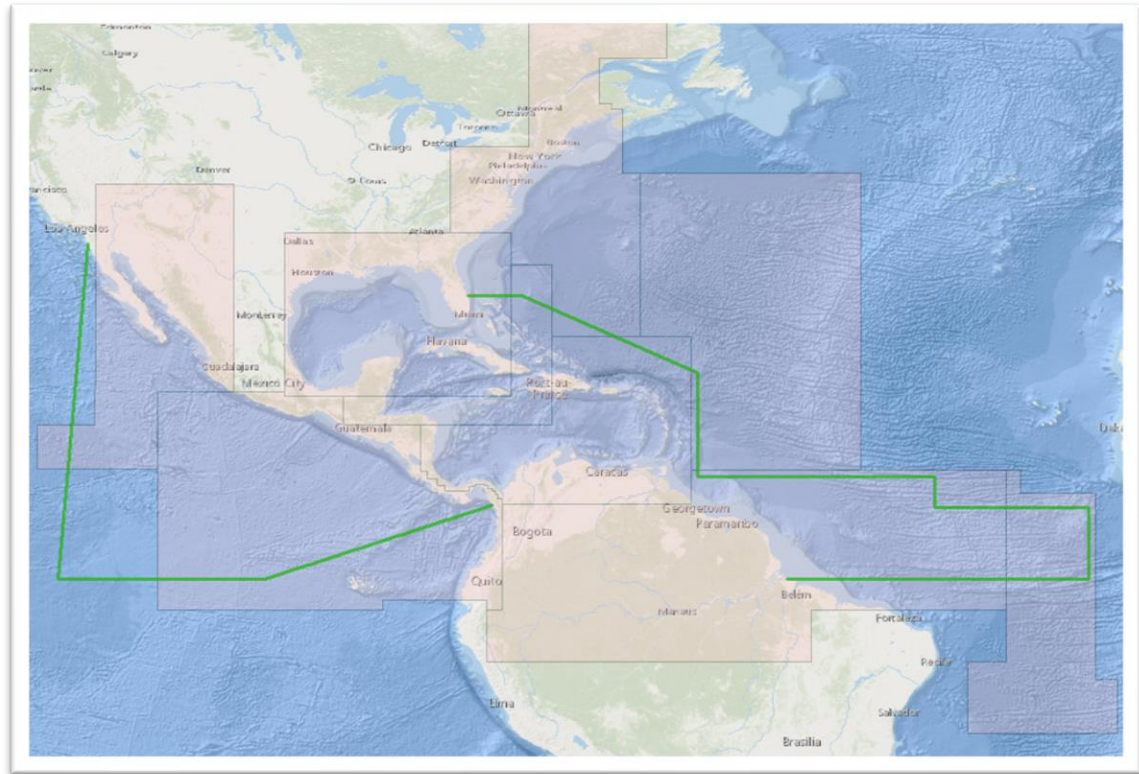
MACHC Regional ENC Scheme Sub Working Group

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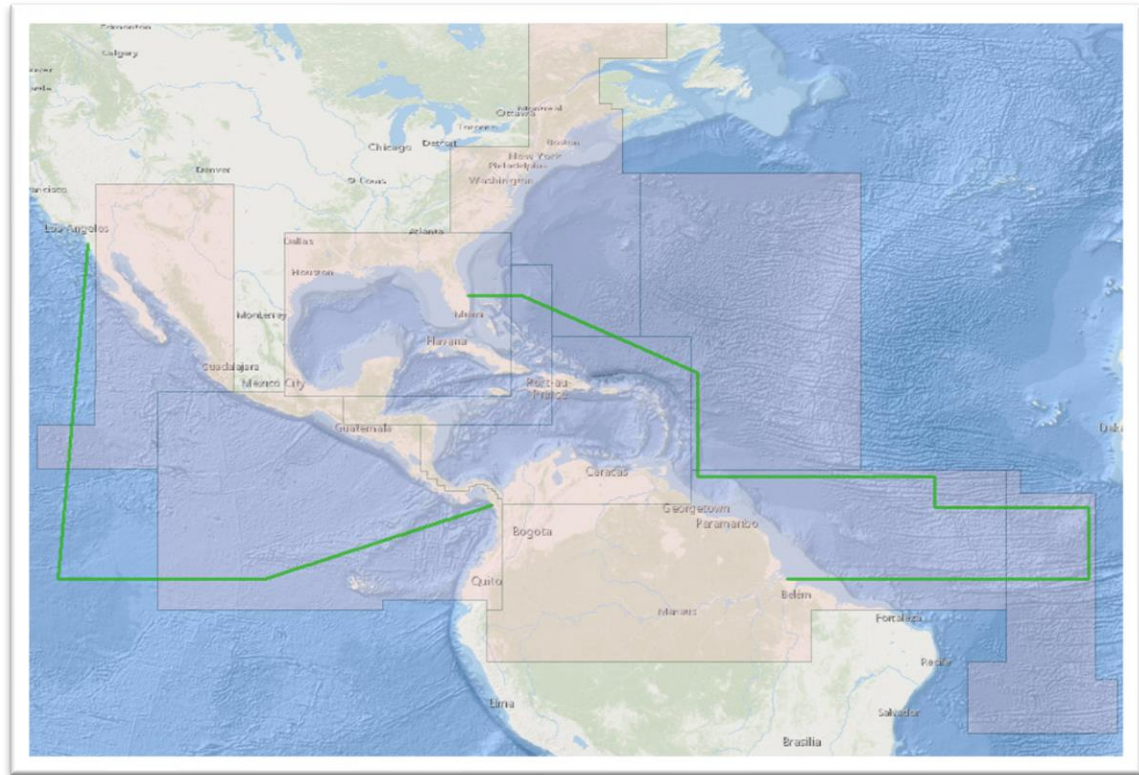
# Current State of Band 1 Cells in MACHC Region

- 9 Band 1 ENC's cover most of region (1 US, 8 UKHO)
- 2 cells at 1:1,500,000
- 1 cell at 1:2,160,000
- 4 cells at 1:3,000,000
- 2 cells at 1:2,500,000



# Gridded Systems

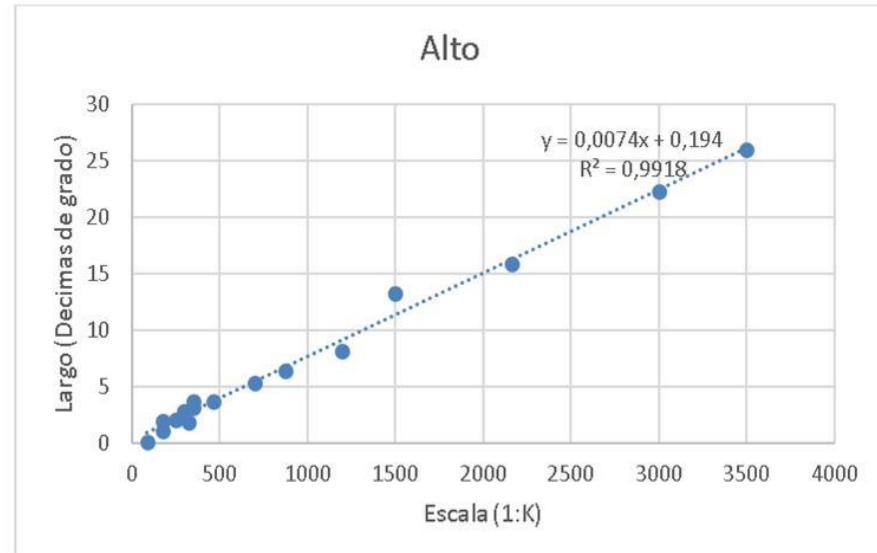
- Advantages:
  - Standardizes ENC cell size
  - Predictable coverage
  - Does not need M\_COVR Cov2
  - Allows for future planning
  - Data consistency across ENC cells
- Disadvantages:
  - Potential overhead costs to implement
  - Does not conform to geographical features



# Research Done

- Existing Usage Band 1 & 2 ENC size analysis
  - Determine the relationship between existing ENC scales and product size
- Comparing average ENC scales within Usage Bands
  - Examined across different HCs to establish guidelines when considering a new grid

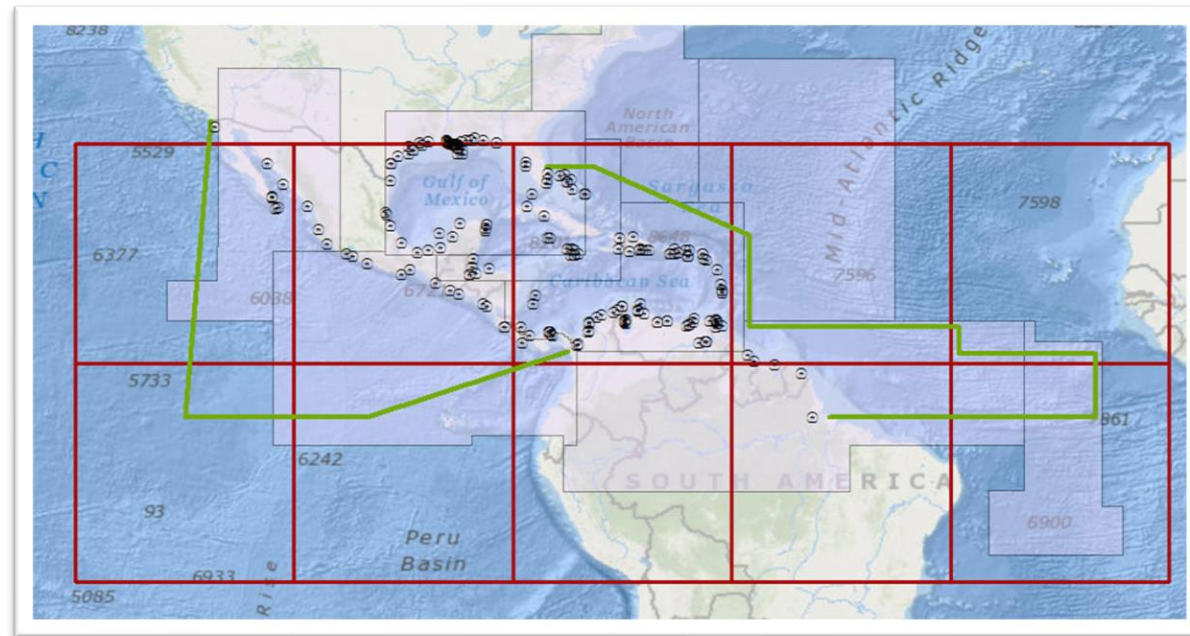
Figura 16 Grafica de dispersión con respecto a los tamaños de alto (a) y ancho (b) en las ENC's actuales en función del valor de la escala para todos los propósitos de navegación.



# Grids Examined – Option 1

## MACHC Based Re-Scheme

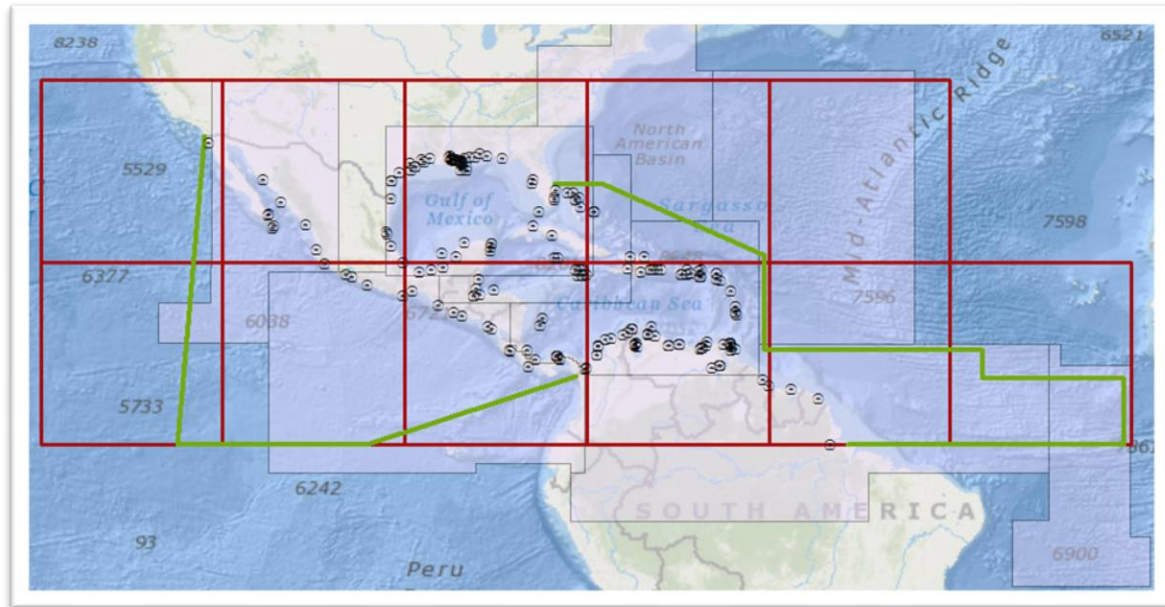
- Parameters
  - Size:  $24^{\circ} \times 24^{\circ}$
  - Origin:  $180^{\circ}\text{W}, 90^{\circ}\text{S}$
  - Scale: 1:3,000,000
- Pros & Cons
  - Pro: Most major ports fall within 1 ENC cell
  - Pro: Origin point lends itself to global expansion
  - Con: With this cell size, they do not distribute equally from north to south



# Grids Examined – Option 2

## NOAA Re-Scheme Plan

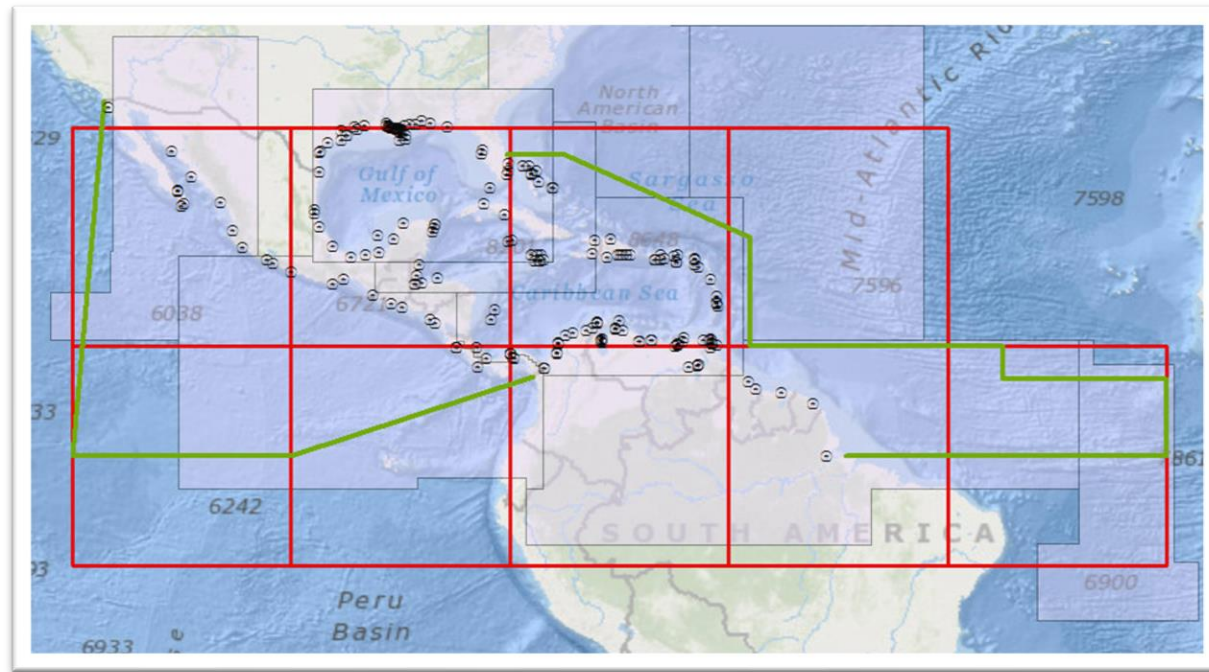
- Parameters
  - Size: **19.2° x 19.2°**
  - Origin: **0°, 0°**
  - Scale: Binary option of **1:2,560,000** or **1:5,120,000**
- Pros & Cons
  - Pro: Aligns with existing US plan for Re-Scheming
  - Pro: Maximum of 12 different scales across the 6 usage bands
  - Pro: Predictable divisibility for each usage band after band 1
  - Con: Origin point was not chosen with the intention of coverage outside of the US



# Grids Examined – Option 3

## UKHO Re-Scheme Plan

- Parameters
  - Size: **20° x 20°**
  - Origin: **180°W, 90°S**
  - Scale: **Flexible – dependent on available coverage and features**
- Pros & Cons
  - Pro: Aligns with existing UKHO plan for global Re-Scheming
  - Pro: Whole cell coverage along latitudes and longitudes
  - Con: Cell sizes of larger scale bands not well defined – Grid layouts at bands 2 and 3 are unclear in the MACHC region at the moment





# Grid Comparisons

Scheme	MACHC	NOAA	UKHO
Band 1 Cell Size	24°	19.2°	20°
Origin Point	180°W, 90°S	0°, 0°	180°W, 90°S
Band 1 Scale	3,000,000	1:2,560,000 & 1:5,120,000	Flexible
Future Usage Band Size	Divides by 4 each scale band	Divides by 4 each scale band	Flexible
Future Usage Band Scale	Based on radar ranges	Scale gets halved at each usage band	Flexible
Aligns w/ Existing Scheme?	No	Yes - NOAA	Yes – UKHO

A map of the MACHC region showing Usage Bands 1, 2, and 3. The map is overlaid with a grid and various geographical features like islands and channels. A red circle highlights a specific area on the map.

# Additional Considerations

- Larger Scale Usage Bands
  - While all of the proposals may work well at Usage Band 1, consideration should be given at how these grids will incorporate several more producing member states at Usage Bands 2 & 3 before deciding on one option
- Scale
  - Ideally, standardized compilation scales or a standard methodology would be established across the scheme based on existing data and desired use
- Compatibility with other regional HCs
  - While the priority is to improve coverage and usability in the MACHC region, there is an opportunity to set an example that could be adopted by neighboring HCs
- Momentum
  - The two ENC providers at Usage Band 1 (NOAA & UKHO) have interest in building out a reschemed plan in the MACHC region, but it is integral that all member states have input for future Usage Bands that will affect their areas of production