



# Uncertainty in national wetland extents

Training Workshop Module 1: Introduction to National Wetland Inventories

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# The importance of consistent data over time

We can only **inform** policy decisions and **assess** their success if we have clear data, repeatedly collected over time

*UNFCCC resolution FCCC/CP/2009/11/Add.1 (Copenhagen):*

**historical** data utilised by signatory countries in order to  
*“provide estimates that are **transparent, consistent, as far as possible accurate, and that reduce uncertainties**”*



How easy is this to do?

# Let's collect some baseline data!

Task: We are going to collate data to create a trend line of mangrove loss for one of the following countries:

- Indonesia
- USA
- Mexico
- Brazil
- Senegal
- Costa Rica
- Singapore
- Kenya
- Malaysia
- Australia

We are doing mangroves because they are the easiest!

But data are slowly coming for other wetland ecosystems

Add your data to:

[https://docs.google.com/spreadsheets/d/1xLXGEyIEBTDEq80TiMIPQITZIY48GvN4Y671k\\_tGanI/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1xLXGEyIEBTDEq80TiMIPQITZIY48GvN4Y671k_tGanI/edit?usp=sharing)

# Data sources you can use

## Google:

- “[country] mangrove extent”
- “[country] mangrove area”
- “FAO 2010 GFRA” (GFRA = Global Forest Resources Assessment)
- “FAO 2020 GFRA”
- World Atlas of Mangroves  
<https://www.environmentalunit.com/Documentation/04%20Resources%20at%20Risk/World%20mangrove%20atlas.pdf>
- Global Mangrove Watch website (next slide)
- Hamilton & Casey 2016 <https://onlinelibrary.wiley.com/doi/full/10.1111/geb.12449>
- Goldberg et al. 2020 <https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.15275>
- Try also searching in Google Scholar

**Be quick!** CTRL+F (find) for  
“mangrove” or your country  
in the documents

# Global Mangrove Watch

[www.globalmangroveswatch.org](http://www.globalmangroveswatch.org)

We will come back to this website in the Coastal Wetlands session

Type your country in here



globalmangroveswatch.org/country/BRA?active-widgets=["mangrove\_habitat\_extent","mangrove\_net\_change","mangrove\_habitat\_chang...

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## Brazil

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MANGROVE HABITAT EXTENT

The area of mangrove habitat in **Brazil** was **11,414.71** **2020**, this represents a linear coverage of **33.79%** of the **68,400.60 km** of the coastline.

- Coastline coverage in 2020  
23,110.50 km
- Non mangroves  
45,290.10 km

SHOW LEGEND ↑

Search different years here



# You just did this analysis!

Global Ecology and Biogeography, (Global Ecol. Biogeogr.) (2014) 23, 715–725

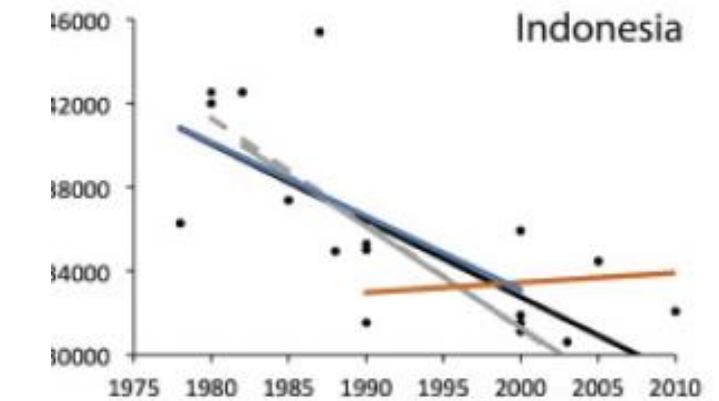
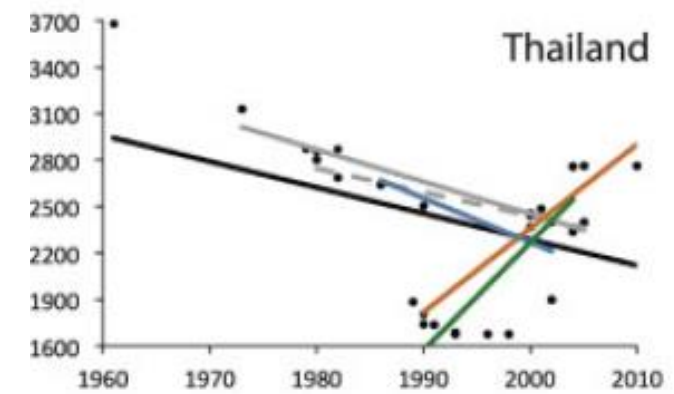
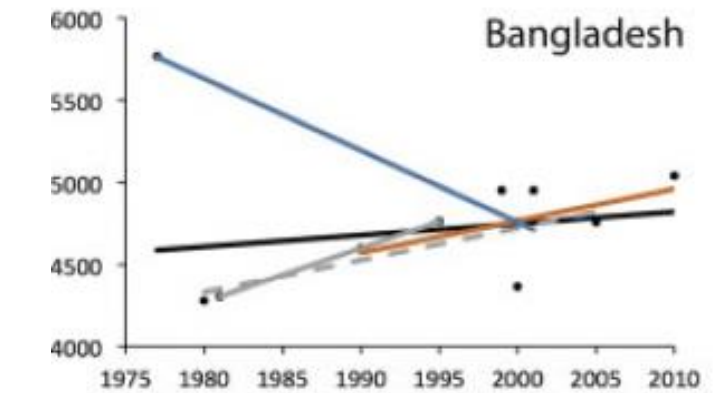
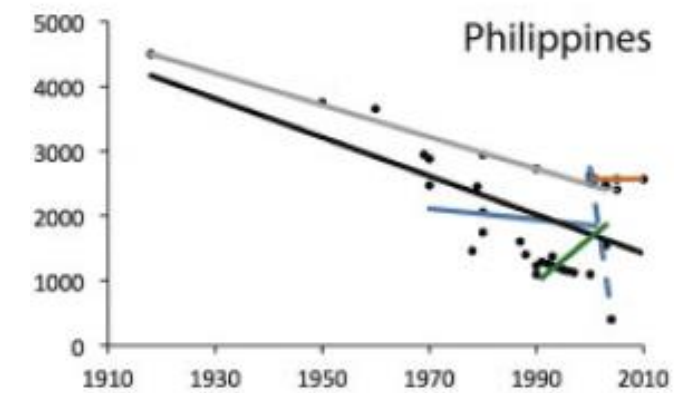
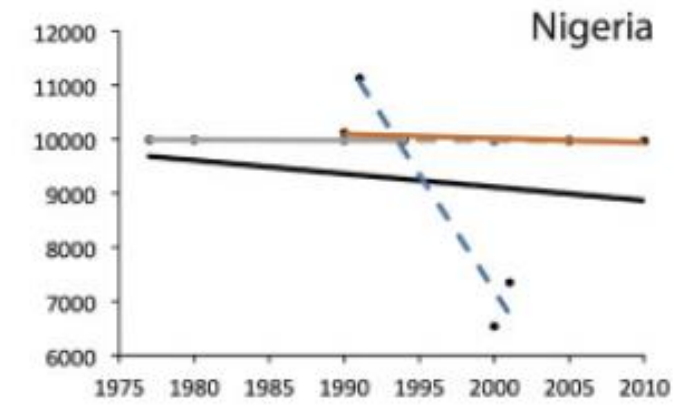
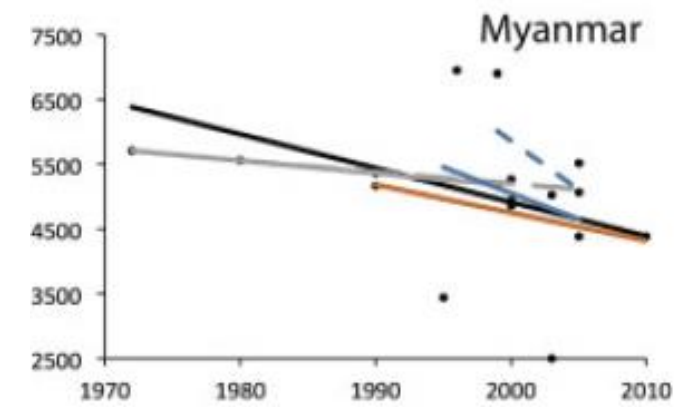
RESEARCH  
PAPER



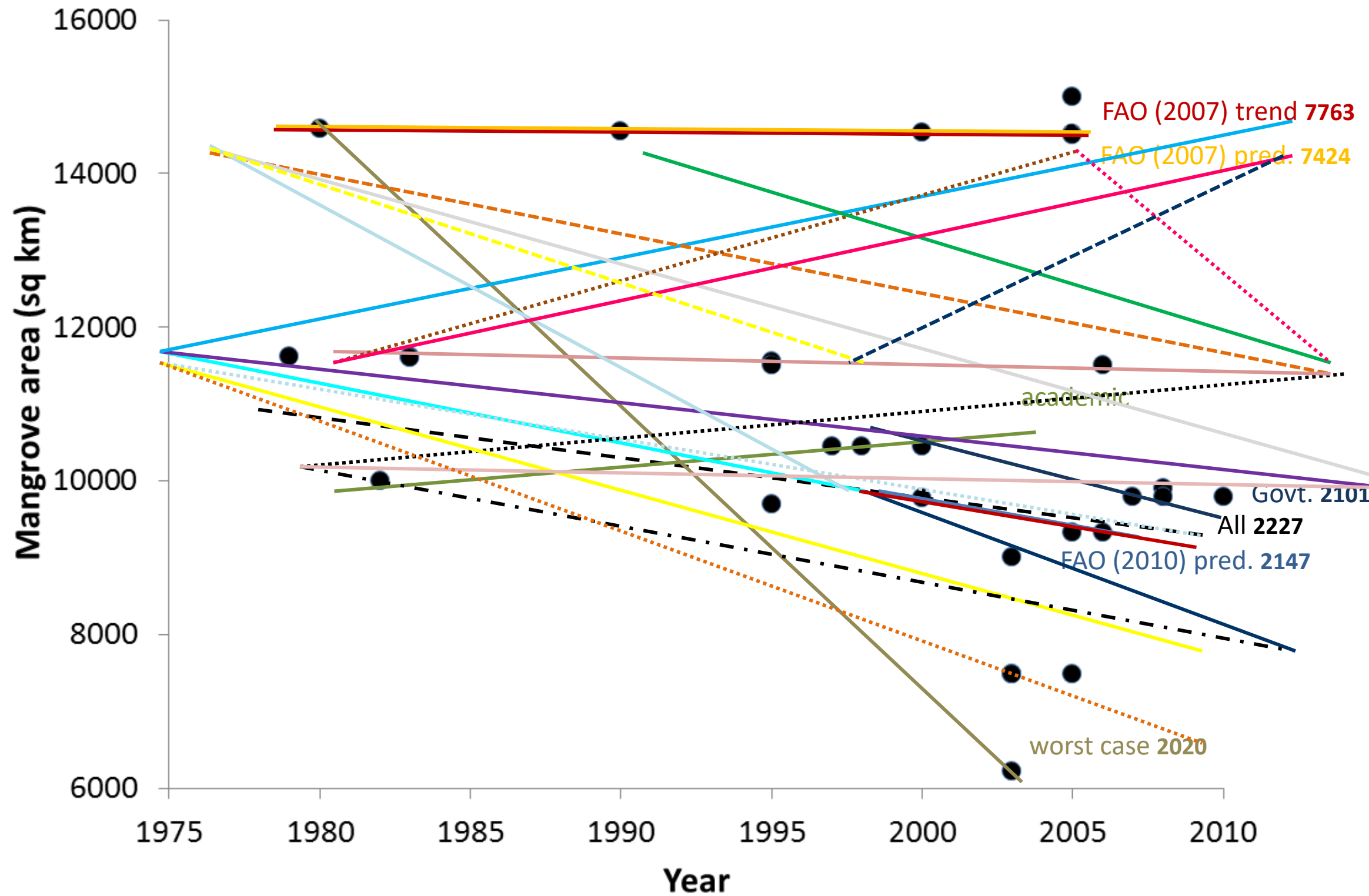
## Variability in mangrove change estimates and implications for the assessment of ecosystem service provision

Daniel A. Friess<sup>1\*</sup> and Edward L. Webb<sup>2</sup>

— FAO (2007a) trend      — FAO (2010)      — Academic      — All  
- - - FAO (2007a) projection      — Government      - - - Remote sensing



# The issues caused by uncertainty



# Why so much uncertainty?

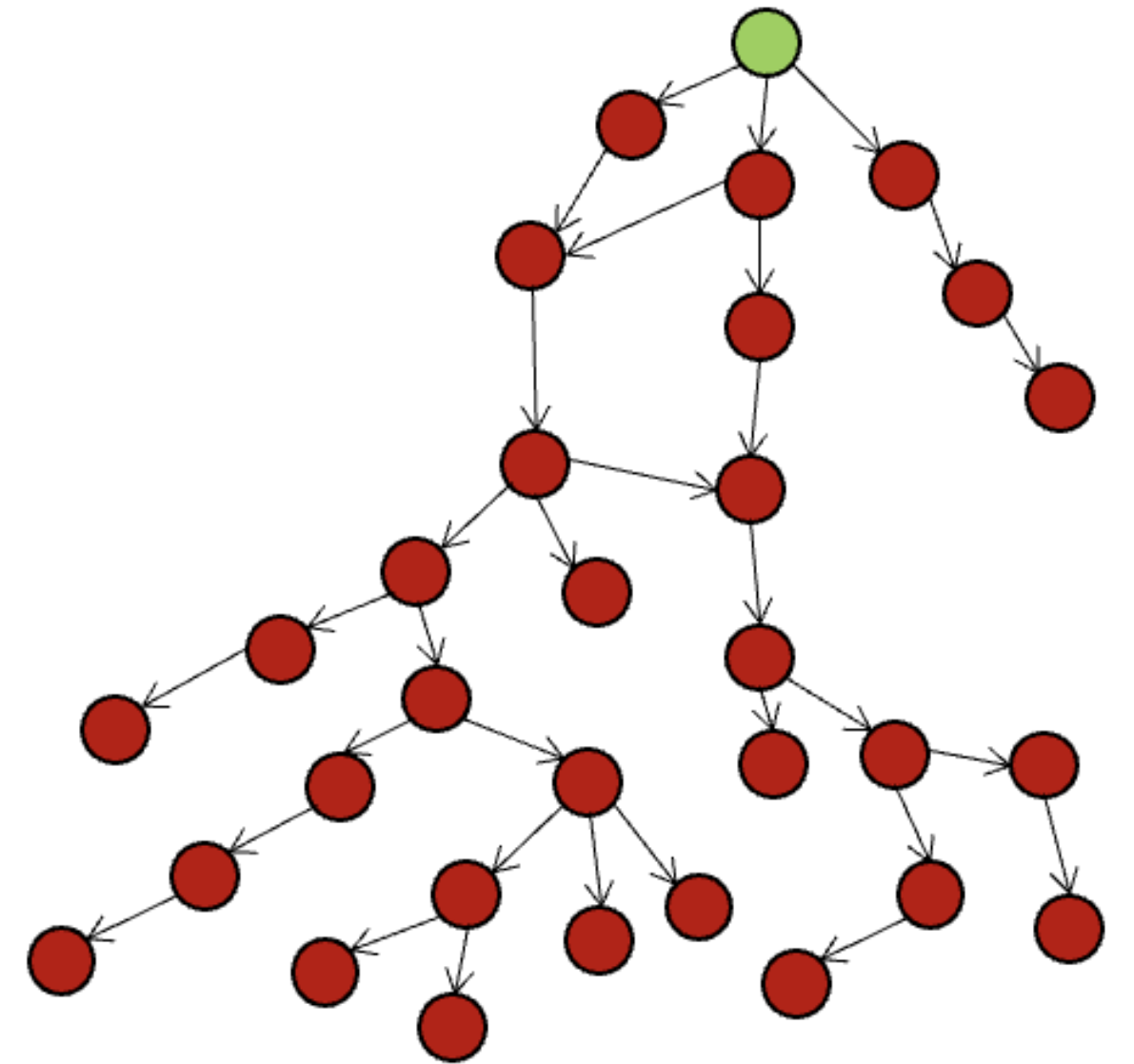
## 1. lack of robust methodology

- how derived? Remote sensing? Best guess? Transparent? Repeatable?

## 2. traceability of secondary info

- poor referencing, poor citations, grey literature

## 3. propagation of erroneous info

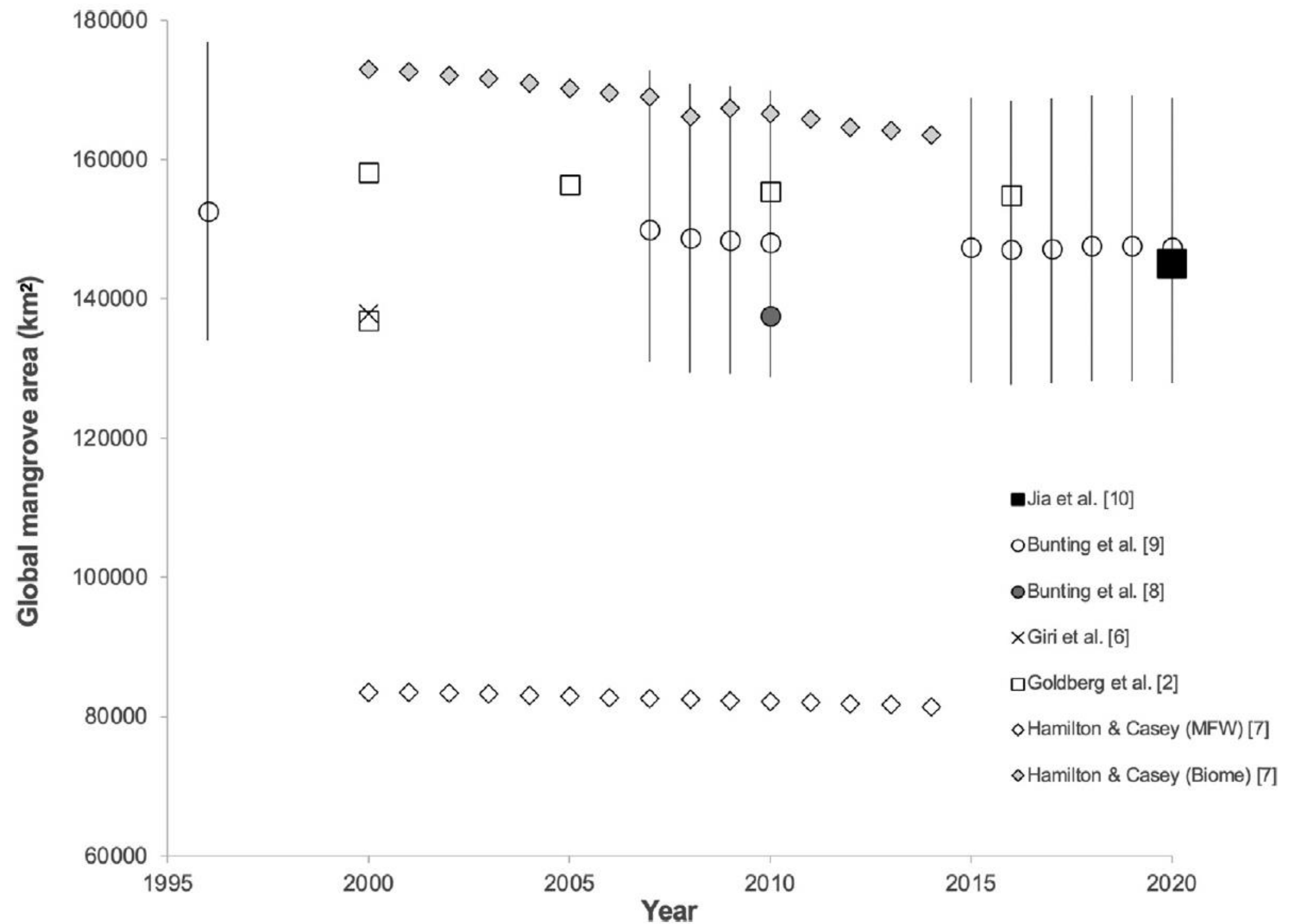




# Remote sensing reduces uncertainty

Areas are different (due to different methodologies)

But the trends are all consistent



# Summary

- Without a clear framework, there is lots of uncertainty in estimates of wetland extent
- Big implications for how we determine trends and assess status
- A National Wetland Inventory will allow for transparent, traceable and repeatable monitoring of wetland extent over time



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Thank you  
Questions?

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