

Why are the Gulf of Guinea Waters so Dangerous?

Crime Displacement and the Unintended Consequences of
IUU Fishing



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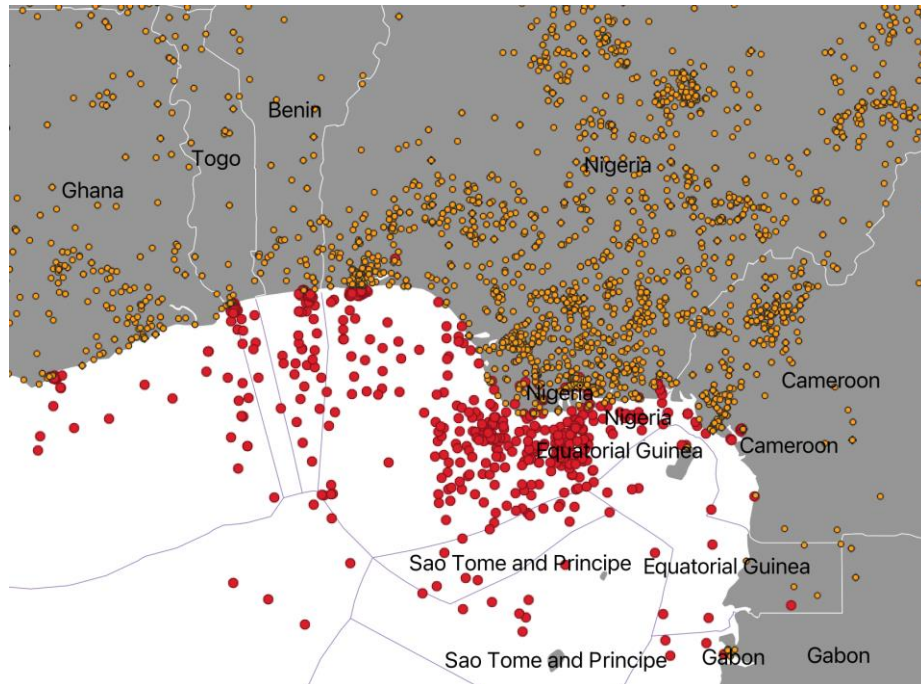
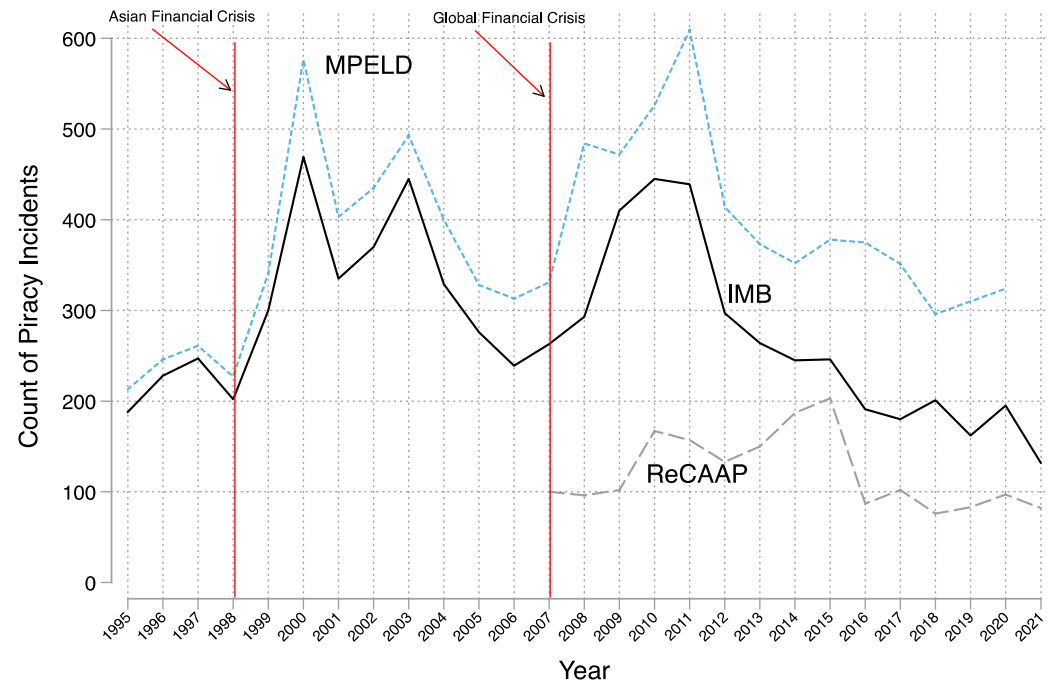
Aaron Gold, Sewanee

OVERVIEW

- Visualizing Sea-Piracy
- IUU Fishing and Sea-Piracy
- Theory – The Displacement of Local Fishers to Sea-Piracy
- Research Design
- Empirical Evidence
- Implications



Photo credit: Eric Frécon



MARITIME PIRACY GLOBALLY AND IN THE GULF OF GUINEA

IS ILLEGAL
FISHING RELATED
TO MARITIME
PIRACY? WHAT DO
WE KNOW?

Seems to be a consensus that
illegal fishing causes piracy

Narrative focuses on foreign
industrial trawlers

The empirical evidence is
inconclusive



THEORETICAL STORY

Decline in
IUU Fishing

Local Law
Enforcement

Increase
in Sea-
Piracy

Local Fishers Engage in IUU Fishing

Local Enforcement Displaces Criminals

Illegal Fishers Transition to Sea-Piracy

Current narrative

- Foreigners are the cause of eco-system harm and the depletion of marine resources
- Locals are only harmed by IUU fishing. They are not the perpetrators of IUU fishing
- State security forces are mostly absent from story

HYPOTHESES

Piracy incidents are more likely to occur in areas:

- Where IUU fishing has declined
- With high commercial vessel traffic
- Where both are present

RESEARCH DESIGN

Data: Gulf of Guinea (1990-2018)

Unit of Analysis: Grid-cell Year

DV: Piracy Incident in a Grid-cell Year

IVs:

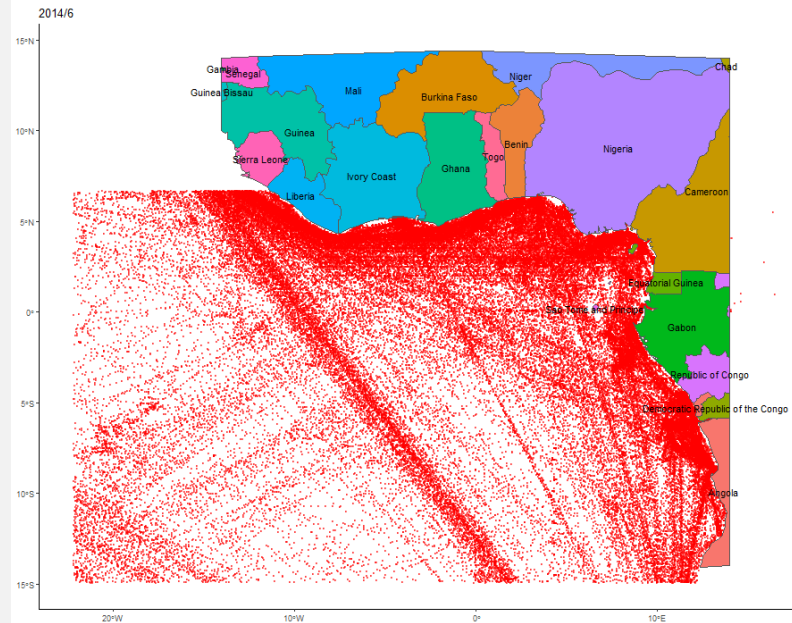
- IUU Fishing Decline in Grid-cell Year (10% or more)
- Opportunity → Vessel Traffic in a Grid-cell Year (Aggregated and Averaged)

Control Variables

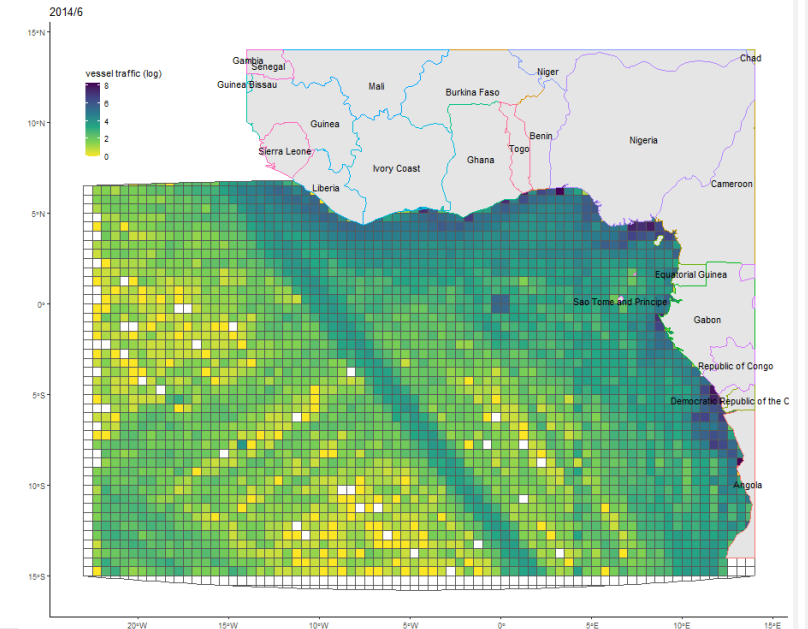
- Ports in each Grid Cell
- Economic Activity (Night-lights)

VISUALIZING
OUR
RESEARCH
FINDINGS

AIS Vessel Tracking Data 2014



Raw Two-Hour Updates



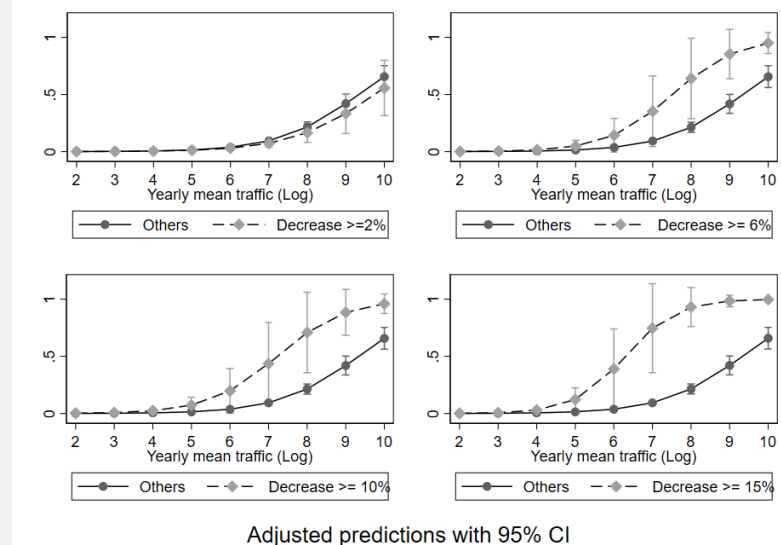
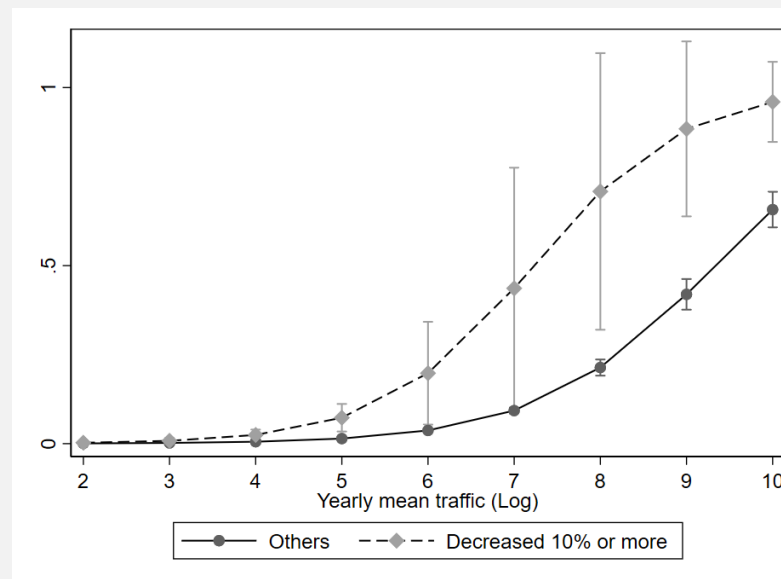
Aggregated to Grid-Cell

RESEARCH FINDINGS

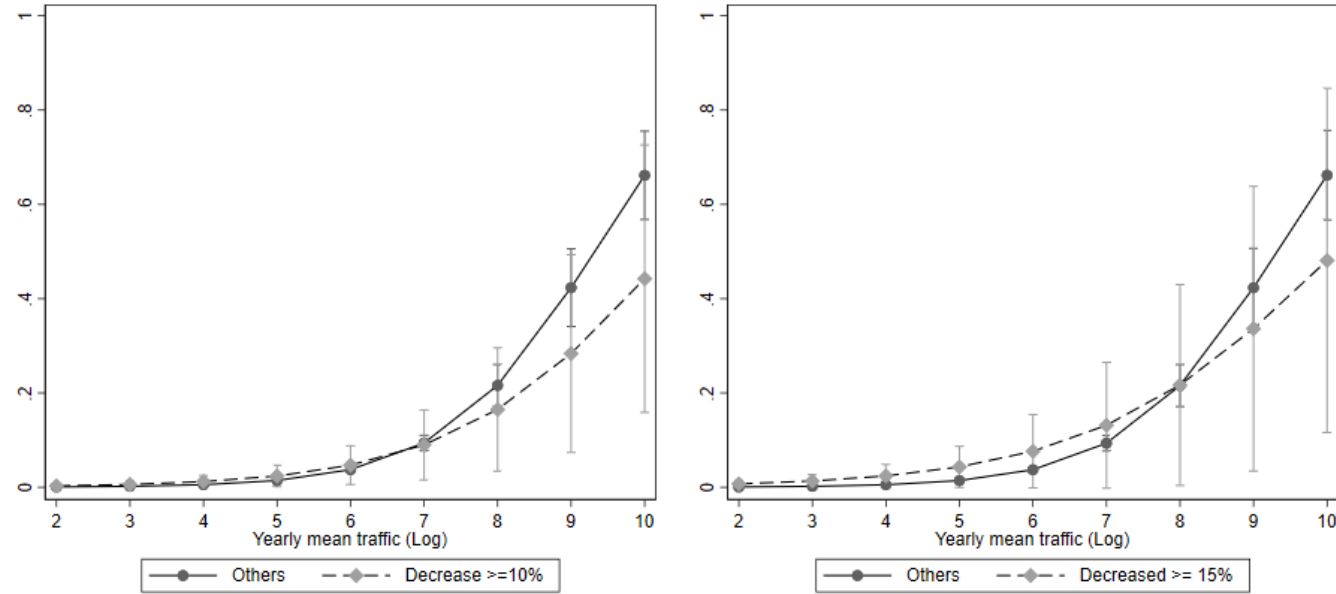


Hot Pursuit in Indonesia

Decrease in IUU Fishing, Opportunity, and Piracy



Decrease in Legal Fishing, Opportunity, and Piracy

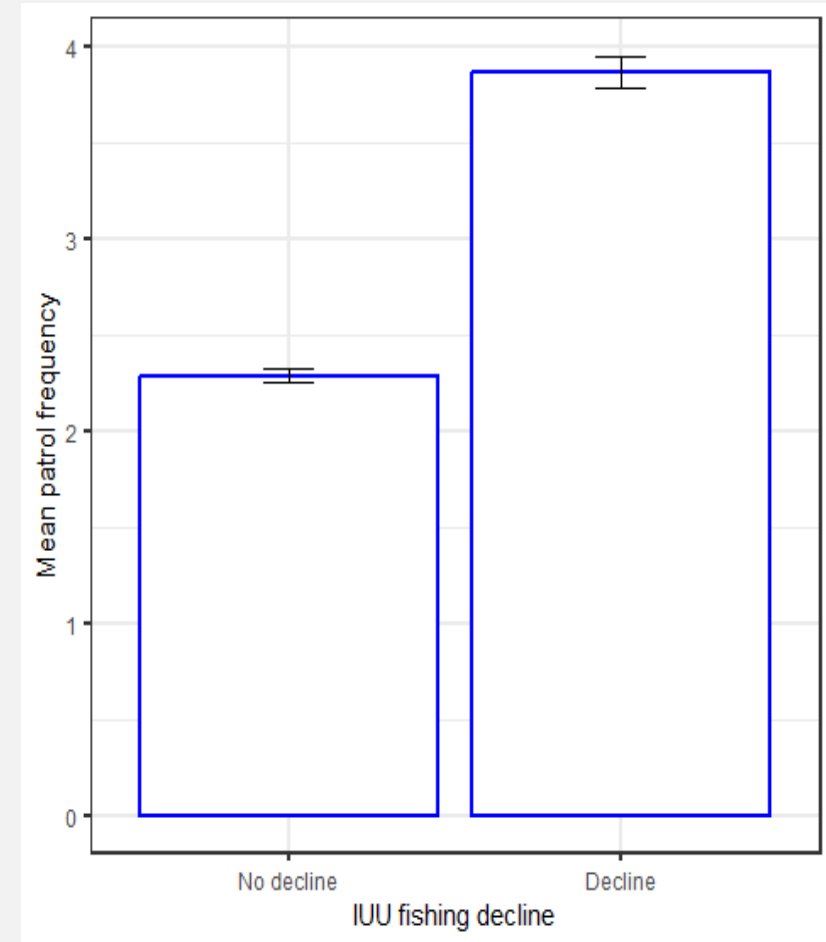
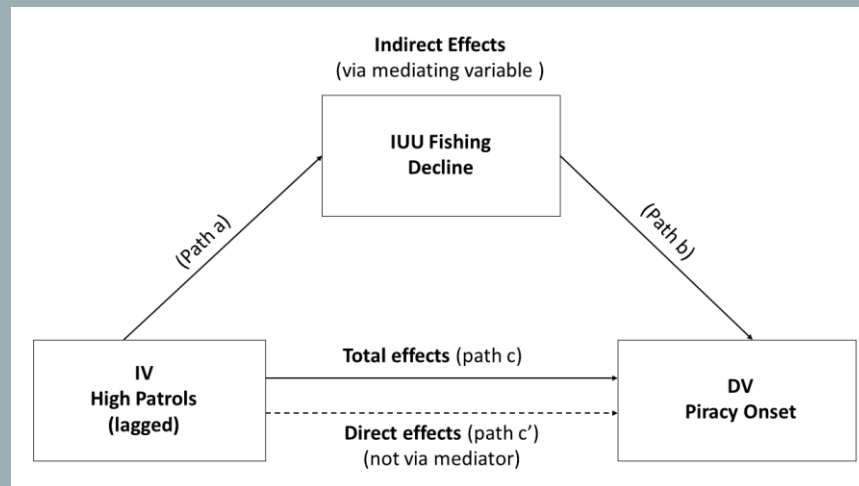


Adjusted predictions with 95% CI

RESEARCH FINDINGS

Patrol frequency in grid-cells and its association with the decline in illegal fishing

RESEARCH FINDINGS



RESEARCH FINDINGS

Mediation Analysis: Law enforcement patrol, IUUF decline and Maritime Piracy

	(1)	(2)
High patrol (lagged)	0.463*	0.337
	(0.246)	(0.237)
IUUF decline		0.781***
		(0.226)
Hi Traffic	1.622***	1.732***
	(0.444)	(0.446)
Near nightlight dummy	3.036***	3.213***
	(0.778)	(0.803)
Port count	1.351***	1.377***
	(0.344)	(0.352)
Constant	-7.814***	-8.165***
	(0.712)	(0.757)
Observation	4685	4685

Effect of law enforcement high frequency patrol on piracy onset

High patrol (lagged)	Coeff.	SE	p*	Bootstrap 95% CI
Total effect (path c)	0.0073	0.005	.136	[-.0023, .0169]
Direct effect (path c')	0.0071	0.005	.147	[-.0025, .0166]
Indirect effect (via mediator)	0.00023	0.0001	.016	[0.000044; 0.000431]

IMPLICATIONS OF RESEARCH



Illegal Fishing off West Africa

Maritime crimes appear to be linked

Maritime criminals can be displaced from one illicit activity to another

Illegal fishing is frequently a local crime issue and not only or mostly a transnational one

Contention among governments strengthens the maritime crime-border relationship

Maritime crime requires multi-national cooperation

Formal military agreements, training opportunities and joint action with other countries can help address maritime crime.

Information sharing through ASEAN, along with confidence-building measures to shared patrols, have also proved effective at preventing maritime crime.



THANK-YOU

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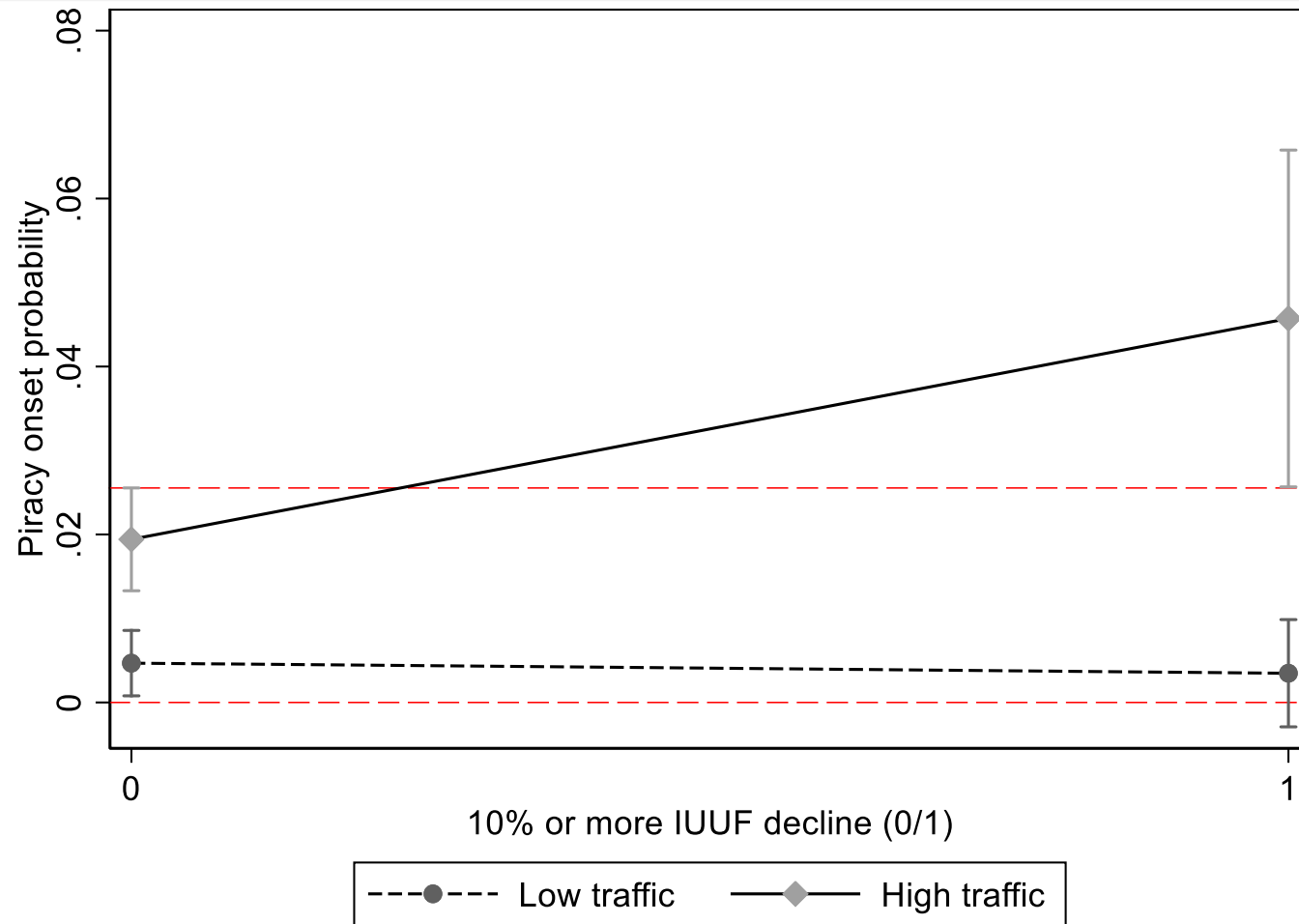
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EXTRA SLIDES

EXTRA SLIDES



Main results on the onset of piracy events at the local level

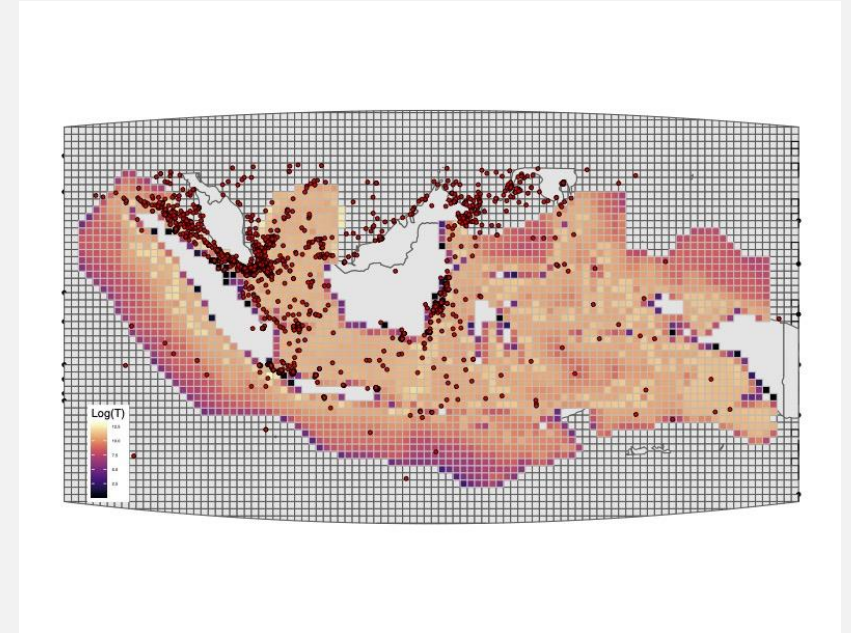
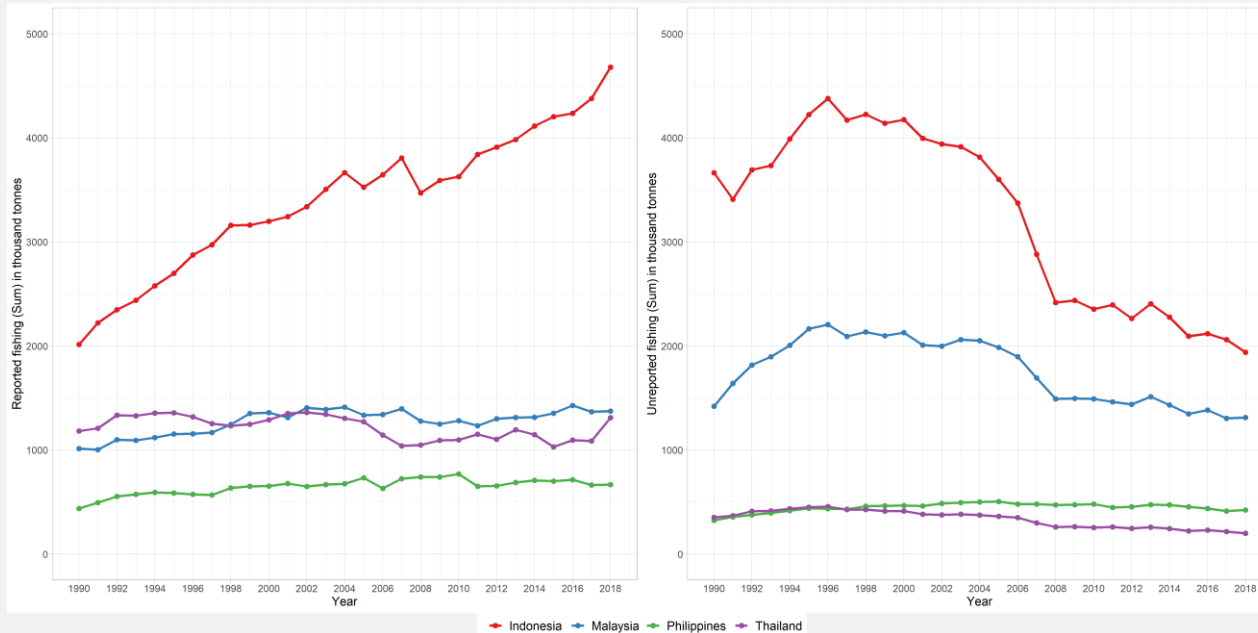
	(1)	(2)	(3)
IUUF decline	0.492**	0.865***	-0.312
	(0.192)	(0.243)	(1.039)
Near nightlight dummy	4.888***	3.310***	3.191***
	(0.474)	(0.794)	(0.786)
Port count	1.842***	1.406***	1.417***
	(0.266)	(0.351)	(0.354)
High Traffic		1.860***	1.527***
		(0.454)	(0.477)
IUUF decline X Traffic			1.276
			(1.079)
Constant	-8.429***	-8.182***	-7.760***
	(0.455)	(0.762)	(0.817)
Observation	26377	4685	4685

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: Model (1) includes data from 1990-2018, whereas models (2) & (3) include AIS data from 2014-2018

THE SECURITY IMPLICATIONS OF IUU FISHING



- Sea Around Us Data
 - FAO
 - Country data
- Evidence currently suggests the two processes occur in similar spaces
- Causal direction remains unclear

IUU Fishing represents threat to stability and security
(Amanda Shaver & Sally Vozell Stimson Center Report 2018)

1. Ecological Security
2. Economic Security
3. Food Security
4. Geopolitical Security
5. Maritime Piracy
6. Transnational Organized Crime

WHAT CAN BE DONE TO REDUCE MARITIME CRIME?

- Capacity Building
 - Can be expensive when focused on counter-piracy
 - Improvements in local governance probably more efficient
 - Collusion between substate actors-crime deserves more attention
- Partnerships
 - Information-sharing (ReCAAP, ISCs, Djibouti and Yaounde Codes)
 - Naval Exercises
 - Hot pursuit needs to be negotiated by countries in the region
- Ship Hardening
 - Effective
 - Some are costly
- Naval Missions
 - Expensive
 - Without other grievance-reducing policies, might just lead to substitution
- Address IUU Fishing
- Improve working conditions in fishing industry
- Mitigate effects of financial crises and public health emergencies
- Port security must be a focus
- Countries must better prepare for economic recessions and public health emergencies