

Environmental & Natural Resource Economics

Week 1

Professor Dave Keiser

Outline for this Week

- ▶ Syllabus
- ▶ What do Environmental Economists Do?
- ▶ Chapters 1 & 2 (T&L Textbook)



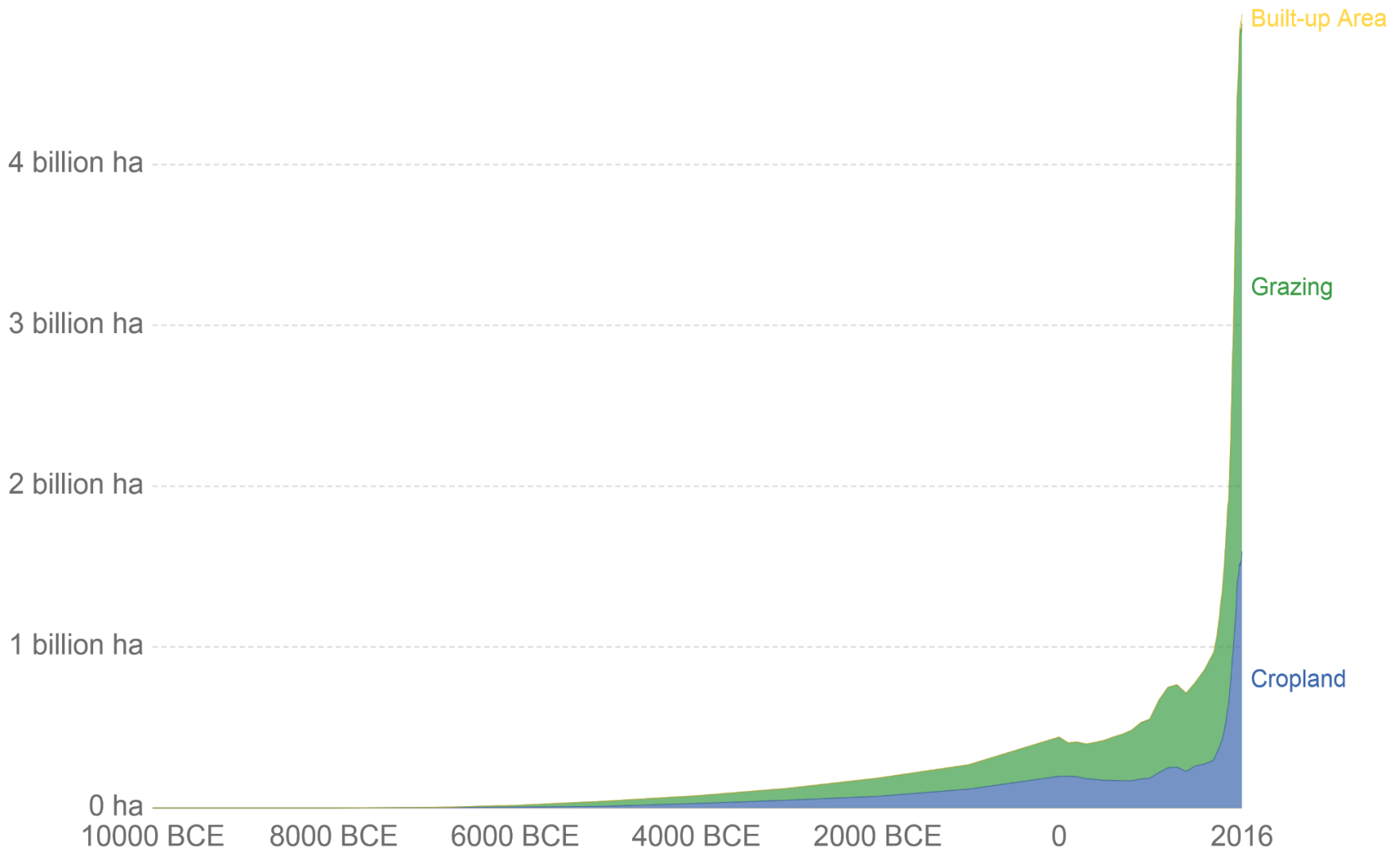
The Study of Economics

- ▶ The study of how people choose to allocate scarce resources
- ▶ More than just the study of the stock market
 - ▶ Big picture of how societies should be run.
 - ▶ How can we improve livelihoods around the world?
 - ▶ What are effective ways to combat malaria?
 - ▶ How should professional sports teams manage their rosters?
 - ▶ How should we manage the environment?



Land use over the long-term, World

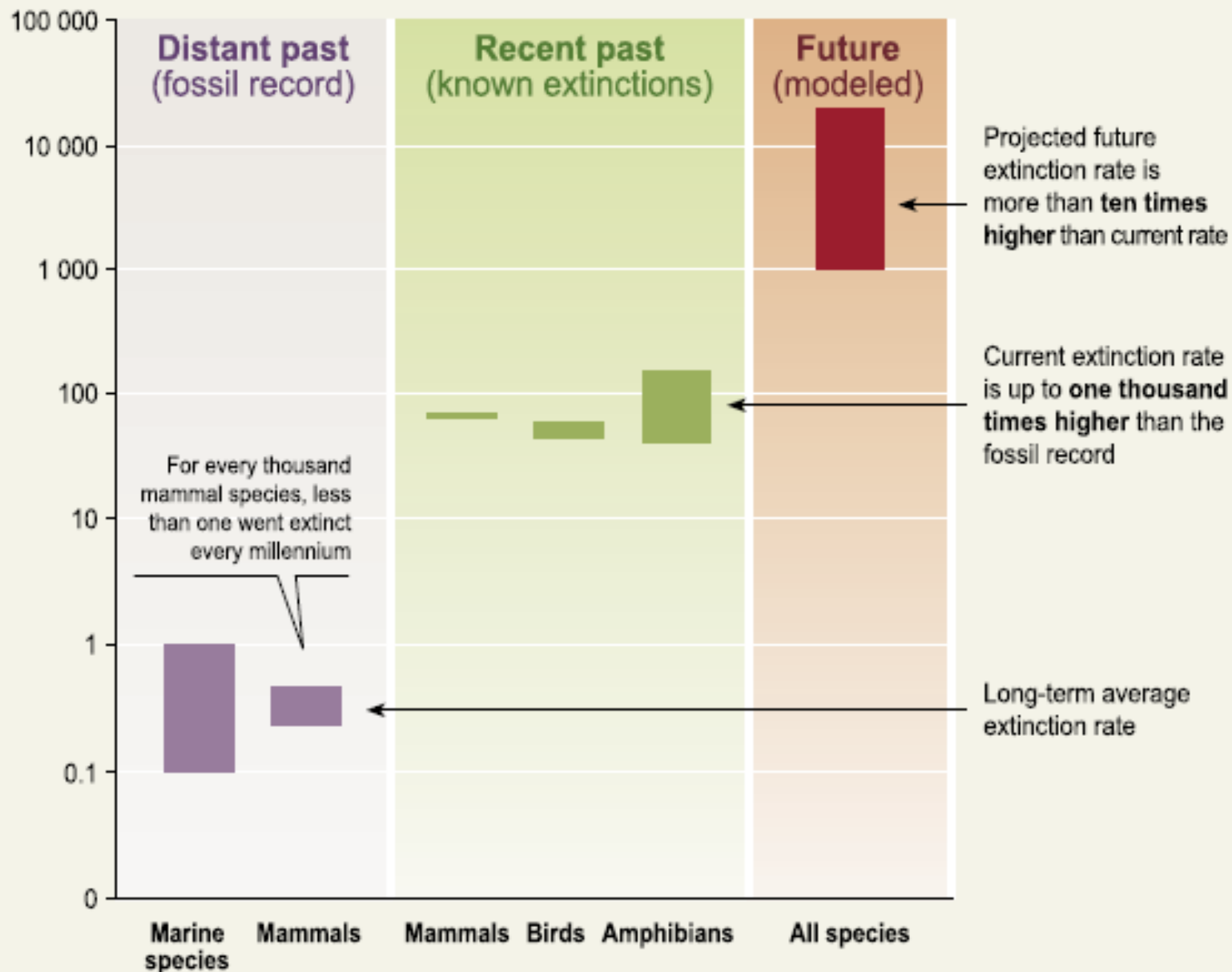
Total land area used for cropland, grazing land and built-up areas (villages, cities, towns and human infrastructure), measured in hectares.



Source: Land Use Data - HYDE (2017)

OurWorldInData.org/land-cover/ • CC BY-SA

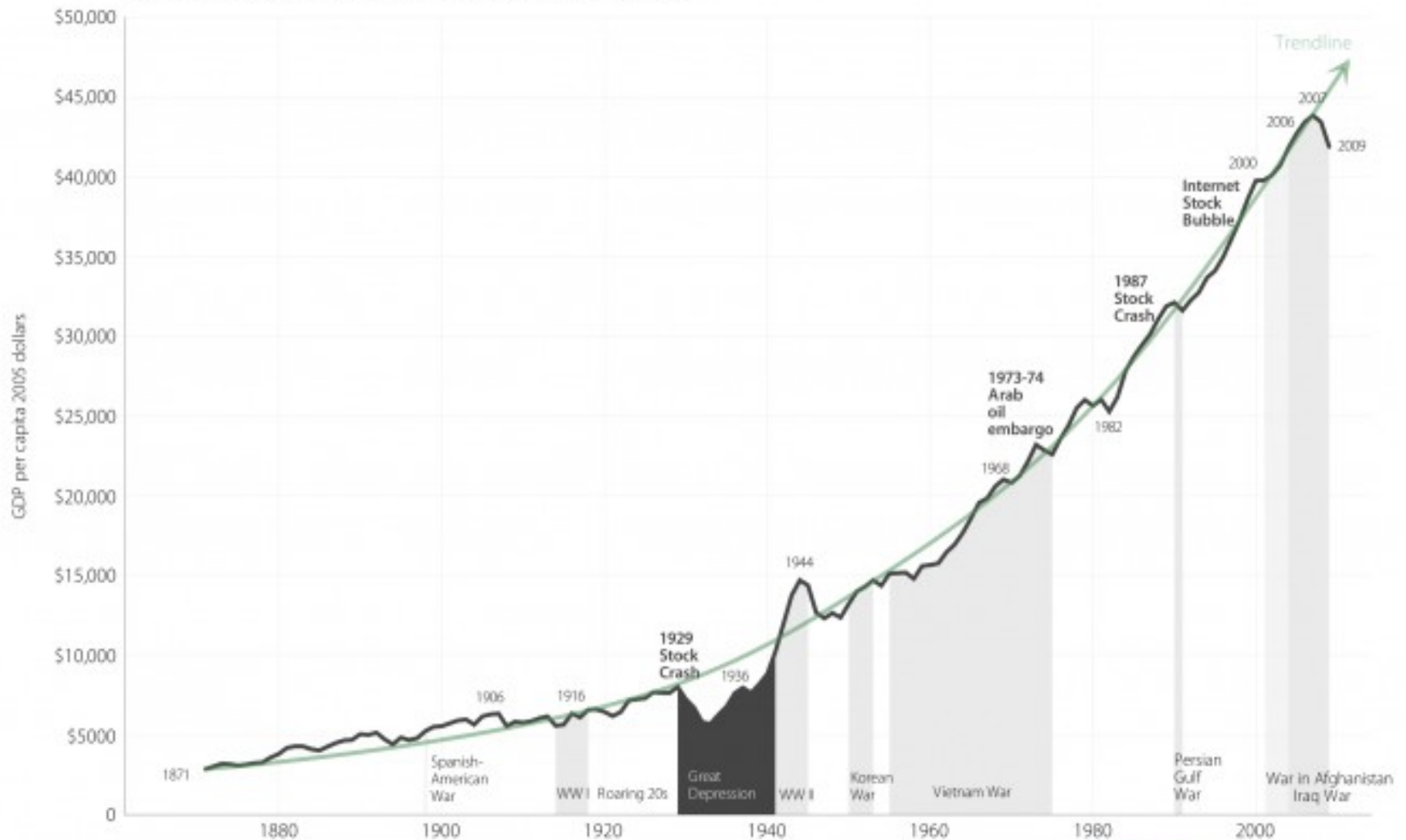
Extinctions per thousand species per millennium



Source: Millennium Ecosystem Assessment

Long-term real growth in US GDP per capita 1871–2009

GDP per capita adjusted for inflation using 2005 dollars

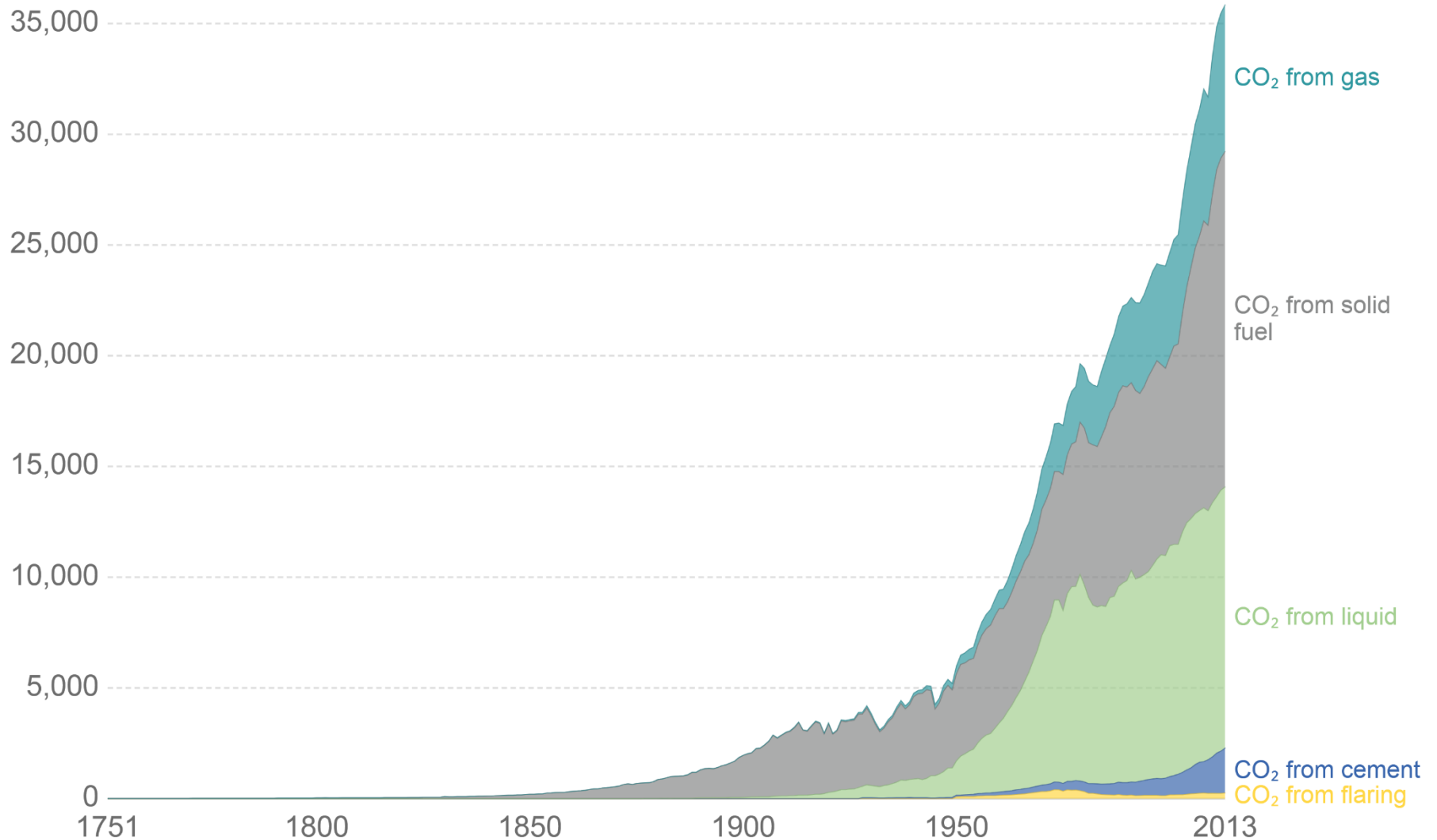


Data from MeasuringWorth.com

VisualizingEconomics.com

CO₂ emissions by source, World

Annual carbon dioxide (CO₂) emissions in million tonnes from solid fuel (e.g. coal); liquid (e.g. oil); gas (e.g. natural gas); cement production and gas flaring



Source: CDIAC

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY-SA

Global warming can make extreme weather worse. Now scientists can say by how much.

Researchers no longer hesitate to blame climate change for floods, fires and heat waves. Here's how the science works.

by James Rainey / Aug. 19, 2018 / 4:56 AM ET / Updated 3:27 PM ET



The reduction of extreme poverty in countries that are rich today, 1820–2000

The absolute poverty is defined as living with less than \$1.25/day. This is measured by adjusting for price changes over time and for price differences between countries (purchasing power parity (PPP) adjustment).

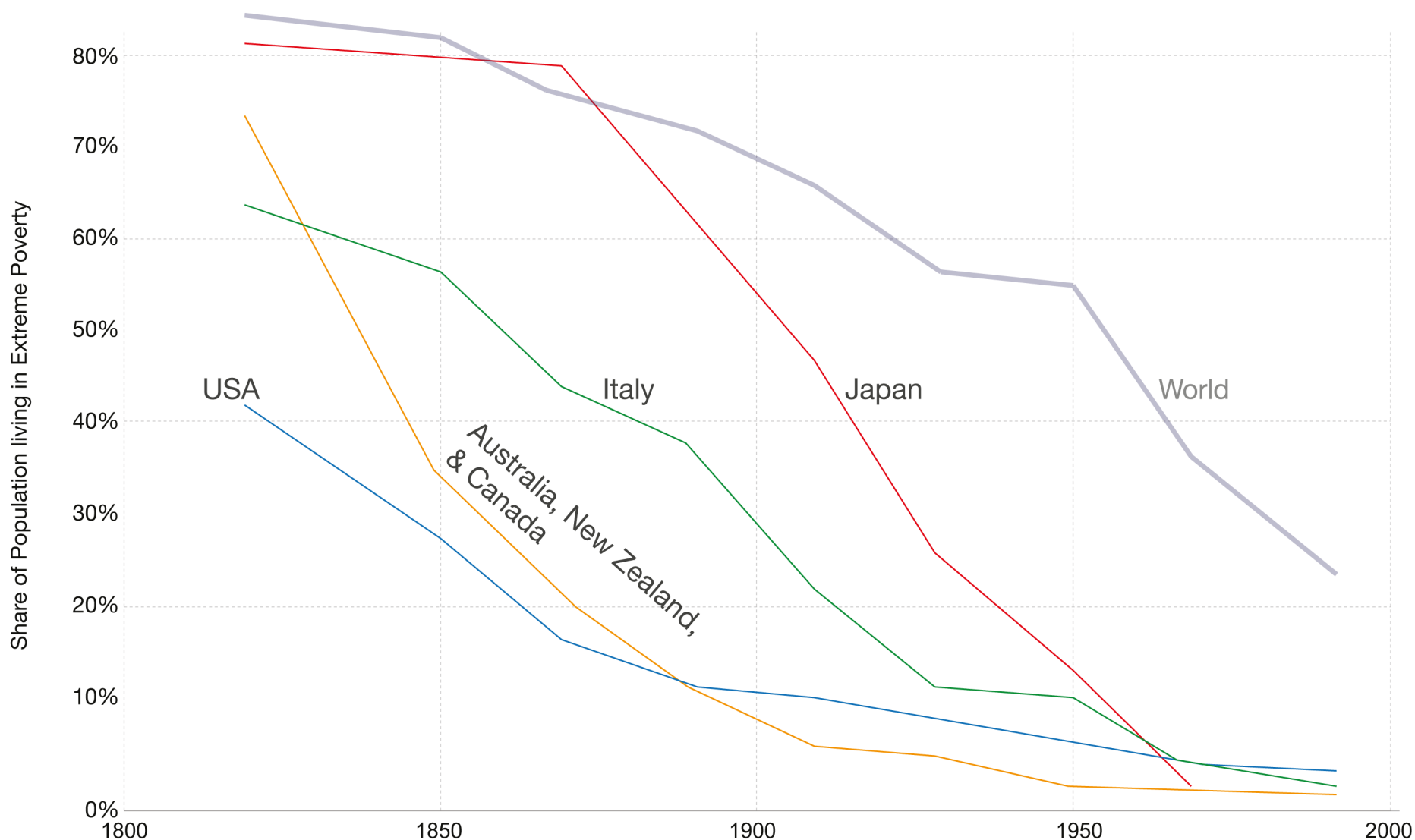
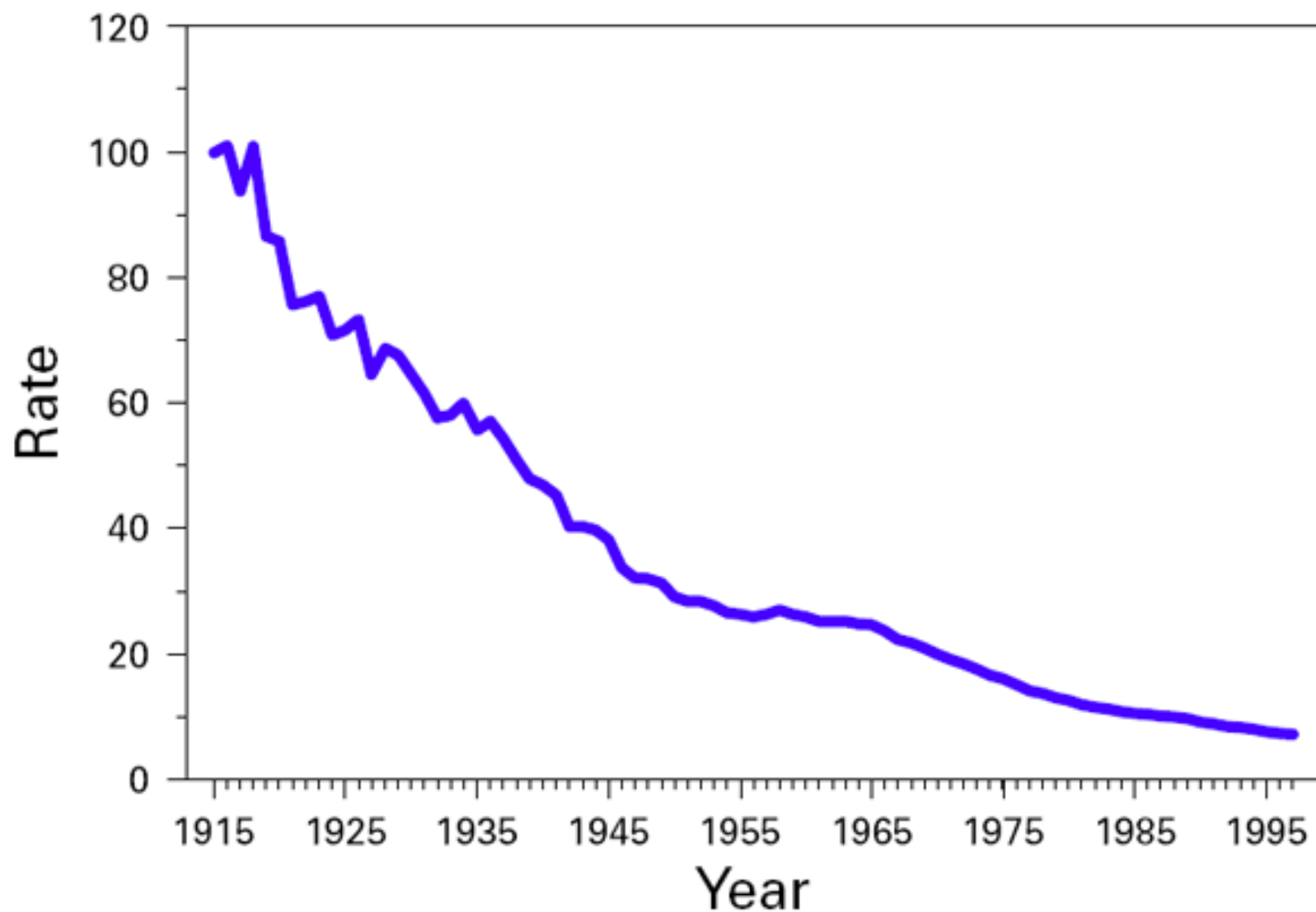


FIGURE 1. Infant mortality rate,* by year — United States, 1915–1997



*Per 1000 live births.

Environmental & Resource Economics

- ▶ How should we think about tradeoffs and human behavior when designing environmental and natural resource policies?
- ▶ Environmental Economics
 - ▶ Optimal Control of Pollution
- ▶ Natural Resource Economics
 - ▶ Optimal Management of Renewable & Non-Renewable Resources



Trump seeks to overhaul signature Obama climate policy: report

As EPA moves to relax Clean Air rules, Trump administration praises progress under the law

CLEAN WATER RULE

Judge revives WOTUS in 26 states

Ariel Wittenberg, E&E News reporter

Greenwire: August 16, 2018 at 2:25 PM



RESEARCH

The Double Smack of Fishery Collapse

by COURTNEY HUMPHRIES

JULY-AUGUST 2018



Overharvesting threatens global fisheries with collapse.

Photograph by Getty Images

Big-City Problems In The National Parks

By GEOFFREY RILEY, APRIL EHRLICH & JOHN BAXTER • AUG 6, 2018

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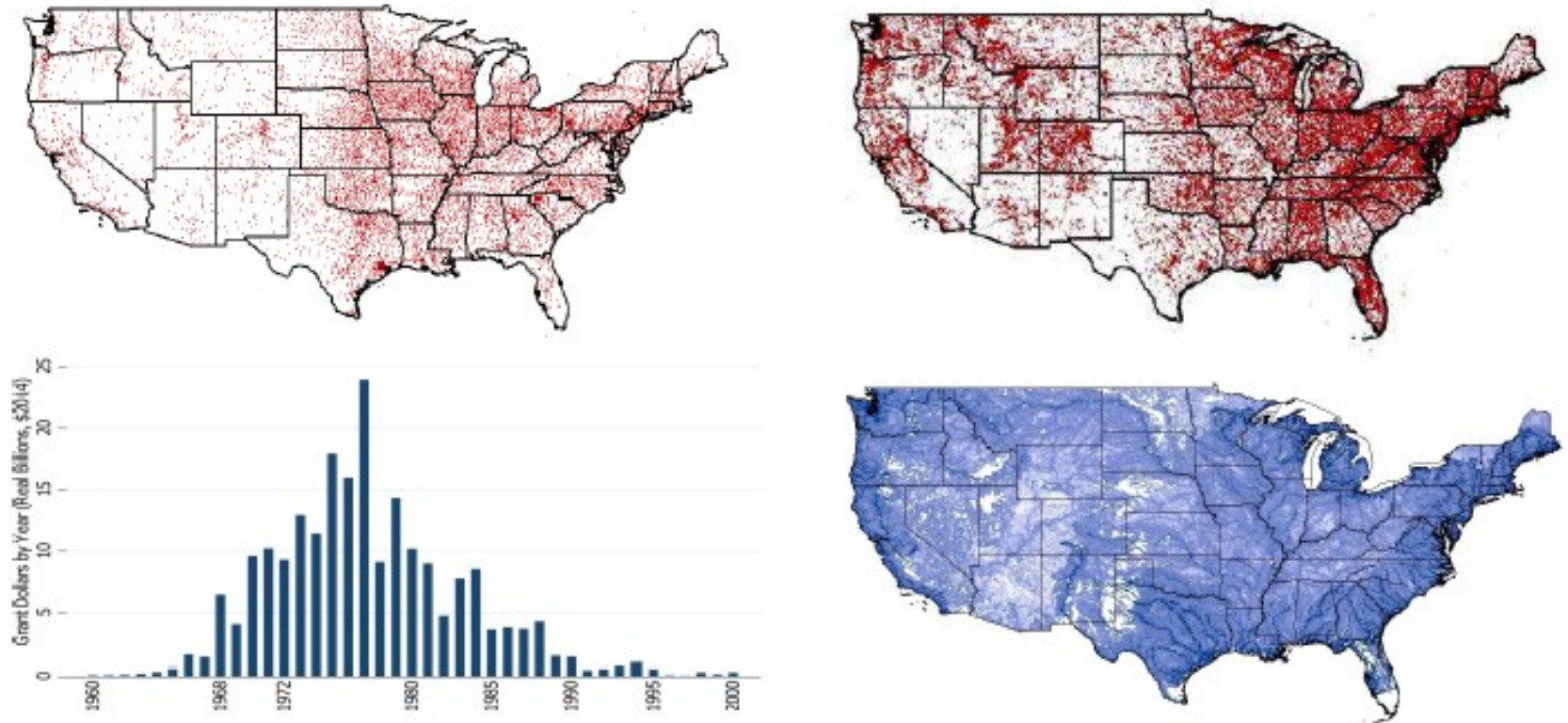


Yosemite National Park.

THOMAS WOLF, WWW.FOTO-TW.DE, CC BY-SA 3.0, [HTTPS://COMMONS.WIKIMEDIA.ORG/W/INDEX.PHP?CURID=60192449](https://commons.wikimedia.org/w/index.php?curid=60192449)

Water Quality Policies and Causal Inference

- How did \$200B in CWA grants affect water quality and housing?



Keiser and Shapiro (2017)