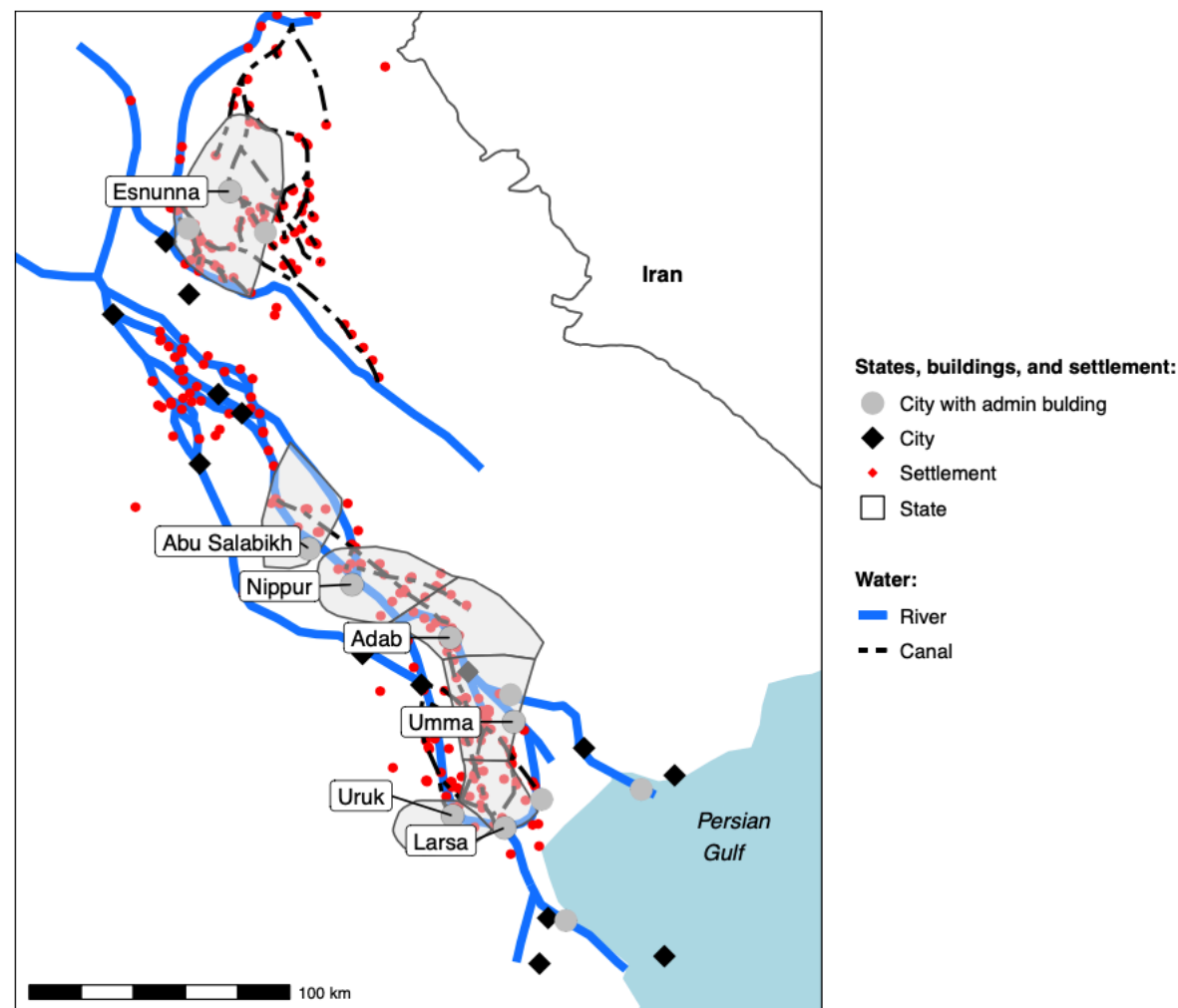


## Cooperation or Exploitation?

More evidence of state near rivers or away from them?

(b) Settlement, cities, and states after the river shift in 2850BCE

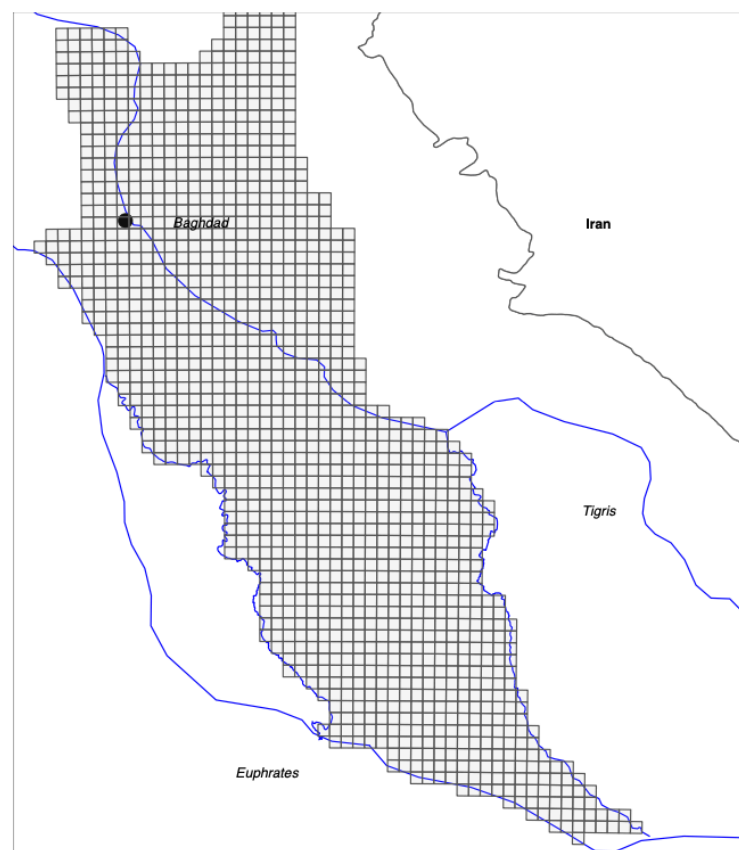


“Cooperation leads to formation of states

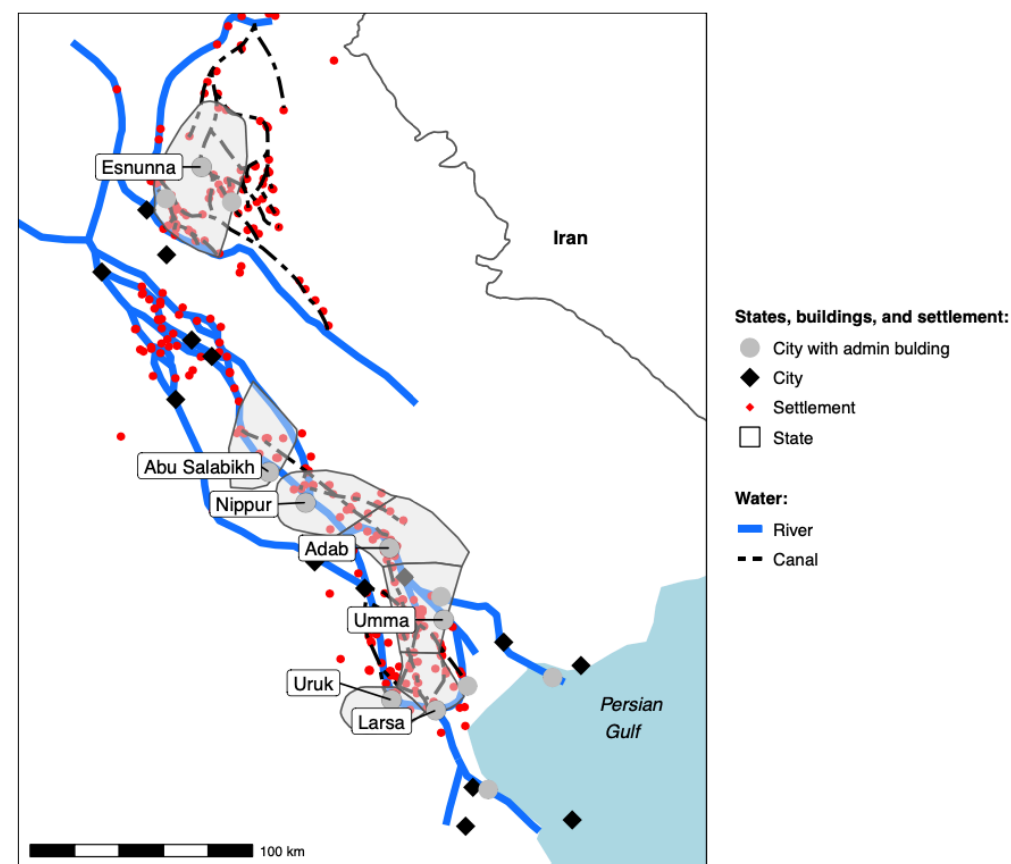
does not show that

‘States always arise from cooperation.’

(d) Unit of observation: grid cells



(b) Settlement, cities, and states after the river shift in 2850BCE



# General linear model: regression



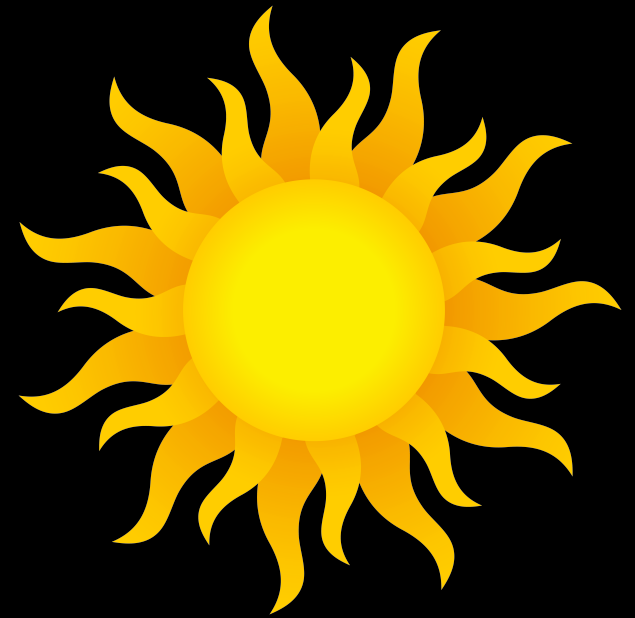


# General **linear** model: regression





# General linear model: regression



Independent variable: near or away from river

Dependent variable: grid square occupied by 'state'

How people organize resources

(... 'state'ness)

depends on the local history

of how people are using resources.





The local rules of engagement within a community must change, often gradually but sometimes very quickly.

Hence hard won local insights from studies in community ecology are essentially ephemeral.

John Lawton, *Community Ecology in a Changing World*

## Cooperation or Exploitation?

More evidence of state near rivers or away from them?

(b) Settlement, cities, and states after the river shift in 2850BCE

