

Accelerating Risks and Longer-Term Adaptation: If and When Resilience isn't Stationary

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resilience **noun**

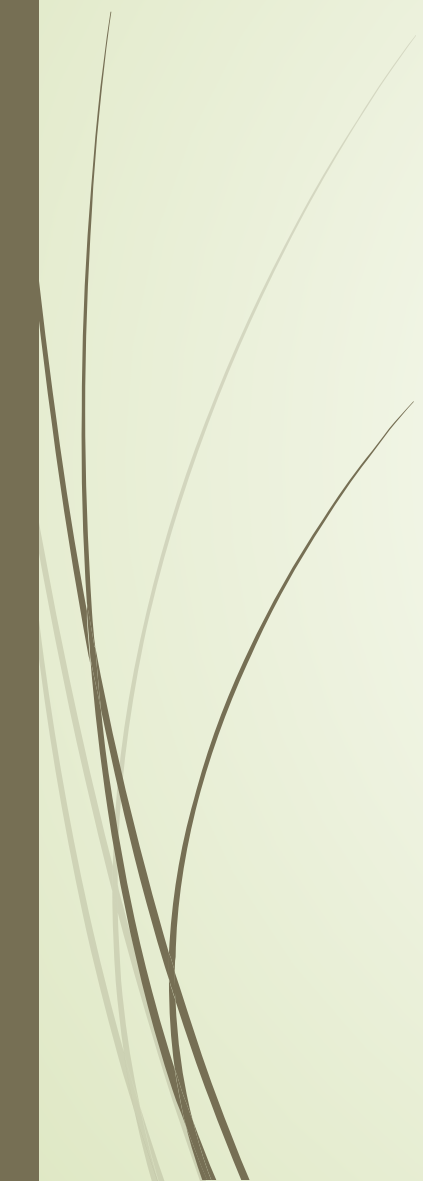
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Definition of *resilience*

- 1** : the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress
- 2** : an ability to recover from or adjust easily to misfortune or change



Plan of the Talk

- Unfortunate Truths (as I see them)
 - Public Policy Principles for Finance in Long-term Transitions
 - Proposal: Buyouts with Rentbacks
- 



We are buying time, not crafting permanent solutions

- ▶ Buying time will be effective for a while
- ▶ At some point (with great uncertainty, 30 -250 years) it won't – coastal property will become an uninsurable risk
- ▶ The resulting outmigration will be different than what we've seen before
 - ▶ More people, more value in the built environment
 - ▶ Bigger environmental problems from abandonment
 - ▶ Much better foresight about what is coming down the pike (Thanks a lot, Science!)

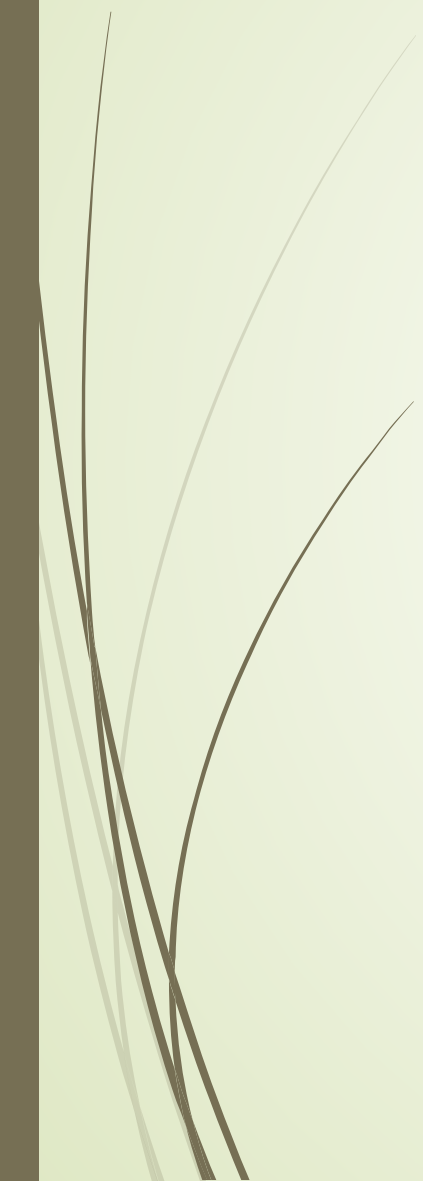


Individuals and businesses will make the final choices

- ▶ Some will leave next year, some will choose to wash away with their homes – but most will be somewhere in between
- ▶ Choices will depend on myriad social and individual factors
- ▶ Retreat is highly unlikely to take place in a way directly dictated by policy of planning
- ▶ But both public policies and market signals will play critical roles for those choices



The transition is critical!

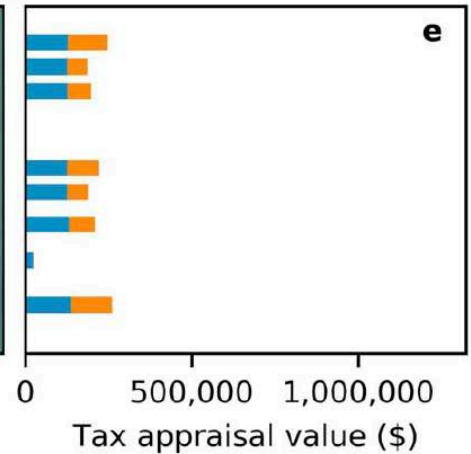
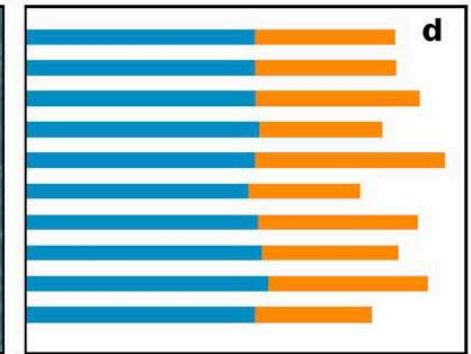
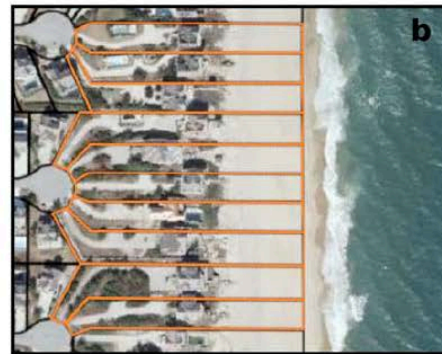
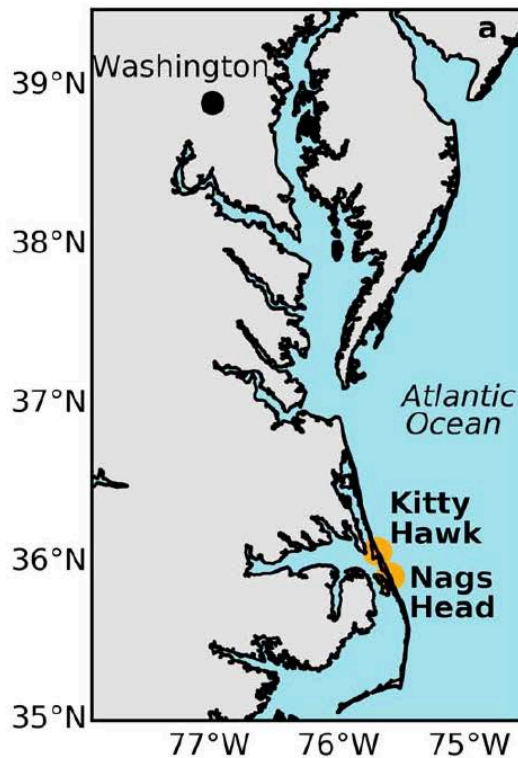
- Ability to retain social and cultural capital
 - Economic costs – magnitude of built assets stranded
 - Adjustments to local government finance and services
 - Environmental and economic costs of damage caused by abandoned capital
 - How painful and dangerous it will be for people to relocate (all at once is probably bad)
- 



Risk reduction investments can set counter-productive expectations

- Reducing the risks and costs of living at the coast gives market signals that increase investment in the built environment
- Which in turn increase the economic and political case for the next round of public investments
- Which can lead to a longer timeline and a more disruptive and expensive transition


Example: Beach Nourishment – Property Value Feedback






Principle: Make the market tell the truth

- ▶ Don't subsidize individual risk reduction
- ▶ Local infrastructure should be financed locally
- ▶ Don't subsidize insurance
- ▶ *Recognize that this is both technically and politically difficult*



Principle: Neutral Transfers and Aid

- ▶ Resources will (and IMHO should) be transferred to both specific demographic groups and communities
- ▶ Those resources should not be biased toward maintaining or returning to the *status quo*
- ▶ And could favor options that improve relocation outcomes (e.g. buyouts)




Principle: Adaptive Engineering and Clear Signals

- ▶ Tying future engineering to observable phenomena (like sea level rise) offers real advantage in guiding expectations and decisions
- ▶ Analogous to parametric bonds or crop insurance design, but with longer timelines
- ▶ *Huge problem here is the ability to make credible political commitments*




Principle: "A Crisis is a Terrible Thing to Waste"

- ▶ Storms and floods that cause extensive property damage disrupt the costs and benefits of discontinuous change
- ▶ Human nature and policy history have always biased response toward "we are not giving in to nature – we're rebuilding"
- ▶ Changing the conversation and expectations about disaster response – and resilience -- to consider relocation and other responses is desirable

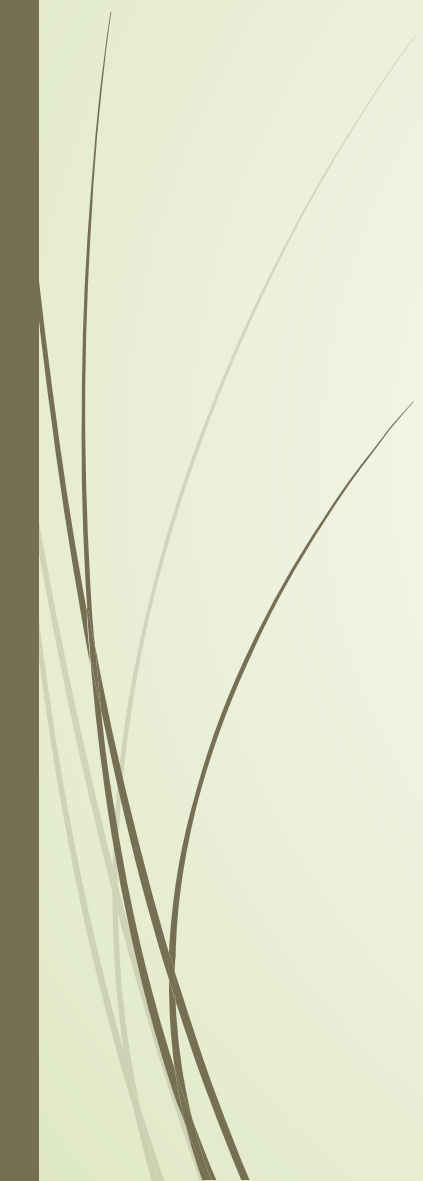


Resulting Issues for Finance Decisions in the Longer Run

1. When is investing in (buying) time no longer worth the cost?
2. The specifics of major transition matter a lot
 - ▶ Gradual vs. sudden
 - ▶ Value of lost capital
 - ▶ Social disruption
3. Using public resources to reduce short term impacts could have negative unintended effects on transition dynamics



Policy Proposal: Buyouts with Rentbacks (BWR)

- ▶ What's the proposal
 - ▶ What problems does it (potentially) solve or ameliorate
 - ▶ Drawbacks and challenges
 - ▶ Next steps
- 



Policy Outline

- Public or regulated private entity buy properties (with partial public funding)
- Rents back to seller, who can choose to live there for some period of time
- At some point
 - Rental agreement ends
 - Property is retired
- Remediation / Salvage occurs



Policy Outline

- ▶ **Where does the money come from, and what is the price**
 - ▶ Future rent receipts
 - ▶ Pdv of rents less expenses
 - ▶ Current FEMA policies require destruction of structures
 - ▶ This is a different context than repetitive-loss flooding
 - ▶ Happens earlier in the risk path
 - ▶ Designed around community transition, not individual properties



Policy Outline



- ▶ **Where does the money come from, and what is the price**
- ▶ sources of compensation for coastal residents
 - ▶ Buyout funds
 - ▶ Resources for climate-proofing individual properties
 - ▶ Resources for risk reduction at community and regional levels
 - ▶ Protecting property
 - ▶ Protecting infrastructure
- ▶ Potential savings from remediation after abandonment



Determining price!?

- ▶ Present discounted value of rents less expenses
- ▶ Other sources
- ▶ Transfers

- ▶ Could minimize upfront financial cost by giving “free” rent

- ▶ Influenced by real estate market fundamentals

- ▶ *Existing buyouts generally occur when property has been (repeatedly) damaged by climate events*
- ▶ *Existing policies largely buy out at some version of pre-disaster market value for an undamaged property*
- ▶ *This policy requires a different model*

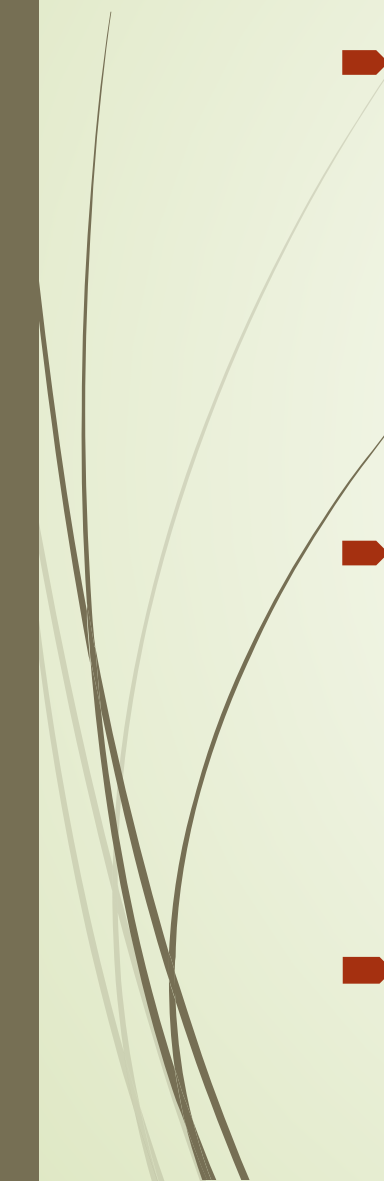


Policy Outline

- Residents (whether owners or current renters) continue to reside in their property if they wish to
- They can leave at any time (with normal notice)
- Rules and decisions for when the property is no longer rented

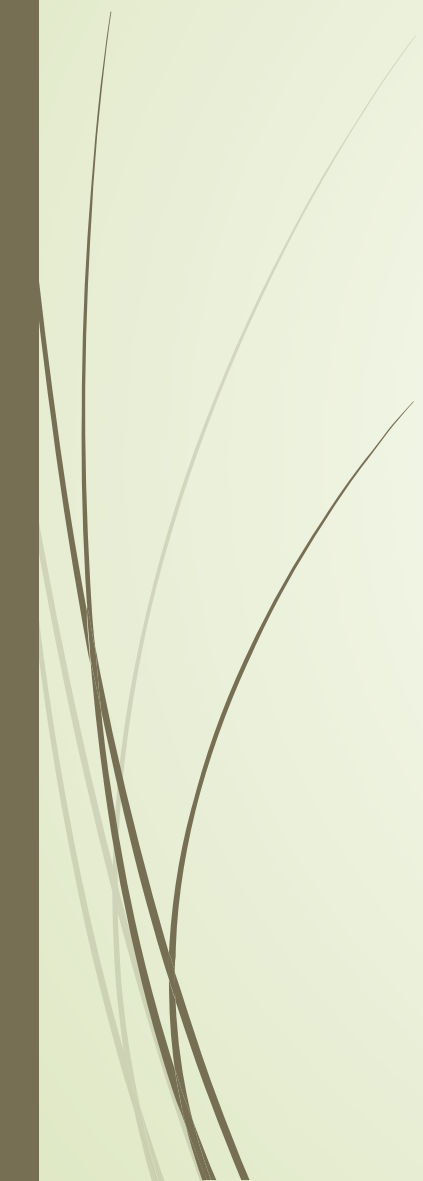


Policy Outline

- ▶ Who owns the houses after buyout
 - ▶ Local government (public housing model)
 - ▶ Private investors
 - ▶ Who manages properties after buyout
 - ▶ Local government
 - ▶ Contracts with management companies
 - ▶ Mixed models
- 



When does it start?

- ▶ Earlier in the risk calculation than existing buyout programs
 - ▶ Start determined in conjunction with when the program ends
 - ▶ Determined by some combination of observable climate signals, modeling, and experience
- 



When does it end?

- ▶ Some combination of
 - ▶ When original tenant leaves
 - ▶ When house is damaged to some specified level
 - ▶ When some observable climate signal (or risk mitigation signal) is observed



Advantages

- ▶ Buyouts generally have advantages
 - ▶ Neutral resource transfers
 - ▶ Achieve equity and social goals
 - ▶ Remove at-risk properties from future disaster-related expenditures

And adding “rentbacks” makes the policy (arguably) more financially and politically feasible

- ▶ Adding rentbacks has other significant advantages not related to just making buyouts more feasible and likely



Policy Advantages: buyouts are a mechanism for relatively neutral financial transfers


- ▶ Transferring resources without biasing recipients is challenging
 - ▶ Historical means – post-disaster assistance, subsidies to engineering and infrastructure, insurance subsidies -- tend to be biased against relocation
- ▶ buyouts provide a means of transferring resources in a way that
 - ▶ Does not bias people toward staying
 - ▶ Does not bias people toward all leaving at the same time
- ▶ **buyouts could serve a mechanism for aggregating diverse sources of finance**



Policy Advantages: transferring remediation responsibility


- ▶ Individual owners abandoning property are very unlikely to be financially and operationally responsible for remediation
- ▶ Performance bonds *could* ameliorate this
- ▶ Buyouts could price remediation into buyout pricing
- ▶ And economies of scale and timing could result in better remediation outcomes

- ▶ Buyouts add a longer time horizon and more predictable flow of properties to be abandoned, potentially enhancing efficiencies in remediation/salvage

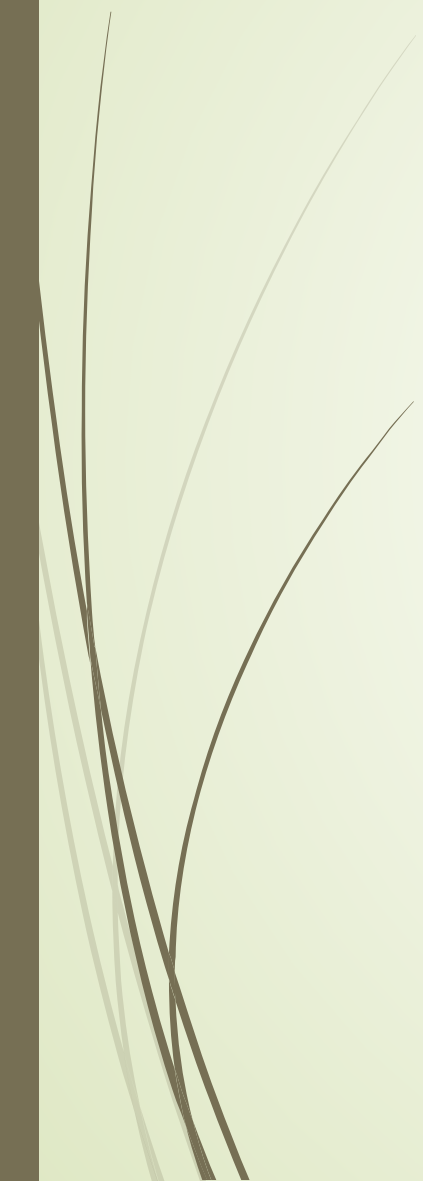


BWR makes buyouts more feasible / probable

- Rental income provides an additional source of finance
- Flexibility in timing makes homeowners more likely to accept buyouts
- Moving the timeline forward from “everything is already trashed” makes buyouts generally more effective in managing transitions



BWR-specific advantage: breaking the public investment – private investment positive feedback

- If the same entity is making decisions about risk reduction and real estate maintenance/investment, then these decisions can be made jointly and the sequential, path-dependent spiral is interrupted.
 - Removes one source of uncertainty from relocation and reduces crash risk
- 



BWR-specific advantage : separating financial decision/considerations from relocation decisions


- ▶ As real estate markets increasingly price in risk, resident owners may feel may trapped by loss of wealth and hope/expectation that things will improve
- ▶ Or may feel pressure to sell early to try to "time the market" and leave early, resulting in possible crash / collapses
- ▶ Individual property owners are very likely to more risk-averse and loss-averse than governments or pools of investment capital



BWR-specific advantage : separating financial decision/considerations from relocation decisions

- ▶ Decision points will increasingly come after climate events with
 - ▶ “clumping” of relocation
 - ▶ Financial hardship making successful relocation problematic

BWR allows residents to separate the wealth decision (and fear of loss) from the relocation decision




BWR-specific advantage: Smoothing demographic and local finance change

- ▶ Lessen sudden (post-storm and/or real-estate-collapse) spikes in relocation
- ▶ Allows both short-term and residential rentals (to support tourism)
- ▶ Rentals will either stand in for (public ownership) or provide (private ownership) property tax receipts in a relatively predictable path toward demographic and service contraction



Drawbacks/Challenges

- Inherent difficulties of public ownership of rental property (public housing)
- Policy and political difficulties of aggregating and financing diverse sources of buyout funds
- Arbitrage / corrupt outcomes (lack of transparent pricing and accessible process)
- Holdouts (degree of coercion / application of eminent domain)



Next steps (if this idea has any value at all)

- ▶ Start to identify triggers for when buyouts should occur
- ▶ Explore feasibility of private investment as a means of implementation and rental management
- ▶ Explore how coastal populations might react to the idea, depending on
 - ▶ Timing
 - ▶ Price
 - ▶ Contract terms (rental price and parameters)
 - ▶ Optics
 - ▶ Other implementation parameters



Why consider policies like this one?

- ▶ If our analysis about the importance of transition from climate-proofing to relocation is correct
- ▶ **Then**
 - ▶ lots of outcomes with very bad characteristics are possible
 - ▶ Mass relocation on short time scales
 - ▶ Significant loss of wealth and social capital
 - ▶ Crashes with large capital losses
 - ▶ This policy (or something with similar features) *could* ameliorate some of these very bad characteristics of mass relocations