# Rhinoceroses Are Not Like Sneakers

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*Response to: Michael Pappas & Victor Flatt, Climate Changes Property: Disasters, Decommodification, and Retreat*

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## I. INTRODUCTION

By any measure or screenwriter's fantasy, 2020 is a disaster movie. Over 397,000 Americans are dead as the result of a global pandemic.[1] The Atlantic hurricane season has been the most active ever recorded, and skies in San Francisco turned an otherworldly orange for multiple days due to wildfires. It seems that the world portrayed on the news – and, in some cases, visible right outside our windows – is more similar to the climate fiction films on our screens than our previously lived reality.

"Cli-fi" films can be broken down many ways, but about half can be characterized as apocalypses, dystopias, or disasters.[2] We may take solace that our world has not yet permanently transformed into "The Day After Tomorrow," "Waterworld," or "Mad Max: Fury Road." However, coastal

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[1] *Coronavirus in the U.S.: Latest Map and Case Count*, N.Y. TIMES, https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html?name=styln-coronavirus&region=TOP_BANNER&block=storyline_menu_recirc&action=click&pgtype=LegacyCollection&impression_id=2d7a3b20-3369-11eb-931c-85804a5a853f&variant=1_Show (last visited 1/18/21) (showing US death toll at 397,612).

[2] *See, e.g.*, Michael Svoboda, *Cli-fi movies: A guide for socially-distanced viewers*, YALE CLIMATE CONNECTIONS (May 7, 2020), https://yaleclimateconnections.org/2020/05/cli-fi-movies-a-guide-for-socially-distanced-viewers/.

Louisiana had a record five storms make landfall, with residents still cleaning up and without power from one storm when the next one hit.[3] No doubt this has led some residents to feel like they are living in "The Fire Next Time," in which a category five hurricane destroys part of the Louisiana coast.

Based on the current disaster aid and other federal policies, it is unsurprising that many of those reeling from repeated storms would choose to rebuild rather than relocate. But Professors Pappas and Flatt make the point that it does not have to be this way, where residents are placed in a position to be harmed time after time. Rather than wait for the next storm, they suggest the ending of "The Fire Next Time" – relocation and transformation – should happen proactively given the impact of climate change. While measured retreat is a laudable goal – one many could agree on and have suggested in the past – the nagging questions have been how to accomplish such a task and which measures should be used to determine the appropriate policy response in a given location.

The authors expertly apply a new concept – "adjustment failure costs" – to the problem of policies around managed retreat. In doing so, they Qcraft what appears to be a highly flexible solution, one that will be broadly applicable in situations of varying risk and adaptable as climate change threatens ever changing locations, potentially saving countless lives and treasure.

This Response demonstrates how *Climate Changes Property* brings together multiple strains of scholarship into a single workable framework. Rather than focus on one part of the policy discussion around environmental markets, managed retreat, or federal disaster policy, the authors instead have integrated what had been separate academic discussions. This Response then suggests how much work remains to be done to fully bring the authors' vision to policy life. While providing a potential path forward, questions around implementation abound.

## II. THE TRUE COSTS OF MARKET LAGGING AND FAILURE IN MANAGED RETREAT

Most often when environmental markets are considered, they are thought about in the binary – they are either working and protecting the environmental

[3] Jason Samenow et al., *2020 Atlantic hurricane season breaks all-time record while leaving Gulf Coast battered*, WASH. POST (Nov. 10, 2020), https://www.washingtonpost.com/weather/2020/11/10/record-hurricane-season-atlantic/. The 2020 hurricane season has caused billions in damage in several states, with the epicenter in Louisiana. In late August, western Louisiana was slammed by Category 4 Hurricane Laura, tied for the strongest storm to ever hit the state. Six weeks later, Hurricane Delta struck only 13 miles east of where Laura had come ashore, exacerbating damage in communities such as Cameron and Lake Charles. When Delta struck, for example, many homeowners in Lake Charles still hadn't gotten their power and water access restored following Laura's direct hit. The back-to-back storms forced thousands to be in an extended limbo, living in hotel rooms away from their battered homes and jobs. Then, in late October, Hurricane Zeta hit Louisiana, its eye tracking directly over New Orleans before it brought damaging winds all the way to northern Georgia and Virginia. *Id.*

attribute that they were designed to protect, or they are not. A carbon market either decreases pollutant emissions to appropriate levels or allows too many emissions and the associated co-pollutants continue to harm vulnerable communities. A market is enabling manufactured wetlands to provide the necessary ecosystem services or, by allowing for destruction of a natural wetland, has failed to clean sediment from runoff, protect waterways, act as a natural storm barrier, etc. This binary thinking around the environmental attributes tends to lead to policy positions which are also binary in nature: either markets can always be the complete answer or we should get rid of markets completely as a way to address environmental challenges.

Managed retreat can suffer from some of the same binary logic. Either managed retreat needs to occur for everyone that might be in harm's way – even those that do not want to leave for specific reasons – or it shouldn't occur for anyone, either because the threats are not real (climate change isn't happening) or because we should harden the coast and fortify in all locations instead, as if "winning" against Mother Nature is consistently an option. This focus on binary policy outcomes is perhaps more baffling because property law has long recognized that rights granted are not absolute. There are countless examples where a given property right must make way for other interests.

Against this background of often binary (and, to date, ineffective) policy proposals, *Climate Changes Property* takes a key step forward by proposing a new framework for how and when markets and managed retreat should work together to reduce risk, both human and financial.[4] The Article tantalizingly posits that there is a new – a different – way we can think about quantifying the costs currently externalized in the real estate market around natural disasters and climate change.[5] The crucial innovation is the idea of using adjustment failure costs for real property threatened by climate change.[6]

### *A. Heeding the Lesson of High Adjustment Failure Costs – And Learning Where Markets Should Not Exist*

"Adjustment failure costs describe the costs (or losses) that arise from difficulties in markets reaching efficiency"[7] – essentially, the costs incurred during "the time markets take to adjust toward equilibrium."[8] The longer it takes a market to come to equilibrium, the higher the adjustment failure costs. "[W]hen adjustment failure costs are relatively low, markets emerge and thrive, but when adjustment failure costs are relatively high, the benefits of the market may not exceed the adjustment failure costs involved. In such instances, markets

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[4] Michael Pappas & Victor Flatt, *Climate Changes Property*, 82 OHIO ST. L.J. 331, 334 (2021).

[5] *Id.*

[6] *Id.* at 335.

[7] *Id.* at 331.

[8] *Id.* at 334.

may not emerge and will be difficult to create or maintain."[9] While perhaps easy to state, the concept becomes much more difficult to apply in practice.

*Climate Changes Property* makes the case that the first thing to understand is where markets shouldn't exist at all. To make the concept more concrete, the authors use examples of four different categories of "goods" – sneakers, pharmaceuticals, livestock, and rhinoceroses – to demonstrate that where harms are reparable and the market failure costs are low, such as with sneakers, a thriving market will exist, and no policy intervention will be needed.[10] Livestock, similarly, have high market benefits which outweigh the time lag for the market to adjust, and harms are considered reparable.[11] Pharmaceuticals and rhinoceroses, on the other hand, need stronger policy measures. Adjustment failure costs for pharmaceuticals could mean death; and so policy interventions are needed, as those costs to society outweigh the benefit of a standard commodity market.

Markets are therefore acceptable for sneakers, livestock, and pharmaceuticals, despite some level of adjustment failure costs, as we perceive these social costs as acceptable. However, the same is not true for rhinoceroses, where high adjustment failure costs could mean permanent extinction for the entire species, and therefore any failure would be completely irreparable. This basic question – what do we treat as a market commodity despite adjustment failure costs versus where we do not allow markets, either directly by policy or by proscribing commodification to begin with – can be extrapolated to any good. Decommodification – like not allowing any market in rhinoceroses – can avoid high adjustment failure costs, and, in some cases, may be the only way for society not to suffer a net loss from a particular market.

This choice, to have or not to have a market, becomes more complicated when the adjustment failure costs are externalized. With high adjustment failure costs, markets will still persist if society bears the costs rather than market participants. Externalizing market adjustment failure costs makes the market appear artificially appealing, lowering the perceived risk of participants. When that occurs, despite overall social losses, the authors suggest it signals a need for policy intervention. That policy intervention can be one of decommodification – of stopping the market completely – or more limited interventions which reduce the adjustment failure costs. Either way, the market should be sufficiently changed by interventions that decrease adjustment failure costs.

### *B. Applying Adjustment Failure Costs to Vulnerable Property*

Moving from the four example goods of sneakers, livestock, pharmaceuticals, and rhinoceroses, *Climate Changes Property* turns its focus to

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[9] *Id.* at 353–54.

[10] Pappas & Flatt, *supra* note 4, at 357.

[11] This, of course, is from the farmer's perspective, not that of the cows.

vulnerable property. As the authors demonstrate, current policy choices mean "high, continuous, growing, and *avoidable* adjustment failure costs for disaster-vulnerable properties" will continue.[12] While recognizing the "great latitude" typically offered property owners, zoning and other land management policies do constrain the market-driven process of property development, but minimally in many cases.[13] Assuming information about climate change risk is readily discoverable, the market should factor in the risk associated with climate change disasters, and the adjustment failure costs would therefore be low.

This will not be the case, however, if countervailing policies distort the market. Many scholars including the authors have previously pointed out the perverse incentives contained within current federal disaster policies, both around loss and recovery.[14] Managed retreat policies should be a way to "coordinate collective withdrawal from an area."[15] Instead of meeting this goal, the policies do not adequately address recurrent disasters, which are likely to only get worse with climate change. Federal buyout programs are too slow with too many limitations on funding and require buy-in at all levels of government. The national flood insurance program subsidizes risky development rather than foreclosing it, enabling incentives for landowners to continue living – maintaining and rebuilding – in the same spot. This becomes an ever-growing policy challenge as more structures become potentially vulnerable due to climate change.

Markets continue, at least in part, because those markets can push some of the costs of disaster onto non-market participants. Externalizing costs of vulnerable properties occurs constantly – as the authors note, "insurance subsidies and disaster assistance policies purposely externalize costs."[16] Rather than treating all markets as positive, adjustment failure cost analysis should be used to determine whether that market should continue – or which policy intervention is needed.

Working from the assumption that repetitive losses are avoidable, caused by a combination of real estate market failures and policy shortcomings, the need for change has been and is clear; the question has been how to accomplish this change. *Climate Changes Property* argues that by understanding adjustment failure cost and adapting it for vulnerable properties, policymakers can determine which properties should have significant additional restrictions placed on them – lowering adjustment failure costs by internalizing to those properties and market participants some of the costs now socialized – or when properties should be completely decommodified, and removed from the market.

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[12] Pappas & Flatt, *supra* note 4, at 334.

[13] *Id.* at 338.

[14] *Id.* at 398 ( "We certainly are not the first to identify the problems with federal disaster management and response laws. From a conceptual angle, important scholarship has been published by Professors Lisa Grow Sun, RonNell Anderson Jones and Justin Pidot.").

[15] *Id.* at 340.

[16] *Id.* at 383.

The authors suggest that "adjustment failure costs should be the key contextual consideration for deploying managed retreat policies."[17] There are, of course, counterarguments to this point: that the market will send appropriate pricing and risk signals, so retreat will happen when and where it should; that insurance and mortgage policies will also send appropriate signals; and that managed retreat policy could be suboptimized for any number of reasons. However, the issue is that current policies dramatically blunt any signals, leading to the need for intervention. Vulnerable real estate can also have especially high adjustment failure costs because the markets can be slow (many people own property for long periods of time), events that lead to the adjustment can cause loss of life, and the cycle can happen repeatedly – not just once – so those adjustment failure costs can occur over and over. Additionally, so far, owning vulnerable property has been profitable.

It is critical to note that the authors do not suggest policy interventions in all cases. As with sneakers and livestock, some vulnerable real estate markets may be reacting quickly enough that the adjustment failure costs are low. In those locations, policymakers need not act. However, in areas where the real estate market is adjusting slowly, such that the benefits of the market are outweighed by high adjustment failure costs, intervention is necessary.

The two main policies suggested include alteration of the underlying commodity and buybacks/buyouts. Alteration might include restricting the development or only allowing for seasonal residency of a given parcel, which would limit future transactions in a still-functioning market – more like a pharmaceutical. "Thus, for properties with identifiable, isolable, and addressable sources of adjustment failure costs, alterations to commodification may be sufficient to drive down the adjustment failure costs."[18] It is important to recognize what a wide variety of options this could present to policymakers – any number of alterations could reduce the potential harm, given the specific risks a property is likely to encounter.

Buyouts, on the other hand, lead to complete decommodification of a given parcel – it is removed from the market completely, just as we remove rhinoceroses from markets. This may be desirable, from a policy standpoint, where it is impossible to reduce the adjustment failure costs to an acceptable level through alteration.

One of the key takeaways is that *each and every* policy intervention concerning a vulnerable property should do one of these two things. Which one will depend on the specific circumstances of the property. Policymakers need to determine two things to choose the correct intervention: 1) whether losses are relatively reparable or irreparable; and 2) whether climate change is likely to make reparable losses irreparable. Irreparable, increasing adjustment failure costs that climate change exacerbates counsels for a major policy intervention such as a buyout. More targeted interventions are acceptable for more reparable

[17] *Id.* at 369–70.
[18] Pappas & Flatt, *supra* note 4, at 369–70.

losses or ones that are more easily isolated, where less dramatic policy interventions will reduce the adjustment failure costs sufficiently. In all cases, government policies should be reducing adjustment failure costs by discouraging risky development rather than increasing adjustment failure costs by encouraging it.

As should be abundantly clear by this point, current federal policies raise adjustment failure costs rather than decrease them. To address these points, the authors "suggest changing disaster policies to 1) reduce the moral hazards of NFIP that perpetuate risky investments and dis-incentivize participation in buyout programs, and 2) reduce the complexity and delay of the HGMP that practically forecloses many buyout efforts."[19] These changes are considerable: setting a preference for buyouts rather than rebuilding, providing money for that purpose and that purpose only, and making it significantly easier to qualify for a buyout.

Interestingly, the authors suggest that buyout compensation should be the pre-flooding or pre-disaster property value, encouraging more participation in the program. In fact, they would even support paying above market rates in some cases. Additionally, the buyouts "should be allowed to be proactive, not just reactive"[20] – so waiting for a disaster to happen would no longer be necessary. Mandating buyout programs or property restrictions as a condition of federal funding would guarantee a reduction in adjustment failure costs. According to the authors, providing pre-disaster valuations would also make it possible to separate those who elect to remain for economic reasons versus those who do so due to sentimental attachment. For those with sentimental attachment, perhaps the commodification alteration would be to limit the duration of occupancy to a life estate.

Combined, these changes would provide a federal backstop against loss but not necessarily for rebuilding. *Climate Changes Property* suggests "[r]ebuilding should generally not be the option in areas that have been hit hard by disasters such as flooding. Insurance for repair should be limited to some smaller amount (such as up to twenty percent) of a property's value."[21] A truly radical notion given the structure of today's NFIP, the authors suggest that even with those changes, "[a] party could pay for repair themselves, buy private insurance at market rates; or accept federal insurance money for a buyout (perhaps with a retained life estate) at above market rates."[22] However, the costs of those actions would not be socialized, leading to lower adjustment failure costs.

In sum, the authors propose a conceptual revamping of federal disaster policy using adjustment failure costs, including a holistic framework for determining whether decommodification or commodity alteration is the

[19] *Id.* at 399–400.
[20] *Id.* at 402.
[21] *Id.* at 405.
[22] *Id.* at 406.

preferred intervention. They do not address implementation and challenges associated with it, which is the focus of the next section of this Response.

## III. BEACH HOUSES ARE MORE LIKE RHINOCEROSES…OR ARE THEY?

While the authors themselves have acknowledged more work needs to be done,[23] they have left unanswered some of the most pressing questions with their proposal, most of which focus on assumptions and implementation.

*Climate Changes Property* acknowledges that new federal proposals will be necessary to bring about the change the authors contemplate, and rightly so. However, it seems to assume that all other facets of the federal disaster aid and recovery system will remain the same. If we can bring about this scope of change – and it would be significant – why not other changes at the same time, which would lower the current adjustment failure costs around vulnerable properties? These could include policies forbidding spending any federal money on projects like beach renourishment and requiring all NFIP premiums to be at market level. While not a panacea to the problem of high adjustment failure costs, given that vulnerable properties will be an ongoing problem in new locations as climate change occurs, the proposed changes paired with other policy measures might make for a more durable solution.

Another sticking point around implementation – hinted at but not fully addressed by the authors – is line drawing where wealth is concerned. After acknowledging that "preexisting owners of properties that are now increasingly vulnerable may effectively be stuck there"[24] and that "adjustment failure costs will likely fall regressively, concentrating burdens on those least suited to bear them and magnifying the costs' impacts,"[25] the proposal never fully addresses whether the plan is to provide full compensation for *all* property owners, or whether some means test would be applied (or where any of the money would come from). If the issue is that "the adjustment failure costs for climate vulnerable real estate are likely to be not only high but also recurrent and regressive,"[26] with appropriations always an issue, some line drawing will be needed. What about for rental properties? Second homes? Would compensation cover just the amount of equity in the home, or also provide full payment to banks and mortgage lenders, who arguably should have known better?[27]

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[23] *Id.* at 393. In future work, we plan to address such tailoring concerns, for example by exploring when voluntary or compulsory managed retreat programs would be preferable, and by considering when decommodification should be designed around government limitations (which might add flexibility but decrease durability as political priorities shift) versus private conservation easement arrangements (which could add certainty at the expense of adaptability).
*Id.*

[24] Pappas & Flatt, *supra* note 4, at 372.

[25] *Id.* at 382.

[26] *Id.* at 383.

[27] *See* Zack Colman, *How climate change could spark the next home mortgage disaster*, POLITICO (Nov. 30, 2020), https://www.politico.com/news/2020/11/30/climate-

The line drawing will be even more important if the authors' suggested proposal that owners are paid *pre-disaster* property values, or perhaps even more – a premium over pre-disaster property values – is implemented. The reason given for compensation at the pre-disaster value is that "repetitive-loss property owners may be more willing to secure any money by selling to a private developer, who externalizes the future harm, than to wait for the government buyout program, and this dynamic costs individuals and society more in the long run."[28] However, it is unclear whether this would be true, assuming the changes that the authors suggest for the NFIP/HGMP occur. If those changes are enacted, would this dynamic still occur? I'm not convinced it would – and, again assuming limited appropriations, a different payment than full pre-disaster value may enable increased buyouts.

Professors Pappas and Flatt seem to acknowledge some potential changes in mindset, as indicated by the idea that property owners could obtain private insurance to make repairs or take a federally sponsored buyout. But that is from the perspective of the property owners, and could lead to other inequalities – where wealthier residents can stay and pay the price of market-based insurance to cover losses, slowly providing them ever-greater greenspace and (perhaps welcome) isolation.

Changes to the NFIP/HGMP would also change the calculus for whether the same costs of a future disaster would recur in precisely the same way, which also needs to be taken into account. While not a change the authors suggest, reform which would not provide insurance for any repetitive loss property would certainly allow governments to avoid some costs of future disasters. This paired with a much more limited rebuilding allowance and buyout preference would lead to a much more rapid market adjustment. A less costly alternative is to make changes to the NFIP/HGMP, which does not allow for continuing insurance for repetitive loss properties, but gives a property owner a one-time chance for either money under the NFIP or a buyout at post-disaster valuation, making the choice permanently in the public land records, and not allowing additional federal funds to flow to that property. That would internalize all risk to future owners of that property, as they would be unable to obtain either a federal buyout or federal flood insurance. Draconian, perhaps, but it solves the adjustment failure cost problem with the greatest amount of fiscal responsibility.

The authors also note that an adjustment failure cost analysis is inherently flexible, because it is context specific: "policymakers can make their own assessments of the relative weight of adjustment failure costs and market benefits in their communities, and by doing so they can make informed policy determinations appropriate to their different contexts and constituencies."[29] This seems like it could become rife with political or regulatory capture, and

change-mortgage-housing-environment-433721 (noting that "private-sector lenders have been slow to make significant changes to their business models").

[28] Pappas & Flatt, *supra* note 4, at 403.

[29] *Id.* at 386.

some guardrails may need to be put in place, especially if limited funds are available.

Indeed, any valuation comes with the potential of "gaming" the system. Valuation isn't the only place where gaming could occur, either; commodification alterations might also be watered down, the way damage assessments currently are, leading to less stringent modifications than should be in place.

One potential way to encourage buyouts but allow the money to go further is to prioritize uses which could still exist in harmony with the goal of reducing the adjustment failure costs, such as not requiring full decommodification but only allowing uses such as agriculture, with no habitable structures allowed on the property. This would lower buyout values since there would be some market remaining, but would be more stringent than the commodification uses suggested by the authors, all of which allow for habitation on the property.

I fully support the authors' suggestion that the current buyout program is, in most cases, unworkable. As they note, part of this is due to the fact that all levels of government must agree that a particular parcel should be decommodified and removed from the market through a buyback.[30] The authors propose modifying this program to limit the decision to individual homeowners.[31] This seems to sidestep the most contentious part of the program as it exists today: that local governments are loath to lose the property tax revenue that comes from the properties which are removed from the market. With climate change and managed retreat, local governments are going to be in an even tougher spot, trying to provide services with an ever-shrinking tax base to fewer and perhaps more sparsely populated residents. A likely piece to making this proposal work is finding a way to continue to support those municipalities, counties, and parishes as more property is removed from the market.

The main other challenge with decommodification – especially in pre-disaster periods – is who is required to deal with the structures themselves. Without proactive management, we indeed could end up with a dystopian future of abandoned, but not removed, structures, slowly being consumed by the waves. Post-disaster, there might not be much left; but even so, it is easy to imagine leaking septic tanks on the wet sand beach contributing to public health hazards, or leaking underground storage tanks becoming exposed and leaching into what is now public land.[32] If public funds are used to purchase properties, the public should not be expected to pay a second time to remove abandoned buildings and pay for hazardous situations. One answer may be – especially if above-market rates are paid for buyouts – to require the current property owner

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[30] *Id.* at 344.

[31] *Id.* at 400.

[32] David Hasemyer & Lise Olsen, *Battered, Flooded and Submerged: Many Superfund Sites are Dangerously Threatened by Climate Change*, INSIDE CLIMATE NEWS (Sept. 24, 2020), https://insideclimatenews.org/news/23092020/climate-change-epa-superfund-sites-hurricanes-floods-fires-sea-level-rise.

to completely remove the structure and any underground equipment before turning the property over and obtaining final payment.

Even with these open questions around assumptions and implementation, *Climate Changes Property* is a highly valuable addition to the scholarship of managed retreat. The authors' framework allows policymakers to holistically address many of the issues in an adaptable manner, moving us far from a binary-policy world.

## IV. CONCLUSION

Summarizing in an overly simplistic way, *Climate Changes Property* argues for a new context within which to change the commodification of property, of which we already have many examples. The brilliance of the Article is in providing a new framework and measure to use as we struggle with the changes occurring in the natural world. In this year of pandemics and disasters, Professors Pappas and Flatt have given us much to think about indeed. They have provided a path forward, should we choose to take it, that can lead us away from the apocalyptic and dystopian futures on our screens . . . and in our backyards.