

WON WITH NATURE

THE PROBLEM WITH VIDEO GAME ECOSYSTEMS

Kevin Mercer, Southern Illinois University Carbondale

Mainstream video games have continually enriched their virtual ecosystems with endemic life. Historically, plant and animal lifeforms have lent credibility and detail to game environments and have served as resources to collect, use in crafting, or sell. However, as developers have built increasingly detailed depictions of and behaviors for lifeforms, established systems in which these lifeforms interact, and, generally, achieved greater degrees of naturalistic and realistic worlds, I often feel conflicted: I experience a deep appreciation for a game's complex ecosystem, yet the game itself requires me to dominate said ecosystem through violence.

Through this experimental, diaristic/intertextual, humanities-minded opinion paper, I will discuss a number of video games which generate this very problem. I will touch upon specific cases to highlight past and present connections between gameplay and environmental systems. I will chart how nature's role has changed over time and arrived at this present moment in which dynamic and complex in-game ecosystems are subordinate to the player's will. This paper will argue that contemporary games are poised, graphically and mechanically, to offer players simulated natural worlds that do not solely allow for domination, but for integration, learning, and stewardship.

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Let's Start with a Garden Walk

My partner and I began gardening, with limited knowledge and experience, a few years ago. We started by planning simple arrangements of annual and perennial flowers in a pair of beds, but we soon learned that our soil was incompatible with quite a lot of plants. It was dense, compacted clay with virtually no drainage. We turned the soil over and amended it with compost, sand, pea gravel, and mulch, then set about planting. Even then, with enriched soil, we had issues. As we learned, our border of sad-looking lavender needed even more freely-draining soil, which required more amendments with sand. Once that was sorted, another puzzle presented itself, and after that one was solved, another. Along the way, as we learned from our mistakes and kept more and more plants alive, I found the interconnected systems of the garden akin to a game.

Gardening has rules. An input yields an output. There is a causal loop in which I participate. There are surprises. We have gradually expanded the garden to include raised vegetable beds, tall planters for grasses, terra cotta pots, and direct, in-ground planting. As the play space of the garden-turned-game has grown, I have increasingly recognized relationships among flora and fauna which constitute a sort of miniature ecosystem right in my own yard. The liatris get picked over by goldfinches in the early summer. Lavender and Russian sage attract bumblebees and honey bees. The fine netting over the zucchini will protect from squash beetles, but if left on too long will prevent pollinators from visiting blossoms and producing vegetables. As it turns out, eastern tiger swallowtail butterflies love parsley, which led a caterpillar to feast on, chrysalise in, and metamorphose from our herbs. Finding its delicate husk attached to a parsley stem by a single silk strand was beautiful and rewarding, and resulted, in part, from my engagement with the natural system of the garden game.

Many mainstream AAA video games attempt to facilitate similar engagement with their simulated ecosystems yet force the player's hand in enacting violent extraction from said ecosystems. In these cases, harvesting is disproportionate to gardening. To broaden the metaphor, hunting and gathering are disproportionate to stewardship. Winning is disproportionate to being. Do video games encourage oneness with or separation from nature? The following examination charts generational changes to video game worlds, their historic functions within gameplay, and some of the most complex simulated ecosystems currently on offer.

The Evolution of the Natural Play Space

David Crane's *Pitfall* from 1982 demonstrates some of the earliest natural play spaces in games, and it captures the inherent fun, danger, and challenge of moving through nature. The protagonist attempts to traverse a jungle filled with various hazards. There are coiled snakes, pools with crocodiles, subterranean scorpions, and more. The player character jumps, holds tightly to vines, and swings high above the crocodiles to either safety or demise.

Pitfall's very early, pixelated graphics communicate to the player that the world has rules, and that there are ways of interacting with the world. A story is being told about what the player can expect. Some creatures live above ground, and some below. Some live in water. The helpful vine swings at a particular tempo. All of these visual and mechanical elements teach the player that they are not welcome and are at odds with the jungle.

Forty years after *Pitfall*, Guerilla Games released *Horizon Forbidden West* on the PlayStation 5. Though the graphical fidelity and mechanical complexity of games have come a long way, the *Horizon* series is really quite similar to *Pitfall*. The player embodies a lone adventurer who creatively traverses the landscape and braves deadly threats. Aloy, the protagonist, squares up to large, animal-inspired robots. There are also living animals throughout the game, spread across a variety of biomes.

Both games in the *Horizon* series offer highly detailed, dense landscapes which the player may explore at their own pace. From the early hours of both titles, the entirety of the game world is available to the player. Aloy may run, jump, climb to astounding heights, and look out over magnificent vistas. To stand atop nature and survey it is to better understand it. It is also a

confrontation of the world's scale. This kind of image speaks to the potential, challenge, or call to adventure that accompanies such open world games.

Nature's Traditional Role in Games

In many games, nature is simply seen as commodity. One of the skills that can be unlocked for *Aloy* is *Expert Carver*, which results in more crafting resources upon killing animals or destroying machines. This skill's description reads: "Increased chance to loot skins, bones, lenses, and hearts." When *Aloy* crouches next to a dead wild boar, for instance, a UI prompt displays quantities of skins, bones, and rations of meat available to collect. This kind of mechanic is common in survival and crafting games where resources like metal, wood, or pelts are repurposed.

Animal Crossing: New Horizons has players catching scores of fish to collect, sell, or contribute to their island's aquarium. The game begins with looming debt to *Tom Nook*, and the player is expected to immediately begin paying it down by selling their hard-earned catch. Extraction from the environment is nearly the only way to earn in-game money early on. Beyond this, the labor is domestic. The various tasks around the private island benefit the player's home and its immediate surroundings, which are predictable and orderly spaces compared with a wild, untamed landscape. *Stardew Valley* and other games of the cozy, rural life simulator genre function similarly.

Animals are often the critical resource which enable the player to craft helpful or even necessary items or equipment. *Elden Ring*'s guillemot birds may drop fowls' feet upon death. The placement and animations of these birds contribute to the overall naturalistic look of the world. They generally gather in small groups, stand near the sea, and face the sea, but the realism ends there. They do not eat or play or sleep or change locations. The guillemot are simply a renewable resource.

In many other games, nature itself is the thing to defeat. *Shadow of the Colossus* requires the player to venture out into a vast landscape in search of colossi that must be slain to progress the story, of which the player is arguably the villain. All sixteen of these great beasts must be found and killed to conclude the game. When the player locates each one, they happen to be minding their own business, living in peaceful seclusion.

Between *Pitfall* and the *Horizon* series, a number of games began facilitating interactions between human player characters and the environments they occupy. In *The Legend of Zelda: Ocarina of Time*, *Link* is given a bottle which the player may use to collect bugs. When collecting, a caption reads: "You put a bug in the bottle! You can release it by using C. This kind of bug prefers to live in small holes in the ground." This bit of text suggests an underlying logic to the ecosystem of insects in the game, and, in fact, some species are only found in very particular locations; not all bugs prefer to live beneath rocks. Nintendo expands upon this notion in *Breath of the Wild* and *Tears of the Kingdom* by building a complexity to the flora and fauna and their respective habitats.

For instance, the *Hot-Footed Frog* in *Breath of the Wild* is commonly found near bodies of water and can be found in greater numbers during rainstorms. The developers' placement and frequency of these frogs simulates animal behaviors, lending a realism to the greater ecology of *Hyrule*. Furthermore, this frog can be cooked alongside monster parts to make a potion which increases the player's speed for a time. The frog imparts its unique, innate qualities to the player.

In Kojima's *Metal Gear Solid 3: Snake Eater*, the player may stumble upon a hornets' nest from time to time. These are both hazardous for the player and may be used as tools to attack enemy combatants. Should the player shoot and knock down the nest, hornets will seek a nearby human and attack them. This may even be used as an optional tactic during a boss battle, which yields a special *Hornet Stripe* camouflage pattern as a reward. The new pattern then prevents hornets from stinging the player, though they will follow and can be led to enemies' positions to swarm them.

In this case, nature is responding to the player's actions and clothing. One could even call it a symbiotic relationship between *Naked Snake* and the hornets. While slightly comical and slapstick, it is nonetheless an early example of Kojima's propensity to craft intricate and variable interactions among gameplay systems. In this case, the interaction is a playful take human-animal cooperation.

Today's Game Ecosystems

Monster Hunter Wilds, the most recent entry in the *Monster Hunter* series, continues the tradition of pitting a human protagonist against very large, dangerous, and often beautiful creatures. This is the core gameplay loop: identify a monster to hunt, track it down, slay it, then use its skin, fur, claws, and other body parts to craft armor and weapons. Nature is the commodity, the enemy, and the resource which must be pillaged.

At the moment of the game's title card drop, the intrepid protagonist looks out across dusty plains. A rising, curving mountain range in the distance calls them to adventure. They sit atop a dinosaur-like mount called a *Seikret*. The animal is a tool, a vehicle, and even a companion. The relationship between human and animal is strengthened, yet it enables more effective control over nature. As the horse betrays cattle in service of the cowboy, so too does the saddled *Seikret* that bears the monster hunter toward each hunt.

Capcom boasts the complexity of the monster, human, and endemic life interactions in its *Forbidden Lands*. Animals of like species will form herds. They travel to flee weather events like dust storms. As the player hunts and kills *Ceratonoth*, the herd thins. Their carcasses can be revisited and will show signs of decay, eventually decomposing into piles of bones, another collectible resource. Eventually, a new herd accumulates in the world and the cycle begins again. The level of detail to these animal behaviors are quite uncommon in video games.

As the player amasses monster parts, they may give them to the blacksmith to forge weapons and armor. Armor sets made from leather, metal, bone, monster skins, or other parts possess various specifications which may impact gameplay. Sets become trophies as well. These clothing pieces range from the serious and utilitarian to utterly dramatic, high fashion ensembles. The *Lala Barina* armor set made from the parts of a giant white spider whose abdomen blooms like a rose (Figure 1.). Claws have contributed to the spikes on one shoulder. A dense white fur makes up the other shoulder. A scarlet material lines the cape. There is a small cluster of roses on the cap. The spider monster is broken down fully and reconstituted as protective and fashionable garments for the hunter.



Figure 1. *Monster Hunter Wilds* protagonist donning the Lala Barina armor set.

Monster Hunter Wilds features five main biomes, thirty-three large monsters, nineteen small monsters, sixty-six endemic animal species, and twenty-one fish species. These figures do not include any plant species. The ecosystems within the *Forbidden Lands* indeed feel alive, and the game itself asks the player to pay close attention to nature, to learn from it, in order to fully engage with various mechanical systems like fishing, for instance. Various species are found only within

biomes that can support them. They respond differently to fishing pole movements, and some are picky eaters. While a *Tentacle Jig* may hook a *Goliath Squid*, an *Emerald Jitterbait* may be more appropriate for another catch. The time of day and season affect the fishing as well. Fishing mini games have been around for decades, but *Monster Hunter* has constructed a fishing system with great depth. This level of complexity makes necessary the in-game *Aquatic Life Field Guide* which outlines caught species and features information about appearance and lure preferences.

The relationships among these species facilitate perhaps the greatest player engagement with the ecology of the game. A crafting resources harvested from one animal may allow for a new consumable which will aid in the fight against another. This is not tedious guesswork. The field guide is key in the simulation of a naturalist lifestyle as it tracks the player's observations and learned information. The problem with this video game ecosystem is that it was designed to be abused.

At Odds with Nature

Game worlds, specifically those that simulate natural systems, require no intervention on the player's part to keep them operating smoothly. In fact, these ecosystems are highly resistant to human interference. *Animal Crossing's* sea bass are certainly not at risk of overfishing. *Aloy* will never run out of animal skins. *Monster Hunter's Ceratonth* replenish. The underlying programming ensures that the scarcity experienced by the player is temporary and can be overcome through play. The results of extraction are minimal and counteracted through fun. The gameplay loops all but guarantee this. Imagine for a moment that this was not the case. Consider a hypothetical video game environment subject to long term impacts of human activity. Consider programming that could not ensure the periodic red snapper or iron ore.

Why might the player's stewardship matter? What may be gleaned from a piece of software which facilitates a user's improvement or protection of a virtual landscape? Perhaps the easiest connection would be between simulation and education; conservation or preservation could be modeled to teach humans about the world on which we depend.

I am conflicted by my deep appreciation for virtual, natural game worlds and the games' expectations that I both internalize its systems and dominate them. The fact is that I cannot play *Monster Hunter* without hunting a monster. For the time being, it seems, studios with some of the biggest budgets and audiences are content to keep players like me in this space of simultaneous engagement with and exploitation of nature for what are too often capitalistic ends. Bigger monsters beget bigger weapons.

Play can even, from time to time, deprioritize winning in favor of being. To simply be in a space, in tune with its rhythms, a participant in its systems, may even prove enough without grinding for weapons, fresh outfits, or big game trophies. I think it is high time Capcom let me be a monster healer or a monster hugger in its gorgeously detailed, interconnected landscapes, one with nature.

The Strawberry Mini Game

When the weather is good, I like to begin each day, coffee in hand, with a garden walk. I enjoy seeing what has grown and what appears near bloom. This year I tried to grow strawberries for the first time, just one plant, to see how it would do. To my surprise, it responded very well to a pot. It filled out and blossomed. There were maybe a dozen or so berries coming on, and I watched them change from small and near-white to plump and vibrant. On one garden walk I decided it was time to pick them all, but I became busy with other chores and forgot.

By the following morning something had picked them all for me. I like to imagine it was a little *Tom Nook*-looking raccoon collecting a strawberry tax. More berries did eventually follow, but they were few and irregular. The *garden game* did not protect against this outcome. Its systems did not ensure that once the plant was off a cooldown that it would produce more. By that time in the

season, strawberry plants were no longer sold. I caused a fail state in the *strawberry mini game* and would have to try again the following year. And try again, I will, for the seasons of the *garden game* continue, and I will keep playing.

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About the Author

Kevin Mercer holds a BFA degree from Western Illinois University and an MFA degree from The Pennsylvania State University. Mercer is an artist and game developer whose work focuses on installation, experimental narrative, rurality, and environments. Mercer is Assistant Professor of Digital Media Arts & Animation at Southern Illinois University, USA. Presentations include: Teaching Environmental Concept Art through the Approaches of Black Myth: Wukong, Concept Art & Character Design: Critical & Creative Perspectives, The University for the Creative Arts Farnham, UK, 2025; The Surreal Bodies & Spaces of Indika, Strangeness & Oddity Interdisciplinary Conference, London Arts Based Research Centre, 2025.

Website: <https://www.kevinmercer.com>

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