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**Goodbye and Thanks for All the Fish: The Inevitable Mass Extinction  
of Vertebrate Wildlife in the United States by 2100 AD**

by

Richard Maximus Strahan  
Baccalaureate of Arts Degree *magnum cum laude*  
University of Massachusetts at Boston 2016

THESIS

Submitted to the University of New Hampshire in Partial Fulfillment of  
the Requirements for the Degree of

Master of Arts in Liberal Studies

May 2020

COMMITTEE PAGE

This thesis/dissertation was examined and approved in partial fulfillment of the requirements for the degree of Master of Arts in Liberal Studies by:

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On 16 May 2020

Approval signatures are on file with the University of New Hampshire Graduate School.

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Richard Maximus Strahan

## DEDICATION

I dedicate this work to Dian Fossey and Digit. They are the quintessential Green Knights who both were murdered actively defending their own from poachers. They lived and died protecting the community of Mountain Gorillas living on the slopes of the Virunga Mountains in Rwanda. Today, their remains lie side by side in the gorilla cemetery on these mountains, standing forever in vigilance over the Earth's last tribe of Mountain Gorillas.

## ACKNOWLEDGEMENT

I want to acknowledge and express my gratitude to Cari Moorhead, the Dean of the Graduate School at UNH, and Ted Kirkpatrick, UNH's Dean of Students and my faculty advisor, for their support and friendship. Together they kept the dark forces at UNH at bay which allowed me to run the hoary gauntlet of UNH meanies and into the light, holding the instant thesis in my hands and shouting HOO-HAW! I also want to express my total gratitude to Don Chandler for his support, amazingly insightful advice and teaching the best zoology class that has ever been taught on the Earth. Finally I want to thank Kurk Dorsey for all his critical comments and possibly being a Green Knight in hiding.

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## ABSTRACT

The last stages of a global mass extinction event (GME) that started in the Pleistocene is likely to be continuing across the nations of the Earth. In the United States (“Nation”), it will likely climax (“Climax”) by 2100 AD when it will wipe out about 80% of endemic, vertebrate wildlife species. It will reduce the populations and ranges of the Nation’s surviving vertebrate species to minimal values. This will be the 6<sup>th</sup> such mass extinction of wildlife species to have occurred in the Earth’s history.

This is a reasonable inference from available data reported in journal articles since 1990 on continuing losses in population size within all taxonomic classes of the Nation’s vertebrate wildlife. Since 1970, vertebrate wildlife in the United States has been reduced to representing only about 5% of the biomass of vertebrate animals living in the United States, with farm animals, *Hominin*, and its pets accounting for the other 95% of all the Nation’s vertebrate animal biomass. **FN1**

The annually growing GDP and *Hominin* population of the Nation is the expected default cause of the mass extinction of vertebrate wildlife in the United States. Climate change can only be seen as a minor contributing to these wildlife losses. The controlling reality is there is only a finite amount of arable land in the United States and most of it is now dedicated to the commercial, residential and recreational use of *Hominin*. The annually growing *Hominin* population of the Nation and its continuing economic growth is gobbling up the remaining

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<sup>1</sup> Oxford English Dictionary. 2020. *Hominin*. “A primate of the tribe *Hominini*, comprising those species regarded as human, directly ancestral to humans, or very closely related to humans.” Retrieved 20 April 2020 (www.oed.com).

available land for commercial and residential development. At some point based just on current trends of increasing *Hominin* land use, most all arable land in the Nation will sooner or later be developed and the remaining wildlife depopulated from these lands.

The “precautionary principle” adopted by the UN Environmental Programme -- and which the Supreme Court has ruled to be the underlying principle of the Endangered Species Act -- compels the Nation to consider the GME as the operating reality in the Nation and that its Climax will occur around 2100 AD. To stop or delay the Climax, protective efforts need to be done now to stop any further decline of the Nation’s vertebrate wildlife populations and their geographic ranges. This needs to be seen as true even if data has yet to be collected to prove that mass extinction is occurring. Unfortunately, the inexcusable failure to start by the 1990s any effort to inventory the Nation’s vertebrate wildlife in order to assess the threat of wildlife GME indicates a failure of will in its agencies and non-government organizations to stop its Climax. This failure of will must now be treated as a social fact and/or norm of the Nation’s society.

Conducting an annual inventory of the status of the Nation’s vertebrate wildlife populations is a requisite first step to insure the GME does not happen. It is compelled by the precautionary principle in order to gauge the necessity and cost to arrest, stop or delay the Climax. All further economic development and sanctioned population increase of the United States (i. e. immigration) requires an accurate assessment of their impact on wildlife populations and their range. To insure preventing GME, economic and population growth should not be allowed to proceed unless there will be no adverse impact by it on the Nation’s wildlife.

A wildlife inventory effort of sorts was started by the government in the 1990s but was quickly abandoned and not restarted to the present day. The ongoing failure by the Nation to

have never implemented an effective inventory of its wildlife is also evidence of the Nation's failure to challenge GME. This failure is likely deliberate.

Wildlife has little utilitarian value and endangered species basically none. The United States economy and Public health will not likely suffer if over eighty percent of its vertebrate wildlife species are extirpated. Some evidence for proof of such is that there has been a 60% decline in many wildlife populations across the board since 1970, yet most citizens barely notice that decline. The current contagion crisis caused by a wildlife originating virus illustrates a fair opinion that wildlife poses a significant risk to Public health and the economy.

All the environmental laws of the 1970's and after are apparently not proving good enough to compel the Nation's government agencies or EINGOS to already have made the needed commitment to effectively stop the GME of the Nation's wildlife species. In part, this is due to a likely decision made at some point between 1995-2005 by the United States society and its governance that it would not stop the already perceived decline in wildlife in order to support an annually growing GDP and population.

These failings compel that a mass extinction Climax for the Nation's vertebrate wildlife must be seen as inevitable absent truly revolutionary and disruptive change to the Nation.

## CHAPTER ONE

## The Ongoing Sixth Wave of Global Mass Extinction that will Climax by 2100 AD

*No Beast so Fierce but Knows Some touch of Pity ...  
But I know None, and therefore I am no Beast.*

William Shakespeare, *Richard III*

It is now widely recognized that there were five previous great extinction events for wildlife species in the Earth's geologic past. **FN2** An additional two more mass extinction events in addition to the five mentioned has been recently proposed. **FN3, FN4**

Each mass extinction event resulted in the loss of over eighty percent of all extant species of Life on Earth. **FN5** All prior mass extinction events were due to the occurrence of long-term disruptive geophysical events that took place over thousands of years and precipitated these mass extinction of wildlife. After these mass extinction events climaxed, wildlife biodiversity eventually recovered to a level that existed prior to its being decimated by each of these extinction events. **FN6**

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<sup>2</sup> Raup, David M. *et al.* 1982. "Mass Extinctions in the Marine Fossil Record." *Science*. 215(4539):1501-1503. DOI: 10.1126/science.215.4539.1501. This paper established the current consensus of their being five past great extinction events resulting in about ninety percent of all existing species lost to extinction . The cited mass extinction events are as follows: (1) Late Ordovician (Ashgillian); (2) Late Devonian (Givetian-Frasnian); (3) Later Permian (Guadalupian-Dzhulian); (4) Later Triassic (Norian); (5) Late Cretaceous (Maestrichtian).

<sup>3</sup> Rampino, Michael R. *et al.* 2019. "The end-Guadalupian (259.8 Ma) biodiversity crisis: the sixth major mass extinction?" *Historical Biology*. DOI:10.1080/08912963.2019.1658096

<sup>4</sup> Hodgskiss, Malcolm, *et al.* 2019. "A productivity collapse to end Earth's Great Oxidation." *Proc. Nat. Acad. Sci.* 116(35):17207–17212. DOI: 10.1073/pnas.1900325116.

<sup>5</sup> Jablonski, David. 1994. "Extinctions in the fossil record." *Phil. Trans. Royal Soc. B.* DOI: 10.1098/rstb.1994.0045

<sup>6</sup> Brown, Paul. *et al.* 2019. "Diversity decoupled from ecosystem function and resilience during mass extinction recovery." *Nature*. 574:242–245. DOI: 10.1038/s41586-019-1590-8.

Currently wildlife species across the globe are in the throes of another mass extinction event that is likely to climax by 2100 AD (“Climax”). **FN7** At current rates of wildlife population and habitat loss across the United States, most existing (*circa.* 1970) native vertebrate species will be extirpated in the United States by the end of this century. The mass extinction of vertebrate wildlife in the United States is a part of the 6th mass extinction in geological history (“GME6”). It has been taking place across the Earth’s surface since the Pleistocene.

The principle reason for the GME6 taking place is unique from those that caused the earlier five. It is based upon the anthropogenic conversion of almost all Earth’s wildlife habitat including wilderness into land only suitable for agriculture and commercial uses in order to solely serve the purposes of the *Hominin* species. The popular alarmism towards climate change throughout the twenty-first century as predicted by the United Nations Environmental Program is but a small factor in contributing to the vertebrate mass extinction in the United States by the date of the Climax. **FN8**

The activity driving the GME6 event is the ongoing direct destruction of wildlife and wilderness by *Hominin* that commenced during the Pleistocene and began to exponentially increase during the Industrial Revolution of the 1800’s and continues to grow exponentially in the present day right up to 2100 AD. The ongoing process of population increase in the United States and its accompanying industrial & agricultural expansion has continually decreased the amount of existing wildlife and wilderness that still existed in the 1970’s. Considering the finite character of the extent of land and Ocean area on Earth that is capable of supporting wilderness

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<sup>7</sup> Ehrlich, Paul *et al.* 2017. “Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines.” *Proc. Nat. Acad. Sci.* 114 (30):6089-6096. [doi/10.1073/pnas.1704949114](https://doi.org/10.1073/pnas.1704949114).

<sup>8</sup> UN Environmental Programme. 2020. <https://www.unenvironment.org>

and wildlife, it is not surprising that the historical growth and geographic expansion of *Hominin* populations will finally displace nearly all of Earth's remaining wilderness and wildlife habitats in the near term by 2100 AD.

As stated, the current GME6 is different from the five earlier mass extinction events since it is not caused by geophysical events. The GME6 began about 14,000 BC in the later part of the Pleistocene epoch. By that date, Neolithic populations of *Hominin* had developed the technology needed to manufacture sharp edged stones and used them in fashioning spears, arrow heads, and cutting tools. This Neolithic technology allowed Hominins to start killing megafauna vertebrates like the Woolly Mammoth and Giant Ground Sloth in large numbers that exceeded the basic needs of the *Hominin* hunters. Using simple hunting techniques with stone age tools, the Neolithic *Hominin* hunters of the Pleistocene in North America destroyed the majority of its existing macro-fauna vertebrate species. Only the Great Whales survived the massacre as a result of their isolation from the Neolithic hunters by their living in the Ocean. **FN9**

Tens of thousands of years later and using the advanced technology of the 21<sup>st</sup> century (e. g. construction equipment, computers, agriculture, etc.) *Hominin* have vastly increased their ability to destroy the remaining wildlife whatever their size and wherever they live. Having survived the Pleistocene megafauna extinction, the Northern Right Whale is now on the verge of

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<sup>9</sup> Some of the departed Pleistocene mega-fauna species are the American mastodon (*Mammuthus americanum*); American Mountain deer (*Odocoileus lucasi*); the Rabbit (*Azlanolagus agilis*); the Beautiful armadillo (*Dasypus bellus*); *Bison antiquus*; *Bison occidentalis*; *Camelops* spp.; the Caribbean ground sloths; the Columbian mammoth (*Mammuthus columbi*); Dire wolf (*Canis dirus*); the Spectacled Bear (*Tremarctos floridanus*); the *Glyptodon*; Harlan's muskox (*Bootherium bombi*); *Holmesina septentrionalis*; Jefferson's ground sloth (*Megalonyx* spp.); *Mylohyus* (*M. elmorei*, *M. floridanus*, *M. fossilis*, *M. gidleyi* and *M. nasutus*); the North American jaguar (*Panthera onca augusta*); the Pygmy mammoth (*Mammuthus exilis*); the Saber-toothed cat (*Smilodon* spp.); the Saiga antelope (*Saiga tatarica*); the Scimitar-toothed cats (*Homotherium* spp.); the Giant short-faced bear (*Arctodus simus*); the Shrub-ox (*Euceratherium collinum*); the Western horse (*Equus occidentalis*); and, the Woolly mammoth (*Mammuthus primigenius*).

extinction not from being hunted, but from being killed and injured incidental to the increasing commercial destruction of its coastal marine environment. The *Hominin* and their technology have spread out to occupy and devastate nearly every acre of arable land and habitat for vertebrate wildlife on Earth. Now that an ever-growing population of billions of Hominin swarm to every corner of the Earth, building cities and establishing more croplands to feed its ever growing population, can it be that *Hominin* by 2100 AD will finally eliminate most remaining vertebrate wildlife in the United States?

Since the 1970's, there have been an increasing number of reports documenting an exponential increase in the extinction rate for mammals and other vertebrate species in the United States and globally. In both current media reports and in peer-reviewed scientific journals, there is a recognition of at least a 1,000-fold increased rate of species extinction and a continuing significant decline in wildlife habitat and wildlife populations in the United States after the 1970's. This is consistent with a mass extinction event that is about to climax. **FN10** Many reports and claims by "extinction interested NGOs" or EINGOS erroneously describe the GME6 as only starting. **FN11, FN12, FN13** The reality appears to be that the GME6 that started

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<sup>10</sup> "Earth's sixth mass extinction event under way, scientists warn." See 10 July 2017 edition of UK's *Manchester Guardian*. <https://www.theguardian.com/environment/2017/jul/10/earths-sixth-mass-extinction-event-already-underway-scientists-warn>

<sup>11</sup> EINGOS deliberately track the start of GME6 by their recent use of the concept to provide evidence supporting their alarmists claims for the impact of global warming. They had a hard time convincing their potential donors about the adverse impact of climate change since it had yet to have a noticeable impact to most in day-to-day living. They claimed that the reports of mass extinction were a direct result of climate change.

<sup>12</sup> Trisos, C. H. *et al.* 2020. "The projected timing of abrupt ecological disruption from climate change." *Nat.* doi: 10.1038/s41586-020-2189-9.

<sup>13</sup> Cahill Abigail E. 2013. "How does climate change cause extinction?" *Proc R Soc B* 280(1750). doi: 10.1098/rspb.2012.1890.

in the Pleistocene is about to come to its Climax after progressing for the last tens of thousands of years.

It is understandable that the GME6 is ongoing and its Climax in the United States is likely by 2100 AD. It is predictable. It is driven by the never ending and increasing anthropic destruction of remaining wilderness and other viable wildlife habitat in the United States. Since economic and population growth are likely assured of growth through 2100 AD and beyond, the Climax can be seen as inevitable unless an active program is implemented to arrest the displacement of wildlife resulting from the conversion of its remaining habitat. **FN14**

Most aspects of this destruction of wildlife habitat is profitable, lawful and are seen as benefits by most *Hominin* and especially its businesses. If there is excess that pollutes and contaminates the *Hominin* environment, it can be corrected over a period of time. The progress of GME6 is evidenced by ongoing deforestation, remaining wildlife habitat converted to agricultural land, the commercial development of “open areas” in cities, suburbs and rural areas, increased urban sprawl, the increasing population in the United States and all manner of economic development. **FN15**

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<sup>14</sup> The *Oxford English Dictionary* defines “inevitable” as meaning: “That cannot be avoided; not admitting of escape or evasion; unavoidable. In extended use: that cannot fail or is bound to occur, appear, be used, etc.; that is inherent (in) or naturally belongs to). Quote source (1893) ‘Inevitable ... jocularly, customary; usual; as, the inevitable row with the cabman; the inevitable hash for breakfast.’” Retrieved on 20 April 2020 from ([www.oed.com](http://www.oed.com)).

<sup>15</sup> *Supra at 1*: “The strong focus on species extinctions leads to a common misimpression that Earth’s biota is just slowly entering an episode of major biodiversity loss. ... But the current “biological annihilation” underlines the seriousness for humanity of Earth’s ongoing sixth mass extinction event. ... The resulting biological annihilation obviously will have serious ecological, economic and social consequences. Humanity will eventually pay a very high price for the decimation of the only assemblage of life that we know of in the universe.”



This current “annihilation” of vertebrate wildlife in the United States is not just an alarm of impending doom from recent climate change or other recent anthropic machination of the environment. It indicates an eventual climax of a continuing historical displacement of wildlife from the finite surface area of the Earth that began thousands of years ago to provide the real estate needs of an increasing *Hominin* population. Every acre of lost wilderness to *Hominin* exploitation has been profitable and has fueled the conversion of the next acre or more of wildlife habitat to serve the needs of the *Hominin* population and its advancing civilization.

The present annihilation of remaining vertebrate species of wildlife in the United States is being accelerated from the current increasing supply of people into the United States coming from immigration legal and otherwise. It is also accelerated by the ever-increasing need by *Hominin* for more material goods that they require to “enhance” their lifestyles. This now precipitates the destruction of ever more square miles of the United States’ landscape to accommodate new cities, factory farms, and industrial production. Deforestation of wildlife habitat is routine in order to build for more people housing, employment opportunities and new technological services. This amounts to innovative social mandates that now requires more electric cars, new factories to meet the requirements for batteries for these cars, and other material stuff as part of the “American Dream.” **FN16**

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<sup>16</sup> Truslow, James Adams. 1931. *Epic of America*. New York: Little, Brown and Company: “But there has been also the **American dream**, that dream of a land in which life should be better and richer and fuller for every man, with opportunity for each according to his ability or achievement. It is a difficult dream for the European upper classes to interpret adequately, and too many of us ourselves have grown weary and mistrustful of it. It is not a dream of motor cars and high wages merely, but a dream of social order in which each man and each woman shall be able to attain to the fullest stature of which they are innately capable, and be recognized by others for what they are, regardless of the fortuitous circumstances of birth or position ... **The American dream...** has not been a dream of merely material plenty. ... It has been a dream of being able to grow to fullest development as man and woman, unhampered by the barriers which had slowly been

All studies reporting the current decline in specific wildlife populations in the United States as yet are insufficient in the number of taxonomic classes covered to definitively show an ongoing mass extinction event for vertebrate wildlife endemic to the United States. The use of the “Precautionary Principle” applied to these reports of wildlife decline and habitat loss compels a presumption that vertebrate wildlife is experiencing a mass extinction event. At a minimum this presumption compels a full inventory of vertebrate wildlife populations to determine if their size and geographic is experiencing a steady decline. The application of the Precautionary Principle is fundamental to environmental conservation.

Its importance has been recognized as underlying all the laws of the 1970’s “Green Epoch” including the Endangered Species Act —

“The precautionary principle is becoming an established guideline for policy makers tackling environmental problems. In salient respects, it applies to biodiversity more than to any other environmental problem. This is because the mass extinction gathering force will, if it proceeds unchecked, not only eliminate half or more of all species, but will leave the biosphere impoverished for at least 5 mill. years—a period twenty times longer than humankind.” **FN17**

If it has not been made clear enough yet, the conflict between *Hominin* economic success and wildlife can be expressed as an equation. The Climax is based directly on two simple and empirically verifiable equations. The first one is More people = Less wildlife. The Second one is Increase GDP = decreased Wildlife. It has been statistically determined that for any increase in the population of *Hominin* in any given area there is a quantifiable decrease in the size of wildlife populations in that same area. Similarly, for any increase in the measure of a nation’s GDP there is a quantifiable decline in the size of that nation’s wildlife populations.

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erected in the older civilizations, unrepressed by social orders which had developed for the benefit of classes.”

<sup>17</sup> Myers, Norman. 1993. “Biodiversity and the Precautionary Principle.” *Ambio*. 22(2/3): 74-79.

Once again, the Precautionary Principal in consideration of current scientific and other studies compels the presumption that increases in GP and people in results in the destruction and/or displacement of any wildlife coexisting in that area. This presumption is supported by all current research on the subject. Unfortunately, there is an existing atmosphere of intimidation among wildlife biologists in the United States keeping them from doing research correlating any decline in wildlife with Hominin population growth. Many leading biologists recognize *Hominin* population growth as the number one threat to wildlife survival in the United States but they believe it is “politically incorrect” for them to say so publicly and refuse to publish their opinions fearing professional retaliation. **FN18** There are still published reports of research that demonstrates a negative correlation between increasing size of a Hominin population and the decline of local wildlife **FN19** —

“However, recent research has shown a clear relationship between human population size and biodiversity threats. In the United States, human population size was one of seven significant variables in models proposed by Kirkland and Ostfeld (1999) that estimated threatened mammal taxa per state with up to 80.7% accuracy. In Britain, Thompson and Jones (1999) could explain about 35% of the variation in the proportion of threatened plants by human population density.”

*Homo sapiens* is the species that wipes out wildlife. It is not the species that saves wildlife. The historical record makes this clear. This “tragedy” seems to be deeply rooted in the *Hominin* psychology and the default structure common to its societies. It was reinforced by evolutionary selection as evident by the Pleistocene extinctions of megafauna vertebrates by Neolithic hunters. When hunters kill wildlife, they do not grow more to replace them. When

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<sup>18</sup> The author was personally informed of this reality by several leading biologists on condition of his maintaining their anonymity.

<sup>19</sup> McKee, John K. 2004. “Forecasting Biodiversity Threats Due to Human Population Growth.” *Biological Conservation*. 115(1): 161–164.

wildlife habitat is invaded by *Hominin* and they destroy it to convert it to farmland, the native animals are not first carried away to a newly prepared replacement habitat that fulfils all their needs. With only a finite amount of land on the planet, the complete loss of vertebrate wildlife starting in the Pleistocene was a matter of time. By 2100 AD, the time for the Climax will likely come. There is little question that most wildlife population loss in the United States is a direct result of an increasing size of the *Hominin* population and the resultant transformation of wildlife habitat to its use —

“Overall, land transformation represents the primary driving force in the loss of biological diversity worldwide. Moreover, the effects of land transformation extend far beyond the boundaries of transformed lands. Land transformation can affect climate directly at local and even regional scales. It contributes ~20% to current anthropogenic CO<sub>2</sub> emissions, and more substantially to the increasing concentrations of the greenhouse gases methane and nitrous oxide; fires associated with it alter the reactive chemistry of the troposphere, bringing elevated carbon monoxide concentrations and episodes of urban-like photochemical air pollution to remote tropical areas of Africa and South America; and it causes runoff of sediment and nutrients that drive substantial changes in stream, lake, estuarine, and coral reef ecosystems.” **FN20**

Clearly the tribes of the Neolithic hunters that wiped out megafauna specie were the dominating tribes of their era. They probably also wiped out all other species of the *Hominin* genus and the tribes they formed that did not share in their quest for unrestrained hunting. A case can also be made that all other species of the *Hominin* genus, including *Homo neanderthalensis*, and perhaps even later populations of *Homo erectus*, were decimated and otherwise driven into extinction by the now sole surviving *Hominin* species, *Homo sapiens*. These extinctions of closely related species are examples of the prevailing *Hominin* species willingness to wipe out

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<sup>20</sup> Vitousek, P. M., H. A. Mooney, J. Lubchenco, and J. M. Melillo. 1997. “Human Domination of Earth's Ecosystems.” *Science*. 277(5325): 494–499.

any species to advance its civilization's occupation of all available land that its expansion encounters.

So the prevailing *Hominin* species current enthusiasm to destroy wilderness and wildlife is fabricated in its genes by natural election. It's the defining psychology of the current civilizations across the globe. This is an illustration of the sociological phenomena that pioneering sociologist Durkheim calls a "social fact" of civilization. A social fact is a fact about a society that no one can change during its lifetime. The Hominin desire to wipe out wildlife for personal gain and to convert wildlife habitat into usable infrastructure for its civilization is a "social fact." This fact is inherent to Capitalist society and as such is largely incapable of being changed. **FN21**

It is well established by archaeological evidence that even the relatively recent stone-age migrants to Hawaii, New Zealand, and other islands across the Pacific Ocean eventually wiped out a large number of the native species on these islands after their arrival as they converted the lands of these islands to suit their needs. Across the globe in a process that continued late into the 19<sup>th</sup> century, gangs of stone-age hunters on remote islands decimated the wildlife population that they hunted and drove many of them into extinction with simple stone age tools and basic hunting techniques.

These Neolithic hunters – including the aboriginal populations of the United States – should not be sentimentalized, as is often done by modern urban dwellers: *Hominin* living in

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<sup>21</sup> Durkheim, Emile. 1859. *Rules of Sociological Method*. trans. by Stephen Lukes. 1982. New York (US): Macmillan Press Ltd. Durkheim defined a social fact this way: "A social fact is any way of acting, whether fixed or not, capable of exerting over the individual an external constraint; or: which is general over the whole of a given society whilst having an existence of its own, independent of its individual manifestations"

harmony with the Earth. No *Hominin* has. **FN22** Knowing this, it cannot be surprising that billions more *Hominin* operating heavy machinery, building dams, and bulldozing whole forests are now capable of extirpating nearly all wildlife species on the Earth in several generations by converting remaining wildlife habitat into shopping malls and suburban sprawl..

In the 21<sup>st</sup> century, hunting is no longer the main reason for the destruction of wildlife in the United States. The main reason for the current collapse of wildlife populations in the United States is the ongoing destruction of remaining wilderness and other ecosystems that the wildlife species depend upon for their reproduction and survival. The scientific evidence supporting the imminent collapse and extinction of remaining vertebrate wildlife species in the United States is convincing. Bird populations in the United States across many species have declined to the point of imminent extinction. **FN23** A recent survey has also documented a collapse of close to one third of United States bird populations just since 1970. **FN24** The populations of mammal

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<sup>22</sup> The Maori of New Zealand caused the following bird extinctions after they inhabited those islands: Waitaha penguin (*Megadyptes waitaha*); Upland moa (*Megalapteryx didinus*); Stout-legged wren (*Pachyptichas yaldwyni*); Snipe-rail (*Capellirallus karamu*); Scarlett's shearwater (*Puffinus spelaeus*); Scarlett's duck (*Malacorhynchus scarletti*); New Zealand swan (*Cygnus sumnerensis*); New Zealand musk duck (*Biziura delautouri*); New Zealand raven (*Corvus antipodum*); New Zealand owlet-nightjar (*Aegotheles novazelandiae*); New Zealand geese (*Cnemiornis calcitrans* and *Cnemiornis gracilis*); Long-billed wren (*Dendroscansor decurvirostris*); Hodgen's waterhen (*Gallinula hodgenorum*); Heavy-footed moa (*Pachyornis elephantopus*); Haast's eagle (*Hieraaetus moorei*); Giant moa (*Dinornis* sp.); Eyles's harrier (*Circus eylesi*); Eastern moa (*Emeus crassus*); Coastal moa (*Euryapteryx curtus*); Chatham raven (*Corvus moriorum*); Chatham Islands duck (*Pachyanas chathamica*); Bush moa (*Anomalopteryx didiformis*); Adzebill (*Aptornis defossor* and *Aptornis otidiformis*)

<sup>23</sup> Pimm, Stuart & Ehrlich, Paul. 2006. "Human impacts on the rates of recent, present, and future bird extinctions." *Proc. Nat. Acad. Sci.* 103(29):10941–10946. Predicting an accelerated rate of extinction from anthropic stressors. Extinction threatens 12% of bird species; another 12% have small geographical ranges and live where human actions rapidly destroy their habitats. Invasive species, expanding human technologies, and global change will harm additional species. Birds are poor models for predicting extinction rates for other taxa.

<sup>24</sup> Rosenberg, K. V. *et al.* 2019. "Decline of the North American avifauna." *Science*. 366(6461):120-124: "Using multiple and independent monitoring networks, we report

species in the United States has experienced similar declines in their numbers since 1970. **FN25** It has been reported that reptile and amphibian populations have “crashed” since 1970 with about thirty percent of frog species globally having gone extinct. **FN26** Wildlife populations are now collapsing globally from the destruction of wilderness and the native habitats of wildlife species which indicates a continuing loss of their remaining geographic range.

“More people equal less wildlife.” This is the primary rule for ecology in the current century. It has been amply demonstrated. The increasing paleontological record for Europe and other highly developed nations shows a historical trend. The more *Hominin* that become associated with a specific wildlife habitat, the less wildlife in that habitat. The presence of wildlife in a geographic area diminishes when people take up habitation in that geographic location. What follows is a precipitous and continuing decline in the presence of wildlife macrofauna in that habitat. Just as in 12,000 BC – when stone age hunters arose – the historical record shows a precipitous decline in both the numbers of macrofauna species and the size of species populations. It also shows a decline in the size and biomass of individuals in the remaining wildlife coexisting in the same geographic region as hominins. In other words, individual mammals and individuals of other surviving vertebrate species became smaller in

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population losses across much of the North American avifauna over 48 years, including once common species and from most biomes. Integration of range-wide population trajectories and size estimates indicates a net loss approaching 3 billion birds, or 29% of 1970 abundance.” DOI: 10.1126/science.aaw1313

<sup>25</sup> Ceballos, Gerardo & Ehrlich, Paul. 2002. “*Mammal Population Losses and the Extinction Crisis.*” *Science*. 296(5569):904-907. doi: 10.1126/science.1069349.

<sup>26</sup> Alroy, John. 2015. “Current extinction rates of reptiles and amphibians.” *Proc. Nat. Acad. Sci.* 112(42):13003–13008. DOI/10.1073/pnas.1508681112: “Severe population crashes have accumulated steadily since the 1970s and 1980s, and at least 3.1% of frog species have already disappeared. Based on these data and this conservative method, the best estimate of the global grand total is roughly 200 extinctions.”

weight and length. This trend continues to the present day. **FN27** The fossil record and other evidence shows that the continuing increase over the last Millenia in the size and geographic range of hominin activity has cause an inverse decline in vertebrate wildlife body size and mass on every continent. **FN28**

Wherever people show up, they impair or destroy the local geographic area for meaningful use by wildlife. It is axiomatic, that *Hominin* choose to occupy wildlife terrestrial habitat, convert it using modern technology in order to provide meaningful services that they require to thrive in the modern economy. Consider two categories, agriculture and residence. Trees are sacrificed to clear land for agriculture and for residence. Wiping out most vertebrate wildlife from exploited terrain. Agriculture uses pesticides and fertilizers that impair the remaining bird and insect fauna. A house will be constructed for a residence. The terrain around the house will then be scraped bare of native vegetation and top soil. It will be replaced by a single species of grass heavily dozed with fertilizer to maintain its bloom. Large mammals will not immediately die but be displaced. In the long run they will either migrate to distant wooded areas or die off. Household cats and dogs can then go on to decimate surrounding bird and small mammal populations.

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<sup>27</sup> Barnosky, Anthony D. 2008. “*Megafauna biomass tradeoff as a driver of Quaternary and future extinctions.*” *Proc. Nat. Acad. Sci.* 105:11543–11548. doi: 10.1073/pnas.0801918105: “[W]ith continued growth of Hominin biomass and today’s unprecedented global warming, only extraordinary and stepped-up conservation efforts will prevent a new round of extinctions in most body-size and taxonomic spectra ...”

<sup>28</sup> Smith, Felisa A. *et al.* 2018. “Body size downgrading of mammals over the late Quaternary.” *Science.* 360(6386):310-313. DOI: 10.1126/science.aao5987: “We demonstrate that size-selective extinction was already under way in the oldest interval and occurred on all continents, within all trophic modes, and across all time intervals. Moreover, the degree of selectivity was unprecedented in 65 million years of mammalian evolution. The distinctive selectivity signature implicates hominin activity as a primary driver of taxonomic losses and ecosystem homogenization”



As a result of this long-term displacement of wildlife by *Hominins*, it was inevitable that wildlife species would become a minority presence on the Earth compared to that of the *Hominin*. Recent studies estimated the relative biomass between the remaining vertebrate populations of wildlife on Earth and the biomass of the current *Hominin* population — including its domesticated animals. The results are startling. Almost all accounted for vertebrate biomass on Earth consists of just *Hominin* and their domesticated animals.

Vertebrate wildlife — Elephants, carnivores, beavers, elk, and the fish in the rivers — now constitute less than five percent of vertebrate biomass on the Earth. A 2018 report in the journal of the *Proceedings of the National Academy of Sciences* concluded that the total biomass of all global vertebrate wildlife species is now an order of magnitude less than the current world population of people. **FN29** If the combined global biomass of all domesticated animals is added to the mix, then about ninety-five percent of all terrestrial vertebrate biomass on Earth is accounted for just by the combined weight of people and domesticated livestock (cows, sheep, pigs, fowl etc.). This statistic alone brings sharp focus to the reality of the impending Climax for GME6. After thousands of years of being decimated by *Hominin*, vertebrate wildlife species are now a vanishing minority of the inhabitants on the Earth.

A major historical tipping point for Life on Earth was reached and largely ignored. The Earth has now gone from a planet whose biomass was dominated by vertebrate wildlife— where *Hominin* and its livestock were a minority presence — to one where it is now the vertebrate wildlife belongs in the minority — and a minority that is declining daily. The Earth’s surface is

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<sup>29</sup> Phillips, Rob. *et al.* 2018. “The Biomass Distribution on Earth.” *Proc. Nat. Acad. Sci.* 15(25):6506-6511: “Finally, we highlight that the mass of humans is *an order of magnitude higher than that of all wild mammals combined* [emphasis added].” [doi: 10.1073/pnas.1711842115](https://doi.org/10.1073/pnas.1711842115).

rapidly being terraformed by *Hominin* and its technology as a place for people and that is it. The Earth is a place with declining wilderness and with very little vertebrate wildlife.

The Earth's surface now constitutes an expanse where *Hominin* live and play that is punctuated by maintained parks containing an increasing percentage of vertebrate wildlife remaining on Earth. In fact it is likely that a large percentage of the more popular remaining wildlife species will themselves be subject to efforts to domesticate them to make them more compatible with the needs of the *Hominin*. Certain wildlife species will be domesticated to make them more entertaining and compatible with tourism for the day that they will only be found in maintained parks. For example lions will be bred to keep their formidable appearance and their ferocious roar, but their behavior will be genetically altered to make them gentle as kittens so that they can be petted and played with by children in the tourist parks. This is the only places they will be found after their natural habitat vanishes.

. Using the numbers from the above cited *PNAS* report, if the hominin population expands its use of habitat by just one percent over the next eight decades (.95 percent), it will likely wipe out almost all remaining (i. e. .5 percent of vertebrate biomass) vertebrate wildlife, both as measured in number of species and the number in a species. Other calculations of relative biomass measures between hominin and non-vertebrate species is as indicative that a significant tipping point may have been crossed. The pendulum is unlikely to swing back in the other direction.

Despite the growing evidence of the collapse of wildlife populations as part of the long history of *Hominin* development of the Earth's surface, most of the Public find it hard to believe that wildlife populations are quickly declining and that most vertebrate species will be lost. Amazingly, academics and EINGOS do not debate on whether it is inevitable. Wildlife is now so insignificant to civilization in developed countries that no one notices the impact of the

historical loss of wildlife nor the increase rate of its loss. The fact that they do not is part of the tragedy of the GME6. It is the quintessential manifestation of the often expressed “Tragedy of the Commons.” At most, the Public now takes news of wildlife losses as a symptom of their alarmist concerns over anthropogenic climate change. Vertebrate wildlife extinction is not upsetting *per se* but only as evidence of *Hominin’s* self-annihilation from causing global climate change. Yet the “salt in the wound” for wildlife facing extinction is that the public sees wildlife losses as only temporary and will cease when the threat of “existential” climate change ends by just having international regimens implemented to stop it. **FN30, FN31**

This delusion is one of the reasons why the mass extinction of vertebrate wildlife is inevitable in the United States. The alarmist obsession by government and EINGOS/WINGOS with climate change is evidence that they serve only popular concerns. Climate change appeals offer a *faux* cause for wildlife destruction that offers them more donation money and the opportunity to deflect public concern away from increasing GDP and population in the United States as the reason for mass extinction in the United States. **FN32**

The current collapse of vertebrate wildlife populations is not just an emergent phenomenon. Any attempt to blame these losses as evidence of a recent “crisis” involving climate change is wholly a fool’s tale. Climate interested NGOs (“CLINGOS”) will admit to wildlife losses to use these losses as tangible evidence for the destructive impacts of climate

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<sup>30</sup> Barnosky, Anthony. 2015. “Transforming the global energy system is required to avoid the sixth mass extinction.” *MRS Energy & Sustainability*. 2(e10). doi: 10.1557/mre.2015.11.

<sup>31</sup> Van Wormer, E. *et al.* 2020. “Viral emergence in marine mammals in the North Pacific may be linked to Arctic sea ice reduction.” *Sci. Rep.* 9:15569. doi: 10.1038/s41598-019-51699-4.

<sup>32</sup> Trisos, C. H. *et al.* 2020. “The projected timing of abrupt ecological disruption from climate change.” *Nature*. doi: 10.1038/s41586-020-2189-9.

change. But for *Hominin* from the start of civilization, wiping out wildlife was intended to lead to mass extinction. This extermination is so much a part of *Hominin* identity that it now does not even notice the impending Climax of mass extinction that it worked so long and so hard to accomplish. Now a hundred thousand years later after it slaughtered its first herd of Woolly Mammoths and now numbering in billions sprawling across all the lands of the Globe it can hardly notice its victory in eliminating wildlife — and even evolution itself — in its path to civilizing this planet. **FN33** Any claim that mass extinction is only an emergent phenomenon is completely wrong.

First let it be established that *Hominin*'s deliberate destructions of wildlife populations and their native habitats dwarves any detrimental impact on people currently imparted by climate change — either of natural or of anthropogenic origin. Climate change may appear as a statistical future possibility in some proposed computer model, but there is no published evidence that it is a big part of most people's day-to-day experience in the United States. The claim is also strikes many as counter-intuitive. Most people equate a temperature shift of two degrees to be generally a good idea. To tell anyone at dawn that the day's temperature will rise to by two degrees would strike most folks as good news. Climate change is currently modeled by international regimes who have pledged themselves to stopping what they still as yet cannot convince most to be bad enough that they would be willing to topsy-turvy their lives to stop it. Regardless, climate change impacts will only insignificantly accelerate Climax of GME6 by 2100 AD in the United States.

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<sup>33</sup> Wilderness is the “mother lode” of evolution. The greatest biodiversity is found in undisturbed wilderness like in Appalachia or the Amazon rainforest. If areas of wilderness are lost in the United States, evolution will largely be shut down. Whatever species are left in deficient habitat will not evolve properly but become domesticated to survive if possible within the *Hominin* built landscape.

However, alarmism demands compliance. The United Nation Environmental Program's ("UNEP") 2019 review of global biodiversity considers climate change as only making a minor contribution to future loss of biodiversity on a global level through 2100. **FN34** This report was a meta study that reviewed hundreds of the most respected peer reviewed articles on the subject. It reflected the consensus of scientific opinion that is widely accepted. One of the only known credible research documenting climate change adversely impacting a vertebrate species focused on the impact of temperature change on desert dwelling lizards living on the thermal edge of survival. **FN35**

Regardless of these realities, now there is a recent and developing trend in top ranked scientific journals to publish papers claiming without sufficient empirical evidence that climate change is going to devastate wildlife in the immediate future. These papers claim that it will be only climate change WITHOUT any help from habitat destruction that will cause mass extinction. A 2019 article contains a claim by an EINGO that most bird species in the United States will soon be devastated by climate change. **FN36** Climate change alarmism is actively diverting resources and attention away the arresting of the Climax. Employees for an EINGO got their political position that climate change was threatening the vast majority of species listed as endangered under the Endangered Species Act published in the journal *Nature*, They did this

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<sup>34</sup> IPBES. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, et al. (eds.). Bonn (Germany): IPBES secretariat. 56 pages. <https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

<sup>35</sup> Sinervo, Barry. 2010. "Erosion of Lizard Diversity by Climate Change and Altered Thermal Niches." *Science*. 328(5980):894-895. DOI: 10.1126/science.1184695

<sup>36</sup> National Audubon Society. 2020. *Two-thirds of North American birds are at increasing risk of extinction from global temperature rise*. Retrieved on 20 April 2020 from (<https://www.audubon.org/climate/survivalbydegrees>).

without conducting any research on a single species or citing any other research on these species to back up their claims of adverse impact. **FN37**

The single most significant and dominating cause in the modern era driving forward GME6 in the United States and elsewhere is simply the exponential increase in the *Hominin* population and the resulting anthropogenic destruction of wildlife habitat (e. g. conversion of forest to agricultural use, urban sprawl, deforestation etc.). The second leading cause for vertebrate wildlife extinction is hunting and its commercial harvesting (i. e. poaching and capture) in the trade of exotic animal products (e. g. ivory, aphrodisiacs, lucky charms). Another significant cause is the invasion of alien species. **FN38** Alternatively climate change has no determinative adverse impact on the survival of almost all know vertebrate endangered species in the United States. By 2100 AD most vertebrate wildlife species will be extirpated by habitat destruction and the other cited major factors well before they feel any significant impact from possible altering of the environment by climate change from natural causes or otherwise.

Wilderness is the “mother lode” for biodiversity. The biological diversity of wildlife species is at its greatest in untouched and extended areas of wilderness. Wilderness is also the crucible for the evolution of new species. It supports evolution at maximum rates. In wilderness ecosystems the rates of extinction and speciation for wildlife species are largely in balance. For every species that disappears a new one evolves. Interestingly, after the prior five GME, the quantity of wildlife species diversity returned to the same level that existed prior to the onset of

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<sup>37</sup> Parmesan, C. & Yohe, G. “A globally coherent fingerprint of climate change impacts across natural systems.” *Nature* 421:37–42 (2003). DOI: 10.1038/nature01286.

<sup>38</sup> Clavero, Miguel. *et al.* 2009. “Prominent role of invasive species in avian biodiversity loss.” *Biological Conservation*. 142(10):2043-2049. DOI: 10.1016/j.biocon.2009.03.034

each global mass extinction. The level of species biological diversity in wilderness ecosystems tends to remain a constant over historical periods of time. **FN39**

Wilderness maybe seen as largely a subjective thing that encompasses a sense of size and loneliness, fear and awe, and pure wonder and adventure. However, there is established scientific consensus that wilderness is at the places where people are not. The Wild Foundation defines wilderness as “The most intact, undisturbed wild natural areas left on our planet – those last truly wild places that humans do not control and have not developed with roads, pipelines or other industrial infrastructure.” **FN40** The International Union for the Conservation of Nature defines “wilderness areas” as “Large unmodified or slightly modified areas that retain their natural character without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition” **FN41** These wilderness areas can be deserts, tundra forests, rain forests and Oceans. The highest possible species diversity still existing on Earth is in the remaining areas of wilderness. Any encroachment on wilderness by *hominin*, by the very definition of wilderness, will decrease the abundance, geographic range, and the number of existing species of wildlife in the area covered by that wilderness.

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<sup>39</sup> R. V. Solé, et al., *Recovery after mass extinction: evolutionary assembly in large-scale biosphere dynamics*, Phil. Trans. R. Soc. Lond. B357697–707 (2002)

<sup>40</sup> Wild Foundation 2020. Retrieved 20 April 2020 (<https://www.wild.org/how-we-work/policy-mgmt/defining-wilderness/>): “Despite its many subjective values, the word wilderness is not so elusive that it defies definition. Broadly speaking, The WILD Foundation defines wilderness areas as: The most intact, undisturbed wild natural areas left on our planet – those last truly wild places that humans do not control and have not developed with roads, pipelines or other industrial infrastructure.”

<sup>41</sup> IUCN. 2020. Retrieved 20 April 2020 (<https://www.biodiversitya-z.org/content/iucn-category-ib-wilderness-area>).

The measure and effective assessing of lost wildlife by anthropic activities in the United States requires reliable data. A reliable assessment begins with the ongoing extent of the anthropic destruction of wilderness since 1970. **FN42** Wilderness has experienced a spectacular decline since 1970 both globally and in the United States. **FN43** All available evidence shows that the most relevant cause of GME6 is the increasing geographic breadth and numbers of global anthropic population. *Hominin* are now in another exponential increase owing to recent advances in medicine, agriculture and international governance that favors generous treatment of suffering indigent populations in third world countries. Falling mortality rates for the poorest *Hominin* and the increasing survival of even the poorest of *Hominin* through the full extent of their breeding years has predictably resulted in an exponential increase in population in the very areas on Earth that contain remaining wilderness.

The direct byproduct of the global growth of the populations of *Hominin* is the increasing abundance of legal immigration into the United States and European nations that is mostly responsible for increasing these nations population. The accelerating economic growth of developing countries supercharged by population growth, is fueling the 2100 AD Climax of the GME6.

Other studies show that the decline in wilderness areas in the Ocean are even more extensive than the decline in wilderness areas on land. A 2018 published study evaluated areas of

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<sup>42</sup> Because of the passage of federal and state statutes during the 1970's that require routine environmental review, surveys of wildlife on lands impact by government and private projects commenced. The survey data by law is in the public trust and is totally available to the scientific and public policy workers.

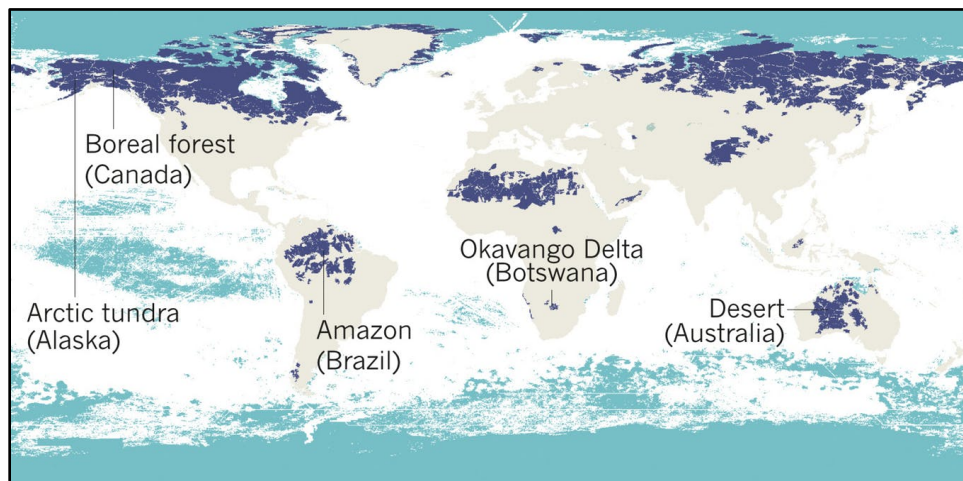
<sup>43</sup> Watson, James E. M. *et al.* 2018. "Protect the last of the wild." *Nature*. 563 (7729)27-28. DOI: [10.1038/d41586-018-07183-6](https://doi.org/10.1038/d41586-018-07183-6).



marine habitat for the presence of anthropogenic stressors like commercial fishing, pollution etc. in classifying marine areas as wilderness. **FN44** The study found that —

“Our method identified 13.2% (55 million km<sup>2</sup>) of the world’s ocean as global marine wilderness, primarily located in the high seas of the southern hemisphere and at extreme latitudes. ... We found that only 4.9% of global marine wilderness (2.67 million km<sup>2</sup>) is inside MPAs [Marine Protection Areas], despite 6.97% of total ocean area being under protection.”

A key observation was that the relative lack of remaining marine wilderness in comparison to terrestrial wilderness was that the Ocean are not owned by anyone or any nation. Anyone can commercially exploit the marine environment especially outside the ECZ of nations with little impunity or restraint. Pirate commercial fishing is rampant on the high seas as an example. The UN has yet to implement any regime that directly attempts to protect marine wilderness and compels member nations to protect and preserve marine wilderness areas.



**Figure 1:** Remaining wilderness areas. Dark blue =land & light green = Ocean.

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<sup>44</sup> Jones, Kendall. *et al.* “The Location and Protection Status of Earth’s Diminishing Marine Wilderness.” *Current Biology*. 28(15):2506–2512. DOI: 10.1016/j.cub.2018.06.010

A further review published in *Nature* in 2018 assessed the lack of any formal efforts to directly protect wilderness areas under international environmental protection regimes. **FN45** This new study noted the importance of intact, continuous and non-fragmented wilderness areas for preserving the Earth's biodiversity. —

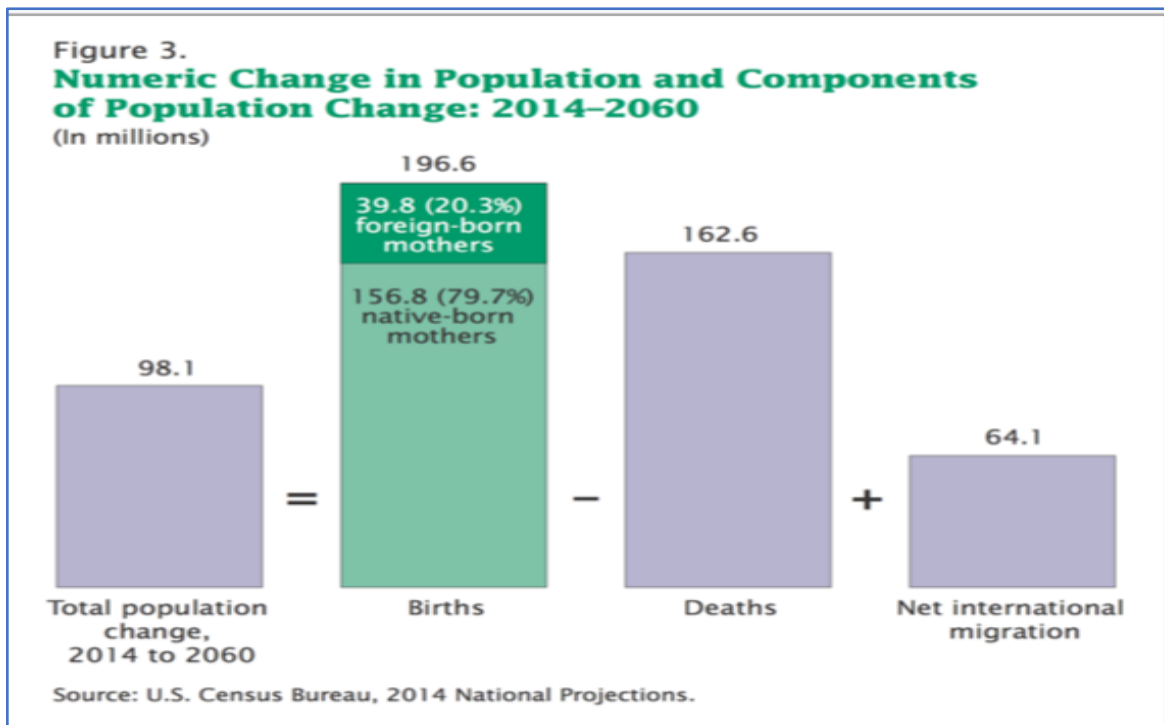
“Wilderness areas are now the only places that contain mixes of species at near-natural levels of abundance. They are also the only areas supporting the ecological processes that sustain biodiversity over evolutionary timescales. As such, they are important reservoirs of genetic information, and act as reference areas for efforts to re-wild degraded land and seascapes.”

The continuing increase in the number of people on Earth is single greatest cause for the continuing global destruction of wilderness and wildlife. The increasing number of people and their spread across the terrain to destroy wildlife habitat in order to convert the land to serve their development and residential needs is the factor driving the GME6 to Climax in the United States.

The increasing United States population is mostly the result of the increasing immigration there from the globally expanding population of poorer nations. The United States Census Bureau estimates that the US population will increase by about 100 million people by 2060. Within the next several decades the population of the United States will increase by a half just from migration from mostly lesser developed nations to the United States. This expected increase in the US population on its own will negate any expected future efforts by its government agencies and EINGOS to deter its economy's precipitating the Climax for GME-6<sup>th</sup> around 2100 AD.

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<sup>45</sup> Watson, James. *et al.* 2016. “Catastrophic Declines in Wilderness Areas Undermine Global Environment Targets.” *Current Biology*. 26 (21): 2929–2934. DOI: 10.1016/j.cub.2016.08.049.



**Figure 2:** Increase of 98 million in population of USA by 2060 from Immigration

The massive influx of hominin from immigration will also negate any effort by the United States government to prevent any future contribution to raising the average global mean temperature by 2 degrees Celsius by 2050. Despite these incontrovertible and accepted adverse impacts on the environment supplied by immigration, the United States government still refuses to conduct the legally required review of the adverse impact from immigration on the environment despite its legally authorizing millions of individuals to annually take up residence in the US.

While studies of the fossil records before and after the first five mass extinction events show an eventual increase in biodiversity after a mass extinction that returns to an equal level of biodiversity existing before the mass extinction event, the Climax of GME6 is unlikely to result in a similar historical recovery of biodiversity. No matter how long the wait, there will be no arising of new species from evolution's vault. Wilderness — the factory of vertebrate speciation

— will be gone in the United States and not return. After the Climax the *hominin* will maintain their commercial development of the lands and the seas that they now ruthlessly occupy and do not share with wildlife. Because of the continuing *Hominin* use of all former wildlife habitat after the Climax, there will be no evolution of new species after the Climax that will restore the lost biodiversity resulting from the GME6.

GME6 will not simply extirpate almost all United States vertebrate species. It will result in the extinction of evolution itself. There will be no more “natural selection” but rather artificial breeding and genetic modification producing desired new varieties of domesticated animals. The extinction of wildlife occurring during the GME6 will constitute the last global mass extinction event. There will be no seventh since there will be no renewed biodiversity of wildlife after the GME6 has occurred after the earlier five mass extinctions of wildlife species. The former habitat of those extinct wildlife species will be for the foreseeable future either a parking lot, a field of soybeans, a housing development, or the town dump. After the Climax there will be no more ecosystem for evolution to mix its ingredients, reshuffle its genetic wildcards, in order to produce its new results. Wildlife will, more or less for the most part, pass out of existence on the Earth until visitors from the Milky Way take advantage of Earth’s newly vacant spaces.

The fact that GME6th started in the Pleistocene and is not the recent product of the current crisis in environmental destruction has been recognized for decades. There have been continuous dire warnings from at least the 19<sup>th</sup> century onward that alerted to the destruction of all wildlife across the globe by *hominin*. Finally, by 1994, many authors from that decade and afterwards published articles presenting quantitative evidence that the mass extinction of wildlife

was well underway and was heading to a soon to be realized Climax. **FN46** Even by 1970 there had been a long history of scientists and conservationists publishing articles expressing their concern and alerting both the public and the science community to the ongoing destruction of wildlife and wildlife habitat incidental to the industrialization and commerce of the United States.

The present day continuing destruction of the remaining wilderness and wildlife in the United States – despite the passage of comprehensive laws by state and federal governments providing for the possibility of stopping wildlife extinction — suggests that United States between 1990 and 2010 made a choice as a society to increase its GDP, its economy and its population size without any meaningful attempt to arrest the expected concomitant extirpation of most vertebrate species of wildlife and the wilderness habitat required for their existence.

Clearly just passing laws, donating to EINGOS, watching the BBC's many wildlife documentaries, and going to zoos/aquaria has been shown, just from the existing trend to a GME6 Climax by some foreseeable date, that these activities by the Public are not enough to stop the mass extinction of vertebrate wildlife in the United States or to restrain the economic development that is causing it.

But why should it?

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<sup>46</sup> Wipple, William. & 15,364 scientists from 184 countries. 2017. "World Scientists' Warning to Humanity, Bioscience: A Second Notice." *BioScience*. 67(12):1026–1028. [DOI: 10.1093/biosci/bix125](https://doi.org/10.1093/biosci/bix125)

## CHAPTER II

### **The Inevitability of the Mass Extinction for Vertebrate Wildlife in the United States**

The Climax of the GME6 can now be seen as inevitable considering the ongoing social forces and development activities causing it across the United States. The ongoing destruction of wildlife habitat to facilitate ongoing economic growth and annually increasing GDP cannot be seen as stopping and more likely to increase. Additionally the increasing population growth of the United States just from immigration will continue without question into the foreseeable future and well beyond 2100 AD. The only variable that scales the date of the Climax's occurrence is how much wildlife habitat is actually left and how fast is it being gobbled up or displaced by anthropogenic development. It now appears to be inevitable that the relentless growth in GDP and population in the United States — and resultant increasing reduction in wildlife and its wilderness habitat — cannot help but sooner rather than later wipe out most species of the vertebrate wildlife that was inhabiting the United States in 1970.

This study addresses the four major concerns to the possibility of GME6th existing and its Climax arriving in the foreseeable future:

- 1) Whether the mass extinction of vertebrate wildlife is TODAY nothing less than a fact for TOMORROW in the United States.
- 2) Why there is serious effort being made right now — pursuant to legal, economic, political and scientific activities — that offers any significant opposition that could stop or significantly delay the GME6th Climax by 2100 AD.
- 3) Did the United States EINGOS, society and government already made decisions by 2010 to sacrifice vertebrate wildlife to achieve continuing GDP and population growth despite the earlier passage of the ESA.

- 4) Is it possible that some social and/or economic movement will emerge in the United States in the next few decades that will override the current national inertia to arrest GME6 in to prevent the Climax by 2100 or any point in the future?

As has been demonstrated *supra*, it appears that the prevailing reality is that GME6 will probably Climax by the 2100 or in due course. It also appears to be an empirical fact that there is no current existing effort that in any way can be seen as significantly arresting or stopping it. These are both scientifically demonstratable facts that both appear to be categorically true as the second leads directly to from the first.

The only questions in regard to the Climax for US wildlife species are: 1) Whether the current failure to arrest GME6 represents not just an institutional incapacity but also a deliberate historical choice by the United States; and, 2) Whether a serious social and/or political effort can likely emerge in the United States over the next several decades that will possess any meaningful capability to stop GME6th or seriously delay its eventual Climax by a century or more.

If GME6 is ongoing — which seems to be incontrovertible — and if this truly indicates that there is no current dedicated conservation effort to stop it, these two realities impose a hurdle to show the possibility of any change in the *status quo* for the future emergence of an effective — and probably costly — widespread effort to slow the onset of GME6. If anything, they pose compelling evidence for the categorical inevitability of GME6 continuing to Climax. To demonstrate something will change requires a latent social potential and an ongoing historical process that would trigger that potential in the United States for change the next few decades. Is there an existing potential that will cause an emergent event that will stop GME6th or delay its Climax by at least a century? History's value lies in showing the existing bias that predicates the

future. What existing potential lies in the present that could empower anyone to be able to strive for a better world over what it is now.

What are the elements of an existing potential that will allow GME6 to be stopped in its tracks? The use of the Precautionary Principle requires that GME6 be seen as a serious threat that requires at a minimum that wildlife populations be measured to determine the reliability of its occurrence. Without a quantitative assessment to determine the extent of GME6, it is not rational to believe that any effective effort to arrest its occurrence could be implemented or adequately funded.

The first necessity in arresting GME6 would be an ongoing scientific survey effort (“Scientific Survey”) to assess the status of each vertebrate wildlife species in the United States in regard to trends for its population, its geographic range and loss of its habitat. Such an assessment means an active collection of relevant data for each vertebrate species. Without this assessment it will not be possible to scientifically determine the statistical likelihood of GME6th and to provide a possible date for its Climax. No one is going to make the commitment in resources and suffer the consequences of protecting wildlife in the United States without the demonstrated empirical proof of the existence of GME6. This analysis could not find any resemblance of such an ongoing effort in the United States. Without such an element there is little potential to convince the public that GME6 is real and needs to be immediately addressed by anyone who would find the Climax to be troubling. Without a quantifiable confidence for the Climax of GME6, little can be done to overcome its inertia nor the expected economic and political forces that will oppose the changes needed to stop it.

War is won in the will. Victory comes to those who want it more than their opponent. Who exists right now that not only opposes in principle GME6th but WILL do and CAN do what is



necessary to change what needs to be changed to stop it. And this question is not answered by pointing out that there are one or two willing souls in a crowd. Groups of willing people need to be acting in concert to amplify and effectuate their combined will to be able to do the unlikely. So the real required potential is that there be groups of people working together now, under the command of a charismatic and driven leader, that will do what it takes to stop GME6 and the Climax.

It would be obvious if there was any current effort that was effectively serving to protect wildlife from GME6. Such a protection effort needs to be ruthless and not subtle. It must be well advertised and transparent in order to obtain needed Public support. It would need to be well coordinated among many non-government organizations and federal/state agencies. It would also need to be well funded from government and private sources and that funding must be stable over several decades into the foreseeable future.

Above all, any meaningful effort to protect even a single species of wildlife would be focused on stopping or attenuating commercial or government activity that is adversely affecting wildlife habitat across the breadth of the United States. Any coordinated effort to protect most vertebrate species from GME6 would openly seek to put a brake on significant amounts of business and other economic activities that would have a negative impact on the annual growth of the United States' GDP. It would also be seeking from the government and private property owners that at least thirty percent of all arable land in the United States be forever protected as wildlife habitat and off limits to any kind of private and/or government development for any reason — including national security.

Such would be consistent with the land protection requirements for wildlife called for by international regimes to protect biodiversity. FN47 Stopping GME6 likely requires a national commitment toward wildlife preservation that would be equivalent to the level of a national emergency. It will likely have the equivalent impact on the United States economy that was inflicted by the 2020 corona virus pandemic in a single month. Trillions of dollars need to be expended to purchase & protect the required amount of wildlife habitat to arrest GME6. Thousands of biologists and other would need to organize and solely employed to the singular purpose of stopping GME6.

It is evident that there is no current attempt to effectively arrest let alone stop GME6 from reaching its likely Climax by 2100 AD. Only about \$200 million dollars is allocated in the current budget of the US Fish and Wildlife Service to pay for recovery programs for endangered species protected under the Endangered Species Act. This is inadequate to provide any ability to enhance any significant number of the ESA listed endangered wildlife's remaining populations, so they no longer need to be protected by the ESA as endangered. FN48 Almost all ESA protected endangered species remain listed as endangered and have little prospect of ever getting off the list because they will not likely be subject to any effective conservation effort.

Above all, there is now no Scientific Survey effort to establish the uncontested reality of GME6 and to provide a quantifiable basis for establishing the likely date for its Climax. The absence of a Scientific Survey for United States wildlife demonstrates that for all practical purposes there is no current or past effort in the United States to stop GME6 or its Climax.

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<sup>47</sup> The UN's Convention on Biological Diversity. 2020. *AICHI Biodiversity Targets*. Retrieved on 20 April 2020 (<https://www.cbd.int/sp/targets/>)

<sup>48</sup> Scott, Michael J. *et al.* 2002. "The Endangered Species Act: Dollars and Sense?" *BioScience*. 52(2):163–168. DOI: [10.1641/0006-3568\(2002\)052\[0163:TESADA\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2002)052[0163:TESADA]2.0.CO;2).

Without a Scientific Survey establishing the biological status of all vertebrate wildlife species in the United States, there is no rational basis to obtain the national commitment to fund any, effective effort to stop GME6 nor to summon the will to suffer the expected adverse impact on the economy in order to stop loss of most US vertebrate wildlife from GME6.

A search of the scientific literature and from numerous interviews with both government employees & NGO employees it was established that no scientist or agency employee had any awareness of an existing effort in the United States to stop GME6. In fact most interviewed officials and scientists were not able to supply any likely date for the Climax nor any hard opinion that GME6 was even occurring.

A search of relevant Internet web sites of NGOs and government wildlife agencies produced no results that indicated the existence of any coordinated and adequately funded effort attempting to significantly arrest GME6. Mostly what was found on relevant Internet websites were alarmist claims by endangered species interested NGOs (“EINGOS”) that one or more endangered species faced threats of extinctions and pleas for a viewer of their website to “take action” by giving them a donation they do little else.

Otherwise on EINGOS’ websites, there is usually an online “petition” to government agencies whose apparent underlying intention is to obtain names and email addresses of viewers to be used to solicit direct donations from them in the future. The pitch to the viewer is that the government agency should be doing something to protect a species and that is all. The sole represented conservation effort of the EINGO is to get the government agency to perform the sought for conservation act and not to support any direct conservation efforts by the EINGO itself. The call of alarm, the solicited donation and an agency petition is essentially the only

“conservation act” that is claimed on its website that the EINGO is intending to do for an endangered species conservation.

The complete failure in the United States of any Scientific Survey to establish the existence of GME6 and the date of its likely Climax, is consistent with their being no existing government agency dedicated to accomplishing this task. There is no federal or state agency existing that is dedicated solely to preserving vertebrate wildlife and its required wilderness habitat. There is environmental laws that require agencies to review to some extent their actions and projects for its impact on wildlife. Yet there is not a single federal/state government agency that is simply dedicated to overseeing the government’s protection of vertebrate wildlife for its own sake and establishing universal scientific standards for EINGOS and other agencies to follow to insure the protection of biodiversity in the United States.

There are federal/state agencies dedicated to promoting and licensing recreational hunting and commercial fishing. Unfortunately in the absence of any agency dedicated to wildlife conservation for its own sake, these agencies are assigned to implement endangered wildlife programs despite the fact they see such duties as a distraction and pose a threat to the recreational and commercial exploitation of wildlife that is their primary duty under law.

As an example, the Northern Right Whale is an endangered species. They are killed by being entangled by the very fishing gear that the National Marine Fisheries Service (“NMFS”). license for use in United States coastline. The last thing that NMFS wants to do is have their commercial fishing activities obstructed with by having to restrain them in order to protect the Right Whale. NMFS is forced to play the role of the “fox guarding the chicken coop” in the role forced on it to protect the Right Whale from itself. The result of this forces relationship is that NMFS has used its supervisory status over the Right Whale to insure that it never had to comply

with the ESA and never had to stop its killing of these whales by its licensing and regulating fishing gear that is known to routinely entangle and then kill or injure these whales.

In 2019 as a result of lawsuits against NMFS, it held hearings in Gloucester MA on its recently proposal to only “reduce” the number of entanglements caused by the fishing gear it licenses and regulates. <sup>FN49</sup> The meeting was in a hub of commercial fishing in Massachusetts. The majority of the Public attending the meeting was commercial fishermen. The only other attendees included a few volunteers and employees of two WINGOS (whale interested NGOs) and the author. There were no members from the general public attending the hearing. Since NMFS is only a fishing agency only fishermen usually attend its hearings.

At the hearing the fishermen were extremely vocal and completely opposed NMFS imposing any restraints on their fishing that would reduce their gear entangling whales. NMFS is disposed by culture and law to weigh their opposition more heavily than the support for the proposed regulations from the general Public. The WINGOS did not want to anger the fishermen and in their testimonies they apologized to the fishermen and agreed that any proposed regulations to protect Right Whales must not hurt the fishermen’s business.

If there was a dedicated agency to protect Right Whales, things may have gone differently. First off, the proposed rule would have stopped any further entanglement from happening and not just a token reduction. The hearing would have taken place in Boston MA and Concord NH. School children and the whale loving public would be the largest group of the Public attending instead of fishermen. The fishermen’s opposition would have been the muted

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<sup>49</sup> NOAA. 2019. *Atlantic Large Whale Take Reduction Plan Modifications to Reduce Serious Injury and Mortality of Large Whales in Commercial Trap/Pot Fisheries Along the U. S. East Coast*. April 2. 84 FR 37822.

one and they would be seeking only token considerations from the agency in its promulgating regulation protecting Right Whales.

After the hearing, the entire Maine congressional delegation and the state's Governor formally opposed the proposed regulations. The opposition was wholly based on the adverse impact the regulations simply "lessening" its rate of entanglement would have on the New England lobsterpot fishing industry. Because of NMFS position by law and culture of being extremely obedient to this industry and state politicians supporting the industry, NMFS has since delayed the adoption of the proposed regulations and has gone back to the "drawing board."

#### **FN50**

The lack of any existing Scientific Survey to assess actual GME6 threat to each vertebrate species and the failure to have any government agency dedicated to overseeing the protection of biodiversity and wilderness is compelling evidence that the United States has no current ongoing effort dedicated to arrest the further extent of GME6 and to stop its climax. Looking, there should be ongoing field efforts to augment to the remaining populations of all current vertebrate wildlife species in the United States and to protect their remaining geographic range which includes the remaining size of their wilderness habitats. The impact of this lack of focus as resulted in wasteful choices by federal and state agencies in allocating resources to conserve habitat for wildlife. **FN51**

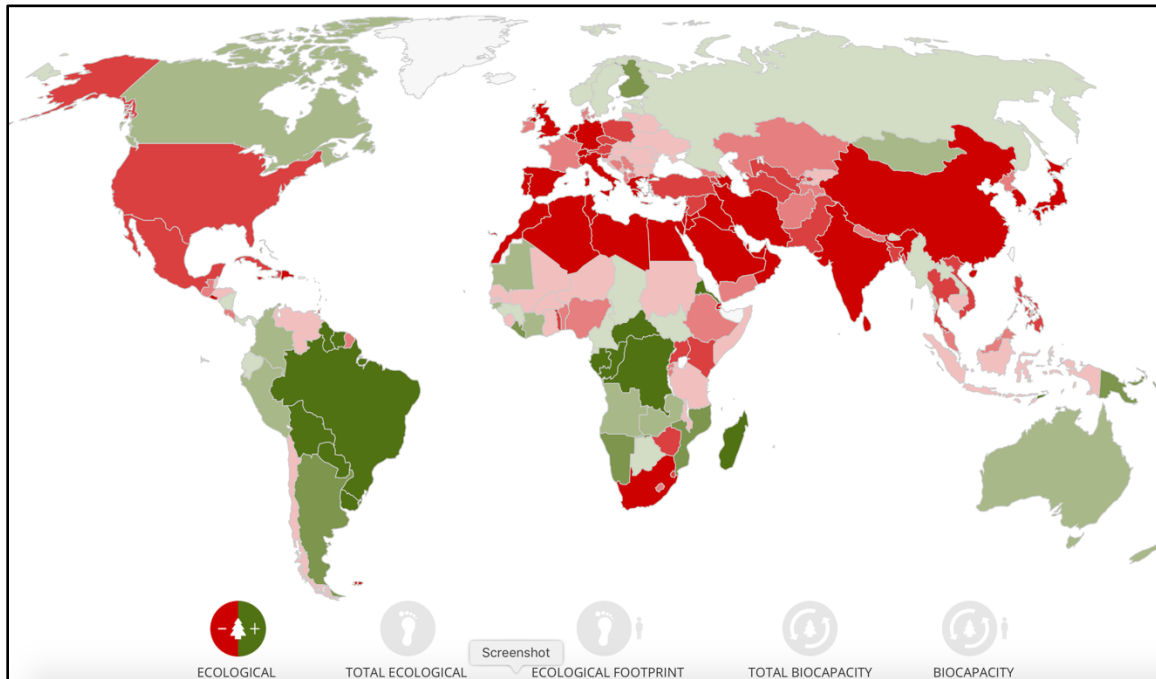
Despite the lack of a Scientific Survey to establish a GME6 threat for vertebrate wildlife, other data has been used to assess the adverse impact of the current US economy and industry on

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<sup>50</sup> NMFS 2020. Letter from the assistant administrator to the Maine Lobstermen's Association.

<sup>51</sup> Pimm, Stuart. et al. 2015. "US protected lands mismatch biodiversity priorities." *Proc. Nat. Acad. Sci.* 112(16):5081-5086. DOI:10.1073/pnas.1418034112.

natural resources in general. One of these efforts to put a number on the degree of injury to the environment by a nation's society and economic activity is the Global Footprint Network that quantizes the measure of environmental impact as an "ecological footprint."<sup>52</sup> The ecological footprint is a measure of the resource requirement for a society compared to the natural environments capability to provide those resources.



**Figure 3:** *Ecological footprint of needed/available natural resources to national economies*

Akin to the failing to historically conduct a Scientific Survey, there has been no serious scientific effort in the United States to firmly establish the negative correlation between GDP and the size of wildlife populations. There has also been so serious scientific effort to settle the other obvious question, "Does *Hominin* population size in a local area/region have a negative impact on wildlife populations in that area?" This is not a simple matter of incompetence and ignorance. In response to repeated off-the-record inquiry to scientific experts on why this is so, the routine

<sup>52</sup> Global Footprint Network. 2020. Retrieved 20 April 2020 (<https://www.footprintnetwork.org>).

response was that it was too “politically incorrect” to explore and these otherwise willing researchers feared the consequences to their careers even if they only openly asked the question.

Restraints on GDP and United States population size needs to be strategic. This needs to be done by a state-wide and national plans in order to ensure the preservation of biodiversity and population abundance of vertebrate wildlife species at 1970 levels. This would be required in order to protect wildlife while minimizing adverse impact to the United States economy.

Also consistent with a failure to conduct a Scientific Survey is the failure especially among EINGOS to support the current need to protect ALL vertebrate wildlife populations from being hunted, their parts sold in commerce, and their current habitat destroyed with few exceptions and then only under government license. It is categorically not enough to effectively oppose GME6 and its Climax by simply protecting a category of diminished and no longer viable vertebrate wildlife species – so the called “endangered species” as defined under the ESA. This policy is too little, too late and is doomed from the start to protect wildlife in general from extinction and cannot even save the depleted species it only offers protection. The cost of to all wildlife by just attempting to enhance the populations of endangered species only results in a still small and highly vulnerable population in a world that is inherently dangerous to them.

In fact, the special treatment for ESA listed wildlife may now be seen as a ruse by commercial stakeholders, EINGOS and government agencies to evade meaningful protection of vertebrae wildlife populations that are now declining but as yet not depleted enough to be ESA defined endangered species. Needless to say, if all vertebrate wildlife were reduced to endangered species status, that would be a reasonable way of defining the Climax and insuring the wholesale destruction of US vertebrate wildlife.



The other reality controlling the effective protection of wildlife species in general from GME6, is that there is neither the political will among the US populace nor the available possible commitment of economic resources to preserve all wildlife species. Survival priority for wildlife species must be managed through triage. Vertebrate wildlife species should be assigned top priority and lesser valued species (i. e. fungus & mollusks) consistent with their ecological importance should be last to board the Ark.

To the current day there has never been an attempt by scientific researchers or government agencies to assess the population trends and the declining area of the geographic range of the remaining vertebrate species in the United States. Despite the fact of overwhelming evidence in the 1990's of the collapse of wildlife populations in the United States and the increasing lost of wilderness, nothing has ever been done to quantitatively document it.

During 1970's a series of unprecedented statutes were passed by Congress that comprehensively sought to protect the environment from further destruction and to eliminate pollution and toxic substances from the air, water and natural environment of the United States. This period of time will be referred to henceforth as the "Green Epoch." The Green Epoch statutes protected fundamental environmental health like clean air and water and required that government agencies review their actions for its possible adverse impact on the environment. **FN53** One of these statutes was the 1973 Endangered Species Act. **FN54** The Green Epoch provided federal and state governments (which also adopted complementary statutes) all the legal tools necessary to stop GME6. These statutes created the Environmental Protection Agency

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<sup>53</sup> Green Epoch laws include: 1) *Clean Air Act* (1963) at Title 42, Chapter 85 §§ 7400 *et seq.*; 1) *Clean Water Act* (1972) at 33 U.S.C. §§ 1251–1387; and 3) *National Environmental Policy Act* (1970) at Title 42 U.S.C. § 4321 *et seq.*

<sup>54</sup> *Endangered Species Act* (1973) at Title 16 USC § 1533 *et seq.*

and the Council of Environmental Quality to implement and enforce their provisions. In the decades since, it is clear that the environmental laws of the Green Epoch are not being enforced to stop the ongoing decline of the vast majority of the United States wildlife populations over their historical geographic range. These laws have only been enforced successfully to improve the quality of the urban and suburban environment for people, providing clean air and water to most. This should not be a surprise to anyone. That is what they were intended to do.

The Green Epoch laws could be used with the ESA to effectively oppose GME6, but the government and society of the United States chose not to do this. For example, the ESA prohibits any physical interaction with its protected endangered species without authorization to do so. This prohibition could have been routinely enforced to protect endangered species populations from further habitat loss and even stopped unbridled population increase in the United States from its immigration policy. This would be as routinely accomplished as the enforcement of a “no fishing without a license” policy. However, the government has chosen consistently to refuse to enforce except in special cases the ESA’s prohibitions against hurting endangered wildlife.

The evidence in 2020 for a lack of opposition to GME6 is as obvious as the lack of light in a dark room. The failure or refusal to arrest GME6 and the mass extinction of vertebrate wildlife in the United States is available to document. If GME6 was being arrested it would be unavoidably obvious. There would be billions of dollars being spent and many thousands of “soldiers” going to battle. In many ways the arresting effort would have the appearance of a response to a global pandemic, one that was not caused by an angry virus but by eager *Hominin* seeking universal economic development of the Earth. There should be a call from political

officials calling for the Public to personally sacrifice to save the Earth's wildlife. Factories would be disassembled. Workers would be laid off from their jobs to insure forever wilderness. There would be a moratorium on immigration into the United States. The corporate media would be covering stories of wildlife protection and the sacrifices being made by people on a daily basis. But none of this is happening. There is no real effort afoot to stop the imminent mass extinction of vertebrate wildlife in the United States.

So the GME6 Climax is inevitable for most vertebrate species in the United States. But considering the cultural history of western civilization and in the United States itself expressing sentiment toward wildlife and the natural world, the current evidence that is showing no real effort to arrest GME6th in the United States is more than curious. It begs an assessment for the reasons behind the United States' current tolerance for the extinction of its native wildlife.

There must be some structural social forces at work that underlie what is clearly more than mere apathy.

### CHAPTER III

#### Why Protect Wildlife from Mass Extinction at All?

Is mankind the species that only causes mass extinction of wildlife and not the heroic one that stops it? Certainly since the *Hominin* seems Hell bent on continuing to wipe out wilderness and wildlife in order to maintain GDP and population growth, there needs to be a significant motivation for them to put the brakes on their ongoing GME6 and even more motivation to actually stop its Climax in the foreseeable future. So what possible motivation can be found to offset *Hominin* desire for economic and population gains that are solely responsible for the ongoing devastation of wildlife and wilderness in the United States?

As early as the 1950's scientists in the United States worried about the obvious loss of biodiversity happening in front of them commented that there are three categorical reasons to inspire *Hominin* to possibly protect wildlife biodiversity and abundance from their anthropogenic destruction: 1) religion, 2) aesthetics and/or intellectual, and for 3) pragmatic and practical reasons. **FN55** The first two categories only apply only to a minority of people and carry very little political capital or persuasive value to counteract economic and population growth. That said, E O Wilson wrote an entire book on the subject of urging the importance for individuals to possess *Biophilia* or the "love of Life" for all living things as the ultimate effective basis for insuring the survival of both wildlife and people. **FN56**

In 2015, England's *BBC* published a story on what it would take to save the Earth's biodiversity from anthropogenic destruction. It claimed that only lots of money and a popular

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<sup>55</sup> Elton, C. S. 1958. *The Ecology of the Invasion of Animals and Plants*. London(UK): Methuen.

<sup>56</sup> Wilson, E. O. 1984. *Biophilia*. Cambridge (USA): Harvard University Press: "*Biophilia* is Edward O. Wilson's most personal book, an evocation of his own response to nature and an eloquent statement of the conservation ethic. Wilson argues that our natural affinity for life—biophilia—is the very essence of our humanity and binds us to all other living species."

recognition that wildlife and wilderness provides serious economic benefits to civilization would offer any chance of stopping GME6. **FN57**

The *BBC*'s reporter was sympathetic to protecting wildlife but recognized that huge hurdles had to be overcome in bringing back endangered species left behind by social and economic progress –

“On the face of it, there are plenty of reasons why we shouldn't bother to save endangered species. The most obvious is the staggering cost involved. One study in 2012 estimated that it would cost \$76 billion (£49 billion) a year to preserve threatened land animals. Saving all the endangered marine species might well cost far more. Why should we spend all that money on wildlife when we could spend it to stop people dying of starvation or disease?”

The economic costs in implementing programs that proactively buy land for wildlife survival and pay for propagating animals in captive breeding facilities are hugely expensive if even possible. It has historically mostly resulted in just a barely viable population of animals. **FN58** NOAA is now spending \$10 million per year on Northern Right Whale conservation. Yet the Right Whale population is still declining and being killed by entanglement in fishing gear and ship strikes. The California Condor has been subject to a multi-million dollars annual conservation effort since 1973 when it was among the first species protected by the Endangered Species Act. Yet almost five decades later and a \$100 million dollars expended to pay for these efforts, the Condor still has no

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<sup>57</sup> Marshall, Michael. 2015. “It will cost billions of dollars to save all the world's threatened species. What's in it for us?” *British Broadcasting Company* (UK). July 14th. <http://www.bbc.com/earth>.

<sup>58</sup> U. S. Fish and Wildlife Service. 2016. *2016 Federal and State Endangered and Threatened Species Expenditures*. Washington DC: U. S. Department of Agriculture. [https://www.fws.gov/endangered/esa-library/pdf/2016\\_Expenditures\\_Report.pdf](https://www.fws.gov/endangered/esa-library/pdf/2016_Expenditures_Report.pdf).

sustainable population in the wild. Condors are still routinely poisoned from scavenging prey previously killed by lead bullets. **FN59**

In fact, wildlife populations now pose a Public health hazard to Hominin as the primary source for new viral diseases. Zoonotic diseases account for over seventy percent of infectious disease experienced by Hominin. They also constitute among the deadliest virus. Diseases like AIDS, HIV, Ebola, SARS, Swine Flu & Bird Flu are all Zoonotic diseases caused by virus that migrated from wildlife populations to people. These innovative virus are carried by wildlife and become infectious to *Hominin* whenever wildlife and domesticated animals intermix. They are especially deadly because Hominin have not developed any prior immunological resistance to them. In 2020, a corona virus zoonosis is causing a world-wide pandemic that in just one month cost the US economy over two trillion dollars in damages and over a thousand *Hominin* deaths with more extensive losses in treasure and souls to come. **FN60**

According to the United Nation's World Health Organization –

“Zoonoses are defined as those diseases and infections naturally transmitted between people and vertebrate animals. Examples are Rift Valley fever, SARS, pandemic influenza H1N1 2009, Yellow fever, Avian Influenza (H5N1) and (H7N9), West Nile virus and the Middle East respiratory syndrome coronavirus (MERS-CoV) reported in the recent past. It is estimated that, globally, about one billion cases of illness and millions of death occur every year from zoonoses. Some 60% of emerging infectious diseases that are reported globally are

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<sup>59</sup> Finkelstein, Myra E., *et al.* 2012. “Lead poisoning and the deceptive recovery of the critically endangered California condor.” *Proc. Nat. Acad. Sci.* 109(28):11449-11454. DOI: 10.1073/pnas.1203141109

<sup>60</sup> Johnson, Christine K. *et al.* 2020. “Global shifts in mammalian population trends reveal key predictors of v spillover risk.” *Proc. R. Soc. B.* 287(1924). doi: 10.1098/rspb.2019.2736.

zoonoses. Over 30 new human pathogens have been detected in the last three decades, 75% of which have originated in animals.” **FN61**

The economic loss and suffering caused by wildlife to *Hominin* just from zoonotic diseases poses a significant reason for *Hominin* society not to protect wildlife and wilderness from any losses when doing so is not just potentially costly in GDP and lives – but also does not pose any real likelihood of success for recovering endangered species populations.

When any other possible consideration for a reason to protect wildlife is to ask if wildlife provides any utilitarian service to *Hominin* outside of food or clothing – the traditional use of wildlife. The EINGOS are able to exploit the ESA and other environmental laws for their own gain, often claim that wildlife provides “ecological services” to *Hominin*. They mean to go backwards to when rivers were able to process sewage or horses supplied manure as fertilizer. They now claim that wildlife acts as a carbon sink , supplies oxygen etc. The “environmental services” argument may have made sense to Neolithic hunter societies but not now.

The *Hominin* have been “terra forming” the Earth using technology since the start of the Industrial Revolution to take natural processes out of the loop of its survival needs. The most famous example of that was the innovation of the Haber Process in the 19<sup>th</sup> century as an artificial nitrogen fixation process that is used to manufacture ammonia straight out of air without using any other organic sources. The result was the artificial - production of fertilizer and the production of nitrogen-based feedstocks for the

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<sup>61</sup> World Health Organization 2020. *Zoonotic disease: emerging public health threats in the Region*. Retrieved 20 April 2020 (<http://www.emro.who.int/about-who/rc61/zoonotic-diseases.html>).

manufacture of dyes etc. Another example is the manufacture of plastics straight from petroleum eliminating the need for ivory, rubber plants, and other naturally derived structural materials. Today “sustainable” energy production using wind power and solar cells eliminates the need to burn wood and use oil. The Amazon jungle in the future will no longer be necessary to serve as a carbon sink because synthetic processes will be employed to harvest CO<sub>2</sub> directly from the atmosphere.

Also as noted *supra*, vertebrate wildlife populations now represent a mere fraction of the vertebrate species biomass left on Earth. Vertebrate wildlife species in the United States no longer serve any of survival needs of people outside of recreational hunting and ecotourism. Bacteria, trees and plants may provide “ecological services” to Hominin for a bit longer until technological innovations eliminate the need any longer for their provided services. But right now the remaining vertebrate wildlife populations in the United States have almost no utilitarian value to *Hominins* any more than insect pests like cockroaches supply (granted there are bird and bat species that serve as plant pollinators). And it must be said that the commercial harvesting of wild fish species provides only “luxury foods and pearls” that are being currently replaced by aquaculture fisheries (e. g. Atlantic salmon farms located on land in Maine and oyster farms in Cape Cod Bay).

If regular vertebrate wildlife populations offer little utilitarian value providing ecological services, endangered wildlife species of all taxonomic phyla offer no ecological services of any kind. A depleted and endangered wildlife species is not a benefit but a burden on society, requiring millions of dollars simply to maintain a minimal sustainable population for it. It is not categorically possible to justify recovering any endangered wildlife population for its contribution to ecological services since it



requires services itself and provides none in exchange. Interesting, no published paper has yet been discovered claiming that the loss of any vertebrate wildlife species has cost Hominin society any measurable financial loss.

Another social phenomenon that illustrates the lack of importance of vertebrate wildlife to *Hominin* societies is the adaption of people to the loss of wildlife. The amount of wildlife during the colonial era of America was easily an order of magnitude greater in numbers than today for most species. Yet few missed or regret the loss of wildlife since colonial times. Even the current loss of wildlife numbers which is significant since 1970 is rarely noticed outside of scientific journals. The reality is that people adapt to wildlife loss and historically has simply chosen to live with little if any documented regret.

If it is hard to find any economic based utilitarian value for vertebrate wildlife in the United States. But it is there. Vertebrate wildlife is the basis of generating billions of dollars for several commercial activities; 1) recreational hunting & fishing, 2) ecotourism and, 3) the emergent phenomena of the business that can be referred to as “voyeur conservation.” While the US “pet industry” generated generates about \$96 billion in sales and services, the recreational hunting industry alone – based on its killing of birds and mammals - generates about \$35 billion in sales and services (2019). The overlapping US ecotourism industry is even larger. The Outdoor Industry Association claims that in 2018 almost a trillion dollars was spent on outdoor recreation – which includes hunting & fishing industries along with hotels and National Park visitations, etc. **FN62**

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<sup>62</sup> Outdoor Industry Association. 2018. *The Outdoor Recreation Economy*. Retrieved 20 April 2020 (<https://outdoorindustry.org>).

The emerging voyeur conservation industry includes zoos, aquariums, EINGOS, WINGOS (Whale Interested NGOs), commercial whale watching industry, Disney and BBC wildlife documentary media business. These industries thrive on the public's fascination with both wildlife as entertainment and its exploitation as adorable animals. Documentaries that portray wildlife struggling from "climate change" are very profitable. The BBC's 2019 "Planet Earth II" series portrayed huge adult walrus having to climb up sheer cliffs along the coast owing to their being no ice left for their use as needed hauling out platforms to rest and care for their young. The documentary shows massive walrus tumbling end to end to their deaths as they fall off these cliffs when they try to descend them to get back to feed in the sea. Such depictions of wildlife in trouble are exploited by the BBC as "conservation," from which it profits the BBC greatly, without its having to do anything about the depicted survival problems for wildlife and with no resulting costs to commerce.

Voyeur Conservation is practiced by EINGOS/WINGOS. The industry nets billions of dollars annually as tax-deductible donations to "varsity squad" corporations like the Sierra Club (which is more like Walmart's "Sam's Club"), National Audubon Society, and National Resource Defense Council and others like them. These donations are not binding in any way. These EINGOS can spend their profits as any corporation can, on its employees' salaries, business operations, and perks to its board of directors.

The EINGOS do not spend their income on costly field conservation efforts for wildlife or without the need to do costly political campaigns to restrict commerce to save wildlife – which angers potential donors, especially high-paying corporate ones. The EINGOS have found it profitable to just rely on alarmism about threats to wildlife to

extract money from the Public without any commitment needed on their part to do anything about these threats, which fulfills their needs not to cause conflict with commercial interests. FN63 The EINGOS find it still more profitable to help commercial stakeholders evade the enforcement of environmental laws and to happily characterize any lack of complete evasion by these stakeholders as “concessions” to conservation. They then boast about these small concessions as conservation victories for wildlife by them.

In practice little of the Voyeur Conservation industry’s “charitable” exploitation of wildlife leads to any effective preservation of wildlife or supplies any effective opposition to GME6. In 2020 in the United States, vertebrate wildlife has no utilitarian value *per se* to inspire *Hominin* to preserve these species and the wilderness they require from being lost by ongoing commercial development and population growth. But there is a lot of sentimental, recreational, and entertainment value for vertebrate wildlife species in the United States to enable their profitable commercial exploitation by the Voyeur Conservation industry as long as the industry has no adverse impact on the growth of GDP and population in the United States.

The Voyeur Conservation Industry has never demanded or conducted themselves an assessment for each species of vertebrate wildlife’s population in the United States. As stated this industry — like any other that exploits wildlife for profit — only does what is good for its employees as measured by profit and its investors’ social status enhancement.

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<sup>63</sup> EINGOS’ method for soliciting cash donations is remarkably similar to that use by the televangelist industry. They both use alarmism to underlie the need to donate to them and then represent the mere fact of making a donation as bestowing a peace of mind achieving act of grace on the donator. This “peace of mind” is in part what both are actually selling to the Public. Neither the EINGO or televangelist need to do anything else for a donator except to take its money.

The industry does not recognize GME<sup>64</sup>, Instead it issue alarms of wildlife loss as a direct byproduct of its exploitation of climate change alarmism and to support its alarming claims in regards to it. It finds climate change as ideal for the industry. No one thing can be blamed for it and there is not one thing to be that that will cure the problem. Hence, pure alarmism ensures donations. There is no compelling need to perform any expensive task to solve the problem. Rather “educating the Public” and generic shaming of the oil industry suffices. **FN64**

The recreational hunting and fishing industry seek to only insure sufficient numbers of vertebrate wildlife species to serve the exploitation interests of its members. It has little interest in non-hunted wildlife species and considers their conservation needs as a threat to it vested hunting and fishing interests. It seeks the elimination of carnivores in the United States — like Gray wolves and Grizzly bears — as threats to its hunting interests. The real problem for vertebrate and endangered wildlife’s reservation, is that this industry has complete control of all state and federal wildlife agencies. The industry insures that state and federal agencies only protect their recreational interests in wildlife and do little else for wildlife, especially those that adversely impact both GDP and population growth.

In 2003, the Wildlife Society, a non-profit organization aligned with recreational hunters and fishermen, published a report assessing the conflict between wildlife

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<sup>64</sup> Monterey Aquarium. 2020. Retrieved 20 April 2020 (<https://www.seafoodwatch.org>). Monterey Aquarium’s program for, “Helping people make better seafood choices for a healthy ocean,” gives lobsters from the US lobsterpot fisheries its highest rating as a “good choice” for environmentally conscious consumers. It gives this rating despite the fact that US lobsterpot fishing gear entangles and as a result routinely kills endangered Right Whales and sea turtles. It does this because it and all other WINGOS in the US openly admit to be partners and supports of the US commercial lobsterpot and gillnet fishing industry.

preservation and the continuing growth of the United States economy. The resulting report (“Report”) recognized that a growing US economy posed a continuing threat to the health and welfare of US vertebrate wildlife and its required wilderness habitat. **FN65** But it went even farther as it assessed the possible alternatives to the current US economy that would operate so as to be benevolent to the welfare of wildlife and its wilderness habitat. The Report’s conclusion was extraordinary. It concluded only a steady-state economy would assure the survival of wildlife. It also recognized that likely development of such an economic system for the United States would only occur if it was seen as good for people independent of any concern for it being needed for wildlife’s preservation —

“For wildlife conservation to be achieved and sustained over the long term, economic growth should be reduced with the goal of establishing a more stable, sustainable economy. Because the public values wildlife, this is an achievable goal if the public fully understands the fundamental conflict between economic growth and wildlife conservation. Realistically, the public values human welfare more than wildlife conservation. Relating the steady-state economy to increased human welfare is the key for societal acceptance and wildlife conservation.”

It would seem to be a fair scientific assessment that the current United States support of an annual growing of its GDP and population is a practice that is wholly inconsistent with maintaining stable populations for its vertebrate wildlife species. There cannot be any existing legitimate motivation within the current economic and political system of the United States for preserving wildlife and wilderness from a continuing loss. Even if an EINGO started out motivated to serve wildlife, it would soon find itself corrupted and coerced by its own need to survive into supporting the existing paradigm in

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<sup>65</sup> Economic Growth Technical Review Committee. 2003. *The Relationship of Economic Growth to Wildlife Conservation, Technical Review 03-1*. The Wildlife Society. Retrieved 20 April 2020 ([https://steadystate.org/wp-content/uploads/Trauger\\_et\\_al\\_Tech\\_Review\\_Economic\\_Growth.pdf](https://steadystate.org/wp-content/uploads/Trauger_et_al_Tech_Review_Economic_Growth.pdf)).

the US. This paradigm demands the support for an annually growing GDP and national population at the expense of sacrificing wildlife and wilderness. It provides no opportunity to oppose GME6.

The above reality forces a reexamination on what is an effective basis for preserving vertebrate wildlife in the United States. In order to protect wildlife requires that the United States adopt a steady-state economy. What possibly could motivate such a revolutionary change in addition to the immediate self-interests of the Public?

It will be a MORALITY that forbids extirpating wildlife species. This is the likely most effective component of motivation for the change in the US economic system that arises in order to protect biodiversity. Morality fuels such a possible change. This is a morality that need only be possessed by just a significant minority to be effective. The majority of the populace need not be so possessed. To assist the adaption to a steady-state economy needs more than the simple expression of a “love for Life” even though such is on its own is compelling. It requires that extinction and GME6 be seen as absolutely immoral by a vocal and dedicated minority who will demand that it is appropriate to subject those that violate this morality to horrific criminal penalties.

The truth is that most Hominin do not believe there is any utilitarian need to protect wildlife from mass extinction if they do not have a personal vested interest in it not happening. This sensibility is evidenced in an op-ed piece in *The Washington Post* by a professional biologist who teaches at George Washington University. It is titled “We don’t need to save endangered species. Extinction is part of evolution and begins “The

only creatures we should go out of our way to protect are *Homo sapiens*.”<sup>FN66</sup> In his op-ed he first states --

“[S]cientists agree that we are now in the middle of the sixth such extinction, this one caused primarily by humans and our effects on animal habitats. It is an "immense and hidden" tragedy to see creatures pushed out of existence by humans, lamented the Harvard entomologist E.O. Wilson, who coined the term "biodiversity" in 1985. A joint paper by several prominent researchers published by the National Academy of Sciences called it a "biological annihilation." Pope Francis imbues the biodiversity crisis with a moral imperative (‘Each creature has its own purpose,’ he said in 2015), and biologists often cite an ecological one (we must avert ‘a dramatic decay of biodiversity and the subsequent loss of ecosystem services.’”

Then he goes on to state these observed concerns are all rubbish –

“Extinction is the engine of evolution, the mechanism by which natural selection prunes the poorly adapted and allows the hardiest to flourish. Species constantly go extinct, and every species that is alive today will one day follow suit. There is no such thing as an "endangered species," except for all species. The only reason we should conserve biodiversity is for ourselves, to create a stable future for human beings. Yes, we have altered the environment and, in doing so, hurt other species. This seems artificial because we, unlike other life forms, use sentience and agriculture and industry. But we are a part of the biosphere just like every other creature, and our actions are just as volitional, their consequences just as natural. Conserving a species that we have helped to kill off, but on which we are not directly dependent, serves to discharge our own guilt, but little else.”

This author’s straight forward opinions probably more accurately describe the viewpoint of most *Hominin* rather than that of E O Wilson on the subject of preserving biodiversity and on the question of how much effort society should expend and even suffer doing it. Such an opinion underscores the reality that only a minority of *Hominin* truly believe that biodiversity should be safeguarded with as much effort as needed even if means stopping the United States economic and population growth. This minority are the part of the citizenry that are united not just in supporting a public policy favoring

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<sup>66</sup> Pyron, R. Alexander. 2017. “We don’t need to save endangered species. Extinction is part of evolution.” *The Washington Post* (USA). 22 November. [www.washingtonpost.com](http://www.washingtonpost.com).

conservation but more in seeing that the destruction of biodiversity is completely wrong, amounts to an act of pure evil, and must be stopped whatever the cost.

Later an editorial was published in the science journal *Nature* that offered a reply to the above cited op-ed piece. **FN67** It was really a petition signed by many scientists denouncing the op-ed piece for missing the point that ethics is the ultimate underlying motive for protecting biodiversity –

“Some people felt that scientists should stick to factual evidence to maintain public credibility: it is unscientific to wade into ethical arguments. The article could be refuted on measurable (although sometimes complex or ambiguous) evidence that biodiversity is essential for sustaining society. This includes the role of species in food production, shelter, clothing, clean water, disease regulation, soil protection and ecosystem functioning as well as yet-unknown functions from the large number of species that remain to be described and studied.”

In 1987 an entomologist asserted a similar observation in a peer-reviewed article in which he asserted that insects are sentient beings that feel pain. **FN68** It states –

“For entomologists to rationally address the treatment of insect life requires going further than calling for the cataloguing of endangered insect species (Raven 1983). To deal responsibly, justly, and sensibly with issues of extinction and the moral status of insects requires a blending of ethics with biology. Fundamentally, we must establish a philosophically sound, scientifically consistent, ethical basis for our concerns regarding insects.”

A fight to protect wildlife seems as a necessity to be won by the will and not by the dollar. Fighting from the moral high ground to protect wildlife offers the only serious advantage to tip the tide of battle in favor of wildlife.

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<sup>67</sup> Antonelli, Alexandre. *et al.* 2018. “The Science and Ethics of Extinction.” *Nat. Ecol. Evol.* 2(581). DOI: 10.1038/s41559-018-0500-z

<sup>68</sup> Lockhart, Jeffrey 1987. “The Moral Standing of Insects and the Ethics of Extinction.” *Florida Entomologist.* 70(1):70-89.



## CHAPTER IV

### **The Mass Extinction of the Nation's Vertebrate Wildlife is Likely Deliberate as Part of the American Character**

The *Science of Inevitability* (“SOI”) is now in play relative to dealing with the likely demonstrated trend to GME6 in the United States. FN69 The SOI allows an examination of the present day event and related past ones to determine the probability of the likely outcome of a chain of events over time. The main principle enabling the science of inevitability is that if an event happens in a place once, it is likely to happen again and soon nearby and less likely the farther away from the original event. In other words, SOI shows that lightning does strike twice on the same place.

Considering the thousands of years path of GME6, the bar is now set high to show that there is any significant amount of uncertainty in occurrence of the Climax in the next century. In this science of inevitability assessment, the logical principle that an “absence of evidence is evidence for absence” holds sway and is wholly valid. If effective opposition to GME6 existed, if there was a significant effort to stop the imminent extinction of most wildlife species in the United States, it would be obvious since it would also be very painful to society and commerce.

Historically in the United States the Public attitude towards wildlife and its preservation developed through the leadership and the advocacy of individuals who affirmed and promoted their personal involvement with wildlife and wilderness to the public. They advocated not only for the protection wildlife and wilderness for its own sake but for its experiential value as being good for the soul of the individual and requisite for a sane and just society. They claimed that the wilderness experience insured the health of the nation and was required to support the frontier

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<sup>69</sup> Woit, Peter. 2019. “Are the Laws of Physics Are Inevitable?” *Not Even Wrong Blog*. December 17. Retrieved April 2020 (<https://www.math.columbia.edu/~woit/wordpress/?p=11513>).

values that underlie what is to be an American. As early as the 1840's, transcendentalist philosophers like Emerson & Thoreau in Concord MA advocated that nature and wildlife experience was required for full appreciation of beauty, morality and mental fitness. **FN70** Later in that century a Scottish immigrant's son John Muir and many upper-class citizens, who enjoyed hunting and camping in the wilderness, united into a national political movement, eventually attracting the personal support of then president Theodore Roosevelt, that established the first National Parks, National Forests, and statutory restraints on the commercial exploitation of wildlife.

These and others like them were the "Green Knights" of the United States that founded and laid down the philosophical basis the environment movement that culminated in the Green Epoch of the 1970's. Each Green Knight made a personal commitment to the natural environment, the wilderness and wildlife, for its own sake and for their personal experience with it. They were very successful because owing to the fact that America was largely a rural nation and most of its citizen's had direct personal contact with wildlife on a daily basis. Industry and commerce's pollution and destruction of the urban environment was viewed by rural Americans as a threat to their own quality of rural life as well as the natural world that they enjoyed.

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<sup>70</sup> Thoreau, Henry David. 1854. *Walden*. Boston (USA): Ticknor and Fields: "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. I did not wish to live what was not life, living is so dear; nor did I wish to practise resignation, unless it was quite necessary. I wanted to live deep and suck out all the marrow of life, to live so sturdily and Spartan-like as to put to rout all that was not life, to cut a broad swath and shave close, to drive life into a corner, and reduce it to its lowest terms, and, if it proved to be mean, why then to get the whole and genuine meanness of it, and publish its meanness to the world; or if it were sublime, to know it by experience, and be able to give a true account of it in my next excursion. For most men, it appears to me, are in a strange uncertainty about it, whether it is of the devil or of God, and have *somewhat hastily* concluded that it is the chief end of man here to 'glorify God and enjoy him forever.'"

Green Knights were all self-funded individuals who sacrificed their own resources to serve the cause and motivated the public to act out of similar personal motivations.

Even in the late twentieth century it was another group of Green Knights who were key to providing the Public support to persuade Congress to pass the Green Epoch environmental statutes of 1960's & 1970's. Ralph Nader was among them.

The Green Knights favorite operating paradigm was using the "Canary in the Coal Mine" parable to get support of the public for environmental legislation to get voted into law. Canaries and other birds were used in coal mines to provide a warning of bad air in the form of lethal concentrations of carbon dioxide that on occasion would flow into the mine from the coal seams. The high metabolism of these birds meant they would stop singing and even die as the lethal gas started to increase but before it reached a lethal concentration for the miners. The popularity and effectiveness of Rachel Carson's *Silent Spring* arose from its showing the public that Robins and other song birds were dying on people's front lawns from the application of pesticides in their neighborhood and that they would be next.

The Green Knight legacy provides the background to show the historical meaning of wildlife preservation in the United States. Prior to the present, protecting wildlife by Green Knights was directly equated to protecting the environment for theirs and the public's own individual health and welfare. At that time the destruction of wildlife was understood to be a harbinger of the imminent destruction of public's own health and environmental safety. This is the era of the "canary in the coal mine" paradigm. It claims that wildlife & wilderness being destroyed from environmental destruction is a dire warning to society that the public itself will soon be hurt itself. This paradigm easily applies to hunters, protecting the forest insures ample deer to hunt, but it also worked when getting public support against exponential increase in

water & air pollution facing Americans in the 1960's. Protecting wildlife in the United States in the 1970's (i. e. "canaries") meant stopping the air & water pollution from killing and poisoning Americans (i. e. "coal miners").

Today, "environmental protection" by the government and business is wholly focused on the health for people from air & water pollution, exposure to toxics, and direct injury to the Public and property values in the context of living in the urban and peri-urban environments. Wildlife experience is no longer a main feature or a focus of the legally protected environmental landscape of America. Wildlife and wilderness now serves as mostly sources for entertainment and recreational activities for the Public. If push comes to shove in stating the way it really is now, wildlife is universally viewed by society as just "feral pets" whose main benefits is akin to companionship (e. g. birds at the backyard feeder or squirrels in the park). People are now offended by the killing of individual animals but not as the destruction of wildlife species and wildlife habitat from commerce. In fact the continuing decrease of interest in generic killing of individual animals in US society has resulted in a concomitant reduction in the partial political support for wildlife that was supplied by hunters and fishermen.

In 2020, many EINGOS now view the protection of wildlife as they view protecting dogs, cats and farm animals from being cruelly abused. This means they are soliciting donations and encouraging the Public to protect wildlife as abused pets and not as a feature of the natural environment that provides them a quality of life experience. What this actually comes down to is these EINGOS profiting by soliciting caring people for money but without making any commitment to these donators that it is actually able to solve the problem they advertise.

For example, the Humane Society of the United States has a page on its website titled “Our Big Fights.” **FN71** One of these “big fights” is to stop “pet homelessness” and another is “protecting chickens used for meat.” All HSUS does is generate income by promising to lessen every kind of animal misery that some member of the public will likely give it money for it to do. But it never promises to stop the misery. How does one sincerely promise to “protect chickens from getting killed for meat?”

The problem for wildlife that HSUS causes is that it has been appointed by the National Marine Fisheries Service to serve on its decisions making task force of EINGOS and commercial fishing industry stakeholders that will decide what should be done to lessen Right Whales being entangled by fishing gear. **FN72** As with chickens being killed for meat, HSUS is seeking donations only to “lessen” the number of individual endangered whales getting entangled by fishing gear. It does not promise to stop the entanglements. This is an example of EINGOS profiting off the killing of animals but under no commitment after getting donations of cash to have to actually stop the killing of endangered animals or chickens. In fact, HSUS is also making things worse by advertising to the public that NMFS and the fishing industry is “protecting whales” when HSUS is only helping the fishing industry evade having to obey federal law which prohibits any killing of endangered species and not to just “lessen it.”

In 2020, like Elvis, the Green Knights have “left the house.” Instead of having the politics for wildlife conservation being driven by zealous individuals sacrificing their own resources to

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<sup>71</sup> Humane Society of the United States. 2020. Retrieved 20 April 2020 (<https://www.humanesociety.org/all-our-fights>).

<sup>72</sup> NMFS 2020. *Atlantic Large Whale Take Reduction Team*. Retrieved at 20 April 2020: (<https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan#the-team>).

preserve wildlife species and wilderness, now corporations are the only parties deciding the course of conservation in the United States. In 2020 EINGOS & WINGOS are using voyeur conservation to profit off the endangered status of wildlife without having to directly stop species extinction or even stop the destruction of wildlife habitat. Instead EINGOS/WINGOS and their attorneys act as “go between” for agencies and commercial stakeholders by getting appointed to government advisory boards concerning wildlife and wilderness management. They then aid the stakeholders in evading the strict enforcement of environmental laws against them. The EINGOS after compromising wildlife protection then advertise to their donators that they and the stakeholders together have protected wildlife. They routinely advertise that conservation must be done with the agreement of stakeholders for it to be effective.

There are several areas of intransigence and structural commitment to a continuously growing economy and population for the United States, that a basic SOI analysis cannot find any likely willingness to change in the status quo that will effectively prevent the GME6 Climax from happening by 2100 or shortly after this date. These areas were identified through the course of this study.

An extensive survey was done on the websites and in the news media of activities of relevant varsity team EINGOS & WINGOS as regard to vertebrate wildlife species and wilderness in the United States. Additionally, a similar survey was done for the two federal agencies assigned to supervise the enforcement of federal wildlife programs: the US Fish (“USFWS”) and Wildlife Service and the National Marine Fisheries Service (“NMFS”). Employees of EINGOS, WINGOS, NMFS and USFWS were contacted directly to be interviewed for the current study. In general, almost all these contacted parties refused to do an offered survey questionnaire, refused to discuss in depth their employers relevant programs, and

often just categorically refused all requests to be interviewed for the purpose of this study. The employees willing to be interviewed at all demanded that it be off the record and that the interviews would not be subsequently cited as even recognized to have taken place. NMFS & USFWS employees were issued a generic order by their executive administrators not to have ANY direct communications with the author as a retaliation to prevent this study's ability to collect the required information that it sought.

These areas are identified with no particular order as follows –

- A. *The strongest indicator for the inevitability of GME6 is the lack of a Scientific Survey nor any institutionalized act of agency wildlife that seeks to preserve or enhance the status of all vertebrate wildlife populations in United States society and their wilderness habitat against any diminution of either the population size of a vertebrate species and/or its geographic range.*

“Agency” refers to any deliberate action on behalf of the biological welfare for a vertebrate species native to or endemic to the United States that is seeking to preserve its continued existence into the foreseeable future. An “agent” for a species of vertebrate wildlife can be a person, an association of people, a government agency, an incorporated organization or any other organized body.

The USFWS recognizes native/endemic United States vertebrate species. The total numbers of each phyletic class of its recognized vertebrate species and the number of species of that class formally recognized as endangered species is as follows: 1) Mammals ~470 species/94 endangered; Birds ~965 species/99 endangered; Reptiles 311 species/45 endangered; Amphibians 280 species/36 endangered; Fish (freshwater) ~800 species/167 endangered. **FN73**

The USFWS is recognized officially as the sole federal agency that formally oversees for all

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<sup>73</sup> USFWS 2020. *Endangered Species*. Retrieved at 20 April 2020 (<https://www.fws.gov/endangered/species>).

other federal agencies the enforcement of the provisions of the Endangered Species Act for vertebrate species considered to have terrestrial habitats and maintains the list of all listed endangered species. For vertebrates recognized as occupying marine habitat. NMFS supervises the enforcement of the ESA's provisions for some of these species not assigned to USFWS (e. g. whales & seals).

The Precautionary Principle dictates an inventorying the populations status of wildlife species to determine if they are subject to an ongoing mass extinction event. This principle has at this date has not been adopted by the USFWS and/or NMFS and as a result they have failed to formally accept the serious threat posed GME6. The Precautionary Principle is internationally recognized as a core principle for the successful conservation of endangered wildlife. The European Union, the UN's Environmental Programme, and the International Union for Conservation of Nature ("IUCN") recognize and follow the Precautionary Principle. In 2017 the IUCN issued a policy statement on this core conservation principle –

“The uncertainty surrounding potential threats to the environment has frequently been used as a reason to avoid taking action to protect the environment. However, it is not always possible to have clear evidence of a threat to the environment before the damage occurs. Precaution – the “Precautionary Principle” or “Precautionary Approach” – is a response to this uncertainty. The Precautionary Principle has been widely incorporated, in various forms, in international environmental agreements and declarations and further developed in a number of national laws. An element common to the various formulations of the Precautionary Principle is the recognition that lack of certainty regarding the threat of environmental harm should not be used as an excuse for not taking action to avert that threat. The Precautionary Principle recognizes that delaying action until there is compelling evidence of harm will often mean that it is then too costly or impossible to avert the threat. Use of the principle promotes action to avert risks of serious or irreversible harm to the environment in such cases. The Principle is based on the recognition that a false prediction that a human activity *will not* result in significant environmental harm will typically be more harmful



to society than a false prediction that it *will* result in significant environmental harm.” FN74

Neither USFWS or the NMFS conducts any formal Scientific Survey program attempting to estimate the biological status in the United States of all vertebrate wildlife species and their required habitat. The ESA itself does NOT compel these agencies to make any kind of such survey effort for the ESA listed endangered species subject even to formal recovery formal recovery efforts by these agencies. The ESA only requires that these agencies to rely on AVAILABLE information to justify their conducting their duties under the ESA. The ESA does not require that any federal agency must do a biological survey on any non-ESA vertebrate species in the United States. Almost all attempts by NMFS/USFWS to cite a population size or range of a vertebrate species pursuant to their doing ESA imposed duties are based on available data opportunistically obtained by it and so generated by its source.

Historically, the USFWS/ESA have seized on the opportunity to only have to use available information to evade having to aggressively (i. e. effectively) enforce the protections afforded endangered species by the ESA against commercial and private activities. The Congress’ appropriations to these agencies (that are consistent to what these agencies request) are wholly insufficient to conduct any meaningful Scientific Survey for any listed endangered species let alone for the vast majority of US native/endemic vertebrate species.

The USFWS resists listing species and fails to conduct surveys of possible candidate species to evade the requirements to list them under the ESA as endangered. The USFWS seldom lists species under the ESA as endangered unless compelled to do so by court order or compelled to do so for political reasons, with both such reasons are rarely imposed.

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<sup>74</sup> IUCN 2017. “Guidelines for Applying The Precautionary Principle To Biodiversity Conservation And Natural Resource Management.” Retrieved 20 April 2020 ([www.IUCN.org](http://www.IUCN.org)).

Even when information is available that shows an ESA listed endangered species is still in decline, the USFWS/NMFS are reluctant and ineffective at enforcing the ESA's prohibitions against harming these endangered species and their wildlife habitat. They also almost never act to protect endangered species habitat that occurs on commercial and private property unless it was opportunistically compelled to act in some manner by a federal court order. Such orders very rarely occur. As a result even when depleted vertebrate species get listed as endangered, they do not effectively benefit from their legally recognized protected endangered status. The historical record shows conclusively that species listed as endangered mostly never get "delisted" by being classified as recovered species. **FN75** There are popular vertebrate species that were ESA listed as endangered in 1973, that have been recipients of millions of dollars' worth of conservation efforts and still have failed by 2020 to recover into being viable species and no longer needing to be listed as endangered. **FN76** This reality points out the inherent problem is assigning a government agency the full responsibility to reverse the ongoing destruction of largely depleted and failing wildlife populations.

It is no surprise after recognizing the above stated failures of these agencies towards carrying out the most basic duties for protecting wildlife species, that neither USFWS or NMFS recognize the ongoing GME6 and the threat of its imminent Climax. They both have failed to make a commitment or even encourage others to conduct a Scientific Survey on the aggregate

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<sup>75</sup> Pagel, Joel *et al.* 2008. "Why Listing May Be Forever: Perspectives on Delisting under the U.S. Endangered Species Act." *Conservation Biology*. 15(5).

<sup>76</sup> The California Condor and Black-Footed Ferret are good examples of the failure to implement effective efforts in the United States to recover ESA listed endangered vertebrate species. To view propaganda videos by the USFWS in which it boasts on the great job its doing, go to <https://nctc.fws.gov/conservationconnect>.

status of vertebrate wildlife species in the United States. They make no effort to establish a possible date for GME6 climax.

Both USFWS and NMFS failings at effectively protecting and recovering ESA listed wildlife is not unexpected. Both of these agencies were created to proactively support the recreational and commercial exploitation of wildlife for the benefit of only a small segment of the American people. To ensure that these statutes only benefitted hunters and fishermen, Congress assigned commissions to oversee these agencies performance that by law could only have fishermen, hunters and industry representatives as members. As a result the USFWS/NMFS only serve the “Public bad” and not the “Public good.” When Congress handed endangered wildlife over to these it was literally asking the “fox to guard the chicken coop.” As stated, NMFS/USFWS failings in protecting endangered wildlife is understandable.

It was a major failing by Congress at passing the original ruthless version of the ESA and then assigning two of the most corrupt and industry controlled government agencies to supervise its enforcement. Because of that failing, the Congress insured that the ESA’s intention to stop extinction of wildlife species would never be able to be fulfilled. In 1978 it gutted the ESA to make it easier for these agencies to evade the protection of endangered species. What Congress should have done in amending the ESA in 1978 was to reassign superintendent responsibilities for the ESA to an agency specifically created for the purpose.

The Green Knights would never support NMFS/USFWS and never did when they were active. But the arrival of EINGOS/WINGOS on the scene after the adoption of the ESA worked to the interests of commercial and industry interests in evading ESA enforcement. The EINGOS/WINGIOS found it in their interests to align themselves with commercial stakeholders and to be partners in crime with these two agencies. They chose to only exploit the technical

aspects of the administrative regulations adopted for the ESA by these agencies and to fully support these agencies taking the lead for ESA conservation. The EINGOS accepted the legitimacy of the vested interests of the commercial and welcomed them as their partners in crime. The EINGOS agree endangered species conservation must be done consistent with the needs of hunters and fishermen and through their leadership which will insure the continued recreational and commercial exploitation of wildlife.

It is likely that NMFS/USFWS will never engage in any significant effort to stop GME6 or prevent its imminent Climax by 2100 AD.

B. *EINGOS & WINGOS do not have programs to stop GME6, or to conduct required Scientific Survey & they mostly exploit endangered species for profit without benefiting their preservation in addition to interfering with enforcement of ESA.*

The “varsity league” EINGOS of the United States are corporations whose employees first serve the needs of the corporation to make money, pay its employees and administrative operating expenses. **FN77** They are run by corporate lawyers and managers who have worked for government and for-profit corporations.

They principally engage in *voyeur conservation* and represent endangered wildlife for its entertainment value. They exploit sentimentality towards individual animals to get donations without any commitment to actually aid endangered wildlife species. They routinely curate petitions to government officials that are used to get names and contact information of the Public for future use in direct soliciting of donations. These petitions are not known to be successful or result in any protective act by a government agency.

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<sup>77</sup> Varsity League EINGOS are corporations with net incomes over \$100,000,000 annually. This includes the usual suspects like the Sierra Club, NRDC, the National Audubon Society, *etc.* All their CEO’s earn salaries in excess of \$250,000 annually.

They conduct no Scientific Survey to determine the biological status of all vertebrate wildlife populations and their geographic range in the United States. They rarely conduct any field operations to protect specific wildlife populations in the United States. Instead they expect the government to do most of the planning and conservation field work for vertebrate wildlife species in the United States and their major boast is that they worked with stakeholders to get government concessions

To get a seat at the “table” of government agency decision making, they work with stakeholders and accept funding from large corporations to minimize the impact of environmental laws on stakeholders. They act as a “go between” between the stakeholder and the government agency and insist that implemented conservation measures for vertebrate wildlife are friendly to commercial stakeholders.

These companies and their employees advocate continued increase in GDP and increasing US population through immigration. The single most important reality check about EINGOS is that they are “people centric” and not “wildlife centric.” The Sierra Club is an EINGO that supports unfettered population increase in the United States’ population. In 2018, its CEO affirmed its support of illegal immigration and its opposition to deportation of any illegal alien. In fact it openly claims that “-- *the struggles to protect our [illegal alien] communities and our environment cannot be separated.* **FN78** Each of the United States “varsity league” EINGOS

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<sup>78</sup> Sierra Club. 2020. *Immigration*. “The Sierra Club has issued statements praising the Dream Act, the Deferred Action for Childhood Arrivals (DACA), and the Deferred Action for Parental Accountability (DAPA) as ways to protect undocumented immigrants at risk of deportation and offer a pathway to citizenship. The Trump administration has rescinded DAPA, is threatening to do the same to DACA, and has indicated an intention to veto the Dream Act, if passed. At this time, the Sierra Club goes on record as reaffirming our support for these three important initiatives, our opposition to deportations that tear apart families and communities, and our support for an equitable and timely pathway to citizenship for undocumented immigrants. The Sierra Club is in total solidarity with immigrants threatened by the Trump administration -- *the*

have adopted a similar official policy supporting unrestricted legal/illegal immigration and equated the needs of immigrants as an “environmental issue” that it seeks to protect. The National Resources Defense Council (the official environment business of the Democratic Party), in 2017 also reaffirmed its unabashed support of unrestricted immigration as an “environmental issue” it defends. **FN79**

The EINGOS also support unfettered GDP growth as key to its “people first” brand of environmental protection interests. The Sierra Club openly claims it wants to substantially increase the material wealth and economic lifestyles of over 16 million workers. FN<sup>80</sup>

Now the Public is exposed mostly to wildlife not from personal and local experience but as advertising for donations to EINGOS and as appears in Voyeur Conservation media offerings. Therefore they channel their nominal support for conservation through the ubiquitous “take action” button on web pages seeking donation and online petitions curated by EINGOS whose principle purpose is to obtain a database for donation solicitation and support of the specific

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*struggles to protect our communities and our environment cannot be separated.” Retrieved 20 April 2020 (<https://www.sierraclub.org/policy/immigration>).*

<sup>79</sup> NRDC. 2017. *NRDC Stands in Solidarity with Immigrant and Refugee Communities*. “President Trump today signed an executive order calling for the construction of a border wall with Mexico. ... Trump’s wall is a waste of taxpayer dollars. It won’t secure our borders, it won’t make us safer and it does nothing to address the underlying issues driving the immigration crisis. If the administration wants to protect the public, it should address the growing dangers of global climate change – a genuine threat to our security and prosperity, a genuine threat to our children’s future. *NRDC stands in solidarity with immigrant and refugee communities against these destructive and divisive actions.*” Retrieved 20 April 2020 (<https://www.nrdc.org/media/2017/170125>).

<sup>80</sup> Sierra Club. 2020. *About our Labor and Economic Justice Program*. “The Sierra Club is the co-founder with the United Steelworkers of the Blue Green Alliance (BGA), which has grown to include 15 unions and environmental organizations representing some 16 million people. We pursue our goals through the BGA, with individual union partners, with emerging workers’ organizations and worker centers, with front line communities, and with labor solidarity and research organizations.” Retrieved 20 April 2020 (<https://www.sierraclub.org/labor/about>).

programs carried out by the ERINGO. The Public's experience with wildlife is a diminishing experience. Outside activities are largely recreational, sport and fitness oriented. Most wildlife experience is through entertaining media offerings, zoos and aquariums. In all of these cases wildlife is exploited entertainment which runs counter to sincere conservation values.

This has been demonstrated with commercial whale watching ("CWW") on whales including endangered species. A whale interested NGO ("WINGO") that sponsors CWW tours did a survey of tourists before and after they had a CWW trip. The informal survey showed that the tourists had more sympathy for commercial whaling *after* their CWW trip than before. This result is indicative of how Voyeur Conservation is the main activity of EINGO/WINGO. It has little or no positive effect on vertebrate wildlife preservation and is not arresting the onset of GME6.

CWW is actually prohibited under both the ESA and the Marine Mammal Protection Act but as discussed *supra* in (A) because it constitutes a prohibited pursuit and harassment of endangered marine mammals. NMFS categorically refuses to enforce the ESA/MMPA prohibitions against anyone not directly trying to kill a whale or dolphin. Most CWW operations are run by commercial fishermen with contracted WINGO employees on board posed as naturalists and tour guides. Since NMFS refuses to prosecute fishermen for entangling endangered whales in their fishing gear, it is consistent with its non-enforcement policy that it does not stop ships from chasing whales in the Ocean and occasionally killing one that it "accidentally" runs over.

This non-enforcement policy and WINGOS support of it is best illustrated by the current plight of the Northern Right Whale — the world's most endangered large whale. Right Whales live off the Atlantic coastline of the United States and Canada. There are only about 400 left on

Earth and there population is shrinking. They are facing imminent extinction. Despite these facts, Right Whales were subject to CWW in Cape Cod Bay in MA. One year a baby Right Whale was killed by the propellers of a CWW ship after it ran between the baby whale and it's mother in order to get a better view of the baby whale. NMFS did not even issue a civil violation against the CWW captain and instead declared the murder of the baby whale an accident. NMFS was then sued by a Green Knight for failing to protect the Right Whale after no WINGO choose to do anything about the killing. **FN81** In settlement NMFS agreed to issue a regulation banning any vessel from coming within 500 yards of any Right Whale. This rule ended CWW on Right Whales, since tourists would not pay to see whales that far away. **FN82**

The lesson herein is that the ESA does not force NMFS to stop the commercial exploitation of an endangered species even when that business winds up killing endangered wildlife in the course of its commercial Voyeur Conservation activities. This raises the question, "What good is the ESA and NMFS enforcement of it for endangered marine wildlife?"

NMFS was compelled to go farther and proposed rules to license and regulate CWW itself on the United States northeast Atlantic coastline. **FN83** EVERY single incorporated

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<sup>81</sup> *Strahan v. Linnon*, 967 F. Supp. 581 (D. Mass. 1997).

<sup>82</sup> NMFS. 1996. "North Atlantic Right Whale Protection." *Federal Register*. August 7<sup>th</sup>. 61 FR 41116-41123: "NMFS proposes to prohibit all approaches within 500 yards (460 m), whether by vessel, aircraft or other means. The proposed rule would restrict head-on approaches to northern right whales, would prohibit any vessel maneuver that would intercept a northern right whale within 500 yards (460 m), and would require northern right whale avoidance measures under specified circumstances. Exceptions would be provided for emergency situations and where certain authorizations are provided."

<sup>83</sup> NMFS. 2000. "Advanced Notice of Rule Making." *Federal Registrar*. January 4. 65 FR 270: "NMFS solicit comments on the appropriateness of codifying, through rulemaking, operational procedures for vessels engaged in whale watching in NMFS Northeast Region (Virginia to Maine). The scope of this ANPR encompasses the activity of any vessel (commercial or private) that is engaged in whale watching." Retrieved 20 April 2020



WINGO on the east coast of the United States opposed NMFS's proposal to license and regulate of CWW in order to protect the whales it targets and pursues. As a result of this opposition NMFS completely abandoned this initiative to develop omnibus rules for CWW. Instead it focused on regulating CWW in a far less restrictive and effective manner in Hawaii and other locales with the approval of local commercial fishermen wanted to improve their business opportunities by eliminating recreational whale watching from pleasure craft (the CWW named recreational watchers as annoying "mosquito boats") by forcing those vessels to stay clear of their tourist operations. **FN84** NMFS also was compelled to issue approach restrictions for Humpback Whales in Alaska to protect them from CWW by cruise ships. **FN85**

This historical event informs that WINGOS commercial investment with CWW and commercial fishermen is more highly valued by them than the enforcement of the ESA to protect endangered whales and other marine mammals. Most WINGOS have professional relationships with the commercial fishing industry, especially on the Atlantic coast of the United States. As a result, WINGOS oppose NMFS enforcing the ESA against commercial fishing industry that routinely kills and injures Right Whales by entangling these and other whales (and endangered Sea Turtles) in the vertical buoy ropes that are used with the lobsterpot and gillnet fishing gear.

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(<https://www.govinfo.gov/app/details/FR-2000-01-04/00-87>)

<sup>84</sup> NMFS. 2016 *Federal Register* September 8. 81 FR 62010: "These MMPA [Marine Mammal Protection Act] regulations prohibit operating an aircraft within 1,000 feet (304.8 m) of a humpback whale, approaching within 100 yards (91.4 m) of a humpback whale by any means, causing a vessel, person or other object to approach within 100 yards (91.4 m) of a humpback whale, or approaching a humpback whale by interception ... The regulations also prohibit the disruption of normal behavior or prior activity of a humpback whale by any act or omission."

<sup>85</sup> NMFS. 2000 *Federal Register*. August 10. 65 FR 39336: "NMFS proposes to prohibit the approach within 200 yards (182.8 m) of a humpback whale, *Megaptera novaeangliae*, in waters within 200 nautical miles (370.4 km) of the coast of Alaska. Under these regulations, it would be unlawful for a person subject to the jurisdiction of the United States to approach, by any means, within 200 yards (182.8 m) of a humpback whale."

It is inevitable that no varsity league EINGO or WINGO will not implement any Scientific Survey for endangered or non-endangered US vertebrate species nor recognize GME6 in time to assist any pragmatic effort intended to stop the Climax. Instead they will continue to support the United States having an annually increasing GDP and population growth that will only increase the probable likelihood of the GME6 Climax by 2100 AD.

*C. The current version of the 1973 Endangered Species Act is a statute that provides too little, late to have any significant impact to stop GME6 from its 2100 AD climax for vertebrate wildlife species in the United States, instead it encourages the decline of viable wildlife populations to become depleted endangered species facing imminent extinction.*

The *Endangered Species Act* (“ESA”) is the sole federal law addressing a Congressional imposed mandate to protect endangered wildlife species that are expected to face the likelihood of extinction in the near term. The ESA only protects endangered species that are formally designated as listed endangered species pursuant to the ESA’s formal definition of “endangered.” It has mandatory environmental review requirements imposed on federal agency for their actions which might adversely affect the long-term survival of ESA listed species. The ESA also has both criminal and civil prohibitions against injuring ESA listed endangered wildlife species. ESA authorizes any member of the Public to serve as “citizen attorney generals” to enforce the ESA’s provisions by bringing lawsuits against private individual and government employees in order to compel their compliance. It also allows courts to force defendants in ESA lawsuits to pay the court costs that a winning plaintiff incurs by bringing their enforcement lawsuit against them.

The ESA does not prohibit the extinction of any ESA listed species and does not additionally punish anyone or any agency if they wipe out an ESA listed species. It was adopted in 1973 as an emergency measure to stop the expected extinction of certain charismatic species highly valued by the American public. The species of concern included American Bald Eagles, California Condors, various raptor bird species, Gray Wolves, Grizzly Bears and American

Bison. As a perceived emergency measure to only protect depleted and economically insignificant species, it was enthusiastically protected in its terms. It was never expected to have any real impact on commerce or other United States interests. That did not turn out to be the case.

In 1977, a law professor and enthusiastic fly fishermen on the Little Tennessee River decided to exploit the ESA's protection of an insignificant species, a three inch long fish called the Snail Darter, to stop the construction of a multi-billion dollar project dam that would flood and destroy his favorite fishing hole on the river. The professor lost in his initial district court appearance. The congressional delegation from Tennessee and others, that actually voted for the ESA, totally opposed the very idea that the ESA would stop billion dollar projects intending to bring prosperity to economically depressed areas in order just to protect a bucket of endangered fish (the estimated remaining population of Snail Darters was in the hundreds). Most legal experts considered his lawsuit to be a folly.

But it turned out that the Supreme Court did not. In one of the most famous court decisions in environmental law, the Supreme Court ruled in its 1977 *Tennessee Valley Authority v. Hill* decision that the ESA's protections for even useless ESA listed endangered species had priority over all other statutory mandates, duties and purpose imposed on government agencies. It ruled that the billion dollar damn could not be completed since it threatened to wipe out the last habitat for the minnow. **FN86** The court also ruled that the adverse impact on the local economy from stopping the damn project no matter disastrous was irrelevant under the ESA.

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<sup>86</sup> See *Tennessee Valley Authority v. Hiram Hill et al.*, 437 U.S. 153 (1978)

How did the 1978 ESA amendment “declaim” the ESA’s mandate to agencies to protect endangered species? The text of the controlling section of the 1973 ESA that resulted in the controversial *TVA v. Hill* ruling is as follows –

“ **§7. Interagency cooperation:** The [Interior] Secretary shall review other programs administered by him and programs in furtherance of the purposes of this chapter. All other Federal ... agencies shall ... utilize their authorities in furtherance of the purposes of [the ESA] ... while carrying out programs for the conservation of endangered species ... **by taking such action necessary to insure** that actions authorized, funded, or carried out by them **do not jeopardize the continued existence of such endangered species** ... or result in the destruction or modification of **habitat** of such species ... **determined** by the Secretary... **to be critical.**” FN87

The controlling text in the above quotation is “by taking such action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of such endangered species ... or result” in the destruction of the species critical habitat. All federal agencies needed to “insure” that jeopardize the survival of a species or its needed habitat. This means all agencies had to conduct a Scientific Survey to collect the necessary information to affirmatively demonstrate that it would not hurt endangered wildlife. This is a ruthless requirement that required an agency to scientifically prove that they would never contribute to a species extinction. Since the TVA was prohibited by the ESA from destroying any Snail Darter habitat that was critical to the fish’s existence, it had no choice but not to complete the dam’s construction.

The 1978 amendment guts the cited protective language and replaces it with “is *not likely to jeopardize* the continued existence of any endangered species ... and each agency shall use the *best scientific and commercial data available.*” The amended text takes away any requirement for an agency to scientifically prove that it will not hurt endangered wildlife and the mandate to

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<sup>87</sup> The *ESA* at Title 16 USC § 1536(a).

collect all the necessary data needed to scientifically based its decision. Obviously, the phrase “is not likely” is completely indeterminate and be used to justify not protecting a species out of nothing more than sheer ignorance or unawareness of any exigent threat. The amended text also allows the agency to base any decision on its impact on endangered wildlife to be based on ignorance since the ESA not only requires it to use the “best available” information. The amended text encourages federal agency’s not to sponsor or conduct themselves any scientific research that would show that their desired activities will hurt endangered species.

The law professor was a Green Knight seeking to test the limits of the ESA as it was then written. However, his antics also exhibited a self-serving aspect that now is widely used by EINGOS bringing lawsuits to enforce the ESA. The professor was using the ESA mostly to stop a project in his backyard that would destroy his ability to continue to go fly fishing. This “Not in My Back Yard” (“NIMBY”) use of the ESA is now widely used by EINGOS just to stop off-shore oil drilling, military projects, and any commercial development threatening residential property values. NIMBY ESA lawsuits is just a further example of EINGOS exploiting endangered wildlife for donations to help people and not wildlife.

The cited text of the 1978 amended ESA illustrates why the USFWS & NMFS now fails to support any Scientific Survey of wildlife populations in the United States. They evade any possibility of having “available information” that would cause the ESA to be enforced against their the commercial and recreational exploitation of wildlife that is their primary duty. In case after case, federal agencies after 1978 were able to justify their claiming that they complied with the ESA because they had no information that indicated otherwise.

The result of the *TVA v. Hill* decision was the overwhelming backlash by just about the entire Congress including members of both political parties, state governments, and every

business interest in the United States. In 1978, president Jimmy Carter signed into law amendments that gutted the ESA of its ruthless protection afforded endangered wildlife. Never again would the ESA serve as a barrier to protect endangered wildlife from politically and commercially significant destruction of wildlife habitat. In the years since 1978, there has not been a single instance of the ESA used to shut down a significant construction project or ongoing activity even if it killed ESA listed endangered wildlife. The 1978 ESA amendments effectively gelded the ESA ability protect and recover endangered US wildlife.

The ESA's Section 7 project review requirements are an example of the "environmental review" basis of all of the Green Epoch statutes that utilizes principles of Administrative Law to offer environmental protection. As such, the ESA and other Green Epoch laws do not prohibit environmental destruction. All they offer is a requirement that federal agencies minimize their adverse impact on the environment and law these agencies full discretion on what that means. In implementing review laws, an agency with adopt a set of procedural rules for conducting the review. Complying with these rules are all that matter. An agency can follow its rules and still makes a bad decision contrary to scientific fact. An agency can fail to follow its rules and no employee will be punished for failing to do so.

The Clean Air & Water Acts work fine as environmental review laws because "pollution" is a relative concept and these laws enjoy a strong political and commercial support. Clean water and air are loved by the Public and are also good for business. But the ESA fails miserably as an environmental review law because protecting endangered wildlife on the edge requires sacrifice and lots of money, neither of which benefits the economy or the Public's welfare. The Congress's reaction to *TVA v. Hill* was nothing less than the government's strong commitment to insuring that

the ESA would never again be used to significantly block economic development. And that is why the gelded version of the ESA since 1978 never once did.

EINGOS are operated by lawyers and corporate type managers. They find environmental review laws are far more consistent with their vested business interest than seeking to enforce legal prohibitions that absolutely protect wildlife. EINGOS seek to be partner with commercial stakeholders and even government agencies. Their use of Voyeur Conservation only requires that they challenge improper administrative procedures by government agencies and put full responsibility on these agencies to implement recovery plans for endangered wildlife and do all the necessary research. Their profits rely on their not having to directly pay for or conduct expensive field work to save endangered species. If they fail to get agencies to use the correct procedures then they simply seek donations under the battle cry “we can never give up.” This is actually a routine appeal from EINGOS.

The ESA also has prohibitions against any degree of physically harming endangered wildlife and/or destruction of the ESA’s designated “critical habitat” for any endangered species. FN<sup>88</sup> This has the potential of being extremely effective in protecting endangered wildlife from commercial operations and also its required habitat. In fact the basis for the *TVA v. Hill* was a ESA prohibition against the destruction of the Snail Darter’s ESA designated critical habitat that was located along the stretch of the river that would be flooded by the dam.

However, EINGOS and NMFS/USFWS fail repeatedly to seek the enforcement of ESA’s prohibitions owing to the very offer of effectiveness ESA’s Section 9 statutory prohibitions to

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<sup>88</sup> Endangered Species Act. 16 USC § 1538(a): The ESA §9 prohibits the “taking” of ESA listed endangered species and to “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

stop in its tracks any act threatening to injure endangered wildlife without any need for an adopted rule or regulation. The EINGOS consider them too ruthless and “unfair” to stakeholder commercial interests they also seek to protect from ESA enforcement.

In 2019, WINGOS deliberately decided to not enforce the ESA’s prohibitions against NMFS for its licensing and commercial fishermen for their using fishing gear that kills and injured endangered whales – like the Right Whale. In fact they oppose anyone doing so. Instead they openly work with the commercial fishing industry to prevent the enforcement of the ESA prohibitions protecting Right Whales from entanglement UNTIL there is a technical fix provided the industry that is acceptable to commercial fishermen. In 2019, WINGOS were members along with commercial fisherman on NMFS’ Atlantic Large Whale Take Reduction Team. In April 2019, the EINGOS voted with the commercial fishermen to work to “lessen” but not stop the industry’s entanglement of Right Whales. This agreement came after NMFS issued a finding earlier in 2019 that the single death of a Right Whale would jeopardize the continued existence of its species.

After 1978 the ESA has proven to be completely ineffective at protecting and recovering ESA listed endangered species. Instead, it is being effectively used by EINGOS and NMFS/USFWS as a means to shield commercial interests from having environmental laws enforced against them and to evade any backlash on their businesses from claims that they are injuring and threatening the survival of endangered wildlife.

Back in 1973 the ESA was an effective emergency tool to stop the imminent extinction of wildlife species by recovering them from their endangered status. In 2020, it has been proven to be too little, too late to recover endangered species since 1978 it has clearly failed to do so for the vast majority of ESA listed species. The ESA does little for vertebrate species whose



populations and geographic range are now on the decline from increasing GDP and population growth in the United States. If anything, the ESA is used to deter the protection of vertebrate wildlife in the United States from GME6 by providing false if not maliciously maintained hope that it will stop all wildlife from extinction.

The real point in protecting biological diversity is not having a world full of sick and depleted species balancing on the edge of extinction in zoos, aquaria and adventure parks. The point is to have healthy and evolving vertebrate species in abundance and everywhere that they were at the beginning of the twentieth century. In 2020, ESA is not an effective tool to preserve wildlife abundance in the United States. It only provides EINGOS and NMFS/USFWS a basis to for them to continue to let commercial development to devastate vertebrate wildlife in the United States so as to insure the GME6 climax in 2100 AD.

The ESA was adopted in 1973 as an emergency statute to stop immediate extinctions that were on the verge of extinction from a legacy of killing and habitat destruction leading up to 1973. It was never meant to be used to enable NIMBY lawsuits, to wind up listing thousands of endangered species and requiring billions of dollars to pay for recovery programs for endangered teste flies, gophers and Sticklebacks. Five decades after it was adopted, with every year more species becoming endangered, only the protection of viable vertebrate wildlife populations to stop them from becoming endangered offers the only chance of arresting GME6 and stopping its Climax. Congress would have to pass legislation that will create a dedicated wildlife protctioon agency for all vertebrate species that would be managed by scientists and be immune to commercial and EINGO influence.

What would work to stop GME6 is replacing the ESA with a new statute that protects all vertebrate wildlife species and their habitat in order to maintain thriving populations. It should

authorize Green Knights to enforce it and reward them financially for any success they achieve in protecting vertebrate wildlife species.

It is unlikely that the above will happen. There is no observable political momentum to have the ESA either amended to be more protective or in fact to support even reclaiming depleted wildlife population in the United States. The fact that United States fully supports a growing GDP and population counter indicates any desire to see its populace supporting increased efforts to protect obscure and unwanted endangered species. Especially when the increased protection poses a threat to economy. With increasing demand for the government to fund all manner of public services from free college tuition and guaranteed medical care, there cannot be seen any significant support to additionally spend billions on recovering wildlife.

Ultimately, the ESA true failing or any other such wildlife protection law is that it does not require the advocacy of Green Knights to make it work and does not provide for the strict enforcement of statutory prohibitions against injuring wildlife and its habitat. The ESA and its reliance on administrative law drove away the Green Knights that would have made it work no matter what the difficulties. Instead since 1973, EINGOS have just exploited ESA for profit and to aid stakeholders in evading having to make their activities safe for wildlife. Because of EINGOS activities over the last decades, in 2020 there is now less and not more support for wildlife preservation than there was in 1973. The Congress' own major failing in implementing the ESA was its reliance on federal agencies to do the heavy lifting and be fully responsible for enforcing the ESA. This has been an unmitigated disaster for the conservation of vertebrate wildlife. Administrative law is also anathema to the effective protection of wildlife. Again, what works best is the unrelenting enforcement by Green Knights of statutory prohibitions as proven by *TVA v. Hill* with no agency interference thwarting prohibition enforcement.

D. *The federal courts refuse to enforce the ESA's prohibitions against injuring endangered species and their critical habitat and bow to federal agency decisions concerning endangered wildlife even if they are incompetent and facially violate the ESA so as to insure the extinction of endangered wildlife.*

Despite the ESA's citizen suit provision that authorizes "citizen attorney general" to prosecute of ESA violators, the federal courts have a poor history of any willingness to stop the unlawful killing of endangered wildlife and the destruction of its critical habitat. One of the big sticking points for the courts is their preference in matters of wildlife conservation to support English common law over federal statutory mandates imposed by the ESA. This refusal maybe unconstitutional conduct on the part of federal judges. Congress decides for courts what laws to obey, not dead English judges. But it was the same refusal that explains why federal judges refused for a hundred years after the Civil War to enforce the provisions of the 13<sup>th</sup> & 14<sup>th</sup> Amendments that protected every American's right to equal treatment under the law and due process and by so doing they allowed racial discrimination by state & federal governments to prosper. **FN89**

The federal courts see wildlife as the property of the state. In the case of endangered species, that would be the federal government as represented by USFWS/NMFS. The simple logic of the federal courts is that endangered species are the government's property they have a right to do what they want with endangered species. If the ESA is seen to impose a mandate to protect them on these agencies, the court believes is fully up to them decide what protections to afford a specific and how to choose one species over another to expend the agency' limited funds. Since the Constitution protects property rights over any law passed by Congress, the

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<sup>89</sup> *Plessy v. Ferguson*, 163 U.S. 537 (1896). *Plessy* was a landmark decision of the Supreme Court that enforced a doctrine of "separate but equal" which upheld the constitutionality of racial segregation laws for public facilities. The judges felt that discrimination was OK as it did not force the victim to use lesser accommodations — which of course it did.

courts see it as extraordinary to be asked to override the agencies decisions and completely refuse to make them enforce the ESA prohibitions.

The other common law use at play is the English common law doctrine of *ferae natura* which literally translates for Latin as “born to be wild.” This doctrine hold that since wildlife is “wild” and unpredictable, if it gets itself killed in fishing gear it is no one’s fault but the animal’s. Consider there is a backyard barbeque. An angry coyote jumps over the fence into the yard and eats the poodle of a neighbor and leaves. The host of the barbeque owes no damages to the neighbor for the eaten pet. It is not its fault. Coyotes are feral animals and no one is to blame for what they do. This is how *ferae natura* doctrine works. So when an endangered whale gets entangled in fishing gear or an endangered lynx gets killed in a leghold trap, its maybe a prohibited act under the ESA but the court will not find either the fisherman or trapper fault and as a result it will stop them from continuing to conduct the same activity in the future that will likely repeat its injury of the endangered whale or lynx.

Federal courts have been consistently reluctant in refusing to issue any order to stop fishing or trapping no matter how many endangered Whales and Lynx get killed. In fishing gear and traps, respectively. When they have done so, it was associated with the agency failing to comply with administrative possible adverse impacts by its reviewed agency activity, but again the court has refused to simply enforce a statutory ESA prohibition against the agency. **FN90**

The courts also misinterpret the ESA as it seeks to preserve its prejudice under common law on issuing an order just to correct a violation of law without more, but a legal prohibition must be obeyed and it must be enforced by a court on the request of a prosecutor.

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<sup>90</sup> *Greenpeace Foundation v. Mineta*, 122 F. Supp. 2d 1123 (D. Hawaii, 2000)

GME6 is inevitable because federal courts are unlikely to abandon common law in order to enforce the ESA. Until they do GME6 and its Climax can reasonably be seen as inevitable.

## CHAPTER V

### **Mankind is the Species that Causes Mass Extinction. It is Not the Species that Stops It**

As has been detailed above, there is an ongoing mass extinction event for vertebrate wildlife occurring in the United States that commenced at the end of the Pleistocene and will likely achieve its Climax by 2100 AD. At the Climax, it is likely there will be an extirpation of over eighty percent of vertebrate wildlife species (1970) and/or a similar diminution of the size of the populations and geographic range of vertebrate wildlife species surviving in the United States. It has been also demonstrated that there is no currently effective activity by government agencies or EINGOS to arrest this mass extinction (GME6) — which is evidenced by its ongoing progress for thousands of years.

It has also been demonstrated that it is unlikely in the foreseeable future that the US government, EINGOS or generally the US society will finally implement a meaningful response to the imminent Climax to prevent it from happening. This last reality is not simply due to a matter of social inertia, just continuing what was good to do in the past. It is also not out of ignorance and United States society simply being aware or sensitive to the importance of protecting natural resources and what are the adverse consequences for failing to utilize natural resources sustainably.

An examination of the historical record shows that the United States populace has become highly sensitive to environmental issues and favors generally the protection of its natural resources. But at some point in the interval from the late nineteenth-century to the years shortly after the millennium, the society and government of the United States apparently reacted to its awareness of an ongoing loss of wildlife, wilderness and possible mass extinction by choosing not to protect its native vertebrate wildlife from it. Many of the underlying reasons have been discussed and explored previously.

This extraordinary observation deserves a recapping and extension of these underling facts and further analysis. In 2016, the Anthropocene Working Group within the International Commission on Stratigraphy (ICS) found enough evidence to prove that we have left the last interglacial period known as the Holocene and entered the epoch of mankind, the Anthropocene. The official recognition that humans are a geological force — together with the physical impossibility of never-ending growth— could result in a political acceptance of mankind’s responsibility towards the environment. FN<sup>91</sup>

In May of this year, the science magazine *Nature* reported that a panel of geologists voted to recommend to the International Commission on Stratigraphy that the current geologic epoch in the Earth’s history be called the “Anthropocene.” FN<sup>92</sup> If that commission agrees then the International Union of Geological Sciences will vote in 2021 on whether to declare that the Holocene has ended and that the next geologic epoch has begun that will be solely distinguished and characterized by the impact of Mankind on the Earth’s environment.

In order to recognize the beginning of a different geological era, there is a requirement for a designated geographic site that signifies the lurch in geophysical conditions that heralds the beginning of the new era. The term for this place is the “Global Boundary Stratotype Section and Point” or the “golden spike.” For the proposed Anthropocene that might be the location of deposits of the element Plutonium that was artificially made during the construction of the first atomic bombs.

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<sup>91</sup> Pimiento C. et al. 2020. “Functional diversity of marine megafauna in the Anthropocene.” *Science Advances*. 6(16): eaay7650

<sup>92</sup> Subramanian, Meera 2019. “Anthropocene now: influential panel votes to recognize Earth’s new epoch.” *Nature*. May 21. DOI: 10.1038/d41586-019-01641-5

But the Anthropocene's golden spike could just as well be at Yonkers, NY where at the turn of the 20<sup>th</sup> century the first plastic — Bakelite — was produced in commercial quantities. Soon it was joined by both Nylon and Plexiglass, as plastics manufactured on the US east coast. As much as new radioactive elements, plastic is a singular chemical footprint for People's impact on the Earth. Plastic literally now covers every square meter of the globe. So much plastic has been produced and still lingers that the surface of the Earth has been termed the "Plastisphere." Plastic is the durable "atom" of modern industrial manufacturing. It defines what is "modern." It rates as one of the most successful inventions of People, equivalent to the invention of the wheel.

Regardless of the choice for the golden spike, by the start of the 21<sup>st</sup> century the planet is covered in the footprints showing the industrial presence of the Anthropoids on Earth. Simple statements of empirical facts – no need for apocryphal warnings – expresses the immense anthropogenic impact on the Earth's wildlife that has occurred over just the last 200 years.

To a future paleontologist examining fossils in its geologic strata, the Anthropocene's most compelling feature will be the extinction of upwards of ninety percent of vertebrate and other wildlife species during that occurred during it. But the mass extinction itself of existing wildlife is only half of what will be most interesting to the paleontologist.

In order to accommodate the billions of people on the planet and supply most of them with the technological products of the 21<sup>st</sup> century, cell phones, computers, air conditioning, automobiles, transportation across the globe, and a diet with an abundant supply of meat, most all terrestrial wildlife habitat on Earth had to be converted to agricultural, industrial, and residential use of people.

Of course, this includes the anthropoids domesticated animal retinue. For every person there is a grateful pig, cow, chicken, cat or dog. Today this is not just about eating them but the



growing list of animals that provide comfort to people as recorded on what “companion” animals are brought by the passengers on airplane flights. This “pet mentality” towards wildlife is indicative of the utilitarian attitude *Hominin* are inherently limited to in what it can actually possess.

The impact of Anthropoc activity on the Earth’s geography not only entitles Hominin to claim a geophysical epoch for itself by renaming its current part of the Holocene for itself. The traditional way of characterizing the ecologies of the various biogeographic areas of the Earth is also being challenged to be renamed for a more appropriate defining feature, the degree of *Hominin* impact on these biogeographic areas. **FN93** Recognize their horrific impact on the biosphere and the geophysical landscape of the Earth since the Pleistocene.

From colonial times through the 1990’s, the United States populace developed a continuously heightening of concern if not devotion to wildlife, wilderness and the natural world. In fact, it is arguable that currently that Americans are already saturated their favorable opinion for wildlife and wilderness protection. Across the globe, public opinion polls consistently express an overwhelming opinion favoring discontinuing commercial activity if it is injurious to endangered wildlife and biodiversity.

The most accurate way to see the situation is that the government and society of the United States by the first years of the second millennium had become well aware that wildlife in the United States was likely to become decimated by its ongoing economic development and population growth. Wildlife populations were seen by then as facing imminent collapse unless

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<sup>93</sup> Ellis, E. T. *et al.* 2010. “Anthropogenic transformation of the biomes, 1700 to 2000.” *Global Ecol. Biogeogr.* **19**:589–606.

the existing laws at a minimum were enthusiastically enforced and sufficient funds expended to insure the protection of vertebrate wildlife and its habitat.

Earth Day in 1990 provide clear evidence for this public's "awareness" and its already abundant enthusiasm in favor of stopping mass extinction in the United States. The scientific literature throughout the 1990's provided calls to action and even proposed plans on how to stop GME6. But by 2005 the culture, as represented by government and the endangered species interested NGOs ("EINGOS") of the United States had come to a choice. They chose not to protect wildlife in any sufficient manner from the adverse impact of increasing GDP and population growth in the United States. The United States apparently decided to allow the Climax to occur if stopping it would impair the continued growth of its GDP and its population.

In the 1960's, books appeared on best seller lists that openly declared an imminent threat of mass extinction of wildlife in the United States. *Silent Spring* by Rachel Carson was one of these books. It gave warning of the threat of wildlife extinction posed by the massive use of pesticides and was instrumental in having DDT banned across the globe and even more that goes right to the core —

“Why should we tolerate a diet of weak poisons, a home in insipid surroundings, a circle of acquaintances who are not quite our enemies, the noise of motors with just enough relief to prevent insanity? Who would want to live in a world which is just not quite fatal?” **FN94**

Another classic best-selling book appearing even earlier in 1949 was, *A Sand County Almanac* by Aldus Leopold. This book openly preached for a “land ethic” and the preservation of wildlife from hunting and development and documented what it considered to be the ruthless and

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<sup>94</sup> Carson, Rachel. 1962. *Silent Spring*, New York: Houghton-Mifflin. Wiki: “*Silent Spring* was named one of the 25 greatest science books of all time by the editors of *Discover* magazine.”

wasteful destruction of wildlife in the United States. **FN95** The land ethic was described as, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community." Both books are widely considered to be the two most significant publications on conservation during the last century. **FN96**

Starting as late as David Thoreau's *Walden* (1854) and with his mentor Ralph Waldo Emerson's inspiring the transcendental movement of the mid-eighteenth century that advocated the importance of wilderness and natural living, these "Green Knights" and those that followed are responsible by the 1990's of establishing environmentalism as a prevailing aspect of American culture and law. These Green Knights each made a personal commitment to a paradigm shift in civilization to recognizing the necessity of the preservation of the natural world as a primal requirement for civilization's advancement. Among the Green Knights are John Muir, Ralph Nader and members of the 1980's Earth First! movement in the United States. **FN97**

The Green Knights were successful in rallying the public to force a paradigm shift in American culture to have environmental concerns embedded in all its social institutions. The actions and advocacy of the Green Knights resulted in the core environmental laws passed by Congress by the first half of the 1970's are a direct byproduct of their success in facilitating this paradigm shift. That period can be called the "Green Epoch" in the United States in which

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<sup>95</sup> Leopold, Aldus. 1949. *A Sand County Almanac*. London (UK): Oxford University Press. Wiki: "The book has had over two million copies printed and has been translated into at least fourteen languages. It has informed and changed the environmental movement and stimulated a widespread interest in ecology as a science."

<sup>96</sup> Duffy, Sean. 1991. "*Silent Spring* and *A Sand County Almanac*: The Two Most Significant Environmental Books of the 20th Century." *Nature Study*. 44(2-3):6-8.

<sup>97</sup> Earth First! "No compromise in defense of Mother Earth!" EF! has been amazingly effective in stopping or forcing compromise in logging wilderness. The EINGOS supported US Forest Service's RARE II policy instead.

environmentalism became successfully instituted as law in the United States. There is little question that the people of the United States were fully supportive of protecting wilderness and wildlife diversity by the 1990's. The 1990's was the time of peak environmental concern in the United States. It has been all downhill since.

The "Green Epoch" in the 1970's refers to the passing of a series of ruthless environmental protection laws starting with the National Environmental Policy Act of 1969. **FN98** One of those laws was the Endangered Species Act of 1973 that makes it a crime to hurt or possess any wildlife species that is listed under the ESA as "endangered." The 1973 original ESA so ruthlessly protects endangered species that in 1978 the US Supreme Court ruled that a billion-dollar dam could not be completed because doing so threatened an obscure but endangered fish species. **FN99**

By the 1990's, a new scientific discipline — conservation biology — arose as a in academia and within the professional conservation community. Conservation biology seeks to establish the means and methods of preserving biodiversity and preventing wildlife extinction. One of the founders of conservation biology, Michael Soule in 1986 described it as, "A mission-oriented crisis discipline." **FN100** The founding conservation biologists openly advocated in the 1990's for a full assessment of the status of all wildlife populations in the United States in order to be able implement conservation efforts in time to stop the possible mass extinctions of wildlife species.

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<sup>98</sup> National Environmental Policy Act. 42 USC 4321 *et seq.*

<sup>99</sup> *Supra* at n. 76.

<sup>100</sup> Soulé, Michael E. ed. 1985. *Conservation Biology: The Science of Scarcity and Diversity*. Sunderland: Sinauer & Associates.

In 1986 National Academy of Sciences (“NAS”). sponsored the “National Forum on BioDiversity” a conference at which the term “biodiversity” was first utilized. Also, in 1986 the Society for Conservation Biology was founded. It started publishing its journal *Conservation Biology*. The NAS in 1988 published a report on the 1986 biodiversity conference with EO Wilson serving as the editor. **FN101** Despite the clear scientific need expressed openly in government and scientific forums like that of the NAS there was no follow-up implementation of any adequately funded program to survey the status of wildlife populations in the United States. Such a survey would have provided a quantitative basis to assess the risk of a future mass extinction of wildlife in the United States. It would have provided a basis to develop a strategic plan to prevent the loss of wildlife species in the United States. It just never happened.

Instead, since around 2005 a mediocrity towards wildlife conservation in the United States has been the order of the day. Big corporations, government agencies and NGOs worked together to divert the Public’s support from the necessity of preserving wildlife and wilderness for its own sake. These social & economic institutions retaliated against the Green Knights’ populism that supported limitations on economic and population growth in order to preserve wilderness and the natural world. Instead corporations and NGOs sought to herald “technological innovation” that would make possible unlimited economic and population growth as environmentally good for people. In this process wilderness and wildlife populations are readily sacrificed to provide quality of life enhancement to People based on increasing GDP from technological advances.

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<sup>101</sup> National Academy of Sciences. 1988. *Biodiversity*. Washington, DC: The National Academies Press. DOI: 10.17226/989.

In the 1990's the Green Knights wanted a "green economy" that preserved all wilderness and wildlife habitat. The big corporations and NGOs instead wanted unlimited materialism, profit, and population growth without the natural world, without needing to preserve wilderness and wildlife habitat. From 1995 on the phrase "environmentally safe" began to mean to the United States' governing social institutions only clean air and drinking water for people. It seemed less to be rooted in preserving wilderness and wildlife.

By the 1990's there was open conflict between grass-root environmental groups like Earth First! and EINGO corporations like the National Audubon Society over wilderness protection. **FN102** This conflict was on display at the 1990 Earth Day celebration in Washington DC where speaker after speaker criticized the commercial perversion and exploitation for profit of the environmental movement by EINGO corporations and by the newly formed wave of "green" businesses.

After Earth Day initiated a decade of the blooming of "Green Awareness" in the United States that has never existed since. The Public was so overwhelmingly into the environment and so upset in its destruction, that some journalists working for corporate media were designated "environmental reports" by their news outlets and from then on focused on only covering the outlet's "environmental news" beat. This emerging interest group of professional

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<sup>102</sup>Whipple, Dan. 1978. "Wilderness loses in RARE II opinion poll." *High Country News*. November 3. "The U.S. Forest Service's poll of 360,000 people on the subject of wilderness and roadless lands reveals a great deal of anti-wilderness sentiment as the agency retires into secrecy to develop its final proposals for the second Roadless Area Review and Evaluation (RARE II)." Retrieved 20 April 2020. (<https://www.hcn.org/issues/10.21/wilderness-loses-in-rare-ii-opinion-poll>).

environmental journalism in 1990 organized a professional association of environmental journalists named the Society for Environmental Journalism. **FN103**

By 1993, Bruce Babbitt, the then Secretary of the Interior under president William Jefferson Clinton, organized a biological survey program within the DOI to assess the biological status of wildlife species and the nation's ecosystems. He then went further and in 1993 had had a bill sponsored in the Congress to formally establish a permanent agency to be known as "National Biological Survey Office" that would "to provide a national focus for research on, inventorying, and monitoring of U.S. biological resources on an ecosystem basis." A partial text of the bill is as follows —

"The Director, shall perform the following function. (A) Conduct research on biological resources, including plants, fish, wildlife, and their habitat. (B) Monitor methods by which ecosystems are managed. (C) Collect and analyze data and information to determine and inventory the distribution, abundance, health, and status and trends of biological resources. (D) Develop methods for the consistent and systematic collection and analysis of data on ecosystems and their components."

There is no question that the passage of this statute would have implemented the REQUIRED Scientific Survey that is not just the first step but the core feature to organize and secure the logistics to arrest GME6 and stop the Climax. This proposed legislation was intended to formally create a permanent government that would have guaranteed annual funding to carry

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<sup>103</sup> Society of Environmental Journalists. 2020. *About SEJ*. "The Society of Environmental Journalists was founded in 1990 by a small group of award-winning journalists, including reporters, editors and producers working for *The Philadelphia Inquirer*, *USA Today*, Turner Broadcasting, Minnesota Public Radio and *National Geographic*. Today, SEJ's membership includes more than 1,500 journalists and academics working in every type of news media in the United States, Canada, Mexico and 43 other countries." Retrieved 20 April 2020 (<https://www.sej.org/about-sej>).

out the biological survey effort into the foreseeable future. The biological survey that Babbitt initiated on his home relied on funds that he could scavenge from other funded DOI programs.

In 1993 the National Resource Council was asked by Babbitt to assemble a committee and produce a report supporting the formal creation of the National Biological Survey program. In 1994 a final report was produced (“NRC Report”). **FN104** The resulting executive summary stated –

“In recent years, increasing concerns about the nation's biological resources have led to calls for a new biological survey. Secretary of the Interior Bruce Babbitt has recently initiated the process of forming a National Biological Survey (NBS) within DOI. To create the new agency, the Secretary is combining portions of the biological research and survey activities from DOI bureaus.”

This text refers to how Babbitt assembled biologists and other researchers from all relevant DOI infra agencies, like the National Park Service and the USFWS, to have a central office for carrying out the biological survey. But the available funding was not perceived to be stable and thus the need for the Congress to pass legislation to establish a permanent National Biological Survey office within the DOI.

The NRC Report claimed that a biological survey will provide —

“Finding ways to preserve the nation's biological heritage. Achieving this goal requires extensive information on the current status and trends in distribution and abundance of species and on relationships among species, and an understanding of the ecological processes on which they depend.”

“Managing biological resources in a sustainable manner. Sustainable use depends on accurate knowledge of the identity, distributions, and ecology of the species being used and those with which they interact.”

“Understanding the impact of human settlement patterns (metropolitan growth, renewable land use, and nonrenewable-resource extraction) on biological

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<sup>104</sup> Commission on the Formation of the National Biological Survey. 1994. *A Biological Survey for the Nation*. NRC. Washington D. C.: The National Academies Press. DOI: 10.17226/989. ISBN: 0-309-58609-7.



resources. The impact of daily human activity has had and will continue to have a great effect on the nation's biota.”

The significance of the NRC Report and the proposed National Biological Survey its call to assess the impact on wildlife the population of *Hominin* in the same environment. In 1994, it was recognized at the highest level of the federal government that wildlife was being destroyed by the continuing economic development of the United States. It recognized that the only way to preserve biodiversity required an ongoing inventory of all wildlife in the United States.

By 2005 things had changed as evidenced in popular culture, corporate news media and implemented public policy by government. Environmental populism had lost the fight to protect biodiversity in a spectacular way. The Green Knights had “left the house” and they have not come back. This in part is because wilderness and wildlife was put into the exclusive custodial possession of government agencies by the Green Epoch environmental review laws. Once this happened the only access to wildlife protection is through administrative law proceedings that favor influential “stakeholders,” wealthy EINGOS and their lawyers. The Public no longer has any direct access to wildlife. It is only afforded views of it from a distance. All wildlife and wilderness is not being preserved under law but after 2005 exploited under law. Wildlife continues to killed and commercially exploited under government license and regulation.

The importance and necessity of a National Biological Survey to insure the preservation of wildlife was underscored by the immediate opposition to Babbitt’s effort to organize it within the DOI and the opposition in Congress to the proposed legislation to establish it. Members of both political parties denied Babbitt the funds needed to continue the DOI’s biological survey

program and in short order it was abandoned. **FN105** The varsity squad EINGOS never supported Babbitts's efforts to have a national biological survey.

A tipping point was reached for the United States in the 1994 opposition to the establishing a National Biological Survey. At this point political parties, EINGOS/WINGOS and industry decided that the preservation of vertebrate wildlife species would have an adverse impact of their vested interests. **FN106** Harping back to the political blowback from the *TVA v. Hill* decision that resulted in the 1978 gelding of the ESA, commercial stakeholders and EINGOS/WINGOS united to stop the government from preserving wildlife populations that would have arrested the progress of GME6. They now recognized that preserving biodiversity was a threat to the United States to having both an increasing GDP and population.

So between 1994 – 2005, government agencies, EINGOS, political parties and commercial interests together reached a consensus environmental concerns should be focused on “people centric” environmental issues. They agreed that wilderness and wildlife would only be conserved in order to supply ecological services to people and not just to protect wildlife *per se*.

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<sup>105</sup> Wagner, Frederic. H. 1999. “Whatever happened to the National Biological Survey?” *BioScience*. 49(3): 219–222, DOI: 10.2307/1313512

<sup>106</sup> Jackson, Jeremy. 2020. E-mail to Richard Maximus Strahan. “The Clinton administration asked the National Research Council (NRC) of the National Academy of Sciences to assess the need for the formation of a National Biological Survey. We did that [Dr. Jackson is an author of the NRC Report] and made recommendations for such a survey; I believe this was published as a NRC book. But then the Democrats lost the House of Representatives and Newt Gingrich became Speaker of the House. That killed it dead because Republicans viewed such a survey as a threat to the exploitation of public lands and even private property. Instead there was established a pale shadow of what we had proposed within the US Geological Survey. It was a tragically lost opportunity for the protection of biodiversity, a lands etc. Frankly I worry ... about the precipitous loss of insects than anything else. Cheers. Author: *Breakpoint: Reckoning with America's Environmental Crises*”

To the present day there has only been a hodge-podge of random reports on declining wildlife populations in the scientific literature. Since 1986, there has been no subsequent effort by the NAS to address wildlife conservation in the United States. To this day no survey work or overall assessment on the status of all wildlife populations in the United States has ever been done or started. This defect has made it difficult to muster any comprehensive effort to stop mass extinction of vertebrate species of wildlife in the United States.

Wildlife protection in the United States since 2005 AD is a nullity that remains rooted in how wildlife was treated by society before the Green Epoch of the 1970's. Before the Green Epoch the killing and possession of wildlife became "managed" by government agencies that serve the exclusive interests of hunters and fishermen. Wildlife's main value historically was its being hunted for recreation, food, and pelts (or plumage for birds). To this day, these state and federal hunting/fishing have exclusive domain over the licensing and regulation of the killing and "conservation" of wildlife species in the United States.

After 2005, the record is clear that the varsity squad EINGOS, the government, and major social institutions chose to fully support for the United States an annually increasing GDP and population increase through legal immigration. In doing so, these entities also deliberately chose not to actively maintain sustainable and stable populations of vertebrate wildlife and wilderness because they recognized that doing so required having an adverse impact on the annual growth of the GDP and its population. The United States essentially has abandoned wildlife for it to survive on its own.

This is a very deliberate decision to ignore the status of wildlife in the United States. The opposition to the proposed National Biological is evidence of the current "social norm" why government agencies and EINGOS not simply fail to do, but refuse to support an ongoing

Scientific Survey to inventory United States wildlife population and to assess their biological status. Consistent with this refusal to do a Scientific Survey, government agencies, stakeholders and EINGOS now act together to “manage to extinction” endangered wildlife populations instead of acting to enhance the viability and habitat of endangered species populations so they will no longer be facing imminent extinction.

What “manage to extinction” means as an official policy is that NMFS/USWF agencies whose organic statutory mission is to promote, license and regulate the recreational/commercial exploitation of wildlife. EINGOS and the agencies employees work together to assist stakeholders in evading the protective provisions of the ESA. EINGOS target the public with propaganda to deflect away any possible demand/expectation by the Public for wildlife protection. Instead, EINGOS and the agencies implement conservation measures for just a few favored species that are hunted, fished or used for tourism. As stated, “managed to extinction” is deliberately conducted because the ESA and other environmental mandates protecting wildlife if enforced in favor of endangered species, are perceived to threaten these EINGOS and stakeholders commercial vested interests.

As the GME6 approaches to the Climax, protecting wildlife species from extinction becomes exponentially more difficult. A diminished wildlife population requires ruthless enforcement of the protections afforded it by the ESA and other wildlife conservation laws. Protecting wildlife in the United States is no longer simply about stopping its deliberate killing. Now, wildlife conservation is a proactive effort that involves habitat restoration and even artificial propagation. is always more costly and time-consuming thing to do. It is better to arrest the decline of a vertebrate population when it has lost less than a quarter of its population and/or historic range. If it allowed to be devastated and its habitat largely lost to development the costs

for its recovery are proportionately large. Similarly, the number of people interested in stopping it's extinction equally shrinks to only a few along with the popular interest in spending the millions required to prevent it's extinction. The best results come from simple but effective acts of enforcement when a species is still relatively abundant and not endangered. EINGOS and Agencies make conservation of endangered species expensive and time consuming. This costly policy assures more money spent on serving fewer species.

In 2020, the regulation and the permitted killing of all wildlife species is still under the control of state and federal agencies that exploit wildlife for sport and commerce as it was before 1970 and the start of the Green Epoch. Nothing has changed except that past institutional failings have been reinforced and preserved even for endangered species conservation. This is how things were done before the Green Epoch, which is another example of how the Green Epoch did not offer any real change for the historical destruction of wildlife and its habitat in the United States. Obviously, these agencies still view any value in protecting wildlife and the basis for its "management" as needing to serve the utilitarian need for a species being hunted and fished. Protecting wildlife just for its inherent value is not only an alien concept to these agencies but they also see it as a threat to their vested interests in exploiting wildlife for sport and commerce.

Green Knights cannot be seen in 2020 because the Green Epoch statutes impaired their ability to function anymore in society by only allowing EINGOS to participate in the administrative review process that they imposed. Obvious current the "manage to extinction" practice of EINGOS and government agencies cannot continue in a political environment friendly to the operation of Green Knights.

That increasing GDP and population is the principal cause driving GME6 is persuasive. Climate change impact on wildlife to 2100 AD is insignificant and functions as a "salt in the

wound” level of impact on wildlife populations. In 2003 the science journal *Nature* published an article that claimed that climate change was now injuring most global wildlife and was a major threat on its own for global wildlife. **FN107**

This article was an indicator of the occurrence of a “tipping point” being reached between 1995 – and the beginning of the millennium that swung environmental rooted in wildlife protection to an industrial environmental based directly on the needs of people. From 2003 onwards, the “social norm” of the United States was to promote continuing economic and population growth as a key basis for environmental protection. Thus climate change now has become the popular rallying cry for EINGOS and government environmental agencies. They define “environmental destruction” as wholly based on climate change and what directly hurts people and not wildlife. People’s health and welfare are claimed to be directly injured by climate change and hence preventing such injury is the basis of EINGO and government environmental protection efforts in 2020 and likely into the future. Conveniently, no one person can be blamed for it or change it. EINGOS voyeur conservation using alarmism to get cash without any promised results works ideally relying on the climate change appeal. **FN108**

On a global scale, environmental policy is now based on successful growth of national economies and populations. Advances in technology is also considered by government and EINGOS as the main basis for curing people based environmental problems. UN has adopted a “sustainable development growth” (“SDG”) standard for its member nations. The SDG program

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<sup>107</sup> Parmesan, C. & Yohe, G. “A globally coherent fingerprint of climate change impacts across natural systems.” *Nature* 421:37–42 (2003). DOI: 10.1038/nature01286.

<sup>108</sup> The journal *Nature* now has an editorial policy ruthlessly promoting climate change as the key and leading stressor causing environmental destruction in 2020 and into the foreseeable future despite the reality that it is not. It repeatedly is publishing articles claiming that climate change is the principle threat to wildlife species.

only sees wildlife conservation to serve as a later day “canary in the coal mine” standard for indicating an environment healthy for people but not to be used to have the global economy to suffer as a result of wildlife preservation.

The UN’s SDG deliberate denial of the impact of continuing economic development and increasing populations on wildlife and wilderness destruction has predictably resulted spectacular failure for its token efforts to promote wildlife conservation. In 2010 the UN’s Environmental Program implemented its Aichi Biodiversity Targets to be achieved by over 100 UN member nations between 2011 – 2020. **FN109** They are as follows —

1. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
2. Reduce the direct pressures on biodiversity and promote sustainable use
3. To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
4. Enhance the benefits to all from biodiversity and ecosystem services
5. Enhance implementation through participatory planning, knowledge management and capacity building

The UN’s Convention on Biological Diversity in 2016 formally admitted that its Aichi strategic agenda was a complete failure with any participant nation meeting any of its targets.

**FN110**This was wholly predictable. Like the United States, each of these nations is fully committed to economic and population growth. Each also requires all wildlife conservation efforts first to serve the need of people and economic growth. None of these nations started to

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<sup>109</sup> UN Convention on Biological Diversity. 2018. *Aichi Biodiversity Targets*. May 11. Retrieved 20 April 2020 (<https://www.cbd.int/sp/targets>).

<sup>110</sup> UN Convention on Biological Diversity. 2015. *Analysis of Targets Established by Parties and Progress Towards the Aichi Biodiversity Targets*. November 24. Retrieved 20 April 2020. (<https://www.cbd.int/doc/nr/assessment-table-2016-11-29-en.pdf>).

implement a Scientific Survey to inventory the biological status of its wildlife species. All these nations limit their wildlife conservation efforts to already depleted and endangered species. Of course, the Aichi Biodiversity Targets were impossible to meet because they violate the social norms of these nations as they do those of the United States. These nations possess a “social fact” that was deliberately decided by each of them. **FN111** The immutable social fact is that these nations will not oppose the GME6 destruction of vertebrate wildlife because to fully do so will adversely affect the annual growth of both their GDP and their population which they believe is required to provide the desired quality of life that is sought by their citizens.

## CHAPTER VI

### The Tragedy of the *Uncommons* and the Giving Commons

The ongoing mass destruction of vertebrate wildlife species and wilderness in the United States is not a biological phenomenon or problem *per se*. The biological or ecological issues involved in wildlife species needing to survive to partial destroyed forests or polluted streams irrelevant to the course of mass extinction. It is the wrong perspective to consider how to manage the needs of wildlife in unsuitable habitats rendered unfit for them by anthropogenic activities. That is conceding to mass extinction and denying that its progress will only become more invasive and not stabilized until the habitat becomes a parking lot.

Mass extinction of wildlife is essentially an economic phenomenon that has significant sociological aspects. It is nothing less the result of *Hominin*'s technological terra forming of the Earth's landscape since the Pleistocene into urban and peri-urban areas that are ideal for the ongoing progress of civilization. Wilderness ecosystems are being deliberately destroyed in order

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<sup>111</sup> *Supra* n. 20.



to prepare the land it occupies for the development required for establishing civilization and its economic growth. The wildlife that was living in the wilderness ecosystem is either displaced or killed from the land being terra formed. A insightful and sophisticated approach to explaining and quantifying the progress of mass extinction exploits the theories underlying behavioural economics, Freakonomics, game theory and chaos mathematics.

One of the sophisticated ways to view mass extinction of vertebrate wildlife is through the economic theory describing the exploitation of “commons” or natural resources are equally accessible to the members of the public without the need for paying rent. A commons can range from a fishing hole to the Atlantic Ocean, from a village common to the hundreds of thousands of acres of wild prairie. Even Central Park in New York City or the Boston Commons can meet the definition of a commons.

The concept of the commons, as a model for a paradigmatic explanation for global environmental destruction, was introduced in an amazingly to the point 1969 article in *Science* magazine. It was written as an editorial by an ecologist whose term of serving as president of the American Association for the Advancement of Sciences (AAAS) was about to end. The motivation for Garret Hardin writing “The Tragedy of the Commons” was to leave a clear message concerning the inevitability of people destroying the Earth’s environment despite the fact of their survival relying on it and — just as importantly — despite the fact as a whole that they do not actually want to destroy it. **FN112** This short (six pages) article has become the most cited article in the history of the biological sciences.

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<sup>112</sup> Hardin, Garret. 1969. “The Tragedy of the Commons.” *Science*. 162: 1243-1248.

In it Hardin nicely made use of romantic memories of the historic English village commons as a basis for his offered assessment for the risk of global environmental destruction. He pointed out that a villager who sought to over graze his cows on the village's commons would enjoy immediate gain but the injury inflicted on the commons from the overgrazing would only pose as an uncertain risk of a future burden on him, if at all, and then to be shared equally with him by all the villagers using the commons. So most of the villagers possess the motivation to overgraze their own cows and get immediate gains in exchange for an uncertain loss in the future that will be shared by all of them. This simple metaphor elegantly makes palatable the ongoing loss of all manner of Public resources. It explains the collapse of the Atlantic Cod fishery, the irreversible loss of the Old Growth forests of the northwestern United States, and why the Colorado River now never makes it to the Pacific Ocean anymore.

The Tragedy of the Commons paradigm relies on the simple observation that people in groups who together harvest the resources from a common landscape to which they got access will inevitably deplete the common of the desired resource. These people acting as individuals will always take more in the aggregate from their individual acts than is sustainable because they have an individual incentive to gain an immediate advantage but in exchange just suffer an uncertain risk of loss in the future from their selfish act. This “lots of immediate gain and only uncertain shared pain down the road” is a reality that drives each member of the group to act individually to over exploit the common resource until their aggregate overexploitation can no longer sustain the needs of the group.

Anyone that steps back to take an objective view of the ongoing destruction of the Earth's environment by anthropogenic assault is well aware that it is not “bad men and women” who are responsible for almost all the anthropic destruction of the Earth's environment over the

last half-century. It is the good people who are killing the Earth. They are also not doing this by accident. They are well aware of the harm they are doing but as a group seemingly unwilling to significantly to put a stop it with the same enthusiasm that possess to cause it.

One of the most important points that Hardin was making is that there is no easy technological fix out of real-world environmental problems. This was a direct challenge to the sunny optimism generated at the time by the “Green Revolution” in the production of high-yield varieties of rice and wheat crops that tripled wheat production which was widely acclaimed to have spared Mexico and Asia from widespread famine at the end of the 20<sup>th</sup> Century. **FN113** This achievement won the Noble Peace Prize for the lead scientist whose technological achievements were behind the successful effort to produce these high-yield grain plants. **FN114**

At the start of his 1969 *Science* article Hardin wrote —

“I would like to focus your attention ... on the kind of conclusion they reached, namely that there is no technical solution to the problem [of nuclear escalation]. An implicit and almost universal assumption of discussions published in professional and semi-popular scientific journals is that the problem under discussion has a technical solution. A technical solution may be defined as one that requires a change only in the techniques of the natural sciences, *demanding little or nothing in the way of change in human values or ideas of morality* [emphasis added].”

One of the problems he identified as not having a “technological fix” is overpopulation. Of course, he is not talking about sterilization or other medical treatments to prevent reproduction. He is referring to the problem of the accruing environmental consequences of a

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<sup>113</sup> Borlaug, Norman. 1994. *Feeding a human population that increasingly crowds a fragile planet*. Mexico: Mexico, DF. ISBN 968-6201-34-3.

<sup>114</sup> Norman Borlaug is the American agricultural scientist and plant pathologist who was awarded the 1970 Nobel Peace for alleviating world hunger with his work advancing agricultural technology that produced high-yield hybrid grain plants. He was called the “Father of the Green Revolution.” Unfortunately, the produced high-yield plants require huge amounts of fertilizer and massive applications of pesticides to get the miraculous high yields, These very requirements are now also causing devastating impacts on the environment and wildlife.

continually increasing population of people on a planet with a fixed amount of land for these people to live on and to do so in a comfortable manner.

What he is achieving using the commons paradigm is pointing out that any increasing population of people will not wisely recognize its greater burden on agriculture production. Neither will it wisely attenuate either its appetite for food or its need to produce more people in order to prevent famine. Instead it will process and overexploit its limited agriculture resources and inflict on itself famine, disease and perhaps even war.

Of course, along the way to oblivion an increasing population will produce a greater demand for say food that will be a boom in *Kapitalist* economies for entrepreneurs to innovate ways to produce greater yields of food produce from an acre of land. But such advances always have their price. The aforementioned Green Revolution requires a huge increase in the amount of fertilizers and pesticides applied to a crop. This has harsh environmental consequences. Ultimately, there is only so much possible in technological advances until time runs out and the “devil gets paid his due.” For example, bigger crops mean more water for irrigation and there is only a fixed amount of available water.

A really interesting concept raised by Hardin is the necessity and efficacy of the imposition of morality in order to get people and social institutions to act rationally in order that they recognize and are willing to face the consequences of the negative impact of their activities on the environment despite the fact that they really want to do these activities and consider them essential to experiencing what would be called a “quality of life standard” (QOLS). Another problem is that it is common for most people to demand that this QOLS be afforded to every single person on Earth regardless if they deserve it or earn it.

It must be made clear that when Hardin refers to “people” or “individuals” the commons paradigm is also referring to corporations, NGOs, government agencies and all manner of social institutions and not just registered voters. All of these organizational actors are bound by the same intents, foibles, irrational conduct and selfish motivations as the people employed by them. If anything, social institutions and structures are more likely to comply with the TOC paradigm than real people and to be even more clueless to the ongoing environmental disasters that they are causing.

Not unexpectedly and despite its overwhelming popularity, Hardin’s paradigm also generated a backlash of denial by a group of political scientists and other advocating that “communities” can easily regulate their commons and void any tragedy. They basically are upset that the Tragedy of the Commons paradigm implies that “communities” readily impose self-inflicting wounds from environmental impact problems when harvesting local resources. They are offended at using the possible “privatization” of historical Public resources to evade the consequences of the TOC paradigm. The paradigm is seen as too immediate a threat to invalidate their promotion of a utopian world of sustained economic growth, technological advancement and free government services with a singular focus only on the “people environment.”

One of its lead scholars, Elinor Ostrom, was renowned for her research that illustrated how small communities in third world countries established collaboratives that harvest common resources in a sustainable manner in the long term. Her 1990 book *Governing the Commons* and her other work became extremely influential. **FN115** Her influence is such that she was awarded the Noble Prize in Economics in 2009. This could though be seen as a sign that the Noble

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<sup>115</sup> Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge (UK): Cambridge University Press.

committee members are signaling their own opposition to the commons paradigm as too harsh a message and agrees with Ostrom --

“The empirical and theoretical research stimulated over the past 30 years by Garrett Hardin’s article has shown that tragedies of the commons are real, but not inevitable. Solving the dilemmas of sustainable use is neither easy nor error-free even for local resources. But a scholarly consensus is emerging regarding the conditions most likely to stimulate successful self-organized processes for local and regional CPRs” **FN116**

However, the Commons Paradigm is not about small, out of the mainstream communities. The anthropic world is seemingly on a path of ever, increasing globalization to point where its “commons” will seemingly encompass the entirety of the Earth and its near space (i. e. satellites and orbiting space stations; where national boundaries have dissolved or have become so porous as to be meaningless; where huge urban centers themselves have no boundaries or any outlying suburbs anymore, there are just huge *megalopolis* stretching for thousands of miles along coastlines and down the length of major river basins. **FN117** In these *megalopolises* property ownership as such has vanished. People travel not just in subways but in autonomous vehicles that that they do not own or lease. They hop into one that is parked and empty and issue a voice command to where the passengers want to go. They get out of the vehicle when they arrive to where they are going and abandon the vehicle to the next interested rider. Neither they or the next rider own any interest in the vehicle. Corporations own all the land

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<sup>116</sup> Ostrom, Elinor. *et al.* “Revisiting the Commons: Local Lessons. Global Challenges.” *Science*. 284: 278-282.

<sup>117</sup> The term “Megalopolis” meaning a “super city” was first used by Patrick Geddes in his *Cities in Evolution* (1915). Later it was used again by Oswald Spengler in his book *The Decline of the West* (1918). In 1938 Lewis Mumford used it critically in his *The Culture of Cities* by describing it as no more than urban overdevelopment and as symptomatic of social decline.

and buildings and just provide living space to their clients. All things are publicly accessible but no one owns anything – except their investments in the stocks of large corporations.

Unfortunately, the reality of the Commons Paradigm is all too real for wildlife species in the United States and across the globe. The ongoing destruction of the Earth's biodiversity by overfishing and other commercial industries supports the predictions of Hardin's Tragedy of the Commons. **FN118** The destruction of Bluefin Tuna (*Thunnus thynnus*) populations in the Atlantic despite government regulation illustrates that government regulation is no panacea solution to the destruction of the commons. Consider a fact of the real world. A single large Blue Fin Tuna brings over \$50,000 in the Tokyo fish market. No one can see any fishermen passing up such a haul even if it were the last tuna fish on Earth. This is the quintessential example of self-interest over common good. One of the most tragic examples of wildlife loss is the ongoing extirpation of the Vaquita, a small porpoise indigenous to the Gulf of California in Mexico that is killed in the gill nets of the local fishermen. Recent surveys have only been able to document 19 remaining. **FN119**

The Tragedy of the Commons for wildlife starts with the fact that no one can lawfully own wildlife in the United States and most European nations. So, there is no economic incentive to protect wildlife species from being destroyed from habitat lost or poaching. But what of the land that wildlife thrives on. At its best this is wilderness itself which is either the Ocean or federal/state owned land. But here if the Public is seen as owning the land, each's share is so small that it is no one's interest to attempt to protect the land from exploitation by commercial

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<sup>118</sup> Peterson, Elizabeth. 2006. *Institutional Economics and Fisheries Management*, Northampton (US): Edward Eigar Publishing. ISBN-13: 978-1843767824.

<sup>119</sup> Jaramillo-Legorreta, Armando, *et al.* 2019. "Decline towards extinction of Mexico's vaquita porpoise (*Phocoena sinus*)."  
*Royal Society Open Science*, 6(7). DOI: 10.1098/rsos.190598.

harvesters of wildlife. No one may really own public lands – owning means possessing the legal authority to keep people off the property. Public lands are a sieve of open access to a killer’s commercial resource that no one protects.

Regarding the Ocean, commercial harvesters have raided the Ocean to harvest fish and whales without restraint since there was no one who cared enough about the fish or whales to stop them. In doing so, the government began regulating these commercial harvesters for the benefit of commerce and not wildlife conservation. Eventually the commercial harvesters had laws passed that gave them the exclusive authority to regulate themselves and control all commercial fishing agencies exclusively. These federal and state laws keep all non-fishermen from having any say on their commercial exploitation of marine wildlife. This is true in the United States and Europe. The collapse of the Atlantic Cod fishery is a prime example of the Tragedy of the Commons. Despite ongoing regulation and imposed fishing quotas, the entire fishery collapsed to a biomass estimated to be less than one percent of the original amount of codfish. The collapse of the cod fishing industry constituted the single greatest loss of jobs in the history of Canada.

The Tragedy of the Commons is now seen as a two-edged sword. It is not just about the over exploitation of the commons but it is also approached from the opposite pole of the under-utilization of Public resources to the detriment of the Public good. **FN120** The author of *The Gridlock Economy* uses the example of the Robber Barons along the Rhine River during the period in the history of the *Great Interregnum* (1250–1273). This was a period when there was no overall reigning Emperor so most gentry got to do what they wanted to finance their

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<sup>120</sup> Heller, Michael. 2008. *The Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*. Philadelphia (US): Basic Books. ISBN 978-0-465-02916-7. & “When too many people own the same thing, nobody can use it.” Retrieved on 20 April 2020 (<https://www.youtube.com/watch?v=9n89Ec3DFtk>).



fiefdoms. The *Raubritter* (robber knights) built toll castles on both sides of the Rhine, strung a chain across the river between the castles, and charged exorbitant tolls for any river traffic to pass. The *Raubritter* pretty much shut down commerce on the Rhine. After decades of unfettered robbery, good barons made war against the *Raubritter* and finally put them out of business.

### **FN121**

The example of the *Raubritter* illustrates that there is both an antagonist and a protagonist component to the exploitation of the common resource. There is the antagonist harvester who seeks to exploit the commons for personal gain. Then there is the protagonist, the protector of the commons that we can call the Green Knight, after the good knights who put an end to the tyranny of the *Raubritter*. Hardin's tale of the Tragedy of the Commons is tragic because a Green Knight is missing to save the day. A Green Knight should have gone onto to the commons and ordered the harvester to remove his excess cow immediately or he would punish him. If Green Knights are present the Tragedy of the Commons does not happen because the presence of the Green Knight brings balance and harmony to the commons.

There are two good reasons why the Green Knight does not show up in the Tragedy of the Commons. First, what is in it for the Green Knight to serve? Anyone who is trying to stop the exploitation of the commons is subject to the same motivations of any harvester. While a protector has some uncertain long-term shared interest with others in protecting the commons this does not provide much benefit for the protector to risk injury and social conflict to stop a single harvester's adding a single cow to the commons on any given day. The protector's interest in protecting the commons on any day cannot compete with the harvester's immediate gain in

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<sup>121</sup> The international cooperation for navigation along the Rhine in modern times was established with the formation of the *Central Commission for Navigation of the Rhine*. The commission's legal authority comes from a treaty signed at the Congress of Vienna in 1815.

overexploiting the commons. Also consider who the neighbors would support. They would be far more likely to side with the Harvester out of sheer empathy. So, the protector faces social enmity from trying to protect the commons. This is the way of the world. The Second is simple motivation. No one is paying a protector to enforce practices to sustain the commons. There is no commercial benefit to be one. So, on any given Sunday, anyone highly motivated to be a protector is probably coerced most of the time into making a living like anyone else by overexploiting the commons.

The *Raubritter*'s can easily be seen in modern terms as commercial fishermen. Commercial fishermen will get away with overfishing and otherwise ravaging the Ocean as long as there is no Green Knight showing up to stop them. International regimes for wildlife protection fail miserably because they do not recognize the authority and will not financially support the existence of Green Knights as an institution protecting wildlife and their wilderness habitat from commercial exploitation. It is fatal error on any international wildlife regime that fails to provide for the enforcement authority of Green Knights.

Contrary to contemporary bias, government agencies cannot serve the role of Green Knights. The exact opposite is true of the actual typological roles they play as promoting commercial exploitation. This claim is supported by basic economic theory. Economist Tullock's analysis shows that government regulation of Public resource allows private corporations to use their resources to influence regulators and actually gain a greater advantage in their exploitation of a common resource than if the Public resource was not regulated and in which simple market

competition prevailed **FN122** This is exactly why commercial fishermen get to overexploit every fish species that they target for over exploitation. **FN123**

This brings us back to the beginning with the Hardin's quote claiming that morality is the authority that provides the protection of the commons. The Green Knights operate out of moral authority. They protect wildlife because it is the cosmic law that they obey, the true law and the only law that can protect life uncorrupted by commercial greed.

A great example of an effective Green Knight is Dian Fossey. She protected Mountain Gorillas in Rwanda not only from poachers but also from exploitation by tourists and NGOs. She became world famous from the support of the National Geographic Society and the publication of her bestselling book *Gorillas in the Mist*. **FN124** She heroically protected the Gorillas in the field mostly on her own with few supporting companions. She was murdered in 1985 in the service to the Mountain Gorillas as a Green Knight. She was buried in the graveyard that she created for the gorillas that were killed by poachers.

Wilderness at a minimum may be stated to be an ecosystem where anthropogenic impact or presence is quite minimal if non-existent. Wilderness by its definition cannot be directly harvested for some commercially saleable product and still be considered wilderness. This "pristine state" compliance is how the Amazon rain forest classically exists in legend and now on its best day in tourist guides. These indigenous pre-Columbian people living in the Amazon— as

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<sup>122</sup> Tullock, Gordon, 1967. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal*. 5(3): 224-232.

<sup>123</sup> Oake, Jason. 2016. "Rent-seeking and the tragedy of the commons: two approaches to problems of collective action in biology and economics." *J Bioecon* 18:137–151. DOI 10.1007/s10818-016-9224-9

<sup>124</sup> Fossey, Dian. 1983. *Gorillas in the Mist*, New York (US): First Mariner Books. ISBN-13: 978-0618083602

their remaining tribes still do to this day -- only possessed an elemental stone-age technology. They are still relatively small in number and their long residence in the Amazon basin has had little impact if any on the numerous species of plants and animals that live there. The Amazon's mineral and biological resources were never significantly exploited by indigenous people. This classic view of the Amazon does not comply with the accepted scenario for a "commons." There are no English villagers leading their family's milking cow out for its daily grazing to a paddock in the Amazon jungle.

Now the Amazon is being exploited commercially with settlements of prospective farmers and cattlemen by immigrants coming from the nations covering its breadth. These activities are reclaiming Amazon land for agricultural purposes by deliberately destroying its wilderness ecosystem. As a result, the Amazon river basin is now subject to fires deliberately set to defoliate vast stretches of its jungles in order to convert the land to agricultural use. This exploitation is nothing more than the destruction of the Amazon as wilderness with the concomitant extinction of its native wildlife. Either way the Amazon is not a commons since it is not exploited for any resource as wilderness and its wilderness is just being destroyed. By its simple definition no wilderness can be sustainably exploited.

However, on a global scale the Amazon and other remaining wildernesses perhaps can be seen as a commons but not because of any direct exploitation of its resources, like being directly harvested for wood, meat, or mineral resources. Wilderness like the Amazon is a vital part of the global ecology. It supplies vast amounts of oxygen to the atmosphere and also functions as a carbon sink with global impact on climate change. By generating oxygen into the atmosphere and acting as a carbon sink for greenhouse gasses the Amazon just serves as a "giving commons." The Amazon alters the global environment to make it more pleasant for Earth's

hominin remaining species and their activities without these benefits needing to be directly “harvested” by the public.

So while civilization cannot directly harvest a wilderness sustainably — and only destroy it attempting to do so -- the Hominin can irreplaceably benefit from it. Therefore, it would be seen as wise course if the Amazon and Earth’s other remaining wilderness were protected by nations from any further anthropic destruction at all. There is a coin to be flipped by the UN’s international regimes establish to protect the global environment: Heads, to preserve the wilderness under law for all time from any kind of commercial exploitation to insure all remaining wilderness from being ever again diminished in acreage by *Hominin*, and tails, allow the Earth’s wilderness to be sustainably exploited (i. e. destroyed) by sovereign nations in order to feed the starving hordes of these developing countries growing populations. Currently the coin is resting with the tail side showing.

Now consider Central Park in New York City on a sunny Summer day. Thousands of the urban Hominin go there on that day and on every Summer day to walk barefoot on the grass or to connect with a friend under a secluded tree. However, Central Park is not a public commons. It is privately owned and was artificially created for the enjoyment of all with no admission fee. Its resources are not being harvested or otherwise directly taken. They are only enjoyed by the Public absent any material consumption by it. The grass in Central Park is not eaten and its flowers go unpicked. No one is allowed to plant a tree or even dig a hole without formal agreement with Central Park’s owners. Better yet, the turf that is worn out by foot traffic gets replaced by landscapers without cost to the public. The trees that fail in time from pollution or disease get similarly replaced with new plantings. Like Earth’s wilderness, Central Park is a gift

to the public and a “giving commons” that would be quickly destroyed if the Public could personally harvest its abundant resources.

There is a critical difference between the Amazon and Central Park as giving commons. The Amazon is being commercially developed by the nations of the Amazon river basin. The Amazon wilderness is unowned property belonging to no one but under government control of these nations. This is just like the *Agra Publica* lands the Roman Senate took under its control and eventually disbursed to its elite citizens and military veterans. Operating under a similar legal scheme, the Amazon and other wilderness areas are now being commercially developed by the individual members of the Public who are opportunistically claiming legal title to these forests from their governments. The Amazon as public land is now being converted into private property and commercially developed. The Amazon and other remaining wilderness are undergoing anthropic reclamation of its land for agricultural purposes. But no one is going to commercially develop Central Park despite its also being a *giving commons*. Unlike the Amazon, Central Park is private property whose owner as a non-profit corporation intend to keep it as a *giving commons*. **FN125** They will not allow Central Park be harvested for private profit. In fact, Central Park is experiencing constant renewal by its private owners.

Consider that every nation has laws forbidding the theft of another’s property. For similar reasons, it is inevitable that individuals will always seek to directly convert a natural resource not owned under law by another to its personal profit. No one owns a fish till it is caught on

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<sup>125</sup> Anonymous. 2020. *Central Park*. “[NYC Central Park] is maintained by the Central Park Conservancy, a private, not-for-profit organization that manages the park under a contract with NYC Parks, in which the president of the Conservancy is *ex officio* Administrator of Central Park. The conservancy employs 80% of maintenance and operations staff in the park. It effectively oversees the work of both the private and public employees under the authority of the publicly appointed Central Park administrator, who reports to the parks commissioner and the conservancy's president.” Retrieved 20 April 2020 ([https://en.wikipedia.org/wiki/Central\\_Park](https://en.wikipedia.org/wiki/Central_Park))

someone's hook. The pioneering of Amerika and Australia was based on the same underlying principles of English common land laws. **FN126** If frontier land is owned in public trust by the government, mere bureaucrats are easily persuaded by law and historical practice to allow any earnest entrepreneur full access to the land under its administration. This makes sense since government employees have no personal interest in the public land under its care. They will not suffer in any way from its being ruined by the politically influential and only from pleasing commercial interests seeking to create jobs and commerce from their acquiring unowned public lands.

“Green Knights” are individuals or legal entities that by character and practice seek to preserve *per se* wildlife and natural resources and for the public good. It would seem based on well-established principles of science and law, that the best way to insure the preservation of the Earth's remaining wilderness as beneficial giving commons is for the nations of the Earth to give them over to Green Knights as their private property. Doing so can only reasonably lead to Earth's wilderness areas being preserved in the long term as giving commons to protect the Earth's biodiversity and the health of the global environment regardless of all future commercial and industrial development on the planet.

#### *Regimes for Sustainable Development as a Threat to Wilderness*

Wilderness maybe scene as largely a subjective thing that encompasses a sense of size and loneliness, fear and awe, and pure wonder and adventure. However, there is established scientific consensus that wilderness is at the places where people are not. The Wild Foundation

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<sup>126</sup> Act of May 20, 1862 (Homestead Act), Public Law 37-64, 20 May 1862; Record Group 11; General Records of the United States Government; National Archives. The United States Homestead Act of 1862 allowed most any US citizen to claim title of ownership to 160 acres of federal lands not currently registered as title property of the federal government. Retrieved 20 April 2020 (<https://www.ourdocuments.gov/doc.php?flash=false&doc=31>).

defines wilderness as “The most intact, undisturbed wild natural areas left on our planet – those last truly wild places that humans do not control and have not developed with roads, pipelines or other industrial infrastructure.” **FN127** The International Union for the Conservation of Nature defines “wilderness areas” as “Large unmodified or slightly modified areas that retain their natural character without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition” **FN128** Essentially “wilderness” is quintessential wildlife habitat and effectively preserving extant wilderness is the measure of whether or not 100% of biodiversity is maintained on the Earth protected from anthropogenic destruction.

Since the beginning of the 1990’s the United Nations has been the focus for the establishment of numerous international regimes for the protection of the global environment. It has not chosen to preserve the remaining global wilderness. The UN adopted the Convention on Biological Diversity at its 1992 Rio Summit 1992. The UN’s pronounced goal of its CBD do not indicate any intent on it is preserving the Earth’s remaining wilderness. **FN129** At its 2010 Convention of the Parties the CBD adopted a ”Strategic Plan for Biodiversity 2011-2020” including its Aichi Biodiversity Targets. The Aichi’s Strategic Goal C, Target 11 seeks for each signor nation to set aside seventeen percent of its land as protective reserves for “ecosystem

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<sup>127</sup> *Supra.* n. 39.

<sup>128</sup> <https://www.biodiversitya-z.org/content/iucn-category-ib-wilderness-area>

<sup>129</sup> UN Convention for Biological Diversity. 2020. “The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity. the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.” Retrieved 20 April 2020 (<https://www.cbd.int/>).



services.” This target serves the vested interests of Sustainable Development Goals (SDG) goals and, as a compromise biased to the needs of commercial development, it cannot be expected to result in the preservation of wilderness.

In 2016 the UNEP CBD’s Secretariat reviewed the party nation’s “5<sup>th</sup> National Report” submitted to document their progress in meeting the 2020 Aichi Strategic Goals. **FN130** It determined that none of the party nations had made any required progress to meeting the 2020 Aichi Strategic Goals. This failure was not unexpected since wildlife species have no market value unlike land. The economic cost of essentially nullifying the economic value of 17 percent of a nation’s land is highly prohibitive and would require considerable demand by the Public for a nation to do so.

Neither of the UNEP’s Framework Convention on Climate Change nor its Convention on Biodiversity directly requires the preservation of intact and continuous wilderness areas. This horrific failure most certainly condemns to failure the UNEP’s current efforts to protect biodiversity and to put a lid on greenhouse gas emissions to stop the Earth’s mean temperature from rising over 1.5 degrees Centigrade.

If anything, the UNEP itself would seem to agree on the need to do more to protect the Earth’s remaining wilderness and admit to the failure of current international environmental regimes to adequately address the required task. Earlier this year, the UN’s IPBES issued a report detailing the status of biodiversity on Earth and the anthropogenic causes for the current state of global biodiversity (“*IPBES Biodiversity Report*”). **FN131**

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<sup>130</sup> *Supra.* n. 109.

<sup>131</sup> IPBES. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and*

The UN's press release of the *IPBES Biodiversity Report* made the following claims –

“Nature is declining globally at rates unprecedented in human history – and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely ... The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. The average abundance of native species in most major land-based habitats has fallen by at least 20%, mostly since 1900. More than 40% of amphibian species, almost 33% of reef-forming corals and more than a third of all marine mammals are threatened. The picture is less clear for insect species, but available evidence supports a tentative estimate of 10% being threatened. At least 680 vertebrate species had been driven to extinction since the 16th century and more than 9% of all domesticated breeds of mammals used for food and agriculture had become extinct by 2016, with at least 1,000 more breeds still threatened ... [and] the five direct drivers of change in nature with the largest relative global impacts so far. These culprits are, in descending order: (1) changes in land and sea use; (2) direct exploitation of organisms; (3) climate change; (4) pollution and (5) invasive alien species”  
**FN132**

It is no simple failure that the UNEP's environmental regimes like the UNFCCC or the UNCBD for their not to include provisions for the direct preservation of the Earth's remaining wilderness areas. The failure is likely nothing more than the UNEP acting deliberately to prevent a conflict between the UNEP's conventions and UN's current high-priority sustainable development goals (“SDG”) to be achieved by 2030 by all its member nations. **FN133** The UN's SDG program supports an exponential growth in economic development in third world

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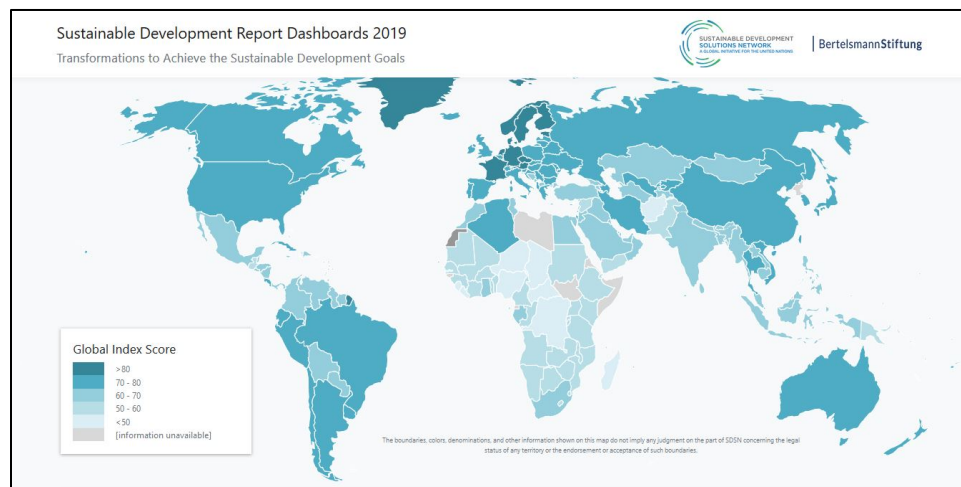
*Ecosystem Services*. S. Díaz, et al. (eds.). Bonn (Germany): IPBES secretariat. 56 pages.  
<https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services>

<sup>132</sup> IPBES 2019. *UN Report: Nature's Dangerous Decline Unprecedented Species Extinction Rates Accelerating*. July. Retrieved 20 April 2020  
(<https://www.un.org/sustainabledevelopment/blog/2019>)

<sup>133</sup> United Nations. 2020. *About the Sustainable Development Goals*. “On 25 September 2015, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled ‘Transforming our world: the 2030 Agenda for Sustainable Development’. This agenda has 92 paragraphs. Paragraph 51 outlines the 17 Sustainable Development Goals and the associated 169 targets and 232 indicators.” Retrieved 20 April 2020  
([https://en.wikipedia.org/wiki/Sustainable\\_Development\\_Goals](https://en.wikipedia.org/wiki/Sustainable_Development_Goals)).

countries. It also supports an exponential growth in the hominin populations in these nations that predictably will result from elimination of disease, poverty and hunger. The SDG program intends to facilitate economic growth by insuring the quality of the environment people. The “sustainable” in SDG means sustain economic growth into the future. SDG seeks to raise the GDP of these nations to equivalence of European nations but with no pollution and with the same European Union standards for social equality and representative governance. Obviously, realizing the UN’s SDG is in direct conflict with preservation of remaining wilderness areas.

The most obvious threat to biodiversity is SDG Goal 9 promoting “Industry, Innovation and Infrastructure.” Brazil’s meeting SDG Goal 9 is being achieved with its establishing roads, powerlines, and dams in Amazon river basin. Brazil destruction of the Amazon wilderness is getting it a high mark in achieving SDG Goal 9.



**Figure 4:** *Map of Countries’ Ratings for Meeting UN SDG Goals*

The tragic reality is that all the remaining wilderness on the Earth can be loss with the UN and its member nations still being able to succeed in achieving the sustainable development goals for all UN member nations. The Amazon rain forest is unlikely to survive if the UN’s SDG is realized by Brazil and the other nations spanning the Amazon river basin. This conflict is why the UNFCCC/UNCBD refuses any commitment to preserve the Earth’s wilderness areas. It

appears the signing nations parties to the UN's SDG program are willing to see wilderness disappear from their respective nations in exchange for achieving the sought for SDG economic miracle for global development.

Since most biodiversity “hot spots” are in third world countries, meeting the UN SDG Goal 9 infrastructure will potentially have a devastating impact on wilderness that is home to mammalian species of wildlife. A study conducted to assess SDG Goal 9's possible adverse impact on Ape species (i. e. Gorillas, Chimpanzees, Bonobos, Gibbons & Orangutan) found that the desired infrastructure growth will adversely impact over ninety percent of surviving ape habitats. **FN134** The study reported that --

“Global modeling exercises indicate that industrial activities will have disturbed more than 90% of African ape ranges and about 99% of Asian ape ranges by 2030—up from 70% in 2002, due to global and local pressures from agriculture, extractive industry and infrastructure development. In large part, these hikes reflect a worldwide boom in current and planned road construction. The International Energy Agency foresees the construction of an additional 25 million km of paved roads by 2050, with development agencies and governments expected to invest US\$33 trillion. Almost 90% of the new roads are to be constructed in developing nations, including in areas that deliver vital eco- system services and harbor exceptional biodiversity ... Infrastructure projects have direct and indirect impacts on apes, both of which can result in significant population declines. Even small declines can have catastrophic effects on numbers, as apes have slow reproductive rates and prolonged periods of dependency on maternal care.”

A summary of the report offered by one of its editors claims —

“The report finds that the environmental and social standards set by financing institutions for development projects, including new infrastructure projects, are insufficient to protect biodiversity, critical habitats and local communities. The report argues that many infrastructure projects aim to promote economic prosperity and alleviate poverty but often fail to achieve these aims. Co-editor of the ‘State of the Ape’ series, Annette Lanjouw, explained that the majority of global infrastructure growth is planned in developing nations, often in “regions with exceptional biodiversity and vital ecosystem services.” She said the

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<sup>134</sup> State of the Apes. 2020. *State of the Apes: Infrastructure Development and Ape Conservation*. Retrieved 20 April 2020 (<https://www.stateoftheapes.com/volume-3-infrastructure-development>).

consequences of such growth “will be devastating for natural systems as well as for people dependent on these ecosystems for their livelihoods.” **FN135**

The *IPBES Biodiversity Report* recognizes that habitat destruction of wilderness is the primary cause for the current crisis for biodiversity. However, the *IPBES Biodiversity Report* repeatedly attempts to link the welfare of wildlife species with the goals of sustainable development. The two cannot be considered the same. While it is nice for the UN members to desire a world of booming economic development where everyone has a job, free health care, higher education, no poverty, food security and any other utopian criteria that can be added to this list, none of this is either required to protect biodiversity and all of them are in conflict with the survival of wildlife species from the very destruction of wilderness that the IPBES cites as the primary cause for the current destruction of wildlife biodiversity.

Wilderness contains the richest biodiversity on the Earth. Of course, it should. Mankind’s adverse impact from its very presence and technology inherently reduces the biodiversity in every area where hominin of any kind dwell and whose societies are at any stage of technological development. The International Union for the Conservation of Nature (“IUCN”) – the most preeminent global conservation society currently – identifies and seeks to establish the legal protection of habitat essential for the survival of endangered species of wildlife. **FN136** If the remaining wilderness was ruthlessly preserved and kept free of any significant involvement with civilization, almost all remaining biodiversity on Earth would be guaranteed preserved too into the indeterminable future.

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<sup>135</sup> <https://www.stateoftheapes.com/>

<sup>136</sup> IUCN, 2016 *Protected Areas The World Database on Protected Areas (WDPA)*, <https://www.protectedplanet.net/>

*The Need to Protect the Uncommons*

Wilderness and Wildlife must be considered an “Uncommons” in regards to mass extinction. Wilderness and wildlife are categorically incapable of commercial exploitation. Exploited wildness is wilderness no more. So wilderness needs to go unexploited to remain wilderness. Wilderness inhabiting wilderness cannot be commercially exploited either because as wilderness to be wilderness cannot be subject to commercial activity.

To apply the Tragedy of the Commons analysis to wilderness/wildlife introduces the issue of not exploiting an Uncommons no matter what the economic motivation. So how is it possible to stop commercially valuable land when it is wilderness? Government fiat is seemingly the only way but through what path? However, as Tullock points out government directly owns or controls the land it is unlikely that government will set it aside indefinitely as preserved wilderness since government principally serves commerce. Politics alone will insure that valuable land will not be treated as inviolate wilderness as lobbying by influential corporate interests are likely to prevail overtime.

## CHAPTER VII

### **If It was Another Time at Another Place.**

Vertebrate mass extinction in the United States is likely inevitable. The majority of published reports detailing wilderness decline and diminution of wildlife populations only supports this asserted fact. The land surface of the United States is finite. As industry and commerce grows continuously, it gobbles up more and more of the Earth's surface. The nation's population is growing and adding millions of people every year. Once again more and more of the nation's land area is taken up with more residential housing. Suburbs are growing out from urban areas. This continuous expansion of civilization is taking over the last of the nation's wilderness. It is displacing and killing off the wildlife that needs to live on this land.

Those interested in wildlife ask the question, "Is there is anything out there trying to stop the Climax of GME6? This study has discovered that the only legitimate answer is "not really." Despite that Green Epoch, wildlife losses are still growing in 2020 and wilderness in the United States is still being eaten by development. The Climax will be largely irreversible for a million years even if regret results in a total commitment to regain lost biodiversity. **FN137**

The complete failing of any existing inventory and accounting of the nation's vertebrate wildlife is the biggest missing piece of the puzzle on why there is no resistance by EINGO and wildlife agencies. The first step in getting a commitment of the Public to restrain economic development to slow the loss of wildlife is to show them the numbers to prove them there is now a necessary choice to make to protect wildlife or to have it wiped out in front of their eyes.

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<sup>137</sup> Davis, Matt. *et al.* 2018. "Mammal diversity will take millions of years to recover from the current biodiversity crisis." *Proc. Nat. Acad. Sci.* 115(44):11262-11267. DOI 10.1073/pnas.1804906115.1804906115

This has not happened at all. Why? An informal survey was done by this study of the UNH community that showed that almost all recipients supported ending commercial fishing if it would stop the killing of endangered whales. That is notable considering that government and EINGOS totally oppose doing anything like that.

It appears that during the 1990's, at the height of environmental awareness and enthusiasm, there was the program to inventory the national wildlife at the highest level of the Department of the Interior and funded to the tune of millions of dollars. But the prevailing political climate did not support it and it was permanently shut down, clear evidence that the nation reached a tipping point. Its governance, both political parties, and even the EINGOS made a deliberate choice around the Millennium to sacrifice vertebrate wildlife to GME6 so that they could maximize their ability to terraform the Earth into bustling and prospering civilization that they wanted and that they got.

In 2020 the Green Knights that made the Green Epoch possible and 1990 Earth Day are gone from the public view, perhaps because the government agencies have betrayed wildlife with the assistance of the EINGOS. There is no compelling reason why this group of individuals went away by their own choice. Clearly something changed in the matrix of America that made it impossible for them to do what they needed to do. Regardless, there is no way to account for what is happening now but that the agencies, the EINGOS, and their protected stakeholders are managing wildlife to avoid enforcing its legal protection. It is "managing into extinction" the nations wildlife.

So is another future possible besides the Climax of GME6 by 2100? It appears not likely. But it is possible to at least explore and speculate on what kind of changes to United States



governance, society and culture would make it possible to avert the Climax if those changes are implemented now.

FIRST, there needs to be immediately established a well-funded scientific authority that will annually inventory all vertebrate wildlife species (Scientific Survey”). The Scientific Survey will assess each species population trend by the numbers, quantify any decline in each species geographic range, and assess the presence of any factors causing a decline in these numbers. This will assure that a developed inventory can be shown to everyone so that a meaningful discussion on the trend of GME6 can be convincingly demonstrated and choices can be made by society with full deliberation.

SECOND, bring back the Green Knights by revering them and authorizing their protection of wildlife. EINGOS in 2020 really do little but exploit wildlife for profit with help of their corporate sponsors. Even the national press has taken notice of this conduct. **FN138** , **FN139**, **FN140** The EINGOS never tried to do required Scientific Survey themselves or demanded it by the government. They demand that the government to do it all for wildlife. Disempowering the EINGOS — even by eliminating their organizing statutes – and fully empowering the Green Knights offer the best hope to protect the nation’s biodiversity.

THIRD, all vertebrate wildlife species should be protected by statute similar to ESA listed species. This means adopting a statute that absolutely prohibits injuring vertebrate wildlife,

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<sup>138</sup> Hance, Jeremy. 2016. “Has big conservation gone astray?” *Monga Bay News (Australia)*. April 26. <https://news.mongabay.com/2016/04/big-conservation-gone-astray>.

<sup>139</sup> Hari, Johann. 2010. “The Wrong Kind of Green.” *The Nation* (US). March 4. Retrieved 20 April 2020 (<https://www.thenation.com/article/wrong-kind-green-2>).

<sup>140</sup> Dolšak, Nives. 2016. “NGOs are great at demanding transparency. They’re not so hot at providing it.” *Washington Post*. February 22. Retrieved 20 April 2020 (<https://www.washingtonpost.com/news/monkey-cage/wp/2016/02/22/ngos-are-great-at-demanding-transparency-theyre-not-so-hot-at-providing-it/>).

authorizes Green Knights to enforce the prohibitions in a court and requires that courts issue orders, as a priority, stopping activities that threaten wildlife without regard to the impact on the economy.

FOURTH, Green Knights must be allowed to privately own an entire species and to protect it as it sees fit.

FIFTH, Green Knight can get guaranteed compensation for its efforts to protect any Vertebrate Species as long as they prove successful. “Guaranteed” means that they can remit the bill to the government and the government must pay the bill like any other debt obligation.

SIXTH, Stabilize the economy at a fixed level of GDP. Better, reduce GDP and the number of cars, the miles of road, the number of airplane flights, etc. There is now organized effort gaining in popularity in Europe to “degrow” national economies to stop GME and prevent a global rise in temperature. **FN141**

If these six measures were adopted, GME<sup>6</sup> maybe arrested and the Climax stopped. Yet, the very failings to protect wildlife shown by this study also result in there being only the possibility of nation implementing measures to protect wildlife that have the same failures that will just insure the continuation of the *status quo* and the occurrence of the Climax.

What is really required is a Revolution that will painfully disrupt the United States society and result in the nation’s commitment to preserve wilderness and wildlife abundance first, and then have a stabilized economy operating to support that commitment.

Anyone that believes in implementing the above six measure has the makings of a Green Knight.

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<sup>141</sup> DeGrowth Europe. 2020. *What is Degrowth?* There is scheduled a Degrow festival for 2020 in Vermont. <https://www.degrowth.info/en/>. Retrieved 20 April 2020 (<https://www.degrowth.info/en/>).

## CHAPTER VIII

### **Report on the Attempt by a Green Knight on His Own to Stop the Killings of Endangered Whales.**

As part of the research for this thesis, an experiment was conducted to assess the adequacy and potential benefits of “Do It Yourself” (DIY) advocacy as a viable agency for species preservation. DIY preservation entails an individual on its own — not as an employee of either a corporation or of a government agency — successfully acting to implement protective measure for a wildlife species.

For this experiment, a critically endangered species was chosen — the Northern Right Whale — for the purpose of testing the current ability for an individual on its own to act as a Green Knight to effectuate new protection for a species and/or its habitat. In this instance, what was being tested is the current ability for a Green Knight to petition courts without an attorney in order to enforce the statutory protections for wildlife species when government agencies and EINGOS have repeatedly failed to do so in the past. The Right Whale is officially listed as a protected species under the Endangered Species Act. The author chose to coerce the routine and straight forward enforcement of the Endangered Species Act’s Section 9 prohibitions against harming endangered wildlife species (“ESA Protection”) by a court of law in order to stop the further anthropogenic deaths and injuring of these whales.

#### *I. The Plight of the Northern Right Whale.*

Off the northeast coast of the United States the last of the Northern Right Whales (*Eubalaena glacialis*) breed, feed and give birth to their young in the bays and inlets of Massachusetts, Maine and the other New England states. They are also being routinely killed by being entangled in the vertical buoy ropes (“VBR”) of fishing gear and being struck by ships. Despite these whales being listed as an endangered species under the 1969 Endangered Species

Act (“ESA”), these killings go unpunished as federal and state government refuse to enforce the ESA Protection afforded these whales under the current (1973) version of the ESA. It should be no surprise to learn that WINGOS (whale interested NGOs) have not once attempted themselves to coerce these agencies into enforcing the ESA Protection against the fishermen and the vessel operators to stop their killing and/or injuring of another Right Whale. **FN142**

There are about 400 Northern Right Whales left on Earth and now only living along the northeast United States coastline and northwards along the Canadian coast. Their population has been declining since 2010. The current birth rate is not self-sustaining. The number of newborn calves since 2010 is less than their the population’s loss from just natural deaths. The added deaths from these whales being entangled by fishing gear and being run over by vessels only adds to the Right Whale’s rate of descent into imminent extinction.

The Right Whales are Pleistocene macrofauna. Like the Woolly Mammoths and the Dire Wolf, they evolved as the largest of mammals during this geologic epoch. They survived Neolithic hunting by *Hominin* because they lived out of its reach in the coastal marine wilderness of North America. However starting in the 1600’s, New England whale hunters intensive hunting of them devastated the Right Whale’s population and rendered them a rare and commercially insignificant species for hunting by the end of the eighteenth century.

The hunting of them was banned in United States coastal waters by the Whale Conservation Act of 1946. However the damage was done to their species viability. There was only a few sightings of any Right Whale between 1940 through 1969. The Right Whale species

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<sup>142</sup> Strahan, Richard Maximus. 2009. “A New Paradigm for Conservation of Great Whales in the Urban Sea of the United States – Species in Need of a ‘Green Knight.’” *Boston College Environmental Affairs Law Review*. 36(2): 431 [lawdigitalcommons.bc.edu/ealr/vol36/iss2/7](http://lawdigitalcommons.bc.edu/ealr/vol36/iss2/7)

was considered extinct at the time it was automatically listed with all other Great Whales as endangered species in 1969.

During the 1980's, Right Whales were re-sighted off the New England coast from vessels doing surveys for marine wildlife in order to support ongoing environmental reviews for proposed oil refinery in Campobello Island, Maine that was conducted under the requirement of Green Epoch laws. These sightings and those of American Bald Eagles and other protected wildlife were then used in a NIMBY ("Not in my backyard") lawsuit to stop the construction of the proposed oil refinery. **FN143**

From 1980's to the current date, Right Whales are subject to annual sighting surveys from dedicated vessels and aircraft. The sighting data from these surveys indicated the Right Whales had a slowly growing population up until 2010. Apparently a tipping point was reached for the Right Whale's species viability owing to increasing coastal industrialization. In 2010 to the present the number of Right Whale births has fallen and the birth rate crashed to zero in 2018. Currently it is still too low to be species-sustaining.

The marine wilderness along the United States coastline has been transformed over the decades since the 1970 into an "Urban Sea." The Urban Sea is comparable to any peri-urban area in regards to its ability to support viable wildlife macrofauna. The ability of a Right Whale to survive in the Urban Sea of Massachusetts & Maine is akin to a Moose being able to thrive in a suburb of Boston even if it can find a park or playground in which to dawdle. The Right Whale faces a significant threat to its survival as it is confined to live in the Urban Sea since that constitutes most of its historic range.

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<sup>143</sup> *Roosevelt Campobello International Park Commission v. EPA*, 684 F.2d 1041 (1st Cir. 1982).

A Right Whale gets repeatedly entangled by fishing gear as it migrates through the Urban Sea which results in its injury and these injuries many times leads to its death. It also gets harassed by small vessels. Large vessels repeatedly run it over which results in propeller scarring and many times in mortal injury. All these accumulated injuries has a devastating impact on the health of the remaining Right Whales. Studies have observed that most Right Whales have unhealthy skin covered in boils and lesions. They also appear slimmer if not gaunt when compared to the members of their sibling species the Southern Right Whales. **FN144**

Right Whales are very unique among the Great Whales. They birth extremely close to beaches in coastal bays and inlets. They do so in depths barely larger than the diameter of their own bodies. They do so apparently to protect their newborn from sharks and other predators as well as to simply provide the calf a safe harbor with calm water for the first days after its birth. Now there are few if any suitable inlets for right Whales to birth left along the coastline of the Urban Sea. As a result the calves either get injured or female Right Whales simply choose not to breed any longer if they are unable to find any safe harbors to encourage their becoming pregnant.

By 2010, the Urban Sea along the United States has become too hostile for the Right Whale. Now it seems incapable of adequately reproducing in the degraded bay environment along the coastline of United States. The Right Whale birth rate in now unsustainable owing to its lost coastal habitat. They now lack the habitat they need to give birth and to use as a nursery for the new born calf. The birth rate also cannot overcome the loss breeding capability of

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<sup>144</sup> Christiansen, F. et al. 2020. 'Population comparison of right whale body condition reveals poor state of the North Atlantic right whale.' *Marine Ecology Progress Series*. DOI: 10.3354/meps13299

physically infirmed females suffering injuries from entanglements in fishing gear and their collisions with ships.

With only 400 Right Whales annually suffering a lot of anthropogenic mortality and possessing an unsustainable birth rate, their species is perceived to be facultatively extinct and facing imminent extirpation.

II. *Deliberate Failure by Government and WINGOS to Arrest the Current Threat of Extinction facing the Right Whales*

The National Marine Fisheries Service (“NMFS”) has also been inappropriately assigned the duty of enforcing the ESA as regards the Right Whale and other endangered whales. Because its main duty is promoting commercial fishing and it regulates commercial fishing operations in the Urban Sea. NMFS requires the use of vertical buoy ropes (“VBR”) by the lobsterpot and gillnet fishermen that they license and regulate. NMFS kills and injures Right Whales since it requires VBR to be used by fishermen on every lobsterpot trawl and gillnet they deploy as part of their licensed fishing activity. The state fishing agencies of both Massachusetts and other New England states do the same.

In 1996 the federal courts issue a finding of law that government agencies themselves violate the ESA Protections by licensing fishing gear that entangles endangered whales and sea turtles. **FN145** Despite this official finding, both NMFS and Massachusetts in 2020 still require the use of VBR by their licensed fishermen insuring the continuing entanglement of Right Whales and their resultant death and injury. NMFS now classifies that Massachusetts lobsterpot

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<sup>145</sup> *Strahan v. Coxe*, 939 F. Supp. 963 (D. Mass. 1996).

fishery as a “Category I Fishery” that kill and seriously injures Right Whales by entangling them in an amount that condemns the Right Whale to imminent extinction. **FN146**

There are many WINGOS soliciting donations from the public on claims that they care about the survival of the Right Whale. **FN147** These same WINGOS have all officially aligned themselves with the commercial fishing industry in order to protect this industry from the any negative impact on their businesses from any effort to protect the Right Whales from entanglements. They openly claim that they are protecting both the Right Whale and the commercial fishing industry. They claim there is no conflict in doing this. They insist that the entanglements of the Right Whale must continue until new technology develops that will allow commercial fishing to be done without entangling whales. They also insist that when such technology becomes available, that the federal government buys any available “whale safe fishing gear” and give it to the fishing industry without cost to any fishing business. **FN148**

### *III. Two Legal Paths Available to Stop Whale Entanglement.*

There are two paths established by Congress to stop the entanglement of endangered whales by fishing gear. One is provided by the Endangered Species Act. **FN149** This is the path

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<sup>146</sup> NMFS. 2019. “Proposed List of Fisheries.” 84 *Federal Register* 22067: “The LOF for 2019 reflects new information on interactions between commercial fisheries and marine mammals. NMFS must classify each commercial fishery on the LOF into one of three categories under the MMPA based upon the level of mortality and serious injury of marine mammals that occurs incidental to each fishery.”

<sup>147</sup> A partial list of these WINGOS includes: 1) New England Aquarium; 2) Conservation Law Foundation; 3) Humane Society of the United States; 4) Center for Coastal Studies; and, 6) the Center for Biological Diversity.

<sup>148</sup> In April 2019, WINGOS entered into an agreement with the commercial lobster fishing industry to not stop entanglements unless Congress pass legislations funding the purchase of fishing gear that is safe for whales.

<sup>149</sup> 16 USC § 1538(a): ESA Protections prohibits any degree of injuring of an endangered animal by government agencies and individuals.



available to Green Knights. The other possible path is provided by the Marine Mammal Protection Act. **FN150** This is the path chosen by NMFS, Massachusetts and the WINGOS to follow.

The ESA prohibits even a single entanglement of a Right Whale or any other endangered whale by anyone including governments agencies for just licensing the use of the fishing gear that entangles whales. The prohibition is absolute. If there is a single entanglement of an endangered whales in a state or federally licensed fishery, then the entire fishery must stop until the government agency can prove that its licensed fishermen will not entangle any more whales. But there is another solution. The government agency can obtain an “incidental take permit” (“ITP”) under the provisions ESA that authorizes a limited number of entanglements as long as they have a negligent impact on the whale’s survival.

The MMPA route starts out not prohibiting the entanglement of whales from being entangled by fishing gear. Any fishermen can entangle all the non-endangered whales it wants. NMFS is just mandated by the MMPA to eventually “reduce” entanglements of whales by innovating new fishing practices. It can take all the time it wants in doing so. In the case of Right Whale and Humpback Whales, NMFS has refused to enforce the ESA Protections that would immediately stop entanglements. Instead NMFS has spent many decades using the MMPA to evade ever having to actually stop the entanglements of the whales in fishing gear.

As part of the MMPA process, NMFS convened what it calls a “take reduction team” to advise it on how to reduce the number of entanglements for the Right Whale. It has ignored all the other whales species. In fact, the number of entanglements of Humpback Whales in New

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<sup>150</sup> NMFS. 2020. *Marine Mammal Take Reduction Plans and Teams*. Retrieved 20 April 2020 (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-take-reduction-plans-and-teams>).

England is three times that of Right Whales. **FN151** Most TRT members are linked to the commercial fishing industry (e. g. fishermen, fishing agency employees, fishermen NGOs, etc.) the rest are employees of WINGOS. No Green Knights have ever been allowed on the TRT.

For NMFS to act, the TRT must have a consensus on what NMFS should do about entangled Right Whales. As stated, in April 2019 the fishing industry and WINGOS all agreed that NMFS should only “lessen” an unspecified amount of Right Whales being entangled instead of stopping the entanglements outright.

There is an inherent conflict between the MMPA and the ESA if the whale is a member of an ESA protected endangered species. In that case the ESA is supreme. The only way the MMPA path can be chosen by NMFS in regards to the Right Whale is if first certifies that the rate of its entanglement is having a negligible impact on the long term survival of the species. NMFS has never issued this required certification for the Right Whale. This means that it is unlawful under the MMPA explicit terms for NMFS and the WINGOS to currently use it as their preferred path to mitigate the entanglements of Right Whales by the lobsterpot and gillnet fisheries in New England coastal waters. NMFS’ TRT for the Right Whale is unlawful under the explicit terms of the MMPA.

Both NMFS and the WINGOS know that the TRT violates the MMPA and is unlawful. The WINGOS are themselves violating both the MMPA and the ESA by supporting NMFS’ using the TRT to evade the ESA’s prohibiting the entanglement of a single Right Whale.

It is odd that the WINGOS agreed to support just lessening of the annual number of entanglements of Right Whales by the New England fishing industry. Earlier in 2019, NMFS

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<sup>151</sup> NMFS. 2017. *National Report on Large Whale Entanglements Confirmed in the United States in 2017*. Retrieved 20 April 2020 (<https://www.fisheries.noaa.gov/feature-story/large-whale-entanglements-national-report-released>).

employees made a finding that the Right Whales are so endangered as a species that just the killing of a single Right Whale over a period of two years, was enough to trigger the imminent extinction of their species. A mere lessening of entanglements for Right Whales is a death sentence for their species. The WINGOS open opposition to stopping entanglements is their *de facto* support for the fishing industry over the survival of the Right Whale's species.

*IV. Green Knight to the Rescue of the Right Whale.*

In 2019, the author notified Massachusetts' marine fishing agency that he was prosecuting it for its ongoing entanglement of Rights Whales — and of endangered sea turtles also. Under the ESA, individuals can sue government agencies as “Citizen Attorney Generals” to stop their activities that injure endangered wildlife and the use of their habitat. The author subsequently on his own — and without any help from a lawyer — commenced a civil action in the US District Court in Boston MA naming the Massachusetts Division of Marine Fisheries as the defendant (“MDMF”). **FN152**

The author in February 2020 asked the court for a preliminary injunction stop the MDMF from requiring the use of VBR by the fishermen it licenses and otherwise to shut down the state's lobsterpot fishing industry until it could the MDMF could prove that the state's lobsterpot fishing fishery can be conducted without entangling a single Right Whale ever again. The author had to attend numerous hearings and argued a lot with the judge.

On 30 April 2020, the federal judge granted the author's PI Motion. It issued an order requiring the MDMF within ninety days to get an incidental take permit from NMFS that authorized it to entangle a limited number of Right Whales. The order has an ultimatum that after

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<sup>152</sup> *Strahan v. Secretary, Massachusetts Executive Office of Energy and Environmental Affairs, et al.*, 19-cv-10639-IT (D. Mass 2019).

ninety days it would be willing to shut down the state's lobsterpot fishery if MDMF failed to get the incidental take permit or could not prove at that time that it was willing to regulate the state's lobsterpot fishery so that it will no longer entangle a single Right Whale. **FN153**

The Order states –

“Defendants [MDMF] appears to demonstrate that, rather than decreasing, the overall entanglement risk for right whales continues to increase. This is despite the establishment of the Atlantic Large Whale Take Reduction Team in 1997, expanded weak link requirements and sinking groundline requirements implemented in 2007, and the implementation of additional closure areas in 2014. ... Despite these efforts, there has been an unprecedented *increase* in fatalities in the past three years, which NOAA has declared to be an unusual mortality event. Defendants are hereby ordered to promptly seek an Incidental Take Permit pursuant to Section 10 of the Endangered Species Act. Plaintiff may renew his motion for a preliminary injunction enjoining Defendants from licensing fishing activities that use Vertical Buoy Ropes in Massachusetts state waters if Defendants have not obtained an Incidental Take Permit within ninety (90) days of this Order. IT IS SO ORDERED.”

Since both NMFS and the Judge recognizes that no more Right Whales can be allowed to get entangled in order to prevent the species extinction, the ESA will not allow the issuance of any incidental take permit that authorizes any further entanglement of a Right Whale. So the state's lobsterpot fishery can only continue if in ninety days MDMF has come up with a management plan for the state's lobsterpot fishery insures that it will not entangle any more Right Whales in the future.

At this time, the clock is ticking away.

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<sup>153</sup> Abel, David. 2020. “In another significant ruling for right whales, a federal judge rules that Massachusetts is violating the Endangered Species Act.” *Boston Globe*. Retrieved 20 April 2020 (<https://www.bostonglobe.com/2020/05/01/metro/another-significant-ruling-right-whales-federal-judge-rules-that-massachusetts-is-violating-endangered-species-act>).

V. *Summary*

This experiment has at least shown that it is possible for individual Green Knights to succeed on their own in protecting wildlife when government agencies and EINGOS fail to do it. This experiment affirms also that government agencies and EINGOS act more as the “foxes guarding the chicken coop” than as sheep dogs protecting endangered species. Instead, they support the commercial exploitation of wildlife habitat even when it results in the death of protected fauna. It is shown that WINGOS are willing to break the law itself in doing so.

It has been demonstrated that DIY Preservation is a revolutionary initiative that could arrest the 2010 AD Climax of vertebrate mass extinction in the United States.

## LIST OF REFERENCES

1. Alroy, John. 2015. "Current extinction rates of reptiles and amphibians." *Proc. Nat. Acad. Sci.* 112(42):13003–13008. DOI/10.1073/pnas.1508681112.
2. Antonelli, Alexandre. *et al.* 2018. "The Science and Ethics of Extinction." *Nat. Ecol. Evol.* 2(581). DOI: 10.1038/s41559-018-0500-z
3. Barnosky, Anthony D. 2008. "Megafauna biomass tradeoff as a driver of Quaternary and future extinctions." *Proc. Nat. Acad. Sci.* 105:11543–11548. doi: 10.1073/pnas.0801918105.
4. Barnosky, Anthony. 2015. "Transforming the global energy system is required to avoid the sixth mass extinction." *MRS Energy & Sustainability.* 2(e10). doi: 10.1557/mre.2015.11.
5. Borlaug, Norman. 2000. "Ending World Hunger. The Promise of Biotechnology and the Threat of Antiscience Zealotry." *Plant Physiology.* 124: 487–90.
6. Borlaug, Norman. 1994. *Feeding a human population that increasingly crowds a fragile planet.* Mexico: Mexico, DF. ISBN 968-6201-34-3
7. Bown, Paul *et al.* 2019. "Diversity decoupled from ecosystem function and resilience during mass extinction recovery." *Nature* 574: 242–245. doi.org/10.1038/s41586-019-1590-8
8. Cahill Abigail E. 2013. "How does climate change cause extinction?" *Proc R Soc B* 280(1750). doi: 10.1098/rspb.2012.1890.
9. Carrington, Damian. 2017. "Earth's sixth mass extinction event under way, scientists warn." *Manchester Guardian* (UK). July 10. <https://www.theguardian.com/environment/2017/jul/10/earths-sixth-mass-extinction-event-already-underway-scientists-warn>.
10. Carson, Rachel. 1962. *Silent Spring*, New York: Houghton-Mifflin.
11. Ceballos, Gerardo & Ehrlich, Paul. 2002. "Mammal Population Losses and the Extinction Crisis." *Science.* 296(5569):904-907. doi: 10.1126/science.1069349.
12. Christiansen, F. *et al.* 2020. "Population comparison of right whale body condition reveals poor state of the North Atlantic right whale." *Marine Ecology Progress Series.* DOI: 10.3354/meps13299
13. Clavero, Miguel. *et al.* 2009. "Prominent role of invasive species in avian biodiversity loss." *Biological Conservation.* 142(10):2043-2049. DOI: 10.1016/j.biocon.2009.03.034

14. Commission on the Formation of the National Biological Survey. 1994. *A Biological Survey for the Nation NRC*. Washington D. C.: The National Academies Press. DOI: 10.17226/989. ISBN: 0-309-58609-7.
15. Davis, Matt. *et al.* 2018. "Mammal diversity will take millions of years to recover from the current biodiversity crisis." *Proc. Nat. Acad. Sci.* 115(44):11262-11267. DOI 10.1073/pnas.1804906115.
16. Díaz, S. *et al.* eds. 2019. *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn (Germany): IPBES Secretariat.
17. Dolšák, Nives. 2016. "NGOs are great at demanding transparency. They're not so hot at providing it." *Washington Post*. February 22. Retrieved 20 April 2020 (<https://www.washingtonpost.com/news/monkey-cage/wp/2016/02/22/ngos-are-great-at-demanding-transparency-theyre-not-so-hot-at-providing-it/>).
18. Duffy, Sean. 1991. "*Silent Spring* and *A Sand County Almanac*: The Two Most Significant Environmental Books of the 20th Century." *Nature Study*. 44(2-3):6-8.
19. Durkheim, Emile. 1859. *Rules of Sociological Method*. trans. by Stephen Lukes. 1982. New York (US): Macmillan Press Ltd.
20. Economic Growth Technical Review Committee. 2003. *The Relationship of Economic Growth to Wildlife Conservation, Technical Review 03-1*. The Wildlife Society. Retrieved March, 2020. [https://steadystate.org/wp-content/uploads/Trauger\\_et\\_al\\_Tech\\_Review\\_Economic\\_Growth.pdf](https://steadystate.org/wp-content/uploads/Trauger_et_al_Tech_Review_Economic_Growth.pdf)
21. Ehrlich, Paul *et al.* 2017. "Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines." *Proc. Nat. Acad. Sci.* 114 (30):6089-6096. doi/10.1073/pnas.1704949114.
22. Ehrlich, Paul. 2017. "You don't need a scientist to know what's causing the sixth mass extinction: It's simple. It's us. The more people there are, the more habitats we destroy. Human civilization can only survive if the population begins to shrink." *Manchester Guardian* (UK). July 10. <https://www.theguardian.com/commentisfree/2017/jul/11/sixth-mass-extinction-habitats-destroy-population>.
23. Ellis, E. T. *et al.* 2010. "Anthropogenic transformation of the biomes, 1700 to 2000." *Global Ecol. Biogeogr.* **19**:589–606.
24. Elton, C. S. 1958. *The Ecology of the Invasion of Animals and Plants*, London: Methuen.
25. Finkelstein, Myra E., *et al.* 2012. "Lead poisoning and the deceptive recovery of the critically endangered California condor." *Proc. Nat. Acad. Sci.* 109(28):11449-11454. DOI: 10.1073/pnas.1203141109
26. Fossey, Dian. 1983. *Gorillas in the Mist*, New York (US): First Mariner Books. ISBN-13: 978-0618083602

27. Geddes, Patrick. *Cities in Evolution* (1915); Spengler, Oswald. *The Decline of the West* (1918); Mumford, Lewis. 1938. *The Culture of Cities*.
28. Hance, Jeremy. 2016. "Has big conservation gone astray?" *Monga Bay News (Australia)*. April 26. <https://news.mongabay.com/2016/04/big-conservation-gone-astray>.
29. Hardin, Garret. 1969. "The Tragedy of the Commons." *Science*. 162: 1243-1248.
30. Hari, Johann. 2010. "The Wrong Kind of Green." *The Nation (US)*. March 4. Retrieved 20 April 2020 (<https://www.thenation.com/article/wrong-kind-green-2>).
31. Heller, Michael. 2008. *The Gridlock Economy: How Too Much Ownership Wrecks Markets, Stops Innovation, and Costs Lives*. Philadelphia (US): Basic Books. ISBN 978-0-465-02916-7. & "When too many people own the same thing, nobody can use it." Retrieved on 20 April 2020 (<https://www.youtube.com/watch?v=9n89Ec3DFtk>).
32. Hodgskiss, Malcolm, *et al.* 2019. "A productivity collapse to end Earth's Great Oxidation." *Proc. Nat. Acad. Sci.* 116(35):17207–17212.
33. IPBES. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, *et al.* (eds.). Bonn (Germany): IPBES secretariat. 56 pages. <https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services>
34. IUCN 2017. "Guidelines For Applying The Precautionary Principle To Biodiversity Conservation And Natural Resource Management." Retrieved 20 April 2020 ([www.IUCN.org](http://www.IUCN.org)).
35. Jablonski, David. 1994. "Extinctions in the fossil record." *Phil. Trans. Royal Soc. B*. 344:11-17. [doi.org/10.1098/rstb.1994.0045](https://doi.org/10.1098/rstb.1994.0045).
36. Jaramillo-Legorreta, Armando, *et al.* 2019. "Decline towards extinction of Mexico's vaquita porpoise (*Phocoena sinus*)." *Royal Society Open Science*, 6(7). DOI: 10.1098/rsos.190598.
37. Johnson, Christine K. *et al.* 2020. "Global shifts in mammalian population trends reveal key predictors of virus spillover risk." *Proc. R. Soc. B*. 287(1924). doi: 10.1098/rspb.2019.2736.
38. Jones, Kendall. *et al.* "The Location and Protection Status of Earth's Diminishing Marine Wilderness." *Current Biology*. 28(15):2506–2512. DOI: 10.1016/j.cub.2018.06.010
39. Leopold, Aldus. 1949. *A Sand County Almanac*. London (UK): Oxford University Press.
40. Lockhart, Jeffrey 1987. "The Moral Standing of Insects and the Ethics of Extinction." *Florida Entomologist*. 70(1):70-89.



41. Marshall, Michael. 2015. "It will cost billions of dollars to save all the world's threatened species. What's in it for us?" *British Broadcasting Company* (UK). 14 July. <http://www.bbc.com/earth>.
42. McKee, John K. 2004. "Forecasting Biodiversity Threats Due to Human Population Growth." *Biological Conservation*. 115(1): 161–164.
43. Myers, Norman. 1993. "Biodiversity and the Precautionary Principle." *Ambio*. 22(2/3): 74-79.
44. National Academy of Sciences. 1988. *Biodiversity*. Washington, DC: The National Academies Press. DOI: 10.17226/989.
45. Oake, Jason. 2016. "Rent-seeking and the tragedy of the commons: two approaches to problems of collective action in biology and economicS." *J Bioecon* 18:137–151. DOI 10.1007/s10818-016-9224-9
46. NMFS. 2019. "Proposed List of Fisheries." 84 *Federal Register* 22067: "The LOF for 2019 reflects new information on interactions between commercial fisheries and marine mammals. NMFS must classify each commercial fishery on the LOF into one of three categories under the MMPA based upon the level of mortality and serious injury of marine mammals that occurs incidental to each fishery."
47. NMFS. 2020. *Marine Mammal Take Reduction Plans and Teams*. Retrieved 20 April 2020 (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-take-reduction-plans-and-teams>).
48. NMFS. 2017. *National Report on Large Whale Entanglements Confirmed in the United States in 2017*. Retrieved 20 April 2020 (<https://www.fisheries.noaa.gov/feature-story/large-whale-entanglements-national-report-released>).
49. Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge (UK): Cambridge University Press.
50. Ostrom, Elinor. *et al.* "Revisiting the Commons: Local Lessons. Global Challenges." *Science*. 284: 278-282.
51. Outdoor Industry Association. 2018. *The Outdoor Recreation Economy*. <https://outdoorindustry.org>.
52. Pagel, Joel *et al.* 2008. "Why Listing May Be Forever: Perspectives on Delisting under the U.S. Endangered Species Act." *Conservation Biology*. 15(5).
53. Parmesan, C. & Yohe, G. "A globally coherent fingerprint of climate change impacts across natural systems." *Nature* 421:37–42 (2003). DOI: 10.1038/nature01286.
54. Peterson, Elizabeth. 2006. *Institutional Economics and Fisheries Management*, Northampton (US): Edward Eigar Publishing. ISBN-13: 978-1843767824.

55. Pimiento C. et al. 2020. "Functional diversity of marine megafauna in the Anthropocene." *Science Advances*. 6(16): eaay7650
56. Pimm, Stuart & Ehrlich, Paul. 2006. "Human impacts on the rates of recent, present, and future bird extinctions." *Proc. Nat. Acad. Sci.* 103(29):10941–10946.
57. Pimm, Stuart. et al. 2015. "US protected lands mismatch biodiversity priorities." *Proc. Nat. Acad. Sci.* 112(16):5081-5086. DOI:10.1073/pnas.1418034112.
58. Phillips, Rob. et al. 2018. "The Biomass Distribution on Earth." *Proc. Nat. Acad. Sci.* 15(25):6506-6511. doi: 10.1073/pnas.1711842115.
59. Pyron, R. Alexander. 2017. "We don't need to save endangered species. Extinction is part of evolution." *The Washington Post* (USA). 22 November. [www.washingtonpost.com](http://www.washingtonpost.com).
60. Rampino, R. et al. 2019. "The end-Guadalupian (259.8 Ma) biodiversity crisis: the sixth major mass extinction?" *Historical Biology*. DOI:10.1080/08912963.2019.1658096.
61. Raup, David M. et al. 1982. "Mass Extinctions in the Marine Fossil Record." *Science*. 215(4539):1501-1503. DOI: 10.1126/science.215.4539.1501
62. Rosenberg, K. V. et al. 2019. "Decline of the North American avifauna." *Science*. 366(6461):120-124. doi: 10.1126/science.aaw1313.
63. Scott, Michael J. et al. 2002. "The Endangered Species Act: Dollars and Sense?" *BioScience*. 52(2):163–168. DOI: 10.1641/0006-3568(2002)052[0163:TESADA]2.0.CO;2.
64. Sinervo, Barry. 2010. "Erosion of Lizard Diversity by Climate Change and Altered Thermal Niches." *Science*. 328(5980):894-895. DOI: 10.1126/science.1184695
65. Smith, Felisa A. et al. 2018. "Body size downgrading of mammals over the late Quaternary." *Science*. 360(6386):310-313. DOI: 10.1126/science.aao5987.
66. Solé, Richard. V. et al. 2002. "Recovery after mass extinction: evolutionary assembly in large-scale biosphere dynamics." *Phil. Trans. R. Soc. Lond. B.* 357:697–707. DOI: 10.1098/rstb.2001.0987.
67. Soulé, Michael E. ed. 1985. *Conservation Biology: The Science of Scarcity and Diversity*. Sunderland: Sinauer & Associates.
68. Strahan, Richard Maximus. 2009. "A New Paradigm for Conservation of Great Whales in the Urban Sea of the United States – Species in Need of a 'Green Knight.'" *Boston College Environmental Affairs Law Review*. 36(2): 431  
[lawdigitalcommons.bc.edu/ealr/vol36/iss2/7](http://lawdigitalcommons.bc.edu/ealr/vol36/iss2/7)
69. Subramanian, Meera. "Anthropocene now: influential panel votes to recognize Earth's new epoch." *Nature*. Retrieved on 21 May 2019 (<https://www.nature.com/articles/d41586-019-01641-5>)

70. Thoreau, Henry David. 1854. *Walden*. Boston (USA): Ticknor and Fields.
71. Trisos, C. H. *et al.* 2020. “The projected timing of abrupt ecological disruption from climate change.” *Nature*. doi: 10.1038/s41586-020-2189-9.
72. Truslow, James Adams. 1931. *Epic of America*. New York: Little, Brown and Company.
73. Tullock, Gordon, 1967. “The Welfare Costs of Tariffs, Monopolies, and Theft.” *Western Economic Journal*. 5(3): 224-232.
74. U. S. Fish and Wildlife Service. 2016 *Federal and State Endangered and Threatened Species Expenditures*. Washington DC: U. S. Department of Agriculture.  
[https://www.fws.gov/endangered/esa-library/pdf/2016\\_Expenditures\\_Report.pdf](https://www.fws.gov/endangered/esa-library/pdf/2016_Expenditures_Report.pdf).
75. Van Wormer, E. *et al.* 2020. “Viral emergence in marine mammals in the North Pacific may be linked to Arctic sea ice reduction.” *Sci. Rep.* 9:15569. doi: 10.1038/s41598-019-51699-4.
76. Vitousek, P. M., H. A. Mooney, J. Lubchenco, and J. M. Melillo. 1997. “Human Domination of Earth's Ecosystems.” *Science*. 277(5325): 494–499.
77. Wagner, Frederic. H. “Whatever happened to the National Biological Survey?” *BioScience*. 49(3): 219–222, DOI: 10.2307/1313512
78. Watson, James E. M. *et al.* 2018. “**Protect the last of the wild.**” *Nature*. 563 (7729)27-28. DOI: 10.1038/d41586-018-07183-6.
79. Watson, James. *et al.* 2016. “Catastrophic Declines in Wilderness Areas Undermine Global Environment Targets.” *Current Biology*. 26 (21): 2929–2934. DOI: 10.1016/j.cub.2016.08.049.
80. Wiersema, Annecoos. 2015. “Uncertainty, Precaution, and Adaptive Management in Wildlife Trade.” *Mich. J. Int'l L.* 36:375-424. Received 20m April 2020  
(<https://repository.law.umich.edu/mjil/vol36/iss3/1>)
81. Wilson, E. O. 1984. *Biophilia*. Cambridge (USA): Harvard Univ. Press: “*Biophilia* is Edward O. Wilson's most personal book, an evocation of his own response to nature and an eloquent statement of the conservation ethic. Wilson argues that our natural affinity for life—biophilia—is the very essence of our humanity and binds us to all other living species.”
82. Wipple, William. & 15,364 scientists from 184 countries. 2017. “World Scientists’ Warning to Humanity, Bioscience: A Second Notice.” *BioScience*. 67(12):1026–1028. DOI: 10.1093/biosci/bix125
83. Voit, Peter. 2019. “Are the Laws of Physics Are Inevitable?” *Not Even Wrong Blog*. December 17. Retrieved April 2020 (<https://www.math.columbia.edu/~voit/wordpress/?p=11513>).

**Goodbye and Thanks for All the Fish: The Inevitable Mass Extinction  
of Vertebrate Wildlife in the United States by 2100 AD**

by

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This thesis has been examined and approved.

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