

# Little Red Ring Binders

## Early Red List Temporalities

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In 2019, the UN Global Environmental Outlook report stated that “a major species extinction event, compromising planetary integrity and earth’s capacity to meet human needs, is unfolding.”<sup>1</sup> However, already in the early twentieth century, a number of scientists were expressing concern about the extinction of other species by humans, and these concerns were an important part of the background for the establishment of organizations such as the International Union for the Protection of Nature (today, the International Union for Conservation of Nature [IUCN]) in 1948 and their production of the first lists of threatened species.<sup>2</sup>

The discourse on biodiversity loss has never been solely a scientific discourse. It is entangled with politics, values, and the expectation of large-scale future consequences. This also means that a number of different understandings of time are at play within the biodiversity discourse. Although the idea of a massive, ongoing loss of biodiversity and the production of threatened species lists are based on information on geological, evolutionary, and ecological timescales, historical and political timescales play important roles as well.<sup>3</sup> Also, during recent decades, understandings of biodiversity loss have become closely intertwined with the expectation of future climate change, adding yet another set of temporal logics to the bargain.<sup>4</sup>

Since threatened species lists have such a complex temporal background, these lists may reveal multiple ways in which people have tried to grapple with time and the relation between past, present, and future, when faced with environmental problems. Different temporal logics can be found within the lists themselves, within the media the lists are presented through, and within the technologies and practices of which the lists are parts.

In her book *Imagining Extinctions*, Ursula Heise claims that there is a narrative structure of elegy and “a focus on nature in decline, on decrease, disappearance, and the past” in Red Lists, although the elegy is intermingled with encyclopedic and epic genre components.<sup>5</sup> Heise suggests that in the endangered species discourse there is an ongoing shift away from the elegy and toward the epic and encyclopedic elements.<sup>6</sup> Focusing on the temporal logics of the genres Heise discusses, I will argue that an epic temporal pattern, with its present heroic struggle toward a future goal, was a more important part of the early discourse on threatened species than the elegy, the focus being toward the present and the near future, rather than toward a lost past.

The history of contemporary threatened species databases and Red Lists can be traced back to the late nineteenth and early twentieth century, while the first lists of threatened species were compiled in the 1940s.<sup>7</sup> Studies of the technologies of the discourse on threatened species have, however, mostly concentrated on contemporary and near contemporary versions of electronic biodiversity databases and lists of threatened species. In this chapter, I will instead explore threatened species lists and documents from an earlier part of the discourse on biodiversity loss, namely the period from 1950 to approximately 1980. Arguing that how threatened species lists were designed and presented affects what meanings were produced, I investigate the temporal logics that can be found within the texts themselves and within the textual media of early threatened species lists. Both media and paratexts, such as titles and the placement of certain species or categories of species, can indicate what temporal scales and time frames were considered important and how these understandings influenced and were influenced by the gathering and sorting of knowledge.<sup>8</sup> Uncovering the temporalities of the early biodiversity discourse may also provide a richer historical background to understanding the relations between past, present, and future in environmental discourses today.

## The IUCN Red List—A Short Background

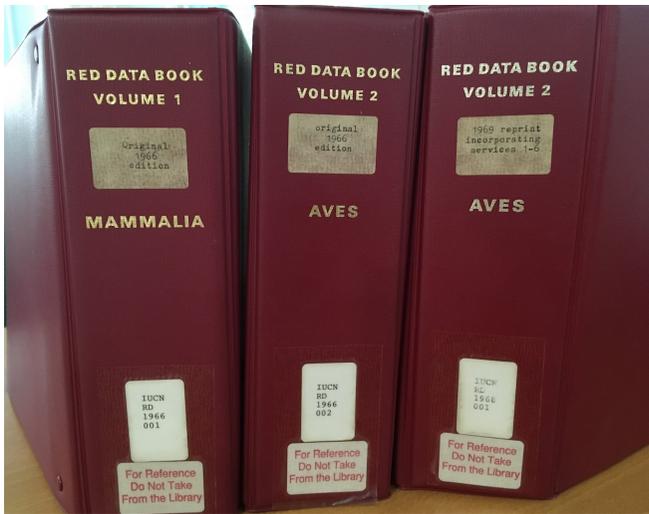
There are several different lists and databases of threatened species around the world, but the most influential and broadly known is the IUCN Red List™, compiled by the International Union for Conservation of Nature (IUCN).<sup>9</sup> Today, the IUCN Red List is a web-based information system, which is updated with new information and new assessments approximately twice a year. According to their own website, the IUCN Red List is “the world’s most comprehensive information source on the global conservation status of animal, fungi and plant species,” and it contains the conservation status of more than 96,900 species. About 26,500 of these are considered to be

threatened with extinction.<sup>10</sup> The criteria and guidelines behind the IUCN Red List are used extensively, both for global assessments of biodiversity and for producing regional and national Red Lists.

IUCN was established in 1948 as the International Union for the Protection of Nature (IUPN).<sup>11</sup> Martin Holdgate, in his book *The Green Web: A Union for World Conservation* dates the beginning of the conservation movement back to the early nineteenth century and relates it to three sources: romantic views on nature, scientific explorations of the natural world, and the decline and extinction of specific wild species; whereas William M. Adams has stressed the influence of colonial interests in the hunting of big game on the African continent.<sup>12</sup> The conservation movement was centered in North America and Europe, and two early forms this movement took were national societies for the protection of certain species groups, such as birds, and the creation of national parks and nature reserves.<sup>13</sup> From the end of the nineteenth century, however, organizations with a more international scope started to appear, and from the beginning of the twentieth century work was in progress to establish an international organization for the protection, preservation, or conservation of nature. Species threatened by extinction was one of the main focuses of the IUCN from the start. Already in 1949, the organization established “The Survival Service” (SSC) and produced its first lists of threatened mammals and birds.<sup>14</sup> During the following years, the Survival Service kept a filing system, and later a card index, with information on the species on their lists.<sup>15</sup>

From the 1960s onwards, it is possible to identify three separate media through which IUCN have presented their data on threatened species. The first Red Data Books, which were published from 1966 to the late 1970s, were ring binders with a loose-leaf system. In the late 1970s bound volumes replaced the ring binders, and in the 1990s the IUCN decided to move the Red List to the internet, together with the underlying electronic species database. The 1996 *IUCN Red List of Animals* and the 1997 *IUCN Red List of Threatened Plants* were the first Red List publications to be made available on the internet through online searchable databases.<sup>16</sup>

These three different media—the ring binder, the bound volume, and the electronic database—make some practices possible, while hindering others. Thereby, they also enable different temporal logics to come into play. While differences between printed lists and electronic databases have been addressed earlier,<sup>17</sup> there has been little discussion as to how the medium of the early threatened species lists, namely the ring binder, influenced and was influenced by understandings of past, present, and future within the conservation community. In this chapter, I will therefore concentrate on the ring binders, their format, and the knowledge practices and different conceptions of time they reflected and enabled.

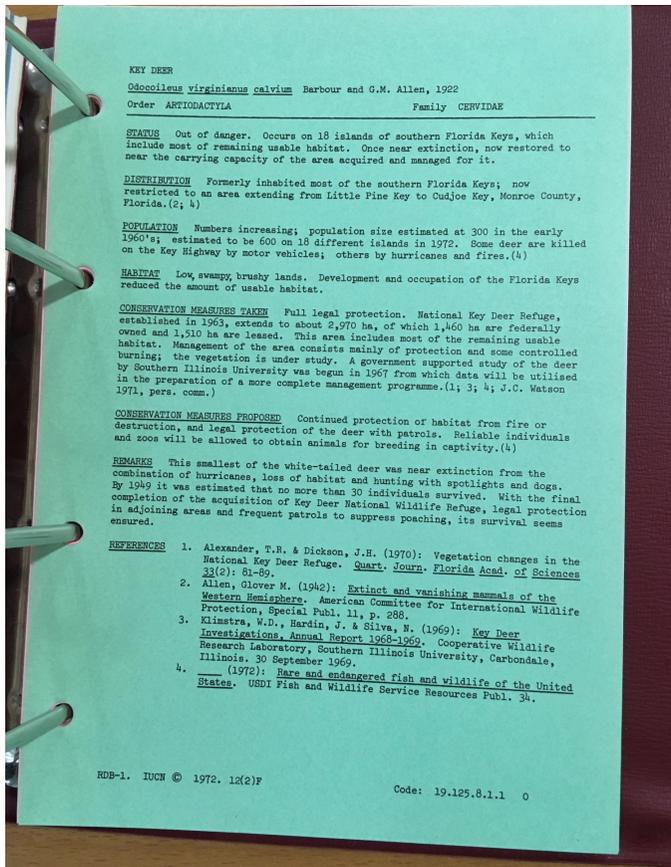


**Figure 5.1** Red ring binders with identical design. Noel's *Red Data Book. Volume 1. Mammalia* (1966), Vincent and Noel's *Red Data Book. Volume 2. Aves* (1966), and Fisher's *Red Data Book. Volume 2. Aves* (1968). © Marit Ruge Bjarke.

## The Format and Practices of Red Ring Binders

The first Red Data Books, *Red Data Book. Volume 1. Mammalia* and *Red Data Book. Volume 2. Aves*, were published in 1966. They were presented in an A5 loose-leaf format, kept in red ring binders (Figure 5.1).<sup>18</sup> The structure of the different volumes and editions of the Red Data Books is quite consistent throughout the 1960s and 1970s. Each Red Data Book contains a set of introductory pages, usually with information on the purpose of the volume and how to use it, species indexes, explanations of categories and symbols, and a bibliography. The information on each threatened species or subspecies is placed on separate data sheets, with subheadings such as “Status,” “Estimated numbers,” “Reasons for decline,” etc. Most of the Red Data Books contain several hundred such data sheets. In addition, some of the editions also include one or more appendices.<sup>19</sup>

An important tool for organizing and keeping track of the many data sheets within each ring binder is the index system. In the 1966 editions each data sheet has a date on the top right corner of the sheet and a code number at the bottom right corner (e.g., B/167/PSITT/PSI for Bird/Family number/genus *Psittirostra*/species *psittacea*). The threat status of the species is shown in the lower left corner of the sheet. It consists of a number from one to four or



**Figure 5.2.** Green for “Out of Danger”: data sheet on *Odocoileus virginianus calvium* with code number in lower right corner. From Goodwin and Holloway’s *Red Data Book. Volume 1. Mammalia* (1972). © Marit Ruge Bjærke.

from one to five indicating how rare the species is and whether its abundance is increasing or decreasing. There is also a “star-listing,” where each species is given one, two, or three stars. The number of stars indicates the degree of perceived importance of the threat: one star for species/subspecies “giving cause for some anxiety,” two stars for species/subspecies “giving cause for considerable anxiety,” and three stars for species or subspecies “giving cause for very grave anxiety.”

From the 1972 edition, the numbering and star-listing were merged into one set of categories: Endangered, Vulnerable, Rare, Out of danger, Indeterminate. At the same time, the coding system underwent several changes and became even more complex than before. It was still on the bottom of the

data sheets, but it could now look like this: “RDB-3 IUCN (c) 1975. 9(2)F Code: 1.2.2.1.1 I,” letting the expert reader recognize at a glance that this is the Red Data Book volume 3, copyright IUCN, data sheet from 1975, issued in September, the second issue of this page, the Front page of the data sheet, the species *Andrias davidianus* of the class Amphibia, order Caudata and family Cryptobranchidae, and that the Red Data Book category of this species is “Indeterminate” (see Figure 5.2 for another example).

“The index lettering at the bottom right-hand corner of each sheet is important, so that when future pages are distributed they may be filed in their correct order,” the author of the 1966 *Red Data Book. Volume 2. Aves* writes.<sup>20</sup> Twice a year, circular letters were sent out to subscribers, containing new data sheets that the subscribers themselves were supposed to add to their ring binders, either replacing old data sheets or adding to the data sheets already present. Thus, the complex coding system and the loose-leaf format of the Red Data Books reflect an expectation of a rapid increase in knowledge. The Introduction to the 1966 *Red Data Book. Volume 1. Mammalia* states that: “The list is . . . intended to be flexible, additions or deletions being made as and when sufficient firm evidence is obtained to enable a more accurate assessment of each animal’s status to be made. Adoption of a loose-leaf format allows each report to be replaced whenever new data warrant the publication of a more comprehensive or more up to date sheet.”<sup>21</sup>

The ring binder medium made it possible to adopt a system of sending out new information and changing the contents of the Red Data Books with greater frequency than would have been feasible with most other formats at the time. The medium demonstrates that the gathering of knowledge on threatened species was to a high degree considered an unfinished and maybe unfinishable task, and that even information considered valid enough to be presented to the scientific community, might change shortly. However, the practice also highlights a disregard of knowledge concerning the history and changes in abundance of each species. “To avoid the possibility of confusion it is recommended that the relevant original sheets which are now being replaced should be removed from the volume and either destroyed or kept separately,” IUCN writes in their “Circular Letter no. 1” from 1967.<sup>22</sup> Thus, earlier versions of the data sheets were neither available for comparison nor for any study of changes.

## Red for Danger

The first use of the color red in connection with the lists of threatened species, was in 1962 when red A4 ring binders with loose-leaves were used for internal compilations of information on threatened species within the IUCN system.

In 1966, red was chosen both as the color of the ring binders themselves, and as part of the title. The connection between the color red and danger has been recognized for a long time and is probably the reason for the choice of color.<sup>23</sup> In addition, differently colored data sheets made up the color scheme within the Red Data Books. In the first editions, the data sheets were pink, white, and green, respectively. The different colors indicated the degree of conceived threat. Pink sheets were for species that had been assigned three stars (“Giving cause for very grave anxiety”), and green sheets indicated “those forms which were formerly rare, but have recovered, to an extent that they are no longer in danger.” In Red Data Book editions from 1972 onwards, a more complex color scheme was used, with pink, amber, white, green, and grey sheets. Each color corresponded to a threat category: pink for Endangered, amber for Vulnerable, white for Rare, green for Out of danger, and grey for Indeterminate. The colored sheets gave an easy overview over the number of species in each category, giving direct access to the most threatened species through the use of pink, the color closest to red.<sup>24</sup>

The color red was chosen to alert the users to danger, but it also has certain temporal features interwoven with it. The color suggests an emergency, and as such can be understood as a call for action. In both cases the focus is toward the present and the future. Red is not a color associated with commemorating the past.<sup>25</sup> However, the red color of the medium did allow for an exception to this future-oriented view—namely the highlighting of stories with a happy ending through data sheets of green color (Figure 5.2). Although there are only a few green data sheets present in most editions of the Red Data Books, the fact that species no longer in danger were assigned data sheets of a certain color and kept in the Red Data Books, shows that stories of species that *had been* threatened but were now recovering, were considered important.

IUPN/IUCN was an organization based on ecology and ecologists, and the people working at the SSC were mostly natural scientists.<sup>26</sup> The lists and Red Data Books were practical tools, and the members of the SSC themselves, and ecologists appointed by them, both compiled the lists, did field trips to countries all over the world to make new assessments of species, and proposed recommendations to governments in the various countries they visited.<sup>27</sup> The format and practices associated with the ring binders reflect the important role of natural scientists’ knowledge gathering in the early biodiversity discourse, as well as the increasing amount of data they gathered.<sup>28</sup> As working documents for conservationists, the little red ring binders were designed for effective knowledge retrieval and searchability. Colored sheets, lists, and coding at the bottom of each sheet made it easy for the expert to quickly gather important points. The increasing complexity of both the coding system for data sheets, the threat categories, and the color scheme reflect increasing

difficulties in getting an overview of the material, due to the rapidly growing number of red-listed species.

The importance put on frequent updates of the Red Data Books during the 1960s and 1970s, highlighted through the ring binder medium, underscores the sense of urgency permeating the discourse on species extinction. New knowledge of threatened species must be spread as fast as possible. This urgency was not, however, connected only with the wish to spread the information among the scientists who were the target readers of the Red Data Books. “All too often it is justifiably suspected that urgent representations are necessary to save a species or subspecies from extinction, but action by some responsible authority is inhibited by a lack of truly reliable facts on which to plan it,” Vincent and Noel wrote in the Introduction to the 1966 *Red Data Book. Volume 2. Aves*. The need to provide updated information was closely connected with the SSC’s aim and practice of gaining contact with and making recommendations to political authorities, although the Red Data Book format was itself too scientific to be easily read by a general public.

## The Names of Early Red Lists

Lists streamline, they preserve, they store, they include and exclude, they administrate, and they control. Lists also convey some basic relations to time: to the past by storing knowledge, to the present by serving specific functions, and to the future by claiming action.<sup>29</sup> Temporal logics within the lists themselves often become visible through paratexts such as titles and introductions, through the ordering of items, and through the use and placement of categories. When established in 1948, IUCN based their work on threatened species on two lists: *Extinct and Vanishing Mammals of the New World* by Glover N. Allen (1942) and *Extinct and Vanishing Mammals of the Old World* by Francis Harper (1945).<sup>30</sup> Both lists had titles that pointed toward the past. The species on the lists were either already extinct or they would become so presently. The titles show an emphasis on the storage function of lists, they are compiled to store knowledge, rather than for any present or future action. This is also the case with the book title *Les fossiles de demain* (The Fossils of Tomorrow) from 1954, the first publication by the SSC.<sup>31</sup> Although the title actively points toward the future and the list does not contain species that are already extinct, it also indicates that it is too late to do something about the problem. Still, these early list names activated the present in at least one sense. By joining species that were already extinct with species that still existed but were vanishing, the early lists furthered the idea that there is a certain category of species that are on the verge of becoming extinct.

The first lists made by the IUCN (then IUPN) were drawn up at a Technical Meeting in 1949. In a resolution (no. 16), the General Assembly agreed to draw up a “partial list of examples of vanishing species of birds and mammals, the survival of which is a matter of international concern.”<sup>32</sup> In this title (and in the list of species that followed), extinct species were not included. The species on the list were still described in the title as “vanishing,” but with the removal of extinct species the focus was moved away from the storage function of the list toward a function of “claiming action” as Young puts it.<sup>33</sup> The title suggests a possibility that the species on the list might survive, and thereby also changes the temporality of the list. Its function is not to name species and store those that will disappear, but to underscore that it is important and possible that they survive, and thus implicitly that something must be done to make this happen.

As a “partial list of examples,” the list title displays the character that Umberto Eco describes as foregrounding its own incompleteness.<sup>34</sup> This was probably to a certain extent meant to reassure the participants of the Technical Meeting who were afraid of accidentally excluding some important and threatened species by adopting the list then and there.<sup>35</sup> On the other hand, it can also be seen as a call for new knowledge, and was regarded as such by the SSC, which at the next General Assembly in 1950 reported that “in accordance with the spirit of the discussions at the Technical Conference at Lake Success, we have done our utmost to obtain all possible ecological data on threatened species.”<sup>36</sup>

The focus of the list as unfinished and the need for more knowledge was kept up in the names of what is today regarded as the first Red Lists by the IUCN, two lists published in 1964. These were called “A Preliminary List of Rare Mammals including those Believed to be Rare but concerning which Detailed Information is still Lacking” and “List of Rare Birds, Including Those Thought to be so but of Which Detailed Information is Still Lacking,” respectively.<sup>37</sup> The threatened species are now “rare” instead of “vanishing,” downscaling the expectation of their imminent disappearance even further. However, most importantly, the names of these lists convey the same call for knowledge as the partial list of the 1949 Technical Meeting. The lack of knowledge is underscored thrice: with the use of the word “Preliminary,” with the use of the words “thought” and “believed,” and in the statement that “detailed information is still lacking.”

The titles *Red Data Book. Volume 1. Mammalia* and *Red Data Book. Volume 2. Aves* from 1966 represent a move away from the focus on lack of knowledge, and also mark a definite step away from the storage function conveyed by words like “extinct” and “vanishing.” The focus is now on danger and a need for action, signaled through the word “red.” The conversion from explanatory to more metaphoric titles also indicates that the category “species threatened

by extinction” was now firmly established. However, it also shows that the Red Data Books were meant for people already working with threatened species, as the concept of Red Lists of threatened species was not generally known at the time, and as the titles included Latin names for the species groups surveyed in each volume.

During the same period of time, the number of listed species was gradually increasing. The first IUCN list from 1949 had consisted of thirteen birds and fourteen mammals. However, this list was entitled a “partial list of examples,” and as such, the species on the lists were not only vanishing themselves but were part of a much larger category of vanishing species that would be listed eventually.<sup>38</sup> The increase in numbers was slow at first. For instance, the list presented to the Seventh General Assembly in Warsaw in 1960 contained thirty-four species, as well as a list of nine species that were suggested to enter the list.<sup>39</sup> However, when the Red Data Books were published in the 1960s and 1970s, they consisted of more than a hundred species in each of five different species groups—mammals, birds, reptiles and amphibia, freshwater fishes, and flowering plants—and the numbers were increasing rapidly.

Delbourgo and Müller-Wille has underlined that as lists draw things together spatially, they “construct groupings, yet in doing so they provoke questions about those groupings.”<sup>40</sup> The various early list titles can be seen as attempts to define both the name and the limits of a category of species threatened with extinction. Should it include species that were already extinct? Should the focus be on rare species? Or should it be on species that were of concern to the international community? The Red Data Books’ shared name and identical format across species groups gave the process of identifying threatened species a uniform touch. It now encompassed all kinds of species from all kinds of places under the common headline of “danger.” In this way, the Red Data Books started turning preliminary lists of extinct and vanishing species into the large, unobservable and global phenomenon that is now called biodiversity loss.

## The Early Red Lists and the Past

When the IUCN Technical Meeting in 1949 compiled its lists of mammals and birds, they omitted “certain very rare species and others whose situation seemed hopeless” as well as some for which “it appeared that everything that could conceivably be done for them was being done at present.”<sup>41</sup> Still, the IUCN scientists continued to interest themselves in extinct species as well as in threatened ones. In the internal document *Animals and Plants Threatened with Extinction* from 1962, data sheets on extinct species were included as a separate group of sheets, placed on the same level of organization as for instance birds or amphibians. Although data sheets on extinct species were

not included in the Red Data Books from 1966 onwards, they were still kept along in the margins. The 1968 edition of the *Red Data Book. Volume 2. Aves* included a “List of Birds Either Known or Thought to Have Become Extinct Since 1600” as an appendix. In the 1977 edition of the *Red Data Book. Volume 4. Pisces*, the Preamble stated that “two taxa, not listed previously, are not included in the present volume because they are either known to be extinct or are probably extinct.” Although these examples affirm that extinct species were considered relevant, they also show that even the probability of being extinct was enough to be excluded from the Red Data Books.

The way the category of extinct species moves in and out of the early material on threatened species reflects an ambivalence toward the past ingrained in the discourse on threatened species. While the knowledge that humans have exterminated other species in the past is a necessary backdrop to the understanding that humans can exterminate other species in the future, it may also indicate that the extinction of species is inevitable. For the IUCN in the 1960s and 1970s, the Red Data Books were means to solve a problem, by increasing knowledge and producing action, as stated in the introduction to the 1966 *Red Data Book. Volume 2. Aves*: “The object of these lists and sheets of threatened species is not only to draw universal attention to the dangers facing some unique creatures, which will be for ever lost unless timely protective measures are taken, but also to provide the factual information necessary for action by those who are in a sufficiently authoritative position to be able to influence the future.” With this aim in mind, there was no need to include extinct species in the Red Data Books, and it was not until 1982 that the category Extinct (Ex) was again included in a Red Data Book on the same level as the other categories.<sup>42</sup>

However, when the readers could not be taken for granted to share the knowledge and belief that a lot of species are threatened by extinction—and the aim was thus mostly educational—the IUCN found it necessary to present the two categories in light of each other. In a popularized bound volume entitled *The Red Book: Wildlife in Danger*, from 1969, the existence of extinct species was thus commented upon more directly: “The S.S.C. has another list, which could be called Black for Death, or rather extinction; organisms extinct since 1600 (or believed to be so),” the authors explain in the introduction to the book.<sup>43</sup> This shows that, in the late 1960s, extinct species and threatened species were seen as two different categories, kept in two separate lists that were named “black” and “red,” respectively, and that, in addition to their scientific functions, the black list was mostly educational, while the red list was political. The IUCN invoked the list of already extinct animals to show the general public who were not already familiar with the issue, the consequences of not doing anything to save the species of today. And they invoked the black color of sorrow and death.

Thus, the past is used mainly as an educational backdrop to the biodiversity discourse in the 1960s and 1970s, a tool for presenting the subject of species extinction to the general reader. However, there is more than one past at play—some near and others distant—in *The Red Book: Wildlife in Danger*. A year that has a prominent place in the story is the year 1600, IUCN's chosen starting point for the modern extinction:

The year 1600 might be thought an arbitrary date; but it has been chosen for a good reason. . . . Virtually all the mammals and birds known to have become extinct since 1600 are identified by adequate descriptions or portraits, nearly all of them by skins, and a considerable number also by subfossil bones; all but two that we can critically admit have acceptable Linnean or scientific names. The two will doubtless soon be formally named. The year 1600 is the year after which zoologists know at least the colours (more than less) of the extinct birds and mammals. Of course zoologists know of very many animals extinct in historical times, though before 1600: but only in a few exceptional cases, based on very rare early documentary evidence, do they know the colours of these; and only very exceptionally do they possess their skins, or parts of them. So 1600 is accepted by the S.S.C. as the reckoning date for modern extinction. It is a practical date that happens to coincide with the approximate beginning of the civilized epoch's own special attack on wild nature.<sup>44</sup>

The citation shows how the story of nature is coupled to recent human history in two significant ways, one belonging to the development of science and one to the development of society. First, there is a methodological link between species loss and the year 1600. The year 1600 is as far back as methods such as descriptions, skins, bones, Linnean names, and color can give information on the extinct species. Thus, the scientific methods available influence which species are included in or excluded from a list of extinct species. Second, civilization since the year 1600 is a historical epoch characterized by a “special attack on wild nature.” After listing the numbers of different species groups that have gone extinct or are threatened since 1600, the authors continue: “As will emerge, this is a state of affairs which is quite without parallel in the former span of man's life with nature, that is to say, in his less civilized history before 1600.”<sup>45</sup> Civilization since 1600 is the reason behind the threats toward species and wild nature. In this, the period since 1600 is radically different from earlier periods of time.

The two ways the year 1600 is important in the authors' story about extinct species highlight an ambivalence toward civilization, which becomes even more obvious when the “civilized period” is compared to the Stone Age:

We have seen that Stone Age people all over the globe attained the power to over-kill and extinguish at varying times in the Pleistocene and the pre-historic epochs; and our ancestors learnt wisdom from the warning. This

wisdom appears to have been widely forgotten again in our later years of post-Renaissance exploration, and particularly since the Industrial Revolution, and the rapid refinement of guns and other hunting tools, in the early nineteenth century.<sup>46</sup>

While Stone Age humans exterminated other species just like modern humans, the authors underscore that these people actually learnt something from their over-killing. They gained wisdom, a wisdom which was later forgotten. Here, the authors present a very typical picture of the twofold aspect of modernity: although characterized by progress, humans in the period since 1600 have lost something important that was older and more real, and thus failed in making the world a better place.<sup>47</sup> To the IUCN, however, the production of lists of threatened and extinct species still shows the usefulness of scientific methods, and thereby puts forward the expectation that scientific knowledge might be able to fill in the gaps that were created by the loss of wisdom.

### Ring Binder, Bound Volume, and Database

The ring binder medium was in use until the late 1970s, when the SSC started to publish the Red Data Books as bound volumes. IUCN states that the reason for the change in medium was that the loose-leaf system was less suited for institutions, since it was difficult to maintain.<sup>48</sup> The change in format was also a result of the increasing number of species in the Red Data Books, as well as the amount of data on each species. While the information in the ring binders had been updated twice a year, the change in format to bound volumes and the increasing number of red listed species led to a considerable increase in the time lapses between updates, and in the late 1980s and 1990s updated Red Lists were published only every second year.<sup>49</sup> Thus, during the 1980s the information published on each species was much less dynamic than it had been in the 1960s and 1970s. The new format meant that the information within the Red Data Books was no longer changeable and possible to update, as in the ring binders. It was fixed once and for all—at least until the next volume was published.

Even the change in format was not enough to cope with the mounting data, however, and in 1986, after some years of publishing the Red Data Books as bound volumes with several pages of information on each species, the IUCN reverted to the pre-1966 practice of publishing simple lists of species instead. The lists were now long enough to fill bound volumes in and of themselves. Where the ring binders were complicated systems of information, based on shorthand and knowledge of taxonomy, the bound volumes were easier to handle and thus more accessible to a larger public. At the same time, however, most of the information on each species had now disappeared. Although the

IUCN had by this time established word-processing facilities and a computer to process the emerging database, the information stored in the database was not accessible to the public during the 1980s.<sup>50</sup> Neither could scientists subscribe to quick updates any longer. Thus, the amount of data accumulated in the 1960s and 1970s outgrew both the format and the practices of the little red ring binders. Species extinctions had been shown to be a massive environmental problem, but also massive in the amount of data produced and the question of how to store these data.

In the late 1990s, the data on each red-listed species again became available, through a searchable electronic database. This change from list to a general information system on species is considered one of the major changes in the history of the IUCN Red List, and there are obviously several important differences between a list and a database that support this claim.<sup>51</sup> While a threatened species list is a static tool as long as it is not revised, threatened species databases seem to be constantly changing. As Ursula Heise writes: “Digital databases, to which new items can always be added, have this incompleteness hardwired into their basic structure.”<sup>52</sup> However, this change from something static to something changeable is only visible when the database is compared with the bound volumes directly preceding it. Although vastly different in materiality, the ring binder format of the Red Data Books from the 1960s and 1970s have many aspects that put them closer to the database than to the bound volume Red Lists of the 1980s. First, their information was updated and replaced with almost exactly the same regularity as today’s database (twice a year). Second, it was difficult to retrieve old/discarded information since the owners were actively advocated to throw out old data sheets. Third, the ring binders, like the database, came with various technologies for effective searches: colored sheets, indexes, and an ingenious system of coding on the bottom of each data sheet. Most importantly, however, like the database, but unlike the bound volume, the incompleteness of the work was “hardwired” into the structure of the red ring binders: both the ring binder medium and the format of the Red Data Books signaled that knowledge was changing and expanding.

John Miles Foley has made a related argument regarding the similarity between oral tradition and internet media technologies, namely that they share the same functionality of being open-ended and under construction, and thus differ fundamentally from bound volumes.<sup>53</sup> By choosing ring binders rather than bound volumes in the 1960s, the IUCN signaled the expectation of rapid change and increasing knowledge. They signaled that spreading scientific knowledge that could lead to action and political results was more important than storing information on extinct species, mourning the past, or registering changes for the worse. The change from ring binders to bound volumes changed the balance between these different functions.

As the bound volumes were updated less frequently, the Red Data Books' function as state-of-the-art notes for scientific lobbying disappeared. On the other hand, the storage function from the lists of extinct and vanishing species from the 1940s and 1950s returned. When included in bound volumes, the state of a certain species at a certain time would be saved and accessible even after future updated volumes had been published. The fact that the change in format coincided with the reintroduction of "Extinct" as a species category in the IUCN system, indicates the close link between the storage function of the bound volume format and the understanding of what Red Lists were for.

### The Biodiversity Discourse of the 1960s—A Belief in Progress?

As mentioned earlier in this chapter, lists construct groupings and then provoke questions about those same groupings.<sup>54</sup> While the early lists produced by the IUCN constituted different attempts of defining a group of "species threatened with extinction," the Red Data Books, with their identical formats and titles across taxonomic boundaries, gave uniformity to "species threatened with extinction" as a group that now included all kinds of species. The ring binder medium also made possible a rapid increase in the number of species that the group consisted of. Thus, the Red Data Books constitute an important part in the production of species extinctions as an environmental problem: from the 1960s, it encompasses all species groups, is global, and grows so rapidly that special measures are needed to organize it. Thus, these little red ring binders point actively toward what is now, in the aforementioned words of the UN Global Environmental Outlook, considered a "major species extinction event, compromising planetary integrity."<sup>55</sup>

Young has argued that lists are easy to mobilize for political ends as they are so flexible and seem to be simply enacting a categorization of subjects that has always been.<sup>56</sup> While the enactment of a global category of "species threatened with extinction" was definitely one political aspect of the Red Data Books, their main intended political function seems to have been to present conservationists with the best possible scientific data, so that they could promote the right solutions to "those who are in a sufficiently authoritative position to be able to influence the future."<sup>57</sup> There was a short way between new information, the sharing of the information in the conservation community, and the use of the information in political work. Thus, in the Red Data Books, the political and societal functions of the information converged with the scientific wish for new and updated knowledge.

This, of course, served to frame the question of species extinctions within temporalities oriented toward the political present and the near future. Present action and ongoing change were the dominant temporal frameworks, both of

the format of the Red Data Books, the names of the lists, and in the practices connected with the material. By combining scientific practices directly with political aims, the Red Data Books represented and reinforced a set of temporalities that were extremely short term compared with the long geological and evolutionary timescales necessary to grasp the idea of a general increase in the rate of species extinctions. With little room to include information on the past, or of change of any kind but the positive, the Red Data Books also encouraged the idea that it was possible to do something about the problem of species extinctions, if only one acted fast enough.

Irus Braverman has advocated species extinctions as one of four major threats to liberal democracy where anticipatory action has been formalized, the three others being terrorism, trans-species epidemics, and climate change.<sup>58</sup> Such potentially catastrophic, imminent disasters require action, but since they are placed in the future, they are inherently uncertain, and there is a need for certain practices to render the future actionable.<sup>59</sup> According to Braverman, in the biodiversity discourse, this need for practices has largely been answered by creating threatened species lists.<sup>60</sup> Although the Red Data Books were definitely designed to produce action, I will argue that the making of Red Data Books and lists of threatened species in the 1960s was not a practice mainly aimed toward a future disaster. Rather, species extinctions were regarded as an ongoing phenomenon. As the lists were directly fueling other practices, such as field trips, and contact with governments and politicians, the conservationists were more concerned with the actual present and immediate action on behalf of specific species, than with a potentially catastrophic future.

Studying narrative genres, Ursula Heise has noted a recent move from elegy to epic and encyclopedia in the textual material from the IUCN database. I agree with her that the move toward encyclopedia seems to be a relatively recent change, stemming partly from the changes that were made in IUCN's methodology in the 1990s, when they went from basing species assessments on existing concern to doing assessments by species groups regardless of initial expectations. However, the formats and media that threatened species were presented through in the 1960s and 1970s definitely contain more epic temporal elements than elegiac. Especially, the focus on collecting and spreading a rapidly increasing amount of knowledge is in line with the temporality of the epic struggle. The removal of extinct species from the Red Data Books, and the inclusion of green pages on species recovering from the threat of extinction also show that elements of sorrow and grief were actively played down in these publications. The IUCN and SSC did not promote a narrative of scientists sitting about lamenting extinct species, but of scientists gathering knowledge as fast as they could, while having to "count the stamps, think twice before telephoning, and hitch-hike to conferences and field programmes."<sup>61</sup> The red

ring binders, with their circular letter system and interspersed green sheets, told an epic tale, with the possibility of victory at the end of the struggle.

I think one of the reasons why there is so little focus on loss and lamentation in the Red Data Books is the fact that, during the 1960s and 1970s, the educational and scientific purposes of IUCN were separated by the use of separate media. While today the two purposes are merged in one electronic database, which is searchable for the public and strewn with photos and easily accessible information in addition to the scientific data, the red ring binders of the 1960s and 1970s were almost unreadable for the general public. Instead, the public was presented with bound volumes such as *The Red Book: Wildlife in Danger*. Here, the elements of past extinctions and sorrow were invoked to serve as pedagogical measures. *The Red Book: Wildlife in Danger* drew up a picture that included both the historic past and the future of humankind.

Thus, the increasing number of species in the Red Data Books played into two different stories of biodiversity loss at once. On one hand, the fast increase in the number of sheets in the Red Data Books was a measure of a successful approach to a scientific and political problem. On the other hand, the increasing problems of organizing, containing, and updating the number of species in the Red Data Books, corroborated the conception that the problem of biodiversity loss was huge and difficult to cope with. The format and practices of the Red Data Books thus, at the same time, served to underscore an accumulation of knowledge and the acceleration of a problem.

In his article “The Climate of History: Four Theses” from 2009, Dipesh Chakrabarty argued that “Anthropogenic explanations of climate change spell the collapse of the Age-old humanist distinction between natural history and human history.”<sup>62</sup> Chakrabarty contended that: “In unwittingly destroying the artificial but time-honored distinction between natural and human histories, climate scientists posit that the human being has become something much larger than the simple biological agent that he or she always has been. Humans now wield a geological force.”<sup>63</sup> However, as has been pointed out by Bonneuil and Fressoz (2016), the distinction between natural and human histories, and the idea of an awakening of humans to their massive effects on nature only with climate change and the establishment of the Anthropocene concept, is a simplification.<sup>64</sup>

Although the temporalities of the Red Data Books are scientific and political, the biodiversity discourse in the 1960s, when presented in *The Red Book: Wildlife in Danger* is clearly based on a grand narrative similar to that of the Anthropocene. In the introduction to the book, history is presented as a history of the human species as a collective actor, as in “man’s life with nature,” “Stone Age people all over the globe,” and “our ancestors.” It is presented as a story of a human species that has affected nature since its very emergence, but it also underlines that the effects of humans on nature have accelerated

since the seventeenth century and links this to modernity and the refinement of technology. Due to human actions, the present historical period is thus considered different from earlier ones. The global scale and the acceleration of the problem are underscored through the view from “outside” the planet: “When the first men shortly reach the moon, they will probably be able to see the forest slashes of the last century with the naked eye, so accelerated have been the environmental changes of the Industrial Age” the authors write.<sup>65</sup> Like climate change, the extinction of species is a phenomenon that exists on a global or planetary scale, the size of which is only possible to grasp through technologies.

The case study of the little red ring binders, then, underscores that many of the ideas that are now connected with climate change and the Anthropocene were at work among conservationists during the 1960s. This includes an acceleration in environmental changes since the Industrial Revolution, environmental effects on global and planetary scales, the human species as a collective actor, and a redistribution of temporalities between nature and history. Both the format and practices connected with the Red Data Books and the narrative of *The Red Book: Wildlife in Danger* serve to evoke the idea that nature is changing as fast as, or even faster than, the political and scientific communities are able to act.

Although the chemical and physical components of climate change sets it apart from the discourse on species extinctions, this case shows that the collapse in the distinction between natural and human histories has not developed solely as a result of climate change, but draws on a set of ideas already at play within the general environmental discourse. The force that the authors of *The Red Book: Wildlife in Danger* consider the human species to be wielding has more in common with humans being “a geological force” than with us being, in Chakrabarty’s words, a “simple biological agent.” The Red Data Books from the 1960s, with their rapidly growing number of species threatened with extinction, highlight the challenge that we also face today; of navigating between an almost deterministic worldview where the human species drives nature to change faster and faster, and an optimistic belief that it is still possible to find solutions to environmental problems with the aid of science and politics.

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2. William M. Adams, *Against Extinction: The Story of Conservation* (London: Earthscan, 2004), 43–46; Paul Warde, Libby Robin, and Sverker Sörlin, *The Environment: A History of the Idea* (Baltimore: Johns Hopkins University Press, 2018), 40.
3. See for example J. M. De Vos et al., “Estimating the Normal Background Rate of Species Extinction,” *Conservation Biology* 29, no. 2 (2015): 452–62; Quentin Cronck, “Plant Extinctions Take Time,” *Science* 353 (2016): 446–47 for natural science temporalities, and Einar Jørstad and Ketil Skogen, “The Norwegian Red List between Science and Policy,” *Environmental Science & Policy* 13 (2010): 115–22; Ursula Heise, *Imagining Extinctions: The Cultural Meanings of Endangered Species* (Chicago: University of Chicago Press, 2016); Irus Braverman, “Anticipating Endangerment: The Biopolitics of Threatened Species Lists,” *Biosocieties* 12, no. 1 (2017): 132–57 for discussions on social temporalities.
4. Marit Ruge Bjærke, “Miss Hare Struggles: How Examples of Species Threatened with Extinction Tell a Story of Climate Change,” *Ethnologia Scandinavica* 50 (2020): 197–99.
5. Heise, *Imagining Extinctions*, 75.
6. Heise, 76.
7. Harold J. Coolidge, *An Outline of the Origins and Growth of the IUCN Survival Service Commission* (Morges, Switzerland: International Union for the Conservation of Nature, 1968).
8. Umberto Eco, *The Infinity of Lists: from Homer to Joyce* (London: MacLehose, 2009); Gerard Genette, *Paratexts: Thresholds of Interpretation*, (Cambridge, UK: Cambridge University Press, 1997).

9. See for example Matthew H. Godfrey, David L. Roberts, and Brendan J. Godley, "Taking It as Red: An Introduction to the Theme Section on the IUCN Red List of Threatened Species," *Endangered Species Research* 6 (2008): 109–11.
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12. Martin Holdgate, *The Green Web: A Union for World Conservation* (Abingdon: Earthscan Publications, 1999), 3; Adams, *Against Extinction*.
13. Holdgate, *The Green Web*, 6–9.
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15. International Union for Conservation of Nature and Natural Resources, *Sixth General Assembly Athens 1958: Proceedings* (Brussels: IUCN, 1960), 133; Jane Smart, Craig Hilton-Taylor, and Russell A. Mittermeier, *The IUCN Red List: 50 Years of Conservation* (Washington, DC: Cemex and Earth in Focus, 2014), 11.
16. Smart, Hilton-Taylor, and Mittermeier, *The IUCN Red List*, 21–22.
17. See for example Geoffrey C. Bowker, "Biodiversity Datadiversity," *Social Studies of Science* 30, no. 5 (2000): 643–83; Liam Cole Young, "Un-Black Boxing the List: Knowledge, Materiality and Form," *Canadian Journal of Communication* 38, no. 4 (2013): 497–516; Heise, *Imagining Extinctions*, 66–67.
18. I have examined the following thirteen exemplars of various volumes and editions of ring binder Red Data Books from the 1960s and 1970s: Simon Noel, *Red Data Book. Volume 1. Mammalia* (Morges, Switzerland: IUCN, 1966), one exemplar from the IUCN Headquarters Library including Circular Letter 1 to 9 (Call number: IUCN-RD-1966–001) and one from Skogsbiblioteket, Stockholm, Sweden; Jack Vincent and Simon Noel, *Red Data Book. Volume 2. Aves* (Morges, Switzerland: IUCN, 1966), exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1966–002); James Fisher, *Red Data Book. Volume 2. Aves* (Morges, Switzerland: IUCN, 1968), exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1968–001); Ronald Melville, *Red Data Book. Volume 5. Angiospermae* (Morges, Switzerland: IUCN, 1970), exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1970–001); Harry A. Goodwin and Colin W. Holloway, *Red Data Book. Volume 1. Mammalia* (Morges, Switzerland: IUCN, 1972), one exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1972–001) and one from The University Library, University of Bergen, Norway; René E. Honegger, *Red Data Book. Volume 3. Amphibia and Reptilia* (Morges, Switzerland: IUCN, 1975), exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1975–001); Harry A. Goodwin and Colin W. Holloway, *Red Data Book. Volume 1. Mammalia*, revised by Jane Thornback (Morges, Switzerland: IUCN, 1978), one exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1972–001 New ed.) and one from The

- University Library, University of Bergen, Norway; Warren B. King, *Red Data Book. Volume 2. Aves*. 2nd rev. ed.: Part One (Morges, Switzerland: IUCN, 1978), exemplar from The University Library, University of Bergen, Norway; Warren B. King, *Red Data Book. Volume 2. Aves*. 2nd rev. ed.: Part One and Two (Morges, Switzerland: IUCN, 1979), exemplar from The University Library, University of Bergen, Norway; Robert Rush Miller, *Red Data Book. Volume 4. Pisces: Freshwater Fishes* (Morges, Switzerland: IUCN, 1979), exemplar from the IUCN Headquarters Library (call number: IUCN-RD-1977-001).
19. In many of the copies, however, there are pages missing, such as the front page or pages from the introduction.
  20. Vincent and Noel, *Red Data Book. Volume 2. Aves*, Explanatory Remarks.
  21. Noel, *Red Data Book. Volume 1. Mammalia*, Introduction.
  22. Copies of Circular Letters 1–9 can be found in the exemplar of Noel, *Red Data Book. Volume 1. Mammalia* from the IUCN Headquarters Library (Call number: IUCN-RD-1966-001).
  23. See Karyn Pravossoudovitch et al., “Is Red the Colour of Danger? Testing an Implicit Red–Danger Association,” *Ergonomics* 57, no. 4 (2014): 503–10 for a brief review.
  24. In two of the Red Data Book copies I examined, the data sheets were even arranged according to color instead of according to taxonomy.
  25. Although this is the first time this color is used in the biodiversity discourse, the specialists using the ring binders must have been expected to understand the connotations, as I have not found any discussion of it in any of the preambles or introductions of the Red Data Books, nor in the IUCN Bulletins where the Red Data Books were promoted. See International Union for Conservation of Nature and Natural Resources, “Survival Service Commission,” *IUCN Bulletin (new series)* 10 (1964): 3; International Union for Conservation of Nature and Natural Resources, “The Red Data Book—Publication of the Specialist’s Edition,” *IUCN Bulletin (new series)* 19 (1966): 3.
  26. Holdgate, *The Green Web*, 40; Simone Schleper, *Planning for the Planet: Environmental Expertise and the International Union for Conservation of Nature and Natural Resources, 1960–1980* (New York: Berghahn Books, 2019), 26–27.
  27. International Union for Conservation of Nature and Natural Resources, *Sixth General Assembly Athens 1958: Proceedings*, 133–34.
  28. Warde, Robin, and Sörlin, *The Environment*, 45.
  29. Young, “Un-Black Boxing the List,” 498.
  30. Complete references to the lists can be found in Coolidge, *An Outline of the Origins and Growth of the IUCN Survival Service Commission*.
  31. International Union for the Protection of Nature, *Les fossiles de demain: treize mammifères menacé d’extinction* (Brussels: IUPN, 1954).
  32. United Nations Educational Scientific and Cultural Organization (UNESCO), *International Technical Conference on the Protection of Nature: Proceedings and Papers*, 183.
  33. Young, “Un-Black Boxing the List,” 497–516.
  34. Eco, *The Infinity of Lists*, 15–17.

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36. International Union for the Protection of Nature, *Proceedings and Reports of the Second Session of the General Assembly held in Brussels, 18–23 October 1950* (Brussels: IUPN, 1951), 25.
37. International Union for Conservation of Nature and Natural Resources, “A Preliminary List of Rare Mammals Including Those Believed to Be Rare but Concerning Which Detailed Information Is Still Lacking,” *IUCN Bulletin (new series)* 11 (1964): Supplement; International Council for Bird Preservation and IUCN, “List of Rare Birds, Including Those Thought to be So but of Which Detailed Information Is Still Lacking,” *IUCN Bulletin (new series)* 10 (1964): Supplement.
38. John D. Lyons, *Exemplum: The Rhetoric of Example in Early Modern France and Italy* (Princeton: Princeton University Press, 1989), 28.
39. International Union for Conservation of Nature and Natural Resources, *Seventh General Assembly Warsaw 1960: Proceedings* (Brussels: IUCN, 1960), 101–2.
40. James Delbourgo and Staffan Müller-Wille, “Introduction,” *Isis* 103, no. 4 (2012): 711.
41. United Nations Educational Scientific and Cultural Organization (UNESCO), *International Technical Conference on the Protection of Nature: Proceedings and Papers*, 135.
42. Jane Thornback and Martin Jenkins, *The IUCN Mammal Red Data Book: Part 1* (Gland, Switzerland: IUCN, 1982), ix.
43. James Fisher, Noel Simon, and Jack Vincent, *The Red Book: Wildlife in Danger* (London: Collins, 1969), 11.
44. Fisher, Simon, and Vincent, *The Red Book*, 11.
45. Fisher, Simon, and Vincent, 12.
46. Fisher, Simon, and Vincent, 18–19.
47. Peter Watson, *The Modern Mind: An Intellectual History of the 20th Century* (New York: Harper Collins Publishers, 2001), 52.
48. Thornback and Jenkins, *The IUCN Mammal Red Data Book: Part 1*, i. The problem of maintenance was also clearly visible in the copies of Red Data Books examined in this study (cf. note 19): some contained original data sheets and circulation letters, but not the updated sheets, some were sorted in new ways (for instance according to color instead of taxonomy), while others again lacked some or all of the explanatory pages.
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51. Dr. Thomas Brooks, personal communication.
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53. John Miles Foley, *Oral Tradition and the Internet: Pathways of the Mind* (Urbana: University of Illinois Press, 2012), xi, 13.
54. Delbourgo and Müller-Wille, “Introduction,” 711.
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56. Young, “Un-Black Boxing the List,” 503–4.
57. Noel, *Red Data Book. Volume 1. Mammalia*, Introduction.
58. Braverman, “Anticipating Endangerment,” 134.
59. Ben Anderson, “Preemption, Precaution, Preparedness: Anticipatory Action and Future Geographies,” *Progress in Human Geography* 34, no. 6 (2010): 777–98.
60. Braverman, “Anticipating Endangerment,” 134.
61. Fisher, Simon, and Vincent, *The Red Book*, 20.
62. Dipesh Chakrabarty, “The Climate of History: Four Theses,” *Critical Inquiry* 35 (2009): 201.
63. Chakrabarty, “The Climate of History,” 206.
64. Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene* (London: Verso, 2016), 252–87.
65. Fisher, Simon, and Vincent, *The Red Book*, 19.

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