En-Listing Life:
Red is the Color of the Threatened Species List

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Not all threatened species are created equally.
---Mike Hoffmann, IUCN, interview

The Cebu flowerpecker *Dicaeum quadricolor* is a native bird of the island of Cebu in the Philippines (BirdLife International 2014a). The species was listed as Extinct in the first bird Red Data Book in the 1960s and was placed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species™ (hereafter, the Red List) in 1988. The bird's surprise rediscovery in 1992 resulted in the species' reassessment as Critically Endangered in 1994 (BirdLife International 2014b). Currently, the flowerpecker is believed to be one of the ten rarest birds in the world. Although the bird was observed in 2014, no one has seen one long enough to take a photograph, and not much other information has been recorded about the flowerpecker. There is, however, the long and convoluted history of this bird's listing.

Errors in species listings are not uncommon, Thomas (Tom) Brooks, head of IUCN's Science and Knowledge Unit, explains in an interview. In this case, he continues, the incorrect Extinct listing "turned into a self-fulfilling prophecy," effectively producing what has been referred to by scientists as a "Romeo Error" (Collar 1998). "In giving up on it," Mike Hoffmann—Senior Scientific Officer at the IUCN Species Survival Commission—explains, "the species actually really does go extinct. Because once there is no attention to it, all those threats actually do wipe it out" (interview). "The assessment in the 1960s was wrong," Hoffmann continues. "If it had been conducted more carefully, it wouldn't have said that the species was extinct [when], obviously, it wasn't. The species would have then maintained attention and an effort towards safeguarding both the species and the biodiversity of Cebu over the past fifty years" (interview). As it is, however, the flowerpecker was most likely down-listed from the "extinct" category only to be re-listed in this category in the not so distant future.

As the flowerpecker example shows, the act of listing threatened species impacts the life and death of actual animals. Indeed, beyond their descriptive and declarative functions, threatened species lists prescribe a series of material effects on very particular animal bodies; they also normalize and regulate conservation and related actions on the part of specific humans and networks. While recognizing these functions and effects on the individual level, this chapter focuses on the management of life at the level of the biological *species*, what Foucault refers to as biopolitics, as distinct from (yet entangled and coproduced with) anatomopolitics (Foucault 1990). In other words, I examine how the practices of assessing and listing nonhuman species translate into particular knowledges of species, as connected with, yet distinct from, knowledges of individual animals and populations.

My focus on species admittedly goes against the grain of animal geography's emphasis of late on individual animals rather than on "collectivities such as 'animals,' 'species,' and 'herds'" (Bear 2011, p. 297). The problem with such exclusive attention to the individual animal is that it disregards myriad nonhuman life worlds, networks, systems, and relationalities that do not necessarily flow directly from the individual scale. I am not saying that critical animal geographies should not take the individual lens seriously; I am merely cautioning against too

widespread an uptake of Bear's recommendation, particularly at this sensitive time. Accordingly, this chapter offers a critical account of biopolitical projects that focus on the *species* as a unique entity of government, thereby revealing a range of power dynamics that would neither be operative nor apparent when discussing the individual animal and the population.

The project of governing species sits somewhere between that of governing individuals and that of governing statistical populations—and corresponds with both. Unlike Foucault's abstract population (which, I should point out, is different from the understanding of a population in the conservation context, typically as a unit smaller than a species), a species has a face and a context; it is situated—as becomes clear from the narratives of conservation experts. Put differently, thinking and governing through species regimes enables both an abstraction—a grid over the Linnaean kingdoms (Foucault 1970)—and an embodiment—a personification of ecosystems, habitats, and populations. Since humans understand themselves primarily as a species and therefore both relate to, and differentiate themselves from, other species—it is important to critically examine this lens and the work that it performs in the world.

For conservation biologists, the species is the foundational ontological unit for knowing and calculating life, or viability (Braverman 2014; 2015; Sandler 2012). Biermann and Mansfield reflect on the perspective of conservation experts that: "Managing individual nonhuman lives is meaningless in responding to the crisis of biodiversity loss; individual lives acquire meaning only when they advance the long-term well being of the broader population or are essential to sustaining key biological processes, especially evolution" (2014, p. 264). According to this way of thinking, the death of an individual gains meaning according to the level of endangerment of the species: once on the brink of extinction, for example, the individual becomes larger than a singular life, and her or his death is therefore more than a singular death: it becomes the death of a life form, the death of nature.

At the same time, the deaths of so many other life forms who are not rare, charismatic, or visible enough to warrant the "threatened" designation fall outside the range of protections established by the list, or outside the list altogether. Such life forms are effectively "listless": incalculable, unmemorable, and thus killable. Toward the end of this chapter, I argue that the conservation value of a species is defined through its inclusion and rank in an increasing number of lists and that the power of such lists is constantly eroded as new lists take their place in defining what is even more threatened, endangered, or extinct. Foucault refers to this project of differentiating between what must live and what must die as "racism." Although he restricts his analysis to humans and to the complex histories of the animalization of racialized others, I find that this framework is crucial to understanding the process of human exceptionalism and speciation and is thus highly relevant also in the context of critical animal geographies.

My project illuminates the immense regulatory power of lists and their heightened focus on, and differentiation of, life. Specifically, I argue that in addition to reinforcing the biopolitical differentiation between perceivably distinct nonhuman species, threatened species lists also reinforce the biopolitical differentiation between human and nonhuman species, with the human never being subject to the threatened list. Such a differentiated, or racial, treatment of the life and death of species through their en-listing, down- and up-listing, multi-listing, and un-listing translate into the positive protection and active management of nonhumans. Threatened species

lists are thus biopolitical technologies in the battle against biological extinction. Listing threatened species becomes a way to affirm—and justify—that life which is more and most important to save.

While most of the biopolitical work in geography is centered on thanatopolitics or necropolitics, this project brings into focus an affirmative biopolitics (Rutherford and Rutherford 2013, p. 426), namely "the ways in which biopolitics can be more about life than death, about inclusion rather than exclusion" (2013, p. 429). What happens to those listless lives that fall outside the realm of the threatened list does not figure within this account, which focuses instead on the viability of the listed. But such a focus on the affirmative does not entail a disavowal of death. Quite the contrary, as Biermann and Mansfield argue, "to *make live* does not mean to avoid death altogether but to manage death at the level of the population. In a biopolitical regime, death is transformed into a rate of mortality, which is open to intervention and management. This transformation erases the fact that not all life is equally promoted" (2014, p. 259). For the listless, the rule is typically the non-application of protection and the phasing out of support, although it can include much more explicitly sovereign methods when pertaining to certain species, especially those that threaten the purity of the listed (e.g. Gila and rainbow trout or crested and marine toads; Braverman 2015). But while the color of the Red List is intended to alert to the dire state of those species that are listed as threatened and the intensified management of their mortality rates, it fails to alert to those species and individual animals who have been marginalized in the process of saving the chosen ones (Braverman 2015). Inspired by Tania Li (2009, p. 67), I conclude with a question: is it possible for social forces to mobilize in a wholly "make live" direction?

A few words on the structure of this chapter. After a brief discussion of biopolitics and its application to nonhumans, I examine the work that lists, and threatened lists in particular, purport to do, and their appeal from a regulatory standpoint. Next, I discuss the IUCN Red List and explore this list's unique category of Extinction. I conclude with a short discussion of interrelated incentives such as the lists of the Alliance for Zero Extinction (AZE) and EDGE of the Zoological Society of London. My heavily empirical and ethnographic focus in this chapter conveys the biopolitical project that lies at the heart of conservation biology, thereby contributing to critical animal geographies of nonhuman species.

Biopower in Conservation Biology

All kinds of things become more interesting once we stop assuming that "we" are the only place to begin and end our analysis.
---Hinchliffe and Bingham 2008, p. 1541

Michel Foucault's concept of "biopower" helps make sense of conservation biology's extensive use of species ontology, its fundamental trust in numbers, and its focus on calculations of rarity in practices of listing life. In the pre-modern period, sovereign power was characterized by the "the right to decide life and death," that is, the right to *take* life or *let* live (Foucault 1990, pp. 135-6). Foucault argues that this ancient right has been replaced by a "power to *foster* life or *disallow* it to the point of death" (1990, p. 138). He defines this new "power over life"—which he sees as emerging in the eighteenth century with the development of bourgeois society and

capitalism—as "biopower." In his words: "Power would no longer be dealing simply with legal subjects over whom the ultimate dominion was death, but with living beings, and the mastery it would be able to exercise over them would have to be applied at the level of life itself; it is the taking charge of life, more than the threat of death, that gave power its access even to the body" (pp. 142-3). Power, Foucault argues, no longer has death as its focus, but rather the administration of the living: "Such a power has to qualify, measure, appraise, and hierarchize, rather than display itself in its murderous splendor" (p. 144).

Although Foucault uses the term biopower to describe the project of governing *human* bodies, populations, and life (see also Rabinow and Rose 2006; Rose 2001), my work draws on a growing scholarship that expands this notion to the governing of nonhuman animal species and populations (Friese 2013; Haraway 2008; Rutherford and Rutherford 2013; Shukin 2009; Smith 2011; Wolfe 2013). Within this scholarship, limited attention has been paid to the role of race in the biopolitical differentiation of nonhuman life (but see Biermann and Mansfield 2014, p. 261). Although the project of racism, as Foucault defines it is crucial for explaining the distinction between listless and listed life, my application of it is different than Foucault's, as I shall explain shortly.

Death, in this context, is a means to foster life. In Foucault's words: "The enemies who have to be done away with are not adversaries in the political sense of the term; they are threats, either external or internal, to the population" (2003, p. 256). Foucault refers to the break between the livable and killable as "racism." According to this definition, the death of the other improves life as a whole: "racism justifies the death-function in the economy of biopower by appealing to the principle that the death of others makes one biologically stronger insofar as one is a member of a race or population, insofar as one is an element in a unitary living plurality" (2003, p. 258).

Unlike in Foucault, however, in this case the "listless" population is ostensibly that which is *not threatened*, and not necessarily that which threatens. Rather than posing a biopolitical threat to the flourishing of listed populations, listless populations simply remain killable, whereas the threatened ones are elevated into a grievable status. So while the vulnerability of certain forms of nonhuman species life is what triggers human protection, the major threats that in fact create such vulnerabilities are de-personalized and abstracted. Terms such as deforestation, climate change, and habitat destruction conceal the underlying assumption of conservationists that, for the most part, it is the conduct of *homo sapiens* that is responsible for the other species' increased risk of extinction. Such an omnipresent threat of violence by humans looms over the threatened (note the passive voice) lists, but it is rarely made explicit. Simultaneously, certain listless species are downgraded to the category of "invasive," "hybrid," or "nuisance," posing a second, this time more typically biopolitical, threat to the purity of the protected species. These inter-species threats become subject to forms of control by humans, such as elimination or purity management (Braverman 2015). To reiterate: threatened species lists are biopolitical technologies in their reinforcement of underlying species ontologies—and in their distinction between threatened nonhumans and never-threatened humans in particular; such lists are also about creating, calculating, and re-performing that line between nonhuman lives that are killable and those lives that should be cultivated.

Lists and Threatened Species Lists

Let me now take one step back to consider the definition of a list and what, in particular, are the history and functions of threatened species lists. The *Oxford English Dictionary* defines a "list" as "a number of connected items or names written or printed consecutively, typically one below the other" (2013). The word "list" originates from border, edge, boundary (from Old High German *lîsta*; *OED* 2013), but it also means lust and desire, or inclination. Dating back to Old English from before the twelfth century, *hlyst* also means "to listen" (*OED* 2013).

A grocery list, kill lists, sex offender lists, and lists of threatened species—all share certain properties that define them as such: they are consecutive configurations of discrete items linked by a common goal that assigns them meaning and functionality. Lists name, classify, document, and simplify; they aspire to comprehensiveness, comparability, consistency, and uniformity, and are structured so as to delineate boundaries and produce authority and focused awareness. Making a list is thus a way to make something apparent (or heard, recall *hlyst*) that is not otherwise so. Related to and drawing upon all these functions, lists also standardize and regulate. Whereas all lists rely on various forms of classification, effectively "sorting things out" (Bowker and Star 1999)—some do more than that: they *prioritize*. With such lists, not only the listed items but also their particular order is significant.

Threatened species lists emerged in the 1960s and proliferated especially from the 1990s on. Today, conservationists routinely utilize lists of threatened species as powerful technologies in the battle against nonhuman extinction. Such lists share a few characteristics: they are typically a *scientific* method for highlighting those *species* under higher *extinction risk* with the explicit or implicit goal of focusing attention on *conservation measures* designed to protect them (Possingham et al. 2002, p. 503; emphasis added). This section will explore the properties of conservation lists that make them such ubiquitous tools of conservation and into such effective biopolitical technologies.

Mike Parr is the Chair of the Alliance for Zero Extinction as well as the Vice President of Planning and Program Development at the American Bird Conservancy. Parr ties the tendency to list threatened animals to our primordial function as hunters and gatherers. In his words: "We [wouldn't] want to kill the last one because we knew that if we did that, we wouldn't be able to eat" (Parr, interview). "If you're not actually going to hunt it," Parr adds, "a very nice surrogate is to make a list of it." The act of listing is thus not only a way of documenting life but also a way of knowing it— both in the sense of experiencing intimate physical contact with it and in being able to consume it. This explanation helps Parr argue for the importance of lists beyond their economic value. "There's a value to it that is not economic; it's intangible, probably," he tells me in our interview, concluding: "if we don't do something about it now, people will find that hole that's left in our collective soul and be mournful of it" (interview). From Parr's perspective then, acts of listing life are tied to our essential biophilic needs and desires as humans. In the process of upgrading the animal from huntable to savable, it is simultaneously elevated from the status of killable to that of the grievable.

John Lamoreux of the National Fish and Wildlife Foundation explains that "birders are famous for making lists: you have to be able to see what you saw. There's almost a listing mentality" (interview). But beyond its routine application, Lamoreux points out that the list is also important

as a “rallying cry.” “As an organization, you know what you stand for if you make a list of what’s important,” he tells me. “The whole reason you go into this is you want something added by doing this,” he continues. “But you don’t even start these exercises if you don’t have some clear idea of what’s missing, or what would get added value, or what would get raised attention, as needed” (interview). The list is thus a technology for differentiation.

Another IUCN scientist, Red List Unit Programme Officer Rebecca Miller, focuses on the functionality of lists. She writes: “The principle aim of a threatened species assessment is to estimate a species’ risk of extinction in a comparable, repeatable, transparent, and objective manner” (Miller 2013, p. 191). According to Miller, threatened lists quantify the magnitude of the contemporary extinction crisis so as to monitor the status of biodiversity and measure current trends; they draw attention to the plight of threatened species and help mobilize political and public support for conservation measures; and they help guide conservation efforts into taking action where it is most needed (2013, p. 191). Finally, Miller argues that such capacities of threatened species lists to quantify, draw attention, and guide action are what have made them such powerful tools for mobilizing scientific, political, and public support (2013, p. 191).

The use of species as the foundational unit of threatened lists—effectively rendering them the “currency of conservation” (Lamoreux, interview)—is not only ideological but also pragmatic. First, species are the most common and easily measured unit for assessing the state of biodiversity. Moreover, threatened species are “among the most visible and easily understood symbols of the rising tide of extinctions,” making them an “emotive and politically powerful measurement of biodiversity loss” (Miller 2013, p. 192; see also Wilson 1992; Wilcove 2010). In other words, species are the personalization—the individuation even—of populations and ecosystems. Using the species scale thus enables conservationists to put a face onto less apparent extinction processes and losses.

The lists’ utilization of the species unit not only implies equality among species but also their comparability and homogeneity. The Red List, for example, is “applied to grasshoppers as well as blue whales,” Lamoreux tells me. “There’s something about the applicability across all groups that’s just truly amazing,” he adds. Yet some listed species end up being more equal than others. Lamoreux explains, for example, that “even if you list a whole lot of dragonflies on the Red List, they’re not going to suddenly get as much attention as a panda.” He clarifies, accordingly, that “they’re not all equal in the eyes of conservation funding or conservation action” (interview). James Watson is president-elect of the Society of Conservation Biology and head of Climate Change Project at the World Conservation Society. Watson points out that of 1,600 species on the Australian threatened list, only 35 percent receive government funding for conservation. “The things which get money are birds and mammals, and the things which don’t get money are butterflies and plants,” he tells me in an interview. Even the listing of a species as threatened, then, does not promise it equal protection in relation to other listed species. Other criteria, and less formal lists, in fact determine which species are more or less worth saving. Conservation biologist Arne Mooers tells me along these lines that “the conservation biology community [itself] mistakenly considers probabilities of extinction as representing worth” (interview). For this reason, certain conservation biologists have been advocating for alternative or additional lists that justify the differentiation project and make it more scientific and transparent. Threatened species lists are now everywhere. National agencies routinely make choices on

resource allocation among species based on these lists, typically allotting more funding to species listed in the highest threat categories (Possingham et al. 2002, p. 503). Nonetheless, Hoffmann tells me that "there are not many studies that investigate, quantitatively, the impact of listings" (interview). He notes two exceptions: in the United States, recent analyses of recovery plans based on Endangered Species Act listings suggest that there is a positive relationship between funding and trends in species status, and a study of threatened bird recovery programs in Australia for the period between 1993 and 2000 found that where funds have been dedicated to the conservation management of threatened bird taxa, they have produced positive results. "Although more threatened birds declined than increased," the Australian study noted, "many stayed stable over the study period when they might otherwise have become more threatened or gone extinct" (Garnett et al. 2003, p. 664).

The IUCN Red List for Threatened Species™

The Red List is a map of how to do conservation.
---John Lamoreux, interview

IUCN's Red List is the first modern comprehensive global attempt at listing threatened species. The IUCN has been producing Red Data Books and Red Lists since 1963 (IUCN 1963; Lamoreux et al. 2003, p. 215). Despite the insistence on the part of many IUCN scientists that the Red List is not prescriptive (Hoffmann, interview), all agree that it has had profound influence on conservation practices and practitioners around the world (Possingham et al. 2002; Rodrigues et al. 2006). Specifically, the Red List has inspired the development of numerous national and regional red lists and functions as an important source for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—a powerful international convention on trade (Miller 2013) that determines whether and how trade in certain species will be regulated.

The Red List is by far the most influential and widely used method for evaluating global extinction risk. It has been in use for five decades, and has evolved during this period from a subjective expert-based system lacking standardized criteria to a uniform rule-based system (Miller 2013, p. 195; Mace et al. 2008). The IUCN revised its risk-ranking system into data-driven quantitative criteria in 1994 and finalized these categories and criteria in 2001 (IUCN 2001a; see also Mace et al. 2008). The current system is designed to provide "a standardized, consistent, and transparent method for assessing extinction risk, thereby increasing the objectivity and scientific credibility of the assessments" (Miller 2013, p. 195).

The Red List classifies taxa into eight categories: Extinct, Extinct in the Wild, Critically Endangered, Endangered, Vulnerable, Lower Risk, Data Deficient, and Not Evaluated (IUCN 1994). The system consists of one set of criteria that are applicable to all species and that measure the symptoms of endangerment (but not the causes). The three IUCN Red List threatened categories are Critically Endangered, Endangered, and Vulnerable. Five criteria, listed A through E, are used to categorize a taxon within these threatened categories. Although the other categories are formally listed, they are not assessed in the same manner, hence being "less" listed, or "list-less." The threatened criteria are: A) a reduction in population size; B) a small, reduced, fragmented, or fluctuating geographic range; C) a decline in size of an already small

population; D) a very small or restricted population; and E) a quantitative analysis indicating the probability of extinction. To be listed as Critically Endangered, for example, a species must decline by 90 percent or more, cover less than 100km^2, or consist of fewer than fifty mature individuals (IUCN 2001b). A species need only satisfy one criterion to be listed. Each of these categories contains a list of species, which can be traced in the Red List's online database, with one exception: the category of Not Evaluated includes no taxa (IUCN 2013a), literall establishing a listless life. Listless, because when a species is not evaluated it is devoid of human protection, thereby remaining mere life. Generally speaking, then, the further the species is ranked away from Extinction, the more unseen it is from the list's perspective and the more killable it is.

Place Figure 1 here: The structure of the IUCN Red List Categories, reprinted from http://www.iucnredlist.org/static/categories_criteria_3_1. Source: The IUCN Red List of Threatened Species © IUCN

Watson says generally about the rigid criteria of the Red List, and of threatened lists more generally, that: "At the end of the day, all listings are arbitrary: they're not driven by the laws of physics, they're actually created [. . .] by humans trying their best to develop the most appropriate categories according to the best available knowledge" (interview). Yet alongside its reliance on fixed and rigid standards, the Red List also enables flexibility and change. Accordingly, the number of species listed in each category changes every time it is updated (on the books, every five years). This is a result of various factors, including species being assessed for the first time, species being reassessed and moved into a different category of threat, and taxonomic revisions. The IUCN distinguishes genuine (namely, real changes in threat levels) from non-genuine (namely, technical changes in threat levels that result from error, taxonomic revisions, or changes in threshold definitions) reasons for revising the listing (IUCN 2013b). The ever-changing nature of the list makes it even more powerful, as no protection, or un-protection, is ever fixed or settled and thus there is constant reliance on the listing process.

In its aspiration to comprehensiveness, simplicity, comparability, consistency, objectivity, and credibility, the Red List is a perfect example of an effective list. By 2013, the IUCN Species Survival Commission network—which is comprised of thousands of scientists and experts from around the world—evaluated the global threat status of 71,576 species of animals, plants, and fungi (IUCN 2013c). The aim: to assess and appropriately categorize every living species (IUCN 2001b). Mike Hoffmann clarifies, accordingly, that the Red List of Threatened Species is in fact not just about threatened species, but about *all* species. "You can't talk about the status of biodiversity globally unless you've assessed everything," he says. Nonetheless, he is first to admit that "we have lots of biases," explaining that the system is "still very much biased towards vertebrates" and that "plants, fungi, and invertebrates are underrepresented" (interview). "We've got a long way to go," he says about the current state of the Red List (see also Stuart et al., 2010).

Alongside its comprehensiveness, the Red List is also powerful for its simplicity: "you want a category system that at the end of the day is relatively simple to implement," Hoffmann explains. "There is, already, a fair degree of complexity in the system," he continues. "So assessors first have to wrap their minds around some of the List's common terms. . . . And then, in addition to

that, you've got to deal with the complex biology of your species and understand how it relates to the categories and criteria. So there's a huge amount of complexity already, just in this simple system" (Hoffmann, interview).

The simplicity factor is intimately related to the heightened comparability that the Red List affords. Generally, the assumption is that the simpler the categories and criteria, the more they can be applied across the board to the various taxa on the list. Indeed, the criteria and categories "are designed to apply whether you are a mammal or a bird or a fungus or a plant or whatever you are" (Hoffmann, interview). For example, Criterion D requires a threshold of fewer than 50 mature individuals (IUCN 2001b); this number applies to all taxa, from fungi to whales. The application of scale in the IUCN criteria of geographic range (Criterion B) surfaces the problems of this "one size fits all" approach. The IUCN cautions that: "The choice of scale at which range is estimated may thus, itself, influence the outcome of Red List assessments and could be a source of inconsistency and bias. It is impossible to provide any strict but general rules for mapping taxa or habitats; the most appropriate scale will depend on the taxon in question, and the origin and comprehensiveness of the distribution data" (IUCN 2001b).

Nonetheless, the central idea of the Red List "was to come up with one system that is applicable across all taxa, and you can therefore make *comparisons* across your different taxonomic groups" (Hoffmann, interview). In addition to the heightened comparability between different taxa, the Red List provides comparability within a particular taxon over time. It makes possible grand calculations such as this one: "On average, 52 species of mammals, birds, and amphibians move one category closer to extinction each year"; or this: "the deterioration for amphibians was equivalent to 662 amphibian species each moving one Red List category closer to extinction over the assessment period, the deteriorations for birds and mammals equate to 223 and 156 species, respectively, deteriorating at least one category" (Hoffmann et al. 2010, 1507).

Place Figure 2 here: The IUCN states that, "Coral species are moving towards increased extinction risk most rapidly, while amphibians are, on average, the most threatened group." From http://www.iucnredlist.org/about/summary-statistics. Source: The IUCN Red List of Threatened Species © IUCN

The Red List's power lies also in its touted objectivity, transparency, and repeatability (namely, that if another expert were to conduct the assessment he or she would reach the same listing conclusion; Brooks, interview). According to Hoffmann, the biggest source of bias is when scientists want to list "their" species as threatened, "because they're worried that if it's not, they're not going to get money." The reverse also happens, with researchers who prefer that their species be listed as Least Concern "so that they can collect their species, put it in a specimen jar, and do research on it." "Our job," Hoffmann tells me, "is to be the neutral, objective, adjudicators of that process." IUCN's Standards and Petitions Subcommittee is the particular adjudicator in cases of disagreement over a Red List designation. According to Hoffmann, they are "the experts in the criteria, and what they say . . . would essentially be considered gospel" (interview).

This brings me to the issue of the Red List's credibility. Barney Long is director of Species Protection and Asian Species Conservation at the World Wildlife Fund and a member of the

IUCN World Commission on Protected Areas. Long tells me that "when you say this species is red listed by the IUCN as Critically Endangered, everyone automatically agrees and accepts that. There's no conversation, because the experts have agreed that it is Critically Endangered" (interview). These lists are so important, Long continues, because they are a means for conservationists to communicate with the public, and a source of advice for policy makers on how to protect and manage species. The credibility of the list, it is inferred, creates a front behind which the increasingly fragmented conservation groups can unite, again serving as both a credibility device and a rallying cry. Today, the IUCN Red List is considered one of the most authoritative sources of information on the global conservation status of plants and animals (Lamoreux et al., 2003). Its reach has extended into numerous national and international regulatory systems. According to Miller, 76 countries use the IUCN methodology for their national red lists (Miller 2013, p. 197). Hence, "From its origins as a general interest in rare and declining wildlife, the science of threatened species assessment has blossomed into a massive conservation theme with far-reaching influence on conservation on the ground" (Miller 2013, p. 200).

But there are also adverse affects to certain listings. Brian Horne, turtle conservation coordinator at the Wildlife Conservation Society, tells me in an interview that collectors often "want the rare, and the unusual and different." Hence, when turtle breeders learned that a certain turtle species was soon to be listed under CITES' Appendix I, their prices increased dramatically. "The turtle went from being a hundred dollar turtle to [costing] one thousand dollars." Another result is that once a species is downlisted (the term used to indicate that it has become less threatened), "you become a victim of your own success . . . because suddenly there's less funding sources available," which could in turn easily translate into less protection (Bennett, interview). Another example is that the price of rhino horn on Korean markets increased by more than 400 percent within two years of their uplisting from CITES Appendix II to Appendix I, which in turn coincided with a sharp increase in the poaching of black rhinos and in illegal trade in rhino horn (Rivalan 2007, p. 530). The listing process thus makes a difference for the lives of animals in myriad, at times counterintuitive, ways.

Listing Extinction

On the far end of the Red List continuum, and of threatened species lists more generally, lies the always imminent and looming category of extinction: zero life for the species—as extinction does not apply to individuals. Threatened species lists derive their meaning from this terminal category; it defines both conservation's goal of preventing the extinction of species and its orientation toward crisis intervention. "Extinction [is] the middle name of conservation biology," Redford and his colleagues (2011, p. 39) write. Furthermore, the category of extinction dictates the lists' focus on rare and threatened species, what Michael Soulé and colleagues (2003, p. 1247) refer to as "manifest demographic or numerical minimalism." Redford et al. (2012, p. 40) explain that, "This trend is still evident in the fact that successful conservation is defined by many conservation biologists with reference to minimum population sizes, minimum areas, and minimally sufficient sets of sites," which they believe are highly problematic as exlusive measures. This trend emphasizes the high level of trust in numbers on the part of conservationists, a phenomenon that has been problematized more generally by critical population geographers (Legg 2005, p. 143) and others (e.g. Porter 1996).

But alongside its popular meaning, extinction is also a regulatory term. Indeed, it means one thing in lay discourses, and something quite different in the context of the IUCN Red List. Mike Parr explains that the IUCN has become extremely cautious about listing species as extinct. The IUCN defines a taxon as extinct: "when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times . . . , throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form" (IUCN 2001b). Because of these extensive requirements, the last time that a bird was declared extinct was nine years ago (Parr, interview).

Conclusion: Listed (and Listless) Life

Both letting die, and making live, have a politics, but I reject the idea that the two are in some kind of functional equilibrium—that it is necessary to select some to die, in order for others to live. . . . [W]e cannot concede that selection is necessary. It is possible for social forces to mobilize in a wholly make live direction.
---Tania Li, 2009, p. 67

The last two decades have witnessed an explosion of national lists of threatened and endangered species (see, e.g., Grammont and Cuarón 2006, p. 22). In 2010, at least 109 countries had produced a national red data book, national red list, or other national list of threatened species (Miller 2013, p. 198), and at least 25 listing systems of threatened species were used across North America (2013, p. 192). Of the myriad threatened species lists, Miller writes, some "are designed purely to evaluate risk of extinction, whereas others focus on ranking species to receive priority conservation attention" (Miller 2013, p. 194).

If the Red List focuses on identifying threatened species, other lists supplement this by identifying alternative targets for maintaining biodiversity. The Alliance for Zero Extinction (AZE) has identified 588 sites that serve as the single remaining location for species listed as Endangered or Critically Endangered under the IUCN Red List (AZE 2013). The AZE is thus an attempt to re-territorialize global threats. Another listing initiative that has emerged in recent years is EDGE of the Zoological Society of London (ZSL), which focuses on red listed species that possess a significant amount of unique evolutionary history.[i] From the ZSL website: "We have scored the world's mammals and amphibians according to how Evolutionarily Distinct and Globally Endangered (EDGE) they are." "These are the world's most extraordinary threatened species," the website notes, "yet most are unfamiliar and not currently receiving conservation attention" (EDGE 2013).

Yet alongside the proliferation of lists, a critique of existing listing processes has also emerged. In the words of James Watson: "The conservation field is dominated by ecologists who really like to make lists." But "conservation is also not just about *listing* something," he continues, "it is about *doing* something." "This is not a failure of the list itself," he explains, "it's the failure of the conservation community to develop other metrics beyond the list" (interview). Joseph et al. (2009) argue along these lines that existing approaches in conservation typically "ignore two crucial factors: the cost of management and the likelihood that the management will succeed"

(328; see also Bottrill et al. 2011; Possingham et al. 2002; Walsh et al. 2012).

In this chapter, I have explored but a few of the myriad threatened species lists that are currently proliferating in various organizational and regulatory platforms. In particular, I have focused on the IUCN Red List for Threatened Species, the foundation for all modern threatened species lists. Despite their common origin, the various lists differ in their perspective on what is most important about life—and thus what is most worth saving, whether rarity in numbers, unique territorial configurations, or evolutionary (phylogenetic) variation.

Traditionally, animals and plants—along with all that is considered natural or wild—have been confined to the realm of biological life: namely, that which is killable. Conversely, humans have been privileged with political life. This chapter has described how species lists elevate listed nonhuman species from the realm of mere, or biological, life into that of a political life worth saving: laws are put in place to protect life forms belonging to threatened species from being killed or harmed, databases are configured around their most recent census, and those last individuals of such species who die despite the efforts are deeply grieved. Individual life is thereby interpreted and calculated through its configuration and evaluation as a species.

Conservationists believe that life—embodied in species units—must be assessed, listed, and ranked if it is to be protected and saved. The focus of the listing project is thus on life rather than death; this is an affirmative biopolitics that promotes nonhuman survival based on human care and founded on detailed calculations. Conservation is about saving life, but it is also about figuring out which life should be privileged in this endeavor. It begins with the assumption that it is life on the level of the species that should be saved, thereby leaving other life forms to contend with less livable conditions. Such a species life that is worth conserving obtains meaning through an ever-expanding calculus.

Rather than a bifurcated understanding of life versus death, then, conservation lists parse the life of species into much more complicated orderings according to their extinction risks. In other words, the focus of conservationists on authenticity, rarity, and endangerment not only oscillates between life and death, or between political and mere life, but also elevates certain nonhuman species over others, effectively establishing a gradation of animal bodies that are both worth living and worth grieving. Finally, even among those species who are deemed threatened, categories and criteria prioritize the ones who are perceived to be *the most threatened of all*: those whose lives are even more, and finally most, worth saving.

Listing a species gives it a name, a number, a map, and a list of threats—all establishing its uniqueness and elevating it from the listless abstraction of ecosystems and even populations. The list is the technology through which the species is individuated. My study of threatened species lists thus provides a novel perspective on biopower that highlights its affirmative properties, while at the same time offering a path for critical animal geographers to critically examine the species as a unit of governance in ways that challenge its assumed ontological ordering. Thus we begin to reveal the important messiness of the divide between individuals, species, and populations.

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Notes

[i] The EDGE idea draws on the phylogenetic diversity (PD) concept (Faith 2013). Biodiversity expert Arne Mooers explains that the PD framework could provide a more dynamic—and thus a better—list than EDGE because of its ability to run multiple scenarios with various sets of groups. Mooers provides the example of the kiwi bird from New Zealand to explain the differences between PD and EDGE listings. There are three kiwi species that "aren't related to anything else on the planet," he says. "But even though as a group, they are fifty million years . . . distantly related to everything else, amongst themselves they're surprisingly closely related," he explains. "So if you saved any one of them, and let the other two go extinct, . . . all [of] the 'kiwiness' would still be there, in that one species" (interview). Mooers tells me that all three species rank highly on the EDGE list, resulting in that "you might be wasting your time trying to conserve all three of them, when really you should conserve only one." The kiwi example clarifies the triage function of lists, which operate under the implicit assumption that humans must save certain species rather than others according to their conservation value. "Like in emergency medicine, triage involves using criteria to assess priority and make life or death decisions, not about human beings but about the futures of entire species" (Biermann & Mansfield 2014, p. 266).