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Sebastien Y. Roux, Amandine Reist

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Roux Sébastien (corresponding author)
Sociologist
CNRS Director of Research

Iglobes (CNRS, ENS/PSL, University of Arizona)
845 N. Park Avenue
Marshall Building, 5th floor
Tucson, AZ 85721 – USA

Reist Amandine
Sociologist
EHESS-ENS, Paris

KILLED FOR GOOD: HUNTERS, BIOLOGISTS, AND THE ETHICAL PARADOXES OF WILDLIFE MANAGEMENT IN NORTH AMERICA.

Built over the 20th century, the North American model of wildlife management relies on a dense network of professionals and institutions who share a certain consensus on hunting as a useful, even necessary, practice for the conservation of endangered wildlife. After describing the moral economy of hunting in the United States, this article looks more specifically at biologists in wildlife management agencies to question how they participate in organizing, maintaining, and justifying the sport. Based on interviews and observations conducted in Arizona, a state with an excellent reputation for the “quality” of its game, we examine how professionals of the *bios* approach their vocation when it is challenged by the paradox of death as a necessity for the protection of life.

hunting; conservation; ethics; consensus; biology

KILLED FOR GOOD
HUNTERS, BIOLOGISTS, AND THE ETHICAL PARADOXES OF WILDLIFE MANAGEMENT IN
NORTH AMERICA



Photo 1: AZGFD Billboard on Oracle Road, Tucson, AZ
Credit: Author 1 (2022)

At the western end of Oracle Road in Tucson, just off the I-10 and only a few blocks from the University of Arizona, the Arizona Game and Fish Department (AZGFD) rented an imposing billboard in Fall 2022. In just a few words, the state agency celebrates and promotes the ecological importance of its missions. The sign does not

include images of hunting trophies, weapons, or scenes; nor does it mention the very “sports” it is responsible for regulating (hunting, fishing, recreational vehicle licensing, etc.). Only “science” and “wildlife conservation” are highlighted, alongside a charming picture depicting the reintroduction of prairie dogs – a species far removed from the big-game animals for which the state is usually renowned in the hunting worlds (notably elk, black bear, bison, bighorn sheep and mountain lion) – to the wild. For its new promotional campaign, the AZGFD has chosen to focus on such endearing (if endangered) rodents, and to publicize local environmental initiatives, rather than emphasizing more traditional iconography (hunting and fishing scenes; the majesty of wilderness; the use of weaponry; or of valuable dead-animal products, such as meat, fur, or trophies).

Most of the people we met during our fieldwork on hunting – whether they were hunters, biologists, institutional representatives, volunteers, or lobbyists – shared a deeply held belief: For them, hunters were seen as essential partners in defending and protecting the environment, and this idea was at the heart of the “North American Model of Wildlife Management” which informed their practices (Heffelfinger, Geist, and Wishart 2013). Over the several months of our fieldwork in Arizona, we became increasingly familiar with this idea, to the point that it took us a few days to even consider the impressive billboard we drove past daily. Nevertheless, while understanding the historical specificity of the American context that has historically linked hunting with conservation, a tension remains between defending the recreational killing of animals and protecting them (Epstein 2017).

Our project examines what we believe is a previously unarticulated, or even discussed, moral tension in the field of hunting and its "highly institutionalized harm" (Presser 2013) to animals: the promotion of their killing for the promotion of life. Our aim is to show that this paradox is not simply a matter of discourse, the resolution of which can take the form of justifications or strategies of neutralization. Ethical paradoxes can also be products and producers of practices and actions, whose paradoxical characteristics are not considered by most actors, and which are often articulated and arranged without tension. However, by participating in the establishment of a genuine biopolitical government of wildlife, the management of hunting not only turns nature into a "hunnable" resource; it also makes the culling of animals a desirable project, consensually valued as a rational and even necessary condition for their care and protection. Thus, our study of hunting shows that moral paradoxes, when located "at the heart" (Fassin et al. 2015) of institutional practices, are not necessarily fragilities that potentially threaten the apparatuses by exposing dilemmas and contradictions; on the contrary, paradoxes can also nourish contemporary ideologies and even support their consolidation by integrating ethical values that would otherwise be difficult to coexist.

The Making of Consensus

Like in many Western countries (Oian 2013, Gibson 2014, Mischi), hunting has become a contested practice in the United States, around which visions of nature, its uses, and the value of living beings are at odds (Bronner 2008). Yet, the actors involved in the

hunting “worlds” (Becker 1982) share a consensus on the connection between the promotion of hunting and the pursuit of wildlife conservation.

As Pierre Bourdieu and Luc Boltanski stated, the “dominant ideology” often results in “common sense” and consensus. It is nonetheless “produced” (Bourdieu and Boltanski, 1976), and develops from an intense social work which itself can be empirically analyzed. While the social sciences have tended to focus on conflict and opposition, agreements and consensuses can also be investigated – including, and perhaps especially, when they concern moral and ethical issues. Indeed, in the worlds we studied, the belief in the ecological value of hunting is akin to an ordinary ethics (Faubion 2011, Laidlaw 2014) that turns this activity into a virtuous practice, even though (or perhaps because) other agents outside these universes contest its morality. As such, by focusing on the hunting worlds only, we suggest examining consensus rather than contestation, to understand how it is socially produced and asserted to a certain extent. Consequently, our contribution seeks less to consider the conflicts that today surround a contested practice than to question the way in which some beliefs are “shared in a relatively untroubled way and yet calls on some notion of reflexivity” (Mattingly and Throop, 2018: 479). To put it another way, our article questions how institutions and individuals resolve a dilemma that may seem insoluble to others, and how they “de-problematize”¹ and de-politicize what others may conversely perceive as highly problematical, political, and paradoxical.

¹ We use here “de-problematization” based on Michel Foucault’s concept of “problematization”, a notion used to characterize an historical process that transforms an object into a problem requiring characterization, analysis, and treatment (Foucault 1965).

The ethical consensus on the ecological value of hunting has become all the more questionable, and worth questioning sociologically, as hunting worlds themselves are diversified and sometimes fragmented. In the US, hunters vary, and the ways in which they practice their activity differ according to their social properties (in terms of class, gender, age, race, etc.) and their dispositions. Concretely, we met with a wide diversity of hunters during our fieldwork: some preferred firearms while others favored the bow or crossbow; some were interested only in large mammals for their trophies while others focused exclusively on small game for feeding purposes; some preferred solitude while others hunted primarily for camaraderie, etc. Secondly, the professionals who make a living from the activity were also diverse: guides, gun dealers, biologists, gamekeepers, manufacturers of specialized equipment, etc. Finally, the key institutions that compose these universes were also plural and did not necessarily pursue the same objectives or share the same interests: regional offices, volunteer associations, anti-hunting groups, political lobbies, etc. Yet, despite this plurality, hunting enthusiasts, like the agents who regulate their practices, tended to rally around the consensus of its environmental usefulness – or even necessity – calling into question the historical and social process that underpins this unity.

That said, as our aim in this contribution is to analyze more specifically the ethical consensus that resolves the tension between promoting killing and conserving life, we have decided to restrict ourselves to a particular professional group, while informing our analysis with a broader perspective. Indeed, we focus here mostly on biologists and, more generally, related professionals (technicians, veterinarians, etc.) who are employed by

hunting agencies: those we have labelled as “professionals of the *bios*”, people whose knowledge in biology and ecology has led them to hold a professional job aimed at protecting wildlife (biologists, game officers, etc.). By focusing on these individuals and the way they participate in the hunting worlds, we thus attempt to understand how individuals experience their profession when framed by a paradoxical ethical belief: the promotion of death as a necessity to ensure the protection of life.

Methods

This research is part of the program HUNTAZ², which examines hunting practices and their management in southern Arizona (2022-2024). Arizona is a state widely regarded for the high symbolic value of its fauna, where the proportion of hunters in the population is relatively similar to the federal average (4.2%), and where numerous associations defend the practice and its continuation. Here, hunting is still widely perceived (and idealized) as an activity constitutive of a certain rural and popular American identity.

Our team brought together four researchers (three French sociologists and an American environmental studies specialist), including two graduate students in training. Our investigation was divided into two complementary parts: (1) a study of hunting practices, the controversies they cause, and the justifications they engender; and (2) an

² The HUNTAZ program is funded by OHMI Pima County (Labex DRIIHM ANR-11-LABX-0010). We would like to thank Larry Fisher, François-Michel Le Tourneau, and Margaux Rolland for their help in other phases of the project.

analysis of the biological and hunting knowledge produced by regulatory institutions. Though our questions and strategy were defined jointly, we conducted most of our fieldwork autonomously, each focusing on different aspects in line with our respective training, interests, and areas of specialization.

We opted for a qualitative approach combining semi-directive interviews and observations. We conducted 26 interviews with hunting enthusiasts and conservationists, each lasting approximately an hour and a half; these interviews took place both in town (coffee shops, institutional offices, etc.) and during hunting-related activities. These formal interactions were accompanied by more immersive moments, such as participation in hunting camps, volunteer activities with hunting associations, online and onsite theoretical training, dinners, bivouacs or campfires, museum visits, shooting practice, operations with biologists, etc. In addition to the interviews conducted, just over 250 hours were spent with participants in the hunting world, between February and October 2022.

The participants' agreement was systematically and explicitly obtained before formal interviews were conducted. Hard-copy descriptions of the expectations of our research were distributed, along with consent forms. In addition to the usual guarantees of anonymity and data confidentiality, the forms specified that the interviews would be used exclusively for academic purposes, reminded the interviewees of their option to interrupt the process at any stage of our research without having to justify themselves, and guaranteed the security of the recordings in accordance with the procedures of our respective institutions. No data was used that would have been collected without the

participants' consent. During the less formal phases of the investigation (observation, participation), we systematically explained our positions as researchers and obtained the agreement of those involved. In line with standard practice in both anthropology and sociology, we have systematically chosen to change the names of participants (including the name of a private business we mention below). However, as it would have been useless to only modify the names of local institutions to ensure their protection, and that of their employees – first and foremost the AZGFD and its biologists – we systematically withheld any information that could be potentially harmful in a social environment with a high degree of inter-knowledge between participants.

Valuing Wildlife

In order to analyze the actions of professionals of the bios in the hunting world, one must first understand the architecture of the system that organizes their work. While hunting is regularly presented by its proponents as an activity in nature, or even – for some – as natural and “instinctive” (Leopold, 1966), in reality it is highly regulated, has powerful economic stakes, and generates intense social and political activity. As such, professionals' actions are shaped by an intense web of (economic and political) constraints and consequences that permeate the production and reception of their knowledge and expertise.

According to the latest *National Survey of Fishing, Hunting, and Wildlife-Associated Recreation Report*³, in 2016, 11.5 million people in the United States went hunting during the year, for a population of around 398 million. Of these, 9.2 million said they hunted “big game” (deer, bear, wild turkey, elk, etc.), 3.5 million “small game” (squirrel, rabbit, quail, grouse, etc.), 2.4 million migratory birds, and 1.3 million “other animals”. In 2016, hunters collectively spent 184 million days, and \$26.2 billion, hunting. However, these significant figures conceal a relative decline in the number of hunters in the U.S. According to *Wildlife for All*, based on compiled figures provided by the *US Fish and Wildlife Service*, while the number of hunters grew by 8.6% between 1960 and 2020, this increase masks a gradual decline in the activity relative to the growth of the population (+83.4%).

Each state in the union has an agency under the authority of the executive branch, whose mission is to ensure the proper management of wildlife resources, the conservation of animal species, and the policing of “recreational activities” (mostly hunting, fishing, and motorboat licenses). This dual mandate – to promote hunting and to conserve wildlife – defines the so-called “North American Model” of wildlife management, which is based on three complementary principles: (1) conservation initiatives are primarily financed by hunters and fishers, as well as sales of arms and ammunition according to regulations defined at the state level; (2) natural environments, particularly public lands, must allow “multi-use”, support the cofacilitation of recreational activities (which include

³ As of September 2023, the 2022 FHWAR survey is still underway. In case of acceptance, figures will be updated as soon as the new report is published.

hunting) and remain accessible to the largest public; and (3) institutions in charge of supervising and promoting hunting must ensure the protection of all wildlife, not just huntable or fishable species.

In Arizona, this state agency is called the Arizona Game and Fish Department (AZGFD). In 2023, the Arizona Game & Fish Department was allocated a budget of just over \$50 million.⁴ The AZGFD is proud to claim that “it doesn’t receive a single penny of Arizona general fund tax dollars”, as it is funded exclusively by revenues from hunting and fishing licenses, tags, and other taxes such as the one organized by the Pittman-Robertson Act. The Pittman-Robertson Act (also known as the Wildlife Restoration Act) was passed in 1937 to organize the levying of a federal tax on the sale of firearms and ammunition. The money collected is redistributed to the states, which are responsible for funding wildlife management and habitat protection (*via* their respective agencies). In Arizona, this has amounted to around \$3 million a year since 2020, most often allocated in the form of grants for projects around a specific species or habitat.

Yet approximately 40% of the AGZDF’s total resources come from permit and tag sales. In 2022, an annual hunting license cost \$37 for state residents, and \$57 if combined with a fishing license; a daily license cost \$15. This license is required for anyone aged 10 and over, yet younger people are also allowed to hunt (including big game) when under the responsibility of an adult licensee. Non-residents are required to purchase a combined hunting and fishing license costing \$160 per year or \$20 per day. The number of non-resident hunters in Arizona is significant, and their presence is a

⁴ According to the *Arizona Joint Legislative Budget Committee* (www.azjlbc.gov).

welcome source of income, accounting for about one-third of all hunting and fishing revenue (\$6.8 million out of a total of \$20.8 million, not including incidental expenses for lodging, meals, guides, etc.).

Every year, the AZGFD publishes a document of just over a hundred pages, called *Arizona Hunting Regulations*, detailing the regulations which govern the sport. This brochure details the hunting seasons for the various species, the equipment permitted, and the weapons authorized. Most importantly, *Arizona Hunting Regulations* details the “tag and stamp” system that organizes the hunting of animals classified as “big game”. Animals classified as big game may vary slightly from year to year, but the category usually includes deer, elk, pronghorn antelope, bighorn sheep, wild turkey, javalina, bison, and sandhill crane. Every year, between mid-May and mid-June, the AZGFD organizes a lottery for tags authorizing hunters to harvest a specimen. While some tags are granted as “first come permits”, most tags are distributed through the lottery. The number of available tags is determined by the agency based on reports written by its salaried biologists, who are themselves responsible for the census, monitoring, and “management” of each species.

Tag prices vary according to residence (and the age of the applicant for certain species, with animals deemed easiest to kill being cheaper for children). It costs \$38 for a javalina or turkey hunt by a resident, and the price rises to \$5,415 for a male bison sought by a non-resident. These rates include a \$13 application fee. If a hunter obtains a valued tag in the annual lottery, he or she must always carry it during hunts, and must attach it to an animal when killed. If a hunter is unsuccessful at the lottery, the AZGFD refunds the

tag price, less administration fees. Yet if a hunter fails to shoot a specimen during the season for which he or she was drawn, the AZGFD does not reimburse the individual for the costs incurred. Lastly, there may be animals that are in great demand but for which few tags are available, meaning that the chances of being drawn are relatively slim. Other forms of regulation also apply. For example, for “small game” (which includes certain common species of rabbit, pheasant, or quail) the AZGFD simply limits the number of individuals killed per outing (the “bag”). During charity events, the AZGFD also auctions off tags reserved for a few extremely desirable but limited (or even endangered) specimens. The sums involved can run into hundreds of thousands of dollars (as for bighorn sheep, *cf. infra*), but these special tags are extremely limited.⁵ Finally, animals that fall into the category of “non-game animals” (such as hares, raccoons, snakes, etc.) are not subject to any restrictions.

Thus, the entire apparatus relies on biologists, as they are the ones who are charged with producing the knowledge upon which authorities will decide which, and how many, animals can be officially “harvested”. Indeed, their actions, knowledge, and expertise determine the categorization of different species as big game, small game, and non-game; the number of individuals that can be harvested per species; and, indirectly, the financial value placed on animals based on their rarity and the relative symbolic value vested in them by hunting worlds. From then on, their knowledge and actions become a condition for the continuation of the hunt, while the continuation of the hunt is a condition for the production of their knowledge and actions. The system works in such a

⁵ These auction tags can only be obtained once in a lifetime (per species).

way as to let scientific knowledge about huntable animals determine the ways in which they will be hunted, while positing their “huntability” as a given characteristic.

Hunting for Data

Sunday, September 25, 2022, around 3 pm. A white pickup truck slowly makes its way across public land about 60 miles south of Tucson. The vehicle bears the logo of the AZGFD beneath its slogan, “Managing Today for Wildlife Tomorrow”. Behind the wheel is Jenny, a biologist wearing kaki hiking pants. Connor, a younger technician in a beige shirt, sits to her right. We are both in the back. In recent months, a viral disease from Europe and Asia has been observed in native jackrabbits, causing a highly contagious lethal hemorrhagic fever. Concerned by the spread of the disease, the two scientists want to count the specimens to assess the health of the population. For three hours, from the comfort of the vehicle as it speeds along a dusty track, we scan the grassy savannah, searching for jackrabbits in the shade of cacti and mesquite trees.

Our shared initial enthusiasm soon gives way to a slightly embarrassed boredom. Jenny wanted to show us, sociologists “from the city”, how fun and varied her job is. But the sun is still too high, and the animals are nowhere to be seen. Trying to keep the conversation going, Jenny jokes: “I didn’t bring my rifle, so I won’t be tempted!” We wait for one hour before spotting the first jackrabbit, lurking some 50 yards away. Jenny and Connor quickly grab their binoculars to get a better look, but nothing seems

particularly significant. No sampling is planned. Less than a minute later, we are off again in search of other specimens.

5:30 p.m.; the light begins to fade. We turn back. It takes us almost an hour to get back to the entrance of the plot. This time, we spot a few animals along the way, including a tortoise, two cotton-tailed rabbits, two grey foxes, and an owl – most of them in the last quarter of an hour of our trip. As for jackrabbits, only four have been counted in total, two fewer than during last year's campaign. Jenny and Connor express concern. For Jenny, "It's a decrease of a third! That's certainly a sign of the spread of the disease." We, in the back seats, look at each other awkwardly; it seemed to us that the low sample numbers should call for statistical caution. We share our doubts with the two professionals. Jenny and Connor do not understand our reservations; they reply a somewhat annoyed tone: "But you know... that's the value of our work. This is what we do. We do science. We collect data."



Photo 2: A jackjabbit survey in the south of Tucson, AZ

Credit: Author 2 (2022)

Jenny and Connor are right: counting and taking census are at the core of their profession. Indeed, data collection requires far more than just a few hours in a pick-up truck, and includes efforts like helicopter flights over remote areas in the case of large mammals, or expeditions lasting several days in the case of small game. For biologists, data is at the heart of their mission; it is the very meaning of their actions and a condition they deem necessary for the validity of their discourse and the legitimacy of their knowledge.

Once collected by biologists and specialists, data are aggregated and processed by wildlife managers, who combine them with the figures received from hunters (gathered

via a self-completed form reporting to the AGZDF the number of hunted animals). Hence biologists and hunters are both data co-producers, and are closely associated in the assessment of wildlife populations. These figures, once incorporated into the AGZFD's statistics, serve as a foundation for the annual reports which recommend to the authorities what the acceptable number of animals to be harvested should be. In concrete terms, these data feed a certain number of indicators (such as sex ratios, species per unit, etc.) which are used to develop a genuine fauna engineering system. This logic of quantified objectification also extends to hunting *per se*. As explained by Jim, an experienced biologist who is a professor at the University of Arizona and has been on contract with the AZGFD for over thirty years, the percentage of successful hunts should fluctuate between 20% and 25%. A higher figure would indicate a supposedly deleterious increase in the number of animals; a lower figure, a depletion of the resource. On the other hand, if the percentage remains between 20% and 25%, it indicates both that hunting as an activity is taking place under expected conditions and that a certain "ecological balance" is being respected. This equilibrium is always sought; it corresponds less to a natural balance (understood as the product of nature itself) than to the ideal of a successful balancing of nature, which would result from a successful management strategy. To put it another way, in no way is wildlife management a *laissez-faire* approach. It can only be the product of human intervention – considered consensually to be the only plausible means, over time, to ensure the "health" of wildlife.

While there may be competing views on the acceptable level of harvesting in the arenas where hunting and its quotas are debated (such as, for example, during AZGFD

meetings or public hearings), the objectivity of figures, their necessity, and their utility were never called into question by either biologists or hunters – at least during our fieldwork. For the majority of hunters we met, the institution promotes “a science of nature” in which they recognize themselves (Dunlap, 1988). The main resistances we heard related to the hunting tag system (which some hunters find too restrictive) and from the large proportion of hunters residing outside Arizona. These objections were often voiced by low-income hunters who deplored the privileges enjoyed by wealthier hunters. (Indeed, the wealthiest do not hesitate to apply to the lottery in many states, thereby mechanically maximizing their chances of obtaining a coveted permit.) However, while the determination of the rules of the system remained a matter of debate and even struggle, the quantification at its core was accepted. To put it another way, while hunters often complained about “bureaucrats” and “politicians” “from Phoenix”, biologists on the other hand were respected and appreciated – even though they *de facto* belong to the same institution (AZGFD). Besides, systematic figures, when systematized according to the rules of systematization specific to this arena (Daston 1995), produced a supposedly indisputable and neutral quantification that nurtures rational expertise regarding wildlife, often opposed in daily conversation to that of “ecologists” or “animal right activists” – who were themselves prone in these circles to be caricatured as emotional and irrational, owing to their political activism and so-called “leftist orientation” (often labelled as “radical”). In hunting worlds like in other arenas of expertise, figures not only have the strength of unquestionability and the appearance of neutrality; they also have the effect of

un-questioning authorities and neutralizing contestation, by obliterating the social conditions of their production as well as their consequences.

As such, contrary to what many individuals involved in environmental management expressed, collected data were never “just” information presented to those in charge of determining appropriate wildlife policy. Rather, ratios, indicators, and percentages were always-already “cooked” (Biruk 2018), meaning considered, constructed, and shaped by individuals working *for* a specific purpose: here wildlife management, the monitoring and surveillance of species, the harvesting of animals, and eventually the justification, maintenance, and defense of the hunting apparatus (Braverman 2014). As such, biology (embodied by figures, measurements, and experts’ knowledge) is here also a technique used for the deployment of a specific politics of wildlife, one which consensually transforms selected animals into resources and selected species into stocks (Beldo 2019a, 2019b), and turns biologists into the main actors of this conversion work.

The Good of the Species

October 2, 2022. On a hilltop in Clifton, biologists and volunteers have set up a camp and are gathering in the shade of two white tarpaulin tents, which serve to protect them from the hot morning sun. A few miles from the Morenci mine, the AZGFD is coordinating a vast operation to capture desert bighorn sheep. These sheep were on the verge of extinction at the end of the 19th century. Yet, their conservation is one of the

pioneering success stories of wildlife management: the species, once over-hunted, is now “saved”⁶. Bighorn sheep are among Arizona’s most renowned game animals. As they remain rare, Arizona hunters can only be drawn for one tag in their lifetime. A few wealthy amateurs can still take part in annual auctions to obtain a special permit, with a tag value regularly exceeding \$150,000 (and with a maximum of over \$300,000). Bighorn sheep are not hunted for their meat, but for the trophy they represent; older males, with more developed horns, are particularly sought after.

In collaboration with the Utah Department of Natural Resources (DNR), our group intends to capture and relocate thirty specimens to Antelope Island, on the Great Salt Lake. Also mobilized for the occasion are Bureau of Land Management (BLM) employees, an all-male team sent by Alpha (a hunting clothing company), an AZGFD veterinarian, and several volunteers from nearby regional hunting clubs. In the hot-red helicopter, trained AZGFD biologists scour the area to capture wild sheep one by one with a net gun. Once a specimen is caught in a net, one of the specialists jumps to the ground, ties the animal, covers its head with an orange mask to minimize its stress, attaches it to a line, and heliports it to the camp.

When the aircraft arrives, we all rush to our respective posts. Alpha’s strong-built crew, wearing camouflage caps, bring the sheep on a stretcher made of wood and wire to a scale, where a volunteer zealously notes its weight on a sheet. They then carry the specimen to an operating table. With its legs still bound and its eyes masked, the sheep is

⁶ Today, only around 65,000 individuals remain (6,000 of which are in Arizona), compared with 1.5 to 2 million at the beginning of the 19th century, according to AZGFD (<https://www.azgfd.com/species/bighorn-sheep/>).

scrupulously examined by specialists and volunteers. They take nasal and oral swabs, inspect its teeth, draw blood (4 pods), and take fecal samples (photo 3). These samples are forwarded to a laboratory to evaluate the animal's level of health, and to avoid any parasite or viral contamination to other captured sheep when they are released on the island. This precaution is even more scrupulously observed given that a first operation carried out a few years ago failed: The teams had failed to detect the presence of a bacteria (*Mycoplasma Ovipneumoniae*) in a sheep which, once introduced, had contaminated the other animals. All the sheep there “had then to be put down for the good of the species.” But the AZGFD and Utah DNR have not been discouraged, and have decided to try again.



Photo 3: A Bighorn sheep being relocated to Utah, Morenci, AZ

Credit: Author 2 (2022)

A lead veterinary surgeon in her fifties is coordinating the operation. She wears blue jeans and a grey sweater bearing the AZGFD logo, and she carries a stethoscope around her neck. She begins her observation by placing an intravenous drip in the sheep's flank; the animal struggles for a moment before calming down. Simultaneously, a volunteer checks the animal's anal temperature. Dramatically, they announce: due to stress and heat, the animal's body temperature is too high – which could be fatal. Buckets of water are poured over the animal to cool it down, while hands work to massage the fluid through its coat. Using an electric razor, a woman from the DNR removes a small section of the animal's thigh fur before using an echograph to measure its body fat. A yellow plastic tag stamped with a number is clipped to the animal's ear, and a GPS collar is attached to its neck. All the collected data are recorded on a single datasheet, on which the number on the tag is entered. The sheep is breathing heavily. The vet opens an oxygen bottle under the table, grabs its hose, and places it under his nose. Several minutes pass before his temperature stabilizes. The animal is then carried on its stretcher to a truck; with its peers, they will all be transported to Antelope Island the following day.

The operation is co-financed by Alpha (which funds the Arizonian component of the project) and by the Utah DNR. In exchange for its patronage, the private company records the operation, highlighting their agents, who, wearing uniformly branded clothing, are always the first to meet the helicopter. In front of its camera, Alpha also

stages the donation of a cheque for \$167,000 to cover part of the operation, although a manager on the scene tells us that the total cost is likely to exceed \$500,000. Alpha's cameraman is not the only person shooting the event: The AZGFD has also sent one of its staff, in charge of producing a promotional film for the department. Framing is paramount: no image should spoil the feeling of an operation conducted for the benefit of animals. Yet the process is not without risks: of the 15 animals harvested on the first day, a ram arrives inanimate after being transported (the net having suffocated it) but manages to be resuscitated, a first ewe bleeds from the anus after the thermometer has been intromitted too violently, and a second one has her horn torn off when she is placed on the table and hemorrhages profusely. Without a word being explicitly exchanged, the cameras turn away. At the same time, the veterinarian sharply requests – despite lacking the authority to do so – that “[we] refrain from mentioning these elements in [our] sociological report”. In a firm tone that leaves no room for negotiation, she asserts:

The public wouldn't understand. They don't need to know that, and it would be counterproductive. They'd say animals are suffering, *blah-blah-blah*. They'd miss the point of the operation and wouldn't see the interest of the species. It would be an emotional reaction that has nothing to do with what we do, and we don't need nor want that.

The sheep are transplanted from Morenci to Antelope Island “for the good of the species”, as the 30 or so people present keep repeating to us. Yet, the process is also for the good of Utah's hunting industry. In addition to the value of the trophy *per se*, the presence of these animals contributes to the hunting appeal of a territory and generates many revenues, both direct (*via* permits and auctions) and indirect (through specialized

agencies, guides, tourism, gun sales, etc.). The project also benefits the DNR, and hunters themselves. The Antelope Island project is intended to create a kind of “ark” where a regular, non-hunted population of bighorn sheep will be maintained, a sanctuary made to “govern captive animal[s]” (Braverman 2012) and functioning as a genetic reservoir from which younger specimens would then be harvested and dispersed in the state, this time for hunting purposes. As one of the employees from Alpha (a hunter himself) explained to us: “That makes sense, you know. You want to keep the resources flowing. And who’d like to hunt a sheep with a GPS collar on?”

As this example illustrates, the intense work of engineering that contemporary wildlife management requires is a process perceived to be more successful the more it manages to erase itself. As such, biologists also have the ambiguous responsibility of fabricating the conditions of naturalness that a “true” and “authentic” hunting experience would require. As Jenny put it bluntly in the pick-up truck during our attempt to spot potentially infected jackrabbits, “If [biologists] have to assess the health of a population, it’s also because that would be disappointing to hunt for a sick or a crippled animal... Hunting is not [as easy as] shopping.” However, and paradoxically, this engineering process aims to produce an ideal of naturalness that is sometimes contrary to nature – requiring even more human and financial effort to maintain. In the case of bighorn sheep, not only was the transplant we witnessed the second institutional attempt after an initial failure, but it seemed also doomed to fail again. Agencies’ demiurgic projects, despite being potentially lucrative, may come up against the complexity of the natural milieus themselves, especially at a time when they are more vulnerable to ecological

disturbances. Indeed, as one of the people in charge of the operation half-heartedly admitted, the drastic lowering of the water level in the Great Salt Lake is rapidly transforming Antelope Island into a peninsula, condemning in the short-term this ark-like project itself reliant on the isolation, monitoring and constant surveillance of the transplanted specimens. (Some of the bighorns have already escaped to breed with feral sheep in the region, while others have simply disappeared or had their GPS collars stopped transmitting).

As some official actions rely on an intense process of technologization to restore “natural balance”, they might have provoked certain debates or dilemmas. However, we never witnessed such debates, or heard such related concerns, despite the many hours spent with professionals and hunting enthusiasts⁷. On the contrary, the argument according to which all actions were conducted “for the good of the species” precluded any discussion, without even requiring its participants to define, analyze or comment upon the nature of this “good”. For example, bighorn sheep transplanted from Arizona are no longer “naturally” present in this part of Utah, if they ever were. Yet, one of the mandates of the agencies is to fight against invasive species or, more generally, against the presence of animals considered to disrupt the ecological balance of a milieu. Introducing a sheep could be seen as potentially harmful or, at the very least, as causing tension with some of the stated objectives. But the agencies (and the employees we interviewed) never perceived the problematic potential of such releases – “the animals

⁷ This ethic corresponds to the one that ecofeminist Marti Kheel associates with holist hunters, who, she argues, attempt to ground the “objective” rationality of their behavior in science and especially ecology, arguing that “the well-being of the whole must always take precedence over the individual parts” (Kheel 1995, 96-97).

will be fine”, “we can keep an eye on them”, “it’s in everyone’s interest”, “the island is empty anyway”, and so on.

Most importantly, to assess what “good” is, professionals make constant strategic analogies between the ecological value of species and their economic worth within the hunting apparatus. For example, in Arizona, some invasive amphibian or crustacean species are systematically considered to be harmful, and are therefore terminated – sometimes dramatically, as during educational courses organized by the AZGFD, where professionals, after having handled crayfish captured from a pond, kill them in front of spectators on the grounds that “the law prevents the release of invasive species”. Conversely, other animals with a higher hunting (and therefore economic) value will be treated more favorably – notably large mammals and other charismatic megafauna. For example, the gemsbok, or African oryx, was introduced into the neighboring state of New Mexico in the 1960s, in White Sands National Park and at the adjacent White Sands Missile Range. The species is nowadays recognized by the NPS as “often very detrimental to native plants, animals, and ecosystems”⁸. But rather than seek its eradication, the New Mexico Department of Game and Fish has added the large antelope to its list of huntable animals, turning a troublesome introduction into an opportunity for hunting – as long as the killing takes place outside of the National Park boundary (photo 4).

⁸ <https://www.nps.gov/whsa/learn/nature/african-oryx.htm>



Photo 4: Dead oryx in a truck, near *White Sands National Monument*, NM
Credit: Author 1 (2022)

Wildlife managers explained that the presence of coveted animals in a territory contributes to that territory's hunting value, generating substantial income for the agency in charge – as in the cases of oryxes or bighorn sheep. The veterinarian we met in Morenci added that, in a political context where “you can't ask taxpayers to pay more for conservation”, economic benefits generated by such popular species could fuel other conservation projects, turning the exploitation of oryxes, bighorn sheep, or other so-called charismatic megafauna into a way of “helping”, “saving”, or “supporting” less reputable animals. As such, the welfare of big game has become entangled with that of

more dependable species, as hunting becomes an economic necessity for environmental initiatives.

Therefore, what is good for a species is a fluid concept that, while resembling a strictly ecological criterion, can only be wholly grasped when embedded in an institutional arrangement. While the task of determining what is good for a species falls within the exclusive competence of professionals of the *bios*, the criteria they apply were never exclusively biological. On the contrary, they always implied, implicitly, a certain conception of hunting as an activity that is not only legitimate but also necessary. Hence, the good was less a state to be sought than the product of an action to be carried out, which was always embedded in hunting objectives, needs, and constraints. Rather than objective ecological reality, the “good of the species” is a politics which, in practice, makes the hunt (and killing) of animals a condition of their well-being, without this paradox ever revealing itself as such to the agents in charge.

Proud to Care

During our interviews and discussions, the professionals we met repeatedly stressed the list of perils threatening Arizona’s wildlife today: escalating urbanization, population growth, water scarcity, destruction of riparian habitats, desertification, mining pollution, etc. The list varied according to the sensitivities of each individual, and to the species and environments for which they had knowledge and responsibility, but the vast majority shared a concern about environmental deterioration. However, according to

many of these professionals, it was because human activities were damaging to the natural balance that their actions were made even more necessary. This belief was not unanimous among environmental agencies: on the contrary, some projects were predicated on transforming certain areas into inaccessible sanctuaries, or entirely prohibiting fishing and hunting activities in a greater number of parks and reserves (as is the case for most national parks, for example). Professionals in the AZGFD, on the other hand, sought an ever more developed, fine-tuned, and precise intervention. Admittedly, the AZGFD, like any other state agency, must combine its conservationist mandate with other imperatives – in particular, ensuring public access to nature for recreational purposes. But above and beyond their plural institutional missions, the professionals we met were convinced that their actions were also a means of repairing damage and healing nature. For most, wildlife management has become not only a necessity but also a way of caring. As Robert, an AZGFD biologist, expressed with a sigh:

Today, we have to manage, whether you like it or not. [...] For better or worse, we have lost most of our large predators. You know, we have wolves on the landscape here and there across the West [...] but those are kind of our largest carnivores. So yeah, I think hunters play a role in [restoring balance]. The idea behind hunting is not that you cut into the source, but that you harvest the excess.

Moreover, care is not only the result of the ecological impact of the activity; it is also the product of hunters' ethics, which most biologists emphasize and value. According to them, if hunting can help restore a threatened equilibrium, it can also educate hunters and convey both ethics and an ethos benefitting the protection of nature. Admittedly, these judgments may be explained by the institutional connection between

biologists and hunters. AGZDF staff (including biologists) were often hunters themselves, and maintained close relationships with hunters, with whom they identified in part⁹. Most hunters, in turn, recognized those within the AGZDF as trusted partners and found in the agency's work valuable support for the defense of their practice. Yet, these ethics also emerged from practice and daily activities. To help us better appreciate the extent to which “hunters play a key role in environmental protection”, Betty – a young biologist from the AZGFD whom we have befriended – suggested we took part in a camp devoted to educating the younger generation of hunters, under the aegis of the AGZDF. We accepted her proposal.

⁹ In the late 1990s, nearly half of professionals in US wildlife agencies were hunters themselves (Muth, 1998). Without being able to rely on up-to-date figures, this proportion seemed to us even higher during our fieldwork in Arizona.



**Photo 6: Teaching a child how to shoot squirrels in the Coconino National Forest,
AZ**

Credit: Author 2 (2022)

Three weeks later, we joined a “squirrel hunting camp”. For three days and two nights, we accompanied some twenty participants who had as their project the initiation of children to the sport of hunting, as well as “its ethics and its values” (photo 6). Arriving early on Friday, we were among the first to set up camp, and decided to explore

the surrounding area. After a short walk, as we returned to our tent, the staccato sound of a twin detonation shattered the silence. We arrived in time to see Betty proudly posing with two Eurasian collared doves, a species classified as invasive in Arizona (photo 7).

Originally from southern Tennessee, Betty grew up with outdoor activities – she defined herself as an “outdoor girl” – such as camping with family and friends, telling stories and sharing the spoils of their day’s hunting and fishing around a campfire. She was mostly accustomed to fishing until she moved to Arizona as a young adult, where she took up hunting as a way to “feel more connected to the land and the food”. Betty first learned to shoot a rifle and then to use a bow. In her family, she was the only woman who hunted, and did so with her father and two brothers. She explained to us:

I like to hunt: a rock hunt, a mushroom hunt, also animals. You know, I like the process of being out and noticing the details and so. It’s not all about wild animal harvest. It’s also about noticing other things, being able to read the landscape and saying: that looks like a good spot for a squirrel or a deer! And that’s probably what I enjoy most about hunting.

Betty insisted on the peculiar way that hunting and fishing have allowed her to get close to nature and “its critters”. As she told us, she developed a direct relationship with nature by “really paying attention to its details”, and she has been using this “unique insight” during her fieldwork with the AZGFD as well as in her hunting sessions. Betty wanted to share her hobby with other women, as a way to “get empowered, from a self-defense standpoint, to be handy with a gun”. She seemed pleased to let us enter into the world of hunting, and she assumed the role of mentor in several hunting camps.

Betty's words made it clear that the discourse of care and concern for nature, which justifies both conservation and hunting, was superimposed on the experience of pleasure and recreation. For Betty, as for all the biologists we met, these values coexisted at the core of professional practice – resolving the paradox of preserving wildlife while also killing it. Biologists used the same skills and applied the same values in their work and in their recreational hunting, blurring the line between the moral conviction of doing good and the desire to have fun.



Photo 7: Biologist hunting doves during an AZGFD camp in the Coconino National Forest, AZ

Credit: Author 2 (2022)

“The Circle of Life” and the Naturalization of Ideology

Shawn, 32, is an AZGFD biologist who has recently begun to train as a hunter. Like most AZGFD biologists, he was recruited after his BA in ecology at the University of Arizona, where ‘[he] learned about the importance of hunting’. He said to us he was “not fortunate enough to grow up in a family of hunters”; he had to learn as an adult. Shawn was drawn for a deer tag that year, and he was anticipating the joy of his first big-game hunt. For the moment, he only shoots dusky grouse, of which he is the specialist at the agency and the correspondent with the local chapter of Grouse Unlimited, the main conservation organization dedicated to their protection¹⁰. We asked him about his conception of the sport, and his recent attraction to it. He explained:

I wasn't a hunter before joining the AZGFD; I was neither against nor for it, I didn't really know much about it. But when I saw how things were going, I understood the role that hunting plays. And that's what made me want to get involved. It allows you to connect with the value of things, with animals, their habitat, their lives. For example, grouses might seem like nothing, but in fact they are important.

Is it hard for you to work for their protection and shooting them at the same time ?

No, no... The grouse made a sacrifice for us. It's all part of the circle of life.

Intrigued by his notion of “circle of life”, we invited him to elaborate:

Is hunting like a part of the circle of life? Maybe not necessarily, but that's why we have hunting regulations, to make sure that we're not

¹⁰ Species has been changed to avoid identification.

over harvesting. I think that it's okay to manage certain populations like that, and that's how we do it.

Shawn's words encapsulate some of the principles that run through and frame the perception of hunting. Less than an activity centered on killing, born of modern times, supported by specific weapon technologies, framed by meticulous regulations, supporting an economy with colossal financial stakes, and inscribed in a socially situated relationship to recreation, wildlife, and the outdoors, hunting paradoxically appears as a timeless and apolitical activity, embedded in a naturalized order of things – which Shawn labelled as “the circle of life” (see also Presser 2013, 97).

This naturalization works all the better because it is backed by a system that places biologists at its heart. Firstly, as scientists, their authority plays a major role in the partial depoliticization of the ethical debate surrounding hunting. Secondly, as specialists in the *bios*, they appear as guarantors of the supposed equilibrium of a milieu – achieved not despite hunting but thanks to it – enshrining the practice of hunting as a mode of harvesting necessary to the maintenance of balance. These forms of intervention are artificial, even requiring a brutal technologization of nature. Yet, paradoxically, they are justified by agents as simultaneously natural *and* necessary. Thirdly, as institutional workers, their actions trivialize the systematization of killing authorized by the current apparatus – as if hunting existed independently of its concrete realization or, to put it another way, as if hunting were just another way of provoking death. Integrated into the “cycle of life”, hunting becomes an authorized activity regardless of the technology and means that its concrete form requires today. Finally, and perhaps above all, as protectors

of nature, these agents guarantee not only the ostensible harmlessness of the sport, but even serve to enlist the hunters as primary actors in the conservation of the environment – doing so all the more effectively as many wildlife managers hunt themselves, and share with the practitioners a certain conception of the legitimate ways of “enjoying” the wild and, more broadly, of “being” in nature¹¹.

Thus, one may understand why the paradox at the core of the North American model, which unites the legitimization of death with the defense of life, never reveals as such to the players involved, especially to the professionals of the *bios* who might be thought as the most exposed to the possibility of the dilemma. On the contrary, today, biologists and their knowledge are a condition for maintaining the activity, even actively supporting its promotion – a fact explicitly reflected in the giant billboard in central Tucson with which we introduced the article. “Science-based wildlife conservation”, indeed. More than just key players in wildlife conservation, biologists have become necessary actors in the conservation *of hunting*, allowing the current system to turn a specific knowledge of the living into a condition for the administration of death, and cementing an ethics of nature into a naturalized ideology.

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¹¹ On the social distribution of legitimate forms of enjoyment of nature, see Steward (2017).

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