FEATHERS ARE THENERS FUR

Cruelty in Disguise









PREFACE	4
executive summary	5
INTRODUCTION	6
feathers in fashion	8
feather use by the fashion industry	8
PUBLIC PERCEPTION OF FEATHERS IN FASHION	13
NO TRANSPARENCY AND FALSE LABELLING	15
OSTRICH FEATHERS: AS DEADLY AS FUR	16
FEATHERS FROM OTHER WILD BIRDS	24
BIODIVERSITY, ZOONOTIC DISEASE AND SPECIES THREATS	28
INNOVATING BEYOND FEATHERS IN FASHION	30
FEATHER-FREE POLICIES	34
CONCLUSION AND RECOMMENDATIONS	36
REFERENCES	38

PREFACE

In 2022 World Animal **Protection and Collective Fashion Justice published** our first joint report on the use of wild animals in fashion. "Cruelty is Out of Fashion" documented the horrific reality that every year millions of sentient wild animals are farmed, captured and slaughtered for their fur, skins and feathers, destined to be made into garments, shoes and accessories. The report, and the campaign we 4 launched with it, called on brands to move to the many more responsible, ethical and sustainable solutions that are already available, and for the major international fashion shows to refuse

Since then, progress has been made. Our engagement with the industry has seen major shows like Australian Afterpay Fashion Week ensure that no fur or exotic skins were exhibited in its 2022 show and Melbourne Fashion Week updated its policy from 2024 to include a ban on wild bird feathers making the event the first in the world to commit to such a ban. Copenhagen Fashion Week has also committed to going fur free, and alongside this millions of European citizens signed the

to exhibit wild animal-

derived materials.



European Citizens Initiative calling for a Fur Free Europe. Major brands have also updated their policies, ruling out fur and the use of wild animal skins. These are wins that we celebrated and will build on.

The progress on fur and wild animal skins has not been matched by similar progress in ridding fashion supply chains of feathers. Feathers are the new fur: cruelty in disguise seeks to address that by shining a light on the shocking injustices involved in feather production. Ostriches in particular suffer in their thousands on barren feedlots across South Africa, Asia and Europe, sometimes live plucked before an early death. It is unacceptable that these animals continue to suffer for their feathers, particularly when their skins are

increasingly banned from use in an effort to protect them.

Our work on feathers and fashion is part of the global movement to evolve the fashion industry beyond the exploitation of wild animals. These individuals do not exist as commodities for our profit, but as fellow sentient creatures with intrinsic value who are deserving of safety and a life in their natural habitats they contribute to and live off of.

The fashion industry has a major role to play in ending the threats facing wild animals. We will continue to work with the industry to build the more just, humane, environmentally responsible and safe fashion industry that is not only possible, but exciting, creative and – in the face of changing community attitudes – inevitable.

EXECUTIVE SUMMARY



Fashion's exploitation of wild birds for their teathers is thousands of years old and persists today. Wild birds, both captured from their natural habitat and confined in factory-farm conditions, are killed and plucked for feather trims. Increasingly, feathers are being used as an alternative to fur. Unfortunately, this move from fur to feathers is far from 'cruelty-free', resulting in significant suffering, mutilation and unjust slaughter for ostriches, peacocks, pheasants and other birds.

The feather trade is not only unethical but unsustainable. In one of the leading ostrich feather production countries, South Africa, land degradation and clearing for ostrich feedlots are recognised as serious environmental problems, and the industry is a contributor to the climate crisis. In order to be used for fashion, all feathers must be processed and often dyed, including with formaldehyde and other harmful carcinogenic substances. After chemical processing, many feathers are unlikely to remain biodegradable. With more than 1,300 of the over 11.000 bird species on Earth under threat of extinction, the trade of wild bird feathers adds pressure to the ongoing biodiversity crisis, and can contribute to the spread of zoonotic diseases.

A lack of awareness of these intertwined issues means that fashion brands and retailers who now ban the use of wild animal skins, including ostrich skins, continue to use ostrich and other wild bird feathers, unaware that these are sourced from the same cruel and destructive supply chains. Mislabelling and the inability of consumers to correctly identify feathers compared to faux fur or other animal-free materials also helps to prop up demand.

As with fur and wild animal skins, public sentiment surrounding the exploitation of birds for decorative feathers is already evolving. Soon their use will be considered an unacceptable irresponsibility, a cruel faux pas. Innovative solutions free

from animal inputs are already available and involve 3D printing, the use of recycled and bio-based materials, as well as luxurious embroidery and fabric manipulation techniques. Collective Fashion Justice and World Animal Protection recommend that the fashion industry responds by prioritising investment in more responsible alternatives and implementing policies banning the use of all feathers.

Fashion has always been about innovation and creativity: two characteristics that lend themselves to moving beyond the archaic exploitation of birds for their feathers, and towards a more sustainable, ethical and alluring fashion future.

FEATHER REPORT

FEATHER REPORT



FEATHERS ARE THE NEW FUR

The use of feathers as decoration in fashion dates back tens of thousands of years. Throughout history, wild bird species have become severely exploited, endangered and extinct for the sake of fashion, and this serious problem persists today, often in a highly industrialised setting. In this report, we explore fashion's current use of 'exotic feathers', or feathers from wild birds, as well as the use of feathers for the purpose of decoration, rather than insulation.

While whole birds were once stuffed and mounted atop hats, with hummingbird heads placed inside large gold earrings as a show of luxury and extravagance, 1-4 the use of wild bird feathers has become more covert over time, even when their use is plentiful. This is perhaps due to a growing disconnect between citizen-consumers and nature,⁵ along with a lack of understanding of where products come from and at what cost.6-8 New polling commissioned by Collective Fashion Justice highlights how few consumers are aware that the many feather-trimmed dresses, shirts and skirts sold by luxury and fast fashion brands alike are indeed made of bird feathers, rather than plant-based or other animal-free materials.9

The majority of decorative feathers used in the fashion industry today belong to ostriches. Once on the brink of extinction due to the feather trade, today these wild birds are bred on farms and confined to feedlots before being plucked, slaughtered and plucked again.¹⁰ Other wild birds including peacocks and pheasants continue to be exploited too, and many feathers used in fashion are sold without species-specific labelling, increasing the risk of illegal wildlife trading for fashion's feather use. The fashion industry's wildlife trade poses zoonotic disease risks, and is associated with biodiversity destruction.^{11, 12} Importantly, breeding and confining wild birds rather than capturing them from their habitat is not a solution, but rather creates a different kind of cruelty.

Wild and domesticated birds used for their feathers in decorative fashion are systematically exploited, denied their natural instincts, and ultimately killed. While many brands have begun using feathers like those from ostriches as an alternative to fur in an attempt to avoid cruelty, this decision is misguided. These birds are confined in unnatural systems and ultimately sent to brutal slaughterhouses profiting from both their skins and further plucked feathers, used by the fashion industry.¹³

While further material innovation is required to produce a diversity of alternatives replicating the qualities of feathers, a range of creative alternatives already exist today. Luxurious brands making use of 3D-printed, recycled, plant and bio-based feather alternatives are creating decorative appliques that appreciate rather than take from nature. Fashion is all about exploration, innovation and new ideas, making the transition beyond historically used, unsustainable and unethical feathers an important aspect of fashion leadership.

Despite a growing number of brands and retailers banning exotic skins, including ostrich skins from the same supply chains producing feathers, only very few have banned exotic feathers from wild animals.14 We recommend that the fashion industry moves to ban the use of wild bird feathers and other decorative feathers, replacing these with innovative, sustainable, entirely animal-free and more responsible materials. Similarly, we call on fashion week events to ban these feathers from their shows. We encourage the industry to invest in material innovation to best replace them, and that material scientists acknowledge a potentially lucrative market gap in the next-gen material space, in which decorative feather replacements are not being widely explored. Finally, we recommend global governments consider feather sale and import bans as many have with fur.

FEATHERS IN FASHION

FEATHER USE BY THE FASHION INDUSTRY

44,000 years ago

The feathers of wild birds were first used as wearable decoration when our Neanderthal relatives are evidenced to have worn the dark feathers of birds of prey.



Middle Ages

In the Western world, feathers came to signify social importance.⁷



18th century

Hats, fans and accessories particularly popularised the use of ostrich feathers. At this time, Marie Antoinette began piling feathers on her wigs, and the feather trade only boomed further as fashion developed as an industry.^{12, 13}



19th century

In early 1900s England, it was noted that bird hunters were offered payment for heron feathers worth twice their weight in gold. Herons were 'on the verge of extinction' at the time, while just one auction house sold heron plumes from nearly 193,000 birds in 1902. In Australia, ancient lyrebirds dating back 15 million years came close to extinction due to the feather trade, and some global species became extinct, such as (New Zealand) Aotearoa's Huia, In alongside North America's only endemic parrot, the Carolina parakeet. Egrets and many other species nearly saw the same fate.

The mounting of whole birds, as well as parts of stuffed birds onto hats for decorative appeal and status was growing in the late 1900s.8



HISTORICAL USE

Ancient feather use for fashion

Killed and worn purely for decoration, history is full of similarly feathered fashion.² Wealthy ancient Egyptians wore ostrich feathers on their heads.³



Ancient and continued cultural use

Around the world, many Indigenous Peoples have and continue to wear decorative feathers with symbolic meaning.⁴⁻⁶

Early 15th to early 17th century

During this time and then following an increase in colonialism and trade, many new and 'exotic' animal-derived materials came to Western markets, considered exciting and luxurious.⁸ This continued through the Renaissance,⁹ and in the early 16th century, millinery – the art of hat making – had risen again.^{10, 11}



Mid to late 1800s, the Victorian era

In 1851, London's Great Exhibition showcased included a presentation from ornithologist John Gould, offering stuffed hummingbirds, referred to as 'living gems'.¹⁴

The lust for wild bird feathers as a form of fashion was so rampant amongst both the wealthy and those of 'lesser means' across North America, Europe, and the British Empire that species came close to or became extinct.^{17, 12} In 1866, ornithologist Frank Chapman observed 700 hats in New York City, noting that 542 included feathers from 40 different species.¹⁷ By 1892, a single London auction room sold '6,000 birds of paradise,

5,000 Impeyan pheasants, 400,000 hummingbirds, and other birds from North and South America, and 360,000 feathered skins from India in a single week.'¹⁸ That year, an estimated five million birds were killed for status-driven millinery in North America alone.¹²



© World History Archive/Alamy Stock Photo

While such destructive cruelty was considered highly appealing by many in the past, the use of birds in fashion has long been controversial.

For as long as feathered fashion has been popular, efforts to cease its associated cruelty have existed; Virginia Woolf wrote harshly on feathered millinery - which was also tied to the exploitation of Jewish immigrant women and girls - and people worked successfully to pass laws across countries which protected birds. 12, 21, 16 In 1918, for example, the Migratory Bird Treaty Act passed in the United States, prohibiting the hunting, killing, trading, and shipping of migratory birds while regulating America's commercial feather trade.²³ This was a direct result of women petitioning against plumed hats, instigated due to feathers being used more as decorative elements than for any practical means.

However, while some wild birds have gained protections, wildlife protection policies also became altered to allow for the industrial farming and killing of these wild birds.

Most notably, ostriches began being bred specifically for slaughter in South Africa in the mid-1800s, as wild populations rapidly vanished due to hunting driven by the fashion industry. 23, 24

Though this captive population increase did allow free-roaming populations some solace, the move ultimately only increased the scale of ostrich suffering.

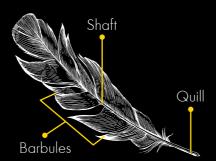
While fewer birds were mounted on heads as time passed, new trends arose; feather boas and headbands in the roaring 1920s, feather-trimmed evening wear through the 1950s and 60s.^{25, 26} Through the latter half of the 20th century and into the 21st, both the dramatic and delicate use of feathers has persisted in fashion.

CONTEMPORARY USE

Today, the industrial rearing and killing of ostriches for their skins and feathers is big business, and both legal and illegal trade of bird species persists in fashion supply chains.1,2

Bird species that have been selectively bred and industrially farmed continue to be confined and killed within fashion supply chains.

Ostrich feathers are particularly popular today due to their softness, durability, and ability to hold vibrant dyes. Barbules are often removed from the centre shaft of these feathers, commonly used to achieve the feeling of movement, volume and softness. Peacock feathers are often used for their striking iridescence, while turkey feathers are less expensive and more readily available.



Feathers are used to add texture, lightweight volume, delicacy and animated movement to clothing and accessories, from feathered hems on skirts and dresses to feather trims on collars and cuffs. As well as earrings, necklaces, and brooches, shoes and boots adorned with feathers have become increasingly popular in recent years. Designers have also been experimenting with more dramatic uses of feathers. creating statement pieces such as feathered capes and jackets.

Couture embellishment creator Lemarié's changing use of feathers is reflective of the wider industry's continued exploitation of birds for fashion in a changing way. Lemarié's archive of prohibited rare and exotic feathers is extensive and includes birds of paradise, herons and egrets.³ In lieu of using these today, the 'exotic' names are given to Lemarié's contemporary feather collection; such as 'marabou' made from turkey down, rather than marabou stork. These feathers are subsequently dyed, painted, and cut to achieve the most 'exotic' appeal, whose relationship is far from the original raw material.

Renowned fashion photographer Alexi Lubomirski engages with creatives in the fashion industry, working towards fur, exotic skin and exotic feather-free pledges. Lubomirski told Collective Fashion Justice that many brands today have replaced their use of fur with feathers, often unaware that feathers are similarly cruel, not simply swept up off the floor without harm to the birds.

"In my talks with designers to sign the Creatives4Change pledge, I have found that even if they are open to stopping the use of fur and exotic skins, the use of feathers is still held on to. The designer's reasoning is that in order to maintain a feeling of fantasy and mystique in their designs, which had previously been provided by the fur trim or fur lining, they feel they need to utilise feathers in its place."4

Alexi Lubomirski













The use of wild birds and their feathers is not exclusive to high-end and luxury fashion, with fast fashion retailers also using them, including brands Zara, H&M, and Mango.

specific textural effects.^{9, 10}



Ultra-fast fashion retailer Boohoo has a section on their website dedicated to feathered dresses, made up of a total of 72 products, ranging from £5.00 to £149.25 at the time of writing. The dress priced at £5.00 has a feather trim at the hem likely made from turkey down, while the £149.25 priced dress features feathers on the hem and sleeve, likely made from ostrich feathers. Both dresses describe a 'feather trim' in the product description but do not include feathers in the listed material composition, meaning customers are not made fully aware of what they're purchasing.¹¹



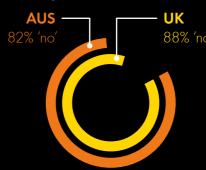
PUBLIC PERCEPTION OF FEATHERS IN FASHION

Citizen consumers have similarly fallen for the false notion of feathers as a crueltyfree and responsible alternative to fur. New independent polling commissioned for this report in 2023 explored public perceptions across Australia and the United Kingdom regarding the use of feathers from wild animals in fashion.1

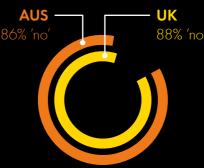
Across both markets, an understanding of the immense cruelty involved in producing fashion with feathers from wild animals is very limited. At the same time, at a principle level, the vast majority of people maintain that it is not acceptable to farm and kill wild animals for clothing and accessories. Positively, this may align with a potentially strong and growing recognition that wild animals are not objects for commercial exploitation, regardless of how an industry may operate.

be obtained from ostriches thinking feathers could be

"Do you think the farming and killing of wild animals for fashion and accessories is acceptable?"

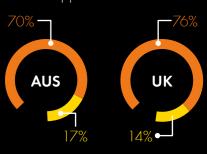


"Do you know how ostriches are farmed and slaughtered for their feathers and skins?"



Across both markets, just 30% (AU) and 33% (UK) respectively understood that feathers cannot without causing harm to them, with about one-third of surveyed people being unsure, and another approximate third incorrectly collected without any harm to the animals.

Once people understood that ostriches are killed in the feather industry, the vast majority did not want to support this:



Highly likely to avoid feathers Somewhat likely to avoid

Perhaps unsurprisingly then, 84% (AU) and 87% (UK) of people polled believed that brands that did not use feathers in their collections were 'more ethical and sustainable' than those that did.

feathers

Unfortunately, a lack of awareness associated with what feathers used in fashion really look like may mean that citizen-consumers are buying into cruelty unknowingly.



PUBLIC PERCEPTION OF FEATHERS IN FASHION

When presented with an image of a dress which featured ostrich feather trimmed sleeves, the vast majority of people across the United Kingdom and Australia could not identify this trim correctly. In fact, the vast majority mistook ostrich feathers for totally animalfree materials.

41% (AU) and 44% (UK) of people thought this trim was made of 'faux feathers'.

21% and **16%** of people thought the trim was **made** of plant-based fibres.

8% and 10% of people thought the trim was made of faux fur.

19% and **18%** of people confessed they weren't sure what the trim was made of.

Just 12% of people across both markets correctly identified the ostrich feather trim.

The similarity in perception between animal feathers, faux fur and feathers, as well as plantbased fibres, is an opportunity for the fashion industry to continue to make fantastical and mystical creations, without harm to ostriches or other birds.



NO TRANSPARENCY AND FALSE LABELLING

Collective Fashion Justice and World Animal Protection's analysis of feathered fashion products sold online found that material composition labelling is often partially hidden, only able to be read by those consumers who click an option to read more about the product in question. As a result, people who assume feathers are not indeed feathers may miss this information before incidentally making a purchase that does not align with their values.

More concerningly, numerous brands and retailers - offering both cheap and high-end products were found to be selling garments which were not advertised as made with bird feather trim, despite this being the case. Some brands included images of dresses clearly trimmed with real feathers labelled as made with a 'faux fur' and even 'faux feather' trim. These included THE ICONIC, Revolve,

Meanwhile, ASOS requested specific information about

Selfridges, and ASOS.²

Cettire, Harrods (though the products were out of stock, though still listed), SENSSE, Net-a-Porter, Boohoo and Nordstrom.² In fact, a Google search for a 'faux fur trim dress' returns numerous sponsored results featuring ostrich and other feathers.² For this report, independent technical textile analysis through microscopy and chemical solubility testing was performed by Microtex, confirming that a number of genuine animal feathers were inaccurately labelled as 'faux' or synthetic by brands including THE ICONIC, Boohoo, Following testing, all brands

were notified of these findings. Encouragingly, The Iconic is now engaged in a collaborative process with Collective Fashion lustice and World Animal Protection, committed to releasing a revised animal welfare policy that protects birds by not permitting any use of decorative feathers. The retailer is also using these findings as an opportunity to improve communication practices with its partner brands to avoid future mislabelling.



mislabelled products, and following our engagement and advice, have pulled flagged products and are revising their strategies to prevent future mislabelling. In the case of ASOS, their product testing strategy, which had been ineffective in monitoring for genuine feathers, is being reassessed with extra testing required to establish a feather is faux, as required. A policy banning the use of feathers was implemented by ASOS in 2019, with an exception for 'Responsible' or 'Traceable' Down Standard feathers.^{3, 4} No such traceability standard exists for ostriches. When real ostrich and other feathers are listed as 'faux feathers' on the retailer's website, people eager to make animal-friendly purchases are unable to, despite their best efforts. This error highlighted the importance of proper compliance procedures following industry policies, and the value of import bans at a government level, which could alleviate these risks.

Cettire, Nordstrom, Selfridges and Revolve did not respond to any communications, and other businesses have responded, but at time of writing had not taken appropriate action.





OSTRICH FEATHERS: AS DEADLY AS FUR





Ostrich feathers are the most commonly used of all wild bird feathers in the fashion industry with an estimate of over one million birds being killed each year.1 While ostrich feathers were once largely reserved for use in costumes for burlesque, Carnival dancers, jazz club singers and the heads of wealthy women, today ostrich feathers are mainstream in fashion. Spotted floating off the backs, sleeves and trims of celebrity dresses and outfits at the Met Gala, the ostrich feather trend trickled down through luxury brands and into the high street, before landing in online stores pushing the fastest of fashion.

While data varies across sources and ostrich farming occurs around the world, South Africa dominates the market,² producing as much as 70% to 85% of ostrich products, which include feathers, skins and meat.^{2,3} In the country, 350 ostrich-rearing facilities raise birds for slaughter, mostly in the Western Cape, with a large amount of feathers exported to Europe.² About 90% of ostrich products are exported, highlighting the power of the global fashion market over this industry.²

Trade information from the industry is difficult to obtain, but the value of the international feather trade is estimated to be worth as much as \$8.3M USD by some representatives.² While this is not an enormous valuation, feathers are far less valuable than ostrich skins, which are sold for as much as 70% of the total income derived from a slaughtered bird.² As such, feathers are a valuable co-product, the sale of which

financially supports the exotic skin industry. According to the industry, feathers account for between 10-30% of total income upon slaughter, with the feathers sold to the fashion industry being more valuable than those used for feather dusters or other products.⁴

The ostrich feather industry is also growing in China, Brazil, and some parts of Europe, particularly in the east. Some reports even state that feather production in China and Brazil is now more significant than that in South Africa. Concerningly, almost no information about animal welfare and environmental impacts associated with the industry across these nations is available. As such, in this report, we primarily explore practices in South Africa, where the ostrich industry remains strong and issues related to it are more clearly documented. These feathers are approved for EU sale and used as the basis of international industries.

Rearing ostriches

Ostriches are the world's largest and fastest birds.^{5,6} Standing up to three metres tall, these social birds can run long distances at a speed of nearly 50 km per hour, sprinting at nearly 70 km per hour. Their natural habitat is found in more than 25 African countries full of semi-arid plains, such as savanna biomes, and in woodlands.⁷

Despite being able to move the distance of a mid-sized family car in one stride,8 ostriches in the feather industry are mostly all

confined to barren feedlots where they do not graze naturally.9 Ostrich industry production requirements do not specify how much space birds should be offered, leaving this at the discretion of businesses prioritising profit.10

When ostriches are not given adequate space to roam naturally, it causes them distress. These mighty birds have been documented on South African feedlots repetitively biting the

air, chewing at wire fences, and displaying other common signs

of psychological distress.^{11, 12} With many ostriches confined to large feedlots, risks associated with this type of production system, such as lameness, can occur. 13, 14 Ostriches naturally feed on grasses, shrubbery, berries, seeds, succulents, and sometimes insects as well as small reptiles.⁷ In the feather industry, birds are fed a crude mixture of hay, grain and oilseed products with cost being a major factor in how birds are fed.9

Live feather plucking

Common misconception sees consumers believe that feathers can be collected from the ground after ostriches moult, but this is not the case for the industry supplying fashion brands. The ostrich feather industry practices live plucking, and considers feathers derived from this process as those of the highest quality. During this process, hooded bags are often placed over the heads of ostriches, in an attempt to subdue them thus decreasing injury risks for workers, leaving the birds unable to see.¹⁰

The official South Africa website states that 60% of feathers are

sourced from birds who are already dead, while the rest are plucked from breeding birds who are later slaughtered.4

The feather industry claims that 'gathering' of feathers - those pulled out of the skin - causes no pain or tissue damage, as 'ripe' feathers are pulled out of ostrich's skin. In reality, it is not financially viable to individually pluck feathers from each bird only when they are 'ripe' and without pain. Instead, birds are often all plucked over the same period, with many feathers pulled out painfully.

The only birds who are liveplucked are those who are also exploited by breeders to continue the supply of chicks who will be slaughtered for their skin, feathers and flesh.9 Breeding birds are often not sent to slaughterhouses, but killed on location when they are no longer profitable. 16 These birds, as well as others who do not make it to a slaughterhouse due to age or injury, face a gruelling death. The industryapproved methods of on-farm killing include blunt force trauma killing, for example with a hammer to the head.¹⁰





The ostrich feather industry is a slaughter industry

While a growing number of brands have banned 'exotic skins' including ostrich skins, a lack of industry awareness means these brands continue to fund the industry killing for these skins by purchasing feathers produced in the same supply chain.

There are only two ways for feathers to be collected from ostriches: through live plucking and cutting, or plucking after slaughter. Our desktop research has found no ostrich feather production systems that do not ultimately slaughter the birds.

Despite a natural lifespan of 40 years old,¹⁷ ostriches in the feather supply chain are killed as young as nine months old.¹⁸ On ostrich feedlots, while some birds are killed sooner, twelve months old is considered the optimal slaughter time to ensure

peak profitability, though this age is dropping to eleven months old.⁹ At slaughter, under 1.4kg of feathers can be plucked from each bird.⁹

Before slaughter, birds are legally denied food and water for up to 24 hours and travel for up to eight hours between a feedlot and the slaughterhouse causing stress and confusion for these animals.⁹



A lack of effective legal protections for ostriches

While most ostriches are killed in South Africa, these animals are also raised for production purposes in Australia, the United States and some parts of Europe.²⁰⁻²² Across the global industry, ostrich farming is subject to differing animal welfare standards and recommendations depending on the country. However, these are often filled with loopholes and open to industry interpretation, using the term 'should' rather than 'must' or 'shall' in a large amount of guidance related to the treatment of ostriches.9

For example, it is recommended under Australian codes that unwell ostrich chicks 'should be destroyed by dislocating the cervical spine', however, the code also stipulates that 'alternatively, chicks can be decapitated'. With no mandate on humane euthanasia should an animal be terminally ill, farmers are left to choose what is convenient to them, regardless of the impact on the young chick.

In South Africa, ostrich production requirements are self-described as flexible, reducing their efficacy, and feather production facilities are not externally audited for compliance. Most importantly, while industry documentation refers to production 'requirements', these are not in fact legal standards but requirements for certification by the South African Ostrich Business Chamber.9 South African animal welfare laws are inaccessible to the public without paying a fee, and are written in a way which makes the legally binding nature of animal welfare codes dubious.²³

In the US, there are just three federal laws that protect farmed animals, including ostriches, and these only cover transport and slaughter practices.²⁴ With no federal laws regulating animal welfare on farms and feedlots, the treatment of ostriches is practically totally controlled by state law, which is full of gaping loopholes,²⁵ and individual businesses that profit from the slaughter of the

birds. In the US, and in fact globally, information regarding the ostrich industry is scarce. In the US, no publicly and readily available standards for the farming of ostriches exist.

The combination of these poor industry standards with legal exemptions which intentionally exclude animals bred for profit - including ostriches – from broader animal welfare legislation results in a global system in which ostriches are often not legally protected from cruelty on feedlots or in slaughterhouses. These exemptions exist in South Africa, Australia, and the US, as in every country around the world.²⁶

supply chains is also of

concern. People working

PEOPLE

OSTRICH FEATHER PRODUCTION: PEOPLE AND PLANET



PLANET

While ostrich feathers may be a 'natural' material, this does not automatically render them sustainable. In fact, feathers are often unnaturally altered after they are processed, and the rearing of ostriches impacts both the land and climate.

South Africa's ostrich industry emits some 62,134 tonnes of carbon equivalent emissions each year, with both the production and processing of feathers being more climate-intensive than ostrich skin production. As a point of comparison, a single sheep can emit approximately 8.5kg of methane in a year, while an ostrich emits 5kg.¹ Methane is a shorter-lived greenhouse gas than carbon, but it is far more potent,

making curbing methane emissions critical to addressing the climate crisis quickly.² The climate impact of sheep and other ruminant animal production is recognised broadly in the scientific community, including in Intergovernmental Panel on Climate Change (IPCC) reporting.3

The United Nations has long recognised farmed animal production as 'one of the most significant contributors to today's most serious problems'. Yet, the acknowledgement that these calls relate to other farmed animals such as ostriches is not yet standard.4

Beyond the climate footprint of ostrich feather production, inefficient land use and associated degradation is a growing problem. While increased environmental awareness of this sustainability issue is positive, the South African Department of

Agriculture refers to this awareness as a 'threat' and 'concern' to the industry.⁵ As much as 70% of primary production variable costs in the ostrich industry are tied to feeding these great birds, though this varies depending on the rearing system type. Younger birds in large operations are often grown and fed in 'lucerne camps' where hay is planted and grown as feed on land cleared for production before birds are older than four months.⁵ Owing to the land clearing impacts of this lucerne production, 'damage to the unique fynbos flora in the Klein Karoo [the country's primary ostrich 'producer'] is a concern that has been raised by environmentalists'.6

According to an industry document, to prevent further ecological harm Klein Karoo facilities essentially raise juvenile birds to slaughter age through a feedlot system.⁶ Feedlot systems are cruel, depriving animals of a range of species of their capacity to enact natural behaviours.⁷ This trade-off between some reduced environmental impacts and increased risks of poor welfare highlights the need for fashion to view sustainability through a 'total ethics fashion' lens, in which the wellbeing of people, our fellow animals and the planet must be considered all at once.8

While feedlot operations minimise the amount of land being trampled and degraded, lucerne and other feed is still grown offsite,6 increasing energy use through transport and highlighting animal production as more inefficient in its use of resources and land than recycled and plant-based production systems. 9 Imported grains for feed and irrigation of planted feed in drought-ridden areas are additional environmental impacts tied to feather production.⁶

Finally, the manure from facilities rearing ostriches poses environmental pollution problems, as in other animal-rearing industries.¹⁰ Particularly in feedlots, freshwater ecotoxicity caused by manure runoff and associated eutrophication can be a problem. Water-related environmental issues persist when slaughterhouses are considered as these facilities are often extremely water intensive due to the amount of blood, urine, faeces and other fluids which must be cleaned each day.¹¹ Further water pollution can occur at this part of the supply chain, too.

Processing and dyeing feathers

Feathers are cleaned, bleached and then dyed for the fashion industry.¹² According to the UK government, feathers imported into the country must have been processed in line with EU regulations. One such acceptable form of processing is with formaldehyde, a known carcinogen, and other often toxic substances.11

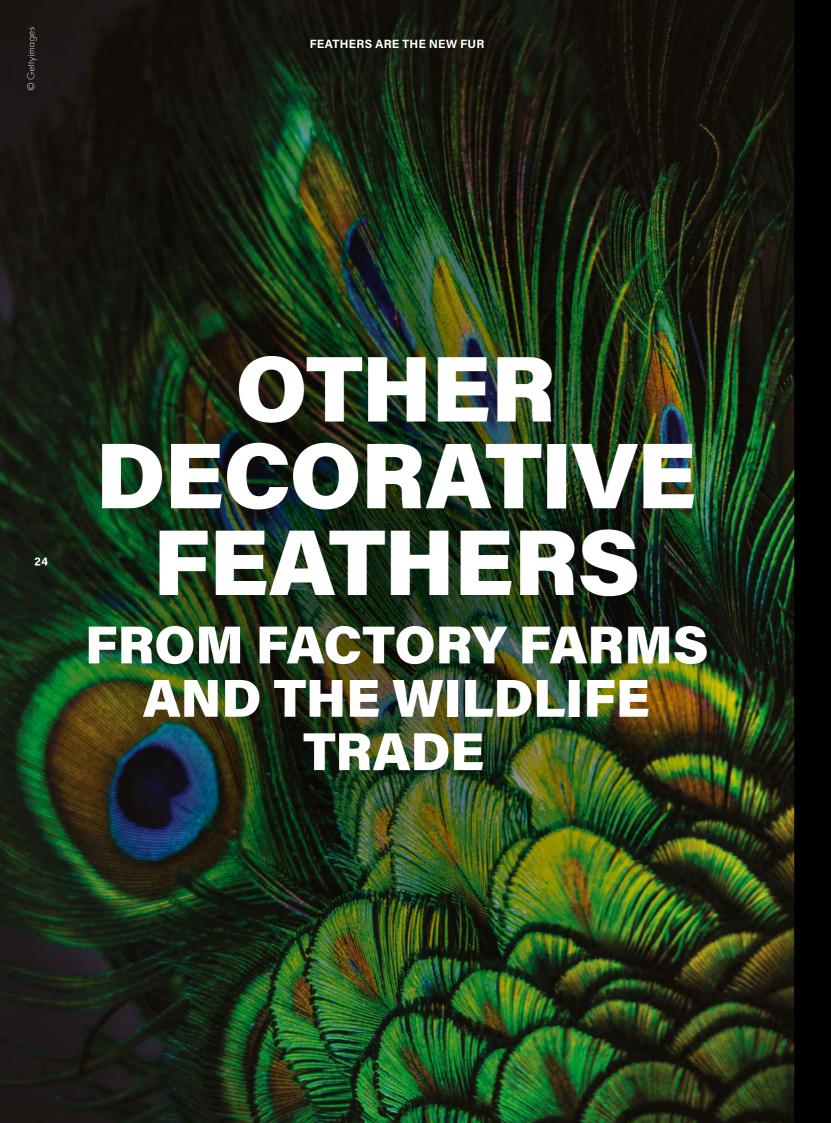
Near to no information is available from brands using feathers regarding how these feathers have been processed. Some of the chemicals used during both processing and dyeing can render feathers, as with other materials, no longer effectively biodegradable.14

When feathers are so often cut and dyed to look very different from their original source, this transformation should pose the question, why not use more ethical, non-animal materials and sustainably transform these instead?



in slaughterhouses are at high risk of physical injury, particularly when working with sharp tools used for slaughtering and butchering at high speeds.¹⁵ These risks may be higher when working to kill such large and powerful animals such as ostriches. The violence inherent to the ostrich feather trade can permeate

consequences of the act of killing'.16 Specific to the South African concerns are faced by these as well as threatened and



A number of other bird species are also exploited by the fashion industry today. A similar story of opaque production processes, cruel confinement or corrupt wild capture exists across these species and the feathers plucked from them. Here, we highlight the issues behind just three other sources of decorative feathers.

Species: Peacocks

Habitat and behaviour:

Male peacocks and female peahens (both colloquially referred to as peacocks) belong to the pheasant family. The blue peacock is native to India and Sri Lanka, while the green peacock is found from Myanmar through to Java. The latter is classified as endangered by the International Union for Conservation of nature (IUCN), considered as possibly extinct in parts of Bangladesh, Malaysia and India.² The Congo peacock lives in its namesake Democratic Republic of the Congo, and is listed as near threatened, with between 2,500 and 9.999 mature individuals alive.3 These birds thrive in warm and humid climates. A peacock can live for as many as 25 years and even longer if they are not exploited or slaughtered.4

Use in fashion:

Peacock feathers are used in millinery, couture and other fashion where the bold colours and patterns are considered a selling point for a product.



Feather trade:

The peacock feather trade is shrouded in secrecy with very minimal information available about it. The industry's lack of transparency was perhaps most famous in 2013 when Burberry sold a £22,000 coat made from what were claimed as "100% farmed golden peacock feathers from India", even while the international trade of peacock feathers is heavily controlled due to poaching and associated population decline. 5-9

Following investigation, it was revealed that the feathers were from birds in a facility in China, exported to New York before being sent to India for sewing. In China, where there is a similar lack of transparency into the peacock trade, two journalistic photo series in 2017 and 2020 gave a alimpse into the treatment of the birds. 10, 11 In the images, birds are wrapped and taped-up in plastic bags that enclose all but their necks and heads during transport to protect the financial value of their tail feathers.

In India, it appears that only feathers 'shed naturally' are accepted for sale, 12, 13 and the former can only be 'verified' by analysis of the end of the feather, which is often bloodied when plucked. However, these feathers can be cleaned and the feather shaft simply removed.8 This provision for possession of peacock feathers in legislation has led to alleged 'rampant killing of the bird across India for the highly lucrative feather business', according to local media.9 This illegal trade of wild poached, live-plucked peacock feathers results in immense pain for these birds and has reportedly led to an increased number of deaths of India's national bird 14

Oxford Martin's Wildlife Trade Programme estimates just 10% of illegal trade to be detected by agencies, with an even smaller amount reported to media.⁸ With so little transparency and such high risks of cruelty and poaching – continually identified by local organisations working to protect wildlife – the peacock industry is highly problematic.¹⁵

Habitat and behaviour:

These birds live in grasslands, wetlands and other shrubby habitats, where they reside year-round. Mother hens can spend nearly three months with their young before they leave.¹⁶

Use in fashion:

These dotted and patterned feathers are often used in millinery.

Feather trade:

Both wild captured and confined pheasants are exploited for their feathers which are sold online by many smaller suppliers. As with other feather supply chains, transparency in the sale of pheasant feathers is near to nonexistent, with information about birds being used for fashion almost always inaccessible or lacking specificity. Many pheasants are recreationally shot in their natural habitats, including in North America, before having their feathers plucked off.¹⁷

The factory-farming of pheasants is tied not only to the feather and meat industries but also to further recreational hunting, where wealthy individuals pay for these birds to be released on their properties, so they can shoot them for 'sport'. Investigations into this complex web in the United Kingdom found birds kept with clips on their beaks, packed tightly together in crowded, metal-gridded pens. 18



Species: Turkeys

Habitat and behaviour:

Farmed turkeys have the same natural instincts as their wild relatives such as enjoying exploring their environment, performing grooming activities with other sociable turkeys, and dustbathing.¹⁹

Use in fashion:

Used as a cheaper alternative to ostrich feathers, these feathers are light and fluffy, often used as a trimming on dresses and other garments.

Feather trade:

Marabou feathers were once plucked from wild marabou storks, derived from their fluffy white undertail down. Today, the term 'marabou' is used to describe a certain look of soft, down feather trimming, which is now most often derived from young, factory-farmed turkeys.²⁰

Across the world, the vast majority of birds,²¹ including turkeys, are confined to factory farms with little to no enrichment before they are slaughtered at a small fraction of their natural lifespan. Birds are routinely denied their capacity to exhibit natural behaviours. They face skin sores from ammonia build up in filthy conditions,²² and their toes and beaks are legally burned to shorter stumps, making handling and confinement more manageable and reducing scratches on other birds.^{23, 24} Most turkeys are cruelly slaughtered before they are sixteen weeks old, and they are then plucked.²⁵ Younger birds have even softer feathers. No marabou turkey feather suppliers identified by Collective Fashion Justice provided any information about the living and slaughter conditions of birds.



The trouble with unidentified feathers

Due to a consistent lack of proper labelling, it can be extremely challenging to know all of the wild and other bird species used and exploited for fashion. For example, Robert Wun's widely celebrated Spring/Summer 23 collection featured a wide range of feathers that were only labelled as 'feathers', rather than with any speciesspecific label.²⁶ This appears to be a standard practice across the fashion industry, resulting in a troubling lack of transparency. The feathers used by Wun had long, thin shafts, with a smaller amount of barbs shaped into a diamond at the end of the feather, rather than all along the shaft.

In nature, such feathers are rare. The Indonesian western parotia, the greater racket-tailed drongo from Southeast Asia, the marvellous spatuletail native to the Andes, and the Central American turquoisebrowed motmot are some of these beautiful species of birds.^{27, 28} As Wun may have dyed the feathers used in his collection, identification becomes challenging. Regardless, the rarity of such shaped feathers in nature and a lack of labelling is troubling, posing questions of wildlife trades, illegal trading, biodiversity threats and harm to these birds themselves.

Perhaps more likely, the feathers may also not be from wild birds at all, but from the tails of roosters, or 'coques' whose feathers are partly stripped.²⁹ This would also be a cheaper option. In either instance, there is a total lack of transparency for consumers, and the conditions birds are kept in and killed are largely unknown.

When feathers are sold not only by fashion brands but to fashion brands without clear labelling, it is impossible to know what species is being exploited. While the use of some wild feathers is illegal today, for example when bird species are given protection from international commercial trade under the auspices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), it does not mean such birds are not exploited due to illegal trade or legal loopholes at the national and international level. Where wild birds are nominally protected from being exploited for feathers under state or country laws, mislabelling and misidentification at the point of sale can hide the illegal or unethical use of feathers.

A similar compliance problem is seen in the fur industry, where fur from domestic cats and a range of both factory farmed and free-ranging, wild fur-bearing animal species have been found, mislabelled and unlabelled, including as inexpensive 'faux fur', on the market across Australia and the United Kingdom. 30-32 Similarly, it was reported in 2020 that dozens of luxury fashion houses including Chanel, Gucci and Michael Kors had over 5.600 products seized from them by the United States Fish and Wildlife Service over a ten-year period, as they were made from illegally traded reptile and other wild animal skins.33 Illegal wildlife trading is an ongoing global issue plaguing the fashion industry, which is also responsible for the majority of the US' total wildlife trade. 34, 35



BIODIVERSITY, ZOONOTIC DISEASE **AND SPECIES THREATS**

Today, more than 1,300 of the over 11,000 bird species known to exist are under threat of extinction, with further avian population reduction expected.^{1,2} This comes as a result of the interwoven climate and biodiversity crises, caused by human activity and associated deforestation and land destruction. Commercial captive breeding of birds, including for fashion, exacerbates these biodiversity concerns.3

As explored earlier, intensive ostrich farming can cause severe transformation and degradation of 28 natural vegetation as well as soil compaction and erosion, declined water quality, and overall loss of biodiversity.4 Extensive grazing and browsing of farmed ostriches in the Little Karoo - an internationally recognised biodiversity hotspot in South Africa - has resulted in significant impacts on ecosystem productivity and biodiversity, affecting more than 50% of the region.^{5,6}

> 'Genetic pollution' of free-ranging, wild ostrich populations, caused by the release or escape of farmed populations, can lead to the erasure of genetically distinct populations. In Kenya, for example, there are concerns that the release of genetically 'contaminated' farmed ostriches could potentially threaten the genetic integrity of free-roaming

populations, resulting in problems such as reduced breeding success which could harm the species' population.⁷

Zoonotic diseases, those which can be transmitted from other animals to humans, are a risk associated with the rearing of wildlife for profit. Common poor conditions on ostrich farms and feedlots such as limited space. poor hygiene, and close contact with caretakers, can increase the risk of disease emergence and create opportunities for pathogen transmission between wild animals and humans. Greater risk of disease transmission between captive wild animals to freeranging populations occurs too.8,9

Avian influenza or 'bird flu' is a major focus point worldwide as it is a highly contagious disease with potential zoonotic risk and huge economic implications.¹⁰

Key ostrich-producing provinces of South Africa have experienced several avian influenza (HPAI) outbreaks over the past two decades linked to poor animal welfare and biosecurity practices, which are commonplace in the industry.11

The South African government considers avian influenza to be a key 'threat and concern' to the industry.¹² Ostriches infected with the disease can suffer anorexia, depression, and central nervous system impacts, with previous outbreaks having led to mass culling of entire ostrich flocks on affected farms. 13 South African production systems move birds between a number of farms during breeding, chick and adult rearing, with an aim to maximise productivity and economic efficiency. This system has been shown to increase vulnerability to disease outbreaks. 14, 15



Avian influenza can have devastating consequences for the health of wild birds, as well as some mammals, who exist in their natural habitat. 10 Wild birds. including endangered species, can be both the vector and victim of the disease. As a result, rearing birds for fashion and food can be potentially devastating for biodiversity and species health.

A number of other disease risks are associated with rearing birds for their feathers and skins.

The highly transmissible Newcastle disease is a major and lethal infectious disease affecting a wide range of farmed and wild bird species including those exploited for fashion such as ducks, turkeys, ostriches, peacocks, and waterfowls.16 Outbreaks of Newcastle disease in farmed ostriches have been reported in many countries, and the disease can cause sudden death, depression, anorexia, breathing difficulties, muscular tremors, head swelling, and paralysis. 16,17

Ostrich rearing also contributes to the transmission of the zoonotic disease Crimean Congo hemorrhagic fever, which can cause mortality rates of up to 30% in humans. 18 Infections of workers in ostrich slaughterhouses have previously been reported.¹⁸ While biosecurity protocols can partially mitigate the risk of zoonotic disease emergence and transmission in these production systems, detection of pathogens in wildlife is limited globally, and infected wildlife often go undetected. 19, 20

INNOVATING BEYOND FEATHERS IN FASHION



While feathers have long been a popular material in the fashion industry because of their undeniable aesthetic qualities, there is a rightfully growing recognition of the steep cruelty and environmental costs of feather use for fashion is prompting designers and brands to reevaluate their use.

Feather-free innovation is far from new but rather is continuously outdoing itself. At the beginning of the 20th century, spun glass, first developed in the 1830s, was positioned as an alternative to feather decoration, due to its similarly light and ethereal qualities. In the same era, American ornithologist, naturalist, and painter Audubon commissioned milliners to create 'Audubonnets' decorated with ribbons, artificial flowers and twists of fabric to exist as an alternative to feathered millinery.² This came as a direct response to activism opposed to feather use, following growing awareness of the harm associated with feather collection.

Designers working with innovative feather alternatives

Today, innovative digital rendering of man-made materials provides new forms, derivative of feather decoration. While synthetic man-made materials are environmentally polluting if disposed of incorrectly and not recycled as part of a closed-loop system, it is nonetheless seen as a positive early step towards developing material forms that encompass a total ethics approach by valuing the life and wellbeing of birds while minimising biodiversity impacts.

Dutch fashion designer Iris Van Herpen has stated that she is inspired by nature but does not like using materials from nature because it is not her own language.^{3,4} Rather than taking directly from nature, Van Herpen's focus in fashion is to develop her own novel material forms using a range of techniques which man-made materials beyond the animal allow. For example, a silicone representation of feathers crafted into a dress by the designer was exhibited in the 'Plumasserie' (featherwork) section of 'Manus x Machina: Fashion in an age of technology' exhibition at the Metropolitan Museum of Art in 2016.5 The choice of section to display the work would appear to be due to the aesthetic similarity of feathers and the contemporary take the company has on the craftsmanship of feather work. Fabrication techniques the designer has applied include laser cutting and 3D printing mixed with traditional craftsmanship.

Other designers have explored plant-derived materials through embroidery and fabric manipulation techniques

to gain similar appeals to feathers. Tammam is a British couture designer label offering womenswear and accessories aiming to use sustainable materials through fair-trade partnerships with artisans in India. Lucy Tammam, the designer behind Tammam, explained that she has never felt the lack of feathers in her collections but loves the ways her label has emulated feather shapes and designs to create original embellishments.

"We've tried to emulate feathers with embroidery - using traditional zardosi and hand embroidery in various collections. For our 2022 FLIGHT collection birds were a strong reference - we used digital printing and hand embroidery to get feathered looks and textures."

- Lucy Tammam, Tammam⁶

Embroidery and textile designer Nadia Albertini, who has worked for a range of luxury fashion houses, explained that an alternative to feathers would need to be a natural material and fulfil an association with the 'exotic'.7 She has imitated feathers using frayed organza, placing it among bird feathers to create volume and reduce cost, in comparison to using only feathers. Her experience of the banning of fur by fashion houses has resulted in the increased use of feather-based fabric manipulation.



Similarly to leather and fur alternatives, where most designers seek an organic material substitute, feather alternatives free of synthetic components are seen to be superior. UK-based sustainable fashion designer Joshua James Small finds the use of feathers ethically complex so has not used them within his own practice. He explained that most faux feathers tend to be polyester-based and lack a "high quality aesthetic you'd expect from a luxury good". Instead, he works with other forms of fabric manipulation and embellishment using a wide range of media that does not include animal feathers or skins.8

In cases where feathers are used in place of fur, a move towards recycled and bio-based, nextgen fur alternatives is a clear step forward for many brands. Today, materials like commercially biodegradable GACHA fur from ECOPEL far outperform not only animal-derived fur but conventional faux fur when considering environmental impacts.9

The need for further innovation in feather alternatives

The formation of specific imitation feathers is underdeveloped in comparison to the material advancements made in leather and fur alternatives. There is an opportunity for material innovation in this area, alongside exploration of alternative forms of decoration that similarly have a feeling of lightweight movement, one of the most appealing features of feathers. Understanding the appeal, properties and uses of feathers in fashion is paramount to developing alternatives that will be adopted by industry.

One milliner, who chose to share their insights anonymously, has worked with feathers for over 30 years. Their studio has previously experimented with manipulated bamboo which has some similar properties to feathers. On the appeal of feathers for millinery and requirements for effective alternatives, the milliner stated:

"The appeal of feathers is their properties, which is that they are manipulatable. They have volume and give shape and form but don't weigh anything. Working with feathers is like cutting air. The flexible central bone of the feather supports the whole feather as a material, giving it direction. It's a very complicated piece of engineering that is naturally slightly curved.

How the material moves is one of the most important factors along with needing to be weightless, waterresistant, and strong. Something that looks like a feather or has the feeling of a feather is attractive but what it really needs to have is the same properties; weightlessness, fluidity, and a sense of movement is what feathers are all about. So it's not about looking like it, it's about behaving like it."

Other creations of movement and lightness in fashion made beyond real feathers look towards plant-based materials, such as lightweight cotton and responsibly sourced viscose organza. One such example is Australian luxury label Aje's of raffia. Made from segments of the leaves of raffia palms, bright orange raffia fibres flow off the bottom of a knitted midi dress from the label in a similar use to ostrich feathers by other brands.

Material Innovation Initiative's 2021 report on the state of the next-gen material industry found that of 74 companies developing animal-free, sustainable materials, just six were working on feather alternatives. These six companies were working on alternatives to down, with none exploring next-gen feathers for decoration.¹¹

With the next-gen material market expected to be worth \$2.2 billion USD per year by 2026, this market gap is an opportunity for material scientists, as well as brands seeking to invest in alternatives early, before they boom similarly to next-gen leather.¹¹

A transition beyond the use of animal feathers in fashion is not only deeply important to the creation of a totally ethical fashion system that values people, our fellow animals and the planet alike, but it also creates opportunity for innovation and exploration of materiality. In an industry that celebrates uniqueness, designers able to imagine the mystique and fantasy, as highlighted by Lubormirski, through their own invention and technical skill are leaders.



FEATHER-FREE POLICIES



Policies relating to the feather trade exist at industry, government and multinational levels. Considering government policies first, the relevant import requirements for most countries treat feathers as a commodity material and do not consider welfare standards associated with their sourcing.

For example, the UK guidelines state that feather imports do not require a health certificate relating to where the birds' feathers are sourced from and what diseases they may carry, and feathers are permitted from any country of origin and trading partner.1 As well as diminishing the recognition of feathers as coming from animals, these minimal auidelines increase the risk associated with already opaque feather supply chains. Furthermore, current import requirements are not in alignment with wider proposed and upcoming transparency measures in fashion such as the EU Digital Product Passport which will require data on all raw material extraction.²

In terms of the global feather trade, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) permits are required for feathers obtained from some threatened species. However, permit requirements for wild animals farmed for commercial gain are relaxed as compared to those captured from their natural habitat.³

A lack of broad, thorough and effective multi-country government regulation and restriction on feather use only accentuates the fashion industry's responsibility to voluntarily create their own feather-free policies. Without this shift, the industry will continue to profit from cruelty to wildlife and other birds.

Fortunately, there has been a rise in brands and retailers banning the use of feathers, such as Australian brand Bardot's ban on feathers, following an investigation by PETA in 2019.⁴ Global retailer ASOS also banned all use of feathers (other than those from ducks and geese sourced through the Responsible Down Standard) across their site in 2019, though as noted, compliance with this policy is an ongoing problem.⁵

SMCP, the luxury group that owns fashion brands Sandro, Maje, Claudie Pierlot and De Fursac, has committed to banning all feathers by Autumn/Winter 2023.7 Looking to the wider luxury fashion industry, designer Diane Von Furstenberg has pledged not to use fur, exotic skins or feathers, and vegetarian brand Stella McCartney has never used feathers in their collections for ethical reasons, an exception

among luxury fashion.^{8, 9} Brands including Burberry, Calvin Klein, Chanel, JilSander, Prada, Tom Ford, Victoria Beckham and Vivienne Westwood have banned fur and exotic animal skins in recent years, but not feathers.¹⁰ These brands no longer use ostrich skins but still apply ostrich feathers within their collections on the misconception that ostrich feathers can be obtained without harm to the animal.

The lack of commitment to stop using feathers is fast becoming an issue in the fashion industry since many brands are also substituting feathers in place of animal fur. For example, while London Fashion Week has been free from fur for several years now, many designers in the line up such as David Koma, Dilara Findikoğlu and Richard Quinnstill use a range of feather accents for decorative purposes. 11-13

There is a pronounced lack of feather-free policies in comparison to the voluntary banning of fur and exotic skins. Despite these policies aiming to protect wild animals, they are inevitably failing to do so for wild birds exploited for their feathers. As a minimum requirement, governments and international working groups should work towards increasing animal welfare standards and traceability within the feather industry while committing to invest into next-gen materials to move towards totally feather-free fashion.

Currently Melbourne Fashion Week (M/FW) is the only global fashion week to have protected all wild birds, by prohibiting all wildlife-derived materials, including feathers, from its shows. This includes all fur, skins and feathers from wild animals, regardless of whether

those wild animals were captured from their natural habitat or bred into factory-farms. Collective Fashion Justice and World Animal Protection are pleased to have engaged with M/FW to make this possible, and urge other events to follow suit quickly.

Event	Fur free policy?	Wild animal skin free policy?	Wild feather free policy?
Amsterdam Fashion Week	√	×	×
Copenhagen Fashion Week	✓	×	×
Helsinki Fashion Week	√	√	×
London Fashion Week	×	×	×
Melbourne Fashion Week	√	√	✓
Milan Fashion Week	×	×	×
New York Fashion Week	×	×	×
Paris Fashion Week	×	×	×
Stockholm Fashion Week	√	√	×



The fashion industry's historical relationship with birds is one of greed, endangerment, and destruction, referred to as 'murderous millinery' in a Cambridge University Press book.¹ It is critical we understand this history, which is both dark and one which should inspire hope, innovation and progress for the industry today.

Our cultural capacity for change in the name of animal protection and environmental conservation is a power we must harness today. The global trade of feathers belonging to ostriches, peacocks, turkeys, and other birds for the sake of decoration is unjustifiable, needless, and unimaginative. While there is no beauty in exploiting and slaughtering these birds within fashion, a fashion industry full of creativity has a much-needed opportunity to explore modes of decoration that are as beautiful in their production as in their final form.

Collective Fashion Justice and World Animal Protection recommend that fashion brands, retailers and event organisers move swiftly to enact policies that ban the use of 'exotic feathers' to protect all wild birds from exploitation and slaughter in fashion supply chains. These feathers should be replaced with innovative, animal-free materials. Brands that already have a policy against exotic skins should recognise the need for a policy extension as a required next step to protect wild animals who could be harmed due to it being solely skins based.

Collective Fashion Justice and World Animal Protection also recommend a shift beyond the use of all feathers for decorative purposes, replacing these with entirely animal-free and more innovative materials.

As global governments begin to enforce more stringent regulations on the fashion industry, using a heavier legislative hand in the face of industry inaction and sluggish process, feather use must also be acted on. Global bans on fur production and sales, crackdowns on fashion's impact on the environment, and those on it must be extended to protect birds used for decorative purposes. Policies related to feathers of wild animal species should at the very least include production, import and sales bans, regardless of whether these species are wild-captured or farmed.

Without addressing the cruelty of feather use, as well as the associated environmental and human impact involved, the fashion industry will be unable to align with much-needed total ethics values,² or with the United Nations endorsed premise of 'one health',³ in which all life on the planet and its well-being are interconnected.

We have the capacity and creativity to move fashion beyond all cruelty to animals and the associated environmental and human impact of this exploitation. With this capacity comes the responsibility to act upon it, all the while creating beautiful, carefully made clothing.

REFERENCES

INTRODUCTION

- Cowie H L. Victims of fashion (chapter 2: Murderous millinery). Cambridge: Cambridge University Press; 2021.
- 2. Earring (ca. 1865 to 1875). [Internet]. London: Victoria and Albert Museum; c2023. [cited 2023]. Available from: https://collections.vam.ac.uk/item/O1126618/earring/
- 3. Earring (ca. 1875). [Internet]. London: Victoria and Albert Museum; c2023. [cited 2023]. Available from: https://collections.vam.ac.uk/item/01126619/earring-unknown/
- 4. Earring (ca. 1865). [Internet]. London: Victoria and Albert Museum; c2023 [cited 2023] Available from: https://collections.vam.ac.uk/item/086513/earring-emanuel-harry/
- 5. Kirshenbaum S, Buhler D. Americans are confused about food and unsure where to turn for answers, survey shows. [Internet]. Melbourne: The Conversation; 2017 [cited 2023]. Available from: https://theconversation.com/americans-are-confused-about-food-and-unsure-where-to-turn-for-answers-survey-shows-82124

- Beery T, Olafsson A S, et al. "Disconnection from nature: expanding our understanding of human-nature relations". People and Nature. 2023. https://doi.org/10.1002/ pan3.10451
- 7. Kesebir P, Kesebir S. [Internet]. How modern life became disconnected from nature. Berkeley: Greater Good Magazine; 2017 [cited 2023]. Available from: https://greatergood.berkeley.edu/article/item/how_modern_life_became_disconnected_from_nature
- 8. Hartmann C, Lazzarini G, et al. "Measuring consumers' knowledge of the environmental impact of foods". Appetite. 2021. https://doi.org/10.1016/j.appet.2021.105622
- 9. Hakansson E. Consumers oppose feather cruelty, but they're being misled by fashion brands. [Internet]. Melbourne: Collective Fashion Justice; 2023 [cited 2023]. Available from: https://collectivefashionjustice.org/articles/consumers-oppose-feather-cruelty-but-are-misled

- Ostrich. [Internet]. Nairobi: African Wildlife Foundation; c2023 [cited 2023]. Available from: https://www.awf.org/ wildlife-conservation/ostrich
- 11. Avian influenza. [Internet]. Paris: World Organisation for Animal Health; c2023 [cited 2023]. Available from: https://www.woah.org/en/disease/avian-influenza/
- 12. Nijman V, Langgeng A, Birot H, Imron, et al. Wildlife trade, captive breeding and the imminent extinction of a songbird. Global Ecology and Conservation. 15. 2018. https://doi.org/10.1016/j. gecco.2023.e02452
- 13. Barends-Jones V. The South African ostrich industry footprint. [Internet]. Worcester: Western Cape Department of Agriculture; 2020 [cited 2023]. Available from: https://www. elsenburg.com/wp-content/ uploads/2022/03/2020-Ostrich-Industry-Footprint.pdf
- 14. Hakansson E. Cruelty is out of fashion: an overview of the fashion industry's policies on wild animal products. [Internet]. Melbourne: Collective Fashion Justice; 2022 [cited 2023]. Available from: https://www.collectivefashionjustice.org/fashion-wild-animal-exploitation

FEATHERS IN FASHION

FEATHER USE BY THE FASHION INDUSTRY: HISTORICAL USE

- Choi C. Neanderthals wore colorful feathers, study suggests. [Internet]. New York: Live Science; 2011 [cited 2023]. Available from: https:// www.livescience.com/12938neanderthals-bird-featherssymbolic.html
- Gannon M, Neanderthals may have worn dark feathers. [Internet]. New York: NBC News; 2012 [cited 2023]. Available from: https:// www.nbcnews.com/id/ wbna49078102
- 3. Attia V. Ostriches in Ancient Egypt (Pharaonic and Coptic epochs). [Internet]. Cairo: Egyptian Ministry of Tourism and Antiques; 2018 [cited 2023]. Available from: https://www.researchgate.net/publication/323016775_Ostriches_in_Ancient_Egypt_Pharaonic Coptic epochs
- 4. Aboriginal Australia, emu feather skirt. [Internet]. London: The British Museum; c2023 [cited 2023]. Available from: https://britishmuseum. withgoogle.com/object/emufeather-skirt
- 5. Hlavinka E. Sacred feathers and the tribes that need them. [Internet]. New York: Atmos; 2022 [cited 2023]. Available from: https://atmos.earth/endangered-birds-indigenous-culture-feathers/

- 6. Birds of a feather: plumed headdresses from around the world. [Internet]. Santa Ana: Bowers Museum; 2019 [cited 2023]. Available from: https://www.bowers.org/index.php/collection/collection-blog/birds-of-a-feather-plumed-headdresses-from-around-the-world?format=amp
- 7. Traill-Nash G. How to wear feathers. [Internet]. Sydney: The Sydney Morning Herald; 2011 [cited 2023]. Available from: https://www.smh.com.au/lifestyle/fashion/how-to-wear-feathers-20110408-1d7aj.html
- 8. Ehrman E. Fashioned from nature. London: V&A Publishing; 2018.
- 9. A feather in your cap: inside the symbolic universe of Renaissance Europe. [Internet]. Cambridge: University of Cambridge; 2017 [cited 2023]. Available from: https://www.cam.ac.uk/research/features/a-feather-in-your-cap-inside-the-symbolic-universe-of-renaissance-europe
- 10. Mayhew G. The importance of a good hat: individuality in millinery. [Internet]. New York: The Met Museum; 2014 [cited 2023]. Available from: https:// www.metmuseum.org/blogs/ in-circulation/2014/millinery

- 11. Morton C. Fashion A-Z. [Internet]. London: Business of Fashion; c2023 [cited 2023]. Available from: https://www.businessoffashion.com/education/fashion-az/millinery
- 12. Nijhuis M. How Mrs. Edge saved the birds. [Internet]. Washington: Smithsonian Magazine; 2021 [cited 2023]. Available from: https://www.smithsonianmag.com/science-nature/how-mrs-edge-saved-birds-180977167/

39

- 13. Webster H, Steele G. Flight of fashion: when feathers were worth twice their weight in gold. [Internet]. Melbourne: Museums Victoria; c2023 [cited 2023]. Available from: https://museumsvictoria.com. au/article/flight-of-fashion-when-feathers-were-worth-twice-their-weight-in-gold/
- 14. Edwards W H. A voyage up the river Amazon.
 Cambridge: Cambridge
 University Press; 1847.
 doi:https://doi.org/10.1017/
 CBO9780511697944
- 15. Eluwawalage D. Exotic fauna and flora: fashion trends in the nineteenth century. International Journal of Fashion Design, Technology and Education. 2015. https://doi.org/10.1080/17543266.2015. 1078848

FEATHERS IN FASHION

- 16. A hatful of horror: the Victorian headwear craze that led to mass slaughter. [Internet]. (London): History Extra; 2021 [cited 2023]. Available from: https://www.historyextra.com/ period/victorian/victorianhats-birds-feathered-hatfashion/
- 17. Tucker J. The bird hat: "murderous millinery". [Internet]. Baltimore: Maryland Center for History and Culture. Available from: https://www. mdhistory.org/the-bird-hatmurderous-millinery/
- Cowie H L. Victims of fashion (chapter 2: Murderous millinery). Cambridge: Cambridge University Press; 2021.
- 19. O'Brien L. Carolina parakeet: a splendor of beauty gone forever. [Internet]. Washington: Smithsonian

- Libraries and Archives; 2014 [cited 2023]. Available from: https://blog.library.si.edu/blog/2014/07/04/carolina-parakeet-a-splendor-of-beautygone-forever/#.ZHaZai8Rpqt
- 20. Hollandbeck A, Nilsson J, et al. Looks that kill: the fashion of extinction. [Internet]. Philadelphia: The Saturday Evening Post; 2016 [cited 2023]. Available from: https://www.saturdayeveningpost.com/2016/06/looks-kill-fashion-extinction/
- 21. Stein S. "Falling into feathers": Jews and the trans-atlantic ostrich feather trade. The Journal of Modern History. 2007. https://doi. org/10.1086/521065
- 22. Chrisman-Campbell K. Fowl intentions: fashion, activism, conservation. San Marcos; Ornament Magazine; 2018.

- 23. Barends-Jones V. The South African ostrich industry footprint. [Internet]. Worcester: Western Cape Department of Agriculture; 2020 [cited 2023]. Available from: https://www.elsenburg.com/wp-content/uploads/2022/03/2020-Ostrich-Industry-Footprint.pdf
- 24. Ostrich. [Internet]. Nairobi: African Wildlife Foundation; c2023 [cited 2023]. Available from: https://www.awf.org/ wildlife-conservation/ostrich
- 25. Wilcox C, Mendes V. 20th century fashion in detail. London: Thames and Hudson; 2018.
- 26. Swan J, Debo K, et al. Birds of paradise: plumes and feathers in fashion. Tielt: Lannoo Publishers; 2014.

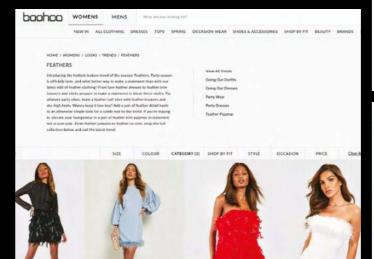
FEATHER USE BY THE FASHION INDUSTRY: CONTEMPORARY USE

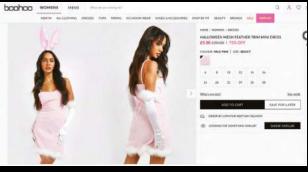
- 1. Delhi customs seizes 21 lakh peacock tail feathers being smuggled to China. [Internet]. Noida (IN): Business Today; 2021 [cited 2023]. Available from: https://www.businesstoday. in/latest/economy-politics/story/21-lakh-peacock-tail-feathers-being-smuggled-to-china-seized-by-delhicustoms-291279-2021-03-19
- 2. An overview of seizures of CITES-listed wildlife in the European Union. [Internet]. Brussels: European Commission; 2019 [cited 2023]. Available from: https://www.traffic.org/site/assets/files/12745/eu-seizures-report-2020-final-web.pdf
- Pacault M, Patchett M.
 The last plumassier.
 Cultural Geographies. 2018.
 https://doi.org/10.1177/ 1474474016673067

- 4. Alexi Lubomirski email (personal communication, March 18, 2023).
- 5. Hakansson E. Cruelty is out of fashion: an overview of the fashion industry's policies on wild animal products. [Internet]. Melbourne: Collective Fashion Justice; 2022 [cited 2023]. Available from: https://www.collectivefashionjustice.org/fashion-wild-animal-exploitation
- 6. Gucci, fall 2023 readyto-wear (look 16, 21, 51). [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https://www.vogue. com/fashion-shows/fall-2023-ready-to-wear/gucci/ slideshow/collection
- Prada, fall 2017 ready-to-wear (look 20). [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https://www. vogue.com/fashion-shows/ fall-2017-ready-to-wear/prada/ slideshow/collection#20

- 8. Valentino, fall 2023 readyto-wear (look 3, 12, 54). [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https://www.vogue. com/fashion-shows/fall-2023ready-to-wear/valentino/ slideshow/collection
- 9. Burberry, fall 2023 ready-towear (look 41). [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https:// www.vogue.com/fashionshows/fall-2023-ready-towear/burberry-prorsum/ slideshow/collection#41
- 10. Loewe, fall 2023 ready-towear (look 22). [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https://www.vogue. com/fashion-shows/fall-2023-ready-to-wear/loewe/ slideshow/collection#22
- 11. See images below.

Contemporary use of feathers, reference 11: Boohoo feather products







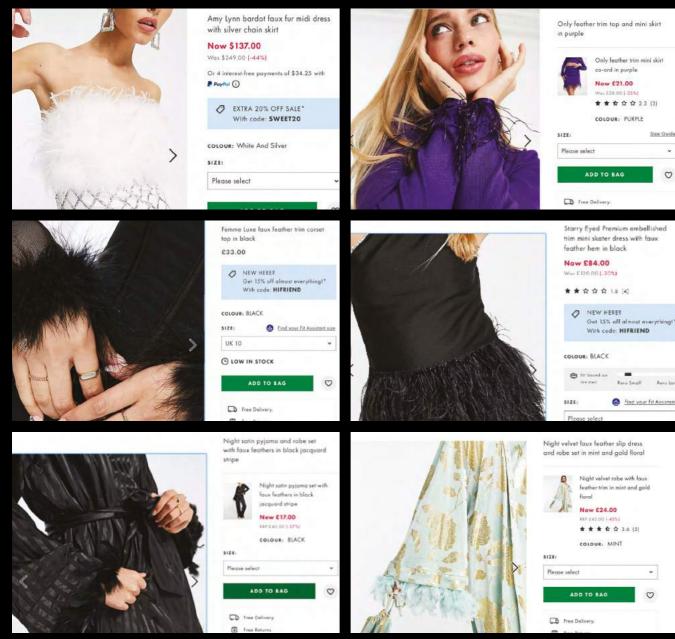
FEATHERS ARE THE NEW FUR

FEATHERS IN FASHION

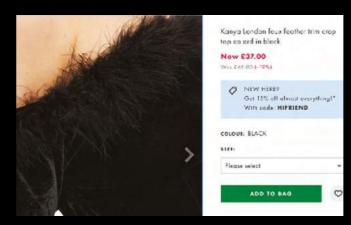
PUBLIC PERCEPTION OF FEATHERS IN FASHION

- 1. Hakansson E. Consumers oppose feather cruelty, but they're being misled by fashion brands. [Internet]. Melbourne: Collective Fashion Justice; 2023 [cited 2023]. Available from: https://collectivefashionjustice.org/articles/consumers-oppose-feather-cruelty-but-are-misled
- 2. See images below.
- 3. ASOS animal derived material policy. [Internet]. London: ASOS; (2019) [cited 2023]. Available from: https://asos-12954-s3.s3.eu-west-2.amazonaws.com/files/3816/7360/6496/ASOS_Animal_Derived_Material_Policy_V10_.pdf
- 4. Cochrane L. ASOS pledge to ban mohair, cashmere and silk from 2019. [Internet]. London: The Guardian; 2018 [cited 2023]. Available from: https://www.theguardian.com/fashion/2018/jun/19/asos-pledge-to-ban-mohair-cashmere-and-silk-from-2019

Public perception of feathers in fashion, reference 2: examples of mislabelling ASOS:

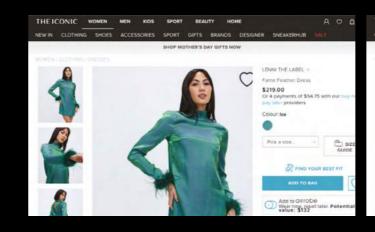


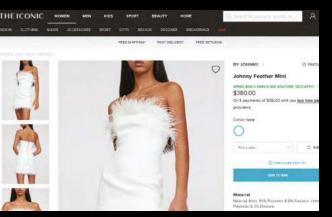
ASOS: Cettire:



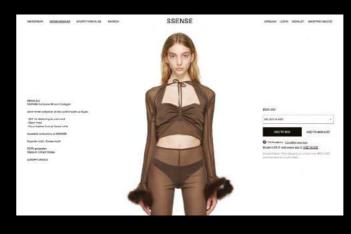


The Iconic:





SSENSE:

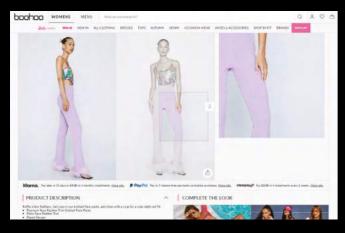


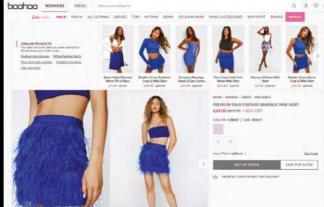


FEATHERS IN FASHION

Public perception of feathers in fashion, reference 2: examples of mislabelling

Boohoo:

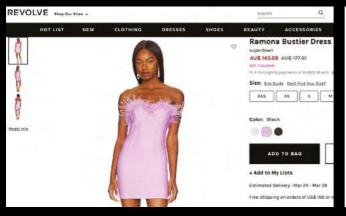


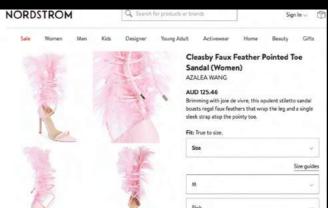


Revolve:

44

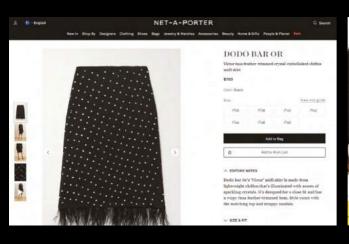
Nordstrom:

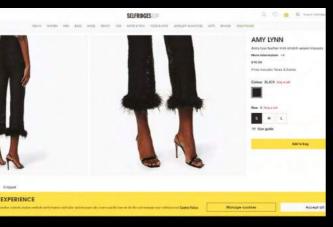




Net-A-Porter:

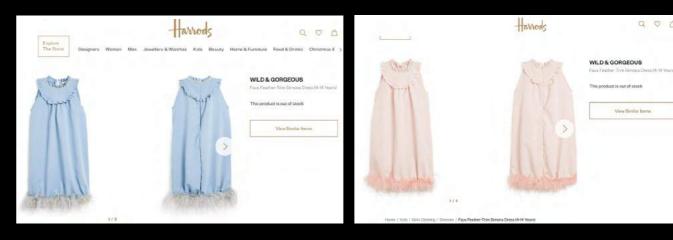
Selfridges:



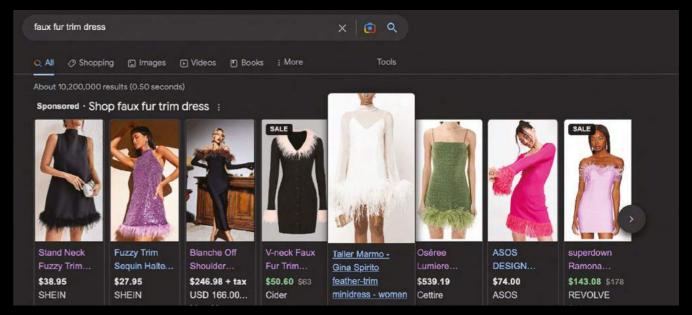


FEATHERS ARE THE NEW FUR

Harrods:



Google search for 'faux fur' showing numerous feather products, including those which are mislabelled themselves.



OSTRICH FEATHERS: AS DEADLY AS FUR

- 1. Kistner C. Ostrich production today: the (eco)logical way to economic success. [Internet]. Cuxhaven (DE): Lohmann Breeders; 2019 [cited 2023]. Available from: https://lohmann-breeders.com/media/2020/08/VOL53-KISTNER-Ostrich-Production-.pdf
- 2. Barends-Jones V. The South African ostrich industry footprint. [Internet]. Worcester: Western Cape Department of Agriculture; 2020 [cited 2023]. Available from: https://www.elsenburg.com/wp-content/uploads/2022/03/2020-Ostrich-Industry-Footprint.pdf
- 3. Cape Karoo International.
 [Internet]. Singapore Central
 Business District: OneAgrix;
 c2023 [cited 2023].
 Available from: https://www.
 oneagrix.com/vendor_shop/
 capekaroomeat.html
- 4. Ostrich feathers. [Internet].
 Cape Town: South Africa;
 c2023 [cited 2023]. Available
 from: https://southafrica.co.za/
 ostrich-feathers.html
- 5. Ostrich. [Internet]. Washington:
 National Geographic;
 c2023 [cited 2023].
 Available from: https://www.
 nationalgeographic.com/
 animals/birds/facts/ostrich
- 6. How fast is an ostrich? And more fun facts. [Internet]. Washington: Smithsonian's National Zoo and Conservation Biology Institute; 2022 [cited 2023]. Available from: https://nationalzoo.si.edu/animals/news/how-fast-ostrich-and-more-fun-facts

- Ostrich. [Internet]. Nairobi: African Wildlife Foundation; c2023 [cited 2023]. Available from: https://www.awf.org/ wildlife-conservation/ostrich
- 8. Ostrich. [Internet]. Washington: National Geographic (kids); c2023 [cited 2023]. Available from: https://kids. nationalgeographic.com/ animals/birds/facts/ostrich
- 9. The South African ostrich value chain; opportunities for black participation and development of a programme to link farmers and markets. [Internet]. Pretoria: National Agricultural Marketing Council; 2010 [cited 2023]. Available from: https://www.namc.co.za/wp-content/uploads/2017/09/Ostrich-Value-Chain-Report.pdf
- 10. Ostrich business chamber, ostrich production requirements. [Internet]. South Turramurra: Exotic Assurance Pty LTd; 2019 [cited 2023]. Available from: http://lwcc.org.za/wp-content/uploads/2021/05/SAOBC-1001-2019-Ostrich-Production-Requirements-Version-1-0-20191112.pdf
- 11. Smallman E. Cruel price of fashion's ultimate status symbol: a-listers spend up to £100,000 for ostrich-skin bags. But a new investigation reveals the trail of suffering behind them. [Internet]. Sydney: Daily Mail Australia; 2016 [cited 2023]. Available from: https://www.dailymail.co.uk/femail/article-3527016/Cruel-price-fashion-s-ultimate-status-symbol-listers-spend-

- 100-000-ostrich-skin-bagsnew-investigation-reveals-trailsuffering-them.html
- 12. Manteca X, Salas M.
 Stereotypies as animal
 welfare indicators. [Internet].
 Barcelona: Zoo Animal
 Welfare Education Centre;
 2015 [cited 2023]. Available
 from: http://www.zawec.org/
 media/com_lazypdf/pdf/
 Sheet%20ZAWEC%202%20.
 pdf
- 13. Davis-Unger J, Pajor E. Economic impacts of lameness in feedlot cattle. Transnational Animal Science. 2017. https://doi.org/ 10.2527%2Ftas2017.0052
- 14. What are some of the animal welfare issues with feedlots for sheep?. [Internet]. Canberra: RSPCA Australia; 2020 [cited 2023]. Available from: https://kb.rspca.org.au/knowledge-base/what-are-the-animal-welfare-issues-with-feedlots-for-sheep/
- 15. Muvhali P T. Improving ostrich welfare by developing positive human-animal interactions.
 Stellenbosch: University of Stellenbosch; 2018 [cited 2023]. Available from: https://core.ac.uk/download/pdf/188221408.pdf
- 16. Ostrich. [Internet]. Amsterdam: Science Direct; c2023 [cited 2023]. Available from: https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/ostrich

- 17. Ostrich fact sheet. [Internet].
 Arlington: PBS Nature; 2021
 [cited 2023]. Available from:
 https://www.pbs.org/wnet/
 nature/blog/ostrich-fact-sheet/
- 18. Bryce E. Festivals, fashion and feather bandits: why ostrich plumage is still worth its weight in gold a photo essay. [Internet]. London: Guardian; 2023 [cited 2023]. Available from: https://www.theguardian.com/environment/2023/feb/20/ostrich-feathers-farming-southafrica-fashion-luxury-a-photo-essay
- 19. Zintle S. Review of the merger between Klein Karoo International (Pty) Ltd, Mosstrich (Pty) Ltd and Cape Karoo (Pty) Ltd: an application of the Guppi and Upp tests. [Internet]. Johannesburg: University of the Witwatersrand; 2021 [cited 2023]. Available from: https://wiredspace.wits.ac.za/items/9f90ad73-01f1-470e-8062-af9a021ac01e
- 20. Primary industries standing committee, model codes of practice for the welfare of animals, farming of ostriches. [Internet]. Melbourne: CSIRO; 2003 [cited 2023]. Available from: https://www.publish.csiro.au/ebook/download/pdf/3526

- 21. Ostrich and emu. [Internet]. Washington: USDA Rural Development; 2021 [cited 2023]. Available from: https://www.agmrc.org/commodities-products/livestock/ostrich-and-emu-53585
- 22. Horbańczuk J. Ostrich farming in Poland its history and current situation after accession to the European Union. Avian Biology Research. 2008. http://dx.doi.org/10.3184/175815508X360470
- 23. South Africa. [Internet].
 London: Animal Protection
 Index; 2020 [cited 2023].
 Available from: https://api.
 worldanimalprotection.org/
 country/south-africa
- 24. Laws that protect animals.
 [Internet]. Cotati (US): Animal
 Legal Defense Fund; c2023
 [cited 2023]. Available from:
 https://aldf.org/article/lawsthat-protect-animals/
- 25. USA. [Internet]. London: Animal Protection Index; 2020 [cited 2023]. Available from: https://api.worldanimalprotection.org/country/usa
- 26. Animal Protection Index.
 [Internet]. London: Animal
 Protection Index; 2020 [cited
 2023]. Available from: https://
 api.worldanimalprotection.org/

OSTRICH FEATHER PRODUCTION: PEOPLE AND PLANET

- 1. Barends-Jones V. The South African ostrich industry footprint. [Internet]. Worcester: Western Cape Department of Agriculture; 2020 [cited 2023]. Available from: https://www.elsenburg.com/wp-content/uploads/2022/03/2020-Ostrich-Industry-Footprint.pdf
- 2. Procopiou C. Methane's short lifespan presents golden opportunity to quickly address climate change. [Internet]. Berkeley: Earth and Environmental Sciences Area; 2021 [cited 2023]. Available from: https://eesa.lbl.gov/methanes-short-lifespan-presents-golden-opportunity-to-quickly-address-climate-change/
- 3. Hakansson E. The IPCC's mitigation of climate change report explained, and what it means for the fashion industry. [Internet]. Melbourne: Collective Fashion Justice; 2022 [cited 2023]. Available from: https://www.collectivefashionjustice.org/articles/the-ipccs-mitigation-of-climate-change-report-explained-and-what-it-means-for-the-fashion-industry

OSTRICH FEATHERS: AS DEADLY AS FUR

- 4. Rearing cattle produces more greenhouse gases than driving cars, UN report warns. [Internet]. Geneva: United Nations; 2006 [cited 2023]. Available from: https://news.un.org/en/story/2006/11/201222-rearing-cattle-produces-moregreenhouse-gases-driving-cars-un-report-warns
- 5. A profile of the South African ostrich market value chain. [Internet]. Pretoria: Department of Agriculture, Land Reform and Rural Development, Republic of South Africa; 2021 [cited 2023]. Available from: http://webapps1.daff.gov.za/AmisAdmin/upload/Ostrich%20Market%20Value%20Chain%20Profile%202021.pdf
- 6. The South African ostrich value chain; opportunities for black participation and development of a programme to link farmers and markets. [Internet]. Pretoria: National Agricultural Marketing Council; 2010 [cited 2023]. Available from: https://www.namc.co.za/wp-content/uploads/2017/09/Ostrich-Value-Chain-Report.pdf
- 7. What are some of the animal welfare issues with feedlots for cattle?. [Internet]. Canberra: RSPCA Australia; 2020 [cited 2023]. Available from: https://kb.rspca.org.au/knowledge-base/what-are-the-animal-welfare-issues-with-feedlots-for-cattle/

- 8. Total ethics fashion. [Internet]. Melbourne: Collective Fashion Justice; c2023 [cited 2023]. Available from: http://collectivefashionjustice.org/total-ethics-fashion
- 9. Ritchie H. If the world adopted a plant-based diet we would reduce global agricultural land use from 4 to 1 billion hectares. [Internet]. Oxford: Our World in Data; 2021 [cited 2023]. Available from: https://ourworldindata.org/land-use-diets
- 10. Ramedani Z, Alimohammadian L, et al. Comparing energy state and environmental impacts in ostrich and chicken production systems. Environmental Science and Pollution Research. 2019. https://doi.org/10.1007/s11356-019-05972-8
- 11. Water. [Internet]. Melbourne: Collective Fashion Justice; c2023 [cited 2023]. Available from: http:// collectivefashionjustice.org/ water
- 12. The legacy of the Klein Karoo ostrich. [Internet]. Oudtshoorn: Klein Karoo; 2020 [cited 2023]. Available from: https://capekarooleather.com/wp-content/uploads/2020/05/legacy-of-the-Klein-Karoo-Ostrich-English.pdf

- 13. Import of treated feathers, parts of feathers and down. [Internet]. Addlestone: Animal and Plant Health Agency; 2023 [cited 2023]. Available from: http://apha.defra.gov.uk/documents/bip/iin/abp-22b.pdf
- 14. Holgate B. Microfibre pollution: are synthetics all to blame?. [Internet]. Melbourne: Collective Fashion Justice; c2023 [cited 2023]. Available from: https://www.collectivefashionjustice.org/articles/microfibre-pollution-in-fashion-are-synthetics-all-to-blame
- 15. Slaughterhouse workers.
 [Internet]. Melbourne:
 Collective Fashion Justice;
 c2023 [cited 2023].
 Available from: https://www.
 collectivefashionjustice.org/
 slaughterhouse-workers
- 16. Lebwohl M. A call to action psychological harm in slaughterhouse workers. [Internet]. Connecticut: Yale Global Health Review; 2016 [cited 2023]. Available from: https://yaleglobalhealthreview.com/2016/01/25/a-call-to-action-psychological-harm-in-slaughterhouse-workers/

OTHER DECORATIVE FEATHERS FROM FACTORY-FARMS AND THE WILDLIFE TRADE

- Peacock. [Internet]. Chicago: Britannica; 2023 [cited 2023]. Available from: https://www. britannica.com/animal/ peacock
- 2. Green peafowl. [Internet]. Gland (CH): IUCN; 2018 [cited 2023]. Available from: https://www.iucnredlist.org/species/22679440/131749282
- 3. Congo peafowl. [Internet]. Gland (CH): IUCN; 2022 [cited 2023]. Available from: https://www.iucnredlist.org/ species/22679430/ 208189646
- 4. How long do peacocks live? (peacock lifespan). [Internet]. (Unknown): Birdfact; 2022 [cited 2023]. Available from: https://birdfact.com/articles/how-long-do-peacocks-live
- 5. Rawstorne T. The cruel reality of fashion's coolest coat: were peacocks plucked alive to make Burberry's £22,000 trench?. [Internet]. London: Daily Mail; 2013 [cited 2023]. Available from: https://www.dailymail.co.uk/femail/article-2292987/Were-peacocks-plucked-alive-make-Burberrys-22-000-coat.html
- 6. Peacocks plucked alive to make Burberry's £22,000 trench?. [Internet]. New Delhi: The Hindu Times; 2013 [cited 2023]. Available from: https://www.hindustantimes.com/entertainment/peacocks-plucked-alive-to-make-burberry-s-22-000-trench/story-W2xffdPQuME47SvP6VEhZL. html

- 7. Peacock feathers seized at airport. [Internet]. Chennai: Hindu Business Line; 2018 [cited 2023]. Available from: https://www.thehindubusinessline.com/news/national/peacockfeathers-seized-at-airport/article7130852.ece
- 8. Mendiratta U, Yashwant Pawar P. The tail of the peacock: protecting India's national bird from illegal poaching and trade. [Internet]. Oxford: The Oxford Martin Programme on Wildife Trade; 2018 [cited 2023]. Available from: https://www.illegalwildlifetrade.net/2018/11/22/the-tail-of-the-peacock-protecting-indiasnational-bird-from-illegal-poaching-and-trade/
- 9. Chauhan C. Govt to ban trade of peacock feathers. [Internet]. New Delhi: The Hindu Times; 2013 [cited 2023]. Available from: https://www.hindustantimes.com/delhi/govt-to-ban-trade-of-peacock-feathers/story-m6z5XxUNKEcrwiky18fxbN. html
- 10. Standaert M. Coronavirus closures reveal vast scale of China's secretive wildlife farm industry. [Internet]. London: Guardian; 2020 [cited 2023]. Available from: https://www.theguardian.com/environment/2020/feb/25/coronavirus-closures-reveal-vast-scale-of-chinas-secretive-wildlife-farm-industry

- 11. Williams S. Peacocks are wrapped in plastic bags by their breeders to prevent their feathers from falling in transportation. [Internet]. London: Daily Mail; 2017 [cited 2023]. Available from: https://www.dailymail.co.uk/news/article-4409492/Blue-peacocks-covered-bags-breeders.html
- 12. Lokesh V. Experts want a total ban on peacock feather sales. [Internet]. Mumbai: Times of India; 2020 [cited 2023]. Available from: https://timesofindia.indiatimes.com/life-style/spotlight/experts-want-total-ban-on-peacock-feather-sale/articleshow/74512253.cms
- 13. The wildlife (protection) act, 1972. [Internet]. New Delhi: Government of India; 1972 [cited 2023]. Available from: http://www.indiaenvironmentportal.org.in/files/file/wildlife%20 protection%20amendment%20 act%202022.pdf
- 14. Bhalla G. National bird in danger? 21 Lakh peacock feathers were being smuggled to China, CBI to probe.
 [Internet]. Mumbai: India Times; 2021 [cite 2023].
 Available from: https://www.indiatimes.com/news/india/national-bird-in-danger-21-lakh-peacock-feathers-were-being-smuggled-to-china-cbi-to-probe-537485.html

OTHER DECORATIVE FEATHERS FROM FACTORY-FARMS AND THE WILDLIFE TRADE

- 15. Peacocks. [Internet]. Pune (IN):
 Beauty Without Cruelty; 2023
 [cited 2023]. Available from:
 http://www.bwcindia.org/
 web/awareness/learnabout/
 Peacocks.html
- 16. The ring necked pheasant. [Internet]. Des Moines (US): lowa Department of Natural Resources; (date unknown) [cited 2023]. Available from: https://www.iowadnr. gov/portals/idnr/uploads/ Hunting/history_pheasant.pdf
- 17. Castillo E. A guide to wild pheasant hunting in North America. [Internet]. New Hampshire (US): Project Upland Magazine; 2020 [cited 2023]. Available from: https://projectupland.com/pheasant-hunting/a-basic-guide-to-pheasant-hunting/
- 18. Blunden M. Exposed: the appalling conditions in factory farms breeding game birds for the table. [Internet]. London: The Evening Standard; 2016 [cited 2023]. Available from: https://www.standard.co.uk/news/uk/exposed-the-appalling-conditions-in-factory-farms-breeding-game-birds-forthe-table-a3382666.html
- 19. Turkey welfare. [Internet].
 Horsham (UK): RSPCA; c2023
 [cited 2023]. Available from:
 https://www.rspca.org.uk/
 adviceandwelfare/farm/
 turkeys

- 20. Marabou. [Internet]. (Unknown location): The Vintage Fashion Guild; 2010 [cited 2023]. Available from: https://vintagefashionguild.org/furresource/maribou/
- 21. Ending factory farming.
 [Internet]. Surrey (UK):
 Compassion in World
 Farming; c2023 [cited 2023].
 Available from: https://www.
 ciwf.org.uk/factory-farming/
- 22. Harmful effects of ammonia on birds. [Internet]. West Lafayette (US): Poultry World; 2010 [cited 2023]. Available from: https://www.poultryworld. net/poultry/harmful-effects-of-ammonia-on-birds/
- 23. Jacob J. Toe trimming of turkeys. [Internet]. Washington: USDA and Extension Foundation; c2023 [cited 2023]. Available from: https://poultry.extension.org/articles/poultry-behavior/toe-trimming-of-turkeys/
- 24. Hatchery. [Internet].

 Melbourne: Farm Transparency
 Project; 2020 [cited 2023].

 Available from: https://www.
 farmtransparency.org/kb/
 food/turkeys/hatchery
- 25. Kalantzis D. Turkey lifespan: how long do turkeys live before slaughter. [Internet]. San Francisco: Sentient Media; 2022 [cited 2023]. Available from: https://sentientmedia. org/how-long-do-turkeys-live/

- 26. SS23 couture. [Internet]. London: Robert Wun; 2023 [cited 2023]. Available from: https://www.robertwun.com/ copy-of-ss23
- 27. Western parotia. [Internet]. (Ithica) (US): eBird; c2023 [cited 2023]. Available from: https://ebird.org/species/wespar]
- 28. Heimbuch J. 15 birds with spectacularly fancy tail feathers. [Internet]. New York: Treehugger; 2022 [cited 2023]. Available from: https://www.treehugger.com/birds-spectacularly-fancy-tail-feathers-4864218
- 29. Stripped coque tail feathers, 10 grams, black. [Internet]. (Australia): Feather; c2023 [cited 2023]. Available from: https://feather.com.au/collections/coque-tails-stripped/products/black-stripped-coque-tails-pack-of-10
- 30. Gloves made of cat fur sold at Melbourne's Queen Victoria Market. [Internet]. Melbourne: The Guardian; 2022 [cited 2023]. Available from: https://www.theguardian.com/australia-news/2022/may/20/cat-fur-found-ingloves-sold-at-melbournes-queen-victoria-market

- 31. Booker C. Luxury Australian brand found selling fur from often-tortured raccoon dogs. [Internet]. Melbourne: The Age; 2021 [cited 2023]. Available from: https://www.theage.com.au/national/victoria/luxury-australian-brand-found-selling-fur-from-often-tortured-raccoon-dogs-20210506-p57pj3.html
- 32. Fake faux fur scandal:
 mislabelling of fur clothing and
 accessories in the UK. [Internet].
 London: Humane Society
 International United Kingdom;
 c2023 [cited 2023]. Available
 from: https://www.hsi.org/
 news-resources/mis-labelledfur-uk/#:~:text=Through%20
 extensive%20research%2C%20
 HSI%20UK,labelled%20or%20
 marketed%20as%20synthetic.
- 33. Nuwer R. Luxury fashion brands had thousands of exotic leather goods seized by U.S. law enforcements. [Internet]. Washington: National Geographic; 2020 [cited 2023]. Available from: https://www.nationalgeographic.com/animals/article/luxury-fashion-wildlife-imports-seized

- 34. Sidell M. Designer Nancy Gonzalez charged with smuggling, conspiracy by U.S. Dept. of Justice. [Internet]. New York: WWD; 2022 [cited 2023]. Available from: https:// wwd.com/accessories-news/ handbags/designer-nancygonzalez-charged-withsmuggling-conspiracy-by-u-sdept-of-justice-1235255077/
- 35. Hakansson E. [Internet].

 Melbourne: Collective Fashion
 Justice; 2021 [cited 2023].

 Available from: https://www.
 collectivefashionjustice.org/
 articles/fashion-industry-tiedto-significant-wildlife-slaughterin-new-analysis



- 1. The IUCN Red List: identifying the birds that most need our help. [Internet]. Cambridge: Birdlife International; c2023 [cited 2023]. Available from: https://www.birdlife.org/projects/iucn-red-list/
- 2. New study reveals that climate change will severely impact bird species by 2080. [Internet]. Durham: Durham University; 2022 [cited 2023] Available from: https://phys.org/news/2022-08-reveals-climate-severely-impact-bird. html
- 3. Nijman V, Langgeng A, Birot H, Imron, et al. Wildlife trade, captive breeding and the imminent extinction of a songbird. Global Ecology and Conservation. 15. 2018. https://doi.org/10.1016/j.gecco.2023.e02452
- 4. Reyers B, O'Farrell P, Cowling R, et al. Ecosystem services, land-cover change, and stakeholders: finding a sustainable foothold for a semiarid biodiversity hotspot. Ecology and Society. 14. 2009. https://www.jstor.org/stable/26268036
- 5. Herling M, Cupido F, O'Farrell J, et al. The financial costs of ecologically nonsustainable farming practices in a semiarid system. Restoration Ecology. 17. 2009. https://doi.org/10.1111/j.1526-100X.2008.00419.x

- 6. Wheeler A, Knight T, Difford M, et al. Ostrich farmer characteristics predict conservation opportunity. South African Journal of Science. 115. 2019. http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0038-23532019000200019
- 7. Turner D. Comments concerning ostrich struthio camelus populations in Kenya. Scopus. Journal of East African Ornithology. 30. 2010. oai:biodiversitylibrary. org:part/146502
- 8. Green J, Jakins C, Asfaw E, et al. African lions and zoonotic diseases: implications for commercial lion farms in South Africa. Animals. 10. 2020. https://doi.org/10.3390/ani10091692
- 9. Kimman T, Hoek M, de Jong M. Assessing and controlling health risks from animal husbandry. Wageningen Journal of Life Sciences. 66. 2013. https://doi.org/10.1016/j.njas.2013.05.003
- 10. Avian influenza. [Internet].
 Paris: World Organisation for
 Animal Health; c2023 [cited
 2023]. Available from: https://
 www.woah.org/en/disease/
 avian-influenza/

- 11. Marimwe M, Fosgate G, Roberts L, et al. The spatiotemporal epidemiology of high pathogenicity avian influenza outbreaks in key ostrich producing areas of South Africa.

 Preventative Veterinary Medicine. 196. 2021.

 https://doi.org/10.1016/j.
 prevetmed.2021.105474
- 12. A profile of the South African ostrich market value chain. [Internet]. Pretoria: Department of Agriculture, Land Reform and Rural Development, Republic of South Africa; 2021 [cited 2023]. Available from: http://webapps1.daff.gov.za/AmisAdmin/upload/Ostrich%20Market%20Value%20Chain%20Profile%202021.pdf
- 13. Capua I, Mutinelli F, Bozza M, et al. Highly pathogenic avian influenza (H7N1) in ostriches (Struthio camelus). Avian Pathology. 2010. https://doi.org/10.1080/03079450020016913
- 14. Van Helden L, Sinclair M, Koen P, et al. Description of an outbreak of highly pathogenic avian influenza in domestic ostriches (Struthio camelus) in South Africa in 2011. Preventative Veterinary Medicine. 128. 2016. https://doi.org/10.1016/j. prevetmed.2016.03.019

- 15. Moore C, Cumming G, Slingsby J, et al. Tracking socioeconomic vulnerability using network analysis: insights from an avian influenza outbreak in an ostrich production network. PloS One. 1. 2014. https://doi.org/10.1371/journal.pone.0086973
- 16. Siddique F, Abbas R, Mahmood M, et al. Eco-epidemiology and pathogenesis of Newcastle disease in ostriches (Struthio camelus). World's Poultry Science. 76. 2020. https://doi. org/10.1080/00439339.20 20.1746220
- 17. Abolnik C. History of Newcastle disease in South Africa. Ondersterpoort Journal of Veterinary Research. 84. 2017. https://journals.co.za/ doi/abs/10.4102/ojvr. v84i1.1306

- 18. Mostafavi E, Chinikar S, Moradi M, et al. A case report of crimean congo hemorrhagic fever in ostriches in Iran. The Open Virology. 7. 2013. https://doi.org/10.2174 %2F1874357901307010081
- 19. Karesh W, D'Phil A, Lloyd-Smith J, et al. Ecology of zoonoses: natural and unnatural histories. The Lancet. 380. 2012. https:// doi.org/10.1016/S0140-6736(12)61678-X





FEATHERS ARE THE NEW FUR

INNOVATING BEYOND FEATHERS IN FASHION

- 1. Ehrman E. Fashioned from nature. London: V&A Publishing; 2018.
- 2. Chrisman-Campbell K. Fowl intentions: fashion, activism, conservation. San Marcos; Ornament Magazine; 2018.
- 3. Wierzba L. Interview with Iris van Herpen. [Internet]. London: Victoria and Albert Museum; 2015 [cited 2023]. Available from: https://www.vam.ac.uk/blog/projects/interview-with-iris-van-herpen
- 4. Dutch profiles. Dutch profiles: Iris van Herpen. 2013 [cited 2023]. Available from: https://www.youtube.com/watch?v=9vZktNvlCal

- 5. Manus x Machina: fashion in the age of technology. [Internet]. New York: MET Museum; 2015 [cited 2023]. Available from: https://www.metmuseum.org/press/exhibitions/2015/manus-x-machina
- 6. Lucy Tammam interview (personal communication, March 18, 2023).
- Nadia Albertini interview (personal communication, March 18, 2023).
- 8. Joshua James Small interview (personal communication, March 18, 2023).
- 9. Fur alternatives. [Internet].
 Melbourne: Collective Fashion
 Justice; c2023 [cited 2023].
 Available from: https://www.
 collectivefashionjustice.org/
 fur-alternatives

- 10. Sanchez Chelsey. Tracee Ellis Ross is a tangerine dream in an artful raffia knit dress. [internet]. New York: Harper's Bazaar; 2022 [cited 2023]. Available from: https://www.harpersbazaar.com/celebrity/latest/a40473783/tracee-ellis-ross-aje-raffia-knit-dress/
- 11. 2021 state of the industry report: next-gen materials. (Internet). San Francisco: Material Innovation Initiative; 2022 [cited 2023]. Available from: https://materialinnovation.org/reports/state-of-the-industry-report-next-gen-materials/

FEATHERS ARE THE NEW FUR

FEATHER-FREE POLICIES

- Import of treated feathers, parts of feathers and down. [Internet]. Addlestone: Animal and Plant Health Agency; 2023 [cited 2023]. Available from: http://apha.defra.gov.uk/ documents/bip/iin/abp-22b. pdf
- 2. Digital product passport.
 [Internet]. Brussels: European
 Commission; 2023 [cited
 2023]. Available from: https://
 hadea.ec.europa.eu/callsproposals/digital-productpassport_en
- 3. FAQ. [Internet]. Geneva: CITES; c2023 [cited 2023]. Available from: https://cites.org/eng/resources/faq.php
- 4. Victory: Bardot plucks feathers from its collection!. [Internet]. Sydney: PETA Australia; 2019 [cited 2023]. Available from: https://www.peta.org.au/news/bardot-ostrich-feathers/
- 5. ASOS animal derived material policy. [Internet]. London: ASOS; (2019) [cited 2023]. Available from: https://asos-12954-s3.s3.eu-west-2.amazonaws.com/files/3816/7360/6496/ASOS_Animal_Derived_Material_Policy_V10_.pdf

- Feathers and down. [Internet]. London: Selfridges; 2022 [cited 2023]. Available from: https://images.selfridges.com/ is/content/selfridges/UPDATE_ MAY_FEATHERS_DOWNpdf
- 7. Richford R. Sandro, Maje go down- and feather-free. [Internet]. New York: WWD; 2023 [cited 2023]. Available from: https://wwd.com/ fashion-news/fashion-scoops/ sandro-maje-claudie-pierlotfursac-go-down-featherfree-1235458894/
- 8. Creatives4Change. [Internet].
 New York: Creatives4Change;
 c2023 [cited 2023].
 Available from: https://www.
 creatives4change.net
- Our commitments. [Internet]. London: Stella McCartney; c2023 [cited 2023]. Available from: https://www. stellamccartney.com/us/en/ sustainability/our-commitments. html
- 10. Hakansson E. Cruelty is out of fashion: an overview of the fashion industry's policies on wild animal products. [Internet]. Melbourne: Collective Fashion Justice; 2022 [cited 2023]. Available from: https://www. collectivefashionjustice.org/ fashion-wild-animal-exploitation

- 11. David Koma, fall 2023 ready-to-wear. [Internet]. New York: Vogue; 2023 [cited 2023]. Available from: https://www.vogue.com/fashion-shows/fall-2023-ready-to-wear/david-koma
- 12. Dilara Findikoğlu RTW fall 2023. [Internet]. New York: WWD; 2023 [cited 2023]. Available from: https://wwd. com/runway/fall-2023/ london/dilara-findikoglu/ review/
- 13. Donnell C. LFW closes with melancholic Richard Quinnn collection dedicated to Queen. [Internet]. London: Guardian; 2022 [cited 2023]. Available from: https://www.theguardian.com/fashion/2022/sep/20/lfw-closes-with-melancholic-richard-quinn-collection-dedicated-to-queen

55

CONCLUSION AND RECOMMENDATIONS

- Cowie H L. Victims of fashion (chapter 2: Murderous millinery). Cambridge: Cambridge University Press; 2021.
- 2. Hakansson E. Total ethics fashion. Melbourne: Hardie Grant Media. 2023.
- 3. One health. [Internet].
 Geneva: WHO; c2023
 [cited 2023]. Available from:
 https://www.who.int/europe/
 initiatives/one-health

