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We also drew inspiration and material from two documents:

- The WAZA Short Guide How to reduce single-use plastic at your zoo or aquarium
- The BIAZA Forest Zoos Pack.

Aim of this short guide
This short guide was compiled by a sub-group of the World Association of Zoos and Aquariums (WAZA) Conservation and Environmental Sustainability Committee to help WAZA members understand and members understand and support the World Association of Zoos and Aquariums (WAZA) / Forest Stewardship Council (FSC) Memorandum of Understanding (MoU) regarding sourcing paper and wooden products. Regardless of the location of your zoo or and wooden products. Regardless of the location of your zoo or aquarium, or the size of your budget, this guide contains simple steps to help you start changing the way your organisation sources forest products.

A woman enjoys the serenity of a forest.

Photo © Parque das Aves

Front cover photo © kazuend on Unsplash

Background

Each institution relies on the use of wood products for construction projects, food services, office supplies, veterinary care and furnishings. These days, much of it is composed of recycled fibres or boards but, at some point, all wood products started as a tree growing in a forest or a managed woodlot. As zoos and aquariums are concerned about the state of the forest habitats that are home to many of our cherished wildlife species, how do we make choices in a way that multiplies our individual impact?

The importance of forests

Forests are home to 80% of the world's remaining terrestrial biodiversity. Additionally, around 1.6 billion people rely on forests for shelter, livelihoods, water, food and fuel security, including 300 million people who live in forests, 70 million of whom are indigenous people. Forests are amazing places that connect us to an older, wilder world; places that have purpose beyond profit.

The reality is, though, our forests are under threat, primarily due to rapid and sustained conversion to agriculture, urbanisation, the systemic effects of climate change and unsustainable harvesting practices. The wholesale use of forest products, including timber and paper, that are derived from these unsustainable practices contributes directly to this threat. The sustainable use of forest products, on the other hand, provides local livelihoods, and provides an avenue for increasing scientific knowledge that can guide further ecological management decisions.

Corroboree frogs that survived the Australian wildfires.

Photo © Taronga Conservation Society

Who determines what is "sustainable"?

Many timber and paper suppliers promote that their products are from "sustainable" or "managed" sources, but it can be challenging for individuals and businesses to verify these claims. An independent, international certification system is one way of providing greater certainty that you are doing everything possible to source forest products responsibly. No system is perfect, and no system is without its critics, but WAZA is confident that its MoU with the Forest Stewardship Council (FSC) provides a way forward for WAZA members on an internationally audited basis.

Conservation is a ripple effect. Imagine the immediate and positive impact that 7 billion humans could have if we made the simple switch to sustainable consumerism. One way to help us conserve wild chimpanzees, gorillas and their forest homes is to only buy products with the FSC label.

Lester E. Fisher Center for the Study and Conservation of Apes Research Fellow, David Morgan, Ph.D.





2. The initials

FSC®

4. 'Forests For All Forever' – full mark



5. 'Forests For All Forever' - logo with text



3. The name

Forest Stewardship Council®

Forest Stewardship Council (FSC)

You will hear a lot about FSC in this guide. The Forest Stewardship Council (FSC) is an international, non-governmental organisation dedicated to promoting responsible management of the world's forests. The FSC certification scheme sets the highest standards for forest management. Products made with FSC-certified wood and/or paper can be purchased from FSC-certified companies or identified by FSC labels.

FSC has developed a system of forest certification and product labelling that enables people to easily identify responsibly sourced wood, paper and other forest products. The World Wildlife Fund (WWF) recognises them as the "hallmark of responsible forest management."

An FSC label on a wood or wood-based product assures that it is made with, or contains, wood that comes from FSC-certified forests or recycled sources, and that its chain of custody can be traced. Some non-timber forest products such as bamboo, latex and cork also contain FSC labels. You will see five registered trademarks on wood and other forest products around the world.

many ways, the FSC could be considered as similar to the Roundtable on Sustainable Palm Oil (RSPO).

positive actions.

The role of zoos and aquariums

Zoos and aquariums have a critical role to play in the conservation of biodiversity and wildlife, both in the field and in their own facilities. They also strive to engage people on the need to protect the ecosystems upon which wildlife depends. With this in mind, the zoo and aquarium community should actively champion the appropriate use of sustainably sourced paper and wood products. We should also aim to raise awareness of how the daily decisions of every individual, including our staff, visitors and suppliers, can have a direct impact on biodiversity and to work towards converting this awareness into

FSC-certified forests must be managed to the highest

environmental and social standards. Trees that are

harvested are replanted or allowed to regenerate

naturally. The forests must be managed with due

respect for the environment, the wildlife and the

people who live and work in them. FSC is the only

forest certification scheme endorsed by the WWF. In

Zoos and aquariums are respected and trusted voices for conservation and, increasingly, for sustainability. This provides us with a unique opportunity to promote the issue of sustainably sourced paper and timber products. Our communities expect us to lead the way in the drive for sustainability. Amending our own business practices can enhance employee engagement, drive innovation, enhance community relations and offer marketing opportunities. We can lead from the front by our own practices and also encourage our visitors to change their own behaviour. Together we can make a significant difference for wildlife.

In October 2018, at the 73rd World Association of Zoos and Aquariums (WAZA) Conference, the Association signed a Memorandum of Understanding (MoU) with the Forest Stewardship Council (FSC). This included a goal

In October 2018, at the 73rd World Association of Zoos and Aquariums (WAZA) Conference, the Association signed a Memorandum of Understanding (MoU) with the Forest Stewardship Council (FSC). This included a goal that 50% of WAZA members would develop a policy by 2021 expressing a clear preference for FSC-certified products and sourcing at least 70% FSC-certified materials in their procurement of paper and wooden products.



The WAZA/FSC MoU has four key goals:

- Joint communications in at least 25 countries communicating the benefits of FSC certification for nature conservation and the protection of endangered species (this goal will be implemented over time to eventually reach 25 countries).
- At least 50% of WAZA members have a policy expressing a clear preference for FSC in their procurement of paper and wooden products.
- At least 50% of WAZA members are sourcing at least 70% FSC-certified materials in their procurement of paper and wooden products by 2023.
- FSC will increase the global area of FSC-certified forests by 50% by 2023.

Implementing an institutional policy for responsibly sourced forest products

Developing an institutional policy on responsibly sourced forest products provides direction and clarity to staff. Such a policy helps to identify tasks, roles and processes associated with an improvement in sustainably sourced paper and wooden products.

By aligning your policy with FSC-certified products, zoos and aquariums can "walk the talk" — that they use products that have been produced with less impact on wildlife and the habitats and communities that surround them. By buying certified products, zoos and aquariums can ensure that the upstream processes in their value chain have already been mapped.

The purchasing power of zoos and aquariums worldwide is significant, and by working together, we can positively influence suppliers of goods and services to adopt sustainable products.

A timber/paper procurement policy is a good way to ensure everyone in your organisation knows what timber/paper is acceptable to use. FSC Certification is available on wood, paper and other forest products such as cork, bamboo and natural latex. Your policy could go as far as naming specific products. We have provided a simple template of an internal policy for responsibly sourced forest products. We encourage each WAZA member to adapt this policy in a way that is relevant and effective within your local, regional or national policies.

Sumatran rhinos once inhabited the forests of Bhutan, Bangladesh, India, Myanmar, Laos, Malaysia, Thailand and China. The International Rhino Foundation estimates that currently less than 80 Sumatran rhinos are left in the wild, which survive in small and fragmented populations. They are now only found in protected areas where they are physically guarded by rhino protection units in the islands of Sumatra and Borneo. Though poaching was responsible for the steady decline of their population, isolation due to forest fragmentation for road-construction and unsustainable palm oil production is now the main threat to this critically endangered species of rhinoceros.

Photo © Barney Long





Responsible sourcing of timber products in Wildlife Reserves Singapore

Wildlife Reserves Singapore | Singapore

Wildlife Reserves Singapore (WRS) embraces sustainable best practices as one of our core values. We are committed to ensuring that timber products used in our operations are sustainably sourced, wherever possible. Since 2013, we have been using FSC-certified paper across our four wildlife parks including for our park maps, office paper, outreach materials and retail products. We also encourage guests to make responsible consumer choices that help protect animal habitats, like choosing FSC-labelled products.

WRS is committed to ensuring all our consumable timber products are sustainably sourced by 2021. We also favour procuring sustainable nonconsumable timber products, such as furniture and building materials, with a commitment to achieve 100% compliance by 2025. Aside from FSC-certified products, we include considerations that fit the local context for non-consumables, such as procuring locally harvested wood or materials certified under the Singapore Green Building Product Certification Scheme.

In 2019, WRS also implemented a Green Procurement Policy which lists FSC-certified and recycled products as mandatory requirements for relevant tenders.





Calgary Zoo recognised for enduring commitment to forest conservation

Calgary Zoo | Canada

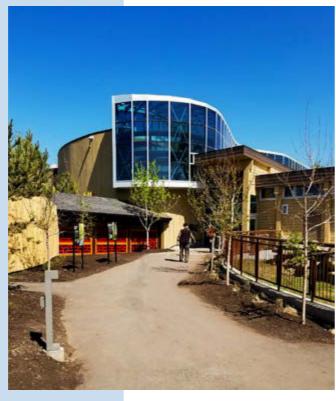
In 2019, the Calgary Zoo was the proud recipient of the Forest Stewardship Council's FSC Leadership Award (Design & Build) for Panda Passage. The FSC Leadership Awards celebrate people, companies and buildings for their commitment to responsible sourcing and forest management.

The Design & Build category recognises excellence and innovation in the use of FSC-certified building materials in residential and commercial design and construction to create a space that promotes environmentally appropriate, socially beneficial and economically prosperous management of the world's forests. Among other qualifications, the winning project must have utilised at least 50% FSC-certified materials.

Construction on the CA\$14.4 million Panda Passage began in 2016, with the support of the Province of Alberta and The City of Calgary and was completed in May of 2018. The habitat features 431m² of two indoor lush habitats and 1,512m² of outdoor habitat. Panda Passage is made with non-toxic materials, FSC-certified wood and repurposed materials. Panda Passage has even received Petal Certification, making it the most advanced habitat in the world, and the first project to receive the designation in Alberta.

As environmental stewards of sustainability, the Calgary Zoo set out to use our resources in the most efficient way possible while inspiring others by living our conservation philosophy through all that we do. Panda Passage is part of the Calgary Zoo's continued commitment to conservation – through cutting-edge habitat design and construction, we ensure our spaces give back more than they take.







Top, middle and bottom: Calgary Zoo's Panda Passage is made with FSC-certified wood and repurposed materials.

Photos © Calgary Zoo

A policy template for your organisation

Responsibly Sourced Forest Products Policy (add your organisation's name and logo)

Purpose

Include a paragraph providing evidence of the impact of non-responsibly sourced forest products.

A standard paragraph could include "Forests are home to 80% of the world's terrestrial biodiversity. The reality, though, is that our forests and the many species of fauna and flora that they support are under threat. This is due primarily to conversion to agriculture and unsustainable logging. Purchasing unsustainable forest products, including timber and paper can contribute to this threat.

(Organisation name) is committed to the responsible sourcing of forest products."

We suggest you clearly link to your organisation's mission or purpose regarding biodiversity and conservation.

This policy supports the WAZA goals as below:

- At least 50% of WAZA members to have a policy expressing a clear preference for FSC in their procurement of paper and wooden products.
- At least 50% of WAZA members are sourcing at least 70% FSC-certified materials in their procurement of paper and wooden products by 2023.

The purpose of this policy is to:

- Provide guidance to allow consistency over the use of forest products at (*organisation*).
- Demonstrate accountability and best practice.
- Provide guidance on sustainably sourced forest products through procurement practices.
- Ensure consistent messaging to staff and visitors.

Objectives

Clearly state your objectives and how this policy supports the implementation and progress of other strategies for your organisation. As some examples, this may support other policies in your organisation like a Conservation Policy, Environmental Management Plan, Sustainable Procurement Policies, Green Team activities, etc.

Responsibility

Outline who oversees the policy, who needs to comply with it (i.e. how broad is the scope) and which staff one should go to with any queries.

Scope

It is important to clearly outline the scope of this policy as it affects operations. This is important, as some organisations do not have control over the whole site or all operations on the site. Explain where you have direct control and where you hope to influence.

Compliance

Clearly state who must comply with the policy. This could include staff, volunteers, suppliers and contractors. Will sub-contractors be included? Will external contract terms be adjusted? How will compliance be monitored?



Aye-ayes are an endangered species that live in the rainforests of Madagascar. Some locals kill them as they believe that encountering this species will bring bad luck. However, the biggest threat to current aye-aye populations is habitat loss caused by deforestation and human population growth.

Photo © Bristol Zoological Gardens





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Definitions

We suggest adding a Definitions section to your policy to give clarity about the definitions for keywords or phrases used. The section below provides some examples that could be included, but you may also want to adjust for your own context.

Responsibly sourced forest products:

FSC forest management certification confirms that the forest is being managed in a way that preserves biological diversity and benefits the lives of local people and workers, while ensuring it sustains economic viability. There are ten principles that any forest operation must adhere to in order to achieve FSC forest management certification.

FSC-certified timber:

Timber may or may not carry the FSC trademark. Proof should be available via the invoice from the supplier that should clearly show an FSC certificate code. Only FSC-certified organisations can make FSC claims on their invoices.

FSC-certified paper:

FSC-certified paper should have the FSC label on the product, but if not, there can be reassurance by sourcing from an FSC-certified supplier.

Controlled wood:

Controlled wood is material from acceptable sources that can be mixed with FSC-certified material in products that carry the FSC Mix label. There are some detailed unacceptable wood sources that cannot be mixed with FSC-certified material.

Add any **other terms** that are specific to your region and/or organisation.

Ring-tailed lemurs live in the dry forests of southwestern Madagascar. According to Conservation International, the wild ring-tailed lemur population has plummeted 95% since 2000.

Photo © Ramat-Gan Safari Park





Policy focus

It is essential for clarity to outline any rules and exemptions clearly. Make it clear what products can and cannot be used. A good starting point in developing your own policy is to conduct an audit of all forest-sourced products (see later template for a simple audit). This can help to determine what products are currently used, how much, where it is used, identify alternatives and then to develop an action plan to change future purchases.

A draft of a commitment is below which can be adapted as required:

- To help protect the world's terrestrial biodiversity, we need to protect the world's forests. (*Insert your organisation's name*) have committed to a policy position that we have a clear preference for FSC in our procurement of paper and wooden products.
- One prime area of focus will be on all of our paper products including leaflets and maps (as this also provides an excellent opportunity to demonstrate responsible sourcing practices and raise awareness of the FSC logo).
- Our aim is that we will be sourcing at least 70% FSCcertified materials in our procurement of paper and wooden products by 2023.
- We will work with all of our suppliers, partners and contractors to help us achieve this position.



Since its inception in 1994, FSC certification has expanded rapidly, and in 2019 the organisation reported over 199 million hectares of forests around the world have been certified. Globally, FSC is widely acclaimed, and WAZA believes it is the best certification programme currently in use. However, it should be recognised, as with the Roundtable on Sustainable Palm Oil (RSPO) there can be abuses of the system, as highlighted with Houston Zoo's case study. It is therefore important to carefully consider wider elements when making sustainable choices.

Houston Zoo changes wood and paper practices to save wildlife

Houston Zoo | United States

The Houston Zoo strives to strengthen our wildlifesaving mission in everything we do. We work both internally and with conservation partners to examine Zoo operations and evolve practices that will reduce threats to wildlife.

The Houston Zoo's conservation partners frequently visit the Zoo to connect with the staff and assist us with our wildlife-saving mission and growth. In 2017, our partners from Brazil were visiting the Zoo and inquired about a stack of Forest Stewardship Council (FSC) certified Ipe (Handroanthus spp.) lumber in the Zoo's service area. Ipe is a Brazilian hardwood, very slow growing, and very disruptive to habitat to harvest. It is a very attractive building product, strong and beautiful, and has a long design life with high durability. The Zoo thought using FSC-certified Ipe mitigated the concerns around environmental impacts. Theoretically, this means we are getting responsibly and sustainably managed lumber, but our Pantanal conservation partners helped us better understand that the chain of custody with this species is not always clear and there is a high risk of fraud in FSC-certified Ipe.



Above and right: An example of the responsibly sourced wood used in Houston's Zoo Pantanal exhibit.

Photos © Houston Zoo

Case Study



Pantanal conservation partner, Dr Arnaud Desbiez and Houston Zoo CEO, Lee Ehmke discussing the plans for the new Pantanal exhibit.

We took the new knowledge we gained from our conservation partners and worked with our exhibit designers to identify alternatives to lpe that would be attractive and durable without the same degree of environmental impact. This process led us to the Thermory Ash product we used on the pedestrian bridge in our new Pantanal exhibit. It is especially a great story since we are representing a Brazilian habitat and avoiding negative impacts to the forests of Brazil all in the same process. The Houston Zoo's Pantanal exhibit is the result of an incredible collaboration with our Pantanal conservation partners. Their thoughts and contributions throughout the design and building process were vital in the creation of this exciting new wildlifesaving exhibit.

In 2016, we began auditing our paper usage zoo-wide to determine how we could adopt more sustainable practices. In this study, we discovered that at best we used paper made of only 10% post-consumer waste/recycled content. Most stock used had no recycled content whatsoever. And at roughly 23,000 lbs of paper usage annually, we knew we had to do better! As a result, the Houston zoo revised zoo-wide paper usage for all operating procedures. We worked with distributors to source papers with 100% post-consumer waste/recycled content, which became our standard. Implementing this simple change in paper content has helped the Houston Zoo save over 4,000 full-grown trees, to date.

Check Houston Zoo's Paper purchasing guide here.



FSC-certified wood and wood products at Zoo Zürich

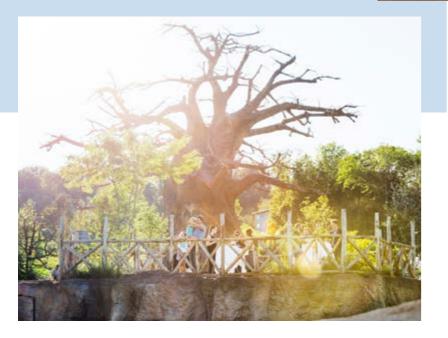
Zoo Zürich | Switzerland

Zoo Zürich promotes the use of sustainably sourced wood and wood products on four levels:

- The Zoo's central wood chip heating plant uses sustainably sourced FSC-certified wood chips from Switzerland; most of them come from the forests of the City of Zürich directly around the Zoo.
- 2. All corporate publishing products (e.g. annual report, brochures, flyers, etc.) are produced by an FSC-certified print shop on FSC-certified paper. The stationery paper products in the Zoo's administration (e.g. printing paper, letters, envelopes, etc.) are FSC-certified as well.
- 3. In construction, Zoo Zürich follows the ecological guidelines of the Canton of Zürich and uses FSC-certified wood, preferably from Switzerland or Europe, in order to avoid grey energy.
- 4. Zoo Zürich strives to educate its guests about the importance of using sustainably sourced wood and wood products and to motivate them to choose such products themselves.







Top: The 'Zoonews' is printed on FSC-certified paper, as are all of Zoo Zurich's corporate publishing products.

Above: The exhibit in Zoo Zurich's Great Ape house addresses the issue of deforestation.

Left: All wood used in the newly opened Lewa Savanna is FSC-certified. A big portion of the wood comes from Switzerland.

Photos © Zoo Zürich

Main forest-sourced products at zoos and aquariums

A first principle should be reducing the need for procurement by adopting best practice, reducing and re-using wherever possible. However, there are times when you do need to purchase, and smart purchases can make a difference. By displaying and promoting sustainable procurement decisions, we are then able to communicate this to our wider audiences to spread the influence and impact.

There is a range of forest-sourced products that we all use regularly. The list below is designed as a starting point, but not as an exclusive list. It may however provide an initial focus for an audit for your organisation.

Paper products:

- Letterhead paper for correspondence
- Copier paper for all office photocopying
- Tissues, hand wipes and toilet paper
- · Finance needs invoices, audit material
- Maps given to visitors
- Membership brochures
- Pamphlets advertising behind the scenes, bequests, experiences
- Retail (wrapping/bags)
- Catering (menus, napkins, wrapping)
- Events (menus, handouts, promotional leaflets, wristbands)

Timber products:

- Fencing and boardwalks
- Construction timber
- Bamboo products
- Timber veneerFurniture
- Cork products

Responsibly sourced forest products audit

A simple table can be prepared to help guide an action plan. There is no need to make this complicated – every action is making a positive difference and it is better to start with a single action, than spend too long developing a plan!

It would be useful to add details of how this audit will be conducted for your organisation.

- Will each work area be asked to conduct and send through to a central source?
- Or will one person coordinate?

Our recommendation is not to spend too much time getting "lost" in the data. Making a start is the key.

What is important is to develop a view of where timber sourced products are being used, whether they are sustainable, and to develop an action plan to improve. Exact quantities are not as important as making positive changes.

What is used	Where is it used	How much is used	Plan to phase out or introduce alternatives

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Communication

Communicating your commitment to purchasing and using responsibly sourced forest products is critical. It is critical that when embarking on (or continuing) this journey that you communicate with your staff – gaining their understanding, support and commitment is essential for the success of this initiative. Show your personal enthusiasm, make it real and tangible by giving personal examples - we want staff and volunteers to be keen supporters who can then help communicate the message to the public. Allow plenty of opportunity for staff to ask questions and engage fully. The support of your Board, Council or Government would also be valuable and so there should be a planned communication approach for them, providing information and reasons for supporting the change.

This guide cannot do this for you — you know your Board, your community and your people. Think about what is important to them and frame your communications with that in mind. Anticipate areas of concern and questions (see later section on common questions and barriers) and be prepared to commit the necessary time to gain commitment.

Once the internal communication is finalised, you can commence the critical partner communication. This should include key partners, suppliers, vendors and tenants. This communication should stress why the decision has been taken, how it will impact the various stakeholders and how the process will be implemented. Timeframes are important. Remember that any step forward is an improvement.

After the communication with internal stakeholders and key partners, you will be ready to plan for the external communication with visitors, members and then the wider community. Think about simple and clear messages and how they can be incorporated into your ongoing communications. Look at signage. Think about an event that might launch this – alongside a key supplier and a local school? Try to build some excitement, and ensure you celebrate any small steps. It is important to emphasise that every purchasing decision can make a difference to forests.

Creating partnerships

The zoo and aquarium community cannot fight the sustainable forest product challenge without collaboration with like-minded organisations in the private sector, academia, education, government and general society. Each partner brings different priorities, resources and competencies. Partnerships are also critical to amplifying the impact of initiatives and increasing the level of innovation applied.

Despite being listed as near threatened in the IUCN Red List, **harpy eagles** are almost extinct in Central America, subsequent to the logging of much of the rainforest in the subcontinent.

Harpy eagle at Parque das Aves © Parque das Aves





Wellington Zoo's integrated approach to using FSC-certified products

Wellington Zoo | New Zealand

Encouraging Behaviour Change with Visitors

Wellington Zoo has a Zoo-wide conservation message to encourage visitors to look for the FSC logo when shopping for wood and paper products.

We show the FSC logo at our Animal Talks and Close Encounters to encourage ways that visitors can help.

When we are thinking about designing new visitor experiences for an animal habitat, we always include information and reinforcement for visitors to look for the FSC logo. Our recently refreshed chimpanzee habitat is one example. All new building work uses FSC or recycled materials.

We have a newly installed 'selfie wall' which asks visitors to make a pledge and help save animals in the wild, which includes buying FSC products.

We love it when our visitors report they now look for the FSC logo when they are shopping!

FSC in Retail Purchasing

When purchasing retail items that are made from paper, cardboard or wood for Wellington Zoo, before confirming any order we ask the supplier questions:

- Is the product FSC-certified?
- Can you please email us proof? (depending on the company we will check to ensure the Chain of Custody is current on the FSC website)
- Are the products manufactured from sustainable sources, if not FSC?
- Would you be open to joining FSC to enable you to print the FSC logo on future products?

Sometimes it is about doing the research yourself as the purchaser, creating your own bespoke products that you can get printed on FSC materials and/or engaging the supplier about FSC. Be true to your company's values and no longer purchase those products until the supplier can prove they are FSC or sustainably sourced.





Top: Signage at Wellington Zoo encourages visitors to consume responsibly by looking for the FSC logo. Bottom left: A Wellington Zoo staff member proudly shows off the FSC logo. Bottom right: Wellington Zoo's selfie wall encourages visitors to take a snap and make a pledge to saving animals in the wild by buying FSC products.

Photos © Wellington Zoo

How to overcome some of the reported barriers

The following are some of the common questions or reasons for not changing supply sources for paper and wooden products, and some suggested responses to these.

"Who are FSC and how were they established?

After the 1992 Earth Summit in Rio failed to produce an agreement to stop deforestation, a group of businesses, environmentalists and community leaders came together to create the Forest Stewardship Council. Through stakeholder involvement it became apparent that a standardsetting body would be required to verify the source of wood products and define sustainable forest management. After 18 months of consultation in ten different countries, the Forest Stewardship Council was established in 1993. Gathered in the first FSC General Assembly in 1993 in Toronto, Canada, the group set out to create a voluntary, market-based approach that would improve forest practices worldwide.

FSC is an international membership organisation with a governance structure based on participation, democracy, equity and transparency. It is a platform for forest owners, timber industries, social groups and environmental organisations to come together to find solutions to improve forest management practices. Today, FSC operates in more than 80 countries, wherever forests are present.

"We don't trust FSC certification – there is no evidence it actually works to save forests."

The FSC Label is an example of the use of public purchasing power to create shifts in industry and regulate the negative environmental impacts of deforestation. The FSC Label "works" by providing an incentive for responsible forestry in the marketplace. It offers manufacturers a competitive advantage and thereby increases market access to new markets and maintains access to existing ones.

Like any human-derived system where profits are at stake, there can be systemic and operational challenges and abuses. FSC Watch, as well as the FSC General Assembly which occurs every three years are part of the ongoing oversight of FSC's mission and its implementation.

"We cannot find vendors for replacement products."

Have you started by questioning your existing suppliers and looking at their supply list? Often the replacement products are there if you specifically request them. If your procurement is large enough, then you can use a tender or requests for quotes and clearly specify your requirements. You can also check with other zoos and aquariums to see what products they have used.

4 "Changing products is too expensive."

It may be worth looking at a longer-term contract or exclusive contract with one supplier. As organisations with lots of visitors, suppliers may also be happy to offer a cheaper price in return for promotion of their product. It is also really important to note that our social licence to operate is critical and so our own sustainability practices need to be able to stand up to scrutiny which will also result in longer term financial sustainability.

"We have existing contracts for our paper supplies."

Inform your supplier of your change in policy and specify the timeline you want to work towards for change. Hopefully your supplier will want to work with you through the transition. Many suppliers are realising the benefits of making the change to FSC Chain of Custody certified.

6 "Our staff or board of directors is not supportive."

Start with the Board - explain to them your role as a leader in sustainability. Use the WAZA MoU as a means of linking this with part of a global approach by responsible zoos and aquariums. Leverage your staff's emotional connection with their animals to build their support. Emphasise that at some point, all wood products started as a tree growing in a forest or a managed area. Forests are critical for biodiversity and for human livelihoods. We all have a responsibility to minimise unsustainable practices.

"There are limited options for government zoos as we have restrictions on which providers we can choose."

This can be a challenge however governments are becoming increasingly aware and even if they are not willing (or ready) to make a wholesale change to their policy, they may be interested in an exemption for your operations, or a case study project. Gaining the support of some high-profile local individuals can certainly assist. Build it into education programmes so that there is a wider community impact.

"What else can we do to move to more sustainable procurement and sustainable building initiatives as it is not just about timber products?"

This is a great question and opens up many more opportunities to consider sustainable design principles in all new developments as well as in general procurement. By following the principles within the United Nations Sustainable Development Goal 12 (Responsible procurement and production) we can all change the way we produce and consume goods and natural resources. You may consider developing a weighting matrix to guide staff in procurement decisions. Considering the full life cycle of a product includes procurement, production, consumption, maintenance and disposal.

"Our region uses its own certification system which as a public zoo we are obliged to use – how do you suggest this is managed?"

It is understood that some Governments undertake their own wood certification. This is a positive step to ensure there is consideration about the sourcing origin of the timber, however, it will not enable you to assist in meeting the WAZA/FSC target. You could suggest that the suppliers consider FSC accreditation as well – as this gives a global recognition to the certification.

Javan green magpie at Chester Zoo. Endemic to the Indonesian island of Java, the two main threats for this critically endangered species of passerine are the songbird trade and habitat loss driven by logging, mining and agricultural expansion, which favour the access of trappers to these animals.

Photo © Chester Zoo









Engaging visitors and promoting change

Zoos and aquariums have a remarkable ability to influence community behaviour change. With millions of visitors, we have a unique opportunity to promote the issue of sustainably sourced paper and timber products. Many of us run school education programmes and we know that children can be powerful advocates and leaders of change. When they return from a Zoo visit, they can ask questions about where paper and timber products are sourced from. If this leads to a school changing their purchasing decision, the ripple has started!

With exhibits and experiences based around individual animals, zoos and aquariums have the potential to engage visitors emotionally and cognitively and empower visitors to make the necessary changes in purchasing decisions. Zoos and aquariums can support (or lead) local, national or international campaigns.

Start at home

We would caution against starting any campaign asking visitors to change their buying behaviour unless you have started with an internal review process on your own purchasing and use. Visitors, the public and media are quick to spot inconsistencies.

Swift parrots' main threat is the loss of nesting and breeding habitat in the forests of Tasmania. A research study published in 2018 by the Australian National University found that 33% of Tasmanian eucalyptus forest used as breeding habitat by swift parrots was lost or disturbed between 1997 and 2016, playing a major role in the decline of this species.

Photo © Laura Moore, Royal Zoological Society of Scotland







Cross-laminated timber for lowering your carbon footprint

Oregon Zoo | United States

The Oregon Zoo first used Cross-laminated timber (CLT) on a restroom/kitchen building roof structure as part of the Elephant Lands project in 2014. Our Polar Passage and Primate Forest projects, currently under construction, utilise CLT on four roof structures.

CLT is a wood panel consisting of multiple layers of lumber stacked in alternating directions and bonded together with adhesives to form a solid panel. Structurally, this is a much stronger and more lightweight alternative to conventional wood structures. It also benefits from excellent fire and seismic performance.

It's a renewable resource, sustainably harvested and does not require the burning of fossil fuels during its production. Harvesting and manufacturing a ton of lumber produces eight times less carbon than producing a ton of concrete. The carbon savings from simply using wood instead of concrete or steel can offset decades of greenhouse emissions associated with the building's operation.





Above top: Oregon Zoo's Primate Passage CLT. Above bottom: Oregon Zoo's Polar Passage CLT. Right: FSC-certified receipt at Osnabrück Zoo.

Photos © Oregon Zoo and Osnabrück Zoo

Supplies

Sedgwick County Zoo | United States

Sedgwick County Zoo recently updated our Core Values and included Sustainability – We are good stewards of the planet and employ eco-friendly practices in our day to day operations. All supply orders are completed by one individual allowing product ordering weekly or bi-weekly, saving on shipping materials. All office products selected for purchase are to be a minimum of 30% postconsumer recycled content and when possible 100% recycled content. This includes copy paper and is currently 30% post-consumer recycled content. Printers throughout are laser jet mono colour and are replaced as a group allowing us to stock a set selection of toner cartridges. Toner cartridges are purchased as recycled products and then recycled after use for refills. Only colour high-end printers use "new" cartridges and are properly recycled through the manufacturer. A supplies "available" space is also maintained for staff to select from gently used supplies, prior to ordering new.

Sustainability concept of Osnabrück Zoo and its tenants

Osnabrück Zoo | Germany

The Osnabrück Zoo tries to use increasingly more sustainable products. For some years now, we have been using only FSC-certified recycled paper for all our copies and prints. We have also introduced the ecological, FSC-certified receipt. Wherever possible, we try to save paper in general, so we mainly work digitally; where possible also in the visitor area. In order to save plastic, we now have wooden stirrers for coffee, forks made out of wood, etc. which are also FSC-certified. Drinks are available in a refillable reusable bamboo-cup upon request. So, we try to improve step by step.



Already sustainably sourcing — what more can your zoo or aquarium do?

Well done if you are already doing a great job in sourcing responsibly sourced forest products. Here are a few ideas on how you can drive a change based on your actions:

- Do you have proof of your sustainable sourcing?
- Do your policies make it clear that you have a preference for FSC-certified materials?
- Have you documented your approach to provide ideas and encouragement for others?

- How did you overcome the barriers outlined earlier?
 Maybe you can share this with the WAZA community.
- Have you spread your good work with others to inspire broader action?
- Have you been able to influence local suppliers?
 Which suppliers have you worked with and what
 motivated them to change? Can you share positive
 supplier responses and actions with other WAZA
 members?



The forests in Congo Basin house the majority of **African great apes'** wild populations. Most of the forests outside of protected areas, overlaps with the habitat used by great apes, with only 17% living in protected areas according to Morgan and Sanz (2007).

Chimpanzees. Photo © Chester Zoo





Pushing the envelope at Taronga's two zoos

Taronga Zoo | Australia

As a result of integrating sustainability considerations into purchasing processes, in 2019-20 Taronga purchased 100% recycled paper for 95% of its office printing. The half a million Zoo maps printed last financial year were FSC Mix certified and contained post-consumer waste material.

At our cafés our straws are made from paper rather than plastic. At our Dubbo site we use 'BioStraws' which are FSC-certified.

Taronga is pushing the envelope by also including responsibly sourced forest products in its innovative new buildings. Our new Wildlife Retreat was constructed largely with timber for reduced embodied material impact and 100% of timber was either reused or sourced from a supplier endorsed by the Programme for the Endorsement of Forest Certification (PEFC).



Above and below: Signage at Taronga Zoo educates visitors about forest and ecosystem loss, and the need to help protect forests by choosing FSC labelled products.

Photos © Taronga Zoo

Taronga also inspires guests to choose FSC products by making connections with the iconic species we care for. The below signage at Taronga Zoo in Sydney educates zoo visitors on forest and ecosystem loss, and the need to help protect forests by choosing FSC labelled products.

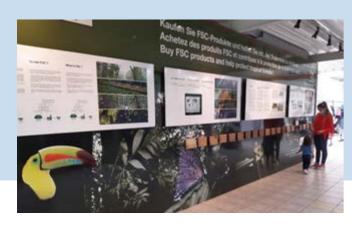


Saving forests, not only in Belize, but also on our own doorstep

Papiliorama Foundation | Switzerland

The Papiliorama Foundation has implemented the following measures to ensure responsible use and sourcing of forest products:

- Where it is not possible to avoid the use of paper, all departments are instructed to buy with preference FSC-certified paper, recycled (printing paper, printed products, hygiene products, cleaning products). We check the products periodically.
- For building purposes, we buy only FSC-certified wood.
- We buy only FSC-certified furniture.
- Most articles in the souvenir shop are FSC-certified and we are trying to gradually eliminate those that are not. We do not sell any tropical wood products in our shop.
- We regularly talk to our staff about responsible products and labels such as FSC to raise awareness.
- We currently have two exhibits about responsible forest use, one entirely about FSC.



One of the two exhibits on responsible forest use at Papiliorama Foundation, in Switzerland.

Photos © Papiliorama Foundation

Green initiative of FSC Paper

Ocean Park | Hong Kong

Ocean Park has long been advocating sustainability and we understand the importance of choosing sustainably sourced paper in our daily operations. We have adopted FSC paper in our guide map production, which is one of the major paper consumptions in a theme park. Also, FSC paper is used in the price tags on the wide range of merchandise we offer, from plush toys to T-shirts. As for the office stationery, all the printing papers and envelopes are FSC paper as well.



Additional resources

The following is a selection of global resources that may help you get started on the journey towards more responsibly sourced forest products at your zoo or aquarium.

Campaigns

British and Irish Association of Zoos and Aquariums' campaign: Together for Forests (pages 26-27)

Bristol Zoo's campaigns with FSC

Kuki's Kitchen — Read more | Video

Grill for Gorillas — Read more

Videos

FSC Wildlife (<1minute)

FSC - Forests For All Forever. Celebrating the forest products in our everyday life (2.25 minutes)

Useful links

Forest Stewardship Council's Website

What is FSC?

Why choose FSC?

FSC's campaign: The Overlooked Animals

FSC UK website

FSC Business resources

FSC Educational resources

FSC International website

FSC responsible procurement resources

FSC trademark use information

WWF UK forests information

Recycle Now

Deforestation and the degradation and fragmentation of **red panda** habitat are the main threats to red panda survival in the wild. Unsustainable harvest of timber, fuelwood and bamboo, amongst others, are depleting forest resources and reducing forest quality for this endangered species.

Photo © Wellington Zoo





Other useful resources

A study from San Diego Zoo Global found that certified logging operations can play an important role in maintaining vital habitat for jaguars and other large wildlife species

Tobler, M. W., Anleu, R. G., Carrillo-Percastegui, S. E., Santizo, G. P., Polisar, J., Hartley, A. Z., & Goldstein, I. (2018). Do responsibly managed logging concessions adequately protect jaguars and other large and medium-sized mammals? Two case studies from Guatemala and Peru. Biological conservation, 220, 245-253.

Managing Forests, Supporting Wildlife: Can biodiversity thrive in responsibly logged tropical forests? — Access the report (pdf)

How does FSC forest certification affect the acoustically active fauna in Madre de Dios, Peru? Campos-Cerqueira, M., Mena, J. L., Tejeda-Gómez, V., Aguilar-Amuchastegui, N., Gutierrez, N., & Aide, T. M. (2019). How does FSC forest certification affect the acoustically active fauna in Madre de Dios, Peru?. Remote Sensing in Ecology and Conservation.

Great Apes and FSC: Implementing 'Ape Friendly'
Practices in Central Africa's Logging Concessions
— Access the report (pdf)

Great Apes & Logging — Access the report (pdf)

FSC UK also offers printed resources available to BIAZA members from FSC UK on request, get in touch with them to find out more!



