Since its establishment in 2018, the Southeast Asian Reptile Conservation Alliance (SARCA) has been advancing a responsible and transparent reptile skin trade that maintains wild reptile populations, supports local livelihoods and national economies, and promotes animal welfare.

This report provides a status update on the developments of the Southeast Asian reptile trade. It highlights SARCA’s key achievements and areas of continued focus, with information for interested companies and stakeholders on how to engage. For more information or to join SARCA, please contact the SARCA secretariat, Edwina McKechnie (emckechnie@bsr.org), or the SARCA scientific director, Dr. Daniel Natusch (d.natusch@epicbiodiversity.com).

### About the Reptile Trade

Reptiles traded from Southeast Asia, notably species of snakes and lizards, are commonly found in biodiverse landscapes, such as waterways, shrublands, forests, and agricultural lands, adjacent to rural, often marginalized, communities. In urban landscapes, certain species of reptiles are also common and abundant.

People in local communities have historically harvested larger reptiles, both as a livelihood benefit and, notably, to curtail the impact of predation on local livestock and people (Natusch et al. 2021). Harvested reptiles, traded locally and internationally, have been used by people for centuries. Today, they continue to be used for a variety of purposes, including food, medicine, leather, and traditional instruments. Many reptiles are considered a culinary delicacy in Asia. The entirety of the animal is typically used, with limited waste.

Since the 1930s, demand for reptile skins has increased in Europe and North America due to the leathers’ aesthetics, durability, quality, and consequent use in high-end goods. This demand has created a formalized reptile skin export trade. The majority of snake and lizard leathers currently traded globally
originate from Southeast Asia; most are from Indonesia, Malaysia, and Vietnam. Other important source regions include West Africa and South America. The skins predominantly end up in Europe, the United States, China, and the Middle East.

Approximately 90-95 percent of traded reptile skins originate in the wild (CITES 2021). The trade is regulated by local, regional, and national governments, and by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Being listed on CITES does not mean a species is threatened due to trade. Rather, it means that trade should be monitored and regulated to ensure that it does not jeopardize the survival of species in the future.

In addition to aesthetics, there is increasing recognition of the sustainability credentials of reptile skins as a natural, renewable, material with minimal waste. The Higg Material Sustainability Index (Higg MSI), developed by the Sustainable Apparel Coalition, released the results of a life-cycle analysis (LCA) examining the environmental impact of reptile leather. The LCA shows that the environmental impact of reptile leather is relatively low compared to many other commonly used materials.

More broadly, the trade illustrates that robust management systems, combined with incentive structures that value local renewable resources and support local livelihoods, can lead to effective trade-based biodiversity conservation. The trade provides jobs, supplementary income, and a safe food source to often underserved people in Southeast Asia while also incentivizing coexistence with predatory species.

Production country governments and their wildlife management agencies, domestic and international conservation scientists, wildlife regulators, and the reptile industry have modernized and legitimized a nascent regional industry. They have done so with efforts and investments facilitated, in part, by initiatives such as SARCA.

The application of independently peer-reviewed and approved conservation science methodologies indicate healthy and resilient wild reptile populations that can indefinitely sustain harvesting.

Government wildlife management systems are demonstrating transparent, robust, and technologically enabled monitoring systems, and the regulation of export trade that adheres to international
requirements, such as CITES. Comprehensive guidance and training programs have been implemented to educate and develop capacity for the humane handling of reptiles in the supply chain.

However, challenges remain. Despite production facilities that meet international standards, work is needed to bring the entirety of the industry to a common baseline, with practices that meet the expectations of domestic and international stakeholders. The industry is fragmented, with many small, often rudimentary, facilities. These facilities are difficult to engage and upgrade without a concerted industry approach and without jeopardizing the well-being of those involved. These same facilities support local cultures and rural livelihoods, which, in turn, provide incentives to maintain healthy wild reptile populations.

The industry also faces ongoing pressure from activists opposed to the use of animals by people. These groups have directly and indirectly targeted the reptile trade in their campaigns. This has affected general perceptions of the trade and influenced some international luxury brands to state publicly that they will not use exotic leathers, including those from reptiles, despite continued use of other animal-based materials. This threatens the specific and unique incentives and benefits that the reptile trade brings to biodiverse landscapes and to local communities’ livelihoods in many low-income countries.

The global COVID-19 pandemic has also created trade supply and demand volatility, further affecting business viability in production countries. The pandemic has also raised debate about human interaction with wildlife, which has implications for trade-based conservation initiatives such as the wild reptile trade, despite minimal risk of zoonotic disease transfer from reptiles. Misinformation on the link between reptiles and zoonoses has the potential to further exacerbate pressure on local communities, species population health, and supporting habitat protection. SARCA’s activities follow the World Health Organization’s One Health policy, which is based on the premise that the health of people, environment, and animals are interdependent.

The reptile trade’s benefits and challenges go beyond any individual reptile, person, or organization. The complex, nuanced, and interdependent issues require cross-organization and cross-border collaboration. This report outlines SARCA’s role in building a more transparent and responsible reptile trade. It presents the progress made to date on the issues identified. It also describes SARCA’s continued collaborative
science-based focus to drive best practices, improvements, and benefits for reptile species, local communities and economies, and the trade.

SARCA

SARCA is an industry-led initiative aimed at advancing responsible and transparent Southeast Asian reptile skin supply chains while driving improvements to the trade’s operating environment.

SARCA defines responsible and transparent reptile supply chains as those with:

- transparency of reptile skin source (e.g., geographical origin, wild capture, or farm);
- up-to-date scientific evidence leveraging ongoing monitoring for healthy, maintained wild reptile populations with a regulated, sustainable harvest;
- production practices that promote animal welfare principles and demonstrate the humane treatment of reptiles;
- production practices that preserve ecosystem function and biodiversity;
- fair and safe working conditions that adhere to industry-relevant and best-practice environmental and social standards; and
- clear benefits for local livelihoods and national economies, supported via a viable and sustained industry.

SARCA Vision and Mission

The SARCA collaborative initiative is oriented by its vision for a reptile skin trade that maintains wild reptile populations, supports local and national economies, and promotes animal welfare principles. SARCA operates as a technical platform for a multistakeholder mission to advance responsible and transparent supply chains of reptile skins from Southeast Asia and drive improvements in the trade’s operating environment.
SARCA’s objectives are to:

» understand and assess the Southeast Asian reptile skin supply chains used by luxury brands;
» evidence legal trade and offtake that maintain wild populations and the humane treatment of species;
» demonstrate good-practice labor conditions and operational management in supply chains;
» ensure a viable, long-term trade with positive livelihood impacts;
» develop and facilitate collaborative actions and multistakeholder engagement to promote sustainable, fair, and humane practices in supply chains, such as capacity-building and assurance programs.

SARCA Scope

SARCA’s scope includes all 27 species of snakes and lizards utilized for skins in Southeast Asia, with a specific focus on the major reptile skin exporting countries: China, Indonesia, Malaysia, Thailand, and Vietnam. SARCA’s core work focuses on the species primarily used in the luxury supply chain, originating from Indonesia, Malaysia, and Vietnam:

- *Python breitensteini*, Borneo short-tailed python (CITES)
- *Python bivittatus*, Burmese python (CITES)
- *Python brongersmai*, blood python (CITES)
- *Python reticulatus*, reticulated python (CITES)
- *Varanus salvator*, Asian water monitor (CITES)
- *Homalopsis buccata* (masked water snake; Ayers) (non-CITES)

SARCA has previously carried out studies on *Coelognathus radiatus*, radiated ratsnake (non-CITES); *Orthirophis taeniurus*, Chinese beauty snake (non-CITES) from China; and *Homalopsis buccata*, Ayers (non-CITES) from Cambodia.
SARCA Governance

SARCA was formally established in 2018 as a Business for Social Responsibility (BSR) Collaborative Initiative. It is independently facilitated and governed by BSR as secretariat, a SARCA operating charter, and a representative, multistakeholder steering committee. Organized via a membership model, SARCA consists of industry and non-industry stakeholders.

SARCA’s membership includes conservation science and regulatory bodies, including the International Union for Conservation of Nature (IUCN) SSC Snake Specialist Group, CITES Management Authority of Switzerland, representation of the Indonesian Ministry of Environment and Forestry, the Indonesian Institute of Sciences, and the Malaysian Department of Wildlife and National Parks. SARCA currently has more than 15 members participating in the reptile skin trade from Southeast Asia, with representation from luxury brands and buyers, European tanneries, Southeast Asian tanneries, and processing facilities and farms from Malaysia, Indonesia, and Vietnam.

SARCA Workstreams

To demonstrate how it will meet its impact vision, SARCA is working toward a series of claims. The SARCA claims frame the key components of a sustainable and responsible reptile trade.

» Claim 1—Sustainable Offtake: Reptile species traded from Southeast Asia are sourced without detriment to the conservation of wild populations and in compliance with export trade requirements.

» Claim 2—Animal Welfare: Reptile species traded from Southeast Asia are treated humanely from capture to slaughter, according to internationally accepted standards.

» Claim 3—Environmental and Social Responsibility: Capture and processing facilities demonstrate good-practice labor and operational management practices.

» Claim 4—Livelihoods Supported: The trade in reptiles from Southeast Asia supports the livelihoods of local people and a viable, long-term industry.

SARCA’s Progress to Date

Sustainable Harvest

Species Population Monitoring
The core of SARCA’s activities has been the development of scientific methodologies and long-term data trends to evaluate wild reptile population health in the context of sustained wild harvesting for trade.

In 2019, SARCA, in partnership with the IUCN Boa & Python Specialist Group of the Species Survival Commission (now assimilated into the IUCN Snake Specialist Group), published the seminal snake population monitoring guide, *Harvest Monitoring of Snakes in Trade: A Guide for Wildlife Managers*. The

1 Luxury brand buyers: Burberry, Kering, LVMH, Ralph Lauren, Tapestry; Trade Associations: UNIC; Tanneries: Caravel, Faggioli, GNP Pelli, Groupe HCP, Pan American Leather, Verdeveleno, Zuma; Range State Production: CBI International Co. Ltd., Minh Quan Farm, PT International Leather, PT Oray Narpalti Perkasa, Yakita Mulia, Yan Wei Lek Trading etc.
guide was released at the CITES Conference of Parties (CoP18) in Geneva, Switzerland. Published in English, Bahasa Indonesia, and Malay, it follows 10 years of methodological research and in-field testing. Peer reviewed by leading scientists, wildlife management experts, and government scientific authorities, the publication establishes practical step-by-step guidance for wildlife managers, conservationists, professional scientists, and wider stakeholders to monitor the harvesting of snakes, namely collecting data from harvested snakes and using that information to understand the status of wild populations and the sustainability of their offtake. It includes protocols for data collection, analysis, and interpretation.

The methodologies set out in the guide, in addition to population field monitoring, have been used annually to track the status of wild populations of pythons, monitor lizards, and other snakes in Indonesia and Malaysia. In partnership with the wildlife management authorities in both countries, the SARCA scientific director has recruited and trained a network of monitoring stakeholders to build annual population trends, inform offtake quotas, and ensure the ongoing sustainability of wild populations. Over 26 scientists carry out data collection and monitoring through the University of Malaysia Terengganu (UMT); PERHILITAN, the Wildlife Department and CITES Scientific Authority of Malaysia; and the SARCA Indonesia Steering Committee (SISC), part of the Indonesian Herpetological Association (PHI) and run by scientists within the Indonesian Institute of Sciences (LIPI; CITES Scientific Authority).

Monitoring sites include locations throughout Peninsular (West) Malaysia and the Indonesian islands of Java, Kalimantan, and Sumatra. In some locations, data have been collected every month. In others, monitoring takes place annually, based on the needs of species, systems, and research objectives. Ongoing monitoring of pythons, water monitors, and water snakes has shown that wild populations remain healthy and abundant. Biological data gathered through research programs on reptile species have helped to inform new regulations limiting the size of snakes that can be captured for trade, providing greater confidence in harvest sustainability. For example, both Indonesia and Malaysia have limited the minimum legal harvest size of reticulated pythons to 240 cm.
SARCA Monitoring Application
In support of annual monitoring, SARCA has funded the development of a tablet and mobile phone application (app) to digitalize data collection by government management authorities and scientific networks, allowing more rapid assessment of harvest sustainability.

Ayers Population Monitoring
In 2019, SARCA initiated a two-year population field study in Indonesia led by local scientific experts, to understand the underlying wild population densities and biological attributes of Ayers (*Homalopsis buccata*) in the habitats from which they are captured. The first comprehensive scientific study of the Ayers species in Indonesia, it has gathered important biological data on an additional 19 species of snakes, many of which are used for their meat, skins, and medicinal properties. The population and monitoring study helps SARCA develop a scientific assessment of Ayers’ biological attributes to gauge life history data from harvested snakes. This monitoring procedure is also critical for ongoing data collection and welfare trainings on the Indonesian Ayers supply chain. Through research, capacity building, and a non-detriment finding, this work ultimately helps to evidence the sustainability of offtake and to inform export quotas of Ayers skins from Indonesia.

As part of a biological attributes study, a SARCA team has conducted monthly field work since July 2019 to collect data from harvested snakes. SARCA has thereby built an understanding of how snake biology differs among seasons, which has important implications for sustainability management. After 12 months of data collection, the SARCA team had examined more than 10,000 snakes of 20 different species, including 4,500 specimens of Ayers. Although many of these additional species are not used for the skin trade, the SARCA project has significantly advanced the (previously unknown) scientific understanding of this important assemblage of snakes.
Non-Detriment Findings (NDFs)
To enhance international reptile trade regulation and to maintain a sustainable trade in monitor lizards and reticulated pythons, Malaysia has prepared non-detriment findings (NDF) using the monitoring data gathered via the SARCA network and government partners. CITES requires that "a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species" for reptile trade export permits to be granted. This is commonly referred to as a non-detriment finding (NDF).

PERHILITAN and the Malaysian Ministry of Energy and Natural Resources submitted these NDFs to the 31st meeting of the CITES Animals Committee in 2021. They showcase the robustness of Malaysia’s management systems for harvested reptiles.

Animal Welfare

Animal Welfare Guide
Ensuring high standards of welfare within the reptile skin trade is one of SARCA’s key objectives. To do this, SARCA has worked to provide guidance and capacity development to trade stakeholders in science-based animal welfare practices.

In 2018, in partnership with the Swiss Federal Food Safety and Veterinary Office (FSVO), SARCA published "Welfare Principles for Snakes and Monitor Lizards in the Southeast Asian Skin Trade." This guide was written specifically for stakeholders engaged in the Asian reptile trade, with a focus on the main snake and lizard species currently traded. The guide is primarily intended to help stakeholders who have no coherent access to the large volume of information and skill necessary for the implementation of Science-Based Animal Welfare (SBAW) standards. It provides practical guidance as well as a summary of how the trade currently works and was produced and reviewed by international experts in reptile biology, welfare, and veterinary care.

This practical industry guidance has helped stakeholders to align their operational procedures with international SBAW standards and expectations. However, given the nature of the industry and the diversity of capacities, SARCA recognizes that this is an ongoing, evolving process. The guidance is not intended to be overly prescriptive. Rather, it is designed to introduce a broad spectrum of stakeholders to numerous welfare concepts that can be successfully adapted and adopted in the social and cultural contexts in which trade is taking place. The guidance provides a set of key principles for each of the major supply chain nodes, ranging from wild harvests to humane slaughter. It includes background information on the context of different aspects of the trade; supporting information enables science-based guidance on handling, welfare assessments, and remedial action.

Capacity Development
Through its extensive capacity development workshops throughout Southeast Asia, SARCA has trained stakeholders working in the reptile skin trade how to humanely capture, transport, keep, and euthanize
Although most processing facilities in Southeast Asia were already practicing correct techniques, a major focus of SARCA’s animal welfare workshops has been to ensure proper implementation of the World Organisation for Animal Health (OIE) Standard for Humane Killing of Reptiles for their Skins, Meat, and Other Products. SARCA’s workshops have included classroom theory sessions as well as hands-on technique demonstrations to help optimize animal welfare outcomes for reptiles. These workshops take place in local languages with the support of internationally recognized reptile welfare experts. To date, SARCA has trained more than 1000 reptile skin supply chain personnel in Indonesia, Malaysia, Thailand, and Vietnam.

**SARCA Assurance Framework**

Recognizing the need to demonstrate sustained, improved practices for downstream buyers and wider stakeholders as well as incentivize and reward such practices in production, SARCA is developing an assurance framework. With the framework, SARCA aims to articulate and provide assurance of practices that demonstrate the key components of a sustainable and responsible reptile trade. Drawing from ISEAL Alliance standards and robust science and stakeholder engagement, SARCA is applying a standardized approach and methodology to the assurance framework. It will define minimum and best-practice standards of performance, an approach to assessment against the agreed standards, and a revision of the merits and practicalities of further performance assurance.

In 2021, SARCA developed the Responsible Reptile Sourcing Standard (RRSS) to define the levels of environmental and social performance required of reptile processing facilities and farms, covering four modules: business integrity, animal welfare, social responsibility, and environmental responsibility.

The intention is for the RRSS to be:

- **Outcome oriented**: enable and enhance positive outcomes for the reptiles and people involved in the trade, as well as their supporting environments and communities
- **Inclusive of all players**: ensure that the standards acknowledge the characteristics of operations in production countries, including varying levels of maturity on the issues, capacity, and resources to invest in improved practices
- **Geared for continuous improvement**: incentivize standard uptake and continuous improvement by recognizing and rewarding achievements
- **Aligned with stakeholder expectations**: ensure that standards are feasible, meet local regulatory and industry development priorities, meet the needs of business and wider international stakeholders, and leverage international guidelines and best practices

To ensure the robustness and completeness of the RRSS, SARCA began an ongoing multistakeholder consultation process in 2021 to inform and build credibility of the new standard, in accordance with ISEAL Alliance guidance. The consultation was open to the public via a web portal. In addition, SARCA has identified and mapped a representative group of stakeholders to participate in the consultation process across a range of stakeholder types (e.g., science/academia, international development organizations, NGO/CSO, industry, regulators, etc.) and expertise (e.g., human and labor rights, animal welfare, conservation, policy/economics, etc.).
Industry-Wide Tag Transparency System

Further recognizing the need of buyers and wider stakeholders to have traceability in their reptile skin supply chains, SARCA has built a tag traceability system leveraging new technology and the SARCA monitoring app to provide industry-wide chain of custody. SARCA has a prototype tag that, through a barcode and QR scanning system, provides traceability from point of capture by hunters to tanning and the final skin buyer. The SARCA monitoring app can document each step of the supply chain, with a system that allows for large amounts of metadata collection at each stage. The system records all hands through which an animal or skin passes and records data such as biological attributes of the animals, the name of the harvester and region of capture, and a large amount of other critical data. SARCA is completing a pilot of the tag transparency system in Malaysia in 2022, to prove the concept with a large sample of skins.

Combining the tag traceability system with performance against the RRSS provides a potentially powerful tool to further enhance the trade’s sustainability credentials. SARCA is also investigating an industry approach to funding and managing such a system to ensure that all industry players in production countries stand to benefit, thereby maintaining the livelihood and conservation benefits of the reptile skin trade.
Join Us!

Get Involved
SARCA membership is open to luxury brands; manufacturers, including tanneries and processing facilities; industry intermediaries; trade associations; nonprofits; and academic and government institutions participating in the trade of reptile skins from Southeast Asia.

SARCA Members

Brands:
- Burberry Group, plc
- Kering LVMH
- Ralph Lauren Corporation
- Tapestry, Inc.

European and North American Tanneries:
- Caravel Pelli Pregiate Spa
- Compagnie de Cuirs Précieux
- Faggioli
- GNP Pelli
- Pan American Leather
- Verdeveleno
- Zuma

Trade Associations:
- Unione Nazionale Industria Conciaria (UNIC)

Regional Tanneries, Farms, Processing Facilities:
- CBI International Co. Ltd.
- Minh Quan Farms
- PT. International Leather Works
- PT. Oray Narpati Perkasa
- Yakita Mulia Yuan Wei Lek Trading

Conservation Science and Regulatory Bodies:
- CITES Management Authority of Switzerland
- International Union for Conservation of Nature (IUCN) SSC Snake Specialist Group
- Indonesian Ministry of Environment and Forestry
- Indonesian Institute of Sciences,
- Malaysian Department of Wildlife and National Parks
Stakeholder Engagement
SARCA continuously seeks to engage with industry stakeholders and experts. Please contact us if you would like to learn more about SARCA’s work and how you can get involved.

Contact Us
For more information or to join SARCA, please contact Edwina McKechnie (emckechnie@bsr.org) or Dr. Daniel Natusch (d.natusch@epicbiodiversity.com).

Supporting Documents
SARCA continues to build scientific and technical knowledge to inform an accurate position on the reptile industry for a widening range of stakeholders. Notable publications to date include:


The conclusions presented in this document represent BSR’s best professional judgment, based upon the information available and conditions existing as of the date of the review. In performing its assignment, BSR relies upon publicly available information, information provided by SARCA member organizations, and information provided by third parties. Accordingly, the conclusions in this document are valid only to the extent that the information provided or available to BSR was accurate and complete, and the strength and accuracy of the conclusions may be impacted by facts, data, and context to which BSR was not privy. As such, the facts or conclusions referenced in this document should not be considered an audit, certification, or any form of qualification. This document does not constitute and cannot be relied upon as legal advice of any sort and cannot be considered an exhaustive review of legal or regulatory compliance. BSR makes no representations or warranties, express or implied, about the business or its operations. BSR maintains a policy of not acting as a representative of its membership, nor does it endorse specific policies or standards. The views expressed in this document do not reflect those of BSR member companies.