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SELLHEIM ENVIRONMENTAL

CONSULTANCY FOR NATURE AND CULTURE

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CONTENTS

EDITORIAL

Onwards into 2024!

The end of 2023 has seen many different national and international developments that show how urgently the internationally agreed nature conservation initiatives need to be implemented — especially with regard to climate change mitigation and adaptation. Not only was 2023 the warmest year on record (e.g. Copernicus, 2023), but the need for science-based decision-making also started to show in a country where climate change-related have thus far been rather moderate — Germany.

Towards Christmas, several rivers in northern Germany started to rise to record-high levels, causing major flooding and the destruction of countless homes and existences. One might of course be easily inclined not to relate these events to climate change, but after an extremely dry summer and the fact that also the science produced by several authorities in Germany pointed to the fact that something is changing indeed.

Against this backdrop, this issue of *The Digest* will start with a review of the 28th Conference of the Parties (CoP28) to the UN Framework Convention on Climate Change (UNFCCC). While *Sellheim Environmental* was not present on site, we followed the developments very closely and also provide for a summary of the new agreement that was concluded at the meeting. While it is beyond our capacities to determine whether the CoP was a success or failure, we leave it to the reader to make that call, based on several responses to the summit which are also included in the article.

We then provide a field report of Dr Nikolas Sellheim's 2-week trip to Bequia (pronounced 'Beck-way') in St Vincent & the Grenadines where he carried out fieldwork as part of the human and indigenous rights survey he currently conducts for the International Whaling Commission (IWC), along with Jessica Lefevre, long time IWC-expert and legal practitioner. The report not only gives insight into IWC-sanctioned Bequian whaling, which is carried out under the Aboriginal Subsistence Whaling (ASW) scheme, but also into the socio-economic and cultural relevance of the hunt. The research is particularly relevant since in the fall of 2024, the IWC will convene again in Peru to decide on the future of the quotas assigned under ASW to the whalers of Bequia, Greenland, Alaska and Chukotka.

While Bequians have a quota of merely 4 humpback whales per year, of which they hardly ever hunt that many, the future of the quota is uncertain given the opposition towards whaling by the vast majority of IWC Members. Bearing this in mind, we also consider Bequian whaling as a potential cultural element to be protected under the 2003 Convention for Intangible Cultural Heritage and describe the different steps that are necessary to be considered.

It is whales that shape the narrative of the two subsequent articles even further. First, we delve into Project CETI, an international, multidisciplinary research project that is carried out to further analyse, and potentially even apply, sperm whale communication ('language'). While these attempts generally are not new, what makes Project CETI unique is the use of artificial intelligence (AI) to further enable humans to understand sperm whale communication even better. It even appears as if with the help of AI, the first

actual 'words' could be identified. However, since 'speaking' with animals in the wild bears also moral and ethical consequences, we spend some thoughts on these implications, providing the reader with some food for discussion.

As an avid scholar of whaling and the IWC, it is common to stumble across Soviet whaling and the way it impacted whale populations all over the world. Yet, hardly any in-depth study exists that really looks into the people behind Soviet whaling and the way it was actually conducted. That has changed with Ryan Tucker Jones' study *Red Leviathan*, which takes a deep-dive into the 'whos' and 'hows' of Soviet whaling in the 20th century, using archival documentation for his treatise. A review of that book appeared imperative not only to promote this unique study, but also to make Soviet whaling somewhat more accessible to an outside audience.

Our final summary article leaves the complex world of whaling and enters the domain of history by looking at the interlinkage of agriculture and language dispersal in Asia. The original article by Robbeets et al. (2021) published in *Nature* provides evidence that language spread was primarily driven by agriculture, utilising a methodology of genetics, linguistics and archaeology.

As per our common practice, we have also included several translated news article from the German media concerning different topics concerning Germany as well as other countries. With this, we wish to enable non-German speaking readers to gain insight into the way German media deal with specific issues and which topics are in fact discussed.

We hope that you enjoy this issue of *The Conservation & Livelihoods Digest* which is, as always, available to download free-of-charge.

If you have suggestions for topics or wish to contribute yourself, please feel free to contact us at info@sellheimenvironmental.org. We wish to include all different sides concerning the link between conservation and livelihoods. Our policy is not to alter the gist of an article, but to include different perspectives, even though they might to align with our own views. We strongly believe in the power of diplomacy and in proper and respectful discussion.

With this, we wish you a successful and peaceful year 2024!

— Dr Nikolas Sellheim
December 2023

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ARTICLE

Was the 28th UN Climate Summit a success?

Introduction

The climate is changing, without a doubt. The year 2023 will in all likelihood mark the hottest year on record. Already some decades ago, greenhouse gases were identified as the major culprits, emitted from different sources on which human society hinges. Not surprisingly, therefore, while climatic changes have occurred in the past as well, the speed to which the current changes are ongoing have contributed to many labelling the ongoing changes as anthropogenic, i.e. caused by humankind.

Human activities, particularly the burning of fossil fuels, deforestation, and industrial processes, release significant amounts of carbon dioxide, methane, and other greenhouse gases into the air. These gases trap heat, leading to a gradual rise in the planet's average temperature—a phenomenon known as global warming. The consequences include more frequent and severe heatwaves, melting ice caps and glaciers, rising sea levels, and disruptions to ecosystems.

While the science is surprisingly clear in this regard — of course, there are some discrepancies, but the general consensus points to the fact that natural causes do not cause such rapid and far-reaching changes — and theoretically humankind should act immediately based on this science, 'the climate' or 'climate change' are probably some of the most societally contentious terms one might think of. What the science essentially means, however, quite inevitably must lead to fossil fuels and their uses must being transitioned to green energy as soon as possible in order to avoid tipping points that change the climate permanently, putting human, faunal and floral life at risk dramatically.

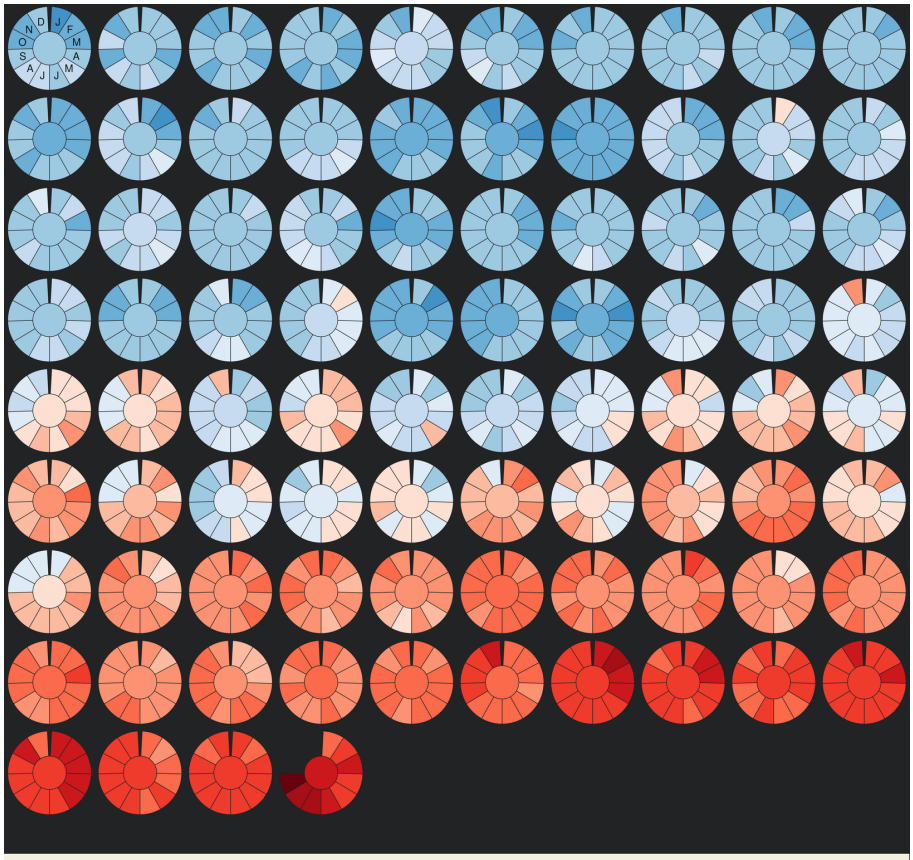
Background

As a means to act, at the Rio Summit in 1992 the UN Framework Convention on Climate Change (UNFCCC) was adopted, under which other legally binding agreements with their own membership can be concluded. Up to this day, 198 countries, i.e. all countries in the world, have ratified or acceded to the UNFCCC while the two concluded separate agreements, i.e. the 1997 Kyoto Protocol and the 2015 Paris Agreement, have a membership of 192 and 195 respectively. The ultimate goal of these agreements, at least since the 2015 Paris Summit, is the limitation of global warming to 1,5°C compared to preindustrial times. While there is no concrete wording that explains 'preindustrial times', generally the time period from 1850—1900 is considered as a reference. About the emergence and scope of these agreements, please see for example Bodanksy, Brunée & Rajamani (2017).

In November 2023, the World Meteorological Organisation (WMO) released its latest Provisional State of the Global Climate 2023 report (WMO, 2023). In this report it becomes clear that the 1,5°C-target is far from being reached, especially when anthropogenic impacts pair with natural phenomena, such as the El Niño phenomenon, the reversal of the South Pacific Oscillation, temporarily warming up the world's oceans. This meant for 2023 — an El Niño year — that the year

has been the warmest on record and that surface-near temperatures were approximately 1,4°C higher than during preindustrial times. The ten-year global temperature increase between 2014—2023 ranged already at 1,19°C. While at first sight this does not seem to be a high number, the report furthermore shows that 2023 was marked by a higher number of extreme weather events with drastic socio-economic impacts and a heavy loss of life.

A powerful visualisation of this warming trend was created as a so-called Little Picture for the European Space Agency (ESA) that shows the increase in global monthly surface temperatures between 1940 to 2023 compared to the average surface temperature between 1971—2020 (Kaye, 2023). The centre circle shows the annual average.



Global monthly temperature

1940 to 2023

Temperature is compared to the monthly average for 1971 - 2020
Top left circle is 1940 bottom right is 2023, months run clockwise
Annual average temperature is shown by the circle in the middle

The 28th Conference of the Parties to the UNFCCC

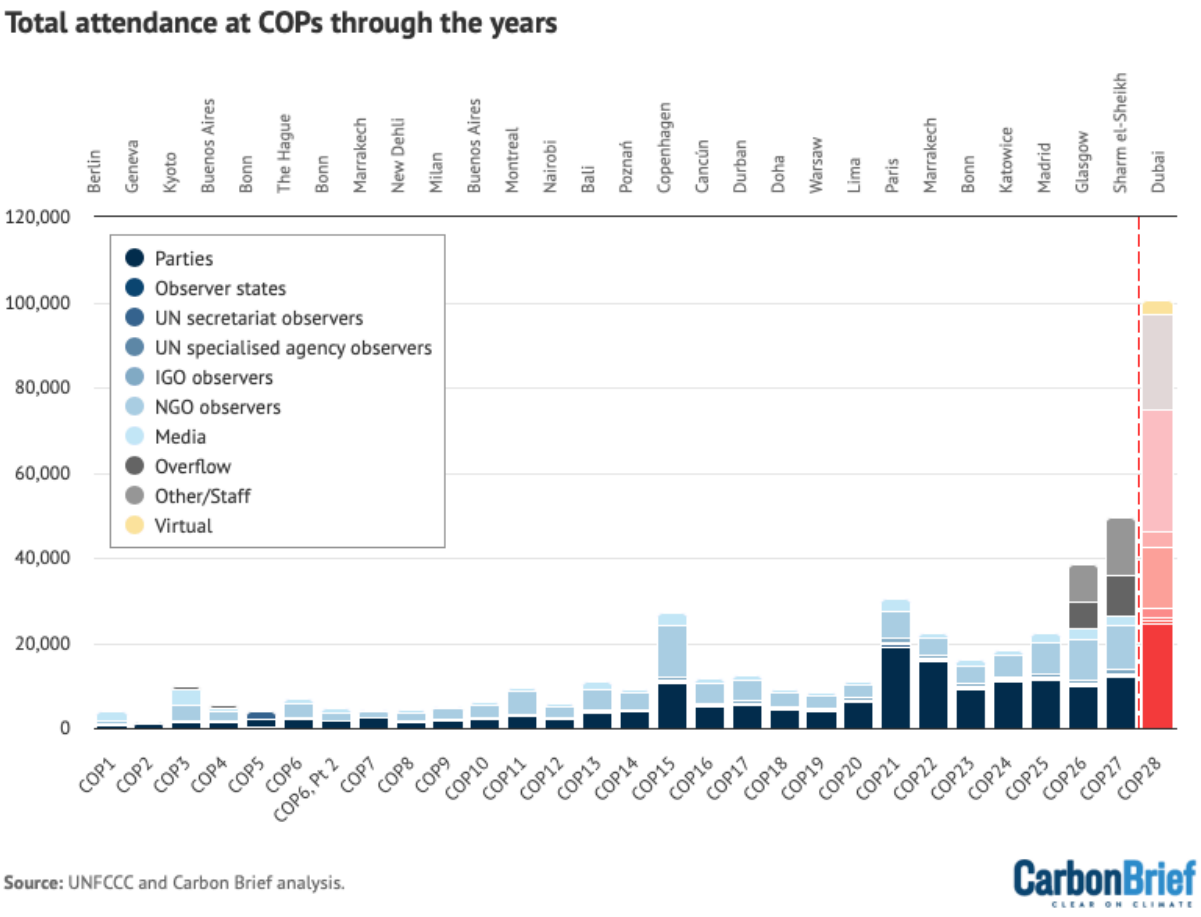
Against this backdrop, it appears rather clear that the world community needs to undertake steps and implement measures that limit greenhouse gas emissions to a degree that slows down and ultimately stops the increase in global mean temperatures. Again, the science in this regard is clear, and countless news and other outlets call for action. The question, of course, remains how this action is to be taken and who is to take this action. A 'we must act' appears somewhat difficult to implement if an entire economy hinges on fossil fuels, for example. Calls by organisations such as *Fridays for Future* or *Die Letzte Generation* (The Last Generation, a German organisation whose members glue themselves onto highways or runways to protest against fossil fuels) to finally reduce greenhouse gases are principally noble, but appear rather unfeasible as they do not take into account the diversity of views on the 'hows' and the 'whos' that accompany climate change mitigation strategies.

The most recent example for these diverging perspectives on how to tackle climate change is the 28th Conference of the Parties to the UNFCCC (CoP28), which took place in Dubai, 30 November—12 December 2023. The summit was chaired by Sultan Ahmet Al-Jaber, Minister of Industry and Advanced Technology of the United

Arab Emirates as well as head of the Abu Dhabi National Oil Company. Quite naturally, the chair's perspectives on climate mitigation are probably significantly different to the views of *Fridays for Future*.

The meeting was attended by close to 90,000 delegates from all over the world as well as more than 3,000 virtually, comprising around 25,000 Party delegates and an additional 27,000 Party 'overflow' delegates (such as advisors, guests or sponsors), 900 UNFCCC Secretariat staff as well as 600 'overflow' delegates, as well as around 1,350 delegates from UN specialised agencies such as the World Health Organisation, the World Bank or the World Meteorological Organisation. The UAE issued most badges with around 4,400 delegates, followed by Brazil with more than 3,000, and China as well as Nigeria with more than 1,400. Despite the criticism the German government received for sending the largest delegation in its history (e.g. RND, 2023), the delegation of around 250 appears to be comparatively small.

Apart from governmental delegates, several tens of thousands of delegates from non-governmental organisations, intergovernmental organisations and other civil society representatives were present at the meeting. According to Dietzel & Richter (2023), around 2,400 Party 'overflow' badges were issued to representatives of the oil and gas industry, providing them with the strongest voice within country delegations since the first CoP. As civil society, however, a super-large meeting such as CoP28 allows very few



Total attendance at COPs through the years © McSweeney, 2023.

pathways to contribute to the negotiations, which, according to Dietzel & Richter (2023), are to be considered rather predetermined statements than actual negotiations.

Several deep-running topics were discussed at the CoP. First and foremost, the conference served as a first attempt to a 'global stocktake', a first assessment of countries' progress to limit temperature rise to 1,5°C and their initiatives to curb greenhouse gases. In line with the 1992 principle of 'common but differentiated responsibilities', the discussions circled around the question of whether it should be *all* countries to take more extreme measures or whether the focus should rest on developed nations.

A second point for discussion ultimately circled around the question of the future of fossil fuels. While the Kyoto Protocol as well as the Paris Agreement both dealt with specific greenhouse gases and their mere existence is proof for the global consensus on limiting them, while at CoP26 in 2021 in Glasgow agreed on a phase-out of coal, the elephant in the room, the phasing out of fossil fuels altogether had thus far not been discussed. Quite surprisingly, even the president of the meeting noted: "The phase down of fossil fuels is inevitable. It is in fact essential. But it cannot be irresponsible" (Reuters, 2023).

A third crucial issue in the deliberations was the development and use of climate-friendly technologies. While these technologies are crucial in reducing humankind's impact on the global climate, they are nevertheless also expensive and difficult to use in resource-scarce countries. Therefore, it was especially the European Union that it was these costs that might contribute to fossil fuel utilisation also in the future, given that countries might argue that they do not have the financial means to develop, purchase or use green technologies.

As a consequence, discussions furthermore circled around renewable energy capacity. Brought forward by the EU, the United States as well as the CoP's presidency, especially countries like China supported the call for an threefold increase in renewable energy capacity.

However, since the effects of climate change cause tremendous economic hardship especially for developing countries, these are in dire need of financial support from the developed world. While the Green Climate Fund, which was established in 2010, already provides an avenue for developing countries to get financial support, it is chronically underfunded. To further advance climate resilience, the GCF was provided with12.8 billion US$ from 31 countries while also the loss and damage fund, established in 2022 at CoP27, was operationalised, immediately generating more than 700 million US$ in contributions.

At the end of the conference, however, stood the adoption of an agreement that aimed to incorporate all matters that were discussed at CoP28. Given the diverging views on matters, the expectations were high and the conference even had to continue for one more additional day in order to reach an agreement. In the end, however, the *First global stocktake* (UNFCCC, 2023) was adopted, which saw both praise and criticism in international politics and media.

The *First global stocktake* — a brief overview

The Preamble

In 11 paragraphs, the preamble highlights key principles and commitments related to the Paris Agreement on climate change. It emphasises the Agreement's aim to strengthen the global response to climate change in the context of sustainable development and poverty eradication. The implementation is to reflect equity and the principle of common but differentiated responsibilities. The document underscores the periodic review of the Agreement's progress, considering mitigation, adaptation, means of implementation, and support, guided by equity and scientific knowledge. Multilateralism based on UN values is emphasised, acknowledging climate change as a common concern with a need to respect human rights, including the right to a clean environment, Indigenous Peoples' rights, and gender equality. The text also recognises the importance of safeguarding food security, protecting water systems, conserving ecosystems, and addressing the interconnected crises of climate change and biodiversity loss. Overall, it emphasises the urgency of comprehensive and synergistic action to achieve sustainable development goals while effectively addressing climate change.

I. *Context and cross-cutting considerations*

In this part, the document acknowledges the widespread global response driven by the Paris Agreement in addressing the climate crisis. Despite notable progress in mitigation, adaptation, and support, collective efforts have yet to align with the Paris Agreement's overarching goals. There is a reaffirmation of the Agreement's temperature goals, aiming to limit the global average temperature increase to well below 2°C and pursuing efforts to cap it at 1.5°C. Emphasis is placed on the significantly lower impact of climate change at 1.5°C, with a commitment to exert efforts towards achieving this target.

Expressing serious concern about the projected record warmth of 2023 and the accelerating impacts of climate change, the document underscores the urgent need for action and support to maintain the attainability of the 1.5°C goal in this crucial decade. There is a commitment to accelerate climate action in the coming years based on the best available science, reflecting principles of equity and common but differentiated responsibilities within the context of sustainable development and poverty eradication. The importance of financial support, capacity-building, and technology transfer as critical enablers of effective climate action is highlighted.

The document emphasises that sustainable and just solutions to the climate crisis necessitate meaningful social dialogue and the participation of all stakeholders, including Indigenous Peoples, local communities, governments, women, youth, and children. It recognises the opportunities and challenges in transitioning to low-emission and climate-resilient development. Just transitions are acknowledged as supportive of robust and equitable mitigation outcomes.

The specific needs and vulnerabilities of developing countries, particularly those most susceptible to the adverse effects of climate change, are acknowledged. The conclusion of the first global stocktake is welcomed, expressing gratitude to those involved and recognising the technical dialogue and

synthesis report. High-level events under the global stocktake are acknowledged.

Furthermore, the document appreciates the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, despite noting the alarming findings. It expresses concern about human-caused global warming, impacts already felt globally, and the unequal distribution of adaptation responses. The report underscores the potential for mitigation efforts embedded in the wider development context to enhance emissions reductions, the need for increased mitigation and adaptation financing, and the availability of feasible and low-cost mitigation options.

Finally, the document expresses concern about pre-2020 gaps in mitigation ambition and implementation by developed countries. The Intergovernmental Panel on Climate Change's earlier indication that developed countries failed to achieve the required emission reductions by 2020 is noted, underscoring the need for intensified efforts to bridge these gaps.

II. Collective progress towards achieving the purpose and long- term goals of the Paris Agreement, including under Article 2, paragraph 1(a–c), in the light of equity and the best available science, and informing Parties in updating and enhancing, in a nationally determined manner, action and support

This part of the agreement is subdivided into five elements: A — Mitigation; B — Adaptation; C — Means of implementation and support; D — Loss and damage; and E — Response measures.

Under 'A — Mitigation', the document highlights several key points regarding global progress towards the goals of the Paris Agreement. It acknowledges significant collective progress in reducing the expected global temperature increase, citing a range of 2.1–2.8°C with the full implementation of the latest nationally determined contributions. The appreciation is expressed for all Parties communicating these contributions and for the 68 Parties presenting long-term low greenhouse gas emission development strategies. These strategies cover 87% of the global economy, offering the possibility of achieving a temperature increase below 2°C.

However, the document expresses concern about the implementation gap, noting that current nationally determined contributions would only reduce emissions by 2% compared to 2019 levels by 2030. It recognises the need for significantly greater emission reductions to align with global greenhouse gas emission trajectories according to the Paris Agreement. The findings of the Sixth Assessment Report and the projected gap between policies implemented by 2020 and the implied contributions are noted with concern.

The document expresses significant concern about the trajectory of global greenhouse gas emissions, emphasising the urgency to raise ambition and implement existing commitments to meet the Paris Agreement's temperature goal. It acknowledges the depletion of the carbon budget consistent with the goal and highlights that historical cumulative net carbon dioxide emissions already account for a substantial portion of the total carbon budget for limiting global warming to 1.5°C.

The text recognises the projected peak of global greenhouse gas emissions between 2020 and 2025 for pathways limiting warming to 1.5°C or 2°C, emphasising the importance of different national circumstances and

sustainable development needs. It underlines the necessity for deep, rapid, and sustained reductions in emissions, including a call to limit global warming to 1.5°C with no or limited overshoot, requiring a 43% reduction by 2030 and net zero carbon dioxide emissions by 2050.

Further, the document outlines global efforts to contribute to these goals, urging Parties to triple renewable energy capacity, double energy efficiency improvements, phase down coal power, transition to net-zero emission energy systems, and accelerate the reduction of non-carbon-dioxide emissions. It calls for the phasing out of inefficient fossil fuel subsidies and emphasises the role of transitional fuels in the energy transition while ensuring energy security.

The document welcomes the availability and decreasing costs of mitigation technologies, such as wind and solar power, over the past decade, while emphasising the need to enhance the affordability and accessibility of such technologies.

The document underscores the pressing need for accelerated implementation of domestic mitigation measures, aligning with Article 4, paragraph 2, of the Paris Agreement. Additionally, it emphasises the use of voluntary cooperation outlined in Article 6, paragraph 1, of the Agreement. The urgent call extends to strengthening integrated, holistic, and balanced non-market approaches in accordance with Article 6, paragraph 8, considering sustainable development and poverty eradication through coordinated efforts in mitigation, adaptation, finance, technology transfer, and capacity-building.

The importance of conserving, protecting, and restoring nature and ecosystems for achieving the Paris Agreement temperature goal is highlighted. This includes enhanced efforts to halt and reverse deforestation and forest degradation by 2030, with attention to terrestrial and marine ecosystems as sinks for greenhouse gases. The document also stresses the need for support and investment, including financial resources and technology transfer, for these conservation efforts, while recognising the role of alternative policy approaches.

Parties are invited to preserve and restore oceans and coastal ecosystems and scale up ocean-based mitigation action. Transitioning to sustainable lifestyles and consumption patterns, including circular economy approaches, is noted as important in addressing climate change.

Recalling specific articles of the Paris Agreement, the document requests Parties to revisit and strengthen their 2030 targets in nationally determined contributions by the end of 2024 to align with the Paris Agreement temperature goal. It reaffirms developed country Parties' responsibility for economy-wide emission reduction targets and encourages developing country Parties to enhance their mitigation efforts over time.

The document emphasises the nationally determined nature of contributions and encourages Parties to propose ambitious, economy-wide emission reduction targets in their next contributions, covering all greenhouse gases and sectors. Aligning contributions with long-term low greenhouse gas emission development strategies is noted as important, with recognition of the capacity challenges faced by the least developed countries and small island developing States.

Finally, Parties are urged to communicate or revise their long-term low greenhouse gas emission development strategies by the sixth session of the Conference of the Parties

serving as the meeting of the Parties to the Paris Agreement in November 2024. This communication should move towards just transitions to net-zero emissions by or around mid-century, considering different national circumstances.

Under 'B — Adaptation', the document emphasises the critical importance of the global goal on adaptation, aiming to enhance adaptive capacity, strengthen resilience, and reduce vulnerability to climate change. It recognises the increasing efforts of Parties in adaptation planning and implementation, including the submission of national adaptation plans and communications. Developing country Parties' significant efforts in aligning national development plans and the challenges they face in accessing finance for adaptation are acknowledged.

The document notes the gaps in adaptation implementation, support, and collective assessment of effectiveness. It stresses the need for monitoring and evaluation of outcomes to improve the quality and awareness of adaptation actions. The establishment and improvement of national inventories of climate impacts, as well as building accessible climate services systems, are highlighted to strengthen adaptation actions.

Recognising that climate change impacts are often transboundary, the document calls for urgent, incremental, and transformational adaptation action based on different national circumstances. It emphasises that the magnitude and rate of climate change depend strongly on near-term mitigation and adaptation actions. Accelerated financial support from developed countries and other sources is deemed critical for developing countries.

The document encourages the implementation of integrated, multi-sectoral solutions such as sustainable land use, resilient agriculture, nature-based solutions, and ecosystem-based approaches. It underscores the importance of an iterative adaptation cycle, including risk assessment, planning, implementation, and monitoring, with a focus on means of implementation and support for developing countries.

Furthermore, the document highlights the role of global solidarity in undertaking adaptation efforts, emphasising inclusive approaches that consider Indigenous Peoples' knowledge and values. It calls for Parties to enhance their adaptation efforts in line with the goals of the Paris Agreement and the global goal on adaptation. The importance of achieving the adaptation goal in the context of the temperature goal is stressed, and Parties are urged to contribute to the global effort through the submission of adaptation information. The document requests the secretariat to prepare a regular synthesis report on adaptation information provided by Parties, emphasising the need for global solidarity to achieve the collective well-being, protection of livelihoods, and the preservation of nature for current and future generations.

The document urges Parties and invites non-Party stakeholders to enhance adaptation action and support, aligning with global frameworks and aiming to achieve specific targets by 2030 and beyond. The outlined targets include significantly reducing climate-induced water scarcity, attaining climate-resilient food and agricultural production, achieving resilience against climate change-related health impacts, reducing climate impacts on ecosystems and biodiversity, increasing the resilience of infrastructure and human settlements, substantially reducing adverse effects of climate change on poverty

eradication, and protecting cultural heritage from climate-related risks.

Furthermore, the document affirms that the framework for the global goal on adaptation involves conducting up-to-date assessments of climate hazards, establishing multi-hazard early warning systems, and developing transparent national adaptation plans. By 2030, Parties are expected to have country-driven, gender-responsive, participatory adaptation plans covering ecosystems, sectors, and vulnerable communities, with mainstreamed adaptation in relevant strategies and plans. Progress in implementing these plans should result in the reduction of social and economic impacts of key climate hazards. Additionally, Parties are encouraged to establish systems for monitoring, evaluation, and learning for their national adaptation efforts by 2030.

The efforts related to these targets are emphasised to be country-driven, voluntary, and aligned with national circumstances, considering sustainable development and poverty eradication. It is clarified that these efforts should not serve as a basis for comparison between Parties.

Section 'C — Means of implementation and support' is further subdivided into 'Finance', 'Technology development and transfer' and 'Capacity- building'.

The document recalls under 'Finance' several key articles of the Paris Agreement and highlights the increasing gap between the needs of developing country Parties and the support provided for their efforts, estimating needs at USD 5.8–5.9 trillion for the pre-2030 period. It underscores the importance of grant-based and concessional finance and non-debt instruments to support developing countries, emphasising the positive connection between fiscal space, climate action, and the transition to low emissions and climate-resilient development. The role of the private sector is recognised, with an emphasis on strengthening policy guidance, incentives, regulations, and enabling conditions.

The importance of developed countries fulfilling their financial obligations is reiterated, emphasising the need for public funds and mobilising climate finance from various sources. The urgency to support the implementation of the Paris Agreement in developing countries is stressed, along with the ongoing challenges faced by many developing countries in accessing climate finance. The document welcomes progress made by developed countries in the provision and mobilisation of climate finance, including the increase to USD 89.6 billion in 2021. It notes efforts to at least double adaptation finance from 2019 levels by 2025 and welcomes pledges for the Green Climate Fund, Adaptation Fund, Least Developed Countries Fund, and Special Climate Change Fund.

The document expresses deep regret that the goal of jointly mobilizing USD 100 billion per year by 2020 was not met in 2021 and notes ongoing efforts of developed countries to achieve this goal. It also expresses concern about the widening adaptation finance gap and insufficient levels of climate finance, technology development, and capacity-building for adaptation in developing countries, especially the most vulnerable. The importance of the operating entities of the Financial Mechanism and the Adaptation Fund is recognised, urging contributors to fulfil pledges and ensure the sustainability of resources. Finally, it calls on multilateral development banks and financial institutions to scale up investments in climate action and simplify access to climate finance.

Further, the document addresses various aspects of climate finance and urges developed country Parties to fulfil the USD 100 billion per year goal through 2025 for meaningful mitigation actions and transparency. It stresses the need to significantly scale up adaptation finance beyond doubling and explore potential funding sources. The operationalisation of funding arrangements and pledges to the Green Climate Fund are welcomed. The document emphasises the importance of making finance flows consistent with low greenhouse gas emissions and climate-resilient development, recognising the need for further understanding of Paris Agreement articles.

The Sharm el-Sheikh dialogue is to continue until 2025, focusing on Article 2, paragraph 1(c), of the Paris Agreement. A new collective quantified goal on climate finance is under consideration, taking into account evolving needs, mobilising finance from various sources, and supporting current contributions and adaptation plans. The importance of reforming the multilateral financial architecture is noted, emphasising the role of various financial actors in managing climate-related risks and scaling down harmful incentives.

A new dialogue on implementing global stocktake outcomes is established, operationalising from the sixth session and concluding at the tenth session in 2028. A high-level ministerial dialogue on scaling up adaptation finance is convened at the sixth session, considering adaptation-related outcomes of the global stocktake. Developed country Parties are urged to prepare a report on doubling adaptation finance by 2025 for consideration at the sixth session, ensuring a balance between mitigation and adaptation in financial resource provision.

In the section "Technology development and transfer," the document emphasises the pivotal role of technology development, transfer, endogenous technologies, and innovation in facilitating urgent adaptation and mitigation aligned with the Paris Agreement and sustainable development goals. It welcomes the progress of the Technology Mechanism, consisting of the Technology Executive Committee and the Climate Technology Centre and Network, in supporting technology development and transfer. The document underscores persistent gaps and challenges in technology adoption globally and urges Parties to address barriers, emphasising cooperative action with non-Party stakeholders, especially the private sector.

Predictable, sustainable, and adequate support for the Technology Mechanism's mandates is deemed important, along with the implementation of the Climate Technology Centre and Network resource mobilisation and partnership strategy. The involvement of stakeholders in strengthening linkages between the Technology Mechanism and the Financial Mechanism is encouraged. Ensuring financial and capacity-building support for developing countries, especially the least developed and small island developing States, for prioritised technology measures is emphasised.

The document encourages international cooperation on research, development, and innovation, aiming to strengthen endogenous capacities and national systems of innovation, aligned with findings from the Intergovernmental Panel on Climate Change. Rapid deployment and adoption of clean technologies, innovation, digital transformation, and the development of new technologies are recognised as crucial for

achieving Paris Agreement goals. The establishment of a technology implementation program is decided upon to support the implementation of technology priorities, addressing challenges identified in the first periodic assessment of the Technology Mechanism. The Subsidiary Body for Implementation is invited to consider the technology implementation program in its evaluation of the Poznan strategic program on technology transfer.

Capacity-building encompasses a fundamental role in catalysing urgent climate action aligned with the Paris Agreement goals, with appreciation for contributions made by institutional arrangements like the Paris Committee on Capacity-building. Progress in capacity-building at individual, institutional, and systemic levels has been welcomed since the Paris Agreement's adoption, including initiatives like the Capacity-building Initiative for Transparency and the Action for Climate Empowerment agenda.

Best practices in capacity-building, such as multi-stakeholder engagement, beneficiary country ownership, and regional knowledge-sharing, are recognised. Persistent gaps in developing country Parties' capacity, particularly in skills development, institutional governance, technical assessment, and policy implementation, are acknowledged, necessitating urgent attention.

Encouragement is given for enhanced coherence and cooperation in providing effective capacity-building support, utilising collaboration platforms, and sharing knowledge, experiences, and best practices. The role of the Local Communities and Indigenous Peoples Platform in strengthening the capacity of Indigenous Peoples and local communities is recognised, with a call for meaningful engagement in climate policies and actions.

The Paris Committee on Capacity-building is requested to identify ongoing activities for enhancing developing countries' capacity, especially for preparing and implementing nationally determined contributions, facilitating knowledge-sharing through workshops. Developing country Parties are encouraged to identify and report their capacity-building support needs in biennial transparency reports. The Paris Committee on Capacity-building is urged to consider new activities, including those related to adaptation, Article 6, and the enhanced transparency framework in its future annual focus areas.

Operating entities of the Financial Mechanism and the Adaptation Fund are requested to enhance support for capacity-building in developing countries, providing updates in annual reports to the Conference of the Parties. Parties are encouraged to boost support for capacity-building through international cooperation.

In Part D, focusing on Loss and Damage, the document begins by recalling Article 8 of the Paris Agreement, emphasising the importance of averting, minimising, and addressing loss and damage associated with climate change. This includes recognising the role of sustainable development in reducing the risk of loss and damage. Special attention is given to particularly vulnerable developing countries and populations, acknowledging their heightened susceptibility to climate change impacts based on factors such as geography, socioeconomic status, and displacement.

The importance of promoting coherence and complementarity in addressing loss and damage is stressed. The document

acknowledges advancements in international efforts to deal with loss and damage, including progress made under the Warsaw International Mechanism and its expert groups, as well as the establishment and operationalisation of the Santiago network. National efforts, including comprehensive risk management and anticipatory action, are recognised.

The document highlights that climate change has already caused and will continue to cause losses and damages, with increasing threats to society, the economy, and the environment. It emphasises the need for improved understanding, support, policy, and action to manage risks comprehensively.

Deep concern is expressed regarding significant economic and non-economic losses associated with climate change effects for developing countries, impacting fiscal space and hindering progress toward Sustainable Development Goals. There is a recognition of significant gaps, including financial, in responding to the increased scale and frequency of loss and damage.

The document calls for urgent and enhanced action and support, particularly under the Warsaw International Mechanism and the Santiago network. Parties and institutions are urged to improve coherence between efforts related to disaster risk reduction, humanitarian assistance, rehabilitation, and displacement to effectively address loss and damage. The importance of transparency is reiterated, with Parties encouraged to provide information related to loss and damage in their biennial transparency reports.

Furthermore, the Executive Committee of the Warsaw International Mechanism is tasked with preparing voluntary guidelines for enhancing data and information collection. The secretariat is requested to prepare a regular synthesis report on information provided by Parties, enhancing the availability of data on loss and damage for monitoring progress at the national level. Interested developing country Parties are encouraged to seek technical assistance through the Santiago network for undertaking relevant actions.

Part 'E — Response Measures' outlines various points related to the economic and social impacts of the implementation of response measures to address climate change.

It begins by recognising the importance of maximising positive and minimising negative economic and social impacts resulting from such response measures. The significance of considering the concerns of Parties with economies most affected by the impacts of these measures, particularly developing countries, is reiterated.

The progress made by the Katowice Committee on Impacts in supporting the forum on the impact of the implementation of response measures is noted with appreciation. The document underscores the key role of just transition, the creation of decent work, and economic diversification in managing the impacts of response measures. It emphasises the need for strategies related to just transition and economic diversification to be implemented considering diverse national circumstances and contexts.

The social and economic opportunities and challenges arising from efforts to achieve the Paris Agreement temperature goal are highlighted. Further efforts are recognised as necessary to strengthen the work of the forum and its Katowice Committee on Impacts.

Parties are encouraged to develop methodologies and tools for assessing the

impacts of response measures, with a focus on creating decent work and quality jobs and economic diversification. They are also urged to establish capacity-building partnerships and networks to increase the number of developing countries utilising these methodologies and tools.

Parties are encouraged to pursue relevant policies for diversifying their economies in a manner that promotes sustainable development and poverty eradication, taking into account national circumstances. The document also requests the forum and its Katowice Committee on Impacts to intensify efforts to implement recommendations outlined in relevant decisions, enhance cooperation among stakeholders, and consider the best available science and different national circumstances.

It notes that the global transition to low-emissions and climate-resilient development presents opportunities and challenges for sustainable development, economic growth, and poverty eradication. The adoption of the decision on the work programme on just transition pathways is welcomed, with a reconfirmation of the program's objective to discuss pathways for achieving the goals of the Paris Agreement in the context of its provisions.

Section III concerns 'International measures' and The document emphasises a commitment to multilateralism and unity in pursuing the objectives of the Paris Agreement. It acknowledges the need for international cooperation to achieve sustainable economic growth and development while addressing climate change, emphasising that climate measures, including unilateral ones, should not unjustifiably discriminate or restrict international trade.

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change is recognised for highlighting the critical role of international cooperation in enabling ambitious climate action. The importance of international collaboration, particularly for those with capacity constraints, is stressed, emphasising its role in sustainable development, poverty eradication, and enhancing climate action across society.

The active engagement of non-Party stakeholders, including civil society, businesses, Indigenous Peoples, local communities, and research institutions, is acknowledged for contributing to collective progress toward the Paris Agreement goals. The document welcomes current international cooperative efforts, voluntary initiatives, and the leadership of high-level champions in supporting non-Party stakeholders' effective participation in the global stocktake.

Parties and non-Party stakeholders are urged to join inclusive, gender-responsive, and cooperative efforts to accelerate climate action. The encouragement of international cooperation, knowledge exchange, and joint projects among non-Party stakeholders at various levels is emphasised. Additionally, cooperation on the implementation of multilateral environmental conventions and agreements, including the Rio Conventions, is encouraged to synergistically achieve the goals of the Paris Agreement and the Sustainable Development Goals.

The final section of the agreement provides 'Guidance and way forward.' Here, the document reiterates the importance of nationally determined contributions (NDCs) under the Paris Agreement and recalls the obligations of Parties to communicate successive NDCs every five years, with a focus

on achieving the objectives of such contributions. Parties are encouraged to communicate NDCs in 2025 with an end date of 2035 and to establish or enhance domestic arrangements for their preparation and implementation.

The critical role of the enhanced transparency framework is emphasised, and Parties are reminded to submit their first biennial transparency reports and national inventory reports by December 31, 2024. The need for increased support to developing countries for implementing the enhanced transparency framework is recognised. The document also acknowledges the role of the Paris Agreement Implementation and Compliance Committee in promoting compliance transparently, non-adversarially, and non-punitively.

Action for Climate Empowerment is highlighted for empowering all members of society in climate action. Parties are encouraged to consider the outcomes of the first global stocktake, implement gender-responsive and human rights-respecting climate policies, and take into account the outcomes of the review of the enhanced Lima work programme on gender. The outcomes of the 2023 ocean and climate change dialogue are welcomed, and further strengthening of ocean-based action is encouraged.

Specific requests are made for expert dialogues on mountains and climate change and children and climate change. The scientific community is encouraged to continue enhancing knowledge on adaptation and providing timely inputs to global stocktakes. The Intergovernmental Panel on Climate Change is invited to align its work with global stocktakes and provide relevant information. High-level champions, the Marrakech Partnership, and non-Party stakeholders are encouraged to consider global stocktake outcomes in their efforts.

Relevant work programs and constituted bodies under the Paris Agreement are invited to integrate global stocktake outcomes into their future work in line with their mandates. Overall, the document emphasises the collaborative and inclusive nature of climate action, encouraging collective efforts and consideration of diverse perspectives.

The document outlines decisions related to the global stocktake (GST) under the Paris Agreement. It calls for an annual GST dialogue, starting in June 2024, to share knowledge on how GST outcomes inform Parties' next nationally determined contributions (NDCs). Encouragement is given for capacity-building support from relevant entities and organisations for NDC preparation.

The launch of the "Road map to Mission 1.5" is decided to enhance international cooperation and stimulate ambition in the next round of NDCs. The refinement of GST procedural elements will be considered, based on experience, starting at the sixtieth sessions of the subsidiary bodies and concluding at the sixth session of the Conference of the Parties (COP). Parties and stakeholders are invited to submit information on lessons learned from the first GST, with a synthesis report informing the refinement process. The second GST components will commence in 2026. Budgetary implications are noted, with actions subject to the availability of financial resources.

Success or failure?

Responses to the climate summit and its final document have been mixed. On the one hand,

official positions were very positive. For instance, US President Joe Biden called the deal an 'historic milestone' while there is still a long road ahead (Reuters, 2023b).

The President of the European Commission, Ursula von der Leyen, called the meeting a "success" and considered it "good news for the whole world that we now have a multilateral agreement to accelerate emission reductions towards net zero by 2050" (von der Leyen, 2023).

Also the UN Environment Programme (UNEP) considered the deal a "landmark decision" since this is "the first time a COP final decision had singled out fossil fuels, whose combustion is by far the leading cause of the climate crisis" (UNEP, 2023). At the same time, UNEP's Executive Secretary, Inger Andersen, noted that the deal is not perfect, but that the world is no longer denying the harmful effects of fossil fuels.

The German Environment Minister, Steffi Lemke, welcomed the agreement since the "global community was able to rally behind a clear commitment to implementing the Paris climate targets" and since "the agreement that has now been reached is a good compromise on which we will build" (Bundesamt für Naturschutz, 2023).

Non-official statements, especially those coming from environmental non-governmental organisations, were not as positive. For instance, Sébastien Duyck, Senior Attorney at the Center for International Environmental Law (CIEL), noted on LinkedIn that the fossil fuels industry tried every trick to protect its interest by hosting the the CoP in a repressive country, thereby taming dissent, by placing a 'big oil' CEO in charge of the CoP, by sending thousands of lobbyists and by coordinating the defence of fossil fuels through the Organization of the Petroleum Exporting Countries (OPEC) (Duyck, 2023).

As some media outlets reported, in a letter, OPEC attempted to convince its members to vote down anything that targets fossil fuels and to focus on emissions instead. The letter therefore urged its member to "proactively reject any text or formula that targets energy i.e. fossil fuels rather than emissions." Given the way the future of fossil fuels was debated at the CoP, the OPEC considered that "pressure against fossil fuels may reach a tipping point with irreversible consequences" (Carrington, 2023).

The World Wildlife Fund (WWF) even considered the new draft "disastrous" since "it doesn't signal the fundamental course correction we need to see out of this process. It presents a buffet of energy options, but not one to phase out fossil fuels" (WWF, 2023).

Also the medial echo did not align with official positions and oftentimes mirrored what has been criticised by NGOs. Sorkin et al. (2023), for instance, precisely state what the WWF so vehemently criticised. The fact that in countless media sources climate protection NGOs made their voices heard by expressing their disappointment and frustration with the CoP points allows for the assumption that the overall response is not as positive as political representatives make many believe.

Conclusion

Against the backdrop of the above, it nevertheless lies in the eyes of the beholder to determine whether COP28 can be deemed a failure. From a scientific perspective, however, the final deal that was struck fall short in addressing the climate crisis, as current climate

targets, if implemented, would lead to a 2.9-degree Celsius warming by the end of the century. Factually, progress since the Paris Agreement has been insufficient, with emissions reductions falling short. Despite a slight improvement in projections, meeting the 1.5-degree target requires a 42% reduction in global CO_2 emissions by 2030. In light of the letter by OPEC, this appears more than unlikely.

The effectiveness of the Dubai conference decision in transitioning away from fossil fuels remains uncertain, hinging on the national policies of countries. The upcoming submission of new national climate targets by 2025 will reveal the world's commitment to combating global warming.

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FIELD REPORT

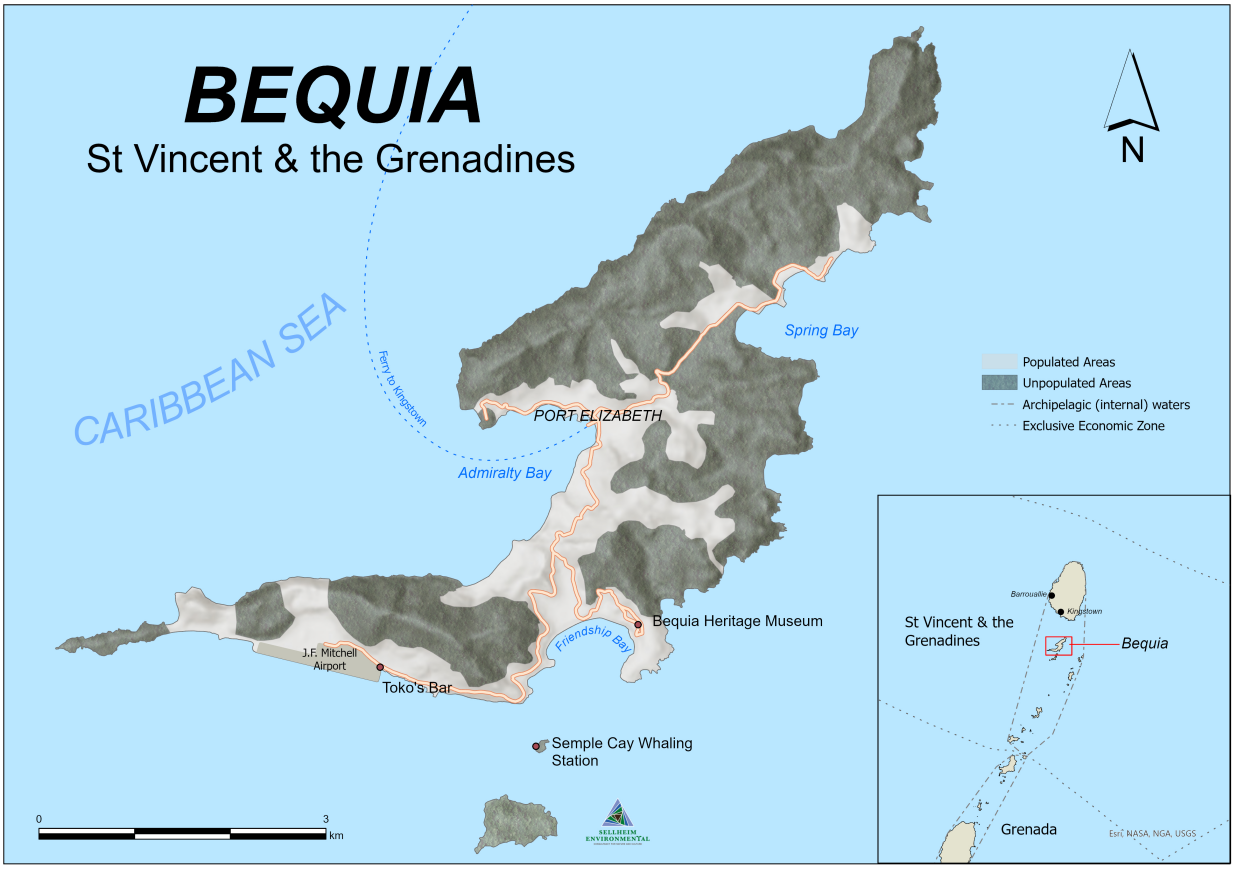
Bequia, St Vincent & the Grenadines

Introduction

In February 2023 the International Whaling Commission (IWC) issued a tender offer to conduct a survey of indigenous and human rights in the context of Aboriginal Subsistence Whaling. The tender offer resulted from an IWC Expert Workshop on ASW in September 2015 and a subsequent meeting by the ASW Working Group (ASWWG) in 2018, which recommended the Commission undertake a survey of international indigenous and human rights instruments. This survey is to inform the Commission's role in addressing indigenous and human rights in the context of ASW.

In March 2023, Attorney-at-law Jessica Lefevre contacted Dr Nikolas Sellheim to apply to conduct this survey, which was approved by the Commission in June 2023. The draft report of the survey is due in March 2024 and the final report is due in June 2024. The findings of the survey will be presented to the Commission at its next meeting in the fall of 2024 in Peru.

Apart from extensive desk research on indigenous and human rights and a deep link between these rights and ASW, the two consultants consider it of utmost importance to hear the voices of the whalers themselves in order to better link the legal framework to the conditions on the ground. Therefore, additional funding is sought to conduct field research in three of the four ASW regions,



Alaska, Greenland and Bequia. Due to the current geopolitical situation, a field visit to Chukotka is not possible, but informants will be contacted remotely.

In order to save costs, the two consultants carried out or will carry out single-person fieldwork in Bequia (Sellheim, November 2023) and Alaska (Lefevre, December 2023). Joint two-week fieldwork is planned for March/April 2024, pending the approval of funds.

This report briefly lays out the main findings of Sellheim's fieldwork in Bequia, 11—24 November 2023.

The fieldwork was generously sponsored by the *Opes Oceani Foundation*.

An overview of Bequia and Bequian whaling

The northern Grenadine island of Bequia (Carib for 'The island of clouds') is approximately 18 km^2 in size and part of St Vincent & the Grenadines. The island is located around 10km south of the main island St Vincent and connected by two ferry lines. The population ranges at around 5,000 with the majority living in the island's capital, Port Elizabeth. In the south of the island, a small airport is located, J.F. Mitchell Airport, linking Bequia also with other Grenadine islands as well as with Dominica and Grenada.

Bequian whaling has been recognised as ASW in 1987 as a result of the government's needs statement. Compared to other ASW regions, however, Bequian whaling is of rather recent origin and was started only in the late 1800s. While the whale hunt in the St Vincentian town of Barrouallie targets small cetaceans such as short-finned pilot whales, Bequian whaling has always targeted humpback whales. During the peak of Yankee whaling in the first half of the 19th century, Bequia was frequently visited due to the islanders' exceptional ship-making and -reparation skills

Boats on display at Bequia Heritage Museum © Nikolas Sellheim, 2023

Toko's bar © Nikolas Sellheim, 2023

as well as the abundant sperm and humpback whale populations in the waters surrounding the island. At that time, Bequia's sugar cane economy had by and large collapsed and when Yankee whalers offered Bequians employment on the whaling vessels, these were gladly accepted.

While Yankee whaling went after the whales for their oil, spermaceti and in parts ambergris, Bequians quickly learnt to appreciate the meat and the blubber of humpback whales as a needed source of food in the resource-scarce island. As a result, the techniques and technologies used in Yankee whaling became a determining factor in Bequian whaling. This means also that up to this day, the main whaling boat is derived from Yankee whaling boats of the 19th century while also the harpoon is the same type as from that time.

Currently, the IWC has ascribed Bequians a quota of four humpback whales per year. This quota, however, was reached only once in the past 10 years. In 2023, one humpback was landed whereas in 2021 and 2022 no whale was killed. The hunting season is not set by the government, but whalers explained that "it starts when we see the whales and it ends when we don't see them anymore."

Usually, the first whales appear in southern Bequian waters at the end of February with the last ones leaving these waters in April/May. However, it did occur in the past that whales could be seen until the end of June/beginning of July.

All whaling operations start from the southwest of the island, directly next to J.F. Mitchell Airport in a small bar called Toko's. Here, the last remaining active whaling boat is beached during the off-season. Even though the bar used to be a small convenience store, it has not become the 'headquarters' of the whalers where they gather under the canopy of a large palm tree. If one wants to meet whalers, one needs to go to Toko's.

Once a whale is spotted, the whaling boat, manned by a crew of six, is put in the water and the chase begins within the internal waters of Bequia, which is recognised as an archipelagic state under the UN Convention on the Law of the Sea. Once the harpoon is struck into the whale, speedboats participate in the hunt and kill the whale by lancing it. It is then towed to land.

Once a whale is killed, it is taken to a small islet named Semple Cay, in the southwest of Friendship Bay. Before the whale is flensed and butchered, a representative from the Fisheries Division in Kingstown measures the whale and takes samples for potential genetic testing, which mostly occurs in laboratories in Japan. Only after these measurements and samples have been taken the whale can be butchered.

The socio-cultural and economic importance of whaling

While it was not possible to witness the whale hunt first hand due to the late time of the year, planned or random interviews were conducted all across the island with informants of different professions. What became clear very quickly is that apart from the nutritional value whale meat brings to the island, the landing of a whale is cause of significant celebrations, bringing together the entire island. Once the words "blows, blows" — indicating the sighting of a whale — can be heard, word spreads quickly and hundreds, if not thousands of Bequians rush to the southern shore to catch a glimpse of the hunt itself and to get hold of whale meat, blubber or a piece of bone. The excitement even goes so far as shops are closed and schools send their pupils home, so that they are able to witness the hunt.

According to all informants, once a whale is landed, the southern shores of Bequia resemble a large carnival with food stands popping up, spontaneous live music and

Corned whale with farine © Nikolas Sellheim, 2023

vendors offering different goods. The butchering of the whale merely takes several hours. While the whalers themselves set the prices per pound and keep meat for themselves, it is quickly sold amongst the islanders as well as residents of other islands, quickly making their way to Bequia. It has happened in the past that looting for whale meat occurred and that police had to be present to keep the crowd in check. Normally, however, it is the women who are responsible for the selling of the meat and its proper distribution.

While Bequia is seemingly not an overly poor island, prices in the very small supermarkets that can be found in Port Elizabeth are surprisingly high. One informant noted that this is because of increasing numbers of tourists who bring in money, allowing the retailers to raise prices for all available goods.

Local residents, in turn, need to carry this extra financial burden. The meat of a whale is consequently a very welcome addition to Bequian household economies since it can be acquired rather cheaply (approximately 1.50US$ per pound). One informant remarked that whale meat may save a household up to 2.000US$ per year.

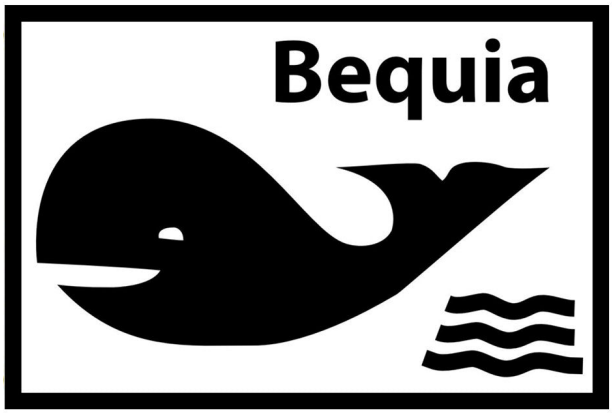
Whaleboner © Nikolas Sellheim, 2023

Whale meat and blubber are prepared in two different ways: dove refers to whale being deep fried in its own oil. If it is left it is oil, it is durable for several years, as several informants noted. The second way is called corned whale, which refers to salted or sun-dried whale. Once it is to be consumed, it is rehydrated and fried or barbecued. Also corned whale is durable for several years. Traditionally, humpback whale is eaten either with Bequian sweet potatoes or with farine, a cassava-based ground powder that also serves as a typical source of food on whaling and fishing boats.

While for individual Bequians whaling plays an economic role, the socio-cultural importance for the entire island cannot be underestimated. It appears as if whales and whaling define the entire island. The unofficial flag of Bequia, a very common tourist symbol that can be found on t-shirts or fridge magnets, for example, depicts a sperm whale, consequently linking Bequia with its Yankee whaling past. After all, sperm whales cannot be spotted from the shore, but can only be found in deeper waters.

As several informants noted, whales and whaling are a matter of Bequian identity, going far beyond whaling being a mere economic activity. Indeed, whales and whaling (or references thereto) can be found all over the island. For instance, on the shore of Port Elizabeth, a bar/restaurant called Whaleboner can be found. Its seaward entrance is arched by two humpback whale rips and the bar consists of humpback vertebrates and rips.

The Bequia Heritage Museum places great emphasis on the island's whaling history. Being divided into two parts, the boat museum depicts four boats, three of which were actively used in whaling. The walls are decorated with ship-building and whaling tools as well as with painted whale bones. The other part of the Museum presents relicts, particularly pottery, which stem from pre-colonial times. The screen, however, on which



Unofficial flag of Bequia © Jaume Ollée, 1997

Model boat shop © Nikolas Sellheim, 2023

a PowerPoint presentation is shown, goes back to the colonial period and places great emphasis on the importance of whaling for the island. Here, visitors are also made acquainted with one of the most renowned whales of Bequia, Athneal Ollivierre, whose boat is one of the boats on display in the boat museum. The history of Bequia, it seems, cannot be seen without whaling.

Along the waterfront of Port Elizabeth, several souvenir vendors sell their handicraft to passing tourists. While many are made of different species of conch, whale bone carvings as well as whale teeth (acquired from Barrouallie) can frequently be found. The handicraft is made on site, in numerous instances also depicting whales and whaling scenes.

One of the major tourist exports link Bequia's whaling history and its famous boat-making skills of the past: hand-made wooden model boats. Several stores offer these boats, the sizes of which range between approximately 35cm to 1,5m with prices ranging from around 250US$ to 7000US$. While especially the larger boats are replicas of famous yachts, the smaller boats — the vast majority of boats for sale — are in fact whaling boats, including harpoons and lances. Most of the whaling boats are named *Why Ask*, the famous boat designed by Athneal Ollivierre and built by Lauren Joe Dewar in 1983.

Neither the island's maritime nor its whaling history can be ignored. All in all having formally or informally interviewed around 20 informants, it has become clear that all have considered whaling integral to the island's and islanders' being. All supported whaling, all stressed the importance of whaling for the island and all highlighted the 'carnival' that would erupt when a whale is landed. Merely on random acquaintance, a Canadian citizen having spent several months in Bequia, voiced his opposition to whaling. He even almost got into a fight with a whaler who had his boat in the harbour of Port Elizabeth (Note: This

appears highly unlikely since no whaling boats are harboured in Port Elizabeth). He noted furthermore that his best friend "sails for Paul Watson."

While all informants considered whaling important for Bequia, not all have either eaten whale meat or like to eat whale meat. Some, especially working in the hotel, appeared personally rather indifferent to whales and whaling. They have seen the landing of whales, they know people that whale and eat whale, but don't care for whale or whale meat themselves. One interview partner stemmed from the whaling family of the Ollivierres and was the great nephew of Athneal Ollivierre. While having grown up with whaling, he has never liked whale meat. He is a stout supporter of the hunt, but would never go out whaling himself: "They [whalers] are either incredibly stupid, incredibly brave, or both."

What has become obvious during the time with the whalers is the social bond whaling creates. An early observation on the island was the presence of several people with special needs and a school for children with special needs. When spending time at Toko's, two impaired individuals were part of the group. One was merely able to scream at others, but was taken for granted. Another was deaf with associated difficulties talking, but was so well integrated into the group that all were able to apply a certain level of sign language, acting as interpreters for him in case his message could not come across. Even though he was not able to speak properly, he is nevertheless part of the whaling crew because of his "exceptional sailing skills." As a consequence, one might speculate, there was an overall need to learn a certain level of sign language in order to be able to communicate with him even better.

Social cohesion plays a crucially important role as an 'insurance policy' for whalers. One informant barely survived this year's hunt since his foot got entangled between the whale and the harpooning rope. He was therefore dragged underwater and was rescued by the crew around 20 minutes later. Since his foot was severely injured, he is not able to go fishing or whaling in the nearer future. Since none of the whalers holds an official health insurance and "each man is on his own", support amongst each other appears to be ever more important. Therefore, the injured whaler could now be seen helping out at Toko's bar, being responsible for the cleaning of the tables, the supply of beverages and food and to look after the overall cleanliness of the bar.

Whaling, conservation and outside influence

Whaling in Bequia follows the quota set by the IWC. Each whaling boats needs a permit that allows it to participate in the hunt. At this time, merely one boat holds such a permit and

Beached whaling boat © Nikolas Sellheim, 2023

Small cetacean whaling boat in Barrouallie (left) © Nikolas Sellheim, 2023

it is being maintained by the whaling crew.

Whaling operations target male humpback whales. A problem which is faced by the whalers is the fact that sometimes females are accompanied by a calf as well as an additional whale that serves as a 'babysitter' for the calf. It is therefore sometimes difficult to determine which whale is the mother and which whale is the accompanying (male) whale. In the past it has therefore happened that the mother was killed, inevitably leading to a necessary killing of the calf as well as it is not able to survive in the wild without its mother. When this was the case, the kills were reported to the IWC as an infraction since calves are prohibited from being hunted. According to the whalers, this has "happened once or twice". It is however not in their interest to kill calves nor females since they themselves show great interest in maintaining the stock. If it is clear that a female is on site, it is left alone.

For Bequians, the quota of 4 humpback whales per year is sufficient. When asked whether they would want to hunt more whales if they could, the unanimous reply clearly reflected that no interest exists to go beyond 4 whales per year: "This is enough for the island."

There is no interest in hunting other whales than humpbacks either. While there are sperm whales in deeper waters, hunting them would prove to be significantly more dangerous since this hunt would occur much farther away from the shore. Moreover, the meat of sperm whales is inedible. In case of a non-renewal of the quota, an obvious alternative would be small cetaceans since they are not managed under the auspices of the IWC. The active, almost daily hunt in Barrouallie is a telling example in this regard. However, Bequian whalers are not interested in the hunt of small cetaceans since they "are accustomed to humpback whales and not to blackfish [short-finned pilot whales]." They noted that they don't know how to hunt them and that they don't know how to prepare the meat.

This led to the hypothesis that the whaling communities are not in contact with each other. This was confirmed by whalers in Barrouallie who knew about the Bequian hunt, but who had never seen it nor talked to Bequian whalers.

Given the outside pressure that is frequently exerted on whaling communities all over the world, it appeared reasonable to assume that Bequian whalers are in contact with other ASW communities. This, however, is not the case, because they don't see a reason to attract more attention by networking with whaling communities elsewhere in the world.

All in all, however, protests against whaling in Bequia have been marginal. One whaler recalled a British woman who appeared to show great interest in Bequian whaling. While she also showed great sympathy for the whalers, she proved to be a Greenpeace activist who used the information she gathered to write a condemning article in a British newspaper. The impact of this article was however negligible.

Asked about the tourists that frequently visit the island and also witness the hunt, one whaler said: "They come and watch — both in awe and disgust." According to the whalers, the overall attitude of tourists appears to be that if they don't like it, they simply leave. Larger protests against the hunt have not occurred on Bequia.

Yet, neither of the whaling interview partners could understand why St Vincent & the Grenadines has joined the IWC since it has never provided any advantages. To the contrary, now whaling is under international scrutiny while large amounts of money need to be spent for the IWC representative to travel to the meetings. "The best would be to leave the IWC altogether." This view is not shared by St Vincent & the Grenadines' IWC Commissioner, who referred to the country's international responsibility concerning the management and utilisation of whales. He noted that "St Vincent is a small country and therefore it is even more important that we can make our voice heard — on the same level as the United States." With this in mind, it appears rather unlikely that the country would leave the IWC in case the quota is not extended at the next meeting in 2025.

Bequian whaling as an intangible world heritage?

Bequian whaling is unique on several levels. First, the activity is extremely small scale, compared with other whaling activities in the world. A comparison could be made to whaling on Lembata, Indonesia (Indonesia is not part of the IWC), in so far as it is very opportunistic and merely targets a maximum number of four whales per year. From a conservation perspective, therefore, it is harmless since the humpback whale stocks in the Atlantic and adjacent seas are stable, if not growing.

Second, Bequian whaling is a glimpse into the past. Having acquired whaling skills from Yankee whaling in the 19th century, the current modes are still very much the same as they were more than 150 years ago. One might therefore argue that it is a living past, which allows a perspective on the techniques, technologies and associated dangers whalers faced during *Moby Dick*'s times and still face.

Third, the socio-cultural implications of whaling are not only unique, but also profound, especially with regard to the role it has continuously played for the island's identity. If whaling were to discontinue, Bequia would be stripped of a substantial

element of what defines it, furthermore making life for the islanders economically harder.

Given its uniqueness, Bequian whaling could be considered a cultural heritage. Three UNESCO Conventions could potentially be relevant: the 1972 World Heritage Convention, the 2003 Convention for Intangible Cultural Heritage and the 2005 Convention on the Protection and Promotion of the Diversity of Cultural Expressions. While the World Heritage Convention aims to protect *tangible* natural and cultural sites, the 2005 convention aims to protect the skills of artists and practitioners. The 2003 convention, however, seeks to protect cultural practices, expressions, knowledge(s) and skills, therefore making it relevant for the conservation of Bequian whaling.

St Vincent & the Grenadines ratified the Intangible Cultural Heritage Convention in 2009. According to Article I of the Convention, State Parties have to fulfil several requirements when proposing the inclusion of a cultural heritage:

(a) to safeguard the intangible cultural heritage;

(b) to ensure respect for the intangible cultural heritage of the communities, groups and individuals concerned;

(c) to raise awareness at the local, national and international levels of the importance of the intangible cultural heritage, and of ensuring mutual appreciation thereof;

(d) to provide for international cooperation and assistance.

Furthermore, Article II stipulates that "intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity."

In light of these criteria, it would appear reasonable to consider Bequian whaling as an intangible cultural heritage. For this to happen, however, several steps need to be taken. First, the government of St Vincent & the Grenadines needs to propose Bequian whaling to be considered in need of safeguarding to the Secretariat of the Convention. The inclusion of the cultural element in two different lists is possible.

List of Intangible Cultural Heritage in Need of Urgent Safeguarding

To be included in this list, two criteria are applied: either, the element under consideration is "in urgent need of safeguarding because its viability is at risk despite the efforts of the community, group or, if applicable, individuals and State(s) Party(ies) concerned"; or the element "is in extremely urgent need of safeguarding because it is facing grave threats as a result of which it cannot be expected to survive without immediate safeguarding." A State Party must therefore fill out a form that demonstrates that one of these two points is fulfilled. The ultimate purpose of this list is to keep the elements inscribed on it alive, to mobilise international cooperation and assistance for stakeholders to undertake appropriate safeguarding measures.

In the case of Bequian whaling, one might argue, it is not necessarily in extremely urgent need of safeguarding, but at least in urgent

need of safeguarding. After all, if the IWC decided not to extend the quota for humpback whales, the activity would cease for at least six years until the ASW quotas are reconsidered by the Commission. Once halted, however, it is rather unlikely that the quotas would be granted again. The fact that the 1982 moratorium on commercial whaling was to be reviewed after 10 years, but remains in place to this day is a telling example in this regard. The government would therefore have an incentive to argue for an urgent need of safeguarding.

Representative List of the Intangible Cultural Heritage of Humanity

This list contains elements that demonstrate the diversity of this heritage and raise awareness about its importance. The criteria are significantly different to the List on Urgent Safeguarding:

(a) The element constitutes intangible cultural heritage as defined in Article 2 of the Convention.

(b) Inscription of the element will contribute to ensuring visibility and awareness of the significance of the intangible cultural heritage and to encouraging dialogue, thus reflecting cultural diversity worldwide and testifying to human creativity.

(c) Safeguarding measures are elaborated that may protect and promote the element.

(d) The element has been nominated following the widest possible participation of the community, group or, if applicable, individuals concerned and with their free, prior and informed consent.

(e) The element is included in an inventory of the intangible cultural heritage present in the territory(ies) of the submitting State(s) Party(ies), as defined in Article 11 and Article 12 of the Convention.

A precondition for inclusion in this list is furthermore that the element is already included in a national list of intangible cultural heritage, as the last criterion outlines. Up to this point, however, this has not yet occurred. Crucial for both lists, however, is the inclusion of the local communities for which the element plays a cultural role. In the case of Bequian whaling, in principle points (a)—(c) are already in place since it does correspond to the criteria of Article II (point (a)), it is already part of international dialogue concerning cultural diversity within the IWC (point (b)), and the government has put measures in place to safeguard it (point (c)) as part of the ASW regime. Point (d), however, does not yet appear to be relevant as it is not yet clear in how far Bequian whalers are part and parcel of any nomination process — especially since thus far no nomination process has been initiated.

The process of inscription

The inscription process for either of the lists follows the same timeline. By 31 March, all files outlining the reasons for list inscription need to be submitted to the Secretariat of the Convention. By 30 June, the Secretariat has reviewed the file and checked them for completeness. If information is missing, the nominating State Party has time until 30 September to provide the missing information. If by then not all information is provided, the process will be moved to the next evaluation cycle.

Once all information is complete, between December—May, an Evaluation Body, for instance an accredited organisation competent in the field of intangible cultural heritage or

individual experts, examine the provided information. The Evaluation Body, however, is not to comprise of nationals from the nominating body.

Between April—June the Evaluation Body holds its final meetings to make a final evaluation of the nomination. Thereafter, but within four weeks of the meeting of the Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage, established under Article V of the Convention, the evaluation is made available online for comments from other State Parties. The Committee then makes its final decision on nominations when it meets in November or December of each year. Once a nomination is approved, it will be included in one of the lists.

Once an element is included in the list, it is primarily State responsibility to ensure that the element is protected. However, once inscribed, the State Party is eligible to request international assistance from the Intangible Cultural Heritage Fund of up to 100,000US$. Every four years, the State Party is to submit a periodic report to the Committee on the status of its elements on the Urgent Safeguarding List. This report must contain information on the state of the element, the way safeguarding actions impact the element and the degree of communal participation in the implementation of these actions.

For elements inscribed on the Representative List, State Parties are required to submit a report on a six-year basis. The report is to contain information on the implementation of the Convention in regard to the state of the element as well as detailed information on the viability and nature of actions taken to safeguard the inscribed elements.

While Bequian whaling does correspond to the criteria set forth for nomination on the Urgent Safeguarding List, it appears rather unlikely that the government of St Vincent & the Grenadines will ever take this step. On the one hand, as a developing country, financial resources are scarce. While it is possible to apply for support from the Intangible Cultural Heritage Fund, it appears rather difficult to imagine what this money would be used for. After all, within Bequian society, whaling does not need more promotion or more educational efforts while the whalers themselves look after their boats and gear. A break on whaling because of lack of funds has not been an issue for the interviewed whalers.

On the other hand, whaling itself is stable in Bequia and it is primarily outside threats, such as political and reputational, that aggravate whaling activities in Bequia. Within Bequia itself — resulting from Bequian societal developments — the viability of whaling does not appear to be at risk.

Final thoughts and summary

Bequian whaling constitutes a truly unique sociocultural and economic activity that provides a crucial element of identity for an entire island. Dating back almost 200 years, it is currently in a very similar state as it was when it was first introduced to the island and therefore constitutes a glimpse into the past. As shown, apart from economic relief for a resource-scarce and rather expensive island, it also serves as a cultural event that unites the island and provides for island-wide happiness and enjoyment. The deep link between whaling and Bequian identity is visible in almost every corner of the island where references to whales and whaling can be found.

Bequians do not hide their whaling history (and present) — to the contrary. Whaling is

said to have saved the island's economy when the sugar plantations collapsed. As one informant even said: "Without whaling, there would be no Bequia." Nowadays, the primary industry is tourism on the island, providing jobs and income for many islanders, including whalers. Yet, as the COVID-19 pandemic has shown, a major reliance on tourism is risky and in light of a lack of other economic sources, whaling becomes an important provider for food.

For Bequian whaling to continue, however, it needs a continuing quota from the International Whaling Commission. It appears unrealistic that St Vincent & the Grenadines would leave the IWC in case the quota is not extended, given the government's position to be a part in international discourse. From the perspective of the whalers, however, this would in any case be the right step to take since, in their view, the IWC has brought nothing but difficulties for them. Given its uniqueness and the fragile grounds on which it stands, a thought-play to consider Bequian whaling as an intangible cultural heritage appears warranted. As shown, it does fulfil the criteria to be included in the Urgent Safeguarding List of the Intangible Cultural Heritage Convention. Whether or not the process of inscription is ever taken by the government cannot be ascertained, but appears unlikely at this point.

What the fieldwork has shown, however, is the incredible skills, openness and inclusivity of Bequian whalers, who maintain a tradition as a matter of pride for their past and as a matter of responsibility of the island itself. Dr Nikolas Sellheim thanks all informants for their willingness to be formally and informally interviewed, to provide valuable information and to provide insight into an activity which is oftentimes falsely labelled and portrayed.

ARTICLE

Communicating with whales through AI?

Introduction

The increasing availability of artificial intelligence (AI) may also have repercussions on the way conservation is applied in the future. Of particular interest in this regard is the way different whale species communicate with each other. Already in the 1960s, Roger Payne was fundamental in catalysing the 'Save the whales' movement when he discovered and promoted the way humpback whales sing. The 'Songs of the humpback whale', released in 1970, became prominent elements in the children's rooms of the West, manifesting the untouchable status of whales as intelligent and cultural beings (Sellheim, 2023). While humpbacks are the most known species to 'sing', also other whale species have developed means of communication that may be of interest to humans, such as the sperm whale. And it is this species which through its clicking sounds as a tool for echolocation has attracted the attention of an international team of researchers, aiming to decipher these sounds through AI.

The sounds of whales

Ever since whales have been studies in more depths and in regard to the way they communicate, interests in these species has not waned. To the contrary. The whale songs recorded by Roger Payne showed clearly discernible patters that some have interpreted to mean that these songs are fraught with

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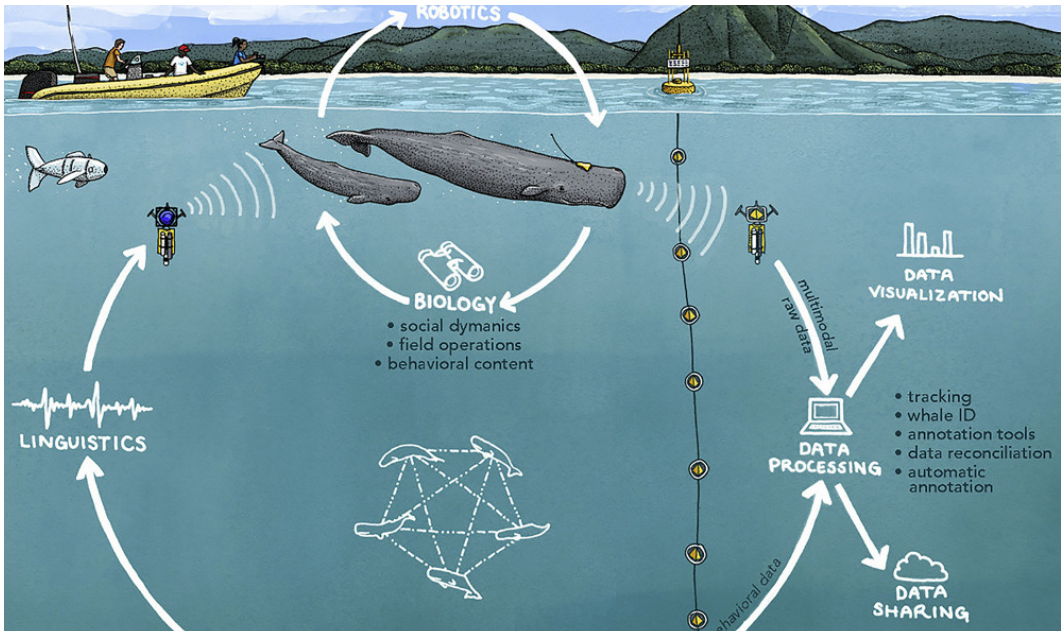

Graphic schematic of Project CETI © Andreas et al., 2022.

meaning. Whitehead and Rendell (2015, pp. 77–78) describe the song structure in the following way:

"A song cycle contains about eight 'themes', and these have a distinctive, and invariant, order: theme I is followed by theme II which is followed by theme III, and so on. When the cycle is complete, theme I follows theme VIII, usually without a pause. Then we hear theme II, and so on. Because it is a continuous cycle, designating one of the themes as 'theme I' is largely arbitrary, although the whales usually choose the end of a particular theme in order to come to the surface to breathe. Each theme consists of a number of nearly identical 'phrases'. The most flexible part of the song is in the number of phrases in each theme."

In other words, the sounds of humpback whales are not merely arbitrary sounds, but appear to carry a certain message that enables them to coordinate their movements. The 'song' is consequently better understood to mean 'language'. A similar observation was concerning sperm whales. While it has been clear for some time that the clicks are subdivided into smaller units, called 'codas', the actual meaning of these clicks has not been fully understood. Peterson (2011, p. 249), for instance, writes that slow-click vocalisation of male sperm whales are "a call to fertile adult females, probably, and a warning to other adult males."

Whitehead and Rendell (2015, p. 150) note that contrary to orcas who use clicks for echolocation and whistles or pulsed calls for communication, sperm whales use clicks "for just about everything." Apart from the codas, which is reminiscent of morse code, the characteristic spermaceti organ which is responsible for making the clicks enables the whale to create other clicking sounds such as creaks or the aforementioned powerful slow-click vocalisation that can also be heard through the hull of a ship.

What has become clear is that different groups of sperm whales use different variations of

codas, having prompted some to even speak of 'dialects' (e.g. Rendell et al., 2012). Interestingly, however, in the North Atlantic, even though different dialects exist, groups using these dialects extend over a significantly larger geographical region than in the Pacific. What this means is that in the Atlantic, dialects can more easily be associated with geographical differences whereas in the Pacific, or more precisely surrounding Galápagos, sperm whales share the same waters but still may use different dialects. These 'clans' therefore appear to consider it significantly more important to differentiate themselves from each other than in the Atlantic. One reason for this might related to the availability of squids, the main food source of sperm whales, the congested abundance of which might lead to different sperm whale clans overlapping and interacting, therefore fostering their distinctive dialects within the same geographical region (Whitehead & Rendell, 2015, p. 154).

What this rather sophisticated mode of communication meant in the past was rather recently considered in a study published in Biology Letters (Whitehead, Smith & Rendell, 2021). Here it was shown that during the early years of Pacific commercial whaling for sperm whales, whale catches dropped by around 58%. This massive drop cannot be explained by declining population levels nor can it be explained by less skilled whalers. Instead, the authors maintain, sperm whales quickly learnt how to adapt to whaling and to develop evasive action. Since the whales live in rather small social groups and due to the fact that their communication is rather far advanced, this allowed them to develop evasive action and to communicate this to other individuals in the social group. 'Word', so to speak, then spread in the Pacific, allowing larger numbers of sperm whale clans to avoid being targeted by commercial whalers by fleeing upwind or even by attacking the whale boats. Arguably, the story of Moby Dick may describe precisely this behaviour.

Artificial intelligence as a tool to speak to whales?

In light of the increasing role AI plays in and for modern societies, also cetacean science has started to make use of this new technology. In 2020, the Project CETI was formed in order to better understand the language of sperm whales and to increase conservation efforts, especially in the Caribbean nation of Dominica. The project comprises a large number of linguists, ocean biologists, roboticists, acousticians and cryptographers in order to develop AI tools to understand sperm whales and the way they communicate, especially in light of different threats. Using so-called 'arrays' that are attached to the whale, underwater drones, underwater drifters and aerial drones, CETI analyses the different sounds made by sperm whales during different phases of their lives.

As a first result, National Geographic reports that the first 'word' may have been deciphered: a signal the animals use to initiate diving (Langer, 2023). As a preliminary result, however, it appears that sperm whale communication is significantly more complex than was presumed earlier. While it appeared that they use merely around 3 codas, it has now become clear that their communication may be even reaching a level of complexity similar to that of the human language. By linking behaviour and the analysis of millions of recorded codas, Project CETI aims to find patterns based on machine learning.

Naturally, the wish to talk to non-human species has been part of human imagination for decades. Hugh Lofting's Doctor Dolittle is probably one of the best known stories that deals with equal communication between humans and animals. In the 1960s, human-dolphin communication even went so far as an entire house was refurbished in order to allow a dolphin ('Peter') to live with a scientist, Margaret Lovatt, in a NASA-funded project to decipher the language of dolphins. Unfortunately, the closeness between the dolphin and the Lovatt went so far as even the Hustler magazine reported about it as being 'Sexploitation'. After funding for the 6-month project was in the end cut, the dolphin was moved to a laboratory with smaller tanks where he died shortly after. The only outcome of the project, it seemed, was that dolphin communication was significantly more complex than initially thought and that they hold a high level of communicative intelligence (Riley, 2014).

This rather naive approach to cetacean communication is far from CETI's diverse and elaborated methods. The fact that different disciplines work together using modern technology gives hope that communication of sperm whales can be deciphered. Indeed, if successful — at least in part — it may also allow for the more advanced analysis of other non-human species' communication, for instance chimpanzees (see also Slocombe et al., 2022).

Ethical consequences of 'speaking animal'

The idea of being able to properly communicate with animals appears appealing at first, but it bears several ethical consequences that must be thoroughly thought out before this communication is established and ultimately used. The underlying assumption of human-animal communication is that also (some) animals, such as sperm whales have agency. In relation to non-human animals, however, this concept is difficult to define.

Several attempts have been made to determine what kind of agency non-human animals could have, two of which are summarised in Meijer & Bovenkerk (2021): 'Propositional Agency' refers to agency which describes the difference between intentional action and mere behaviour. While it is easy to consider this type of agency through an anthropocentric lens (i.e. 'lesser-than-human agency'), propositional agency relating to animals should be considered exactly as such, meaning that sperm whale agency is sperm whale agency, standing in no relation to human agency.

On the other side of the spectrum we find 'Materialist Agency', which essentially refers to a web of interrelated objects (humans and non-humans) exerting certain pressure onto the world that all respond to. Materialist Agency is therefore rather subjective than responding to an active will, therefore holding the danger of disregarding any 'planned' action by animals.

Given these difficulties surrounding the ethical approaches to animal agency, Meijer & Bovenkerk propose the application of 'relational agency', which does not provide for an ethical approach on a macro-level, but rather considers agency of humans and non-humans within different contexts. In their view, an equal view on agency allows for a significantly more egalitarian ethics: Like humans, who are born into a certain culture with a certain gender and skin colour, having

the opportunity (or not) to choose a certain profession, religion or partner, animals should be approached in the same manner, holding the same character of agency.

If, therefore, animals agency is approached through this lens, the implications of human-animal communication could be severe. For example, it might be possible to breed animals in a way that no longer allows for the development of any particular agency, enabling humans to exploit them even more efficiently. Already more than 20 years ago, this issue became prominent in the context of laboratory animals and the associated 'human-animal bond,' pairing utilitarian and deontological (good or bad actions according to a clear set of rules) approaches to this bond (Russow, 2002). Being able to communicate with these very intimately situated animals would therefore allow two things: on the one hand, it might allow the researcher to develop new modes of relationship-building, to establish friendship or even love, and certainly trust — means to improve the animal's welfare. At the same time, however, if the animal experiences pain as part of animal testing or is even euthanised, this would raise a whole set of other moral questions as the trust that was built, the friendship or love would be violated severely.

On the other hand, communication with laboratory animals could potentially increase the exploitative nature of the setting, since, as mentioned above, merely those animals that do not show any sign of agency would be preferably used in a laboratory. This would potentially detach the human further from the animal, allowing the research to potentially break ethical boundaries. Animals could be manipulated in a way that merely serves human interests on a much higher and more sophisticated level.

If CETI manages to establish a line of communication with sperm whales, what would this mean for the ecosystem? The question cannot be answered here, but it appears reasonable to assume that human-sperm whale-communication could have an impact on the way the whales behave in their natural habitat. Since whales play a crucial ecological role (Roman et al., 2014), this role could potentially be altered dramatically if, for instance, the whales prefer staying at one particular spot where there is no danger (because of the communication with humans) instead of migrating to other regions of the world. From this perspective, therefore, a Code of Ethics for communication with non-humans is absolutely necessary since the impacts of this communication on marine and terrestrial ecological systems could be severe.

Conclusion

Communicating on equal terms with non-human species is probably as old as humanity itself. But only in recent years, the emergence of artificial intelligence takes this communication a large step forward, allowing for more detailed and concise analyses of intra-species communication. From past research it has become clear that many animal species even have a kind of culture that makes them unique when compared with humans. And it has become clear that especially whales do communicate in complex manners through song (e.g. humpback whales) or clicking sounds (e.g. sperm whales and dolphins). Given that they are also ascribed a high level of intelligence, it becomes ever more intriguing to be able to 'speak whale' in order to delve into their seemingly sophisticated minds.

But as the above also has shown,

communication with whales does not come without risks. Therefore, a necessary precondition before for this communication is established is the evaluation of its impacts on the treatment of animals, in case they live in captivity, and on the ecosystems in which they roam, should they roam in the wild. Whether or not human-animal communication will ever be established cannot yet be ascertained, but in in light of the advances of AI, it does not appear to be unrealistic.

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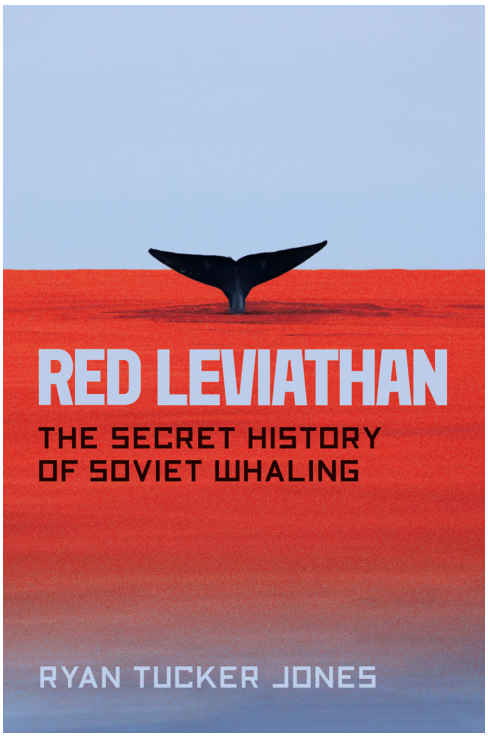
BOOK REVIEW

Ryan Tucker Jones' 'Red Leviathan — The Secret History of Soviet Whaling'



It is almost impossible not to stumble across terms such as 'Whaling Olympics' when dealing with the current status and the history of (commercial) whaling in the world. Indeed, the literature on whaling is very detailed in the tracing of the whaling industry and several seminal book have been written on this subject (e.g. Tønnessen & Johnsen, 1982; Dorsey, 2016). What becomes clear when studying this literature are essentially two things (at least): first, the history of modern whaling is rooted in several misconceptions, such as the so-called 'blue whale unit' (BWU), which served as the benchmark for setting catch limits, but realistically wiping out the largest whales. A second observation is that of misreporting, especially by the Soviet Union. These two points cumulatively resulted in the 'Whaling Olympics', the hunt for whales in a rather uncontrolled fashion, decimating the stocks dramatically and in the end causing all commercial whaling to cease with the adoption of the moratorium in 1982.

And this is where *Red Leviathan* enters the scene. The book is a truly unique and thus far unparalleled contribution to whaling literature as it presents a deep insight into the development and ultimate demise of Russian/Soviet whaling — a perspective based on on-site fieldwork and the analysis of Russian archival documents. Indeed, the book demonstrates how from the very first beginnings, it was the Russian Far East and international collaboration/competition that were instrumental in shaping the industry. While it was the numerous indigenous peoples — e.g. the Chukchi, Evenks or Kuryat — on the Russian eastern shores who had hunted whales since time immemorial, the town of Vladivostok became the hub for Russian commercial whaling activities after it was founded in 1860 and commercially advanced by the Russian-Finnish Whaling Company under the leadership of Swedish-Finnish whaler Otto Lindholm.

Even though Russia had tried to protect her waters from outside intrusion, it became clear that there is a need for outside expertise and commerce to advance the Far East. To this end, in the 19th century it was American ('Yankee') whalers who stood in close contact with the indigenous peoples around the Sea of Okhotsk, allowing them to engage in trade with the Americans and learning and adapting

their whaling techniques and technologies — a process that could also be found in the Caribbean island of Bequia (Ward, 1995). After Norwegian whaling had surpassed American whaling, and after the Bolshevik Revolution, in 1923, the Russian government awarded the Norwegians a concession to hunt whales within Russian waters up to 12 nautical miles in exchange for 5% of the proceeds. After it was discovered that the Norwegians had slaughtered hundreds of whales without using them, the concession was revoked in 1928.

The Second World War allowed whale populations to recover after their numbers had plummeted under intense Norwegian, British, Japanese and Soviet whaling pressure. Yet, after the war, it was especially Soviet bureaucrats that shifted attention to the Antarctic since the war-ridden country was in dire need for whale oil and fat. With merely 1% of the global whaling share, there was room for more. While preparations for the establishment of the International Whaling Commission (IWC) were well on the way in 1946, the Soviet view was nevertheless that the freedom of the seas allows for unhindered whaling in the Antarctic.

While the industry and whalers themselves needed to develop the skills in a whaling environment that was marked by international competition, by the 1950s it was on par with other whaling nations. Paired with Khrushchev's Five-Year-Plan of 1956 and the ever expanding expectation to land more whales, several IWC-controlled regions in the Antarctic were decimated by Soviet whaling ships by 1959 and 1960, even though a very small number of catches was reported to the Commission. In reality, Jones shows, the numbers far exceeded those ever landed by British or Norwegian whalers in the region when within one year Soviet whalers killed tens of thousands of whales with BWUs up to almost 17,000.

Throughout the 1960s, Soviet whaling in the Antarctic intensified, not least because of the increasing scientific interest in whales. While, inevitably, increasing observations led to better knowledge concerning behaviour or migration patterns, this knowledge was predominantly used to locate whales even better and to exploit them even more. At the same time, however, also genuine, non-commercial scientific interest started to develop in the Soviet Union and knowledge about whales was also transmitted in children's books.This notwithstanding, illegal and unreported killing of whales continued until 11 April 1987 when the last minke whale was caught in the Antarctic. From then on, merely aboriginal whaling, managed under the IWC's Aboriginal Subsistence Whaling (ASW) scheme has been taken place in the Russian Federation even though the country has issued an objection to the moratorium and is therefore legally not bound by it.

This short summary is merely to be understood as such. What Jones does is feed all the information with direct quotations, direct references to original sources without making the book an overly scholarly treatise. Instead, *Red Leviathan* is a great narrative that reads to some degree like an investigative novel, drawing a picture of an industry, of the politics behind the industry and, of course, of the individuals engaged in the industry. The book shows how different motivations behind whaling were, which kind of different hubs had developed and what kind of cultural role whaling played for these hubs. It is especially 'Chapter 10—Whales in the Home', which I found most intriguing in that regard, since it sheds light on the often so little heard cultural

impact whaling has had on those societies that were (or are) engaged in it (see also Clark, 2019; Fielding, 2018; Sellheim, 2023). Especially Soviet or Russian whaling culture, apart from the ASW conducted in Chukotka, is an issue which I have not yet come across.

The wealth of knowledge and meticulous research that was put into this book are impressive, to say the least, and the book shows the absolute havoc Soviet whalers reaped on the Antarctic whale populations. To visualise this even more, Jones has given Chapter 8 the title 'The Cetacean Genocide'. While I do understand what he aims to say with this title — also arguing throughout the chapter that it is the destruction of whales for economic benefit warranting this term —, I personally dislike the anthropomorphic connotation this brings about. A genocide is a war against a human ethnic group for the sake of destroying it and the Oxford Learners' Dictionaries define the term accordingly: "the murder of a large number of people from a particular nation or ethnic group, with the aim of destroying that nation or group" (Oxford Learners' Dictionaries, 2023). While it is clear what has happened, the term should, in my view, only be used in relation to people, since otherwise these horrors against human beings may appear to be diminished when put on the same level as animal species.

In terms of content, however, I am convinced that this book should be part of every library dealing with whales and whaling. It will definitely serve as a reference work for me whenever Soviet whaling is the subject of inquiry. A small, but still misleading mistake can be found on page 212, which does not relate to whaling as such. Nevertheless, it was not in 1997 when Arthur Chilingarov planted the flag under the North Pole, but in 2007 — 10 years later.

Either way, and needless to say, *Red Leviathan* is highly recommendable and I applaud — and even thank — the author for providing the reader with some insight into what Soviet whaling once was, how it came to be and why it did what it did. There is certainly no other book that manages to achieve this in a comparable manner.

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SUMMARY ARTICLE

Agriculture was the key to Transeurasian language spread

Introduction

A recent study in *Nature* by Robbeets et al. (2021) has found evidence that it was indeed agriculture that caused the dispersal of speakers of the early Transeurasian language speakers, to which Japanese, Korean, Tungusic, Mongolic and Turkic belong. This origin spread belongs to one of the most disputed elements in Eurasian population history. The research reveals that the shared origins and initial spread of Transeurasian languages can be linked to the early farmers who migrated across Northeast Asia during the Early Neolithic period. However, this common heritage has been obscured by widespread cultural interactions since the Bronze Age.

Background

Recent advancements in ancient DNA sequencing have prompted a reevaluation of the relationships between human migrations, linguistic evolution, and cultural expansions in Eurasia. While western Eurasia has received significant attention, the understanding of eastern Eurasia, particularly Northeast Asia, remains limited. This vast region, encompassing areas like Inner Mongolia, the Yellow and Amur River basins, the Russian Far East, the Korean peninsula, and Japanese Islands, lacks comprehensive interdisciplinary studies. The linguistic connections of Transeurasian languages, such as Japonic, Koreanic, Tungusic, Mongolic, and Turkic, have long been debated. While recent assessments suggest some linguistic commonalities result from borrowing, there is evidence supporting Transeurasian as a valid genealogical group. The study challenges the traditional 'pastoralist hypothesis' of nomadic expansions and proposes a 'farming hypothesis,' linking Transeurasian languages to the 'farming/language dispersal hypothesis.' Integrating archaeology and genetics, the approach termed 'triangulation' aims to address questions about time depth, location, cultural identity, and dispersal routes of ancestral Transeurasian speech communities.

The link between linguistics, archaeology and genetics

The study compiled a dataset of 3,193 cognate sets representing 254 basic vocabulary concepts across 98 Transeurasian languages. Using Bayesian methods, a dated phylogeny was inferred, revealing time-depth estimates for various language subgroups. The findings suggest a West Liao River region origin for Transeurasian languages in the Early Neolithic, challenging previously proposed homelands. Dispersals occurred in the Neolithic, Late Neolithic, and Bronze Age, with specific language branches moving in different directions.

Analysis of agropastoral words in reconstructed proto-languages identified culturally diagnostic items, supporting the farming hypothesis over the pastoralist hypothesis. The study emphasizes the

importance of agricultural terms in understanding the age, homeland, and contact dynamics of the Transeurasian language family.

During the Neolithic period in Northeast Asia, plant cultivation was widespread, with cereal farming emerging from various centers of domestication. The West Liao basin played a crucial role in Transeurasian development, particularly in the cultivation of broomcorn millet around 9000 BP. An analysis of archaeological features and carbon-14-dated crop remains from 255 Neolithic and Bronze Age sites revealed clusters of cultures, notably in the West Liao basin.

Millet farming dispersed to Korea and the Primorye region, affirming previous findings. In the Bronze Age, sites in the West Liao area connected with Mumun sites in Korea and Yayoi sites in Japan, reflecting the incorporation of rice and wheat into the agricultural package. While population movements were not strictly tied to archaeological cultures, diagnostic features like stone tools and textile technology accompanied Neolithic farming expansions.

Animal domestication in Northeast Asia was limited before the Bronze Age. The transition from millet to wet rice farming marked demographic changes, with wet rice farmers adopting more sedentary patterns, while millet farmers tended to expand. The Late Neolithic witnessed a population decline, followed by exponential growth in the Bronze Age in China, Korea, and Japan.

The study conducted genomic analyses on 19 ancient individuals from the Amur, Korea, Kyushu, and the Ryukyus, combining them with published genomes covering various regions from 9500 to 300 BP. Using principal component analysis (PCA) and admixture models, the researchers identified genetic components and relationships among ancient populations. The results indicated a common Amur-related ancestry among speakers of Transeurasian languages, contradicting previous claims. Neolithic individuals from Mongolia showed high Amur-like ancestry, and gene flow from western Eurasia increased from the Bronze to Middle Ages.

The presence of Jomon ancestry in Koreans by 6000 BP and its disappearance over time were observed, with farming spread to Korea linked to different waves of Amur and Yellow River gene flow. Yayoi farmers in Japan and Nagabaka genomes from Miyako Island supported the Bronze Age migration from Korea to Japan. The study challenges previous hypotheses about the origins of populations in the southern Ryukyus, suggesting a genetic turnover from Jomon to Yayoi-like ancestry in the early modern period.

Findings

The study utilises a triangulation of linguistic, archaeological, and genetic evidence to trace the origins of the Transeurasian languages back to the inception of millet cultivation and the early Amur gene pool in Neolithic Northeast Asia. The language spread occurred in two major phases corresponding to agricultural and genetic dispersals.

The first phase, during the Early–Middle Neolithic, involved millet farmers with Amur-related genes spreading from the West Liao River to adjacent regions, leading to the primary splits in the Transeurasian family.

The second phase, in the Late Neolithic, Bronze, and Iron Ages, saw millet farmers with substantial Amur ancestry admixing with Yellow River, western Eurasian, and Jomon

populations, adding rice, western Eurasian crops, and pastoralism to the agricultural package.

The study identifies clear links between spatiotemporal patterns and subsistence practices, associating the origins of Sino-Tibetan and Transeurasian language families with millet domestication centres on the Yellow River and West Liao River, respectively. The migration of farmers around the Yellow Sea into Korea and the Primorye during the mid-sixth millennium BP brought Koreanic and Tungusic languages, along with Amur ancestries.

The Late Bronze Age witnessed cultural exchange and genetic admixture, particularly in the Eurasian steppe. Migration from the Liaodong–Shandong area to the Korean peninsula around 3300 BP added rice, barley, and wheat to millet agriculture, impacting the genetic composition and language evolution. The third millennium BP saw the transmission of this agricultural package to Kyushu, triggering a transition to full-scale farming, a genetic shift to Yayoi ancestry, and a linguistic transition to Japonic.

The study provides new evidence from ancient DNA confirming West Liao River ancestry in Japanese and Korean populations, contrary to previous claims. It concludes that the early spread of Transeurasian speakers was primarily driven by agriculture, supporting the farming/language dispersal hypothesis.

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IN THE MEDIA

Brazilian parliament makes protected areas for indigenous people more difficult

— *Die Zeit*, 15 December 2023

Brazil's President Lula had promised to stand up for the protection of the indigenous population. Now parliament has dealt him a heavy defeat.

The Brazilian parliament has restored controversial articles of law that make it difficult to recognise indigenous protected areas. At a joint session of both chambers of parliament, a majority of 321 MPs and 53 senators voted in favour of the articles. This is a serious defeat for President Luiz Inácio Lula da Silva, whose veto was overruled.

Accordingly, only land that was inhabited by indigenous people at the time the Brazilian constitution was promulgated in 1988 may be recognised as a protected area. However, indigenous communities argue that they had been driven out of many areas by the previous military dictatorship at that time and have a right to the land regardless of this date.

The indigenous people's association Apib has now announced that it has appealed to the highest Brazilian court. This would have to declare the law unconstitutional.

800,000 indigenous people live in Brazil

The court had already rejected the law's underlying concept of limiting the claims of indigenous peoples in a historic decision in September. Nevertheless, the Senate passed the law on protected areas for indigenous people the following week, which favours the South American country's powerful agricultural sector. Lula partially vetoed the bill in October, but has now been overruled by parliament.

Senator Ciro Nogueira, a minister in the former government of Lula's ultra-right-wing predecessor Jair Bolsonaro, said that parliament had created "legal certainty for the agricultural sector".

According to the last census, around 800,000 indigenous people live in Brazil, most of them in reserves that make up 13.75 per cent of the country's territory. Under the Bolsonaro government, the allocation of land to indigenous people has come to a standstill. Shortly before his term of office began, Bolsonaro announced that he did not want to give "one more centimetre" to indigenous people. Deforestation also increased sharply under his presidency.

Six new areas for indigenous people

The left-wing politician Lula, who has been in power since the beginning of the year, promised to turn away from the policies of his predecessor when he took office and announced that he would campaign vigorously for the protection of indigenous peoples and the Amazon rainforest.

It was only in April that he designated six new indigenous areas and guaranteed the indigenous people exclusive use of the natural resources. Experts see the protected areas as a bulwark against the deforestation of the Amazon rainforest - one of the greatest challenges in the fight against climate change.

"Protected" instead of "strictly protected" — status of the wolf to be lowered

— *Der Spiegel*, 20 December 2023

Are there too many wolves in Europe? In some places, yes, says the EU Commission. That is why the shooting of the animals is now to be made easier.

Is it now becoming more dangerous for wolves in Europe? The European Commission wants to at least relax the strict protection rules for the animals. It is proposing to lower the status of the wolf from "strictly protected" to "protected", the Brussels authority announced. This would make it possible to authorise the hunting of wolves if this does not endanger the conservation of populations.

Commenting on the initiative, EU Commission President Ursula von der Leyen said that the return of the wolf was good news for biodiversity in Europe. However, the density of wolf packs in some European regions has now become a real danger, especially for livestock farming.

Von der Leyen referred to an analysis published at the same time, which shows that wolf populations have increased considerably over the last two decades and are colonising ever larger areas. According to the analysis, there are now more than 20,000 wolves with mostly growing populations and expanding home ranges as well as packs with pups in 23 member states.

With the proposal to lower the protected status of wolves, the EU Commission is responding in particular to the demands of livestock owners and farmers. They have been pointing to increasing problems for a long time. According to a report, the number of wolf attacks on livestock in Germany alone rose significantly to more than 1000 cases last year. More than 4000 farm animals were killed or injured.

Federal government's stance still unclear

It initially remained unclear on Wednesday whether the German government would support the initiative. At the beginning of the year, Environment Minister Steffi Lemke had spoken out clearly against lowering the protection status for wolves and pointed out, among other things, that the shooting of individual conspicuous wolves is already possible today under certain conditions.

Around three weeks ago, the federal and state environment ministers agreed that problematic wolves that have climbed over protective fences and killed livestock can be killed in Germany much more quickly than before. Unlike before, it will not be necessary to wait for a DNA analysis to be carried out.

In an interview with the news agency dpa shortly before the EU initiative, Lemke warned against demonising the wolf. "It is the closest relative of one of our favourite pets, the dog, and therefore we should not act as if the wolf is rubbish and can go away," said the Green politician. A balance must be struck between livestock grazing and the fact that the wolf has re-established itself in Germany.

Wolf killed in Saxony-Anhalt

Meanwhile, a sick and misbehaving wolf was

deliberately killed in the district of Wittenberg. The weakened animal was lured into a box trap on Tuesday, the State Office for Environmental Protection announced on Wednesday. For around two weeks, employees of the state office had been observing a wolf that repeatedly visited feeding sites for cats and other animals in Zschornewitz, a district of Gräfenhainichen.

It turned out that there were two young animals with mating symptoms that were severely weakened. They were walking purposefully into urban areas and retreated later than usual when encountered, the report continued.

In this form of habituation, it is reportedly legally permissible to kill the animals. The animal caught in the box trap was therefore killed. This is now also the target for the second conspicuous young wolf.

Environmental organisations want to prevent lifts on Tyrolean glaciers

— *Süddeutsche Zeitung*, 21 December 2023

Several nature conservation organisations want to prevent plans to develop a glacier area in the Austrian Kaunertal. They have applied to the Tyrolean state government to extend the "Ötztal Alps" quiet zone and thus protect the "largest contiguous glacier area in Austria around the Weißseespitze and the upper part of the Gepatschferner", according to a press release issued by WWF Austria, the Austrian and German Alpine Associations and Naturefriends on Thursday. The nature conservation organisations are thus opposing plans to expand the Kaunertal Glacier ski area to include areas of the Gepatschferner.

The approximately 3.3 square kilometre area to the east of the 3518 metre high Weißseespitze, including the highest glacier areas of the Gepatschferner in the rear Kaunertal, is still not protected, the associations criticised. According to the associations, two lifts and 13 hectares of new pistes are planned. "This is a completely unspoilt east alpine summit area," said a spokesperson. As reported by the Tiroler Tageszeitung newspaper, an environmental impact assessment (EIA) is likely to be necessary. A decision should be made by February.

First international polar summit calls for protection of glaciers

— *Frankfurter Allgemeine Zeitung*, 10 November 2023

Emmanuel Macron has organised the first polar summit in Paris. It is long overdue to take concrete measures to protect ecosystems, says the French president.

France is striving for greater international cooperation to protect glaciers and polar regions. To raise awareness of the urgent need for action, French President Emmanuel Macron has organised the first Polar Summit at the Museum of Natural History in Paris. The meeting ended on Friday with a call to protect the Arctic, Antarctic and glaciers. Among other things, the summit participants called for at least thirty per cent of the ocean and coastal areas to be protected by 2030.

Host Emmanuel Macron said that the thawing of the permafrost could lead to the release of greenhouse gases. The melting of glaciers is an immense challenge that affects all of humanity. It was overdue to take concrete measures to protect ecosystems, said the French President.

Since Wednesday, scientists and representatives of non-governmental organisations have been meeting in Paris with heads of state and government from 40 countries that are particularly committed to the polar regions. These include Norway, Italy, Belgium and Switzerland, as well as China and India, Nepal and Kyrgyzstan. Green Environment Minister Steffi Lemke attended on behalf of the German government. Only Russia was not invited.

Lemke calls for network of protected areas

The Polar Summit is part of the "One Planet" summit series launched by the French President at the UN Climate Change Conference in Bonn in 2017. The exchange is intended to help prepare for the COP28 climate summit in Dubai at the beginning of December. Environmentalists are insisting that concrete protective measures are also implemented and have warned of "catastrophic consequences" if this is not achieved. Marine protected areas must be established in the polar regions and stricter rules for shipping and tourism must be put in place. Scientific recommendations should also be incorporated into political action.

"Our glaciers and poles are unique and hugely important ecosystems," said Federal Environment Minister Lemke. "They are coming under increasing pressure: the climate crisis is causing the polar ice caps and glaciers to melt, biodiversity is dwindling and pollution such as plastic waste is putting additional pressure on ecosystems," she said. What is needed is strong environmental protection in the polar regions and a network of protected areas.

In the Arctic, sea ice reached its sixth-lowest summer extent. According to scientific calculations, glaciers below an altitude of 3500 metres in the Alps and 5400 metres in the Andes will have disappeared by 2100. In September, it was announced that the sea ice in the Antarctic has reached a new low, which is significantly lower than had been predicted. Experts also attribute the death of thousands of emperor penguin chicks to the loss of sea ice. Satellite images showed that the ice areas used by the penguins as breeding grounds had completely disappeared before the chicks had

developed their waterproof plumage.

The Director General of the European Space Agency (ESA), Josef Aschbacher, emphasised the importance of satellite observations in his speech on Friday. "With Copernicus, Europe has one of the best Earth observation systems in the world," he said. More than half of the knowledge on climate change is dependent on measurements from space.

At the end of the summit, an association of coastal cities was launched. They want to cooperate in order to arm themselves against rising sea water levels. French Environment Minister Christophe Béchu said that the summit signalled that international cooperation remains possible despite geopolitical tensions. Another result is a report on the state of the poles and glaciers. "300 scientists from all over the world have been working on it for several months; it is the most comprehensive report on this topic," says the French ambassador for the polar regions, Olivier Poivre d'Arvor.

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