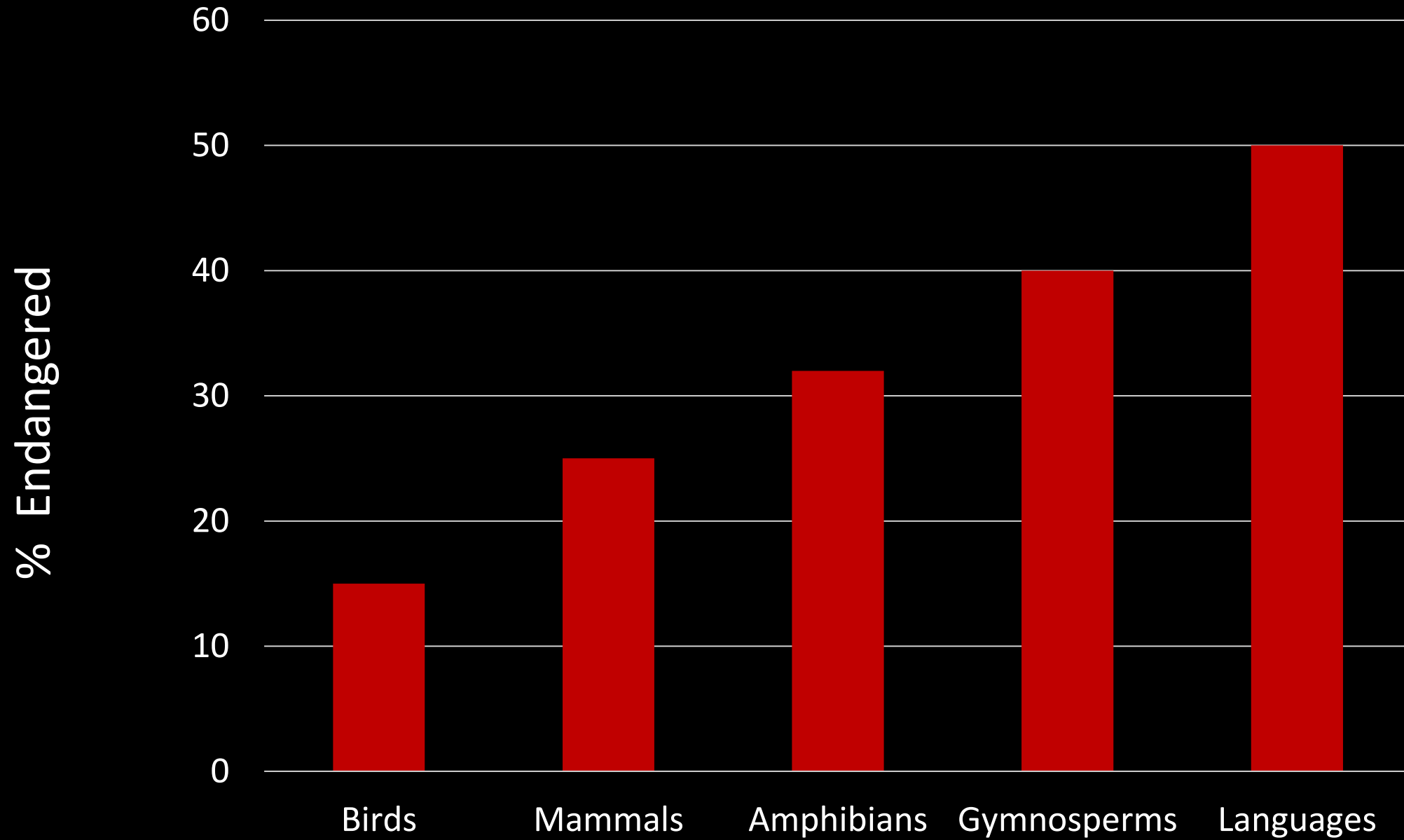


Traditional knowledge conservation and the GSPC: progress and perspectives

Christopher P. Dunn, PhD
Cornell Botanic Gardens

Peter Wyse Jackson, PhD
Missouri Botanical Garden





Sources: IUCN Red List; UNESCO



“Cultural diversity, like biological diversity, is threatened, and the two are often linked.”

New York Botanical Garden

FRANCESCO

Laudato si'

sulla cura
della casa comune



“The human environment
and the natural
environment deteriorate
together”

“The disappearance of a
culture can be just as
serious, or even more
serious, than the
disappearance of a species
of plant or animal”

24 May 2015



ISLAMIC DECLARATION ON GLOBAL CLIMATE CHANGE

Ecosystems and human cultures are already at risk from climate change

We call upon the people of all nations and their leaders to prioritize adaptation efforts with appropriate support to...
vulnerable groups, including indigenous peoples

Indigenous and local knowledge,
innovations and practices associated with
plant resources, [are]
maintained or increased, as appropriate,
to support customary use, sustainable
livelihoods, local food security and health
care.




81

PLANT CONSERVATION REPORT 2014:

A review of progress towards
the Global Strategy for Plant
Conservation 2011-2020



| GSPC Target | Current status (and level of confidence for ranking) | Comments |
|---|---|---|
| <p>Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and health care</p> |  <p>low Progress towards target but not to achieve it</p> | <p>Although a wide range of initiatives to conserve traditional knowledge have been developed at national and local levels, progress towards this target is difficult to measure as baselines have not been quantified.</p> <p>This Target can be considered an 'enabling' target, supporting the achievement of other targets.</p> <p>Relates to Aichi Target 18: Traditional knowledge respected</p> |

Global Biodiversity Outlook 4

A mid-term assessment of progress towards the implementation of the Strategic Plan for Biodiversity 2011–2020

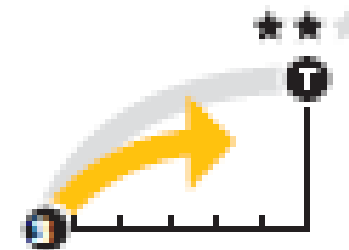


SUMMARY OF PROGRESS TOWARDS THE TARGET

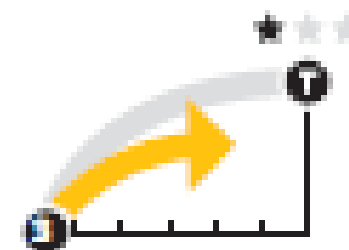
TARGET ELEMENTS (BY 2020)

STATUS

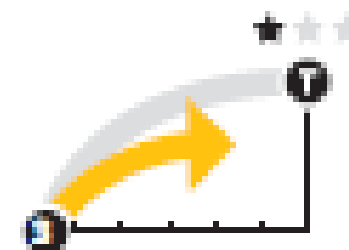
Traditional knowledge, innovations and practices of indigenous and local communities are respected



Traditional knowledge, innovations and practices are fully integrated and reflected in implementation of the Convention ...



... with the full and effective participation of indigenous and local communities





EUROPEAN COMMISSION

Brussels, 3.5.2011
COM(2011) 244 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE ECONOMIC AND SOCIAL COMMITTEE
AND THE COMMITTEE OF THE REGIONS**

Our life insurance, our natural capital: an EU biodiversity strategy to 2020



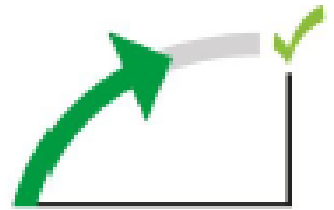


{SEC(2011) 540 final}

{SEC(2011) 541 final}

Scotland's Biodiversity

a Route Map to 2020



| | | |
|---|---|---|
|  | <p>E18 Traditional knowledge respected</p> | <p>Assessment due in 2017</p> |
|  | <p>E19 Knowledge improved, shared and applied Sharing and using biodiversity knowledge is key to identifying problems and solutions, priorities for conservation, and action we need to take. The Atlas for Living Scotland, Scotland's Environment Web, and the Marine Scotland data publishing portal contribute to the sharing and application of knowledge in Scotland. More work is required to address data recording, analysis gaps and improved information on ecosystem function to help set Scotland's biodiversity priorities.</p> |  |
|  | <p>E20 Financial resources increased Since 2011 financial resources for biodiversity in the UK have declined, but with a long term increase in the preceding years. There is currently no Scottish indicator for this target. Total funding figures for many of the Scottish organisations that have some biodiversity remit have also</p> |  |



E18 Traditional knowledge respected

Scotland's traditional languages and the knowledge held by their speakers have gained greater protection since 2005, following the Gaelic Language (Scotland) Act 2005. New research is safeguarding and sharing traditional knowledge. The rights of communities have been enhanced through several pieces of legislation, particularly since 2000. Traditional land management practices, such as crofting, benefit nationally and internationally important biodiversity.



E19 Knowledge improved, shared and applied

Scotland has made significant efforts in data delivery and data management systems with The NBN Atlas Scotland, Scotland's Environment Web, and the Marine Scotland data publishing portal all contributing greatly to improving sharing and application of Scotland's knowledge. Volunteers and researchers make large contributions to the numbers of species and habitats records and the way we use them. More work is required to address data recording and analysis gaps. Improved information on the consequences in the loss, values, and functions of Scotland's biodiversity, could aid us in prioritising conservation action.



E20 Financial resources increased

The UK indicator shows a long term increase in financial resources for biodiversity, but a recent short term decline. There is currently no Scottish indicator for this target. Total funding figures for most of the Scottish organisations that have some biodiversity remit have also declined in the last 5 years. Work is required to produce a Scotland indicator.





BY
HELEN LEWIS

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POLITICS 4 OCTOBER 2012

The death of the Cromarty fisherfolk dialect


Listening to extinct languages and dialects is an eerie, but incredible, experience.

SIGN-UP

The last native speaker of the Cromarty fisherfolk dialect, Bobby Hogg, has died – and with him, a version of our language which had unique words, expressions and character.

You can listen to Hogg and his brother Gordon speaking [here](#): the dialect has a lilting, sing-song quality. Linguists think it was influenced by Norse and Dutch, and survived because of the close-knit community and relative geographical isolation of Cromarty in the Scottish Highlands.

“ src=“/sites/default/files/images/cromarty.JPG“ style=“width: 510px; height: 331px;“ /></div> <div> Image: Google Maps</div> <div> </div> <div> </div> <div> We’re lucky that in 2009, a researcher called Janine Donald set out to preserve and record as much of the Cromarty dialect as she could. She wrote up her findings here, and it’s quite hard to see what the roots of some of the words are that turn in us. For example, where did “amairn” – meaning “the fourth year from?”



Ireland's Vision for Biodiversity

That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.

PETER WYSE JACKSON



IRELAND'S GENEROUS NATURE



THE PAST AND PRESENT USES OF WILD PLANTS IN IRELAND



The Republic of Palau
Revised National Biodiversity Strategy and Action Plan
2015-2025
Promoting Wise Development to Achieve Conservation and Sustainable Use of Biodiversity

Strategic policy interventions to promote long-term cultural, economic and environmental sustainability through protection of biodiversity



Prepared For:
Ministry of Natural Resources, Environment and Tourism
National Government of the Republic of Palau
November 2016

Aichi Target 18

...a more targeted process of ensuring that Palau's traditional ecological knowledge and expressions of culture around biodiversity is collected and utilized needs to be realized.



UNEP



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Resilient nations.

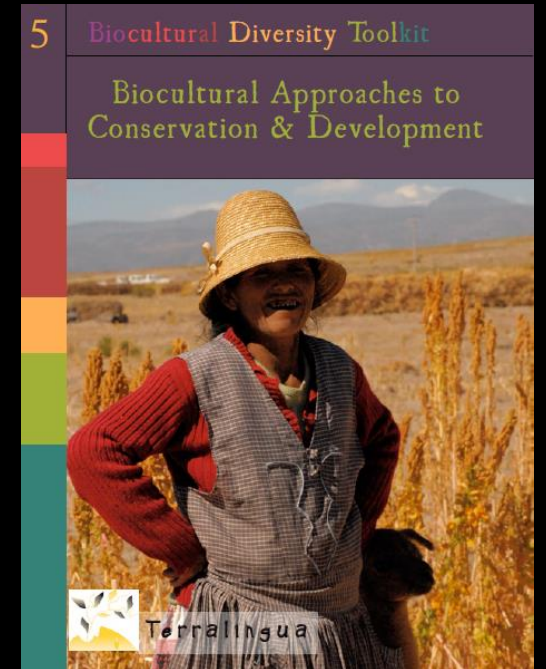
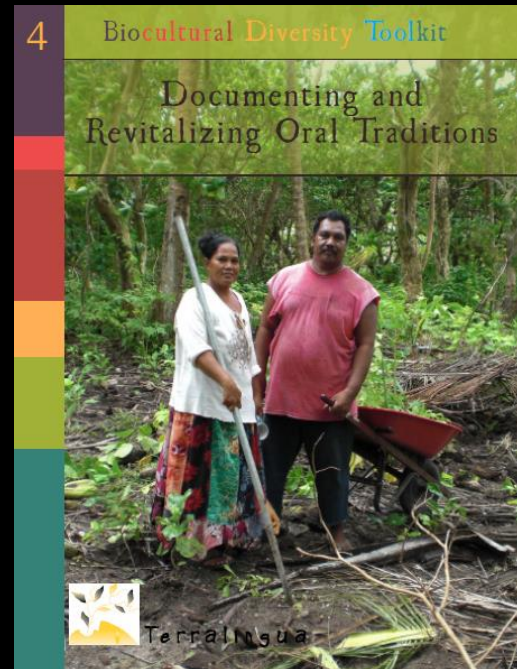
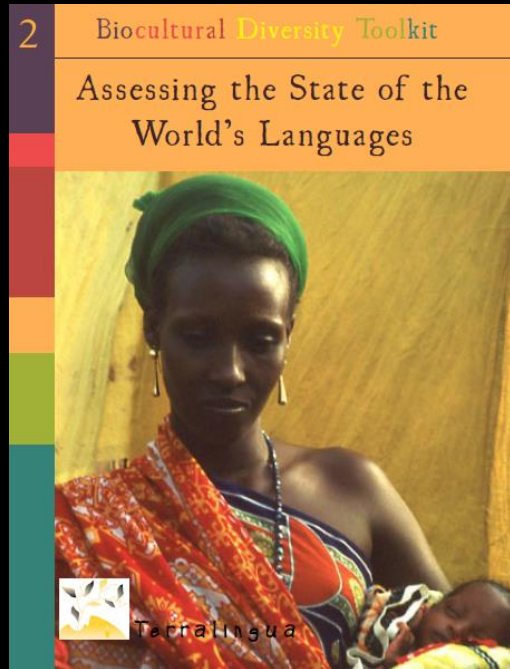
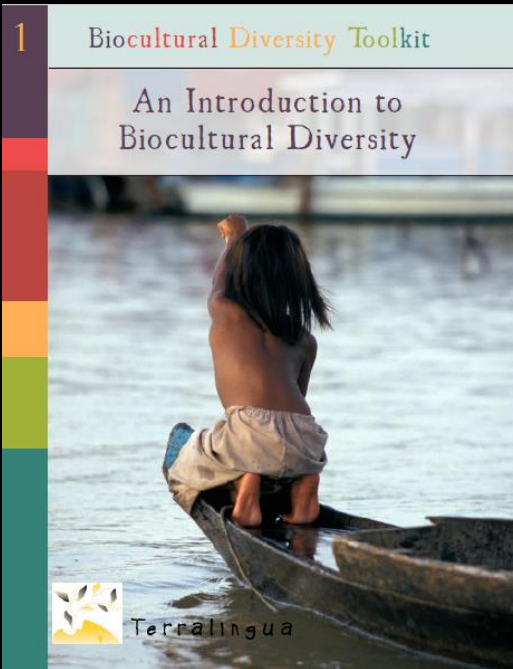
**A toolkit to support
conservation by
indigenous peoples and
local communities:**

Building capacity and sharing
knowledge for Indigenous Peoples'
and Community Conserved
Territories and Areas (ICCAs)

**BIOCULTURAL COMMUNITY PROTOCOLS:
A TOOLKIT FOR COMMUNITY FACILITATORS**

**Integrated Participatory and Legal Empowerment
Tools to Support Communities to Secure Their
Rights, Responsibilities, Territories, and Areas**





Biocultural approaches to well-being and sustainability indicators across scales

Eleanor J. Sterling^{1*}, Christopher Filardi¹, Anne Toomey^{1,2}, Amanda Sigouin¹, Erin Betley¹, Nadav Gazit¹, Jennifer Newell³, Simon Albert⁴, Diana Alvira⁵, Nadia Bergamini⁶, Mary Blair¹, David Boseto⁷, Kate Burrows⁸, Nora Bynum⁵, Sophie Caillon⁹, Jennifer E. Caselle¹⁰, Joachim Claudet¹¹, Georgina Cullman¹, Rachel Dacks¹², Pablo B. Eyzaguirre⁶, Steven Gray¹³, James Herrera¹⁴, Peter Kenilorea¹⁵, Kealohanuiopuna Kinney^{16,17}, Natalie Kurashima^{18,19}, Suzanne Macey¹, Cynthia Malone¹, Senoveva Mauli²⁰, Joe McCarter¹, Heather McMillen²¹, Pua'ala Pascua²², Patrick Pikacha⁴, Ana L. Porzecanski¹, Pascale de Robert²³, Matthieu Salpeteur⁹, Myknee Sirikolo²⁴, Mark H. Stege²⁵, Kristina Stege²⁶, Tamara Ticktin¹⁸, Ron Vave²⁷, Alaka Wali²⁸, Paige West²⁹, Kawika B. Winter^{22,30} and Stacy D. Jupiter³¹

Monitoring and evaluation are central to ensuring that innovative, multi-scale, and interdisciplinary approaches to sustainability are effective. The development of relevant indicators for local sustainable management outcomes, and the ability to link these to broader national and international policy targets, are key challenges for resource managers, policymakers, and scientists. Sets of indicators that capture both ecological and social-cultural factors, and the feedbacks between them, can underpin cross-scale linkages that help bridge local and global scale initiatives to increase resilience of both humans and ecosystems. Here we argue that biocultural approaches, in combination with methods for synthesizing across evidence from multiple sources, are critical to developing metrics that facilitate linkages across scales and dimensions. Biocultural approaches explicitly start with and build on local cultural perspectives — encompassing values, knowledges, and needs — and recognize feedbacks between ecosystems and human well-being. Adoption of these approaches can encourage exchange between local and global actors, and facilitate identification of crucial problems and solutions that are missing from many regional and international framings of sustainability. Resource managers, scientists, and policymakers need to be thoughtful about not only what kinds of indicators are measured, but also how indicators are designed, implemented, measured, and ultimately combined to evaluate resource use and well-being. We conclude by providing suggestions for translating between local and global indicator efforts.

VITEK

VITALITY INDEX OF TRADITIONAL ENVIRONMENTAL KNOWLEDGE



BECAUSE **TEK** IS OUR INVALUABLE HERITAGE AND OUR HOPEFUL FUTURE

- HOME
- BIOCULTURAL DIVERSITY
- ABOUT US
- OUR WORK
- PUBLICATIONS
- SUPPORT US
- OUR UBUNTU SITE
- CONTACT
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Vitality Index of TEK

Home / Our Work / Vitality Index of TEK

Navigation

- > HOME
- > BIOCULTURAL DIVERSITY
 - > The Inextricable Link
 - > The Extinction Crisis
 - > The Loss Of Diversity

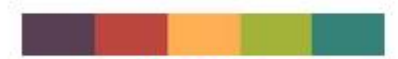
“Traditional knowledge is rooted in the traditional life of Aboriginal people. Certain issues are firmly grounded in traditional knowledge, such as harvesting, use of lands and resources for traditional purposes, cultural well-being, heritage



Terralingua Ubuntu



RECEIVE ENEWS



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support the effort to protect the world's biocultural diversity

Translate



Linguistic Diversity

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[> HOME](#)[> BIOCULTURAL DIVERSITY](#)[> The Inextricable Link](#)[> The Extinction Crisis](#)[> The Loss Of Diversity](#)[> Why Does It Matter?](#)[> What Can We Do?](#)[> ABOUT US](#)

photo by David Rapport, 2011

“Language allows us to interact with the world in so many ways, almost like seeds adapted to local conditions, land races that make the best use of local conditions.”

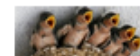
-Felipe Montoya Greenheck

The Index of Linguistic Diversity is the first-ever quantitative measure of trends in the world’s linguistic diversity. It tells us that, since 1970, global linguistic diversity has diminished by 20%.

Indigenous linguistic diversity has decreased even more markedly in most regions of the world. The 16 largest world languages



Terralingua Ubuntu



RECEIVE ENEWS



DONATE

support the effort to protect the world’s biocultural diversity

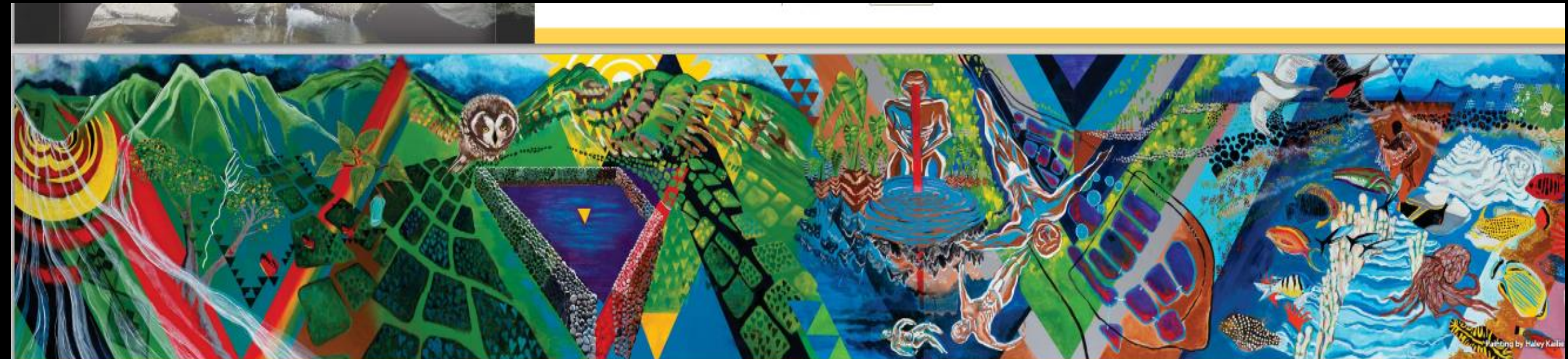


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Translate



Welina Mānoa*

Welina is a greeting of affection, similar to aloha. Used alongside Mānoa, the indigenous name for the place, this phrase can be understood to literally mean "greetings to you, Mānoa" and is often used by people from or tied to Mānoa to introduce themselves to another place or group of people from outside Mānoa. The Mānoa to Waikīkī watershed extends from the slopes of the Ko'olau to the shores and outer reefs of Waikīkī. Traditionally, this watershed was part of the larger Waikīkī ahupua'a, a Hawaiian division of land that contains enough resources from both the land and ocean to sustain the community that lives within its boundaries. While some ahupua'a, like Waikīkī, extend from mountain to sea and contain one or more watersheds, others do not. Each ahupua'a on every island is unique, determined by the flow of the landscape and the available resources of that particular place.

The University of Hawai'i at Mānoa has three place-based science centers within the Mānoa to Waikīkī watershed community: Lyon Arboretum, Ka Papa Lo'i 'o Kānewai Cultural Garden, and Waikīkī Aquarium. With our partner the Mānoa Heritage Center we developed a Hawaiian and English language, culture-rich series of learning experiences that are grounded in an intersection of Native Hawaiian knowledge and contemporary scientific knowledge of water and land/ocean resources, as well as management and ecosystem

Our banner is an artistic expression of the 'āina (the land and all that feeds us) of Mānoa and Waikīkī and the aloha (love), mahalo (gratitude), and kuleana (responsibility) we feel for this place. There are lessons embedded in the banner that teach about wai (water), 'āina (land), and the relationship kānaka have to them through mo'olelo (story, history). In this foldout, you will learn about these themes that connect each center and tell the rich story of Mānoa.

In this series, children (ages 0-8 years) and their family members are asked to follow pinao at the site and from one site to the next. Pinao points out important geographic spots, challenges learners to search for endemic and indigenous species, asks families to discuss critical questions about the land and its natural resources, and encourages learners of all ages to have fun! As you journey through each location we encourage you to use your smartphone, iPhone (or other device) to access our website using the QR code on the back of each foldout. Here you can listen to the mo'olelo (stories) of the place, read up on its history, locate more information and references about Mānoa and each of the four sites, and access more learning activities.

Mahalo for picking up this learning map! We hope you enjoy your learning journey! Please let us know about your experiences and feedback. We will use your input to improve our future work.

1 Lyon Arboretum

Lyon Arboretum is a tropical rainforest botanical garden that serves as a biological field research site for tropical botany, ecology and community learning. The arboretum's mission is to increase the understanding and appreciation of tropical systems, traditional knowledge and to celebrate the intersection of biological and cultural diversity.

Wai – This is the site of the kumu wai, the source of water, in Mānoa Valley. High in the sky you see the clouds forming. In the mountains you can hear the waterfalls and feel the rain, all which feed Mānoa Stream.

Kuleana – Here we learn that what we do i uka affects the 'āina, wai, and kai below.

Mo'olelo – This place tells the mo'olelo of water and verdant plant life. The mo'olelo also tell of the many changes to the land and of the people now working together to bring back Hawaiian culture and plants.

'Āina – Many types of plants are able to grow here because of the fertile 'āina and abundant water of Mānoa Valley. The 'āina produces

2 Mānoa Heritage Center

Mānoa Heritage Center promotes the understanding of Hawai'i's natural and cultural heritage through preserving and interpreting a unique historic property. The Center includes a garden of Hawaiian native plants, an historic home, and an ancient Hawaiian heiau. Kūka'ō'ō Heiau is thought to be an agricultural site and is one of the few traditional Hawaiian structures that still exists in our urban Honolulu landscape.

Wai – From the hilltop look up to see wai in the ānuenuē, or rainbow, and look across the valley at the many forms of wai that create a lush, green landscape.

Kuleana – Here we are reminded to take care of our kūpuna by continuing their mo'olelo, asking permission, and giving thanks.

Mo'olelo – We learn many lessons by listening to the mo'olelo of events that took place here in Mānoa and of the place-names and features of this land.

'Āina – From this 'āina we are able to see the mountain ridges and valley floor of Mānoa

3 Ka Papa Lo'i 'o Kānewai

Ka Papa Lo'i 'o Kānewai is an experiential learning center. Its purpose is to engage visitors in traditional Hawaiian farming methods and preservation of Hawaiian varieties of kalo. Kānewai is a pu'uhonua (safe place) that maintains and perpetuates Hawaiian language, practices and values such as laulima and mālama 'āina.

Wai – This is where wai is skillfully diverted from the kahawai, channeled through the 'auwai to the lo'i to feed the kalo, and directed to return to the kahawai.

Kuleana – Here we practice taking care of our land because she is our ancestor and keeps us healthy.

Mo'olelo – Mo'olelo tell us that Kānewai receives its name from the work of Kāne and Kānaloa who created springs and sources of water. Mo'olelo also tells us how Kānewai continues to be a spring of life and serves as a valuable source of food, culture and language.

'Āina – Here at Kānewai we can see how the 'āina and the wai work together to cultivate

4 Waikīkī Aquarium

The Waikīkī Aquarium is committed to education, research and conservation of Pacific marine life. Internationally noted for coral husbandry and propagation, the Waikīkī Aquarium houses endangered Hawaiian monk seals, unique marine species, endemic fishes and diverse coastal native plants.

Wai – This is where the wai meets the kai and creates a place of nutrient-rich brackish water. This area where the water from the uplands pours into the ocean is known as the muliwai or river mouth.

Kuleana – Here we meet many living things who need us to keep both the fresh wai from the mountains and springs as well as the ocean wai both flowing and clean.

Mo'olelo – This site is rich in the mo'olelo of plants, fish, and animals native to Hawai'i. The mo'olelo also tells us how the mixing of fresh and salt water creates a place abundant with life.

'Āina – The 'āina here has looked very different over time. It once had many



الحديقة النباتية الملكية
Royal Botanic Garden

MISSION

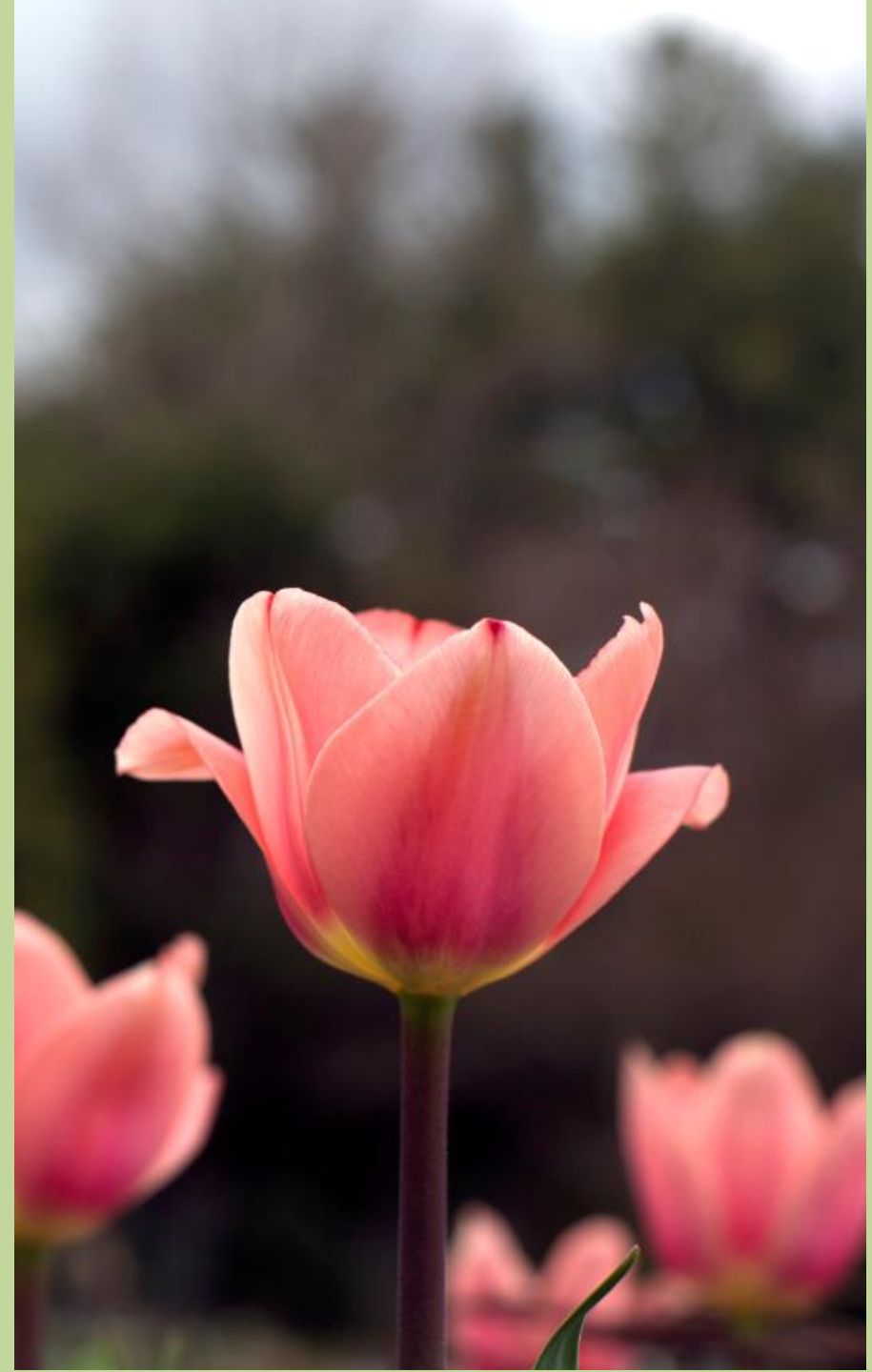
Inspiring people – through cultivation, conservation, and education – to understand, appreciate, and nurture plants and the cultures they sustain.

VISION

A world in which the interdependence of biological and cultural diversity is respected, sustained, and celebrated.

Connecting plants and peoples for a world of diversity, beauty, and hope

Cornell Botanic Gardens
Strategic Plan 2018-2023





Pamir Mts., Central Asia



Standing Rock Reservation, N. Dakota, USA



Building schools



Irrigation for crops



Agroforestry training



Fruit tree distribution



Basket-making Association



EcoTourism



Community partnerships in Madagascar for sustainable development and plant conservation



School gardens



Duckling distribution



Photos courtesy of Chris Birkinshaw

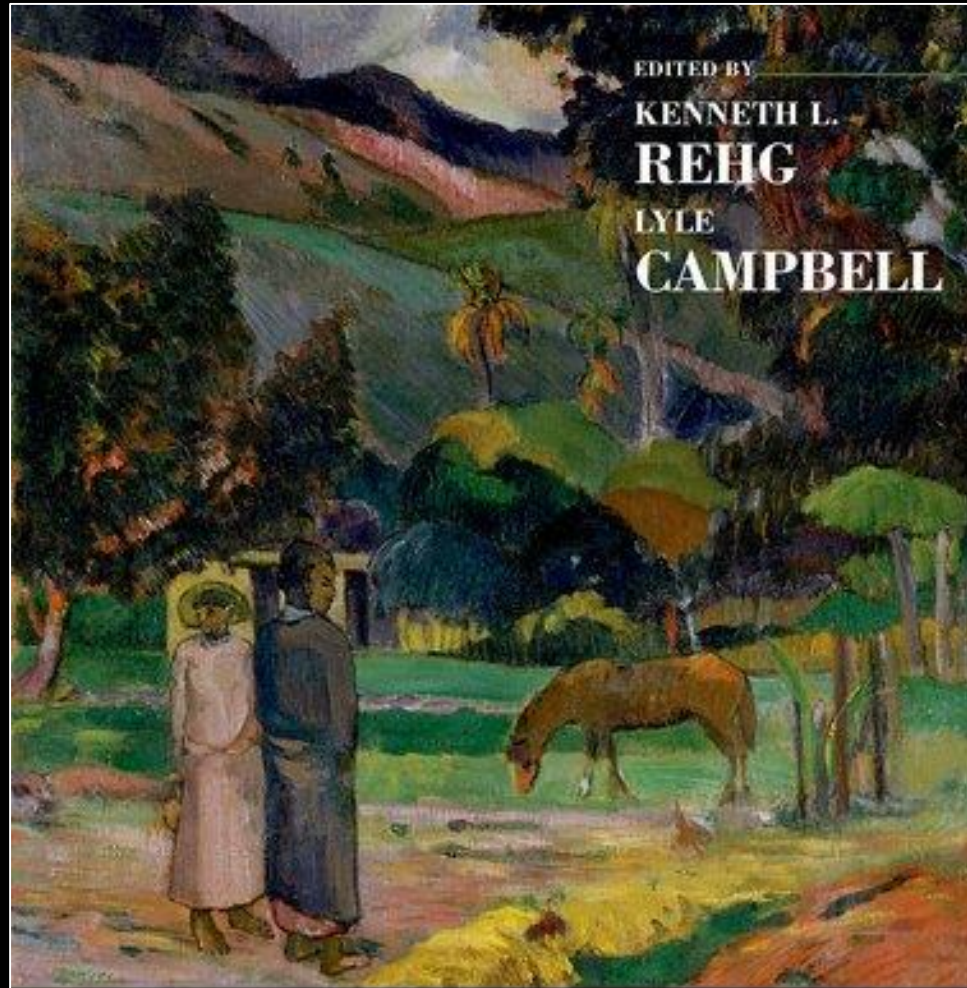


Filipina-Americans from the Foundation for Filipino Artists in traditional costume



Thai New Years Songkran Festival

EDITED BY
KENNETH L.
REHG
LYLE
CAMPBELL



≡ The Oxford Handbook of
**ENDANGERED
LANGUAGES**

RECOMMENDATIONS

International research platform to address gaps

- global catalogue of useful plants, TK
- language documentation
- multilevel partnerships

Capacity building

- educational materials, curricula
- toolboxes, case studies
- meaningful & measurable indicators

“Crosswalk” GSPC Targets, Aichi Targets, SDGs

Engage botanic gardens, arboreta, natural history museums, universities, IPOs, humanities

Assist local communities to preserve LK and TEK

- greater support for on-the-ground initiatives
- biocultural knowledge transmission and custodianship
- actions to implement language revitalization
- fair and equitable benefit-sharing

Increase engagement by government partners

- national
- subnational
- Institutes of botany



Credit: Kono Carragee