# Ecosystem governance in biosphere reserves for better conservation and livelihoods

Liette Vasseur

CEM- Ecosystem Governance Thematic Group

Brock University, UNESCO Chair in Community Sustainability

May 30, 2018

# Ecosystem Governance

- Inclusive approach that better connects the social system with the ecological system to improve conservation of biodiversity and ecosystem health for human well-being.

# Ecosystem governance for sustainable development

- "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

- Two key concepts:

- the concept of '**needs**', and

- the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

# Key points

- Complexity and process (non-linearity)
- Footprint and accountability
- Scalability with flexibility and adaptability
- Engagement and trust building
- Transparency
- Question of time and space
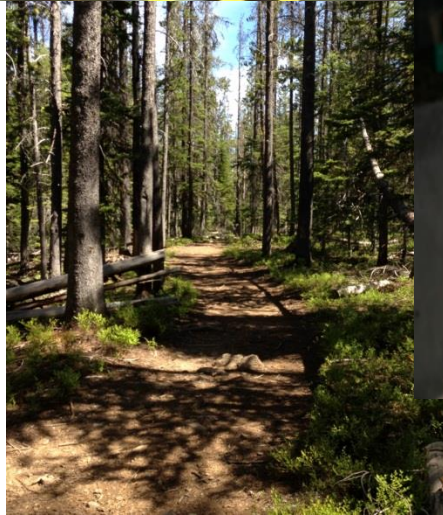- Transformation

# Other principles

- Context specific
- Top-down meeting bottom-up
- Implications of policy development and capacity building
- Need to respect cultural practices and livelihoods

# Ecosystems provide social, cultural & economic stability

# Reliable access to nature's services …



## … is essential for economic development

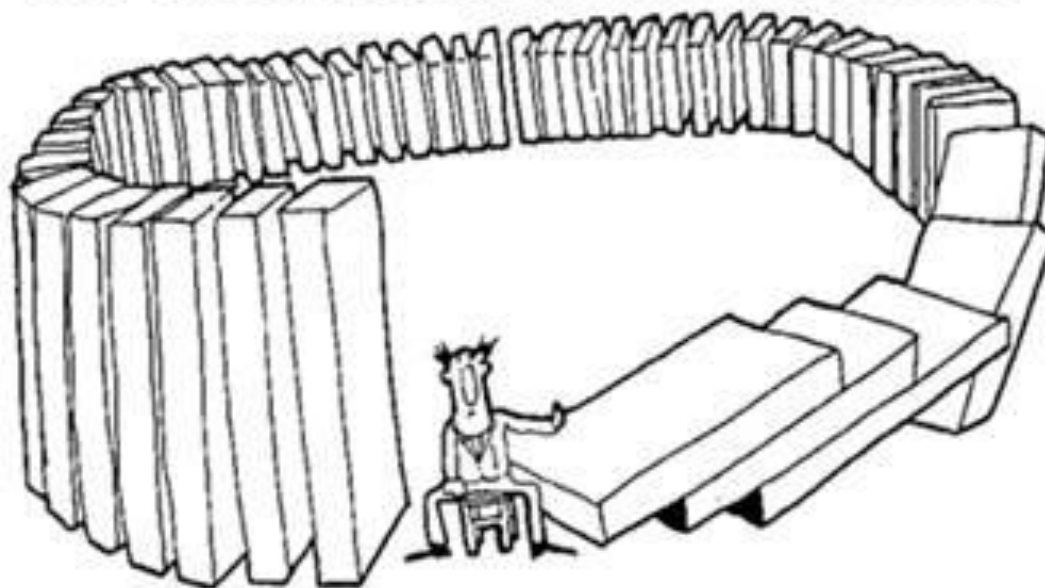# Sustainable development requires us to invest in natural capital

# Actions

- Capacity building at ALL levels

- Appreciation the importance of ecosystem services

- Recognition of the roles of local communities

- It takes time…

# Actions are needed



In complex systems, cause and effect are often distant in time and space

And **Biosphere Reserves** may be a great place to start as model

# Conclusion

Ecosystem governance is not optional but essential to ensuring continued access to vital ecosystem services and to human wellbeing

# Thank you

## Discussion coming after the presentations!

# Governance models in Biosphere Reserves

## Succes factors and bottlenecks

**Communities, Conservation and Livelihood**
May 30, 2018.  Halifax, Canada

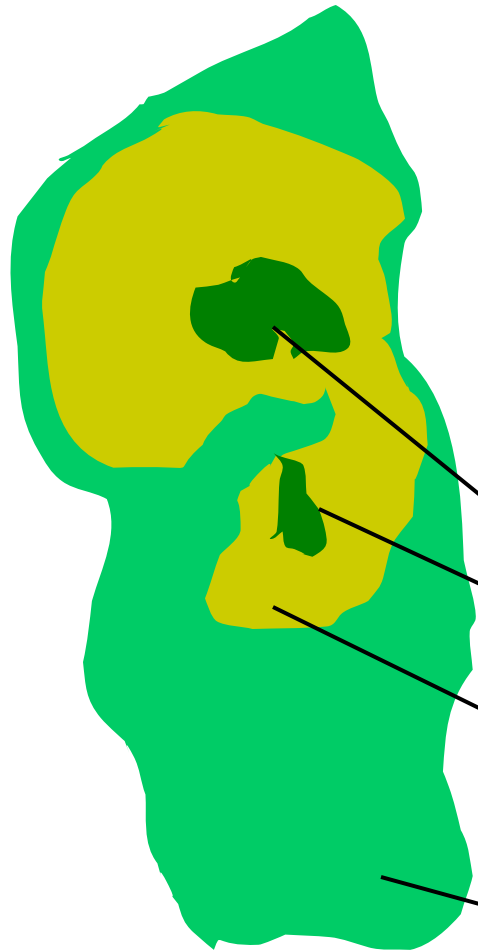Esperanza Arnés.  Co-chair Biosphere Reserves Thematic Group (CEM-IUCN)

# Biosphere Reserves at a glance

**Learning laboratories for sustainable development**

- Reduce loss of biodiversity;
- Improve livelihoods of local people; and
- Enhance social, economic and cultural conditions for environmental sustainability.

Areas comprising terrestrial, marine and coastal ecosystems for testing <u>interdisciplinary approaches</u> to understanding and managing changes and <u>interactions between social and ecological</u> systems. Biosphere reserves <u>involve local communities</u> and all interested stakeholders in planning and management.

# 3 Functions and 3 Areas

* Conservation of biodiversity and cultural diversity

* Economic development that is socio-culturally and environmentally sustainable

* "Logistic" support, i.e. underpinning development through research, monitoring, education and training

Core Area(s)

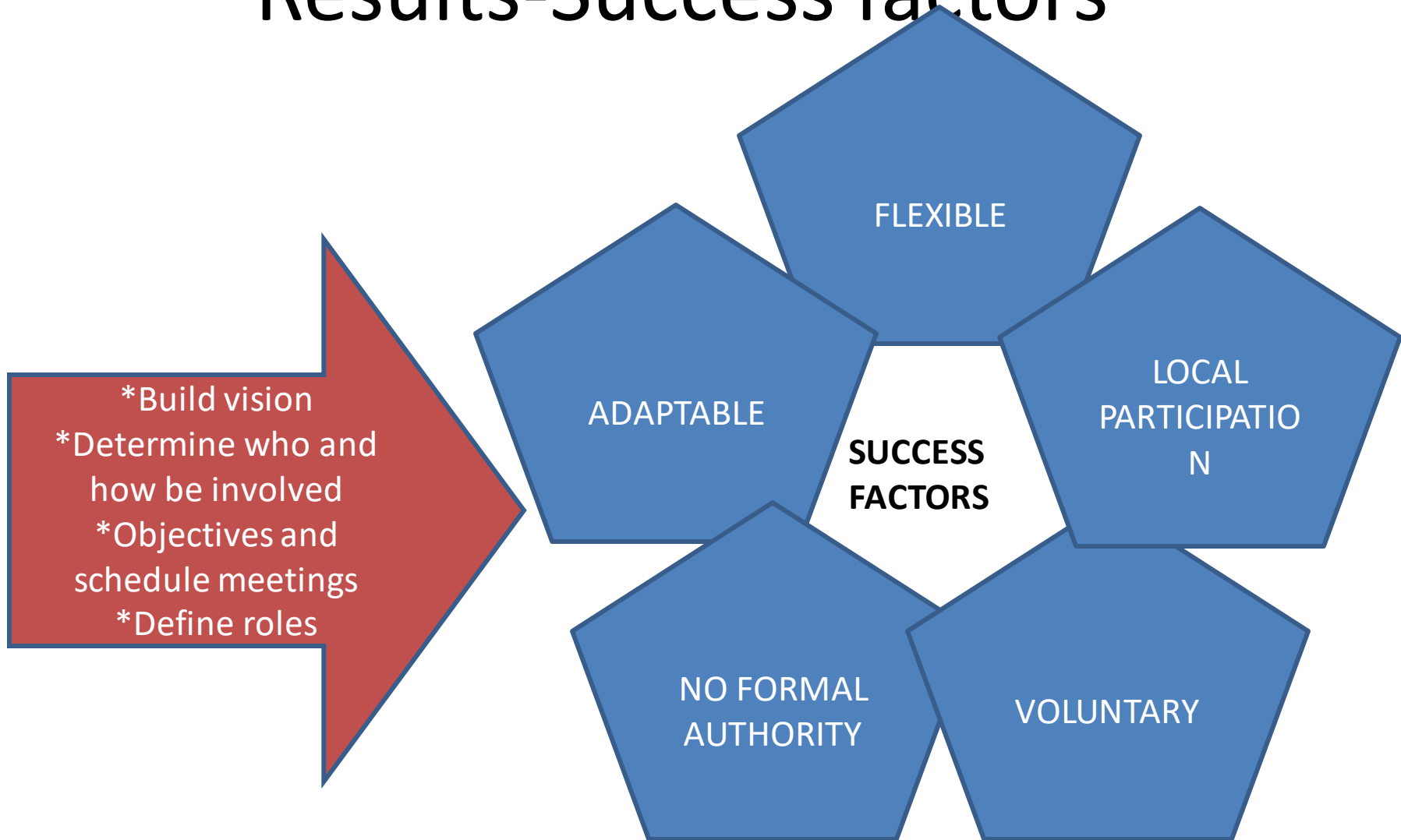Buffer Zone(s)

Transition Area

# World Spectrum

- 669 Biosphere Reserves worldwide (2017-2018)

- 20 Transboundary Biosphere R~~eserves~~

- 120 ~~coun~~tries

# Objective and BR selected

- Sponsored and published by GIZ in collaboration with UNESCO in 2017.

- Objective: Highlight the main strengths and weaknesses of the governance models implemented in different biosphere reserves around the world.

- 17 RB were selected under those criteria
  - a) they are active as biosphere reserves (beyond national parks or protected areas);
  - b) they implement (are open to) dynamic process in their governance models
  - c) they present diverse challenging activities as mining, oil, tourism, agriculture, livestock, among others);
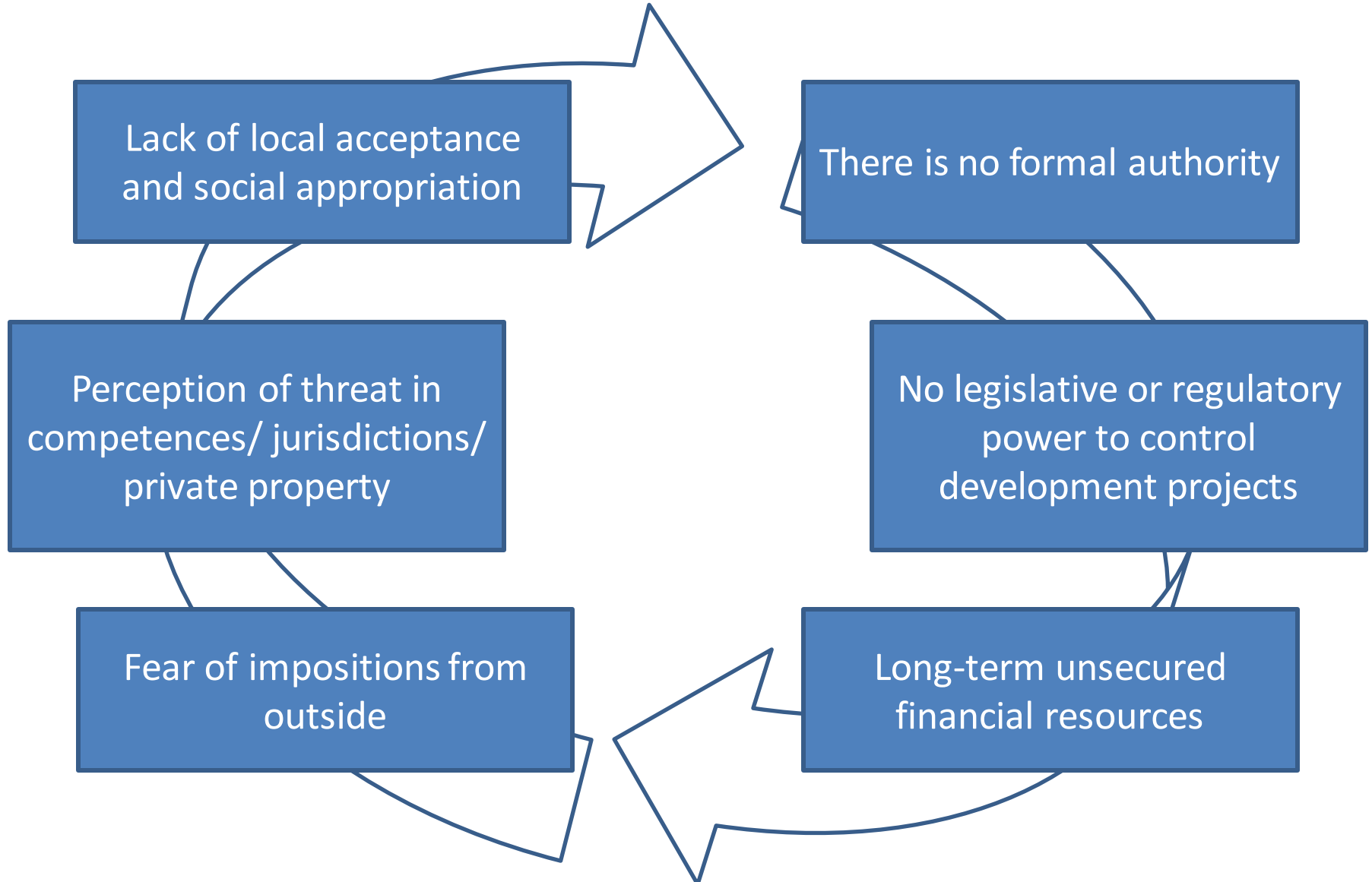
# Results-Success factors

*Build vision
*Determine who and how be involved
*Objectives and schedule meetings
*Define roles

FLEXIBLE

ADAPTABLE

LOCAL PARTICIPATION

SUCCESS FACTORS

NO FORMAL AUTHORITY

VOLUNTARY

# Results-Success Factors

- FLEXIBLE: Negotiation process to achieve a consensual strategic orientation and an adequate organizational design.

- ADAPTABLE: Local interpretation for greater acceptance and local ownership.

- VOLUNATRY: It is not a convection.

- LOCAL PARTICIPATION: In the best of cases, it arises from a local or regional initiative, as part of an endogenous development process.

- NO FORMAL AUTHORITY: They are open discussion forums to build trust and symmetrical relationships. They are politically neutral.

# Results-Bottlenecks



Lack of local acceptance and social appropriation

There is no formal authority

No legislative or regulatory power to control development projects

Long-term unsecured financial resources

Fear of impositions from outside

Perception of threat in competences/ jurisdictions/ private property

# Conclusions

- Every RB is a "world" and have different geographic, economic, cultural and social context.

- Being a Biosphere Reserve is a long-term social and institutional commitment between local communities and society

- BR must be management in an open, evolutionary and adaptive way.

- The international society needs real models of sustainable development…..are BR a model that can be extrapolated on a global scale?

# Thanks!

esperanza.arnes@gmail.com

# The Clayoquot Sound UNESCO Biosphere Reserve Region: Governance and Ecosystems
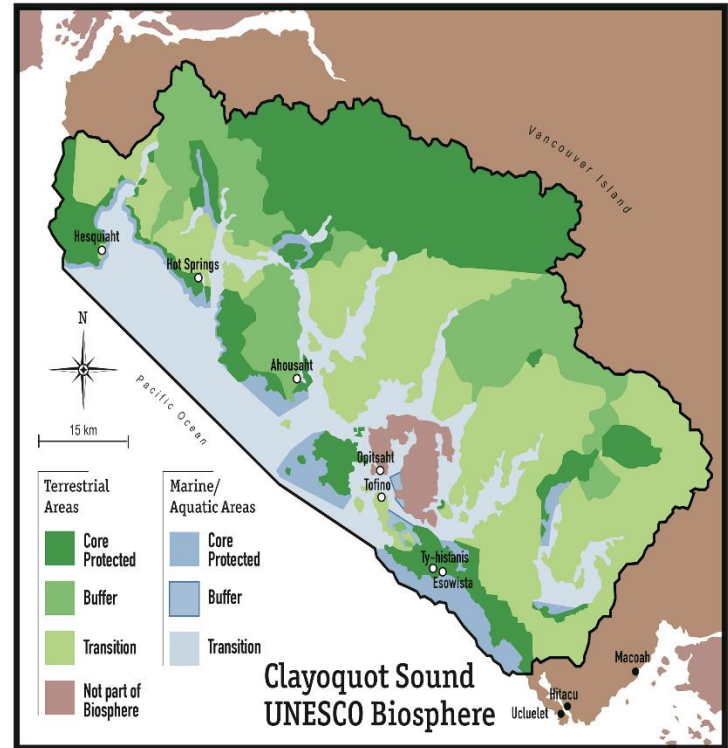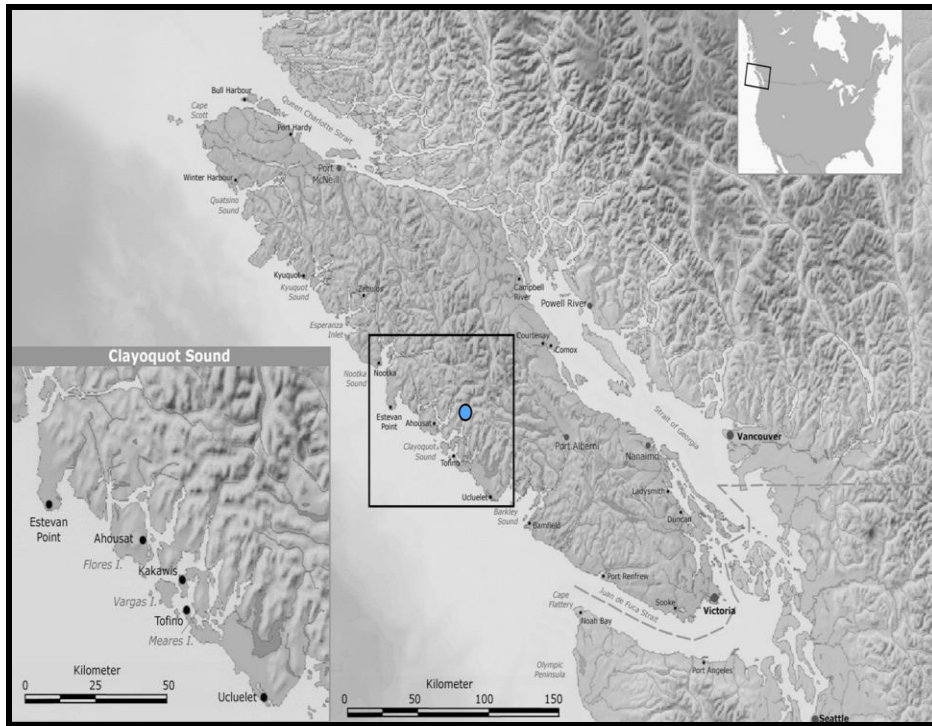
Laura Loucks, PhD, Research Director
Clayoquot Biosphere Trust

Communities, Conservation & Livelihoods Conference, May 28-30, Halifax, Canada

# Designated a UNESCO Biosphere Reserve Region in 2000

# Clayoquot Sound UNESCO Biosphere Region

# Shared Conservation Values of Arising from Conflict...

The Nuu-Chah-Nulth phrase ***hishuk ish tsʼawalk*** ("everything is one") embodies sacredness and respect.

*"Nothing is isolated from other aspects of life surrounding it and within it.*

*This concept is the basis for the respect for nature that our people live with, and also contributed to the value system that promoted the need to be thrifty, not to be wasteful, and to be totally conscious of your actual needs in the search for foods.*

*The idea and practices of over-exploitation are deplorable to our people. The practice is outside our realm of values"*
*(Haiyupis 1995).*

Source: Clayoquot Sound Scientifc Panel : First Nations Perspectives Relating to Forest Practices Standards in Clayoquot Sound March 1995
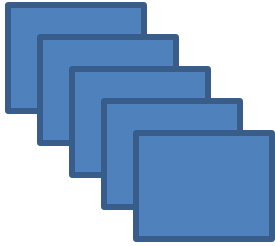
# Clayoquot Biosphere Trust (CBT)

## Our Vision

To live sustainably in a healthy ecosystem, with a diversified economy and strong, vibrant and united cultures while embracing the Nuu-chah–nulth First Nations "living" philosophies of *Iisaak* (living respectfully), *Qwa' aak qin teechmis* (life in the balance), and *Hishuk ish ts'awalk* (everything is one and interconnected).

## Our Mission

To assist the Clayoquot Sound UNESCO Biosphere Reserve Region to achieve its vision by providing funding and logistical support for research, education and training initiatives that promote conservation and sustainable development.

The CBT will facilitate the sharing and exchange of knowledge and experience both locally and globally. The CBT will accomplish these objectives by working creatively and proactively within the framework of the UNESCO Man and the Biosphere programme.

# CBT Board Governance Structure:
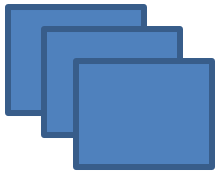
**5 First Nation Board Representatives:**
Hesquiaht First Nation
Tlaoquiaht First Nation
Ahousaht
Yuułuʔiłʔatḥ Government
Toquaht Government

**3 Municipal & District Reps:**
Tofino
Ucluelet
Port Albion

**3 Government Ex-officio Reps:**
Environment Canada
Fisheries and Oceans
Parks Canada
BC Ministry of Forests, Lands, Resources

**1 Youth Representative**

# Program Objectives:

a) Enable local communities to plan, manage and complete projects aimed at protecting, conserving, enhancing and restoring habitats, sites and ecosystems;

b) Encourage environmental and sustainable development projects that will result in tangible, measureable environmental benefits;

c) Enable responses to specific environmental and economic needs and emerging issues at the regional or ecosystem level; and

d) Leverage financial support for training, education and research projects;

# Program Objectives & Outcomes:

a) Enable local communities to plan, manage and complete projects aimed at protecting, conserving, enhancing and restoring habitats, sites and ecosystems;

b) Encourage environmental and sustainable development projects that will result in tangible, measureable environmental benefits;

c) Enable responses to specific environmental and economic needs and emerging issues at the regional or ecosystem level; and

d) Leverage financial support for training, education and research projects;

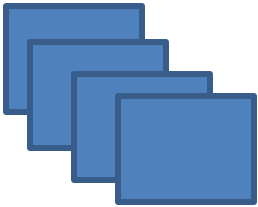| Healthy Communities | Youth & the Biosphere | Biosphere Centre/Hub | Research & Education |
|---|---|---|---|

- Supports local community solutions to local economic, social and environmental challenges.
- Contributes to supporting livelihoods in the region that are diversified and sustainable.
- Contributes to dialogue and enhanced collaboration among stakeholders in the region that leads to solutions toward conservation, sustainable development and healthy communities.
- Contributes to regional livelihood opportunities that are diversified by supporting research, education and training leading to new livelihood activities.
- Supports residents to get involved in local projects and initiatives that result in tangible, measurable benefits towards conservation, sustainable development and healthy communities.
- Contributes to local research, education and training projects and initiatives that promote both conservation and sustainable development and are funded/supported.
- Raises awareness of a range of solutions to local challenges that help residents respond to specific conservation and sustainable development needs and issues at the regional or ecosystem level.
- Effectively manages its Canada Fund (and related endowments) and targets its efforts towards increasing the funding available for local research, education and training.

# We're Also A Community Foundation

# Annual Program Grants & Committees:

**4 Discretionary Funds ($100,000):**
Research & Environment
Community Development
Arts& Culture
Youth & Education

**4 Vital Grants ($80,000):**

**Neighborhood Small Grants ($2,000):**

**1 Biosphere Research Award ($20,000):**

**2 Scholarships ($25,000):**

# UN SDGs in the 2016 Vital Signs Report

# Monitoring for Social-Ecological Health & Wellbeing

## Impact on Food Security

Food security exists when everyone in a community has physical and economic access to adequate amounts of nutritious, safe, and culturally-appropriate food. Eat West Coast is an initiative of the Clayoquot Biosphere Trust that acts as a hub for community-driven food security in our region by helping to bridge gaps in our food systems so that everyone gets the food they need.

### Food Bank on the Edge[58]

The food bank sees an average of **7** new clients per month

Even though food distribution is increasing, donations have gone down.[58]

West coast children in grades 4 and 7 eat dinner with their families most days of the week (5 to 7 days) and maintain that behaviour through to grade 12. While 90% of children in grades 4 and 7 from our region eat breakfast on a regular basis, only half continue to do so when they are in secondary school.[19,9]

In 2015, over 60,000 lbs. of farm direct fresh produce from Vancouver Island farms was brought to west coast restaurants, grocers and families by the Tofino Ucluelet Culinary Guild, up from 40,000 lbs. in 2014.[44]

As of 2016, a **community garden** exists in 7 of our 8 communities: Tofino, Hitacu, Ahousaht, Opitsat, Esowista/Ty-Histanis, ACRD-Area C, and Hesquiaht (for Hot Springs Cove).[59]

In the summer there are farm-direct local fresh produce markets in three communities.[59]

Ucluelet   Tofino   Ahousaht

Only **2** of our **8** communities have grocery stores. Many people in our region must travel by boat or car to reach grocery stores at significant expense.

The cost of food has been increasing across the province.

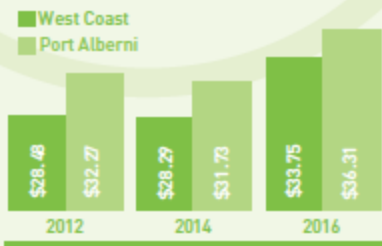As of 2016 **3** out of **6** schools have gardens

Free community lunches are provided every week by the Westcoast Community Resources Society in Ucluelet and by Fish and Loaves in Tofino. Community supported fisheries allow fish to be shared among First Nations members.[39]

In 2012, a comparison of 10 healthy food items showed that food prices were 13% to 21% higher on the west coast than in Port Alberni. In 2016, west coast prices are 8% to 17% higher, but the cost rose significantly for both regions.[43]

Eating fish and marine foods has always been an important part of west coast culture and nutrition. This is increasingly being recognized as a priority for local health and agricultural strategies to not only ensure sustainable harvest for economic prosperity but to create opportunities for residents to live "sea to fork." In 2016, the Alberni-Clayoquot Regional District produced a report on shellfish and marine aquaculture culture and will feature marine foods in the 2017 Islands Agriculture Show.

...with planning underway for the other half to launch in 2017. Our schools are also starting new breakfast, snack, and hot lunch programs in 2016-17.[59]

The first ever West Coast Farm and Garden Show was held in February 2015 by the Tofino Community Food Initiative, with **over 300** attendees[42]

Eat West Coast a program of the Clayoquot Biosphere Trust has invested over $100,000 since 2010 to support food security and food system projects in the region.[59]

CBT at WORK

**West Coast**
**Port Alberni**

| 2012 | 2014 | 2016 |
|---|---|---|
| $28.48 / $32.27 | $28.29 / $31.73 | $33.75 / $36.31 |

Clayoquot Biosphere Vital Signs© 2016   11

**1 NO POVERTY**

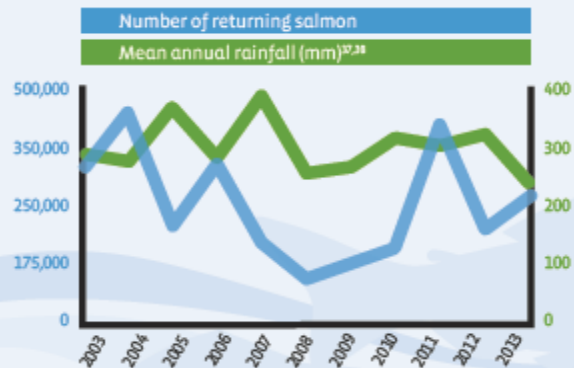**2 ZERO HUNGER**

**3 GOOD HEALTH AND WELL-BEING**

# Monitoring for Social-Ecological Health & Wellbeing



Climate Change Impact on Salmon

July 2016 was the hottest year on record globally.[38] As air temperatures rise in the Pacific Northwest, water levels in our rivers are declining. Rainfall precipitation is now higher in cooler seasons, causing more frequent flooding and increased erosion in salmon spawning habitat. These conditions, together with other stressors, are driving down the number of salmon returning to rivers in Clayoquot Sound.

Over the next 10 years, salmon will likely become even more vulnerable to threats such as increased fishing, and increased exposure to predation, marine contaminants, diseases, and invasive species. In an effort to restore salmon habitat and support salmon recovery, local organizations have formed the Clayoquot Sound Salmon Roundtable to develop a collaborative stewardship approach.[36]

Twenty years of salmon habitat restoration in Lost Shoe Creek is showing results. The Central Westcoast Forest Society's salmon smolt trap monitoring indicates that riparian ecosystem restoration may have a positive impact on coho salmon returns.
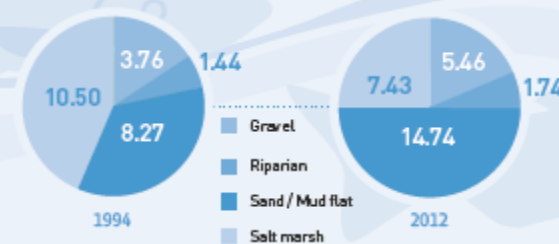
Estuaries provide important feeding habitat for juvenile salmon as they transition from the river to the ocean. But more frequent spring flooding is contributing to a loss of this critical habitat.

Between 1994 and 2012, the area of salt marsh habitat located at the mouth of Tranquil River has decreased by nearly
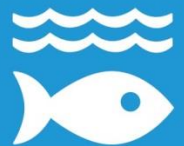
30% due to washouts.[40]

The mean number of returns is

707

coho smolts per year. This is an average increase of

32% since 2007.[39]

Tranquil River Estuary habitat classification (ha)

1994: 10.50, 8.27, 3.76, 1.44
2012: 14.74, 7.43, 5.46, 1.74

Gravel / Riparian / Sand / Mud flat / Salt marsh

Number of returning salmon
Mean annual rainfall (mm)[37,38]

Over the last 10 years, the number of salmon returns, for all species, have declined in the rivers of Clayoquot Sound. In the few years that show an increase, local fish hatcheries enhanced salmon to prevent population extinction. But government funding for salmon enhancement ceased in subsequent years.

Clayoquot Biosphere Vital Signs® 2016    19

# Discussion questions

- How can we better link governance to SDGs in BR?

- How can livelihoods of communities in a BR be improved through ecosystem governance?

- What are the necessary / priority actions to increase ecosystem governance in BR in a way that is also culturally inclusive?

- What tools can be available?

- Could the results found in BR be extrapolated on a global scale?