Impact assessment in conservation and restoration projects through the use of ecosystem health indicator scoring system

VOTE for the indicators

Introduction

***Ecosystem Health Definition*: the ability of an ecosystem to maintain its biotic and abiotic functions and the interrelationships between organisms and the physical environment, such that it is resilient to acute and chronic changes and stressors.**

We are lacking in comprehensive, holistic approaches that engender themselves towards easy implementation and short- and long-term objectives to measure ecosystem health in conservation and restoration projects (=CRP) [1]. To assess ecosystem health through the use of biodiversity, socio-economic, and public awareness indicators is an essential step towards more successful conservation and restoration activities [2,3].

Ecosystems are interconnected and without a comprehensive approach that includes humans we will not be able to adequately protect biodiversity and ensure healthy ecosystems [4,5]. Various research and policy bodies have already embraced each of the previously mentioned indicator themes. However, a comprehensive reporting or assessment methodology and an interdisciplinary framework consisting of all three indicator themes is lacking [1,2].

Research Objectives

To create a methodology that estimates ecosystem health adequately for CRP.

To determine if this methodology is a good impact reporting system for CRP.

Methods

1. **Gather academic expert consensus on the indicators that are to be used in the ecosystem health assessment. This will be done by surveying 1000 academics active in the field of ecology and/or conservation. The indicators with a 60%, or higher, consensus will be included in the methodology draft.**
2. **Organize the selected indicators in the 6 pillars depicted in Figure 1.**
3. **Select and standardize metrics, as well as frequency and scale of measurements, to be used to measure each indicator.**
4. **Re-create survey to gather in-the-field expert consensus of the selected indicators and metrics. 1000 Individuals working in CRP will be surveyed. Indicators and metrics will be changed according to survey output. Each indicator will receive a low, medium or high score according to CRP goals and current status.**
5. **Create ecosystem health assessment to aid in impact measurement of conservation and restoration projects based on results of both surveys. The assessment is to be constructed in such a way that it can be used for impact reporting under existing frameworks such as ESG and GRI.**

Follow the colored circles that match the Methods step's color and number.

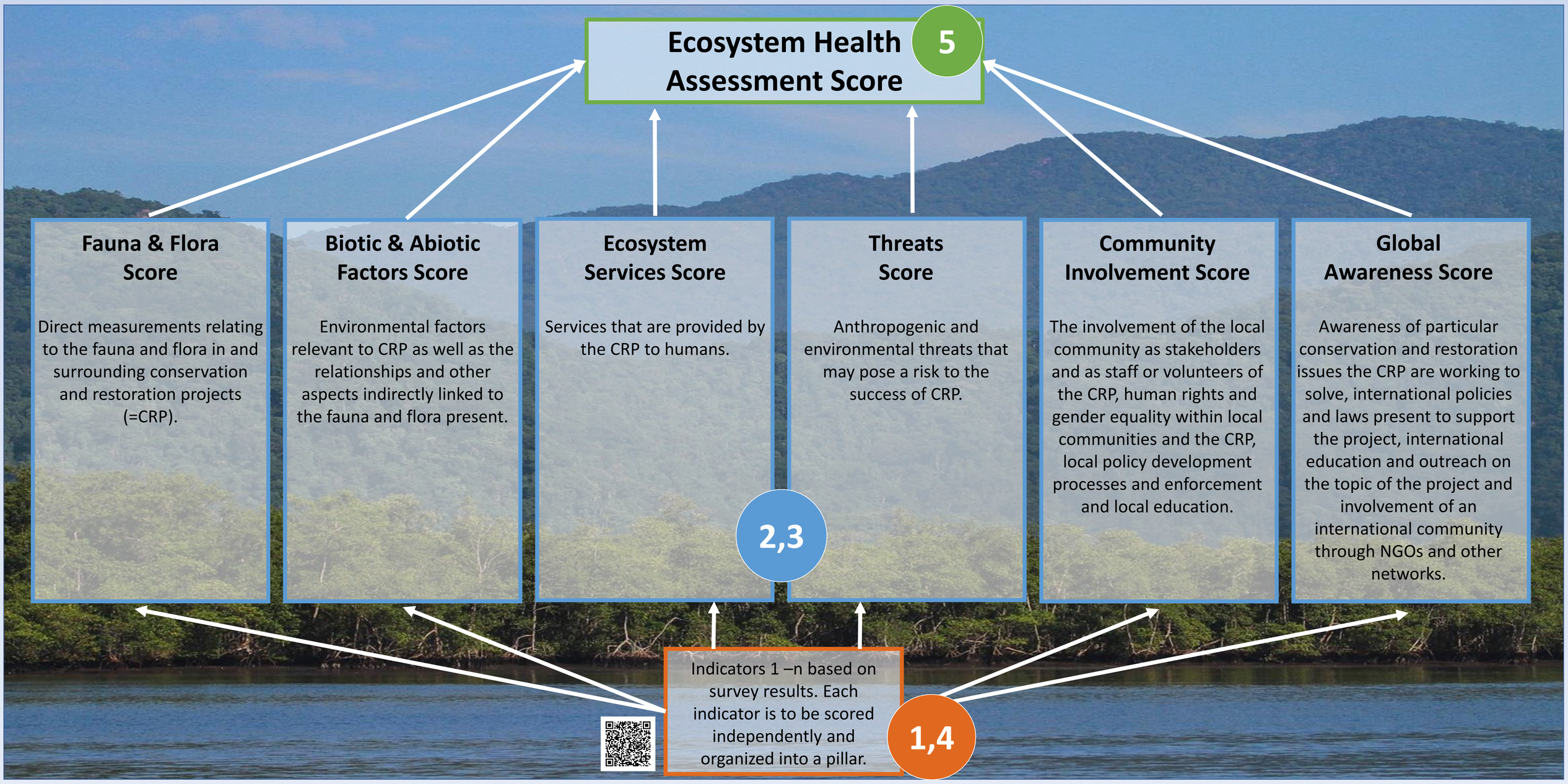

Figure 1: Ecosystem Health Assessment Score Built Up. Each indicator selected in the survey through 60% or more consensus will be organised into one of the following six pillars. Adding the scores (a low, medium or high) of each indicator within a pillar will equal the pillar score. The addition of each pillar score will equal the overall ecosystem health score of a C&RP. Picture by Jose Eduardo Camargo downloaded from Pixabay.

Expected Results

CRP are often faced with financial caps that do not allow for substantial monitoring of the project progress towards its objectives [6]. Keeping this restriction in mind, it is expected that the results will relay the most commonly used and accepted indicators (such as habitat size, species richness and levels of pollution), as well as indicators that can be measured through earth observation and other remote sensing techniques or those that have large open source databases available to researchers and conservationists.

It is expected that fewer indicators belonging to the social pillars will reach a 60%, or higher, consensus due to the resources required to collect relevant data and the lack of integration of anthropogenic aspects into national and international conservation and sustainability frameworks [4].

Key References

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