

❖Standard 12: Set overall priorities for conservation action within the ecoregional portfolio/biodiversity vision and define institutional roles and priorities.

Case Study: **Sequencing Conservation Actions in the Southeast Division, USA**

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[see also figures, and appendices]

Purpose and region of analysis

Sequencing Conservation Actions is a project of the Southeast Division of The Nature Conservancy developed to identify priority project areas and cross-cutting strategies at various geographic scales (state, ecoregion, division). We use the term Conservation Actions to represent strategies implemented both at and across Conservation Areas and from local to global scales.

Criteria/Methods

There are three steps to the Sequencing Process, they are: 1) assess Relative Threat Status, 2) compute Relative Contribution to Ecoregional Goals, and 3) assess Relative Conservation Opportunities. The first two are based on the characteristics of the conservation area, the conservation targets and the threats to those targets. The third step, Relative Conservation Opportunity, takes into account the human dimensions of funding opportunities, presence of individuals in agency/partner, policy/political/community support, presence of a planning window, and achievability. The whole process is systematic, standardized, quantitative, transparent and adaptive, and is backed by an MS Access tool designed by Chris Szell (Figures 1-2). For more detailed information, a PowerPoint presentation is available on ConserveOnline (http://www.conserveonline.org/2004/02/p/Sequencing_Talk_-_ACR_February_04)

Teams representing each of the eleven southeast ecoregions met to rank a list of 28 sources of stress for each Conservation Area in the portfolio. Sources of stress were ranked in terms of Severity (how severe are the stresses associated with the source of stress to the conservation targets) and Percent Ecoregional Target Occurrences (proportion of target occurrences upon which this source of stress is acting at the scored level of severity). Ranking was done on an ordinal scale (low, medium, high, to very high) and the data was used to calculate the Relative Threat Status of each Conservation Area.

Resources available to assist in the scoring process included: a list of standardized sources of stress, criteria defining the ranks used to score Severity and Percent Ecoregional Target Occurrence, and the list of targets for each Conservation Area. These were made available in the Access database to facilitate the recording of data relevant to the sequencing process (Figures 1-2). In addition, spatial data for each Conservation Area and GIS derived maps for selected threats were also made available. The teams' level of knowledge about each Conservation Area was also ranked (low to very high) in order to identify those areas for which TNC would need to obtain better information.

Relative Contribution to Ecoregional Goals was calculated for each Conservation Area by assessing two attributes: 1) the total number of ecoregional targets and 2) the number of imperiled conservation targets. Imperiled conservation target is defined as the number of G1 and G2 ecoregional target occurrences and the presence of irreplaceable targets (G1/G2 targets that are only found at one Conservation Area in the ecoregion). The total number of ecoregional targets was weighted at 75% and imperiled targets weighted at 25%. Finally the weighted values were summed to provide the Relative Contribution to Ecoregional Goals value for each Conservation Area.

The third step assessed the Relative Conservation Opportunity for each conservation area, scoring the attributes of 1) funding opportunities, 2) support in key partners/agencies, 3) policy and constituency support, 4) feasibility, 5) presence of a planning window, and 6) leverage opportunity. Experts scored attributes for each conservation area as very high, high, medium and low. The synthetic relative Conservation Opportunity score for a conservation area is the summed scores (1-4 where 4 corresponds to very high) for the six attributes. The funding and planning window attributes received a weight of 2. Support of key partners received a weight of 1.5. The remaining attributes were not weighted. Dividing scores into quartiles provided the Conservation Opportunity categories of very high, high, medium, or low opportunity.

Products/Outcomes

There are three outcomes to the Sequencing Process:

- The first is the ranking of Conservation Areas into four sequencing categories based on conservation value and threat status: 1) **Now, Right Now:** Conservation Areas to be addressed immediately, 2) **Now:** Conservation Areas to be addressed in 3-5 years, 3) **Soon:** Conservation Areas that can be addressed in 5-10 years, and 4) **Later:** Conservation Areas that can be addressed in more than 10 years.
- The second outcome is the identification of foci for cross-cutting strategies, such as common threats, ownership and ecological systems. It is around these foci that strategies can be developed, supported by the quantitative information gathered as part of the Sequencing Project.
- And the third compares Conservation Opportunities across priority Conservation Areas.

Below are listed the five products that came out of the sequencing process. All products were produced at the division, ecoregion, and state scales.

- A graph of Conservation Areas distributed along the axes of Relative Threat Status and Relative Contribution to Ecoregional Goals and within areas of the four Sequencing Categories (Figure 3).
- A table of Conservation Areas ranked by the four Sequencing Categories (Now-Right Now, Now, Soon, Later) (Figure 4).
- A bar graph depicting the number of conservation areas in which a threat was present and the percentage of very high, high, medium, low and unknown scores for each threat (Figure 5).
- GIS derived maps highlighting either high priority threats or Conservation Areas color-coded by Sequencing Category (Figures 6-7).
- A graphic comparison of Conservation Opportunity across priority Conservation Areas.

Strengths and weaknesses

The primary strength of the process is the easily interpreted and visual nature of the outcomes. The assessment of conservation priority, common threats, and conservation opportunity are easily understood and communicated. In addition, the process has provided other numerous values.

The Sequencing assessment initiates work that will inform future iterations of the Ecoregional Assessments. Conservation Area boundaries were re-examined in this process. One example, Tropical Florida, resulted in 65 Conservation Areas redefined to 10. The process allowed teams to re-assess the ecological integrity of Conservation Areas and target occurrences for each Conservation Area were removed (not viable, destroyed, questionable data) and new targets were added. The process also identified low or no knowledge Conservation Areas where more information is needed in order to be included in the assessment.

The Sequencing process makes explicit important questions concerning how TNC implements its mission. These include:

- Does TNC focus on the most threatened or conserving the best remaining Conservation Areas?
- How does TNC find a balance between working deep at a few Conservation Areas and working on broader, larger scale actions that influence conservation at multiple scales?
- Should TNC focus work on large landscape sites or a mix of spatial scales?
- Should TNC focus on conserving targets nearest to extinction or actions that influences all conservation targets equally?
- How does TNC make decisions between high priority Conservation Areas and opportunities for conservation at lower priority sites?

Lastly, Sequencing will have value to many TNC organizational-wide priorities.

- The standardization of threats and threat definitions used in Sequencing will help the Global Priorities Group and the Developing Strategies Group improve Ecoregional Assessments and Conservation Area Plans.
- The identification of foci for multi-site strategies will assist the Developing Strategies Group in determining approaches and methods for developing multi-area conservation strategies.
- Conservation Measures Group is testing new Ecoregional Status Measures which has a threat component and Sequencing provides a potential process for this component.
- Threat information and multi-site strategies feed into many, if not all, of the goals of TNC Initiatives.
- Sequencing initiates components for second iterations of Ecoregional Assessments.
- Sequencing may assist in connecting TNC's 10-year goal to priority Conservation Areas and Ecoregional Assessments.

A drawback to this approach is the bias underlying the scoring of threats. Scores are biased toward current status and urgency and thus do not adequately address threats that are currently low or medium but require immediate attention so they do not cross an irreversible threshold (e.g. invasive species, climate change/sea level rise). The threat assessment also does not address the matrix between Conservation Areas. Further work needs to be done to complete the Sequencing in certain parts of the Division and to better incorporate freshwater sites.

Acknowledgements

The completion of the Sequencing effort would not have been possible if not for the unique knowledge, time, and effort that some 122 individuals from TNC, Natural Heritage, USFS, USFWS, various State Agencies, and Ecological Contractors that assisted in the project.

Tools

SCAT- Sequencing conservation action tool V 6.2. A Microsoft Access tool designed to prioritize conservation strategy options and identify the sequence of those actions and various geographic scales. [Manual](#) available through conserveonline.org.

References

Sutter, Rob, Chris Szell, and John Prince. Sequencing Conservation Actions: Science-based Priorities for Ecoregional and Global Conservation. 2005. The Nature Conservancy, Southern U.S. Regional Office, Durham, NC.
