Overview

Thriving Earth Exchange helps community leaders and scientists work together to design and carry out projects that advance community priorities and make a concrete local impact. In the seven years since our founding, we have worked with over 100 communities across the US and internationally. We always begin with community priorities – it is never about outside experts coming in to tell communities what to do – and then build and manage projects that integrate science with community context and knowledge to respond to those priorities and produce tangible, local impacts.

"Community Science" Defined:

Community Science is when communities and scientists do science together to advance one or more community priorities. "Doing science" includes defining questions; designing protocols; collecting and analyzing data; and using scientific knowledge in decision-making and planning. Community science starts with community priorities (not needs); respects community knowledge and scientific integrity; advances equity; and uses evidence honestly.

Community Science Project

Community Science Project: A Community Science Project is a 6-18 month project that combines science and community knowledge to advance a local community priority. These projects have concrete local impact and advance community capacity to use science. The projects also enhance science's capacity to work with local communities and respond to societal priorities. Examples of community science projects include updating traditional calendars, restoring damaged ecosystems, monitoring and curbing local pollution, building and helping implement climate change action plans, and helping neighborhoods enact policies or promote infrastructure that reduce flood risk.

The results of Community Science Projects are designed to be shared with other communities who may have similar priorities. Community Science Projects, like all projects, sometimes evolve over the course of a project, so the final outcome may be different than initially imagined. Community Science projects often inspire future work.

Project Leadership Team

Below is an overview of each of the roles represented on any given Thriving Earth Exchange community science project.

Community Leader(s): acts on behalf of a **community** as part of the project leadership team and serves as a main point of contact for other team members and Thriving Earth Exchange staff. Project design starts with their input, and they take primary responsibility for ensuring the project advances community priorities and reflects community values and perspectives

➔ ***Community*** *is broadly defined as a group of connected or organized individuals who live in a similar place; who are subject to the same jurisdiction; who have a characteristic in common; or who share a feeling of fellowship given common interests, goals or attitudes. Communities may include local or regional governments, tribal governments, community-based organizations, or other advocacy, tribal, non-profit organizations, or others.*

Community Science Fellow: manages and guide the project leadership team. Community Science Fellows are usually volunteers, but sometimes a staff member from a Thriving Earth exchange partner will serve as a Community Science Fellow. They work with the community leader to scope the project; recruit, interview and recommend a Community Scientist match; manage the project through its 6- to 18-month lifetime; ensure concrete local outcomes; and facilitate interaction between their community science team and the Thriving Earth Exchange network. They also help the project share results and lessons-learned broadly.

Community Scientist(s): contributes scientific knowledge to the project. These pro-bono (i.e. volunteer) scientists help refine the project. Their role can include finding and interpreting relevant scientific information, adapting existing research for local context, designing and conducting new research (often with community partners), analyzing data, and educating community members or local leaders.

Thriving Earth Exchange Staff: serve as a resource for Community Leaders, Fellows, and Scientists and provide educational and programmatic oversight during the execution of each project. Together, we offer guidance on successful practices; education about community science; templates and tools for doing community science; coaching and mentoring for project participants; and help sharing project results and successes. Staff may be employed by AGU and partner organizations that contribute to Thriving Earth Exchange.

The Approach

Each project works through a four-step process that has been developed and tested through over 100 projects. The process starts when a community leader submits an application to the Thriving Earth Exchange.

Scope: Discuss community priorities and identify a project

All Thriving Earth Exchange projects are developed and defined based on community priorities. The Community Science Fellows and Community Leader engage in a series of conversations to explore community values, priorities, strengths, and challenges, and their connections to Earth and space science. Scope is complete when the community leader and fellow have designed a viable and tractable 6-18 month community science project – a project that excites the community, advances their priorities, and leverages science.

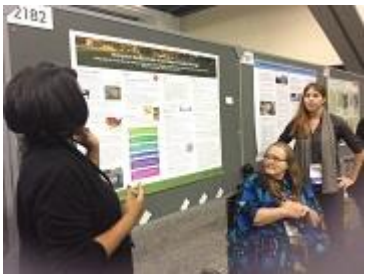
Match: Partner with scientist

Using the scope developed in the first step, the Community Science Fellow will recruit one or more scientist with the right technical and collaborative skills to serve as a pro-bono Community Scientist. Match is complete once the Fellow introduces the Community Scientists and Community Leaders and they agree to work together on the project.

Solve: Design and Implement a solution

Community Leaders and Scientists work together collaboratively to achieve the project objectives. The Fellow provides project management, facilitates progress, and coaches the team toward success. As a team, they connect to new partners and identify additional resources. Solve is complete when a community-relevant outcome is realized and documented (or shared). Not all projects are completed exactly as designed, but all projects do produce a community relevant outcome and many projects position the community and scientist for future work

Share: Make your tools and results available



Every community is unique, but many face similar challenges. Sharing the results of Thriving Earth Exchange projects enables other teams to adapt and build upon community science solutions. The Share component of a project includes making sure that the project outputs translate beyond the community, recognizing the efforts of volunteers, and providing feedback on the Thriving Earth Exchange process. “Share” also helps to guide future scientific research along directions that are relevant to the priorities of *all* communities, helping to ensure research is societally relevant and advances equity. Community Science Fellow (with support from AGU and partner staff) will help ensure the team pays attention to share throughout the life of the project, and all team members participate.

View more examples of active projects for more information on the breadth and diversity of community science happenings here.