

The Nature-Based Restorative Economy in Santa Cruz County, Arizona

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About the Study

Nature and the resources and benefits it provides are key inputs to production processes that stimulate economic growth. They enhance quality-of-life, and ultimately provide the underpinnings for human life. They also contribute to the health of regional economies through ‘nature-based’ industries that depend on them, supporting jobs, income, and economic development. At the same time, how these natural resources are used can either build or degrade the natural resource base within a region and positively or negatively affect the regional economy. This study examines industries within the nature-based restorative economy (NBRE) in Santa Cruz County, Arizona. Within the context of Santa Cruz County’s economy, the NBRE

consists of three general areas: nature-based tourism, nature-based industries, and conservation, restoration, and preservation (Figure 1).

This study characterizes and quantifies the total economic contribution of the NBRE in Santa Cruz County in 2019, including economic activity supported in other industries through indirect and induced multiplier effects. In addition to quantifying the total contributions of the NBRE to the county economy, this study provides a socioeconomic and natural resource profile for Santa Cruz County and presents the results of a SWOT (strengths, weaknesses, opportunities, and threats) analysis to better understand and predict the medium- and long-term outlooks for the NBRE in the region.

Figure 1.
NBRE Three-Legged Stool Definition



Nature-Based Tourism

Tourism & associated economic activity that rely on products of and experiences with nature

Nature-Based Industries

Economic activities related to products derived from local, renewable resources provided by nature

Conservation, Restoration, & Preservation (‘C&R’)

Activities to conserve, restore, and preserve the natural environment, as well as mitigate human-caused environmental damage

What did the study find?

Total County Economic Contribution of the NBRE Including Multiplier Effects

\$53.8 million county GDP
 \$121.7 million sales

1,200 jobs & \$41.2 million labor income
 \$4.7 million state & local tax revenues

- The NBRE directly supported 779 jobs, \$31.1 million in county GDP, and \$76.6 million in sales in Santa Cruz County in 2019.
- Several industries within the NBRE are considered part of the economic base of the Santa Cruz County economy, including ranching, the growing wine industry, and nature parks.
- Industries directly part of (or closely linked to) the NBRE accounted for 30% of net job gains in Santa Cruz County over the past decade.

Direct Economic Contributions of NBRE Industries

The direct economic activity of the three NBRE components is as follows.

Nature-based tourism directly contributed \$22.9 million to Santa Cruz County output (sales) in 2019, directly supporting 320 jobs and \$8.9 million in income, and contributing approximately \$13.0 million to Santa Cruz County's GDP (value added).

- Santa Cruz County is home to a number of state and national parks and other protected areas and is recognized as an area with high natural amenities and opportunities for outdoor recreation. Popular outdoor recreation activities in the county include wildlife viewing, birdwatching, camping, hiking, mountain biking, equestrian activities, and hunting.
- Economic activity related to nature-based tourism captures visitor spending in Santa Cruz County in 2019 and includes visits to national parks, state parks, the Coronado National Forest, and some privately-owned natural areas, including agritourism activities taking place in the region's vineyards and wineries.

Nature-Based Tourism



Directly contributes...

\$13.0 million county GDP

\$22.9 million sales

320 jobs & \$8.9 million income

Nature-Based Industries



Directly contribute...

\$12.6 million county GDP

\$40.0 million sales

345 jobs & \$12.5 million income

Nature-based industries directly contributed \$40.0 million to Santa Cruz County output (sales) in 2019, directly supporting 345 jobs and \$12.5 million in income, and contributing approximately \$12.6 million to Santa Cruz County's GDP (value added).

- Within the context of this study, nature-based industries are industries that derive renewable products from nature within Santa Cruz County, and those that process locally sourced renewable products of nature into value-added goods. Effectively, this encompasses agricultural industries, renewable energy generation, wineries, and select food, fiber, and wood manufacturing businesses.
- Economic activity of nature-based industries includes sales of agricultural products, wine, and manufactured products produced from locally sourced renewable resources. It also includes operational costs associated with renewable energy generation located in the county.

Conservation, preservation, and restoration activities (C&R activities) directly contributed \$13.7 million to Santa Cruz County output (sales) in 2019, directly supporting 114 jobs and \$5.4 million in income, and contributing approximately \$5.4 million to Santa Cruz County's GDP (value added).

- Santa Cruz County has a long history of conservation, restoration, and preservation (C&R) activities, with much of this activity increasing in recent years. A strong community of organizations and volunteers support these efforts and work collaboratively to preserve and protect the county's unique natural environment.
- Economic activity related to C&R activities involves federal, state, and local government agencies, public land managers, private landowners, nonprofits, research scientists, private contractors and consultants, tribes, and others.

Conservation, Preservation, & Restoration



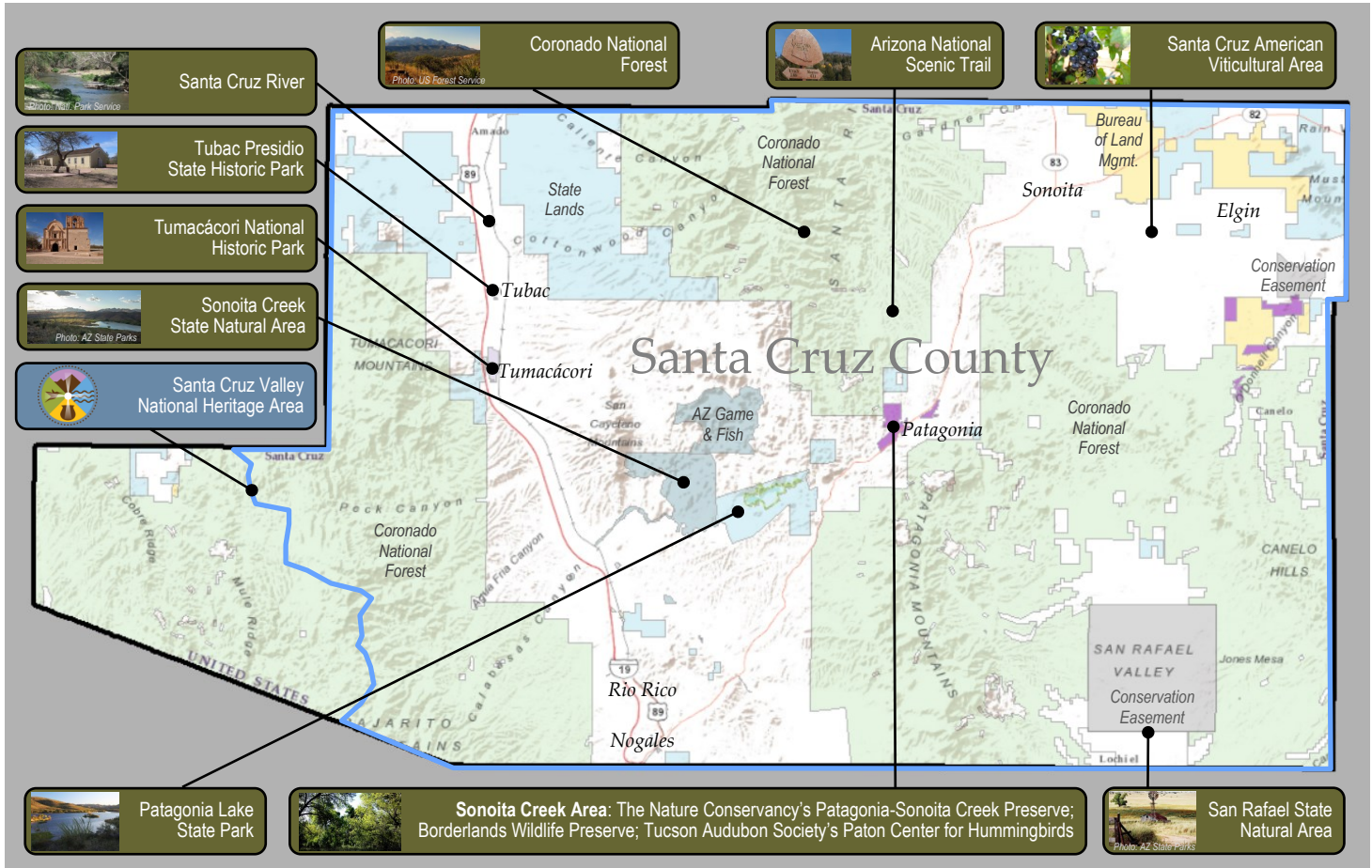
Directly contribute...

\$5.4 million county GDP

\$13.7 million sales

114 jobs & \$5.4 million income

Based on direct county GDP supported by the NBRE, it would rank above 4 of 14 high-level industries in the county in 2019



About Santa Cruz County

- Santa Cruz County, Arizona is located in south-central Arizona along the U.S.-Mexico border.
- In 2019, the county's population was roughly 46,500 people, of which roughly 40,000 live in Nogales and Rio Rico. Between 1980 and 2010, the county added roughly 1,000 people per year to its population, however since 2010, the county's population has held steady. Most population growth has occurred among people over age 50, while in recent years the population under age 50 has declined.
- The Nogales area is the county's most populous area and is home to a highly concentrated fresh produce import industry cluster. The area also has a large share of federal employment related to operations of the international border and port of entry. Outside of the Nogales area, other communities include Tubac, Patagonia, Sonoita, and Elgin, among others. These areas are generally rural and rely on industries such as ranching, wineries, and nature-based tourism to state and national parks, the national forest, and other natural areas.
- The county is part of the newly-established Santa Cruz Valley National Heritage area. This federally-recognized area is highlighted for its distinct landscape with rich natural, cultural, historic, and recreation resources.
- Santa Cruz County has a high concentration of natural amenities. Over half of the county's area falls within the Coronado National Forest. The county is part of the region known as the 'Sky Islands', characterized by a wide range of elevations, ecosystems, and rich biodiversity. Of Arizona's 15 counties, Santa Cruz County has the highest concentration of federally-listed threatened and endangered species. The county is an important destination for wildlife viewing, particularly birding.

How Was the Study Done?

This study characterizes and quantifies the Santa Cruz County nature-based restorative economy (NBRE) and analyzes market transactions and the linkages between industries to estimate the contribution to the county economy. The results present a snapshot of economic activity attributable to the NBRE that occurred in Santa Cruz County in 2019. The study was conducted in four phases.

- Phase I developed a socioeconomic and natural resource profile for Santa Cruz County, providing an in-depth analysis of the county's economy in 2019 (prior to the 2020 COVID-19 pandemic) as a baseline.
- Phase II involved a deliberative process with the study's project steering committee to develop an operational definition of the county's NBRE.
- Phase III used primary and secondary data sources to: (1) quantify the economic activity in 2019 directly attributable to the NBRE and (2) develop short- and long-term projections for each component of the NBRE. Primary data were obtained by conducting informal meetings and focus groups with NBRE stakeholders and projections were informed by a SWOT (strengths, weaknesses, opportunities, and threats) analysis.
- Finally, Phase IV estimated the economic multiplier effects of the NBRE in terms of the number of jobs, income, sales, and value added (GDP) supported using the IMPLAN 3.1 model and data for Santa Cruz County, Arizona.

Takeaways & Future Research

This study uses a regional economic analysis framework to examine the NBRE's role in Santa Cruz County's economy. It measures the circulation of money through the regional economy attributable to the NBRE and presents measurable contributions in terms of dollar and jobs. While these methods are useful from a regional economic development perspective, they only capture *one* type of value attributable to the natural environment. There are many economic values that are not captured in this report that are associated with the benefits that humans derive from nature (Figure 2). Future research could include conducting visitor surveys to better understand different economic value of the environment, including the value of things not bought and sold in a market economy, such as the value of nature-based recreation in Santa Cruz County. It could also involve conducting a *hedonic price analysis* to better understand the value that Santa Cruz County homeowners place on proximity to natural amenities such as open space, riparian areas, or scenic views. Finally, it could involve conducting analyses to better understand and measure the impacts of conservation and restoration and estimate the value of ecosystem services, resources and benefits that people derive from the natural environment.

Figure 2. Measuring Economic Values of the Environment

Economic Contribution Analysis

Measures the value of *monetary transactions* occurring in a regional economy attributable to the natural environment

Other Values

Property value impacts
Intrinsic value of recreation
Value for future generations
Human health & wellness
Value of species' existence
Value of ecosystem services
(*fresh air, clean water, etc.*)

Santa Cruz County's rich biodiversity, natural beauty, and engaged NBRE community make it a dynamic location for studying the economics of conservation, restoration, and other nature-related economic activity. This study presents a baseline of existing economic activity in the county attributable to the NBRE. It also provides information on the context of this economic activity, and forces at play influencing the future of the county's NBRE. Confronting influences such as climate change or land-use change will present unique challenges in the future, however, this study demonstrates ways in which the regional economy can benefit from efforts to protect and restore the environment.

To read the full report, please visit <https://economics.arizona.edu/nature-based-restorative-economy-santa-cruz-county-arizona>