Executive Summary

Introduction

The Santa Cruz County Regional Conservation Investment Strategy (RCIS) is a voluntary, non-binding, non-regulatory regional plan for the conservation of natural communities, species, and related biodiversity conservation values within Santa Cruz County (the RCIS Area). It was developed to facilitate regional, early, and advance mitigation planning, and to direct conservation investments to the highest priority areas through science-based, collaborative, and voluntary actions to achieve more effective conservation outcomes.

The RCIS was developed by the Santa Cruz County Regional Transportation Commission (RTC) and the Resource Conservation District of Santa Cruz County (RCD) through a multi-stage process between 2020 and 2022. The RCIS synthesizes and builds upon prior conservation research and plans and was developed with extensive input from the community including: local, state, and federal resource agencies and organizations; stakeholders from a variety of sectors including representatives from conservation and transportation; technical advisors with expertise in biological system and species in the RCIS Area; and the broader public. The RCIS was prepared following the guidelines for the RCIS program (CDFW 2018), which is administered by the California Department of Fish and Wildlife (CDFW) to help California's declining and vulnerable species by protecting, creating, restoring, and reconnecting habitat and may contribute to species recovery and adaptation to climate change and resiliency (CDFW 2021).

The RCIS describes the document and its purpose (Chapter 1), characterizes the RCIS Area (Chapter 2), describes the conservation framework including conservation elements (Chapter 3), assesses the pressures and stressors, including climate change (Chapter 4), presents conservation strategies for the 23 conservation elements (Chapter 5), and then identifies how the RCIS can be implemented, monitored, and updated over time (Chapter 6).

Regional Setting

The 285,261-acre RCIS Area (Santa Cruz County) features varied topography, geology, soils, and hydrology that give rise to a mosaic of biologically rich communities. These include globally rare terrestrial communities such as old-growth redwood forests, Santa Cruz sandhills, karst caves, coastal prairie grasslands, and maritime chaparral; they also include coastal streams and their associated riparian corridors, ponds, sloughs, and other wetlands, and rocky seashore, dunes, and coastal bluffs. These dynamic systems were historically maintained through natural disturbance regimes, including fire and floods, which create and maintain habitat for rare species and promote biodiversity.

These rare communities, along with the more widespread communities which include oak woodlands and redwood forests, support 1,000 native plant species (Neubauer 2013) including 17 that are found only within the county, such as Santa Cruz wallflower (*Erysimum teretifolium*)

and Scotts Valley polygonum (*Polygonum hickmanii*). The RCIS Area also supports a diverse fauna including endemic invertebrate species such as the Zayante band-winged grasshopper (*Trimerotropis infantilis*) and Ohlone tiger beetle (*Cicindela ohlone*), and other critically endangered species including Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*), Santa Cruz kangaroo rat (*Dipodomys venustus* venustus), coho salmon (*Oncorhynchus kisutch*), and marbled murrelet (*Brachyramphus marmoratus*). The RCIS Area contains large patches of intact habitat and important aquatic and terrestrial landscape linkages, including those connecting the Santa Cruz Mountains and the adjacent Gabilan and Diablo ranges; this habitat connectivity is essential to the persistence of wide-ranging species including the mountain lion (*Puma concolor*), and to facilitating species migration in response to climate change.

The RCIS Area's natural systems occur within a landscape that features iconic working lands that play an important role in regional biodiversity conservation, including: prime farmlands in the Pajaro Valley, productive coastal farmlands on the North Coast, scenic rangelands of the Pajaro Hills, and the redwood and Douglas-fir forests that blanket the mountains and produce timber (Section 2.2.3). Development in the RCIS Area is concentrated along the coast between City of Santa Cruz and the unincorporated village of Aptos, and in Watsonville, Scotts Valley, and the San Lorenzo Valley; the mountains support variable density of rural residential (exurban) development (Section 2.2.2).

The RCIS also assesses foreseeable impacts that may occur due to implementation of major planned infrastructure and development projects within the next 10 years (Section 2.2.4). A small suite of residential, mixed use, commercial, and other development projects are planned in the cities of Capitola, Santa Cruz, Scotts Valley, and Watsonville, the unincorporated county, where most projects are proposed for existing developed areas (Section E.4). The RCIS Area will also see a suite of transportation, water, and other infrastructure improvement and maintenance projects, which are similarly concentrated in the existing developed areas (Section 2.2.4.1 and Appendix E).

Conservation Framework and Elements

To create a comprehensive conservation strategy to protect biodiversity and sustain natural ecological systems, this RCIS addresses five types of conservation elements: natural communities, other conservation elements, focal species, non-focal species, and co-benefitted species (Table 3-1). To develop comprehensive and cohesive strategies for the landscape that benefit entire assemblages of species and support ecosystem functions in ways often not achieved in developing strategies for single species (Section 3.2), this RCIS developed conservation strategies for 13 **natural communities** (Table 3-2). To complement the natural communities-based approach to address other important facets within the landscape, the RCIS addresses three **other conservation elements**: habitat connectivity, working lands, and bat habitat. Habitat connectivity is essential to goals for communities and species, while working lands (i.e., timber, grazing, and cultivated lands) play an important role in landscape-scale

conservation in the region. Bat habitat, which occurs throughout the RCIS Area including developed areas, requires unique strategies.

Recognizing the value of natural community-based, landscape-scale planning for native species conservation, the RCIS also presents conservation strategies for seven **focal species** (Table 3-3) which were selected to include listed species, wide-ranging species, climate-vulnerable species, and provide taxonomic representation. The conservation strategies for focal species build upon these community-level strategies and address unique objectives, actions, and priorities that are specific to the focal species and do not directly benefit the related community or communities.

Non-focal species are 32 additional listed species (or Fully Protected) species (Table 3-4) that will benefit from the conservation strategies, as identified in the RCIS strategies. Finally, the RCIS lists 159 **co-benefited species:** other rare species that are not state or federally listed but may be recognized as sensitive under the California Environmental Quality Act, California Coastal Act, or other state or local regulations, are anticipated to benefit from the conservation strategies (Table 3-5).

Pressures and Stressors

The conservation elements are influenced by both anthropogenic and natural pressures, that create degraded ecological conditions known as stressors (Chapter 4). The primary pressures in the RCIS Area include development, incompatible working lands, mining and quarrying, water use, altered disturbance regimes, exotic species, incompatible recreation, unauthorized activities, and climate change. The pressures and associated stressors impact the communities, species, and other conservation elements by reducing, fragmenting, and degrading habitat, and reducing genetic diversity. Table 4-1 lists the pressures and associated stressors impacting aquatic communities and species, while Table 4-2 provides those for terrestrial systems. Details about the unique pressures and stressors impacting each conservation element are provided in the conservation strategies (Section 5.3).

Conservation Strategies

Chapter 5 provides the conservation strategies for the 13 natural communities, three other conservation elements, and seven focal species. Strategies for the natural communities are designed to promote focal and non-focal species by conserving habitat that they rely upon for key aspects of their life history and addressing their pressures and stressors. The RCIS voluntary strategies are designed to complement protection measures afforded by existing policies and regulations, which play an essential role in protecting biological systems in Santa Cruz County.

The strategies are outlined in tables that features four main components: goals, objectives, actions, and priorities (GOAP). The **goals** reflect broad, desired outcomes—what the strategy is designed to achieve in the RCIS Area—and generally include: 1) promoting persistence and integrity of the conservation element; 2) connecting the conservation element within the landscape; 3) protecting biodiversity and rare species; 4) promoting water quality; and 5) promoting water quantity. The objectives identify the general ways the goals can be achieved,

including: 1) protecting habitat, 2) restoring and enhancing habitat, 3) creating and expanding habitat, and 4) conducting individual species (or population) actions (e.g., reintroductions). The **actions** list steps that can be taken to achieve the objective, while the **priorities** reflect the specific activity or location where investments should be emphasized. The goals and objectives are sequenced in the orders listed above, which do not necessarily reflect their priority within the strategy, and instead are for consistency**.** The RCIS explicitly does not prioritize between goals and objectives and instead recognizes that conservation requires multiple co-equal goals that function at different spatial and temporal scales and different locations.

The links between the conservation strategies and the focal and non-focal species benefited are made through three methods: 1) a list of the species associated with the conservation element before each GOAP table, 2) a column in the GOAP table that identifies the focal and non-focal species that will benefit from each action, and 3) Table 5-2, which summarizes the key ecological requirements for each of the focal and non-focal species, and identifies the conservation elements with which they are associated. Recognizing many of the conservation strategies will benefit multiple conservation elements, each strategy identifies the other conservation strategies that will benefit the conservation element (e.g., strategies for Riparian and Riverine Communities will benefit coho salmon).

Each of the strategies is preceded by background information including (Table 5-1): rarity and status, citations for detailed descriptions, a summary of the key ecological elements, a list of the key pressures and stressors, and a climate change vulnerability assessment. The quantitative habitat protection targets were developed through a gap analysis (Section 5.2), which sets 30-year and 10- year habitat protection targets based on overall targets and the percentage of habitat in existing protected lands (Section 2.2.5). Section 5.2.4 outlines important factors to consider in using the gap analysis and resulting quantitative targets to inform conservation actions through the RCIS.

Implementation

As a voluntary, non-binding guidance document, the RCIS will be implemented through the actions of many agencies, organizations, and individuals seeking to conduct conservation projects through a variety of mechanisms. Coordinated implementation of the RCIS can enhance effectiveness of the strategy toward achieving its goals, and can be facilitated through existing conservation collaboratives and new initiatives (Section 6.1.2).

The RCIS actions can be funded through a variety of existing mechanisms, including: mitigation, government grants and other public funds, private philanthropy, and tax incentives (e.g., for conservation easements; Section 6.1.3). In addition, the RCIS provides a strong foundation for developing a dedicated and sustained source of local conservation funding that can match state, federal, and private funding and greatly enhance the ability of conservation agencies and organizations working in the region to achieve the goals and objectives of the RCIS.

Achievement of the RCIS goals and objectives can be facilitated by taking steps to overcome existing barriers to implementation of conservation projects including permitting, liability

issues, lack of skilled labor, and economic trade-offs within working lands (Section 6.1.4). To maximize efficiency, projects that achieve multiple-benefits for the conservation elements should be prioritized, to protect, restore, and/or otherwise conserve multiple communities and species. The maps and spatial database used to develop the RCIS can help site projects in areas that can achieve multiple objectives of the RCIS to enhance cost effectiveness of implementation (Section 6.1.4). Monitoring and adaptive management are designed to ensure that the conservation actions and habitat enhancement actions achieve the RCIS goals and objectives (Section 6.2).

Adaptive management programs are also required as part of a mitigation credit agreement (MCA): agreements developed in collaboration with CDFW to create mitigation credits by implementing RCIS conservation or habitat enhancement actions. Credits generated through MCAs are transferable and can be used as compensatory mitigation for impacts under the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and the Lake and Streambed Alteration Program (LSA). Additional resource agencies could potentially elect to have credits generated through MCAs be applicable to compensatory mitigation needs under other local, state, or federal regulations.

As the RCIS proponent, the RTC will monitor overall effectiveness of the conservation actions and habitat enhancement actions at achieving the goals and objectives for the conservation elements by assessing the extent to which they offset the effects of identified pressures and stressors (Section 6.3). The RCIS strategies identify the specific metrics that will be used to monitor progress toward the goals and objectives (e.g., acres of habitat restored). The RTC and RCD, with support and input from the RCIS Steering Committee, Technical Advisory Committee, and Stakeholder Committee, will facilitate a 10-year evaluation of the RCIS, and complete the 10-year update of the RCIS provided it is achieving the intended purposes (Section 1.6).