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Panel 1: Building Bridges Between Indigenous Communities and HCPs

Panelists: Margaret Park, Ebru Ozdil, Karin Cleary-Rose

This panel will explore integration of Tribal interests with HCPs during HCP development, including discussion of what early coordination looks like.

Session: Protecting Pollinators

Speaker: Lou Thomas **Topic**: East Valley Pollinator Pathway

Abstract: The Coachella Valley lies in the Priority 1 Action Zone in California for recovering Western monarchs as an early breeding zone. Having an abundance of pesticide-free milkweeds and early season nectar plants is crucial for the reproductive success of the monarchs. As infrastructure within the valley expands and takes over native landscapes, resources for pollinators such as monarchs disappear, making life and migrations throughout the valley more challenging for these invertebrates. Through the East Valley Pollinator Pathway project, we built 32 gardens with ten schools to create viable habitat and in the process soften urban areas for native pollinators. We used 25 native species that are used for nectar or as a host species to native pollinators to add 607 native plants to the landscape. The project also carries the message of the importance of native desert plants not only for pollinators but also for drought resilience. Native plant species have evolved to better withstand the effects of drought compared to many non-native species. This project allowed community members, mainly students, to learn the importance of drought resilience and native biodiversity by helping to build a pathway for pollinators across the Coachella Valley.

Speaker: Tanya Agawal **Topic**: Expanding our Wingspans: The Development of a Butterflies HCP

Abstract: San Diego is a biodiversity hotspot and home to many unique species and habitats. The County of San Diego (County) has placed conservation efforts as one of its highest priorities, including developing plans and programs such as the Multiple Species Conservation Program (MSCP) South County Subarea Plan (South County Subarea Plan) to balance protecting sensitive species and habitat and allowing for effective development within the region. When the Quino checkerspot butterfly was listed as an endangered species in 1997, the County tried adding the species under the recently adopted South County Subarea Plan, but pollinator conservation came with its own set of challenges—ultimately the species was not added through an amendment. After years of discussion and planning, the County applied and received a Section 6 grant in Fiscal Year 2021 to develop a Butterflies Habitat Conservation Plan (BHCP), complementing the County's existing and future MSCP plans (South County Subarea Plan, Draft North County Plan, and future East County Plan). With USFWS and CDFW coordination, it was determined that the BHCP will cover four sensitive butterfly species: Quino checkerspot butterfly, Hermes copper butterfly, Harbison's dun skipper, and the Laguna Mountains skipper. In this presentation we will discuss the criteria used to determine our covered species, the challenges associated with covering invertebrates as covered species, and the unique conservation strategy the BHCP is developing.

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Session: Corridor Crossings and Connections

Speaker: Julie King **Topic**: State Route-152 Pacheco Pass: Working Together for the Benefit of Wildlife

Abstract: The heart of the Santa Clara Valley Habitat Plan's conservation strategy is the creation of a Reserve System that will protect an estimated 46,496 acres for the benefit of covered species, natural communities, biological diversity, and ecosystem function. Land acquisition and protection will create a network of reserves that also preserves 20 distinct local and regional connections between key habitat areas and between existing protected areas. Portions of the Plan's linkage #15 and #17 lie within Pacheco Pass, an established wildlife corridor that is essential to connectivity between the Diablo and Inner Coast Range, and is a conservation priority for local, state, and federal agencies. Since 2018, wildlife connectivity studies have identified State Route 152 as a substantial barrier to the movement of mountain lions, mesocarnivores, and Tule elk as well as a major hazard causing wildlife mortality.

The Santa Clara Valley Habitat Agency has worked collaboratively to address connectivity issues in Pacheco Pass by implementing creek and wetland restoration, creating a pathway for wildlife atop rip-rap under a bridge, securing funding for directional fencing, land acquisition, and the planning for design, environmental clearance, and permitting of a wildlife overpass over SR 152. Additional actions include fitting mountain lions and Tule elk with GPS collars to evaluate potential locations for the wildlife overcrossing and working with Caltrans to clear sediment blocked culverts. These activities are rooted in on-going wildlife movement studies, strong landowner relationships, and a collaborative wildlife connectivity working group. Challenges include establishing sustainable funding for protected land, deferred maintenance of highway culverts, and the installation of directional fencing. Other development pressures in the region like the planned High Speed Rail and Pacheco Reservoir Expansion may contribute to cumulative impacts on wildlife movement and worsen existing conditions, so the winning formula includes support from elected officials, NGO and government funding, and Caltrans engagement.

Speaker: Emily Perkins **Topic**: Planning across NCCP areas for regional connectivity with genetic case studies to assess the landscape's permeability.

Abstract: In San Diego, where urban and rural development has spread over much of the western half of the County, maintaining species' connectivity and genetic diversity is a challenge. The San Diego Management and Monitoring Program (SDMMP) in collaboration with many partners is conducting a connectivity assessment across multiple species Habitat Conservation Plans, including the Multiple Species Conservation Plan (MSCP), Multiple Habitat Conservation Plan (MHCP), North County MSCP draft. This assessment prioritized acquisitions, road crossing infrastructure improvements, habitat management, and effective monitoring of important regional wildlife corridors. SDMMP has coordinated projects funded by the San Diego Association of Governments (SANDAG) that were implemented by various partners to document wildlife movement and regional corridor planning. Other stakeholders have also invested in these types of studies leading to a wealth of

data relevant to connectivity planning for this region. These studies document movement and use of road crossing infrastructure by target species using camera monitoring and GPS tracking, evaluate genetic connectivity of key species (e.g., mountain lion, coastal cactus wren, coastal California gnatcatcher), and model potential movement corridors for different taxa. Other studies identify and evaluate road crossing infrastructure to facilitate wildlife movement and plan corridors for wildlife movement. These studies are the basis for evaluating connectivity across western San Diego County and developing regional linkages and wildlife crossing infrastructure improvements. SDMMP collected the results of these projects in various formats and created an online map tool where land managers can assess important core and linkage areas on their properties and identify specific actions to improve connectivity. On a regional level, acquisition funding and management priorities are directed through the larger framework of a connected county with identified priority pinch points where improvements can be made.

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Session: Diversity and Inclusion in Conservation Planning

Speaker: Zack West **Topic**: Looking Forward: A Day of Volunteering for the Next Generation of Conservation and the Delhi Sands Flower-Loving Fly.

Abstract: Cultivating long-term support for conservation involves two critical elements: captivating the minds of the next generation of stewards of conservation and engaging the public to appreciate their conserved lands and the species that they support. Together, the Western Riverside County Regional Conservation Authority (RCA), the Rivers and Lands Conservancy (RLC), and Riverside County Park and Open-Space District (Parks District) developed a public engagement event that achieves both of these critical elements of conservation through a day of volunteer efforts to restore and maintain suitable habitat for the federally listed as Endangered Delhi Sands Flower-Loving Fly (Rhaphiomidas terminatus abdominalis). Volunteers of all ages, the California Youth Conservation Corps, and staff from the RCA, RLC, and Parks District come together to benefit this endangered species and share appreciation for their conserved lands.

Speaker: Barbra Calantas
Topic: An EEPIC Way to Develop The Next Generation of Conservation Professionals

Abstract: For too long, the demographics of the Architecture/Engineering-Environmental/Construction (A/E/C) industry has lacked diversity. The May 2020 murder of George Floyd caused a nationwide reckoning across the United States to prompt all of us to consider how we dismantle the institutionalized systems of oppression that preclude the equity we deserve. To respond to this within the AEC industry, a group of five firms focused in the environmental, engineering, and planning professions based in California decided to collectively coordinate to address this need. Within our professional spaces, we decided to increase access to high-paying careers within our industry by providing internships within our companies, and organized this effort amongst our various firms by providing a real-life project opportunity for the participating interns to gain career experience through a project charrette, via a multi-organizational internship program. The candidate pool for this internship program would intentionally focus on college students and/or recent college graduates from historically excluded communities. Thus, what is currently known as the Environmental, Engineering, and Planning Internship Charrette (EEPIC pronounced as ep-ik) Program was founded in December 2022. This session would focus on how this program was developed and what we have accomplished by 2024 (Year 3). We will talk about the Year 3 Project Charrette which consisted of a project where the interns worked over two weeks to develop a plan for a small parcel of land with a biological conservation easement, to improve the site within the regulatory confines of the conservation easement.

Speaker: Kaitlyn Shaw **Topic**: Empowering Tribal Members to Join the Conservation Workforce

Abstract: There is a profound need for more Indigenous voices in the field of conservation, which requires the next generation of Tribal members to be interested in the environmental sciences and conservation. The Coachella Valley has some of the most severely disadvantaged Tribal

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communities in California, with many members of these Tribal communities living below the poverty line. Many Torres Martinez Desert Cahuilla Indians (TMDCI) youth have a lack of opportunities to learn about traditional ecology and engage with natural spaces on their ancestral lands. For adult Tribal members across the region, there is little to no access to programs with sequential, positive workforce development programs that provide upwardly mobile paid workforce training that takes them out of minimum wage jobs and into the field of conservation. The Living Desert created two programs to promote an increase of Indigenous voices in conservation, leading to more effective and successful conservation efforts: 1. The Torres Martinez Youth Environmental Ambassador (TM-YEA) program, to reconnect TMDCI youth with nature and inspire an interest in conservation, and 2. The Native American Conservation Workforce Development (NACWD) program, to empower and build capacity among regional Tribal members to diversify the conservation workforce. We discuss the activities of these two programs and their impacts on participants, including the ways in which TM-YEA helped reconnect TMDCI youth to nature and their ancestral lands and how NACWD helped build the capacity of future Indigenous conservationists through education and hands-on training opportunities.

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Session: Innovative Monitoring Technology and Techniques

Speaker: Maya Nunez **Topic**: Rapid Assessment Vegetation Assessments at Dos Palmas Preserve Indicates Strong Riparian Area Restoration Success.

Abstract: Dos Palmas Preserve, located four miles east of the Salton Sea State Recreation Area, is a 1,400-acre Area of Critical Environmental Concern (ACEC) containing rare oasis/wetland habitat for the endangered Yuma Ridgway's Rail (Rhallus obsoletus yumanensis) and desert pupfish (Cyprinodon macularius). The Coachella Canal Lining Project is required to create and maintain Desert Riparian (DR) habitat within the Dos Palmas ACEC as a part of their mitigation requirements. Utilizing the California Native Plant Society protocol for Rapid Assessment (RA) vegetation sampling, we surveyed 164 polygons covering 667.26 acres in the fall of 2023. In these surveys, we looked for relative coverage of eight target DR alliances. Washingtonia filifera woodland alliance was the most common, covering 42.6% of the total survey area, followed by Pluchea sericea shrubland alliance, which covered 29.94%. In addition to target alliances, four performance criteria questions relating to species alliances, species richness, species recruitment, and invasive species were included. 89.2%, 595.4 acres of the survey area, scored three or higher, and 66.12%, or 441.17 acres, scored a four. Species richness averaged 5.5 within the survey area, with above-average richness associated with Washingtonia filifera woodland alliance, followed by Prosopis alliances.

Speaker: Melody Aimar **Topic**: Western Riverside County MSHCP Biological Monitoring Program Overview.

Abstract:The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area consists of over 400,000 acres, and will be 500,000 acres once reserve assembly is complete. The MSHCP created a Biological Monitoring Program to strategically inventory and monitor the 146 covered species to provide data to inform habitat management decisions. The covered species include 63 rare plants, 5 invertebrates, 2 fish, 5 amphibians, 12 reptiles, 45 birds and 14 mammals. The MSHCP stipulates specific conservation goals for each of the 146 covered species. For most species, these goals require an assessment of distribution within the Conservation Area at least once every eight years. The distributions of 12 species must be assessed more frequently (1-5 years), and 20 species have additional biological objectives that include some measure of reproductive status, population density, or both. The Biological Monitoring Program is guided by a long-term monitoring strategy that emphasizes scientifically reliable sampling designs. Survey and monitoring strategies seek to determine whether the MSHCP species-specific monitoring objectives are met, with a focus on monitoring groups or suites of similar species in a community to maximize the number of species that can be measured under any one set of protocols (e.g. riparian birds).

Speaker: Chad Norris **Topic**: Filtering Complex Science to Formulate Straightforward Take Estimation Methods

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Abstract: Take estimation is a crucial step in the development of a Habitat Conservation Plan (HCP). Estimating the amount of take associated with covered activities is a key basis for evaluating project impacts. Take can be quantified in a number of ways, such as numbers of affected individuals, nesting groups, or a surrogate measure like acres of habitat or stream miles. Identifying the resources required by a species that may be affected by a stressor and the resultant response by a species can be relatively simple. However, quantifying take can be difficult and complicated by a lack of relevant data, incomplete life history information, and the inherent complexity of natural systems, among other factors. In the case of freshwater mussels in Texas recently listed as federally endangered (Guadalupe Fatmucket, Guadalupe Orb, and False Spike), sufficient data was available from various state and academic sources while other data gaps were filled to develop a multi-faceted, yet straightforward take estimation method that accounts for various effects pathways

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Session: Recreation on Conservation Lands

Speaker: Kristina Tolman **Topic**: Conserving Species Habitat in a Heavily Recreated Aquatic Ecosystem

Abstract: Comal Springs and San Marcos Springs are the largest springs systems in Texas and the American southwest. Artesian springs fed by the Edwards Aquifer, their clear, clean, water that remains at 72 degrees year-round provide ample recreation opportunities for the cities of New Braunfels and San Marcos, such as swimming, boating, tubing, and fishing. They are also home to endangered species covered under the Edwards Aquifer Habitat Conservation Plan (EAHCP), including the Texas wild-rice, fountain darter, and San Marcos salamander. Permitted in 2013, the EAHCP has implemented measures to protect these species from adverse effects of public recreation that include disturbance and degrading habitat quality. The EAHCP has also monitored changes to covered species and their habitat in response to these measures for over a decade. The current EAHCP permit expires in 2028, so the EAHCP is undergoing a permit renewal process to consider potential changes to its recreation management measures. These changes draw on lessons learned from plan's prior implementation, and they anticipate challenges expected in the next permit term beyond 2028, which include finding new ways to enforce protective measures to ensure conservation of the species while allowing access for recreation opportunities vital to these cities' communities.

Speaker: Neoma Lavalle, Josh Philips, Christie McKaskey **Topic**: Parkland Decision Support Tool to Define Core Conservation & Recreation Areas

Abstract: The East Bay Regional Park District (Park District) is applying lessons learned from the development of the HCP recreational planning process develop the Parkland Decision Support Tool (DST). The DST is a multivariate weighted analysis based on spatial data with four principal indices: Wildlife, Vegetation, Public Access, and Equitable Access. These indices are weighted to create the Core Conservation and Recreation Areas which are then overlayed to identify areas that can be defined as more suited to Conservation or Recreation, as well as areas that provide both recreation and conservation values. This tool will be applied HCP Preserve Lands and Park District parklands to support thoughtful planning that successfully meets Park Districts dual mission of balancing conservation and recreation.

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Session: Commitment to Collaboration

Speaker: Daniel Large **Topic**: Integrating Collaborative Conservation and Water Management: The Guadalupe River HCP Second Party Take

Abstract: Developing collaborative partnerships is widely recognized as a best practice for advancing species conservation efforts, as it brings together diverse stakeholders and leverages various resources and expertise. The Endangered Species Act (ESA) explicitly encourages such collaborations, which are also valued in water resources management for their ability to address complex interdependencies. The Guadalupe River Habitat Conservation Plan (GRHCP) exemplifies this approach by integrating species conservation with water management. In this presentation, I explore the development of the GRHCP Second Party Take Program, highlighting the challenges and opportunities in fostering collaboration in Section 10 planning and implementation. This program enables additional parties to join conservation efforts, expanding the plan's impact. I will discuss the practical aspects of building and maintaining partnerships, navigating regulatory requirements, and balancing diverse interests, offering insights and best practices for future conservation initiatives.

Speaker: Jennifer Weikel **Topic**: Development of a Habitat Conservation Plan as Mandated by Policy Changes in Oregon

Abstract: In 2020, historic adversaries in Oregon's timber wars agreed to work together to seek solutions rather than battle each other through ballot initiatives and the courts. Their efforts culminated in a landmark agreement, the Private Forest Accord (PFA). The PFA resulted in legislative changes, including a significant update to the Oregon Forest Practices Act (OFPA) to increase regulatory protections of streams and aquatic habitats. The OFPA regulates forestry activities on nonfederal lands in Oregon. The legislation was signed into state law with strong bipartisan support. A key component of the PFA legislation was a mandate to develop a Habitat Conservation Plan to provide all private forest landowners in Oregon incidental take coverage for 28 species/DPS of fish and stream amphibians and to have Incidental Take Permits issued by the end of 2027. Failure to do so will result in a rollback of laws to where they were prior to the PFA Agreement. This presentation provides a summary of how discussions among representatives of forest corporations, small woodland owners, and conservation organizations resulted in a stakeholder-initiated process to develop a statewide, programmatic HCP closely tied to a state regulatory framework. The discussion will center on the political structure that guided the formation of an HCP and an overview of how that process has unfolded to date. This project is a unique example of how an HCP has evolved from a bottom-up stakeholder agreement that has strong political support.

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Speaker: Sarah McCutcheon **Topic**: Leveraging Partner Engagement and Collaboration for a Successful Regional Management and Monitoring Program

Abstract: San Diego County has four multiple species Habitat Conservation Planning Areas with plans in various stages of completion and a regional monitoring and management program crossing these plan area boundaries. The San Diego Association of Governments (SANDAG) established and funds the San Diego Management and Monitoring Program (SDMMP), which relies upon participation by many partners to achieve regional management and monitoring goals and objectives. SDMMP prepared a strategic management and monitoring plan (MSP Roadmap) identifying and prioritizing regional management and monitoring goals and objectives and coordinates with partners to implement these objectives. This partnership depends on a combination of regional funding, local funding and matching contributions by partners, and grant funding from a variety of sources. Partners include federal and state agencies, local jurisdictions, nonprofit organizations, universities, and biological consulting firms. Since 2008, this successful collaboration of over 100 entities has regionally monitored 65 species; monitored and/or mapped 8 vegetation communities; and modeled, assessed, and mapped 8 threats and stressors. Additionally, SDMMP and partners have carried out 80 research studies and many modeling and analytical projects. SDMMP and partners prepare standardized protocols and collect data across the region. SDMMP then compiles and manages these datasets, develops regional databases, and uses a web portal to distribute data for more than 150 projects. Through 10 cycles of SANDAG-funded land management grants, partners have obtained competitive funding to implement over 300 management actions for 67 species, 9 threats, and 16 habitat types. Through years of collaboration, SDMMP has learned the importance of regular and frequent communication with partners, the value of input and diversity of opinions from all partners, and the effectiveness of funding partners to implement management and monitoring actions. This is exemplified through a few key projects, such as the Rare Plant Inspect and Manage Program, the California Gnatcatcher South Coast Regional Monitoring Program, and the Mountain Lion Research, Monitoring, and Management Project. The mutually beneficial relationship between SDMMP and partners is critical to the success of the regional program and progress in meeting conservation targets set years ago in the Multiple Species Conservation Program and Multiple Habitat Conservation Program.

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Session: Species on the Brink

Speaker: Michael Henry **Topic**: The Celebrated Jumping Frog of UC Santa Cruz

Abstract: The University of California, Santa Cruz (UCSC) is preparing a Habitat Conservation Plan covering incidental take of four federally listed and candidate species resulting from development, operation and maintenance of the campus over a proposed 40-year permit term. Proposed covered species are Ohlone tiger beetle (Cicindela ohlone), monarch butterfly (Danaus plexippus), northwestern pond turtle (Actinemys marmorata) and California red-legged frog (Rana draytonii). California red-legged frog (CRLF) is known to occur in one pond on the main campus, located within the "Arboretum" that cultivates a variety of native and exotic plant species. As part of the Conservation Strategy, UCSC proposes to establish an HCP preserve in the existing pond area and enhance habitat value for CRLF through vegetation management, placement of basking surfaces, and improvement of hydrological conditions. To further benefit CRLF and improve climate resilience of CRLF breeding habitat on the campus, the Conservation Strategy also proposes creation of a new pond nearby. Complicating design of a new pond is the fact that the main campus is underlain by karst geography, with sinkholes and caves located in various locations. To inform the conceptual design of this new pond, Dudek conducted an electrical resistivity tomography (ERT) analysis of two potential pond locations to identify potential subsurface void spaces and prepared a hydrological study of the ponds' watershed to ensure appropriate hydroperiod to support CRLF breeding. After identifying the superior pond location, Dudek prepared a preliminary restoration design to provide optimal habitat value for CRLF. The HCP is expected to be released in 2025, with implementation beginning as early as 2026.

Speakers: Dan Calvert and Chris Chaput **Topic**: Challenges and opportunities in coordinating with the Department of Defense: A case study from Puget Sound

Abstract: This presentation offers a unique case study involving coordinating, developing, and implementing multiple HCPs and a Department of Defense-US Fish and Wildlife Service Conservation Crediting Biological Opinion. The presentation specifically discusses efforts to preserve and protect glacial outwash prairies in Washington State's South Puget Sound, which are among the rarest ecosystems in the US. Despite once extending over 150,000 acres, only about 10% remains. These prairies are home to several ESA listed species solely reliant on these unique habitats, including Taylor's checkerspot butterfly (Euphydryas editha taylori), Mazama pocket gopher (Thomomys mazama sp), and the Streaked horned lark (Eremophila alpestris strigata). Roughly 90% of the remaining prairie habitat is located on Joint Base Lewis McChord (JBLM). Regulatory restrictions relating to the management of ESA-listed species on JBLM pose significant challenges to training flexibility and military readiness. Furthermore, the rapid population growth in the Puget Sound region has led to development threats to the limited remaining prairie. As a result, several local governments near JBLM have found it necessary to develop HCPs. At this point, JBLM, Thurston County, two cities, and a port authority are all pursuing habitat mitigation opportunities within a finite geographic area. The presentation outlines the efforts to coordinate land protection

between JBLM/DoD and multiple municipalities in an area with limited crediting opportunities. It also addresses the unique challenges and opportunities that have arisen in terms of collaboration, communication, and policy.

Speaker: Shelly Amrhein **Topic**: Standing up for the Little Guy – Protecting Threatened and Endangered Small Mammals while Maintaining Critical Infrastructure in the Central Valley

Abstract: The State Water Project (SWP) spans approximately two-thirds of California, and as such traverses a variety of sensitive species' habitats. Many of these species are protected under one or both the federal and California Endangered Species Acts (FESA and CESA) as threatened or endangered. The SWP was constructed in the 1960s, before FESA and CESA were enacted, to deliver water to residents, businesses and farmland throughout the State. Since the 1960's, the population has grown considerably, making the charge of the Department of Water Resources (DWR), to maintain the SWP, more critical. During this population boom, in addition to increasing the need for reliable water supply, the State has also seen considerable habitat loss and fragmentation. As habitat is lost, more and more species are pushed to the brink, often seeking refuge in the buffers in and around large infrastructure projects such as the SWP. The DWR is currently developing a Habitat Conservation Plan (HCP) in one such area of the SWP. Special-status small mammals such as kangaroo rats and antelope squirrels are relatively abundant along this section of the SWP yet are imperiled elsewhere due largely to habitat fragmentation. The DWR has been working closely with State and federal wildlife agencies through the HCP process to develop innovative strategies for preserving and protecting these small mammals. Some of these strategies include less invasive survey and monitoring methods as well as enhancing movement within and between habitats.

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Session: Navigating Water Challenges

Speaker: Kai Palenscar **Topic**: In-Stream Habitat Enhancement for a Federally Threatened Fish Associated with the Upper Santa Ana River Habitat Conservation Plan

Abstract: The Upper Santa Ana River Habitat Conservation Plan has committed to enhance conditions for inland native fishes to mitigate impacts coming from water projects in Southern California. Many attempts to enhance foraging and spawning habitat in the lowland Santa Ana River for use by the federally threatened Santa Ana sucker (Catostomus santaanae) have failed to achieve long-lived species benefits. Results from a novel, low impact habitat restoration method hold promise to provide short and long-term in-stream habitat uplift for native fishes. This method uses wooden stakes embedded into the streambed to create turbulence, which in turn suspends lightweight sediments, increasing sediment transport over a short distance. Over time this process erodes sand off of heavier gravels within limited stream reaches, creating gravel bars and islands, and coarsening the overall streambed. Early results have shown a realized benefit for the Santa Ana sucker and suggest this method can achieve long-term habitat enhancement for native fishes and potentially reduced benefits for nonnative aquatic species.

Speaker: Anna Cassady **Topic**: How Wastewater Effluent Affects Endangered & Threatened Wildlife in California Watersheds

Abstract: Droughts and continued high levels of water use in California have led managers to implement novel water conservation strategies, including the reuse of treated municipal wastewater and the disposal of treated wastewater, or effluent, into urban freshwater streams. Attention has often been focused on the negative effects of effluent on water quality, but recent research has emerged documenting its positive impacts as well. In urban systems, effluent can create and sustain aquatic habitat in historically intermittent or perennial river systems that have had their baseflows diverted for human use. Wildlife species, including threatened and endangered wildlife conserved under California HCPs, have been documented returning to or colonizing this habitat. To better understand the role treated municipal wastewater might play in helping to conserve and recover special-status species, we identified the intersection of wastewater treatment plant locations and occurrences of threatened and endangered species in California, then compared the permitted contribution of effluent to baseflow quantities of the receiving waterbody to assess the degree to which changes in effluent could affect instream waterbodies. We found a positive correlation between the presence of treatment plants and threatened and endangered species in California watersheds—a quarter of species have their entire range in watersheds with at least one treatment plant. This correlation is greatest for species associated with terraces and riparian habitat, followed by aquatic habitat and aquatic emergent vegetation. One-third of the watersheds in our analysis can receive most of their cumulative watershed baseflow from effluent and are characterized by dense urbanization or agriculture. Our analysis demonstrates that the fates of these two resources—species and effluent—are ultimately interconnected in ways that are important for water policy and conservation planning. This suggests that HCP Implementing Entities should be involved in decision-

making regarding effluent allocations to ensure that species conservation goals are considered.

Speaker: David Shaw **Topic**: Restoring Dynamic Processes in a Static Regulatory Environment: Does it Count?

Abstract: The Santa Clara Valley Habitat Agency (Habitat Agency) represents multiple stakeholders in providing long-term protection of ecosystems and biodiversity within Santa Clara County. Together with Santa Clara County Parks, the Habitat Agency identified San Felipe Creek in Halls Valley as degraded and therefore a prime candidate for riparian restoration. Upon assessing the site, it became clear that the causes of channel degradation were numerous, so a wide range of restoration treatments were applied to re-establish the dynamic and depositional processes that had been lost to incised channels and eroded ditches. Restoration elements included restored wetland depressions, backwater channels, inset floodplains, gully fill, staked wood jams, and distributary swales, all of which were implemented on a Design-Build basis. Early field meetings with resource agency staff and collaboration among the multi-disciplinary project team created buy-in on process-based design elements that would qualify for compensatory mitigation credits, but the crediting system didn't necessarily account for the spatial variability associated with the designed channel dynamics. Six years of post-project monitoring suggests that the process-based restoration approach successfully restored dynamic channel and floodplain processes such as channel avulsion, floodplain reactivation, lateral channel migration and erosion, and sediment deposition. These processes have, however, also led to variability and unpredictable vegetation community responses, which raises questions about how best to quantify this functional lift in a regulatory system that typically operates around mitigation credits as acreage of wetland and/or linear feet of channel. With a view toward ecosystem processes, habitat conservation planners, designers, and perhaps regulatory agency staff may continue to shift away from "designing to credits" and toward stewardship and adaptive management of restored functional habitat.

Panel 2: Stewardship Opportunities to Manage and Conserve Indigenous Resources on HCP Conservation Lands

Panelists: Don Hankins, Elizabeth Paige, Valentin Lopez

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Session: Adapting to Climate Change and Climate Resilience Strategies

Speaker: Lynn C. Sweet **Topic**: Supporting Climate Resilience Planning with Empirical Data and Habitat Modeling within the Coachella Valley Multiple Species Habitat Conservation Plan

Abstract: Detecting and properly attributing the impacts of climate change on threatened and endangered species is critical to strategic planning for increased climate resilience. The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSCHP) in California's desert was first established in 2008, intended to protect 27 species, 23 communities and 3 essential ecological processes. Although the original plan development considered a range of factors including the coverage of conserved lands over projections of currently suitable habitat of focal biota, it is now recognized that static boundary plans may be challenged to fully address the impacts of climate change if covered species shift in space within or out of conserved areas. Efforts now underway include assessing the climate change vulnerabilities of several plan-listed species and investigating the built-in resilience of conserved landscapes to support changes, such as through corridors or conservation of unoccupied future suitable habitat. Secondarily, monitoring efforts should be stratified across levels of predicted impacts (habitat loss, retention and gain) to distinguish the effects of globally driven climate change from other threats and stressors. This allows data about abundance and demography to be used as more meaningful indicators within an overall framework designed to detect geographic shifts. Predictions of vegetation community shifts may also be used to assess climate change impacts to accessible outdoor spaces for underserved communities, among other applications. With regional coordination and better understanding of potential impacts to species and ecosystems, this research can help inform an overall strategy to plan adaptive management for the Plan area.

Speaker: F. Paul Bertetti **Topic**: Projecting the Potential Effects of Climate Change on a Karstic Aquifer System in Support of an Incidental Take Permit Renewal Process

Abstract: The Edwards (Balcones Fault Zone) Aquifer in south-central Texas is a prolific limestone karst aquifer system. The aquifer is managed using a regulatory framework that includes a cap on permitted withdrawals, reductions in permitted withdrawals during drought, pumping forbearance lease programs, and supplemental supplies from an aquifer storage and recovery system that are implemented during significant droughts. Combined, these measures provide protection of spring flows specified as part of the Edwards Aquifer Habitat Conservation Plan (EAHCP) and its associated Incidental Take Permit (ITP). The current EAHCP ITP will expire in 2028, and its renewal will require assessment of the potential impacts of future climate change on spring flows. We have taken a multipronged approach to evaluate the potential impacts of climate change on the aquifer system. Region-oriented, downscaled global climate model projections were generated and used as input for estimating future recharge. Current estimates of aquifer recharge utilize stream gauging to measure stream losses across the recharge zone (Edwards Formation outcrops) and do not directly incorporate a climate or meteorological component. To address this, a new machine learning-assisted recharge model was developed by training a tree-based ensemble model to reproduce historical recharge values using input variables including precipitation and temperature. The resulting recharge model performs well relative to a validation set of historical values and was used with

climate model output to produce projected recharge sequences. These recharge sequences were then used in an existing numerical groundwater flow model to produce future projected spring flows and aquifer water levels under various climate scenarios.

Speaker: Remy Vincent **Topic**: The effects of an abnormal monsoonal rain season on annual plants within protected aeolian habitat in the Coachella Valley of Southern California

Abstract: Understanding the effects of climate change on sensitive habitats is critical to inform proper management strategies and conservation of protected species. The Coachella Valley is located in the Southern Californian portion of the Colorado Desert, a more arid region of the Sonoran Desert. This region is expected to see an overall increase in temperature and more stochastic and extreme precipitation events as a result of climate change. These shifts in precipitation can impact key ecosystem processes that are essential to maintaining sensitive desert habitats, like aeolian habitats protected under the CVMSHCP (Coachella Valley Multiple Species Habitat Conservation Plan), and the species endemic to them. Typically, winter storms provide the majority of precipitation for this region, followed by a summer monsoon season wherein precipitation is less reliable and smaller in magnitude than in the broader Sonoran Desert. This winter-biased bimodal precipitation regime results in relatively few fall-germinating species, compared to the rich diversity that can be seen in Springs following a sufficiently wet winter. However, in August 2023, several precipitation events, including Tropical Storm Hilary and a subsequent major storm, produced the equivalent of a year's worth of rain within a two-week period. As a result, our long-term study plots in aeolian habitats experienced notable physical landscape changes due to flooding as well as unusual native and nonnative plant species composition and density. This rare, extreme late-monsoonal event provides valuable insight into how these aeolian habitats may respond to a future of less predictable precipitation patterns and larger climate change-driven storms. Monitoring these shifts in habitat characteristics is critical to ensuring continued effective management of these aeolian habitats and the CVMSHCP protected species that occur there.

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Session: The 3 Cs: Conservation, Compliance, and Coordination for Sustainable Success

Speaker: Kimberly Meitzen **Topic**: Leveraging Supplemental Funding to Enhance Restoration Activities in the San Marcos River Ecosystem to Benefit the Edwards Aquifer Habitat Conservation Plan, Texas

Abstract: Over the last decade, habitat-based conservation measures implemented within the San Marcos River system as part for the Edwards Aquifer Habitat Conservation Plan (EAHCP) have proven successful and resulted in significant habitat improvements. While the bulk of the restoration work has been funded by Aquifer Management Fees levied on Edwards Aquifer groundwater use permit holders, supplemental external funding secured by EAHCP stakeholders and partners has bolstered these efforts. This presentation highlights four grant-funded projects that further enhance endangered species habitats within the EAHCP implementation area, and expand restoration activities beyond the Plan work area, but still within designated critical habitats. These supplemental projects received support from the Southeast Aquatics Resource Partnership (federal), the US Army Corps of Engineers (federal), Texas Parks and Wildlife Department (state), Environmental Service Committee of Texas State University (academic), and numerous community and student volunteers (local). Primary restoration activities include riparian and instream invasive species removal and native species plantings that benefit habitat for the endangered Fountain Darter (Etheostoma fonticola) and Texas Wild-rice (Zizania texana).

Speaker: Jana Gray **Topic**: Lowering Barriers to Compliance for Small Businesses under Section 10: Integrating Recreational Camps into the Guadalupe River Habitat Conservation Plan

Abstract: In 2019, the Guadalupe-Blanco River Authority (GBRA) began planning the Guadalupe River Habitat Conservation Plan (GRHCP) following the award of a Section 6 planning grant. A central aim of the GRHCP is to design a comprehensive, basin-wide, plan. To achieve this, GBRA has worked to create a plan that encourages participation from various entities across the basin with similar operational activities. As part of this effort, GBRA has focused on including recreation oriented small businesses on the Guadalupe River and its tributaries whose operations could potentially impact endangered freshwater mussel species. The inclusion of these small businesses has presented both challenges and opportunities. In this presentation, I explore the challenges associated with incorporating these river-focused recreational businesses and the strategies GBRA has developed to reduce barriers to Endangered Species Act compliance through the Section 10 program. This presentation also provides a foundation for considering strategies to increase participation in HCPs, both to extend the reach of conservation efforts and to make compliance more achievable for organizations within the regulated community that might otherwise lack the resources to undertake the extensive and complex planning required for an HCP.

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Speaker: Deb Bartley **Topic**: NEPA for HCPs: 2024 Changes and What they Mean for all HCPs and HCPs in California

Abstract: Phase 2 of the Council on Environmental Quality's (CEQ) NEPA Regulations were finalized this year and became effective May 1, 2024. This is following on the heels of a year full of changes to the NEPA Statute, regulations, and policies in 2023. This presentation will address the new NEPA requirements in the Phase 2 CEQ Regulations. I will focus on how this affects NEPA documents for HCPs and what this means for HCPs in California, in particular when combined with California Environmental Quality Act (CEQA) requirements for HCPs. I will provide several examples of how this is playing out with HCPs; and include a Question and Answer period. The presentation will be developed in collaboration with USFWS headquarters; they will help answer questions as needed.

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Session: Focus on Florida HCP's

Speaker: David Zippin **Topic**: Overview and Trends in Florida HCPs

Abstract: This presentation will provide a first-of-its kind overview of Florida HCPs. To date, there have been over 175 approved HCPs in the state, more than any other state except Texas. Most HCPs are project level, focusing on small-scale development. However, Florida has pioneered programmatic HCPs on over 125 miles of coastal beaches covering a wide range of activities including recreation and beach construction. Despite the success of the HCP program in Florida, programmatic HCPs have a reputation for being expensive, time consuming, and risky. This is due to the perceived recent "failure" of two prominent HCPs, the Eastern Collier County HCP and the statewide Florida Beaches HCP. However, the outcome of these HCPs is more nuanced. Florida may embrace programmatic HCPs again due to 1) more awareness of their benefits, 2) renewed support from USFWS Region 4, 3) the loss in 2024 of the state's assumption of the Clean Water Act 404 permitting program, and 4) two large programmatic HCPs in Florida led by a major water agency and an electric utility.

Speakers: Samantha Pitts, Tim Day and Kristi Yanchis **Topic**: 10 years of the Perdido Key Habitat Conservation Plan

Abstract: The Perdido Key Habitat Conservation Plan (PK HCP) is celebrating ten years of implementation in 2024. Authorized in 2014, the PK HCP covers the critically endangered Perdido Key Beach Mouse, nesting sea turtles and shorebirds. On a small barrier island with a booming tourism industry, the plan works to balance species and habitat conservation with beach recreation and economic development. At Year 10, the PK HCP continues to meet key milestones and has exceeded land acquisition targets, while developing a strong network of local, state and federal partners. Staff will provide an overview of the plan and current progress towards species recovery efforts and look at the plan's future in the face of climate change, sea level rise and an ever-growing coastal population.

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Session: Conservation in California: Safeguarding Nature and Wildlife

Speaker: Sonya Vargas **Topic**: Overview of the Salton Sea

Abstract: The Salton Sea is an important ecosystem located in Riverside and Imperial counties. It is California's largest lake and is twice as saline as the ocean, yet still provides important habitat, as part of the Pacific Flyway. Two habitat conservation plans adjoin the Salton Sea, the Coachella Valley Multiple Species NCCP/HCP to the north, and the Imperial Irrigation District HCP to the south. The Salton Sea is a multifaceted ecosystem facing many challenges including a receding shoreline and rising salinity. These challenges brought together people of all disciplines, from scientists to policy makers and community members to determine how best to manage the Sea and the associated health impacts from the changing conditions, including harmful dust emissions to surrounding communities. This presentation will provide an overview of the history and progress made toward monitoring and managing the Salton Sea including the development of the Salton Sea Monitoring Implementation Plan, which identified priorities for tracking important trends in the land, water, air, biota, and local community conditions within and around the Sea. Additionally, the Salton Sea Management Program Project Tracker was developed to provide information on the progress made under the Salton Sea Management Program Phase 1: 10-Year Plan.

Speaker: Chris Jones **Topic**: Collaborative Management of Headwaters: A Key to Ensuring Valley Resource Sustainability

Abstract: The headwaters of a watershed play a crucial role in maintaining the ecological health and resource availability downstream. This presentation explores the vital importance of protecting the form and function of headwater regions to ensure the sustainability of resources within the valley. Key topics include the ecological functions and ecosystem services provided by the headwaters, the impact of upstream activities on downstream water quality and biodiversity, the interconnections between headwater health and valley ecosystems, and the necessity of collaboration.

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Session: Past Wisdom, Future Goals

Speakers: Angela Angrove and Jim Lynch **Topic**: HCP's – the Good and the Bad…

Abstract: The Pierce County Planning and Public Works Flood Risk Reduction Structures Maintenance and Operations Habitat Conservation Plan (HCP) has a long and convoluted history, starting in 2009. Since then, the team has encountered key USWFS/NMFS staff changes and retirements, tough conversations with the tribes, addressing climate change into future impacts as well as budget and contracting challenges. What started out as (what we thought was) a fairly focused HCP with a short pathway to completion has morphed into a nine year, $1 million-plus dollar, 18+ HCP drafts journey. Pierce County staff, along with Jim lynch. Solutions PLLC, will provide a succinct history of the project, key challenges and successes, and what other jurisdictions should know before embarking on their own flood risk reduction structures maintenance and operations HCP.

Speaker: Petrea Marchand **Topic**: Recipe for a Successful HCP

Abstract: This short presentation will present practical strategies for successfully developing Habitat Conservation Plans, including financial and administrative strategies, based on my team's experience completing the Yolo Habitat Conservation Plan/Natural Community Conservation Plan. The presentation will invite input from the audience as well, to help promote the collaborative development of opportunities to improve the HCP development process at the state and federal level. Strategies include, but are not limited to, designating or hiring a project manager separate from the consulting firm developing the HCP, creating a written elevation process for tough decisions, identifying ongoing funding to support the planning process, developing a robust and realistic timeline, and securing input from wildlife agencies before starting an HCP regarding the relative priority and resources available to develop the HCP.

Speaker: Adrienne Lee **Topic**: 20 Years in Carlsbad

Abstract: The City of Carlsbad (city) is celebrating its 20-year HCP anniversary! Carlsbad is a coastal California city in northern San Diego County. Their HCP (City of Carlsbad Habitat Management Plan; HMP) was officially approved and adopted in November 2004. The city oversees the entire HMP Preserve System, but only 11% of the Preserve System is owned and managed by the city—there are over 100 different landowners. Implementation partnerships are critical to successful HMP implementation. In this significant milestone year, we will highlight the local and regional implementation partnerships involved with the HMP and lessons learned so far.

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Session: Permitting Power and Protecting Species

Speaker: Corey Schutzman **Topic**: The Northeast Utility Working Group: Banding together to streamline endangered species consultation for energy transmission infrastructure maintenance

Abstract: The Northeast Utility Working Group (NEUWG) is a coalition of eight energy transmission utilities with over 150,000 miles of electric and gas transmission and distribution infrastructure across much of New England and New York. Regular maintenance of utility system assets is critical for regulated utilities to deliver safe, reliable energy to customers and is required under federal law. Given the endangered status of the Indiana bat (Myotis sodalis), recent uplisting of the northern long-eared bat (M. septentrionalis), and imminent listing of the tricolored bat (Perimyotis subflavus), NEUWG formed to provide independent utilities across the Northeast a means of consolidating Endangered Species Act compliance under an HCP. Consolidating regulatory compliance under an HCP allows NEUWG Partners to conduct regular maintenance of system assets within rights-of-way to provide safe and reliable gas and electric distribution and transmission, while streamlining consultation with the U.S. Fish and Wildlife Service. In this presentation we discuss some of the benefits and challenges of preparing an HCP to meet the goals and needs of separate intra- and interstate energy utilities.

Speaker: Brett Hartis **Topic**: Bat Habitat Conservation Plan for Large-Scale Vegetation Management – Duke Energy's 7-State HCP

Abstract: Duke Energy is the third-largest utility in the United States, operating over 380,000 miles of electric and gas lines and associated infrastructure to provide energy to 8.2 million customers in portions of seven states: North Carolina, South Carolina, Florida, Indiana, Ohio, Kentucky, and Tennessee. Additionally, Duke Energy manages over 155,000 acres of land for timber management in four states. Duke Energy is developing a Bat Habitat Conservation Plan (HCP) to support vegetation management, operation and maintenance activities, vegetation removal for new and expanded energy infrastructure, and timber operations while protecting seven covered bat species. The HCP will provide a streamlined and programmatic approach for addressing the avoidance, minimization, and mitigation of potential impacts and will ensure efficient, consistent, and effective conservation measures for these species. This presentation will provide an overview of the HCP, recommendations for involving internal stakeholders, and insights on collaborating with USFWS to develop this comprehensive bat HCP.

Speakers: Elise Anderson and Diane Barr **Topic**: California Condor Multi-party Wind Energy Resource Area HCP

Abstract: Wind energy production in the Tehachapi Wind Resource Area in southeastern Kern County, California, has occurred for over 35 years. There are approximately 50 operating projects in this wind resource area with approximately 3,465 turbines with 3.3 gigawatts (G.W.) of generating

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capacity. The wind resource area is located at the edge of the current range of the California condor (Gymnogyps californianus), which has been slowly expanding in recent years as the population has increased. As the condor population recovers and expands its range in the Tehachapi Mountains, individual condors occasionally fly over the wind resource area. To date, there have been no reported instances of condors being injured or killed by operating wind turbines in the wind resource area. However, as the condor population grows and their range expands, the potential for a condor to be injured or killed from a collision with a wind turbine or other wind project-related facility becomes greater.

To address the potential conflicts between wind energy facilities and condors, a group of project owners and operators within the Tehachapi Wind Resource Area put aside their market competitive interests and formed the Wind Energy Condor Action Team (WECAT). WECAT members operate approximately 1,282 turbines across approximately 200 square miles with 2.3 GW of generating capacity. WECAT members proactively addressed the risk of injuring or killing a condor by successfully navigating a multiparty U.S. Fish and Wildlife incidental take permit (ITP) process by developing a Condor Conservation Plan (CCP). The WECAT partnered with Victoria Bakker of Montana State University and Myra Finkelstein of U.C. Santa Cruz to publish an updated quantitative analysis to inform conservation planning decisions (Bakker, Finkelstein, 2022), establishing the basis for condor rearing mitigation metrics. In 2023, WECAT members received approval for the CCP and ITP from the U.S. Fish and Wildlife Service (USFWS), forming WECAT LLC, owned by the wind operators.

WECAT's CCP is a partnership between the wind companies, the USFWS, and The Peregrine Fund (TPF). WECAT will provide over $6 million in funding for TPF to expand their current efforts at the World Center for Birds of Prey in Idaho and provide for the breeding, rearing, and release of 35 condors over the next 15 years. Additionally, WECAT members are committed to operations at all covered facilities that will strive to prevent any injury or mortality to condos through wind turbine curtailment and detection and removal of animal carcasses within the wind resource area.

This effort marks a significant success in both a multi-party HCP and a demonstration of progressive species management within the renewable energy industry.

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Session: Golden State Guardians: Exploring California HCPs

Speaker: Jonathan Reinig **Topic**: Practicing Adaptive Management on the Fly: Managing for the Understudied and Federally Endangered Delhi Sands Flower-Loving Fly

Abstract: The Delhi Sands Flower-Loving Fly (fly) is an imperiled, obligate sand dune species that hasn't been thoroughly studied due to its rarity and largely subterranean life cycle. Although most of this fly's remaining habitat is protected, the species still faces a myriad of threats including invasive weeds, sand stabilization, sand loss, soil type conversion, and trespassing. Armed with what is currently known about the life history of the fly, 12 years of survey data, and hands-on experience, the RCA and Riverside County Park and Open-Space District have been implementing management efforts to improve habitat for the Delhi Sands Flower-Loving Fly within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Conservation Area, with some promising results. Thus far, tangible successes have included localized range expansions and recolonizations of recently abandoned areas, underscoring the importance of adaptive management for bolstering populations of declining species.

Speaker: Kristine Preston **Topic**: A Tale of Two Co-occurring Birds: Different Management Strategies Revealed by Monitoring and Research

Abstract: The coastal California gnatcatcher and coastal cactus wren were target species for the earliest multiple species Habitat Conservation Plans. Both species co-occur in coastal southern California. The California gnatcatcher is an obligate species of coastal sage scrub whereas the cactus wren is restricted to patches of coastal sage scrub that also support cactus. Both species dramatically declined by the early 1980s because of habitat loss and fragmentation. Coastal sage scrub is inhabited by many other rare species that were also threatened by extensive habitat loss. Multiple species conservation planning was initiated in the early 1990s in response to listing of the California gnatcatcher as a threatened species and to avoid listing of other species dependent on coastal sage scrub. Thousands of acres of coastal sage scrub have been conserved in eight conservation plans completed for southern California. Despite successful conservation, the recovery of these two species is threatened by habitat fragmentation, wildfire, invasive plants, and increasing frequency and intensity of drought associated with climate change. Regional monitoring and research studies have revealed that gnatcatchers and wrens are both negatively affected by these threats, but that differences between the species' life history, behavior and ecology requires different management strategies for long-term persistence. Cactus wrens are limited in their dispersal capability and face challenges in moving between populations in fragmented habitat with a patchy distribution of cactus scrub. As a result, they have distinct genetic clusters with low genetic diversity and increasing risk of inbreeding. Cactus wrens have disappeared from much of their former distribution and primarily remain as isolated small populations vulnerable to extirpation. In contrast, genetic studies reveal that California gnatcatchers have strong dispersal capabilities and form one genetic population, can persist in habitat fragments, and overall are more widely distributed and abundant. Both species face the same threats but require different management

priorities and strategies. Coastal cactus wrens are at greatest risk of extirpation and can benefit from habitat management to first expand existing populations and second to create stepping stone linkages between prioritized populations to increase gene flow and demographic rescue. Improving habitat quality can support more abundant arthropod prey and boost wren fecundity and resilience to drought. Genetic management (i.e., egg exchanges between populations) could help to prevent inbreeding. Coastal California gnatcatchers could benefit from habitat restoration after wildfire to increase carrying capacity and resilience to drought and from conservation and management of corridors to maintain current gene flow across southern California.

Speaker: Milan Mitrovich **Topic**: HCP Implementation: A Perspective from Southern California on How to Effectively Manage Our Natural Resources

Abstract: How do we effectively manage our most sensitive natural resources when so much is unknown, when there is more work than there is time, and when there are greater financial needs than there is funding? To begin to answer this question, I share my experiences from the last few years implementing the Upper Santa Ana River Wash Habitat Conservation Plan. We are in our fifth year of implementation, and I use three examples from the field addressing the needs of state and federally listed species to highlight an approach that has continued to evolve throughout my career but has five essential elements that are time-tested and natural system approved. In short, these elements are best described as the following actions items: build a collaborative team, lean into what we know, pay attention, lean into our collective strengths, and fight to keep the solution simple, while still allowing the impact to be profound. As land managers we have a responsibility to advance our field while taking care of the natural resources we are entrusted to protect and recover. I realize, in some ways, we are just at the beginning, but I am excited to see where our collective work takes us as we move forward and begin to have the kind of impact these natural systems deserve.

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Session: HCPs and Agency Partnerships

Speaker: Darren Proppe **Topic**: What's the state got to do with it?

Abstract: Habitat Conservation Plans are an agreement between the applicant and the U.S. Fish and Wildlife Service. As such, engagement by the state is not regulated by HCP guidelines. However, HCP applicants must still abide by all state laws, and these laws can vary greatly between states. In this talk we will explore the role that the Texas Parks and Wildlife Department currently plays in HCP development and discuss how regular engagement with state agencies might be beneficial for the development and implementation of an HCP.

Speakers: Lily Sweikert and Erin Hitchcock **Topic**: HCPs Streamline ESA Listed Species Compliance Where Military Buildup is Occurring

Abstract: The U.S. Military is consolidating its operations and expanding its presence in specific locations across the U.S. and its territories. These expansions are driving local development and economic growth. Due to numerous threats, the number of species listed under the Endangered Species Act is also growing. The growing number of listed species presents a compliance challenge to local developers trying to keep up with the military buildup. For them, their only options are to avoid the species or negotiate mitigation solutions with federal and state wildlife agencies, which is often cost and time prohibitive. Programmatic habitat conservation plans (HCPs) can provide a novel and cost-effective solution for compliance. A programmatic HCP is being developed for the U.S. Territory of Guam and another is being developed in response to development needs around a military base in Texas. These HCPs will streamline local development permitting for Endangered Species Act compliance, while providing permanent conservation that would otherwise not occur on this scale and not be financially feasible. These programmatic HCPs are also uniquely suited to complement federal programs designed to protect the operational flexibility of these growing military facilities.

Speakers: Aaron Gabbe and Liz O'Donoghue **Topic**: Conserving Land, Reducing Miles: Land Conservation's Role in Reducing Vehicle Miles Traveled and Greenhouse Gas Emissions

Abstract: The transportation sector accounts for the largest share of greenhouse gas (GHG) emissions in the country, generated mostly by the amount of travel ("Vehicle Miles Traveled" or VMT) from passenger cars and light duty trucks. Reducing VMT would reduce GHGs and improve regional air quality, helping to meet climate, public health and economic goals. Can land conservation – and regional HCPs - have a role in reducing VMT? Partners in Western Riverside County (CA) are developing the science, methods and implementation scheme in response to California law requiring the mitigation of VMT that could enable land conservation through the Western Riverside County Multispecies Habitat Conservation Plan. The study team, including the Riverside Conservation Authority/Riverside County Transportation Commission, The Nature Conservancy, and Fehr &

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Peers, has explored whether conservation can serve as VMT mitigation for projects that exceed VMT thresholds per the California Environmental Quality Act (CEQA) in Western Riverside County. If successful, VMT mitigation could provide funding for conservation in the largest regional HCP in the country, and serve as a model for other habitat plans in California and elsewhere in the United States, especially in places that are considering ways to analyze, track, and reduce VMT. Land conservation as a VMT mitigation strategy offers the potential to generate benefits across multiple resource areas and redirect growth from high to low VMT areas, directly in line with the broader goals of California and federal policies to encourage more compact development patterns and discourage sprawl. The study team will share the results of the first phase of the work, and seek feedback from Annual Meeting attendees on the project and potential applications in other regions in California and the United States.