



California Grizzly

Reintroduction Roadmap

California Grizzly Research Network
Winter 2023

Purpose

The purpose of this document is to describe a series of key steps that would likely be required—based on sound science, using the best conservation practices, and following current state and federal laws—to reintroduce brown bears (*Ursus arctos*), known throughout much of North America as grizzlies, to California.

Brown bears are the world’s largest terrestrial omnivores. Prior to 1800, they occupied a wide range of habitats and niches in Europe, Asia, and western North America. Since then, they have been eliminated from most of the southern half of their former global range, and numerous populations have been eradicated (Figure 1). Despite these losses, brown bears remain widespread, with an estimated total population of more than 200,000, and an International Union for the Conservation of Nature (IUCN) designation as a “species of least concern.” In recent years, brown bears have reappeared or been reintroduced in several areas, and in many regions their populations are stable or increasing.



Figure 1. The global range of brown bears in 1800 (historic) and today.

North America contains around 60,000 brown bears, 97 percent of which live in Alaska or Canada. In 1800, prior to large-scale European settlement in the American West, the area that is now the lower 48 US states had an estimated population of 50,000 brown bears. Over the next 175 years, however, their population and geographic range both collapsed by as much as 98 percent. By 1975, the lower 48 states contained only around 1,000 grizzlies, all of which lived in the Northern Rockies of Idaho, Montana, and Wyoming. Later searches in Colorado and Washington state failed to produce proof of any additional remaining individuals.

The brown bear’s decline in California was even more catastrophic. Brown bears are recent migrants to this region, probably having arrived in Northern California less than 40,000 years ago and in Southern California as recently as 8,000 years ago. (American black bears, by comparison, likely arrived in this region closer to one million years ago.) Over the following millennia, however, grizzlies made an enormous impact. They spread to every non-desert corner of the state—from the Northwest Forest to the High Sierra to the Los Angeles Basin—and assumed the position of apex consumers, replacing the giant short-faced bears, saber-toothed cats, and dire wolves that had dominated this region’s ecosystems during the Pleistocene. They also formed complex relationships with diverse native peoples who viewed them as friends, neighbors, guides, adversaries, resources, healers, and kin.

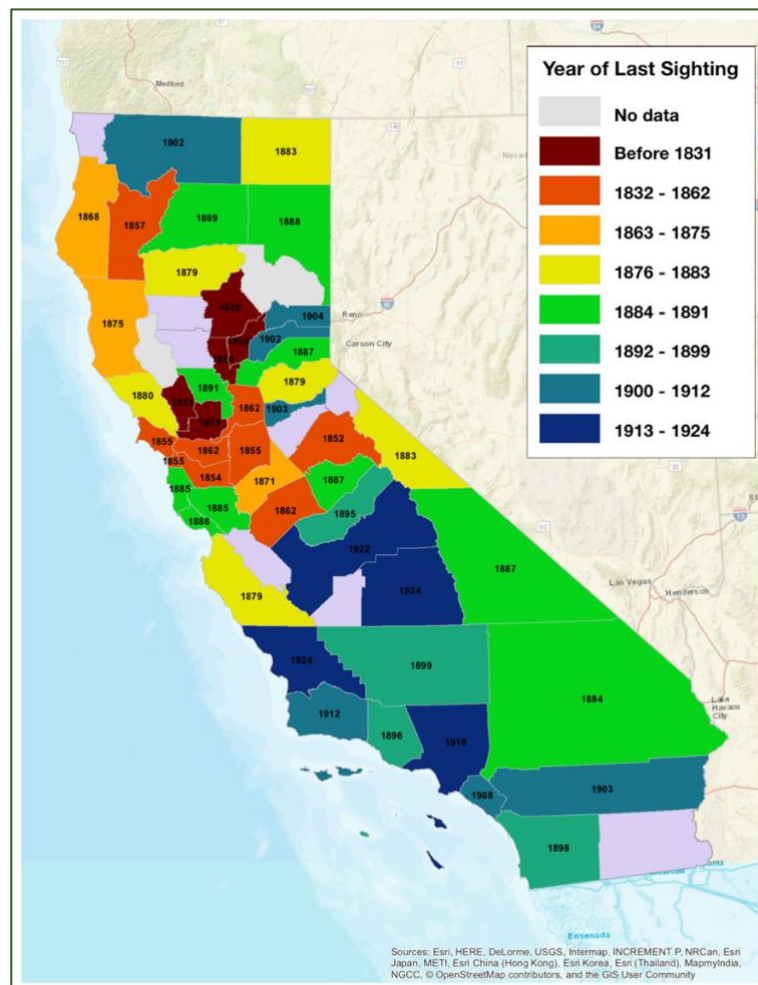


Figure 2. Year of the last known sighting of a grizzly bear by California county.

In 1800, California was home to as many as 10,000 grizzlies, or around one-fifth of the grizzlies in the area that is now the lower 48 states. Early European settlers recorded detailed accounts of their experiences with California’s legendary “chaparral” or “golden” bears, creating a sprawling historical archive and making the grizzly bear the state’s iconic mascot. California’s grizzly

population soon plummeted, however, due to a frenzy of hunting, trapping, and poisoning. The last credible sighting of a California grizzly occurred in 1924 near the western boundary of Sequoia National Park.



Figure 3. James Walker. Roping the Bear at Santa Margarita Rancho. Oil on canvass, ca. 1876. Collection of the California Historical Society. Gift of Mr. and Mrs. Reginald Walker.

In 1975, the US Fish and Wildlife Service (FWS) [listed](#) grizzlies in the lower 48 states as “threatened” under the Endangered Species Act. The [Grizzly Bear Recovery Plan](#), published in 1993, identifies six “grizzly bear ecosystems,” places where at least a few brown bears lived, or had very recently lived, at the time of the species’ listing (Figure 4). Grizzlies now occupy at least 4 of these ecosystems—Greater Yellowstone, Northern Continental Divide, Selkirk, and Cabinet-Yaak—and nearby areas. Two additional grizzly bear ecosystems, the Bitterroots of Idaho and North Cascades of Washington state, do not currently contain any known brown bears. After more than four decades of recovery efforts, the lower 48 states now house around 2,000 brown bears—double that of 1975 but just 4 percent of their estimated population in 1800.

If the current Recovery Plan were to completely succeed in all six ecosystems, there would be about 3,000 grizzly bears in the lower 48 US states. The U.S. government could declare the grizzly fully “recovered” with a population 94 percent below its pre-European level.

In its 1993 Recovery Plan, the FWS argued that these six grizzly bear ecosystems “had the potential to provide adequate space and habitat to maintain the grizzly bear as a viable and self-sustaining species.” It did not argue that recovering grizzlies in these areas would restore the diverse ecological roles these bears once played throughout their vast historical range, or heal the injustice committed toward indigenous people when white settlers exterminated their kin. It did, however, note that, given a range of uncertainties, protecting grizzlies in perpetuity in the lower 48 states may require further recovery efforts in other regions. The FWS thus pledged to study a

potential seventh grizzly ecosystem, the San Juan Mountains of Colorado, as well as other areas within the species' historical range. Such an analysis, the FWS noted, should focus on habitat values, the size of the areas, human uses, connections to other areas where grizzlies live, and historical information. This effort was expected to take 5 years.

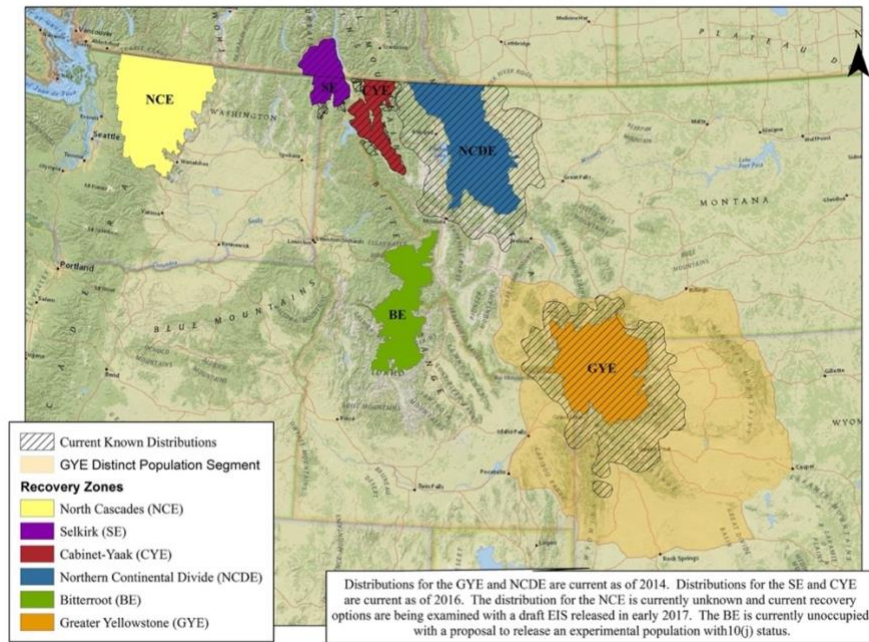


Figure 4. The six current Grizzly Bear Ecosystems (recovery zones).

Twenty-eight years later, in 2021, the FWS published a “[Species Status Assessment for the Grizzly Bear \(*Ursus arctos horribilis*\) in the Lower-48 States.](#)” In Appendix A (p. 286), the service reported the results of a modeling exercise apparently meant to fulfill its decades-old pledge to study other potential grizzly bear ecosystems. It concluded that neither the San Juan Mountains of Colorado nor the Sierra Nevada of California contained enough “secure habitat”—defined as contiguous blocks of land at least 1,000 hectares (2,471 acres) in size and at least 500 meters from the nearest road—to support a viable population. Unfortunately, this study, like some [others](#) the FWS has produced in recent decades seeking to limit the scope of large carnivore recovery efforts in the American West, contains a host of conceptual and methodological [flaws](#), limiting its value for future grizzly recovery efforts.

This Roadmap describes a rigorous, scientifically-based, socially-informed, *stepwise process* by which grizzlies could be reintroduced to California, as part of a more ambitious vision for the recovery of *all of the state's native wildlife species*. It is intended for use by researchers, tribal governments, community-based organizations, concerned citizens, students, and agency officials, as well as grizzly advocates and other conservation partners.

Tasks

This Roadmap is divided into a series of **tasks**, each of which may include several elements. These tasks are listed roughly in the order in which they should begin, but there is no set timeline or sequential linear process for an effort as complex grizzly reintroduction.

Task 1

Initiate a comprehensive program of basic research

A robust, ongoing, independent, and well-funded program of basic research—encompassing the biophysical sciences, social sciences, humanities, and arts—is an essential component of species reintroduction and recovery programs. Since 2016, the California Grizzly Research Network has jumpstarted this process by pursuing a series of research projects with the goal of promoting a more informed scholarly and public conversation about the past and potential future of grizzly bears in California. Several of these projects—which draw from extensive archives, specimen collections, cutting-edge interdisciplinary methods, and diverse literature—are now complete, with others in progress. Crucial research projects remain to be conducted, and should continue indefinitely as part of a multifaceted knowledge gathering, community building, and biological monitoring effort. For the California Grizzly Research Network’s projects and publications, visit www.calgrizzly.com.

Task 2

Identify committed leaders

Successful species conservation efforts require dedicated leaders responsible for stewarding the planning, organizing, and implementation of project goals in collaboration with community, tribal, non-profit, and government partners. To move forward beyond the basic research phase, a California grizzly reintroduction effort will need to identify a small cohort of leaders who will work to complete the tasks identified in this roadmap, marshal support, garner resources, and advance the process. Leadership should represent varied interests and experiences, as well as the cultural and ethnic diversity of California, including but also reaching beyond traditional conservation circles.

Task 3

Produce a feasibility study

In addition to basic science, **targeted, policy-oriented research is crucial for supporting species reintroduction efforts**. A feasibility study can serve a useful intermediate step in this process, building on basic research and providing the foundation for a more structured Environmental Impact Statement (see Task 10). A feasibility study for reintroducing grizzlies to California should be based, in part, on the IUCN's [Guidelines for Reintroductions and Other Conservation Translocations](#), which describes best practices for reintroduction planning, as well as the body of more specific research on bear reintroductions.

IUCN Guidelines emphasize that the following key areas, which could form the basis of a feasibility study, must be assessed early in any reintroduction planning process:

- ✓ Biological and social feasibility
- ✓ Relevant regulations
- ✓ Availability of necessary resources
- ✓ Interest from local communities, interest groups, and the broader public
- ✓ Existence of one or more viable source populations
- ✓ Availability of appropriate release sites
- ✓ Risks to a reintroduced population
- ✓ Release protocol
- ✓ Monitoring and long-term adaptive management program

A feasibility study is intended to focus the parties involved in a reintroduction effort, identify potential challenges and opportunities, and reduce (or at least identify) key uncertainties. A feasibility study is only a preliminary step, however, and as such it will necessarily be speculative. This is particularly true for cases such as that of California grizzly, in which the species proposed for a reintroduction has been absent from the area for an extended period, during which time the biological and social environment have undergone significant changes. Further research and other policy-oriented documents should seek to reduce uncertainties identified in the feasibility study by using creative methods to fill research gaps.

Task 4

Identify and develop sources of support and opposition

The IUCN *Guidelines* note that a vital early step in any reintroduction effort is to identify current and potential future sources of support, including political and financial, as well as

likely opposition. **Building relationships and trust, forming a broad-based network, addressing concerns, and sharing knowledge are all essential for cultivating a well-resourced, politically influential, and publicly-backed campaign.** Raising sufficient funds to support research, advocacy, education, and outreach—as well as financial, institutional, and technical support for local communities near new grizzly bear ecosystems—is essential. In particular, it is crucial to identify sources of potential local or interest group-based opposition, and then work to initiate outreach and dialogue, and wherever possible, address the legitimate concerns of such groups. It is also essential to build the political support, locally and state-wide, to overcome bureaucratic barriers and risk-averse political leadership. Initiating discussions with local, state, and federal management agencies can help build understanding of the resources currently available, as well as any adjustments that would need to ensure that the project will have agency support and backing.

Task 5

Engage tribes and Indigenous leaders

California’s Indigenous communities shared their homes with grizzlies for millennia. Indigenous people throughout the Northern Hemisphere—where bears are the native species that appear most similar to humans—have rich cultural traditions giving prominent roles to bears, and many consider grizzlies their kin. The extermination of the California grizzly was not only, therefore, a loss to science and conservation; it was also part of a broader assault on the state’s Indigenous cultures and communities. **Indigenous people—including scholars, conservationists, activists, and others—must be supported and encouraged to hold prominent leadership positions in any serious effort to recover this species, and grizzly recovery efforts should be designed and implemented in extensive collaboration with Native communities. Any grizzly recovery effort must adhere to the principle of free, prior, and informed consent regarding any action that would affect Native peoples’ ancestral and current lands, territories, or rights.**

The conceptual foundation for such participation has already been laid. Indigenous people in Canada have long asserted their rights to manage wildlife. In 2017, the Central Coast Working Group, made up of three First Nations, led a successful campaign to end grizzly trophy hunting in British Columbia. In California, Indigenous groups have spearheaded or taken leadership roles in several wildlife reintroduction and recovery efforts, including projects involving beavers, elk, and condors. Since 2016, tribes from across the United States, including California’s Hoopa Valley Tribal Nation and Karuk Tribe, have signed the [Treaty of Grizzly Solidarity](#), which opposes grizzly trophy hunting and supports conservation efforts on the

species' behalf. With more than 170 tribal signatories, this now appears to be the most widely-adopted Indigenous-led treaty in American history.



Figure 5. The Treaty of Grizzly Solidarity.

Task 6 Engage local communities

In the United States legal tradition, wildlife is considered a public trust to be managed by government agencies for the benefit all citizens. In practice, however, conservation is often the subject of contentious interest group politics, with certain groups exercising disproportionate influence over policy and management. Local communities are particularly important players in the political arena because the costs and benefits of wildlife are often felt most acutely in communities that lay within or are located nearby important habitats, and because support or opposition from local residents and elected officials can substantially influence reintroduction projects.

Community engagement – communication, collaboration, and shared leadership – are essential for addressing the concerns of local residents, businesses, and officials and building long-term support. Such efforts should begin as early as possible in the reintroduction planning process, providing local people ample opportunities to voice

concerns, contribute to decision-making processes, and build trust with conservationists from the public and private sectors and from tribes. Local engagement should continue throughout the reintroduction and recovery process, including basing project representatives in local communities, making project leaders accessible and accountable to local residents, hosting community meetings, and visiting schools, places of worship, and other civic institutions. Such efforts are more than cosmetic or political because they can help conservationists anticipate problems that may arise and respond efficiently and effectively to those that do, maintaining and building further local support.

Task 7

Develop a broad-based public outreach program

In addition to local community engagement, reintroduction and recovery programs also benefit from broad-based public education and outreach campaigns. In California, grizzly bears occupy a unique position with regard to public knowledge. As the state’s official animal, the mascot of its two largest prominent public universities, the source of hundreds of place-names, and the star of its iconic flag, grizzlies—or at least images of grizzlies—are a ubiquitous presence. A 2019 [study](#) by Hiroyasu et al., however, found that only around a quarter of Californians know that grizzlies do not currently live in the state. If a more formal proposal to reintroduce grizzlies to California emerges, public interest would likely grow, with benefits for public understanding but also the potential to increase the political conflict and polarization around this issue. A consistent and robust education and outreach program—involving schools, agencies, traditional broadcast, print, and digital media outlets, and social media—could help counter those issues, increase knowledge of grizzly bears in California, and reduce the potential for conflict. Given the likelihood of some resistance, it will be particularly important to identify potential allies, communicators, and champions among those communities most likely to be skeptical or reluctant.

Task 8

Engage policy makers and agency officials

The policy-making community includes elected officials and their staffs as well as career and politically-appointed agency officials working at the local, state, federal, and tribal levels. To date, elected officials and agency staff in California have engaged little with the question of grizzly reintroduction. Currently, California is governed largely by a coalition of moderate and progressive Democrats, most of whom are clustered in large and densely populated urban

population centers, while smaller numbers of Republicans occupy key positions in rural areas near several potential grizzly reintroduction sites. Career officials working in the federal government, including the US Fish and Wildlife Service (FWS) and National Park Service, have expressed skepticism about a grizzly reintroduction. In 2014, the Fish and Wildlife Service dismissed the Center for Biological Diversity’s petition to list grizzlies in California and the Southwest under the Endangered Species Act. The California Department of Fish and Wildlife (CDFW) currently opposes the idea of grizzly reintroduction—based largely on concerns about risks and resources—but in recent years it has reversed its positions several times regarding species reintroduction and recovery programs. The FWS’s and CDFW’s current positions on this issue represent the beginning of a process of engagement. **A multi-pronged strategy that gradually introduces the idea of a California grizzly reintroduction, builds trust, identifies potential allies, and focuses on levers of support would greatly aid any such effort.**

Task 9

Revise the Recovery Plan

The Recovery Plan for grizzlies in the lower 48 US states includes only the areas that were known to contain, or were thought to potentially contain, grizzly bears at the time of the species listing as threatened under the Endangered Species Act in 1975. For a reintroduction to move forward, one or more new grizzly bear ecosystems in California would need to be formally added to the Recovery Plan.

The current grizzly Recovery Plan was completed in 1993. The ESA requires that such plans be revised every five years, but the grizzly plan has not been updated since its approval almost three decades ago. As of summer 2022, recovery team staff based in Montana were occupied with three federal lawsuits, efforts to move forward grizzly recoveries in the North Cascades and Bitterroots, and time-consuming human-bear coexistence efforts in Montana and Wyoming. These urgent priorities are delaying progress on a new Recovery Plan.

The prospect of a new Recovery Plan offers an enormous opportunity to broaden the scope of grizzly conservation. The ESA does not define recovery. The definition of recovery for any listed species is defined through specific criteria, which are developed by a recovery team and described in the species’ recovery plan. A revised grizzly Recovery Plan that includes ecosystems in California and the Southwest, or at the very least compels the Fish and Wildlife Service to conduct a rigorous, comprehensive, peer-reviewed study of new grizzly ecosystems, would open up the process to a more ambitious set of recovery goals. A rigorous assessment effort of these potential new grizzly ecosystems—involving habitat

mapping, population viability modeling, and other techniques—would build on published and ongoing research.

A revised Recovery Plan would need to establish a set of recovery goals—criteria by which grizzlies in California could be declared recovered. Legally, there remains some debate about the circumstances under which individual populations of a listed species can be considered recovered, and thus delisted as an entity, under the ESA. Regardless, the recovery criteria for grizzlies in California would need to be based new studies—and updated conceptions—of potential habitat, connectivity, carrying capacity, and long-term population viability.

Task 10

Produce an Environmental Impact Statement

An Environmental Impact Statement (EIS) is a lengthy document that fulfills key requirements of the National Environmental Policy Act by describing, in-depth, the impacts of a proposed project on the environment. EISs are produced for proposed species reintroductions both to comply with state (California has a similar requirement under CEQA) and federal laws, and as a framework for considering the possible effects of such an effort on ecosystems and other species. Often taking years to complete, an EIS for California grizzly reintroduction would build on and be expedited by a prior feasibility study, as well as the [2017 draft](#) (and planned 2023 rewrite) of the grizzly recovery plan for the North Cascades ecosystem.

Task 11

Establish a 10j population under the ESA

The ESA contains a provision, outlined in section 10j of the Act, defining what are often referred to as “experimental, non-essential” populations. This designation is crucial for species reintroductions because it provides the FWS with increased flexibility—and reduced legal exposure—in designing and implementing reintroduction programs that are not considered essential to a species’ immediate survival but could benefit its long-term recovery. 10j populations also do not require potentially controversial critical habitat designations. For these reasons, many species reintroductions under the ESA now take place under the 10j designation.

According to section 10j (2)(A) of the Act:

The Secretary may authorize the release (and the related transportation) of any population (including eggs, propagules, or individuals) of an endangered species or a threatened species outside the current range of such species if the Secretary determines that such release will further the conservation of such species.

Any grizzly reintroduction effort in California would likely begin under a 10j designation. Before moving any bears, however, the recovery team would be required to design a reintroduction protocol. The IUCN guidelines discussed under Task 3 describe best practices and other recommendations for consulting with partners, identifying source populations, selecting founders, trapping and transporting individual animals, releasing them at the reintroduction site, and monitoring them. Insights from other recent brown bear translocations, for example in Northwest Montana, can be used to help design and implement the reintroduction protocol. Reintroducing a large, intelligent, high-profile, and long-lived species like a grizzly bear is an inherently risky endeavor. Proper planning and consultation can greatly reduce these risks for people and bears alike.

Task 12

Monitor and manage

Any successful reintroduction program must have a robust plan for monitoring and adaptively managing the population, within its social and ecological context. Such a program would enable officials to identify problems as they emerge, develop effective interventions, shepherd the program through its multiple phases, and chart progress. Such a program would be particularly important for grizzlies in California due to the inherent uncertainties involved with this reintroduction and recovery effort, and the need for timely information and flexibility—what conservationists call adaptive management—in response to events on the ground.

In addition to the biological aspects of a reintroduction program, monitoring and management should focus on the social, cultural, and political context. Once bears are on the ground, most management actions will likely focus on slowly adding additional individuals, avoiding conflicts, and promoting coexistence and coadaptation. This will involve a communication strategy, working with local jurisdictions and residents to implement bear-safe waste disposal and other programs, and acquiring funding to invest in education, infrastructure, law enforcement, and compensation for property loss or damage.

Task 13 (optional)

Give grizzly recovery a legal boost or basis in California

A California state grizzly law could take several forms and contain a range of provisions, from merely proclaiming 2024 “the year of the grizzly” to mandating that the Department of Fish and Wildlife study grizzly reintroduction, to mandating that it work toward such ends. There are at least four forms that such a law could take. The first, which is the most straightforward politically but least meaningful in terms of actual policy, is a resolution of the state legislature. The second, which would require considerable work with lawmakers and other advocates, would be the passage of a law that directs the state to study or pursue grizzly recovery. Alternatively (third), such a law could be more general, building on and strengthening a variety of other state laws, including the California Endangered Species Act, by providing an affirmative mandate for the reintroduction and recovery of *all California native species* wherever feasible. The fourth would be a voter initiative, analogous to Colorado’s Proposition 114 (2020), which requires the “Colorado Parks and Wildlife Commission to create a plan to reintroduce and manage gray wolves on designated lands west of the continental divide by the end of 2023.” A different but potentially useful example from California is the state’s famous Proposition 117 (1990), which designated pumas a “specifically protected” mammal species and banned sport hunting of them.

Conclusion

This document describes a series of tasks, most or all of which would need to be undertaken—given the current political, legal, and institutional environment—to reintroduce and recover grizzlies in California. Beyond the technicalities of this tortuous process, however, it is worth reflecting on why.

Prior to the violent onslaught of Anglo-American conquest, grizzlies roamed California by the thousands. They shaped California's ecosystems through hunting, scavenging, and foraging, and by influencing the behaviors of dozens of other wildlife species. They lived alongside diverse Indigenous people, many of whom considered them kin. They added color to the landscape, with their rich social relations, and complex individual personalities. In the places where grizzlies remain today, they command respect, draw attention to the natural world, inspire wonder, and spark the imagination. For a state like California—which prides itself on its scientific prowess, artistic creativity, and environmental consciousness—their loss is an unhealed wound. Bringing them back would represent a bold and unprecedented triumph.

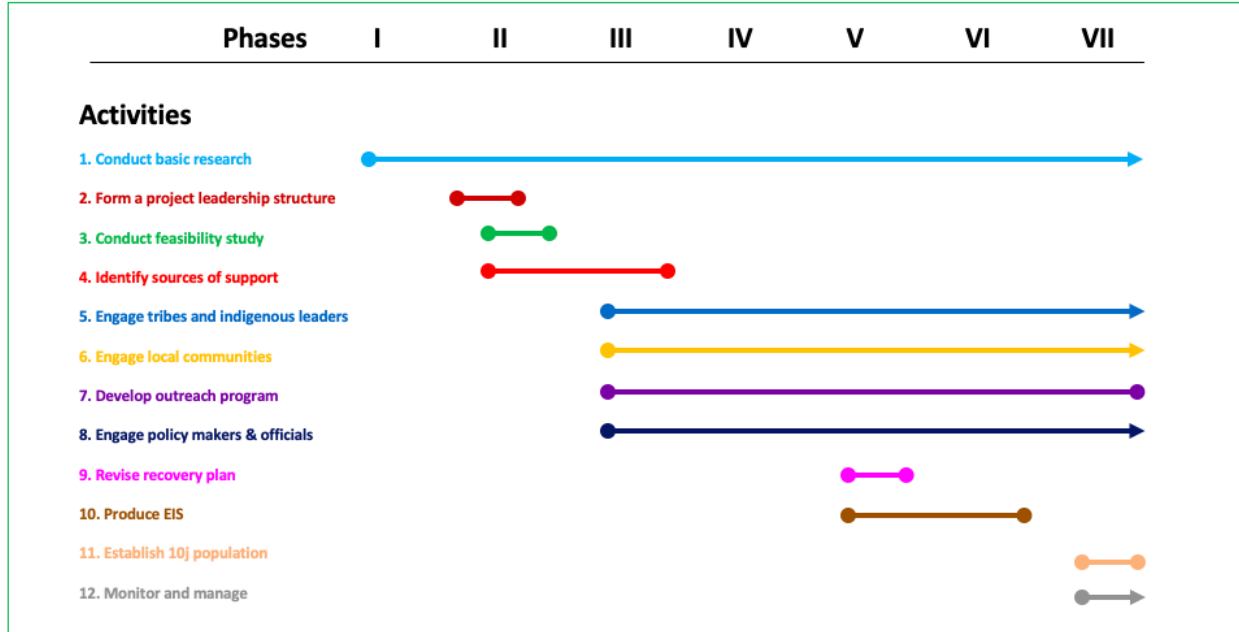
For nearly a century, scholars and storytellers have been reflecting on the epic saga of grizzlies in California. Although each had their own take on the rise and fall of this iconic animal, they all agreed on one thing: the California grizzly's story was finished. Over time, this belief became a matter of fact, repeated by experts and pundits who, with scant evidence, confidently pronounced that this state was too developed, too crowded, and too ecologically damaged ever to recover its full suite of native species, including its famous mascot. They were all wrong. Recovering grizzlies in California is not impossible—it is a choice. Their story is far from over.

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Appendix A

Reintroduction Roadmap: Activities & Phases



This figure provides a theoretical sequence for the tasks listed above. Actual reintroduction processes often involve multiple simultaneous steps, loops, and both forward and backward progress en route to the ultimate goal.