

# Building California's Forest Resilience Workforce

A CRITICAL GAP IN INCREASING THE PACE AND SCALE OF WILDFIRE PREVENTION

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<b>EXECUTIVE SUMMARY</b> .....	4
Key Findings .....	6
Potential Solutions .....	6
<b>ESTIMATED LABOR NEED</b> .....	7
<b>POTENTIAL POLICY INTERVENTIONS</b> .....	9
Invest in Workforce Housing .....	9
Ensure Federal-State Pay Parity .....	12
Improve Firefighter Working Conditions and Mental Health Care .....	13
Improving Entrance into the Profession .....	14
<b>RECOMMENDATIONS</b> .....	16
State Policy and Funding .....	16
Federal Policy and Funding .....	17
<b>CONCLUSION</b> .....	18

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## EXECUTIVE SUMMARY

Wildfires in California, and across the western U.S., are increasing in frequency and severity, threatening both ecosystems and communities. Restoration—a combination of ecological thinning and prescribed fire—is one of the best tools to build forest resilience and prevent catastrophic wildfires, by reducing the buildup of fuels resulting from a legacy of logging and fire suppression. Recognizing the value of forest restoration, California's Department of Forestry and Fire Protection (CAL FIRE) and the U.S. Forest Service (USFS) have each committed to treat 500,000 acres of forestland annually within the state by 2025<sup>1</sup>, a dramatic increase over the tens of thousands of acres that have been treated in recent years. Large sums of public funding have followed these commitments, with the most recent state budget appropriating over \$1.2 billion<sup>2</sup> and USFS requesting nearly \$300 million for Fiscal Year 2022-2026 for forest restoration on two of the agency's 10 priority landscapes in California, the North Yuba Landscape and the Stanislaus National Forest (NF).<sup>3</sup> It is worth noting that the planned federal treatment in California is for a total of 70,500 acres by FY26, far less than the 500,000 annual goal that USFS announced in 2020, highlighting both the challenge of substantially increasing the scale of forest treatment and the considerable additional funds needed to deliver on the initial ambitious goal.

While a big and essential step forward in achieving forest resilience at scale, California's current forestry workforce falls far short of that needed to deploy the large sums of public money flowing to forest resilience. By our estimate, California's current public sector workforce alone will need to grow by nearly 9,400 to put these funds to work. This gap creates considerable risk that California will fail to reach its ambitious goals or that it will be more costly to do so, given the limited supply of professional foresters, private operators with boots-on-the-ground and wildland firefighters who also do wildfire prevention work. Furthermore, the inability to deploy funds in-hand has the potential to undermine requests for additional funds, which will be necessary to accomplish the scale of restoration needed to build forest resilience across the state.

1 Office of Governor Gavin Newsom. 2020. California, U.S. Forest Service Establish Shared Long-Term Strategy to Manage Forests and Rangelands. Available at: <https://www.gov.ca.gov/2020/08/13/california-u-s-forest-service-establish-shared-long-term-strategy-to-manage-forests-and-rangelands/>.

2 Governor's Office. 2022. 2022-23 Governor's Budget Summary. Sacramento: State of California, Governor's Office. Available at: <https://www.ebudget.ca.gov/>.

3 U.S. Forest Service. 2022. Confronting the Wildfire Crisis: Update on the National Strategy for Protecting Communities and Improving Resilience in America's Forests. Available at: [https://www.fs.usda.gov/sites/default/files/fs\\_media/fs\\_document/WCS-Progress-Summary.pdf](https://www.fs.usda.gov/sites/default/files/fs_media/fs_document/WCS-Progress-Summary.pdf).

To date, workforce development for forest restoration has centered on training to increase the pipeline of new entrants. While training is an essential piece of the solution, it is not the only piece. A number of other barriers—specifically related to wages, housing, mental health and licensing requirements—must be addressed if we are to build a robust forest restoration workforce. A recent report by the U.S. General Accounting Office, released during the preparation of this policy brief, identified similar barriers to recruiting and retaining wildland firefighters, a significant segment of the forest restoration workforce.<sup>4</sup>

This policy brief first estimates the size of the current public sector workforce gap if CAL FIRE and USFS are to deploy public funds recently allocated to scale up forest restoration and wildfire prevention. The brief then lays out key barriers beyond training and opportunities to clear them, with a focus on state and federal policy. Although the focus is on California's public sector, because of the availability of data on the size of the current workforce, many of the barriers and potential solutions outlined are relevant to private operators, contracted out by agencies to conduct ecological thinning, prescribed burning and more lucrative wildfire suppression. Tribes also represent an important part of California's restoration workforce, conducting cultural burning, at times using private operators<sup>5</sup>, but barriers to cultural burning beyond workforce development are beyond the scope of this brief.



4 United States Government Accountability Office. 2022. WILDLAND FIRE: Barriers to Recruitment and Retention of Federal Wildland Firefighters. Available at: <https://www.gao.gov/assets/gao-23-105517.pdf>.

5 Pfeiffer, J. 2022. Forests in the American West Need More "Good Fire." Tribes Can Help. Slate. Available at: <https://slate.com/technology/2022/07/cultural-burning-california-wildfires-usfs.html>.

### ► Key Findings

- **California's forestry workforce has declined by approximately 38%** over the last two decades because of the contraction of the timber industry, as well as attrition from public agencies.
- In the public sector alone, **USFS Region 5**, which primarily covers California, **is currently short about 1,300 employees**, while **CAL FIRE is short about 1,145 employees**. To deploy the funding allocated in the last two state budgets, CAL FIRE and other state agencies would need to add approximately 5,060 employees, and USFS would need to add over 4,300 employees within Region 5, **a total of nearly new 9,400 employees**.
- Although California's largest forestland owner, **USFS pays roughly 50% less** than similar entry-level positions at CAL FIRE. **Utilities and large landowners with insurance payouts** also offer more competitive opportunities.
- Over the last decade, California's average **housing costs have increased nearly 50% more than wages** and have **doubled in some rural communities**, like Sonora, near the priority Stanislaus NF. **High housing costs may present the single largest barrier**, felt across the workforce, from community college students to private contractors to seasonal firefighters.
- Longer wildfire seasons and staff shortages have led to a **mental health crisis and high attrition rates among firefighters**, who also do wildfire prevention work—**10% of CAL FIRE's permanent workforce quit in 2021**.
- **Registered Professional Foresters (RPFs)**, who conduct essential planning and oversight, are **retiring nearly 3 times faster** than new licenses.
- Non-violent **formerly incarcerated firefighters** who aim to enter the workforce face a range of barriers, and **demand for additional training** to ease their entry is **15 times greater than the current training capacity**.
- The forest restoration **workforce relies heavily on economically disadvantaged populations** from rural towns, community colleges and fire camps, **underscoring the need for support beyond training**.

### ► Potential Solutions

- **Reducing housing costs** may have the greatest impact on closing the workforce gap. **Investing in workforce housing**, for example by **building on-site housing** on lands already owned by public agencies and private operators and **offering a housing allowance** are two strategies to make housing affordable for workers.
- **Ensuring pay parity for USFS employees** is essential to reverse attrition and **prevent cannibalization** by other sectors in the restoration workforce and ensure USFS and the state of California deliver on ambitious restoration goals.
- It is essential to **improve working conditions for firefighters** to grow a shrinking wildfire suppression and prevention workforce. This includes **greater access to mental health care** to address growing rates of grief, substance abuse and suicide.
- **Easing barriers to entry** for those aiming to join the restoration workforce is critical to reverse the trend of decline. Evaluating the RPF licensing process and opportunities to **streamline expungement and increase investments in job training** for formerly incarcerated firefighters are to areas to explore.



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## ESTIMATED LABOR NEED

Since the mid-1980s, California's timber industry has contracted significantly, primarily a result of new regulations limiting harvesting, notably on public lands. Between 1985 and 2016, the volume of timber harvested in California declined 70%.<sup>6</sup> The industry's employment in the state followed a similar trajectory, declining 38% (from 80,000 to 50,000 employees) between 2001 and 2019.<sup>7</sup> Given that industry is a potential pool of labor for the restoration workforce, this prolonged decline means that many of the former workers have likely moved to other fields or retired and are therefore, not available to work in forest restoration. At the same time, public agencies involved in forest restoration are experiencing high rates of attrition. In the next five years, USFS expects around 60% of its employees to retire, while both CAL FIRE and the forest products industry anticipate 45%-50% retirement.<sup>8</sup> It is against the forestry industry's steady decline that state and federal leaders have set ambitious goals to dramatically increase the scale of forest restoration in California, and the result is a significant gap in the workforce needed.

USFS and CAL FIRE are both facing significant shortfalls in the workforce needed to meet current forest restoration workloads in California. While public employees do not represent California's entire forest restoration workforce, their numbers give a sense of the workforce needed to deploy public funds to scale up forest resilience and may serve as a conservative estimate, given the private sector is also facing a shortfall of qualified personnel and high retirement rates.<sup>9</sup> Based on data provided by USFS, the agency currently has approximately 5,275

6 Porter, D. and R. Longcor. 2020. Accelerating Forest Restoration: Stimulating a Forest-Restoration Economy and Rebuilding Resilience in California's Fire-Adapted Forests. The Nature Conservancy and Bain & Company. Available at: <https://www.scienceforconservation.org/products/accelerating-forest-restoration>.

7 North State Planning and Development Collective. 2021. Forest Sector Workforce Study Report.

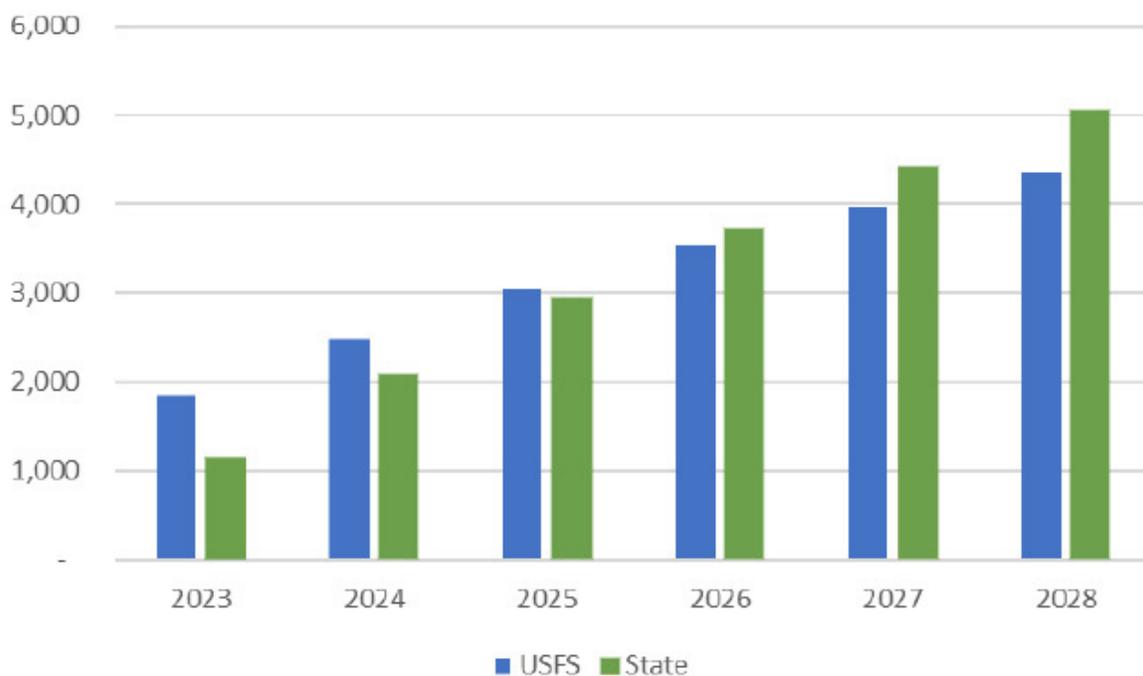
8 The California Forest Foundation. 2022. Work. Available at: <https://www.calforestfoundation.org/work>.

9 North State Planning and Development Collective. 2021.

permanent and seasonal employees based in California. Over 60% of these employees are wildland firefighters, and the remainder are foresters, civil engineers and other professional and skilled employees who contribute to forest health and wildfire prevention. By one estimate, USFS’s wildland firefighting workforce in California was approximately 3,700 in the summer of 2022, with a gap of around 1,300.<sup>10</sup> Assuming a similar share of unfilled positions (approximately 25%) for its entire California workforce, USFS is facing a current shortfall of around 1,850 employees. Given potential annual attrition of up to 12%,<sup>11</sup> and assuming a five-year period to deploy funding for wildfire prevention, the USFS job gap could exceed 4,300 by 2028.

Based on data provided by CAL FIRE, the agency’s workforce is composed of approximately 10,410 permanent and seasonal employees, nearly 85% of whom are wildland firefighters. The agency also benefits from approximately 2,070 additional employees from other programs, such as inmate firefighters<sup>12</sup> and the California Conservation Corps.<sup>13</sup> CAL FIRE currently has a need to hire approximately 1,145 workers under the state budget.<sup>14</sup> With a potential annual attrition rate of 9%,<sup>15</sup> CAL FIRE and other state agencies are facing a gap of approximately 5,060 workers by 2028. Combined with the USFS workforce gap, this could mean a shortage of nearly 9,400 workers contributing to forest restoration in California by 2028. Figure 1 depicts the workforce gap over time, including currently budgeted positions.

*Figure 1. Potential Shortfall of Federal and State and Forest Restoration Workers in California*



Sources: The California Forest Foundation, CAL FIRE, USFS

10 Alexander, K. 2022. ‘It Scares the Heck Out of Me’: California’s Federal Firefighter Shortage Has Gotten Dramatically Worse. San Francisco Chronicle. Available at: <https://www.sfchronicle.com/california-wildfires/article/forest-service-firefighters-17350152.php>.  
 11 The California Forest Foundation. 2022.  
 12 California Department of Corrections and Rehabilitation. 2022a. Conservation (Fire) Camps. Available at: <https://www.cdcr.ca.gov/facility-locator/conservation-camps/>.  
 13 California Conservation Corps. 2022. CCC Wildland Firefighters Ready for Wildfire. Available at: <https://ccc.ca.gov/ccc-wildland-firefighters-ready-for-wildfire/>.  
 14 Petek, G. 2022. The 2022-23 Budget: Wildfire and Forest Resilience Package. Legislative Analyst’s Office. Available at: <https://lao.ca.gov/Publications/Report/4495>.  
 15 The California Forest Foundation. 2022.



## POTENTIAL POLICY INTERVENTIONS

### ► Invest in Workforce Housing

The lack of available and affordable housing is perhaps the greatest barrier to growing California's forest restoration workforce. The problem exists across the pipeline and is particularly acute for entry-level employees in both the public and private sectors, as well as students seeking to enter the workforce, in rural communities where housing stocks are low and/or prices are high. California home prices have outpaced wages by nearly 50% in the last decade,<sup>16</sup> and in areas such as Truckee, Grass Valley and Chico, have increased upwards of 50% in the last 2.5 years.<sup>17</sup> In perhaps the most acute example, the median monthly rent for a one-bedroom apartment in South Lake Tahoe (\$1,625)<sup>18</sup> would consume 49% of the gross monthly income (\$3,297) for a USFS entry-level employee (GS-05), such as a Forest Technician.<sup>19</sup> The U.S. Department of Housing and Urban Development (HUD) considers monthly housing costs above 30% of gross income to be a cost burden and above 50% be a severe cost burden.

Beyond funding for boots-on-the-ground restoration work, public investment specifically in forest restoration workforce housing would fill a gap for the "missing middle" who do not qualify for affordable housing intended to avoid homelessness. Workforce housing has gained traction with local governments seeking to ensure those in the education, municipal firefighting and law enforcement sectors can afford to live where they work, because of high attrition rates. Funding for (1) building new housing and improving the existing housing supply and (2) a housing allowance are two potential strategies that would require additional public investment.

16 U.S. Bureau of Labor Statistics and Federal Reserve Bank of St. Louis. 2022. Average Hourly Earnings of All Employees: Total Private in California [SMU06000000500000003]. Available at: <https://fred.stlouisfed.org/series/SMU06000000500000003>.

17 FRED, Federal Reserve Bank of St. Louis. 2022. Housing Inventory: Median Listing Price in Sacramento--Roseville--Arden-Arcade, CA (CBSA) [MEDLISPRI40900]. Available at: <https://fred.stlouisfed.org/series/MEDLISPRI40900>.

18 Zumper. 2022. South Lake Tahoe, CA Rent Prices. Available at: <https://www.zumper.com/rent-research/south-lake-tahoe-ca>.

19 U.S. Office of Personnel Management. 2022. 2022 General Schedule (GS) Salary Calculator. Available at: <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2022/general-schedule-gs-salary-calculator/>.

Building “on-site” housing has the benefit of directly increasing access to housing while capping rent to ensure affordability. One approach that may prove to be cost-effective is to build new forest workforce housing on land already owned by public agencies or private operators, since the cost of acquiring land is likely to be minimal. The Forest Service Flexible Partnerships Act, a new provision in the 2018 Farm Bill, allows USFS to lease and allow development on a maximum of 400 acres of administrative land—lands typically located near towns rather than within the larger nearby national forest<sup>20</sup> — per fiscal year.<sup>21</sup> This new authority creates opportunities for USFS to partner with local governments also in need of housing, which serve as long-term lessees, as the Colorado towns of Dillon and Steamboat Springs are exploring with the White River<sup>22</sup> and Routt NFs,<sup>23</sup> respectively.

Building adjacent to or near existing towns also adds new housing supply in a way that does not significantly increase the forest management burden. Forest management plans already prioritize restoration treatments around existing communities, an important action for reducing the risk of catastrophic wildfire. Building on-site workforce housing in a way that factors in existing development and ongoing forest management activities could help protect the investment in workforce housing and reduce the risk that it will burn in a wildfire, which would further perpetuate the state's housing shortage.

Building on-site forest restoration workforce housing is gaining traction in California. For example, USFS is exploring building housing on their administrative sites near the Tahoe and Inyo NFs. Other entities within the forest restoration workforce are also pursuing on-site housing—Lake Tahoe Community College (LTCC) is building a 100-bed student housing facility on its campus, and some private operators are considering building housing on their land.



20 Anderson, D. 2022. Forest Service Land in Steamboat Could Eventually Become Affordable Housing. Steamboat Pilot & Today. Available at: <https://www.steamboatpilot.com/news/forest-service-land-in-steamboat-could-eventually-become-affordable-housing/>.

21 Congress.gov. 2017. S.1705 - Forest Service Flexible Partnerships Act of 2017. Available at: <https://www.congress.gov/bill/115th-congress/senate-bill/1705>.

22 D'Argonne, S. 2020. Dillon, Summit County Make Headway on Workforce Housing Project with US Forest Service. Summit Daily. Available at: <https://www.summitdaily.com/news/dillon-summit-county-make-headway-on-workforce-housing-project-with-us-forest-service/>.

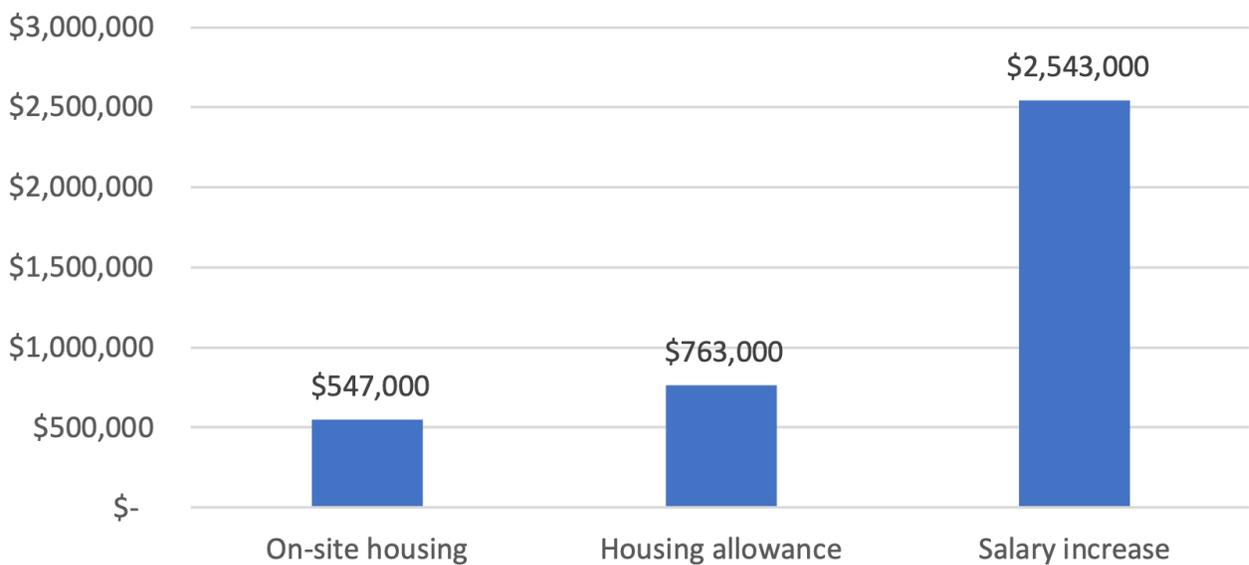
23 Anderson, D. 2022.

New grant and/or loan funding for forest restoration workforce housing is one option to fill a gap for building new workforce housing and/or improving the existing housing stock. The majority of existing state and federal programs are aimed at affordable housing for low- and very low-income populations, and therefore, many in California’s forest restoration workforce are likely ineligible. Developing and financing new housing is complex, and so any additional programs to support public investment in workforce housing should collaborate with the California Department of Housing and Community Development (DHCD) and HUD.

An alternative—or complement—to building on-site housing could be to provide a housing allowance to employees to keep housing costs to 30% of gross income. For example, an annual housing allowance of \$7,630 would keep housing affordable for USFS GS-05 employees residing in the Tahoe Basin. Whereas building new housing can have long timelines, a housing allowance may be a near-term solution, provided there is sufficient housing supply. However, a housing allowance does not increase housing supply or improve the quality of housing in poor condition, both problems in rural areas.

Because of the potential to build on land that public agencies or private operators already own and to recoup rent, on-site housing may be the most affordable option on an annual basis (Figure 2). For example, annual costs would be approximately \$547,000 to build a 100-bed facility in the Tahoe Basin without any rent generation<sup>24</sup> compared to \$763,000 to provide a housing allowance for 100 USFS entry-level employees.<sup>25</sup> Both on-site housing and a housing allowance are likely to be more cost-effective than the wage increase required to keep housing costs at 30% of gross income for 100 entry-level USFS employees in the Tahoe Basin, approximately \$2.5 million annually, since a wage increase does not specifically address an employee’s housing burden.

*Figure 2. Annual Costs of Investments in Forest Restoration Workforce Housing*



Sources: Lake Tahoe Community College, OPM, The Balance, Zumper

24 Assuming capital costs of approximately \$40M, operating costs of 1% of capex and a project lifetime of 75 years.

25 Assuming GS-05, Step 1 salaries within the Sacramento-Roseville-CA-NV region.

### ► Ensure Federal-State Pay Parity

Low wages at USFS relative to other employers in the sector allow for cannibalization from California's largest forestland owner. For example, CAL FIRE 1st-year firefighters—who conduct wildfire prevention work when not on active suppression duty—earn over \$30,000 (40%) more than their USFS counterparts.<sup>26</sup> By year 3, the annual wage gap worsens and is nearly \$50,000, with CAL FIRE firefighters earning 50% more than their USFS counterparts. CAL FIRE has also abolished hazard pay, paying wildland firefighters the same wage on and off the fireline, whereas USFS defines specific hazards that qualify for additional pay, such as climbing a tree 50 feet or higher, further contributing to the pay disparity between the two agencies.<sup>27</sup>

Utilities conducting right-of-way vegetation management and private operators contracted by landowners in need of clearing burned vegetation, often funded by insurance payouts, are two other sources of competition for USFS. While necessary, these activities differ from the ecological thinning and prescribed burning that must happen to reduce wildfire risk on unburned federal forests. With continuing pay disparity, there is considerable risk that current USFS employees and new entrants to the sector will move to better-paying employers and that California's largest forestland owner will be unable to deliver on its goal of treating 500,000 acres annually.

USFS has seen high rates of attrition and a dramatic reduction in entry-level firefighter applicants over the last couple decades, a result of low wages, a lack of housing and limited benefits under more grueling working conditions (see *Improving Firefighter Working Conditions and Mental Health Care*, below).<sup>28</sup> The topic of wildland firefighter pay disparity has received significant attention, and there has been progress at the federal level. The recent IJA increased the minimum wage for federal firefighters to \$15 per hour, plus a 2-year base pay increase of up to 50% or \$20,000 (whichever is lesser), with the goal of reaching a permanent solution.<sup>29</sup> IJA also created a new job series to differentiate federal wildland firefighters from Forest Technicians with the goal of retaining staff by providing a career ladder.

Despite these improvements for federal wildland firefighters, they are unlikely to be sufficient to grow this sector of the workforce in California. The state's minimum wage will increase to \$15.50 in 2023, meaning many other options for seasonal federal firefighters. House Resolution 5118 proposed provisions not in IJA, including a minimum wage of \$20 per hour for seasonal federal firefighters, base pay of at least \$57,000 with annual adjustments for permanent federal firefighters and a report on pay parity with state and local agencies. Beyond wildland firefighters, there is a need to address the USFS-CAL FIRE pay disparity among other job classifications, if USFS is to grow its forest restoration workforce and break the cycle of underinvesting in wildfire prevention.

In the early 2000s, California-based USFS employees received a one-time pay increase, and the agency submitted a similar, unsuccessful request to the U.S. Office of Personnel Management under the last administration. While the wage increases required for USFS employees to afford housing across California are likely more expensive than other housing-related strategies, wage increases to ensure pay parity between USFS and CAL FIRE employees are essential to reduce high rates of attrition. Without pay parity, USFS employees will continue the current pattern of departing for CAL FIRE and private employers, making it extremely difficult for the agency to grow its workforce and achieve large-scale forest restoration in the state.

26 Grassroots Wildland Firefighters. 2022a. Pay Disparity: Cal Fire vs. Federal. Available at: <https://www.grassrootswildlandfirefighters.com/pay-disparity-cal-fire>.

27 Grassroots Wildland Firefighters. 2022b. Hazard Pay. Available at: <https://www.grassrootswildlandfirefighters.com/hazard-pay-reform>.

28 Paskus, L. 2022. Poor Pay and Benefits Deplete U.S. Firefighting Workforce. Idaho Capital Sun. Available at: <https://idahocapitalsun.com/2022/04/28/poor-pay-and-benefits-deplete-u-s-firefighting-workforce/>

29 The White House. 2022. Fact Sheet: Biden-Harris Administration Announces New Pay Raises & Supports for Wildland Firefighter Workforce from Bipartisan Infrastructure Law. Available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/21/fact-sheet-biden-harris-administration-announces-new-pay-raises-supports-for-wildland-firefighter-workforce-from-bipartisan-infrastructure-law/>

## ► Improve Firefighter Working Conditions and Mental Health Care

As the severity of wildfires increases and the season lengthens, wildland firefighters are increasingly overworked in the face of more hazardous conditions. Federal seasonal firefighters now work between 1,000 and 2,000 hours compared to 400 hours in the 1980s, a 150%-400% increase.<sup>30</sup> Despite better pay, CAL FIRE firefighters work 21-day shifts with forced overtime compared to 14-day shifts for their USFS counterparts.<sup>31</sup> In some cases, this means 40 straight days including overtime for CAL FIRE firefighters.<sup>32</sup> In 2021, over 10% of CAL FIRE's permanent workforce quit, nearly double the 4-year average.<sup>33</sup>

In addition to high attrition, this sector of the forest restoration workforce is facing a mental health crisis. CAL FIRE provides employee support, in part, through a peer hotline, which has seen a 12-fold increase in employee calls over the last decade.<sup>34</sup> The majority of these calls relate to stress, with sharp increases in calls on the topics of grief and loss, addiction and substance abuse, and suicide in the last five years. In a recent survey of federal wildland firefighters (n=708), over 78% of respondents reported experiencing poor mental health, but only 32% reported having sufficient time and resources to get the help they needed.<sup>35</sup> The majority of federal firefighting jobs, including 75% of hotshots and smokejumpers, are classified as temporary, even with a nearly year-round fire season, and have historically lacked benefits, including mental health care.<sup>36</sup> Compounding this problem are coverage limits for public employees, a national shortage of mental health workers and a culture of toughing it out when the going gets tough.<sup>37,38</sup>

Several recent improvements have occurred related to mental health care and working conditions for federal wildland firefighters. The IJA created a new wildland interagency program for the Agriculture and Interior departments, focused on providing federal wildland firefighters with trauma-informed mental health care.<sup>39</sup> USFS also recently made existing mental health support available to temporary employees.<sup>40</sup> While the latest state budget allocated \$671.4 million for CAL FIRE to increase its wildland firefighting capacity, including by adding 1,265 positions in 2022-23, funding alone is unlikely to grow the workforce to a level that enables sustainable working conditions. CAL FIRE's wildfire protection budget increased nearly two-thirds from 2017-2018 to 2021-22, including for new permanent and relief personnel,<sup>41</sup> and in this last year, attrition hit a five-year high.

Beyond funding, significant changes to working conditions are needed to stabilize and grow the wildland firefighting workforce, particularly at CAL FIRE. This includes additional investments in mental health care—although just launching, the new federal program may be one to model. In California, Senate Bill 1062 passed the Senate unanimously in 2022, and required an end to forced overtime, in addition to minimum staffing levels. However, the bill was held in the Assembly. Reducing CAL FIRE shifts to align with USFS's 14-day shifts and requiring a minimum amount of wildfire prevention work could also reduce high suppression workloads while ensuring forest restoration continues. While difficult to accomplish with an already short-staffed department

30 Paskus, L. 2022.

31 Cart, J. 2022. Overworked California Firefighters Struggle with PTSD, Suicide, Fatigue, Intensifying Wildfires. CalMatters. Available at: <https://calmatters.org/environment/2022/06/california-firefighter-trauma-ptsd/?series=california-firefighters-trauma-wildfires>.

32 California Legislature— 2021-2022 Regular Session. 2022. SB-1062 The Fixing the Firefighter Shortage Act of 2022. Available at: [https://leginfo.ca.gov/faces/billTextClient.xhtml?bill\\_id=2021202205B1062](https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=2021202205B1062).

33 Cart, J. 2022.

34 Cart, J. 2022.

35 Wildland Fire Survey. 2022. 2022 Wildland Firefighter Survey Results Summary. Available at: <https://www.wildlandfiresurvey.com/general-1>.

36 Paskus, L. 2022.

37 Frosch, D. and J. Carlton. 2022. Firefighters Battling Wild Blazes Are Suffering from Anxiety, Addiction—and Can't Find Help. The Wall Street Journal. Available at: <https://www.wsj.com/articles/wildland-firefighters-face-mental-health-struggles-with-little-support-11662040800>.

38 Cart, J. 2022.

39 The White House. 2022.

40 Frosch, D. and J. Carlton. 2022.

41 Petek, G. 2022.



and increasingly demanding wildfire seasons, the absence of significant change to working conditions in the face of longer, more hazardous wildfire seasons is likely to result in continued attrition that imperils not only California's forest restoration goals but public health and safety.

### ► Improving Entrance into the Profession

A range of licensing requirements exist that may constrain new entrants into the forest restoration workforce. California law requires positions that involve planning, design and regulatory oversight, among other activities, to be held by Registered Professional Foresters (RPFs). RPFs work for both public and private sector employers. Nearly 50% of California's approximately 1,100 RPFs are expected to retire over the next decade.<sup>42</sup> RPF retirements are outpacing new licenses by more than 2 to 1, with an average of 56 retirements and 25 new licenses annually. As a result, this segment of the workforce is expected to shrink by over 40% in the next 10 years.

42 Office of Professional Foresters Registration. 2020. Licensing News. Winter 2020, Volume 32 - Issue 2. Available at: <https://bof.fire.ca.gov/media/xjidnznu/licensing-news-winter-2020-ada.pdf>.

43 Uenuma, F. 2022. The History of California's Inmate Firefighter Program. Smithsonian Magazine. Available at: <https://www.smithsonianmag.com/history/the-history-of-californias-inmate-firefighter-program-180980662/>.

44 Legislative Analyst's Office. 2021. The 2021-22 Budget: Department of Forestry and Fire Protection. Available at: <https://lao.ca.gov/handouts/resources/2021/CalFire-020421.pdf>.

45 Assembly Bill No. 2147. 2020. Available at: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201920200AB2147](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB2147).

46 California Department of Corrections and Rehabilitation. 2022b. AB 2147: Expedited Expungement for Formerly Incarcerated Fire Camp Participants. Available at: [https://www.cdcr.ca.gov/facility-locator/conservation-camps/fire\\_camp\\_expungement/](https://www.cdcr.ca.gov/facility-locator/conservation-camps/fire_camp_expungement/).

More investigation is needed into the changes that could reverse this trend and grow the pool of new RPFs, but one place to explore is the education and professional experience requirements for licensing. Aspiring professional foresters must complete seven years of qualifying experience (receiving a forest management degree from a university with an accredited forestry program can qualify for four years) and then pass a written examination. An evaluation of whether RPF licensing requirements have kept pace with a changing industry, workforce and societal needs would help identify possible changes needed to improve access to this career pathway and increase the number of professional foresters. Some initial meaningful first-steps towards increasing the number of RPFs could include: (1) allowing degrees and certificates, from accredited forestry programs offered by California's community college system, to count towards the professional forester experience requirement for licensing; (2) providing greater awareness of the forestry profession and employment opportunities in high schools; and (3) greater coordinating with professional organizations, the forest products industry, CAL FIRE and other impacted stakeholders to develop career awareness.

CAL FIRE firefighters include inmate crews, composed of non-violent, low-level offenders who voluntarily participate in the California Department of Corrections and Rehabilitation's Conservation Camp Program (Fire Camp). As with other wildland firefighters, these crews also conduct wildfire prevention work. Fire Camp participants have often made up around one-third of California's wildland firefighting workforce,<sup>43</sup> although their numbers declined 25% between 2010 and 2020—to approximately 3,000—mirroring a similar decline in inmate populations because of changes to the state's sentencing guidelines.<sup>44</sup> Inmate firefighters receive the same initial training as CAL FIRE seasonal firefighters, plus ongoing training while enrolled in the program,<sup>45</sup> which can be up to eight years.<sup>46</sup> Despite this training and experience, formerly incarcerated firefighters seeking employment in the field face a range of barriers because of their criminal records.

Assembly Bill (AB) 2147, signed into law September 2020, provides for expedited expungement of criminal records for formerly incarcerated Fire Camp participants, in an attempt to remove barriers to securing permanent employment as firefighters. However, expungement is a burdensome process that requires petitioning the court, depends on the discretion of individual judges and results in only a handful of cleared records annually.<sup>47</sup> Streamlining the expungement process for Fire Camp participants is one potential avenue to remove barriers for qualified firefighters aiming to entire a segment of the forest restoration workforce facing sharp shortfalls.

Two training programs—the Forestry and Fire Recruitment Program (FFRP) and the Ventura Training Center—also aim to reduce the barriers to entry by offering formerly incarcerated firefighters job training and employment pathways with public agencies. However, their combined capacity to serve 120-150 individuals annually falls far short of FFRP's 2,000-person listserv, one measure of demand. FFRP is expanding from Southern California to the Bay Area, with the support of a \$3.7 million CAL FIRE Workforce Development Grant, but the opportunity exists for further public investment to scale up support for the transition of formerly incarcerated firefighters into the permanent firefighting workforce. In aiming to bolster this sector of the forest restoration workforce, the improvements discussed previously—better pay and working conditions, access to housing and mental health care—are especially important for a segment of the population that has been historically marginalized and is overwhelmingly composed of people of color.<sup>48</sup>

47 Thompson, D. 2022. Western Fires Outpace California Effort to Fill Inmate Crews. AP News. Available at: <https://apnews.com/article/wildfires-covid-health-california-climate-and-environment-701ee89ceb4b7ba3e1a412b83c2a2f3f>.

48 Gurley, L.K. 2020. California Relies on Incarcerated Women to Fight Wildfires. Then it Abandons Them. Vice. Available at: <https://www.vice.com/en/article/v7gaz8/california-relies-on-incarcerated-women-to-fight-wildfires-then-it-abandons-them>.

49 Assuming a Fire Fighter I base salary of \$41,316 and a 1BR apartment renting for \$1,650 per month, the median in South Lake Tahoe, for illustrative purposes. See: CAL HR. Civil Service Pay Scale - Alpha by Class Title. Available at: [https://www.calhr.ca.gov/Pay%20Scales%20Library/PS\\_Sec\\_15.pdf](https://www.calhr.ca.gov/Pay%20Scales%20Library/PS_Sec_15.pdf).

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## RECOMMENDATIONS

The challenges facing the forest restoration workforce are multi-faceted, and no single solution is likely to reverse the trend from decline to growth. However, increased investment and public policy changes are essential, at both the state and federal levels, to develop the human capital necessary for California to meet its ambitious forest restoration goals and reduce the risk of catastrophic wildfire.

### ► State Policy and Funding

- **\$100 million in for the development of forest restoration workforce housing on land owned by public agencies or private operators to minimize capital costs.** These funds should be deployed flexibly, for planning, design and construction, to both build the pipeline and advance shovel ready housing projects. Funds should be available to a range of housing types, from permanent single- and multi-family developments to more temporary trailers or mobile homes for seasonal employees, and both grants and loans should be considered. These funds should also be administered by, or in coordination with, DHCD given the complexity of developing and financing housing and the agency's expertise. \$100 million is unlikely to go far, given the high costs of developing housing in California—for example, LTCC's new 100-bed student housing facility has a capital cost of \$40 million. But this fund should serve as a pilot, in part to gauge the needs of a sector struggling with short supply and high housing costs, but whose specific needs and potential proponents are not well understood, and also to test how on-site housing can be developed in ways that minimize wildfire risk to that housing.
- **\$10 million to pilot a housing allowance for employees of CAL FIRE and private operators in need of affordable housing.** Because a housing allowance will not increase the supply or improve the quality of existing housing, it should be coupled with investments in new housing. A housing allowance can be rolled out in the near-term to reduce employee housing costs while new housing is under development. \$10 million could cover annual housing costs for over 1,400 CAL FIRE entry-level employees, over 13% of the agency's current workforce.<sup>49</sup> However, a housing allowance has the potential to benefit considerably more seasonal firefighters who would not require a full year of housing while employed by CAL FIRE. Beyond state employees, consideration should be given to making housing allowance grants available to private operators in geographies where housing is available but where employees face high housing costs. This pilot would test the demand for a housing allowance within the forest restoration industry, as well as the effectiveness of this tool with respect to retention and hiring.
- **\$5 million to conduct a mental health needs assessment of CAL FIRE firefighters and implement a subset of near-term solutions.** The goal should be to identify additional mental health resources, as well as any changes to working conditions, necessary to support, retain and grow CAL FIRE's firefighting workforce and the associated costs. This assessment should be conducted by a third-party with expertise in work-related trauma. \$5 million should be considered a starting point, to fund urgent needs, with the intent to provide additional funding once the needs assessment has identified additional investments required.
- **Evaluate the additional investment and policy change needed to ease the transition of formerly incarcerated firefighters to the workforce.** Given the shrinking number of wildland firefighters in California, it is critical to enable those desiring to enter this sector of the restoration workforce. This evaluation should identify the magnitude of additional funding needed to scale up the capacity of job training programs, as well as any necessary changes to laws, such as AB 2147, intended to allow for the expungement of former Fire Camp participants.

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50 Assuming GS-5, Step 1 residing in the Tahoe Basin, for illustrative purposes.

## ► Federal Policy and Funding

- **Increase the pay of California-based USFS employees to equal, at a minimum, their CAL FIRE counterparts.** USFS faces a real threat to its efficacy in California if it does not pay at least on par with its main state counterpart, CAL FIRE. This intervention should go beyond recent efforts to increase the pay of federal wildland firefighters, and include all USFS workers in California, since forest restoration cuts across numerous job classifications and is hard to isolate in specific positions. Pay parity should include abolishing hazard pay for USFS firefighters to align with the practices of CAL FIRE. The full cost of federal-state pay parity needs to be determined, based on agency data on existing employees and recruitments. Given CAL FIRE's own attrition problems, consideration should also be given to pay parity with local firefighting agencies in California. This strategy should be combined with investments in housing (below), where wage increases achieve parity between USFS and state and private counterparts, while providing housing and housing allowances close the remaining gap between wages and high housing costs.
- **\$10 million to pilot a housing allowance for California-based USFS employees and operators in need of affordable housing.** \$10 million could cover annual housing costs for around 1,300 USFS entry-level employees, roughly 18% of the USFS workforce currently needed in California.<sup>50</sup> Similar to the recommendation for employees of CAL FIRE and private operators, a housing allowance could be run as a pilot to determine its impact on hiring and retention of USFS personnel in California.
- **Reauthorize USFS's authority to build housing on its administrative sites in the 2023 Farm Bill.** Originally authorized in the 2018 Farm Bill, the Forest Service Flexible Partnerships Act expires in 2023, unless reauthorized. USFS has several efforts underway to develop housing on the Tahoe and Inyo NFs that will not be under contract by 2023 and are, therefore, at risk if this new authority is not reauthorized. Given the long timelines and considerable resources required to develop new housing, extending this authority indefinitely and funding additional positions for California national forests intending to use this authority should also be considered.
- **Evaluate the impact of recent mental health investments and where necessary, provide additional resources.** While an important step forward, it is too soon to tell if the new federal interagency mental health program for wildland firefighters will address the current mental health crisis. Going forward, it will be important to track the impact of this new program on firefighting mental health and well-being and improve it, where necessary. Responses to the 2022 Wildland Firefighter Survey present one opportunity to serve as a baseline against which to measure progress following implementation of the new mental health program.



## CONCLUSION

California has seen some of the nation's most destructive wildfires in recent years, a trend that is set to continue with climate change. The state and federal governments have set ambitious goals to treat 1 million acres of California forestland per year, coupled with large sums of public funding for wildfire prevention and forest resilience. But without a sufficient and sustainable workforce, these funds will sit on the sidelines, and California's communities and ecosystems will remain at risk. Significant, structural changes are needed if we are to reverse the historic decline of California's forest industry, combined with recent attrition from retirement, burnout and cannibalization by other parts of the industry, as well as difficulty competing with other industries that offer better pay and working conditions. Increased investments in pay, housing, mental health care and removing barriers to entry are essential if we are to restore California's forests before, rather than after, they burn. California is often a leader in environmental protection, and we have an opportunity to get it right before it's too late and restore our forests to healthy and resilient landscapes.





