

CAMP FIRE REGIONAL ECONOMIC IMPACT ANALYSIS

Presentation based on
the January 2021 Final Report
prepared by EPS and IEc

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Economic & Planning Systems, Inc.
The Economics of Land Use

IEc Industrial Economics,
Incorporated

EPS Sacramento Office
P.O. Box 340176 ■ Sacramento, CA 95834
916.649.8010 ■ www.epsys.com

Consultant Team

EPS

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PUBLIC FINANCE
LAND USE & TRANSPORTATION
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FISCAL & ECONOMIC IMPACT ANALYSIS
HOUSING POLICY
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APPLIED ECONOMICS
FINANCE & FORENSIC ANALYSIS
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STUDY PURPOSE AND APPROACH

Provide the Tri-County Region's business community with information needed to make decisions regarding resuming and maintaining business operations in the Region in the wake of the 2018 Camp Fire.

- Characterize the regional economy immediately before and after the Camp Fire
- Estimate the impact of the Camp Fire on the regional economy
- Develop short-term regional residential and employment growth scenarios
- Summarize insights gained through our outreach and data collection efforts regarding the short-term implications of this event on the Region



Source: <http://adunnphotography.blogspot.com>

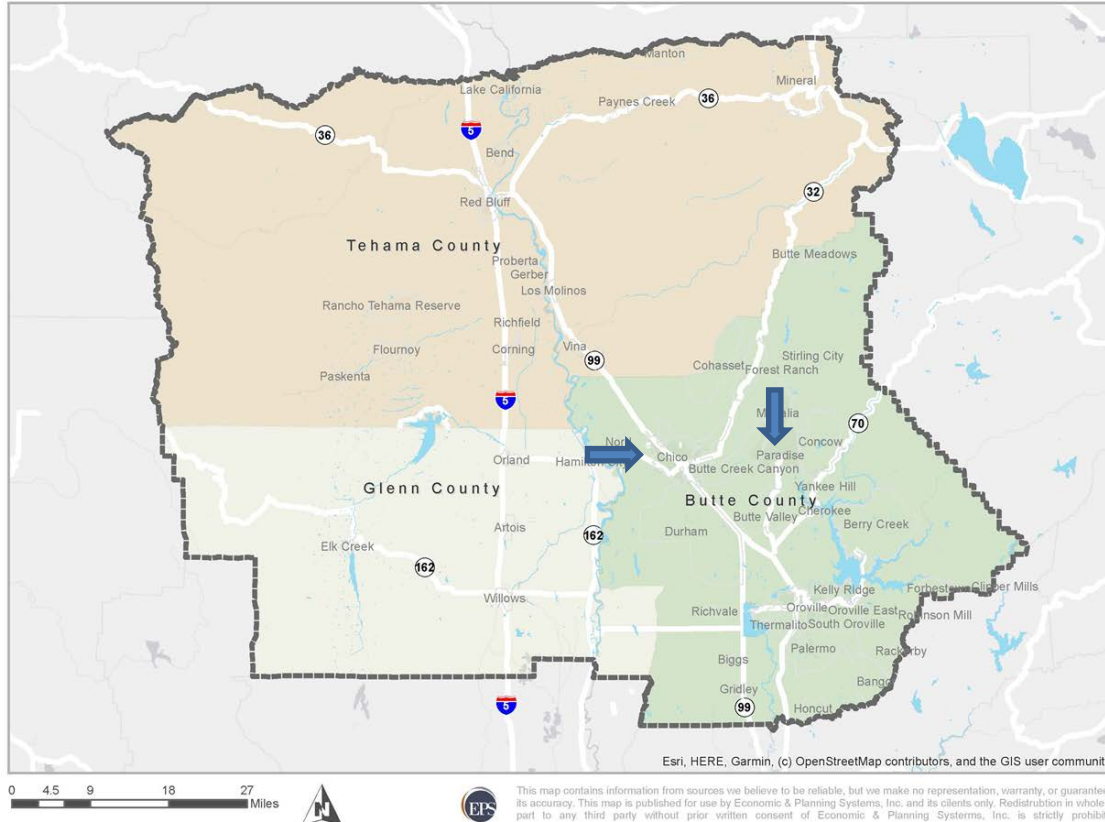


Source: <https://www.actionnewsnow.com>

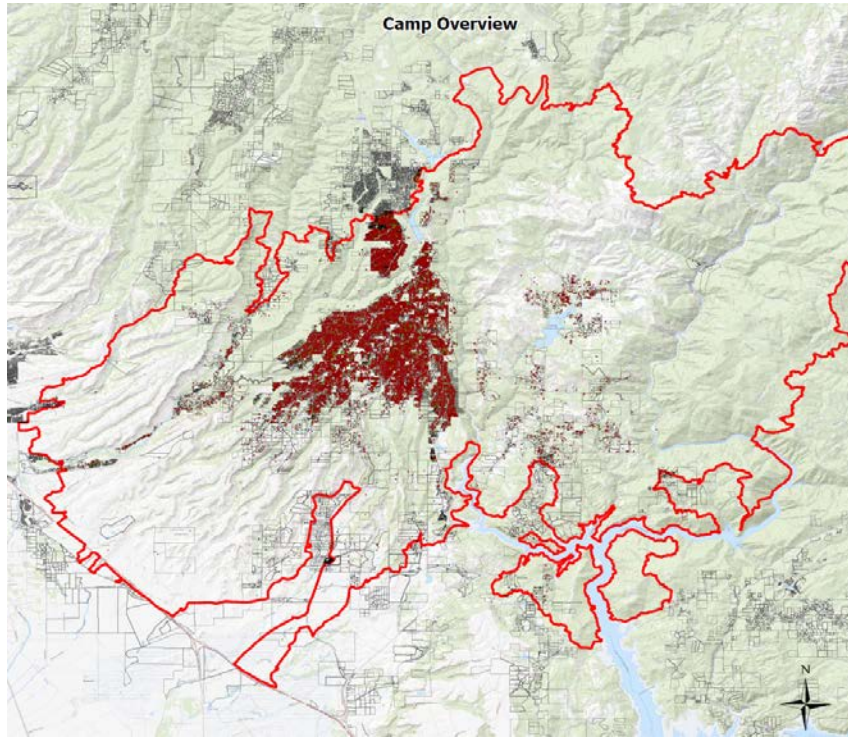
REGIONAL CONTEXT



TRI-COUNTY REGION



2018 CAMP FIRE



Source: GIS data provided by the Town of Paradise.

- 86 people lost their lives
- Burned over 150,000 acres of land
- Impacted almost 19,600 structures
 - 96% considered destroyed
- Destroyed structures included:
 - 14,000 housing units
 - 530 commercial buildings
 - Thousands of infrastructure/utility structures
- \$8.4 billion in insured losses

2018 CAMP FIRE



Photo: Noah Berger/AP



Photo: Jim Wilson/N.Y. Times

2018 CAMP FIRE

POPULATION IMPACTS

- The Region lost 14,500 residents following the Fire
- The Camp Fire resulted in substantial inter-regional shifts in population
- The significant population loss contributed towards a significant reduction in the number of commercial businesses in operation in Ridge Communities

Jurisdiction	Population Total		Population Change	
	2018	2020	Total	% Change
Butte County				
Biggs	1,985	1,852	(133)	(6.7%)
Chico	92,286	110,326	18,040	19.5%
Gridley	6,863	6,402	(461)	(6.7%)
Oroville	17,896	19,440	1,544	8.6%
Paradise	26,256	4,631	(21,625)	(82.4%)
Unincorporated	81,088	67,640	(13,448)	(16.6%)
Total Butte County	226,374	210,291	(16,083)	(7.1%)
Glenn County				
Orland	7,834	8,323	489	6.2%
Willows	6,115	6,208	93	1.5%
Unincorporated	14,561	14,869	308	2.1%
Total Glenn County	28,510	29,400	890	3.1%
Tehama County				
Corning	7,527	7,620	93	1.2%
Red Bluff	14,133	14,245	112	0.8%
Tehama	438	445	7	1.6%
Unincorporated	42,331	42,819	488	1.2%
Total Tehama County	64,429	65,129	700	1.1%
Tri-County Region	319,313	304,820	(14,493)	(4.5%)

Source: California Department of Finance, Report E-5, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011 – 2020, with 2010 Benchmark; EPS.

KEY STUDY CHALLENGES

- Estimate impact of the fire on the regional economy immediately (study initiated in November 2019)
 - Precluded a retrospective analysis of changes in GRP or other measures using quasi-experimental designs
- Address changes in factors of production, including: natural, produced, and human capital
 - Timing and resources precluded building a CGE model for the region
- Address concerns of multiple stakeholders
 - Different models required depending on geographic scope (the Ridge, City of Chico, and the broader Tri-County region)

ECONOMIC IMPACT ANALYSIS

METHODOLOGY

- Estimated the change in Gross Regional Product (GRP) that may have resulted from the Camp Fire.
 - GRP is a commonly-used metric measuring the economic welfare, or well-being, of a society or region. It measures the amount of goods and services produced in the Region in a given year.
 - Identified key changes in employment and spending patterns that likely resulted from the Fire.
 - These changes are used as inputs to IMPLAN, an input-output model, to calculate the impact of these changes on GRP.

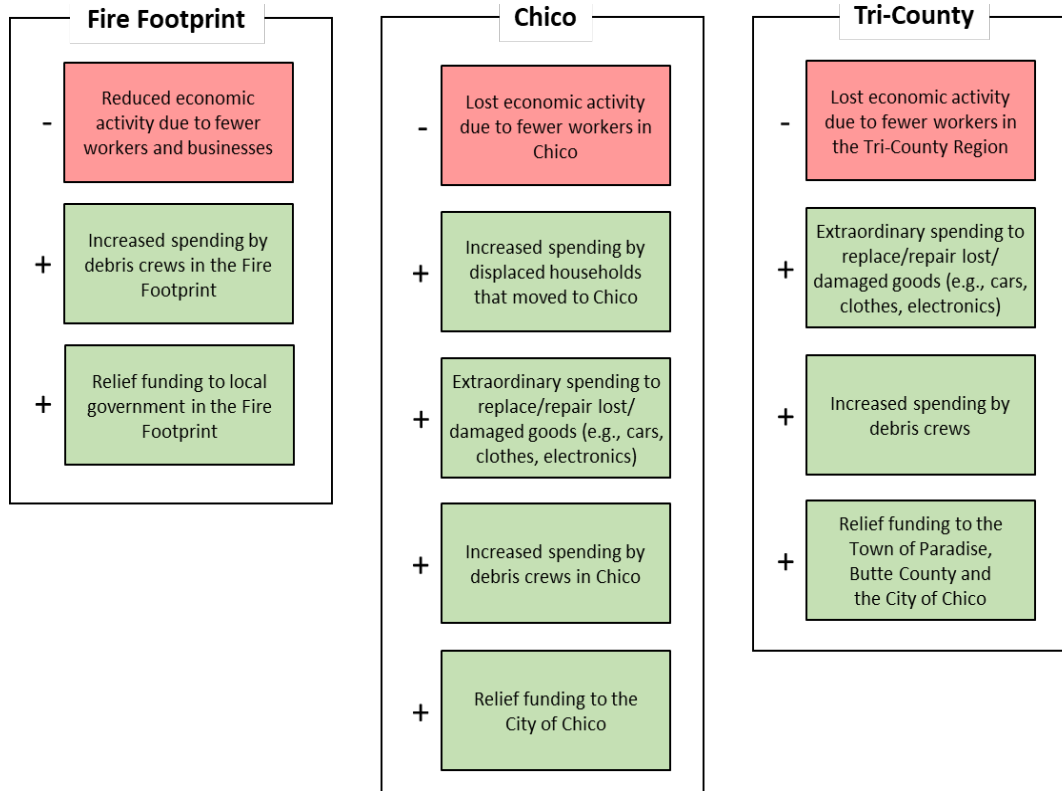
PRE-FIRE REGIONAL SOCIOECONOMIC CONDITIONS

PARADISE SOCIOECONOMIC CONDITIONS (2018)

- Second most populous incorporated municipality in the Region (over 26,000 residents).
- Served as an affordable housing enclave for service and trades-based workers as well as a large proportion of retired residents.
- Economy was almost entirely composed of employment in local-serving activities (over 95% of jobs), and recent employment gains were also almost entirely local-serving.
- Most residents (70%) commuted to work outside of Town.
- The Town's largest employer, Adventist Health, which operated the Adventist Health Feather River and related health care services in the Town employed about 1,250 staff, over half of whom resided in the Paradise Ridge.

ECONOMIC IMPACT ANALYSIS

KEY ECONOMIC EVENTS: FIRST-YEAR POST FIRE



ECONOMIC IMPACT ANALYSIS

CHANGE IN GROSS REGIONAL PRODUCT: FIRE FOOTPRINT

Impact Category	Income-based approach	Expenditure-based approach
Lost value added or final demand	-82.4%	-64.7%
Increased spending by debris removal and recovery crews	0.9	0.9
Local government revenue backfill	0.2	N/A
Increased government spending	0.1	0.1
Total	-81.1%	-63.6%

- To evaluate the reasonableness of these estimates, we also obtained historical sales tax data and applied the percent reduction in sales indicated by these data to the relevant industry sectors (including near total loss of the Health Care and Social Assistance sector). The result is a decline in GRP of 57%.

ECONOMIC IMPACT ANALYSIS

CHANGE IN GROSS REGIONAL PRODUCT

Impact Category	City of Chico	Tri-County Region
Lost worker output at local businesses and organizations	-2.6%	-5.2%
Increased routine household spending by new residents living in the region	0.4	N/A
Extraordinary spending to replace household goods lost in the fire	4.8	2.7
Extraordinary spending to replace automobiles	0.5	0.3
Increased spending by debris removal and recovery crews	0.8	0.6
Increased government spending	<0.1	0.1
Total	4.0%	-1.6%

Source: IEC calculations.

ECONOMIC IMPACT ANALYSIS

IMPORTANT CAVEATS

- Input-output models, such as IMPLAN, are **static models**, where mathematical relationships and linkages between households, businesses, and government entities are fixed.
 - In other words, they do not allow for adaptation, and are generally more useful in the context of **small, incremental shocks** to an economy.
 - Thus, all of these estimates should be viewed as providing information about the **magnitude of potential changes**, rather than precise estimates of the likely impact.
- GRP provides an incomplete picture of the impact of the fire on economic well-being.
 - **Certain losses, such as human or produced capital stocks, are not completely captured in this metric.**
 - The absence of such losses is important because human capital (e.g., workers) and produced capital (e.g., infrastructure, homes) are necessary for future economic production.

DISCUSSION & QUESTIONS

FULL REPORT AVAILABLE AT

<https://3coreedc.org/wp-content/uploads/2021/03/Camp-Fire-Regional-Economic-Impact-Analysis-January-2021.pdf>

CONTACT INFORMATION



Amy Lapin, Project Manager

Economic & Planning Systems, Inc.

P.O. Box 340176
Sacramento, CA 95834
916-649-8010
alapin@epssac.com



Jennifer Baxter, Principal-in-Charge
Christine Lee, Project Manager

Industrial Economics, Inc.

2067 Massachusetts Ave
Cambridge, MA 02140
617-354-0074 x169
JBaxter@indecon.com
CLee@indecon.com