John Meyer

The Ecology of Work Relief

Long Term Policy Lessons From the Civilian Conservation Corps

Abstract:

The Civilian Conservation Corps was a work relief program created by executive order in 1933 with the dual mandate of easing structural unemployment and engaging in large scale conservation and infrastructure projects. Issues related to the environment are often framed as the tradeoff between efficiency and welfare where actions taken to amend environmental conditions will be at the cost of economic productivity but the CCC is a historical example of a policy intervention that succeeded in improving both environmental and economic conditions. In this paper I demonstrate the empirical evidence that this program was not only a short term solution to the issues of persistent unemployment and ecological degradation but had significant positive long term effects on the income and employment patterns of the counties where the CCC operated. I will be using historical panel data spanning from the early 20th century to the present, identifying where and when the sites were operational, demonstrating empirically the impact that the program had using difference in differences estimation as well as synthetic control method to isolate the effect of the intervention. I will ultimately be showing that the program functioned as a place based approach to rural development, enhancing the conditions of the specific counties depending on the location and number of sites operated compared with counties where there was no CCC intervention.

Introduction:

Structural unemployment and ecological degradation are often framed as an example of the tensions between efficiency and welfare where actions taken to amend environmental conditions will be at the cost of economic productivity. In this paper I will be showing that this is not necessarily the case, with work relief programs and job guarantees acting as a mechanism by which the state can begin to resolve these two respective issues, addressing environmental concerns without sacrificing efficiency. In order to preempt the current climate crisis and meet the demands of a changing economy it is necessary to look back at the precedent set by policies of the past that were meant to address similar conditions in order to determine the relationship between economic and ecological outcomes. The Civilian Conservation Corps is an example of the possibility that exists in this policy space as an illustration of the potential to generate long run returns in the form of higher employment and wages as well as promote more productive land use. In this analysis I will be examining the effects of the early conservation work of the CCC and evaluating its impact and efficiency at generating beneficial long term economic and

environmental outcomes in general and breaking these effects down into subgroups of significance.

Background:

Periods of structural economic transformation result in persistent unemployment until the labor force is able to move geographically and sectorally to meet the changing demand for labor. The premier case of this phenomena is the Great Depression and the United States transition from agriculture to manufacturing. Following the stock market crash of 1929, unemployment soared with roughly one in four workers unemployed.[1] In rural regions in particular, the failure of the market to adjust to an agricultural price collapse by shifting labor to higher paying jobs elsewhere resulted in an enduring economic downturn.[2] The first steps towards recovery were the New Deal policies of the Roosevelt administration, aimed at stimulating the economy with the US fully recovering through the mass mobilization of manufacturing needed to fight in the Second World War. Similar to the stock market crash of 1929, first the housing market collapse in 2007 and now the 2020 pandemic and its consequences were flashpoints in revealing the fundamental changes in the composition of US jobs, this time highlighting the transition from traditional manufacturing to a service based economy. Unemployment hit a high of nearly 15% in April 2020 and currently sits around 5% as of October of 2021, well above full employment levels.[3] Once again the rate of unemployment remains elevated and workforce participation depressed, because the stimulus policies used can only functionally address cyclical unemployment and fails to confront the underlying structural shift. Amidst the concerns over the state of employment and the economy there is the ever growing specter of environmental cataclysm, spurred by the fundamental breakdown of markets and a failure to adjust and resolve the conditions that drive climate change in a timely manner. There has been both a market and policy failure in curbing the pollutants and other externalities that are contributing to rise in global temperatures and extreme weather events, necessitating a bolder approach to the issue through direct government intervention. At the intersection of ecology and economy the set of policy initiatives collectively known as “The Green New Deal” allude to the precedents of this set by FDR’s eponymous New Deal, these represent a series of infrastructure and jobs programs oriented not just towards the structural changes present in the economy but towards the looming climate crisis. The reference is no coincidence and we can look at the precedents set by the New Deal Policies to get a better idea of how large-scale spending on environment and conservation can have additional benefits in the realm of employment and infrastructure.

The most relevant of the New Deal policies is Executive Order 6101, establishing The Civilian Conservation Corps. Approved March 31, 1933 this order created a voluntary work relief program that hired unemployed individuals to work on environmental conservation

[1] Gailbraith, John Kenneth. *The Great Crash 1929.* 168
[2] Stiglitz, Joseph. “Structural Transformation, Deep Downturns and Government Policy” 7
[3] Bureau of Labor Statistics. “Civilian unemployment rate.” October 2021

projects around the US, and is considered to be one of the most successful of the New Deal programs.[4] The formation of the Civilian Conservation Corp was not an independent policy decision but fit into the context of a wide range of policies meant to reinvigorate the stalling American economy including the establishment of the Public Works Administration and Civil Works Administration. The core policy problem that the Roosevelt administration was hoping to address with this executive action was the labor supply and demand discrepancy across the country with the CCC acting as a vehicle for the relocation of unemployed young men on the East Coast to the West Coast. The CCC would additionally serve as a means of building human capital providing vocational training, and more general education opportunities that would be otherwise unavailable to the laborers. This was in principle a work relief program, aimed at alleviating the worst of the conditions of unemployment and offering income for a large sector of the population. The additional problem that the CCC was meant to address was the ecological degradation and waning timber resources that were occurring as a result of unsustainable growth. Alongside the great depression was the agricultural and ecological disaster that was the result of a combination of drought and overworking agricultural land. The CCC would be engaged in reforestation and other sustainability efforts in order to achieve the dual mandate of economic recovery and ecological conservation.[5] This was in essence a solution to the problem of employment and land use with the government acting as an intermediary to overcome the costs associated with connecting the two misallocated resources. Congress never established the Civilian Conservation Corp as a permanent agency and the CCC was dissolved in 1942 as resources were shifted to the war effort. Though the CCC only lasted for roughly a decade it had a significant impact on the construction of public infrastructure and the formation of the modern National Parks Service.

Once again faced with the problem of structural unemployment and ecological devastation it is important to revisit programs that have been implemented in the past and evaluate their successes and shortcomings. Analyzing the long term implication of the order establishing the Civilian Conservation Corps requires that we identify the criteria by which the policy solution is being evaluated and demonstrate how they are related to stakeholder wellbeing. The first of these criteria is related to the economic outcomes of the program; does the presence of CCC sites increase the long term employment rates and income level of a county? Second criteria evaluates the ecological dimension of the program; does the presence of CCC sites decrease the long term damage from weather events such as flooding and forest fires? While the effect of endogenous policy decisions makes it difficult to isolate the effects of the CCC on a macro level, records of camp and project locations can be matched with other county level data to measure the economic and environmental outcomes in communities where this program was operational. This will allow for panel data analysis of the different outcomes in environmental quality and economic opportunity based on the quantity of CCC camps found in a given county. Looking back at the developments that result from this executive order I will be able to

[4] Roosevelt, Franklin D. Executive Order 6101, Starting The Civilian Conservation Corps.
[5] Fechner, Robert. The Civilian Conservation Corps Program (1937)

determine the impact of environmental policy as work relief on both the long term economic health and environmental conditions of a county.

Data and Methods:

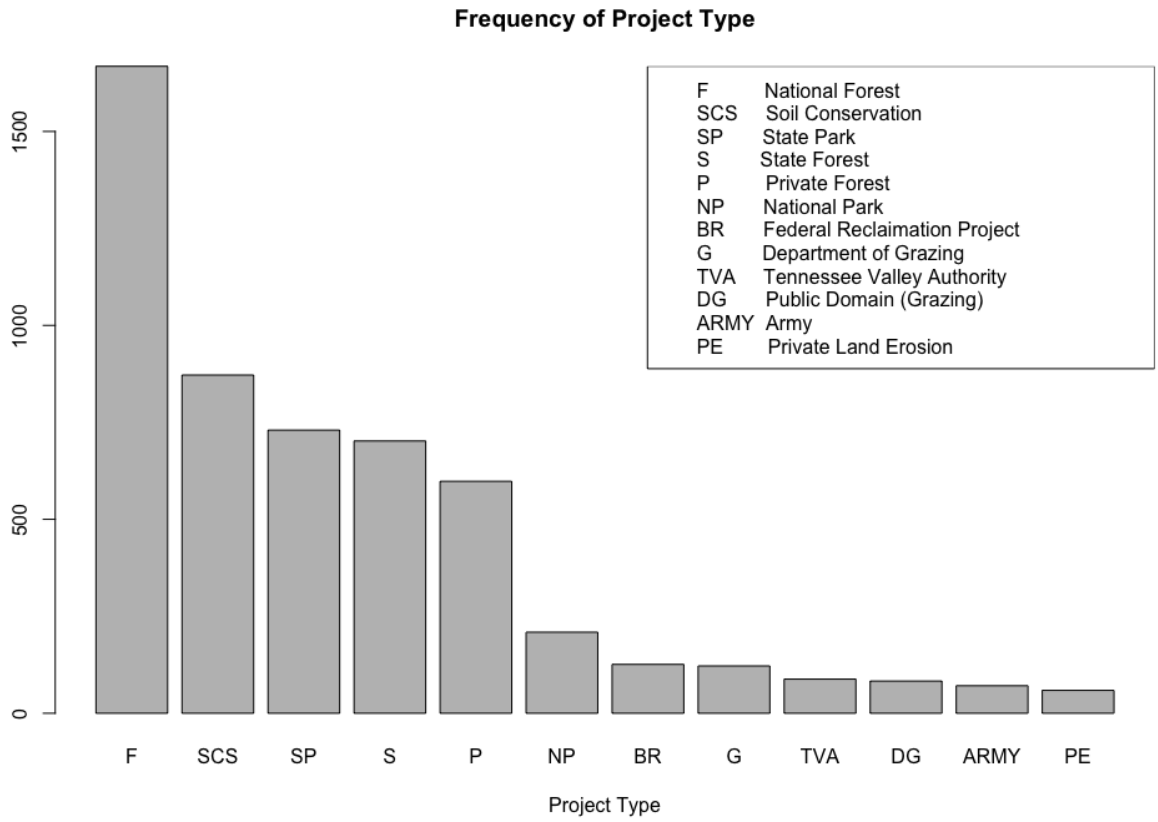
In this analysis, I will be aiming to answer two central questions regarding the CCC,

1. *Did early conservation efforts have long term effects on the economic and ecological conditions of a county?*
2. *Through what mechanisms, specifically what economic sectors and ecological processes do these different outcomes occur?*

I will be using a series of regressions demonstrating the effect of CCC sites as a continuous and dummy variable to perform my initial analysis before looking at subgroups of interest including different timeframes and economic sectors of interest. I will be utilizing several different data sets in order to determine the causal impact of the CCC camp locations on a series of economic and ecological indicators at the county level. I will be able to decompose these results across the different subgroups of each data set, looking at types of economic activity and land use to determine the areas where the CCC have the greatest effect on long term outcomes. The regressions will be using time series data and will contain fixed effects for both year and the state in order to control for trends over time as well as different state level policies that might confound the impact of the CCC. Hopefully in this analysis I will be able to find a significant relationship from the entire set of counties but I will additionally be looking for similar cases that can be used to demonstrate qualitatively why the observed outcomes have occurred. By looking at a few case studies I will be able to more clearly demonstrate the causal relationship and explain how the CCC affects the long term ecological and environmental health of a county.

Results:

An important factor in the impact of CCC site placement on long term outcomes is the type of project being undertaken. Of the thousands of sites there were twelve different kinds of projects, distinguished by region, type of land and the general aim of the work being done. Below you can see the visualization of the frequency of project type, showing that forest projects made up the majority of CCC



National Forest projects were mostly aimed at reforestation, and included planting trees, clearing brush, forest fire fighting and prevention, as well as pest control on national forest land. These projects were in conjunction with the United States Forest Service and were primarily oriented towards conservation with minimal infrastructure development and land enhancement mostly confined to service roads and camp buildings.

Soil Conservation projects were focused aiding farmers on widespread agricultural issues such as soil erosion and depletion, introducing more sustainable practices and developing US agriculture infrastructure. In coordination with what would become the Department of Agriculture's Soil Conservation Service, these projects included damming, irrigation, planting vegetation and other projects to improve farm output and sustainability.

State Park projects were intended to create state parks, particularly near urban centers in order to provide leisure and recreational opportunities for people confined to the large cities. These projects were completed with various states and localities public parks services, with a focus on providing access to nature through the construction of roads, bridges, trails, campgrounds, buildings and other amenities.

State Forest projects were similar in nature to the National Forest projects but were enacted on state land. These projects included the same kinds of conservation work as the

national projects focusing on reforestation and ecology work with only minor infrastructure improvements including things like fire towers and roads.

Private Forest projects were again the same kind of improvements and work as the state and national forest work sites but were performed on private land. The federal government would intervene and regulate logging and water use on private lands as well as state and federal lands with the CCC conducting the same range of reforestation projects on privately held land.

National Park projects were intended to fulfill the same purpose as the state parks and included many of the same kinds of work, constructing various roads, trails and structures throughout existing and soon to be established national parks. These projects were undertaken in conjunction with the National Parks Service and were oriented towards leisure and recreation activities building the infrastructure that would be the foundation for the modern national parks system.

Federal Reclamation projects were primarily concerned with managing and maintaining water and resources focusing on water shortages and drought relief. Performed in coordination with the Department of the Interior Bureau of Reclamation, these projects included dams, irrigation, canals, reservoirs and other infrastructure aimed at supporting agricultural and urban development particularly out West.

Department of Grazing projects were undertaken through the Department of Agriculture in order to improve the condition of grazing land used by ranchers, by providing access to water, building basic ranching infrastructure, and introducing more sustainable land use policies. This involved reseeding land, constructing wells, roads, fencing, and corrals, as well as managing pests and predators that might impact cattle.

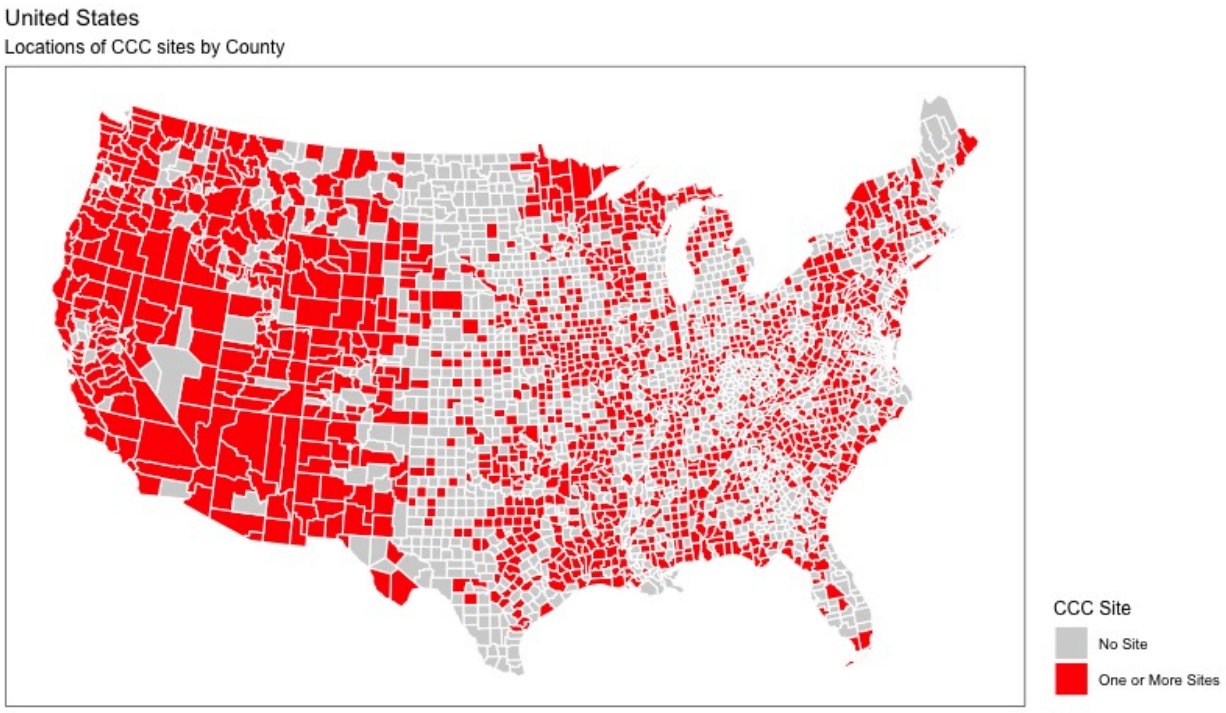
Tennessee Valley Authority (TVA) projects were a specific subset of the CCC with a regional focus on the Tennessee Valley rather than a specific project type, engaging in a wide variety of conservation and public works projects. While engaging in many of the same activities as the other kinds of CCC sites, the TVA was additionally tasked with developing the region through providing access to utilities and proper land use practices.

Public Domain (Grazing) projects were affiliated with the Grazing Service with the intent of restoring the public lands that were used for grazing cattle, and providing public goods to ranchers. This meant working on roads, cattle dips, pest control and other similar department of grazing projects but on public land to be used by ranchers.

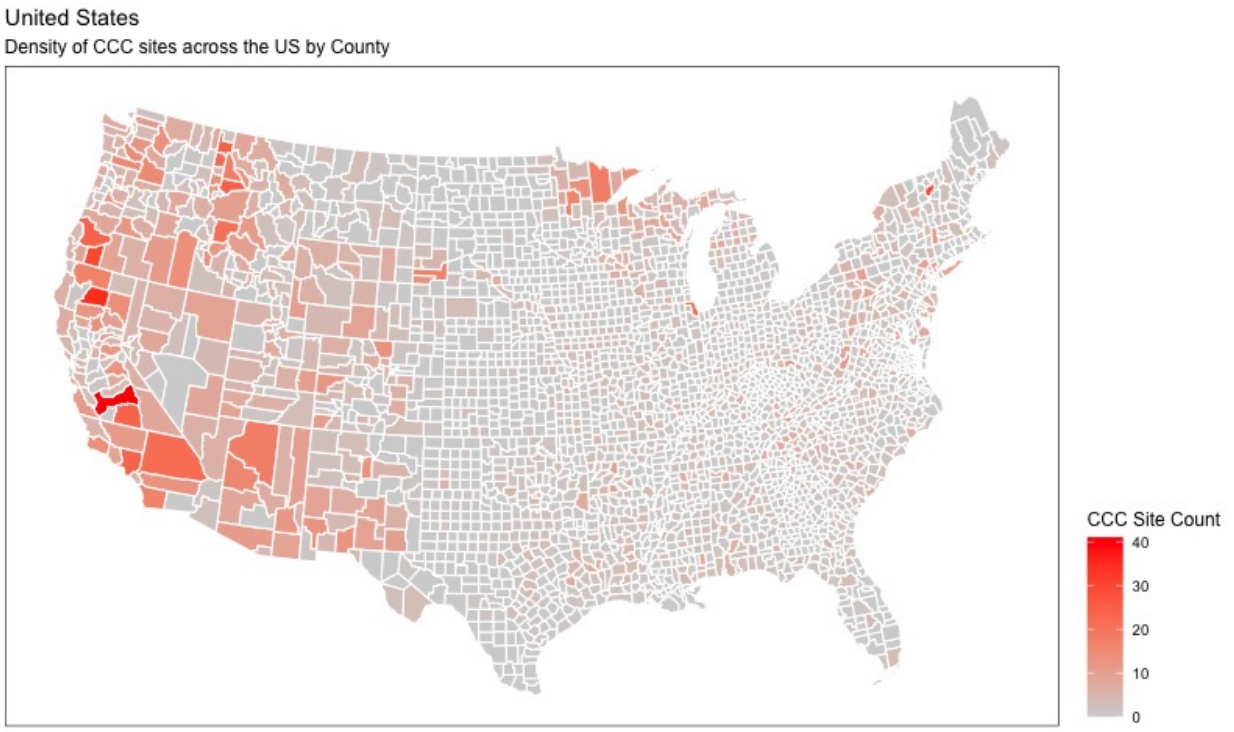
Army projects were mostly improvements to existing army and national guard installments around the United States. This included the construction of housing, barracks, mess halls, leisure areas and parks on base as well as maintaining and updating the existing infrastructure. These projects were undertaken in coordination with the Army and other new deal agencies like the Public and Civil Works administrations.

Private Land Erosion projects had a similar mission to the soil conservation projects, with the aim of preventing soil erosion and promoting more sustainable land use practices. This involved reforestation, irrigation and other measures meant to mitigate flooding and retain topsoil on private agricultural lands.

The Civilian Conservation Corps operated most heavily on the West coast of the United States with notable locations including famous parks like Grand Canyon and Yellowstone. Based on contemporary reports by the programs director Robert Fechner, the program was able to provide young men work opportunities that would give them better opportunities in the future and send money to their families. Most of the evidence of this is anecdotal, with an employer quoted as saying he would be more likely to hire a former CCC laborer, indicating that the program was able to provide value to its workers beyond their initial wages.[6] This is important in the long term impact on employment and wages for an individual employed by the program, where they will in the long term have greater opportunity and income than if they had not participated in this program. Individual records of the CCC laborers are difficult to attain so the level of analysis will be on counties in the continental United States.



[6] Fechner, Robert. The Civilian Conservation Corps Program (1937), pg 139



This heat map demonstrates the frequency and general distribution of CCC sites across the contiguous United States. While the map of site presence makes it appear as though the distribution is roughly even across the US it is clear from the frequency of sites that the focus of the program was the Western US. This is because the CCC contributed to the construction of much of the national parks and forest system that still exists today as well as significant development of the infrastructure that was necessary for migration West through the 20th century.

The distribution of camps demonstrates the sort of East to West frequency of camp operations and shows that the program was largely centered on undeveloped land in the Western half of the country. These areas required investment in infrastructure that was not supplied by the private sector due to sunk costs, requiring government intervention to cover the initial development in these areas. If this is the case we can expect to see that the operation of the CCC in a county would result in the further development of a county, bringing in more jobs and income as well as shifting the land use relative to counties where the CCC was not operational.

Effect on Employment

	Dependent variable:					
	`Log Total Employment`		`Log Forestry and Conservation`		`Log Parks and Historic Sites`	
	(1)	(2)	(3)	(4)	(5)	(6)
Sites	0.035***		0.036***		0.006***	
	(0.001)		(0.001)		(0.001)	
`Site Dummy`		0.278***		0.140***		0.042***
		(0.007)		(0.005)		(0.005)
Population	0.00000***	0.00000***	-0.00000***	-0.00000***	0.00000***	0.00000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	159,717	159,717	159,717	159,717	159,717	159,717
R^2	0.917	0.917	0.200	0.196	0.275	0.275
Adjusted R^2	0.917	0.917	0.199	0.195	0.274	0.274
Residual Std. Error (df = 159613)	1.275	1.271	0.862	0.864	0.910	0.910
F Statistic (df = 103; 159613)	17,094.960***	17,205.760***	386.502***	377.202***	587.111***	587.488***
Note:						*p<0.1; **p<0.05; ***p<0.01

We can see from the output that the presence of CCC sites is positively correlated with total employment as well as forestry and conservation employment and to a lesser extent, parks and historic sites. There is both an overall positive positive effect for the operation of CCC camps as well as a marginal effect from each additional camp.

One of the most pertinent indicators of economic health is employment. The initial goal of the program was to provide temporary work relief, relatively low paying work to try and restart the economy. These were the primary goals at the time but after the end of the program, the counties where the CCC was operational may see elevated employment due to infrastructure and conservation maintenance as well as the other jobs that come with increasing economic development. Based on the employment regression outputs we can clearly see that there is a positive effect on employment that is significant at an alpha level equal to 0.01. For each additional site that operates within a county we would see a marginal increase of 3.5% in the total employment or alternatively a 27.8% increase in employment in any county where the CCC operated, relative to counties where they did not. We see this effect also appear in employment in the forestry and conservation secor with a marginal effect of plus 3.6% and binary effect of plus 14%. This confirms the hypothesis that the CCC spurred not only short term employment but generated long term opportunities for employment, specifically in conservation and forestry positions.

Effect on Income by Decade (Continuous)

	Dependent variable:				
	`log Income`				
	1970s	1980s	1990s	2000s	2010s
	(1)	(2)	(3)	(4)	(5)
Sites	0.033***	0.036***	0.038***	0.037***	0.035***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Population	0.00000***	0.00000***	0.00000***	0.00000***	0.00000***
	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	30,579	30,681	30,745	30,765	30,810
R^2	0.508	0.495	0.498	0.496	0.489
Adjusted R^2	0.507	0.494	0.497	0.495	0.488
Residual Std. Error	1.001 (df = 30517)	1.029 (df = 30619)	1.067 (df = 30683)	1.094 (df = 30703)	1.103 (df = 30748)
F Statistic	516.464*** (df = 61; 30517)	492.303*** (df = 61; 30619)	498.374*** (df = 61; 30683)	495.184*** (df = 61; 30703)	481.560*** (df = 61; 30748)
Note:					*p<0.1; **p<0.05; ***p<0.01

The marginal effect of CCC site operation is increasing from the 1970's through the 1990's before declining slightly in the 2000's and 2010's. The difference in marginal increase between decades is not great enough to be significant over the 50 years that data is available for.

Effect on Income by Decade (Dummy)

	Dependent variable:				
	`log Income`				
	1970s	1980s	1990s	2000s	2010s
	(1)	(2)	(3)	(4)	(5)
`Site Dummy`	0.274***	0.290***	0.305***	0.309***	0.294***
	(0.012)	(0.012)	(0.013)	(0.013)	(0.013)
Population	0.00000***	0.00000***	0.00000***	0.00000***	0.00000***
	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	30,579	30,681	30,745	30,765	30,810
R^2	0.513	0.500	0.503	0.501	0.493
Adjusted R^2	0.512	0.499	0.502	0.500	0.492
Residual Std. Error	0.996 (df = 30517)	1.024 (df = 30619)	1.061 (df = 30683)	1.089 (df = 30703)	1.098 (df = 30748)
F Statistic	526.495*** (df = 61; 30517)	502.479*** (df = 61; 30619)	508.879*** (df = 61; 30683)	505.722*** (df = 61; 30703)	490.933*** (df = 61; 30748)
Note:					*p<0.1; **p<0.05; ***p<0.01

Looking at the dichotomous effect on income separated by decade it is evident that the effect of the CCC operating in a county is increasing from the 1970's through the 2000's before declining slightly in the 2010's. This is potentially indicative of increasing returns on investment over a 60 year period.

Returning to the short term goals of the program, the jobs generated by the initial CCC program were low paying and hardly provided a liveable income for those who were employed in the program. However, part of the mission of this program was to forgo high pay in favor of human capital development and potential for greater future earnings. The CCC report stated that there was success in giving laborers skills that they might transfer to other positions.[7]

Income is affected over the long term according to the regression output results. Broken down by decade we see that in the continuous output there is a slight upward trend in the coefficients until the 1990's and a brief decline. An effect of 3.3% in 1970's increases to 3.8% in the 1990's before declining to 3.7% in the following decade and dropping to 3.5% by the 2010's. This indicates that rather than a temporary boost to the baseline income level, the counties with CCC sites see increasing returns to each site over time, with the difference reaching its peak 50 years later. This trend is even more significant in the binary analysis, where counties where the CCC operated go from a 27% increase in income in the 1970's to a 31% increase in the 2000's. The 4% increase in effect over time is a significant amount of growth that confirms this theory that the initial investment results in a long term path divergence that results in compounding long term benefits.

Effect on Land Use

	Dependent variable:					
	`Forest Proportion`		`Federal Proportion`		`Log Roads`	
	(1)	(2)	(3)	(4)	(5)	(6)
Sites	0.022***		0.015***		0.062***	
	(0.0005)		(0.001)		(0.006)	
`Site Dummy`		0.101***		0.043***		0.286***
		(0.002)		(0.005)		(0.031)
Population	-0.00000***	-0.00000***	-0.00000***	-0.00000***	-0.00000***	-0.00000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.00000)	(0.00000)
Year Fixed Effects	No	No	No	No	No	No
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	25,740	25,740	3,032	3,032	3,066	3,066
R^2	0.564	0.556	0.580	0.548	0.541	0.537
Adjusted R^2	0.563	0.555	0.573	0.540	0.533	0.529
Residual Std. Error	0.182 (df = 25700)	0.184 (df = 25700)	0.116 (df = 2982)	0.120 (df = 2982)	0.799 (df = 3013)	0.803 (df = 3013)
F Statistic	850.929*** (df = 39; 25700)	824.274*** (df = 39; 25700)	83.911*** (df = 49; 2982)	73.646*** (df = 49; 2982)	68.218*** (df = 52; 3013)	67.138*** (df = 52; 3013)
Note:						*p<0.1; **p<0.05; ***p<0.01

Land use and infrastructure are also affected by the presence of CCC sites. We see an increase in the proportion of county land that is forested as well as an increase in the proportion of federal land. Additionally we see a substantial increase in the miles of road in a county based on CCC operation.

There is a clear relationship between the location of CCC sites and land use by county. First, the proportion of forested land increases by 2.2% for each site located in a county and a

[7] Fechner, Robert. The Civilian Conservation Corps Program (1937), pg 134

dichotomous increase of 10.1% relative to counties where no CCC sites are present. With the CCC being a federal program that was closely tied with the National Parks System we see that there is a clear relationship with federal land ownership. For each CCC site we would expect a 1.5% increase in the proportion of land owned by the federal government with a total increase of 4.3% for those where the CCC operated compared with the counties where they did not. Finally, Infrastructure was a major part of the program, specifically the construction of roads and other public goods that are necessary for the economic development of rural areas. We can see that each CCC camp results in a 6.2% increase in the miles of road in a county which is a significant increase. Comparing counties where the CCC operated with those where they did not we see a total increase of 28.6% in the miles of road, indicating that the program does have a large impact on the construction of public infrastructure more than half a century later.

Policy Recommendations:

The retrospective look at the effects of the CCC over time clearly shows the broad range of positive externalities that result from the implementation of conservation and work relief programs. It is difficult to quantify the short term benefits of the program due to endogenous policymaking but the long term returns are clear. The short term benefits included the provision of a stable income, relocation of labor resources and human capital gains. Large scale work relief aimed at infrastructure and conservation will additionally result in long term gains in employment, higher total income as well as more forested land. With this in mind we can more fully evaluate the potential costs and benefits of a Green New Deal agenda and the implications it has for not just short and medium term environmental concerns but the added benefits of increasing long term employment and wages.

The results from this study are only the tip of the iceberg as far as potential topics to cover related to the long term impact of the Civilian Conservation Corps and its long term impact. Future research should be done on other aspects of the CCC including racial equity of camp locations and projects, lifetime earnings for CCC laborers, impact of different project types, and other conservation projects that have been undertaken internationally. Additionally, there should be further research done on the factor endowments of a county, controlling for variables such as mineral wealth and natural resources that can potentially interfere with the observed results of this study.

Works Cited:

Tymoigne, Eric. “The Cost of Job Guarantee in the United States: Insights from the 1930s Work Programs - Eric Tymoigne, 2014.” *Review of Radical Political Economics* (2014) https://journals-sagepub-com.libproxy.temple.edu/doi/10.1177/0486613414532767.

Reingold, David A., and Leslie Lenkowsky. “The Future of National Service.” *Public Administration Review* 70 (2010): S114–21. http://www.jstor.org/stable/40984105.

Fechner, Robert. “The Civilian Conservation Corps Program.” *The Annals of the American Academy of Political and Social Science* 194 (1937): 129–40. http://www.jstor.org/stable/1022150.

Borgschulte, Mark. David Molitor and Eric Yongchen Zou. “Air Pollution and the Labor Market: Evidence from Wildfire Smoke” *NBER* (2020) https://static1.squarespace.com/static/56034c20e4b047f1e0c1bfca/t/5f3a910df2f2fd38e695321b/1597673744847/Smoke_and_Labor.pdf

Boyd, James. Rebecca Epanchin-Niell, and Juha Siikamäki. “Conservation Planning: A Review of Return on Investment Analysis” *Review of Environmental Economics and Policy Volume 9, Number 1* (2015) https://doi-org.libproxy.temple.edu/10.1093/reep/reu014

Shah, Payal, and Amy W. Ando. 2016. “Permanent and Temporary Policy Incentives for Conservation under Stochastic Returns from Competing Land Uses.” American Journal of Agricultural Economics 98 (4): 1074–94. doi:10.1093/ajae/aaw032.

Soh, M, Cho, SH. “Spatial targeting of payments for ecosystem services to achieve conservation goals and promote social equity and economic impact”. Natural Resource Modeling. 2019; 32:e12218. https://doi.org/10.1111/nrm.12219

Goodwin, B.K. and Vado, L.A. (2007), Public Responses to Agricultural Disasters: Rethinking the Role of Government. Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie, 55: 399-417. https://doi-org.libproxy.temple.edu/10.1111/j.1744-7976.2007.00099.x

CCC Camp Lists. Civilian Conservation Corps Legacy http://ccclegacy.org/CCC_Camp_Lists.html.

Flood Insurance Claims. FEMA https://www.fema.gov/openfema-data-page/fima-nfip-redacted-claims

U.S. Fire Statistics. US Fire Administration https://www.usfa.fema.gov/data/statistics/#tab-4

Personal Income by County, Metro, and Other Areas. Bureau of Economic Analysis https://www.bea.gov/data/income-saving/personal-income-county-metro-and-other-areas

County Business Patterns. US Census Bureau https://www.census.gov/programs-surveys/cbp/data.html

Employment by County, Metro, and Other Areas. U.S. Bureau of Economic Analysis https://www.bea.gov/data/employment/employment-county-metro-and-other-areas