



# Seeing Beyond the Scars: Three Decades of Transforming Abandoned Mine Lands in NEPA

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2024 PA BROWNFIELDS CONFERENCE

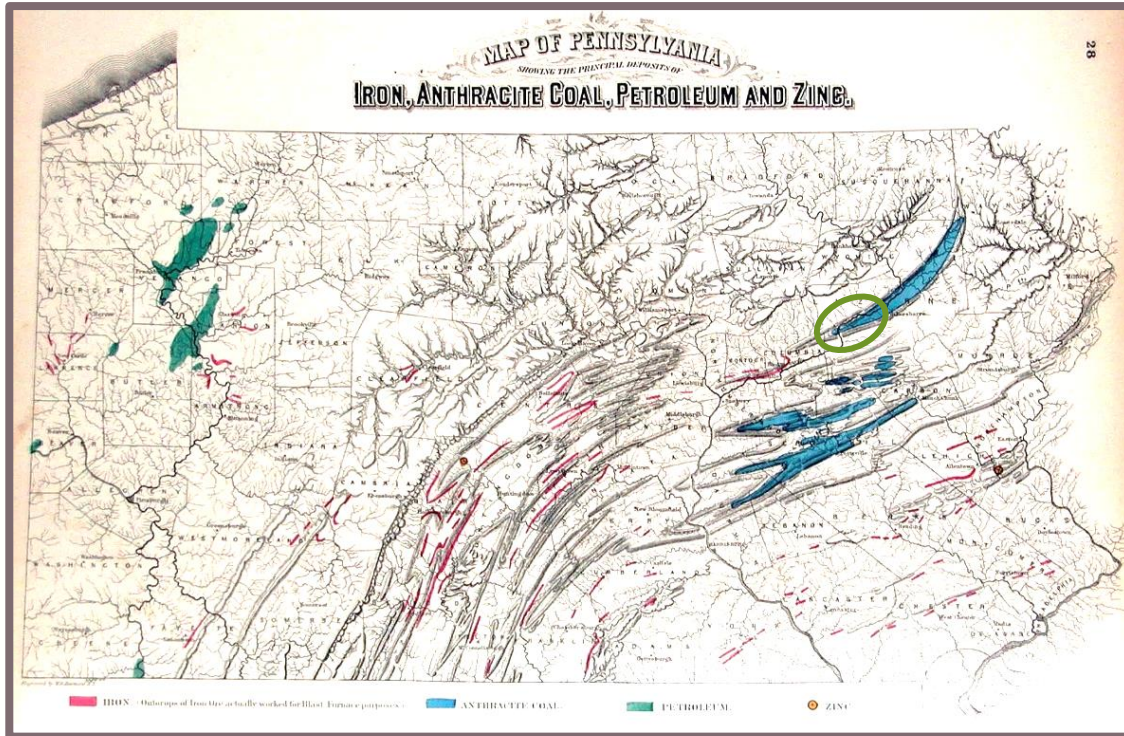
Elizabeth W. Hughes, EdD  
Wednesday, March 27, 2024

# AGENDA



- 1 The Anthracite Region & Blue Coal
- 2 The Experiment of Earth Conservancy
- 3 What We've Achieved
- 4 What's Next
- 5 Lessons Learned

# The Anthracite Region of Northeastern Pennsylvania



"Map of Pennsylvania Showing the Principal Deposits of Iron, Anthracite Coal, Petroleum and Zinc," by H. F. Walling and O. W. Gray, published by Stedman, Brown & Lyon, Philadelphia, PA, 1872. Retrieved from [www.explorepahistory.com](http://www.explorepahistory.com)

- Settled in the late 1700s
- Flourished with rise of the coal industry, particularly anthracite: a hard, clean, long-burning, and thus efficient fuel source.
- At the industry's peak, over 100 million tons of coal were mined annually for distribution along the East Coast.



## Underground Mining



Photo: Reading Anthracite



Photo: modeshift.org

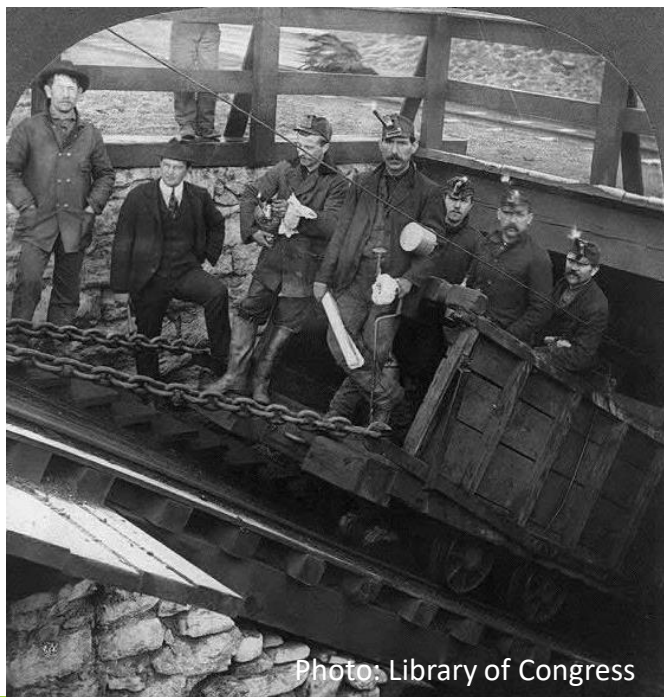


Photo: Library of Congress

## Strip Mining

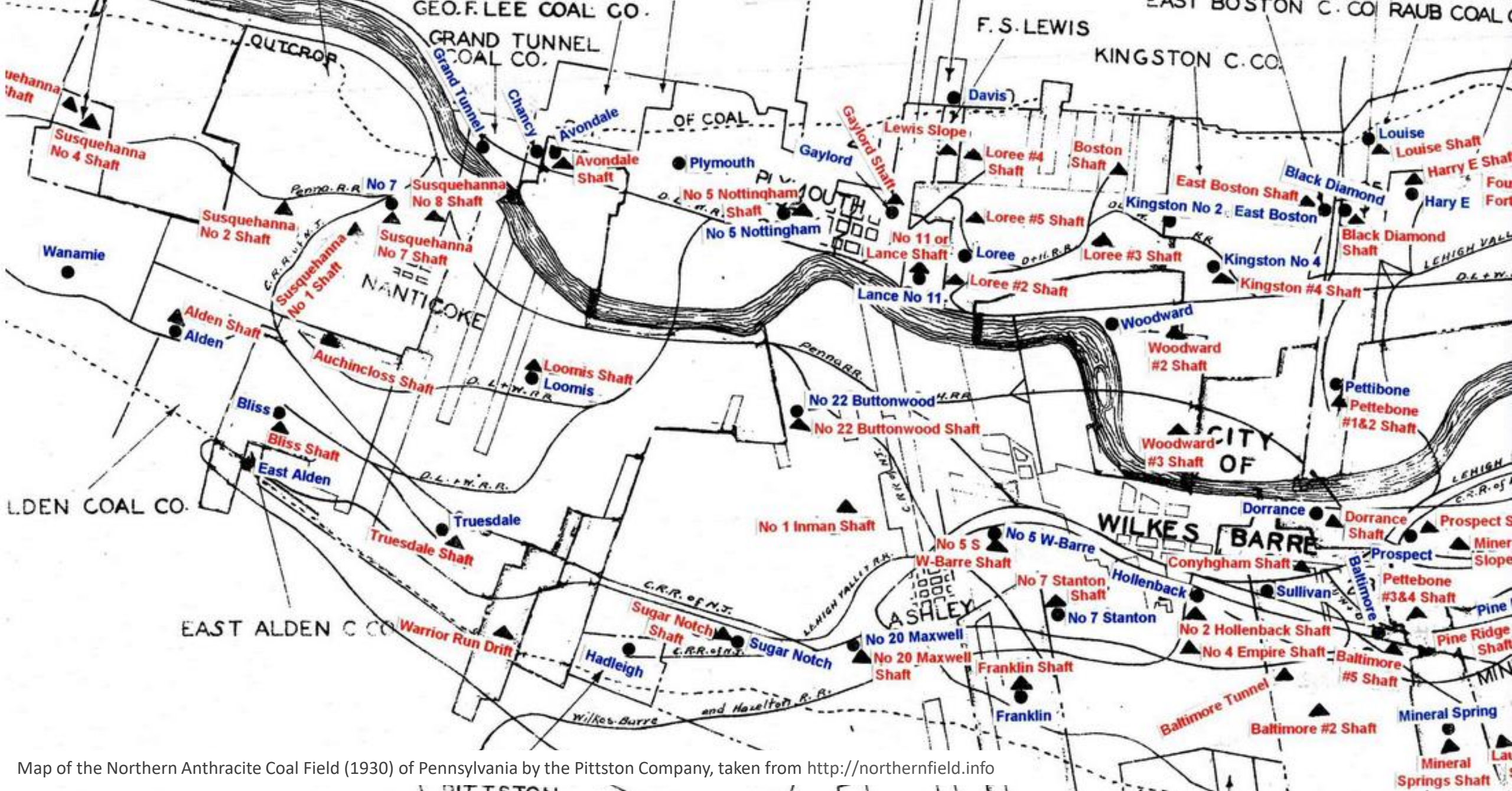


Photo: EC archives

Huber Breaker, Ashley, PA | 1954



Taken by the Glen Alden Safety Department; retrieved from the Library of Congress

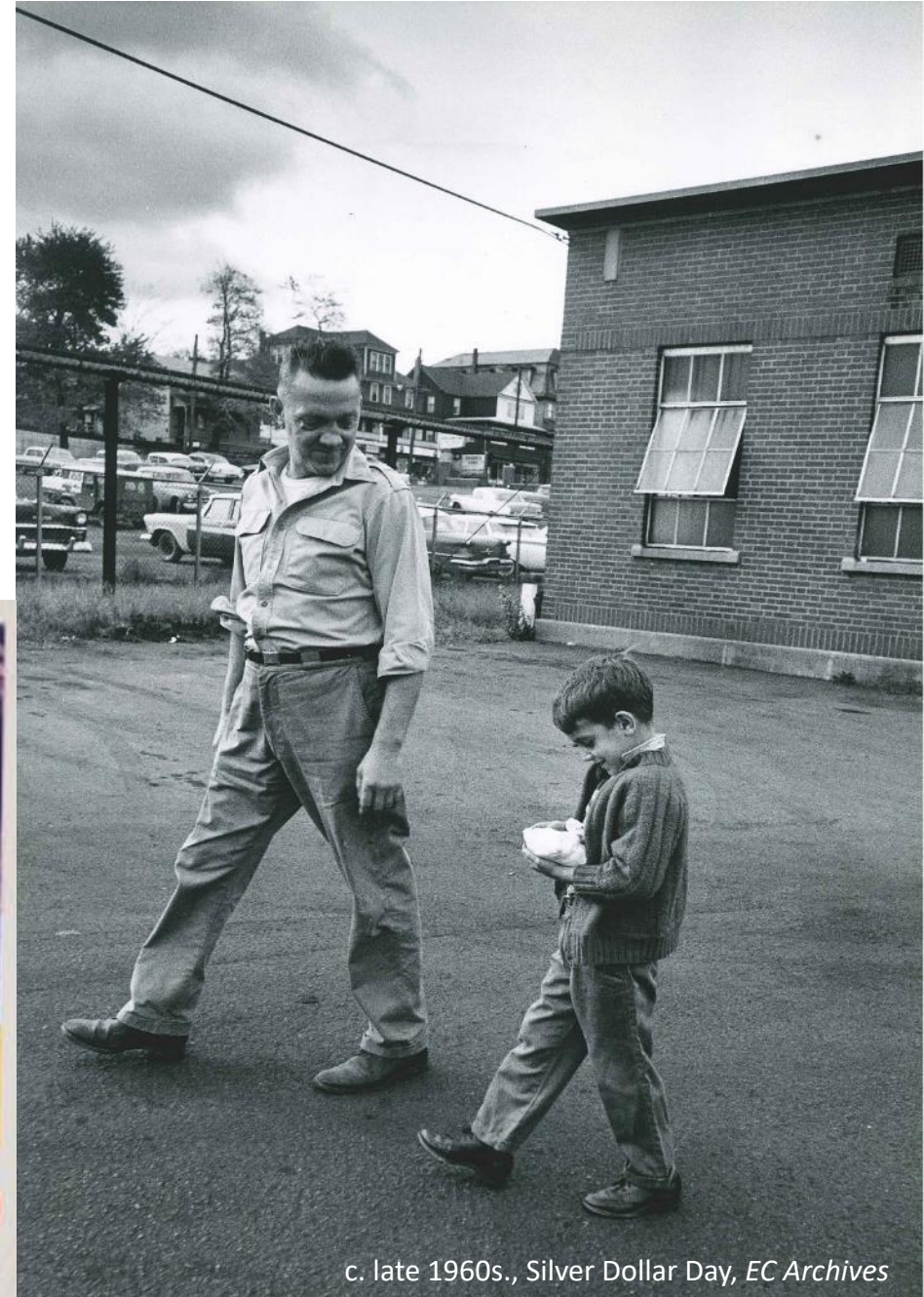


Map of the Northern Anthracite Coal Field (1930) of Pennsylvania by the Pittston Company, taken from <http://northernfield.info>



c. late 1960s, Silver Dollar Day, EC Archives

  
**'blue coal'**



c. late 1960s., Silver Dollar Day, EC Archives

IT'S SWELL TO WAKE UP IN A NICE WARM HOUSE

...**EASY** TOO WITH **'blue coal'**  
TRADE MARKED FOR YOUR PROTECTION

**RADIO'S MASTER DETECTIVE**  
*The Shadow*  
Tune in every Sunday Afternoon

'blue coal' starts quicker, burns better, lasts longer—it makes home heating easy. ★ 'blue coal' warms up the house in a hurry. For trouble-free, money-saving heat in every room, order a supply of 'blue coal' today.

Phone for a free demonstration of the 'blue coal' deluxe heat regulator. Opens and closes furnace dampers automatically. Insures healthful temperature.

**PAVONIA ICE & COAL**  
23rd and Howell Streets  
Phone: 988

**PHONE TODAY**



Blue Coal Blotter image by HA.com

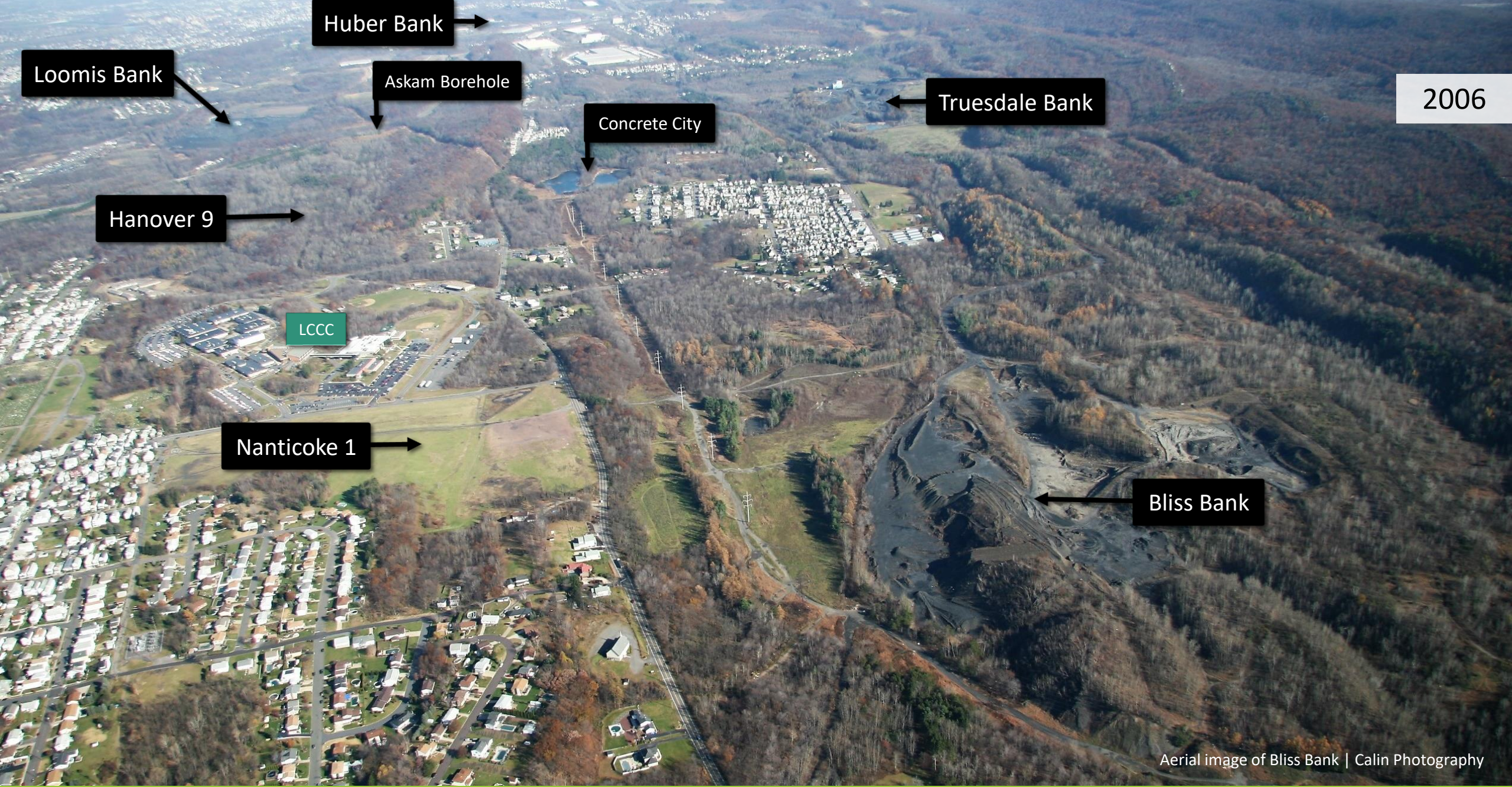




# Abandoned Mine Lands



# Impacted Watersheds



2006

Aerial image of Bliss Bank | Calin Photography

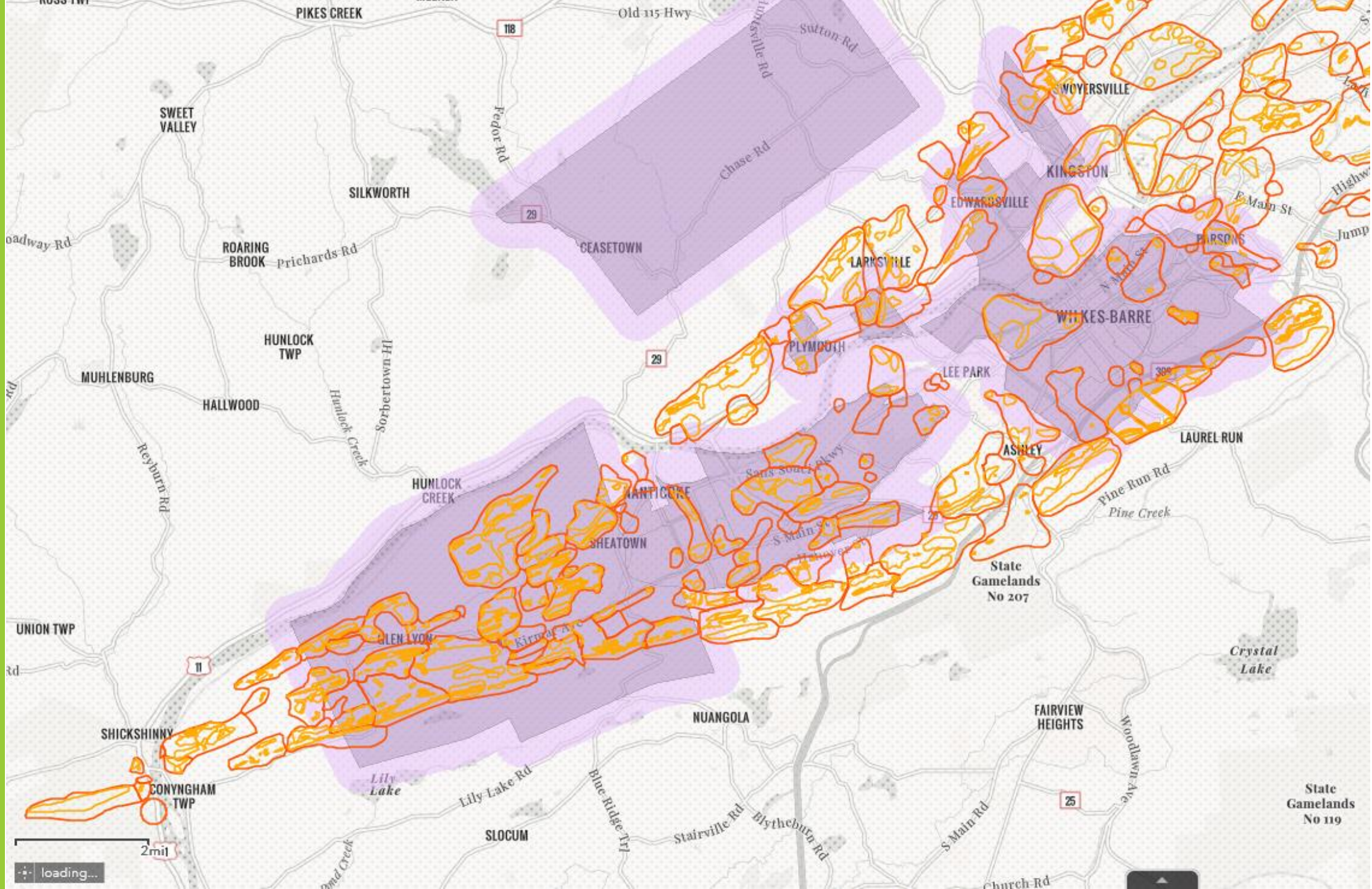
# Reverberating Effects

	Luzerne County	Wilkes-Barre	Nanticoke
<b>Population</b> (1920 v. 2021)	390,991 ↓ 324,825 (-17%)	78,888 ↓ 44,086 (-44%)	23,614 ↓ 10,588 (-55%)
<b>Unemployment</b>	5.9%	8.1%	6.7%
<b>Median HH Income</b>	\$56,534	\$42,430	\$49,934
<b>Poverty</b>	14.2%	20.4%	17.4%
<b>College Graduate</b>	24.0%	16.7%	18.6%



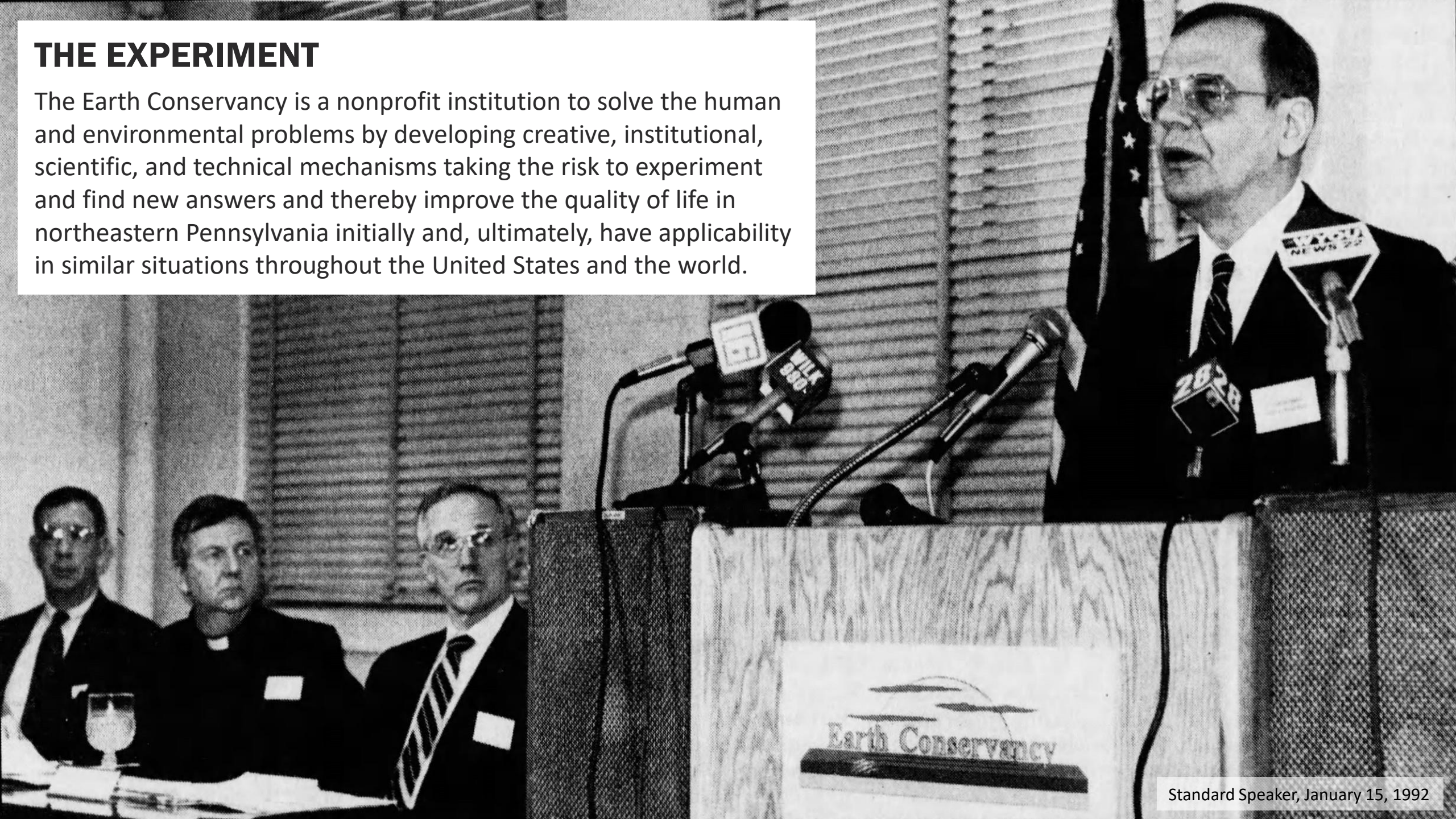
Huber Breaker, 1991; retrieved from the Library of Congress, <https://www.loc.gov/item/pa2251/>

# EJ Tracts & AML Areas



## THE EXPERIMENT

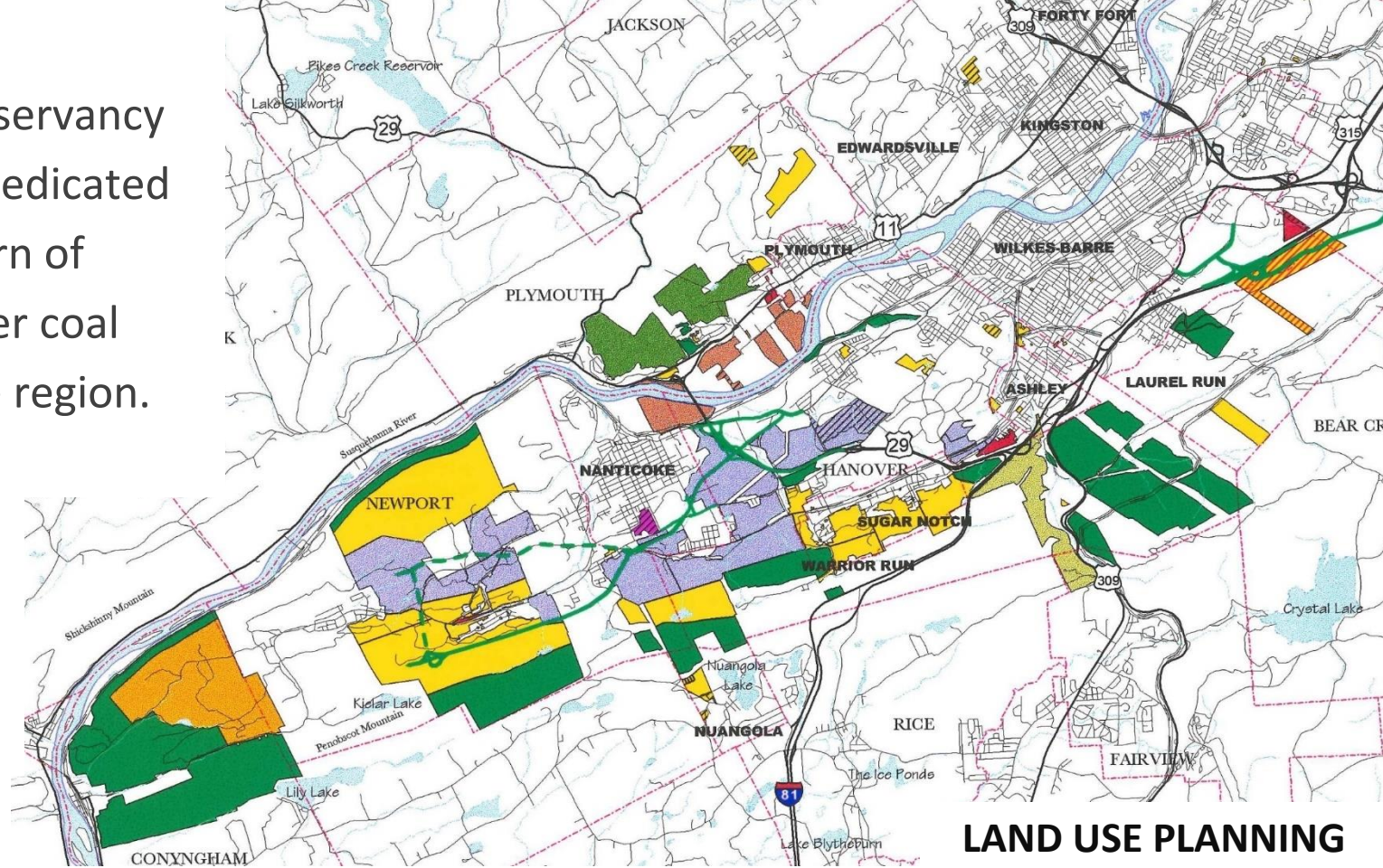
The Earth Conservancy is a nonprofit institution to solve the human and environmental problems by developing creative, institutional, scientific, and technical mechanisms taking the risk to experiment and find new answers and thereby improve the quality of life in northeastern Pennsylvania initially and, ultimately, have applicability in similar situations throughout the United States and the world.



# Who We Are & What We Do

Founded in 1992, Earth Conservancy is a nonprofit organization dedicated to the reclamation and return of nearly 16,500 acres of former coal company-owned land to the region.

Our mission is to mend the environment, improve the community, and encourage economic growth.



**LAND USE PLANNING**



**MINE LAND RECLAMATION**



**WATERSHED RESTORATION**



**CONSERVATION**



**EDUCATION & OUTREACH**

# Huber Bank | Phases III & IV



2013 | 185 acres | Hanover Township

Project Cost: \$9.4 million

Funded by PADCED and Earth Conservancy

# Hanover 9 | Phases I & II



2014 • 149 acres • Hanover Township & City of Nanticoke

Project Cost: \$1.6 million

Funded by USEPA, PADEP, and Earth Conservancy



# Franklin Bank



2009 | 15 acres | Hanover Township

Project Cost: \$337,000

Funded by USEPA and Earth Conservancy

# Greater Hanover Area Recreation Area



2011 | 65 acres | Hanover Township & Sugar Notch Borough

Project Cost: \$1.9 million

Funded by USDA, PADEP, PADOT, PADCED, Luzerne County,  
Private & In-Kind contributions, and Earth Conservancy



# Bliss Bank





**Bliss I**

**Bliss II**

**Bliss III**

Bliss Bank | 2019



**Bliss I**

**Bliss II**

**Bliss III**

Bliss Bank | 2020



Bliss Bank | 2022



# Espy Run





Espy Run | 2023



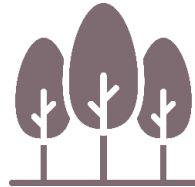


Hanover Reservoir | 2023

# Our Accomplishments



**2,030 ACRES  
RECLAIMED**



**9,377 ACRES  
CONSERVED**



**\$62.3 MILLION  
INVESTED**

- Rebuilt **1.2 miles** of damaged stream channel
- Constructed **three** acid mine drainage treatment systems
- Completed **13** land use plans & feasibility studies
- Donated **755 acres** to 20 local entities, valued at \$3 million
- Built three trail systems, totaling **12.5 miles**
- Operate a compost facility serving Luzerne County residents and municipalities, processing **8,000 tons** of green waste annually
- Have managed a small community garden for **23 years** for local residents, offered free-of-charge

# Correlating Effects?

Population	2010	2020	%
<b>Hanover Township</b>	11,076	11,445	+3.3%
<b>Luzerne County</b>	320,918	325,594	+1.5%
<b>Pennsylvania</b>	12702379	13002700	+2.4%

Unemployment	2010	2022	%
<b>Hanover Township</b>	6.1%	5.2%	-14.8%
<b>Luzerne County</b>	7.0%	5.9%	-15.7%
<b>Pennsylvania</b>	7.3%	3.4%	-53.4%

Income	2010*	2022	%
<b>Hanover Township</b>	\$50,653	\$65,439	+29.2%
<b>Luzerne County</b>	\$57,002	\$60,836	+6.7%
<b>Pennsylvania</b>	\$68,037	\$73,107	+7.5%

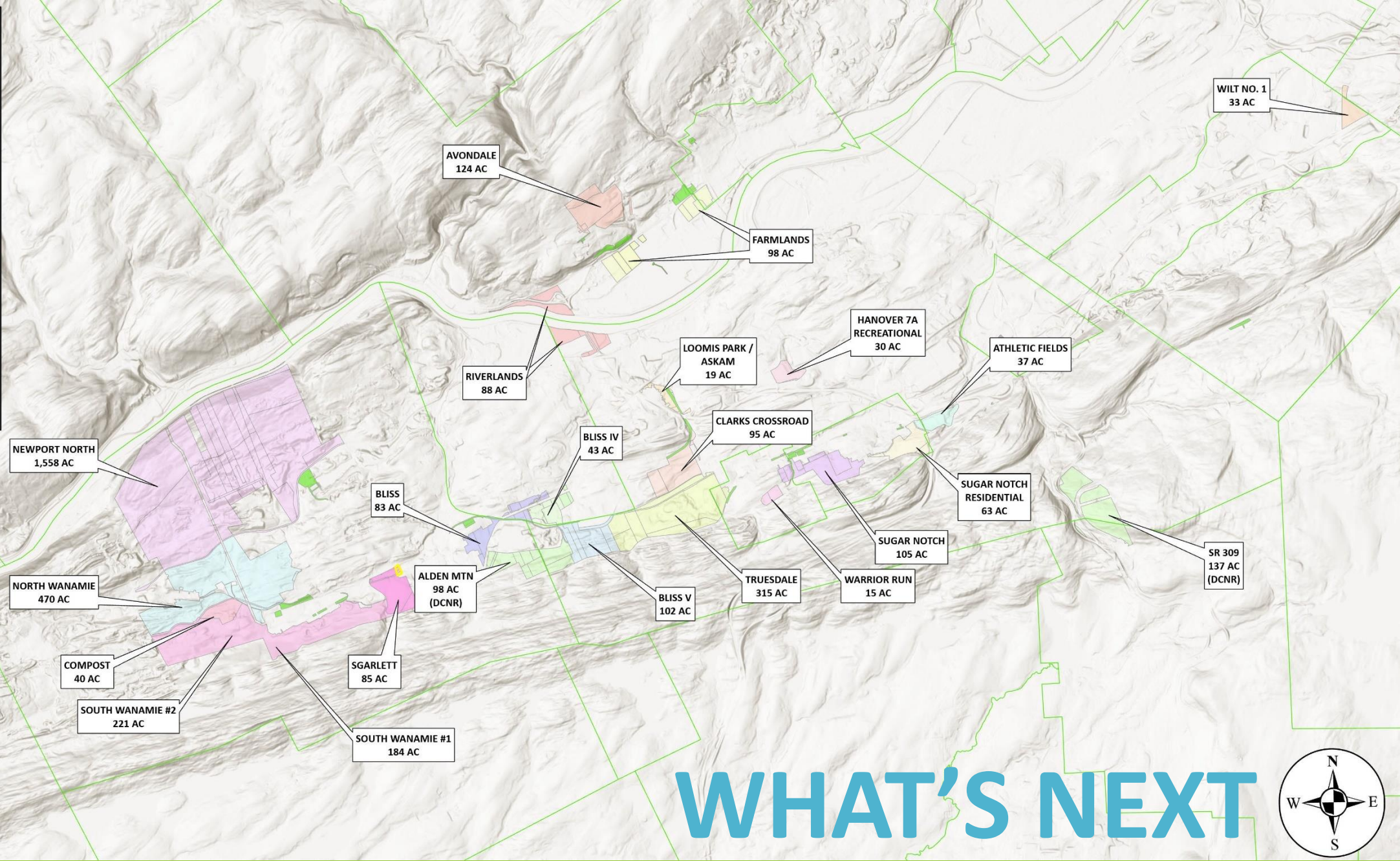
Poverty	2010	2022	%
<b>Hanover Township</b>	15.3%	14.4%	-5.9%
<b>Luzerne County</b>	13.6%	14.5%	+6.6%
<b>Pennsylvania</b>	12.1%	11.9%	-1.7%

College	2010	2022	%
<b>Hanover Township</b>	16.3%	19.1%	+17.2%
<b>Luzerne County</b>	20.2%	24.5%	+21.3%
<b>Pennsylvania</b>	26.4%	33.8%	+28.0%

\*2010 Median Income adjusted for inflation

**EC Remaining Lands (01/2024)**

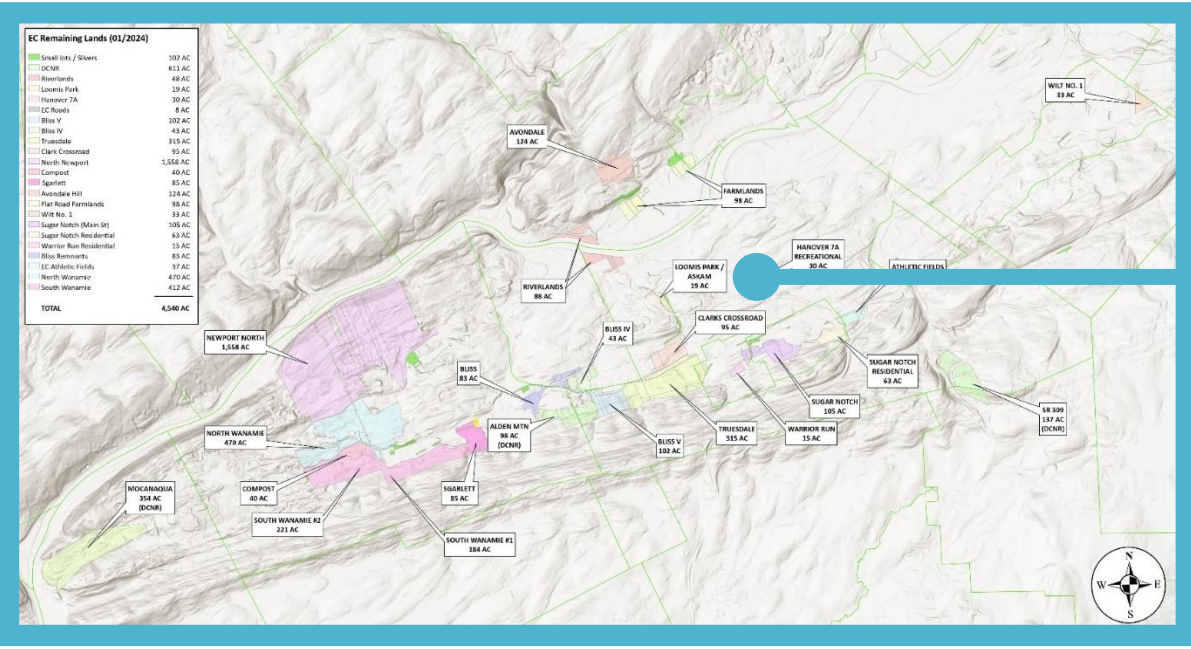
Small lots / Slivers	102 AC
DCNR	611 AC
Riverlands	48 AC
Loomis Park	19 AC
Hanover 7A	30 AC
EC Roads	8 AC
Bliss V	102 AC
Bliss IV	43 AC
Truesdale	315 AC
Clark Crossroad	95 AC
North Newport	1,558 AC
Compost	40 AC
Sgarlett	85 AC
Avondale Hill	124 AC
Flat Road Farmlands	98 AC
Wilt No. 1	33 AC
Sugar Notch (Main St)	105 AC
Sugar Notch Residential	63 AC
Warrior Run Residential	15 AC
Bliss Remnants	83 AC
EC Athletic Fields	37 AC
North Wanamie	470 AC
South Wanamie	412 AC
<b>TOTAL</b>	<b>4,540 AC</b>



**WHAT'S NEXT**



# HANOVER 7A

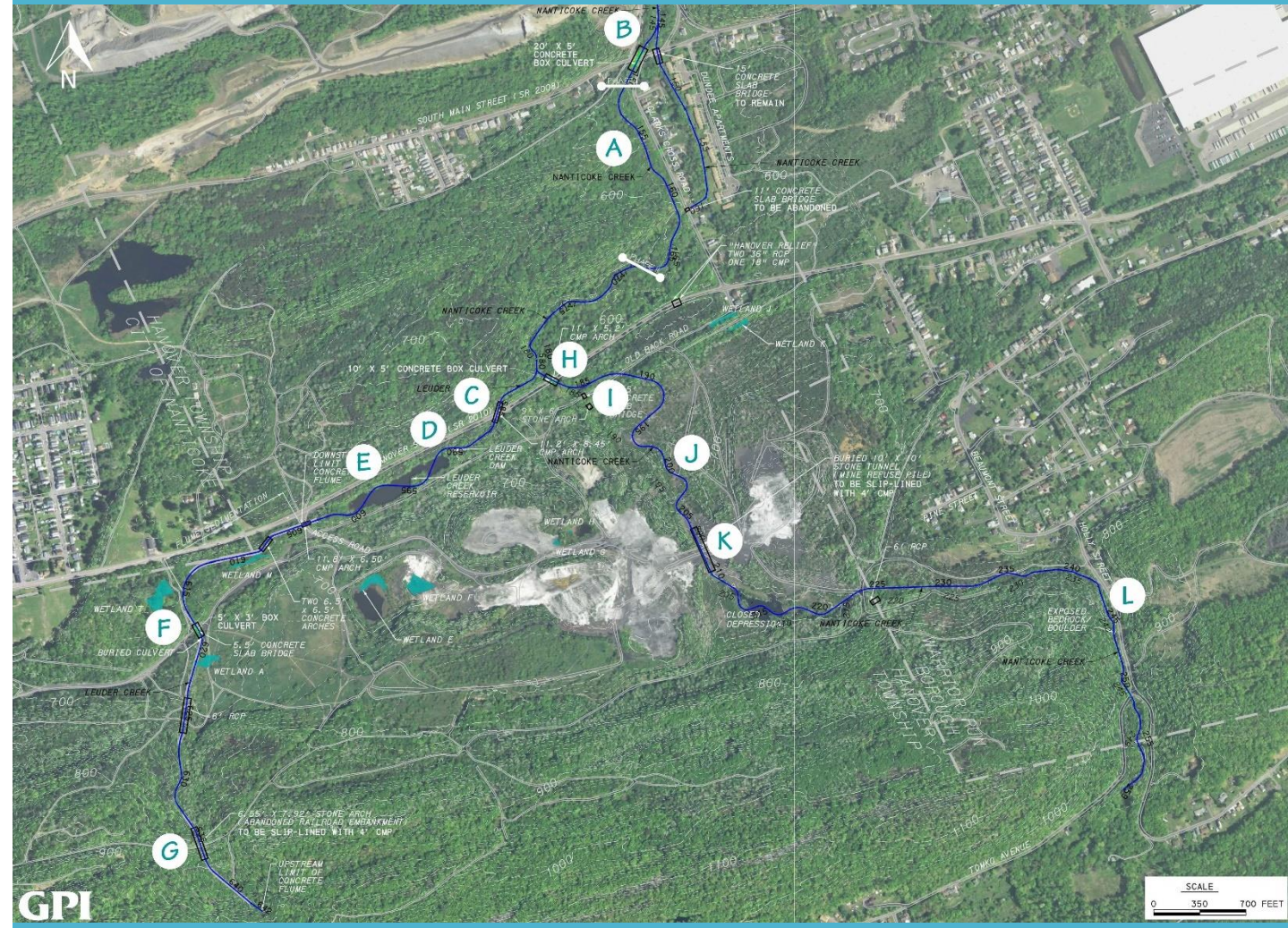
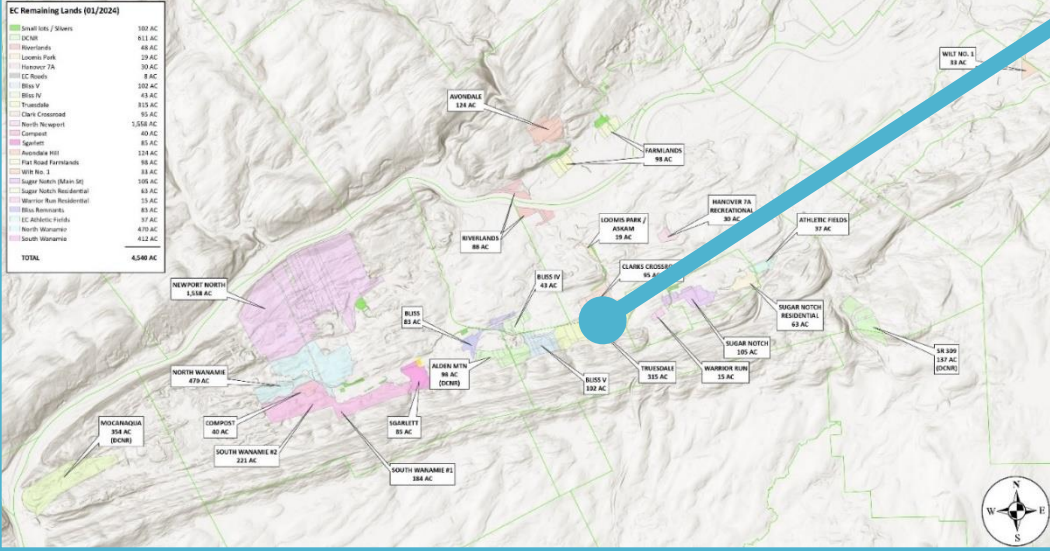


- Site**
- Former strip pit, used as dump after Hurricane Agnes
  - Started planning in January 2020
  - Completed Master Site Development Plan in 2023 (PADCNR)

- Challenges**
- Reclamation vs. Development Funding
    - Ownership & Future Grants
    - Maintenance



# NANTICOKE CREEK WATERSHED

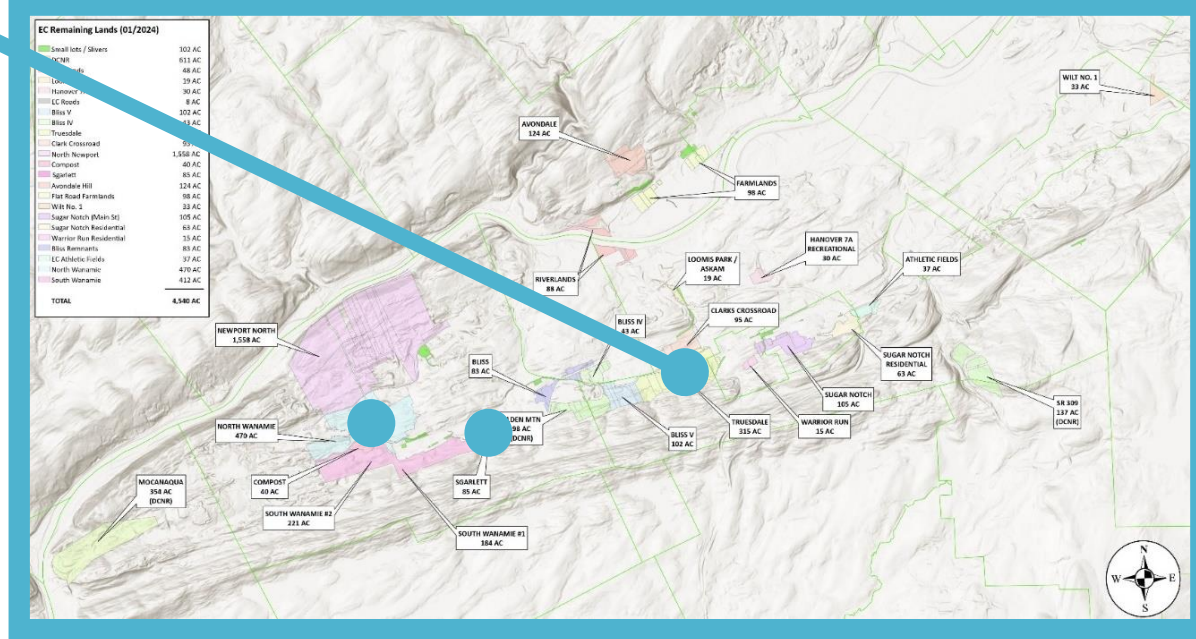


## Site

- 15,000LF of mining-impacted stream channel, including flow loss, dry beds, impoundment
- Funding: \$1.96M USEPA BF; \$17.5M PADEP AML

## Future Work

- Reclamation of Truesdale Bank
- Downstream AMD treatment system



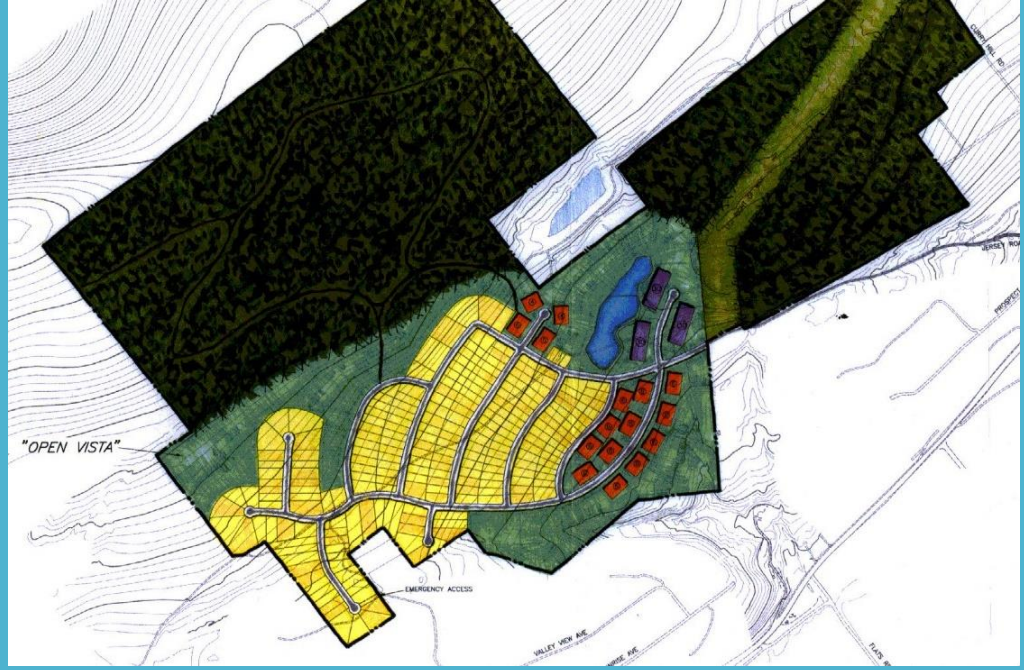
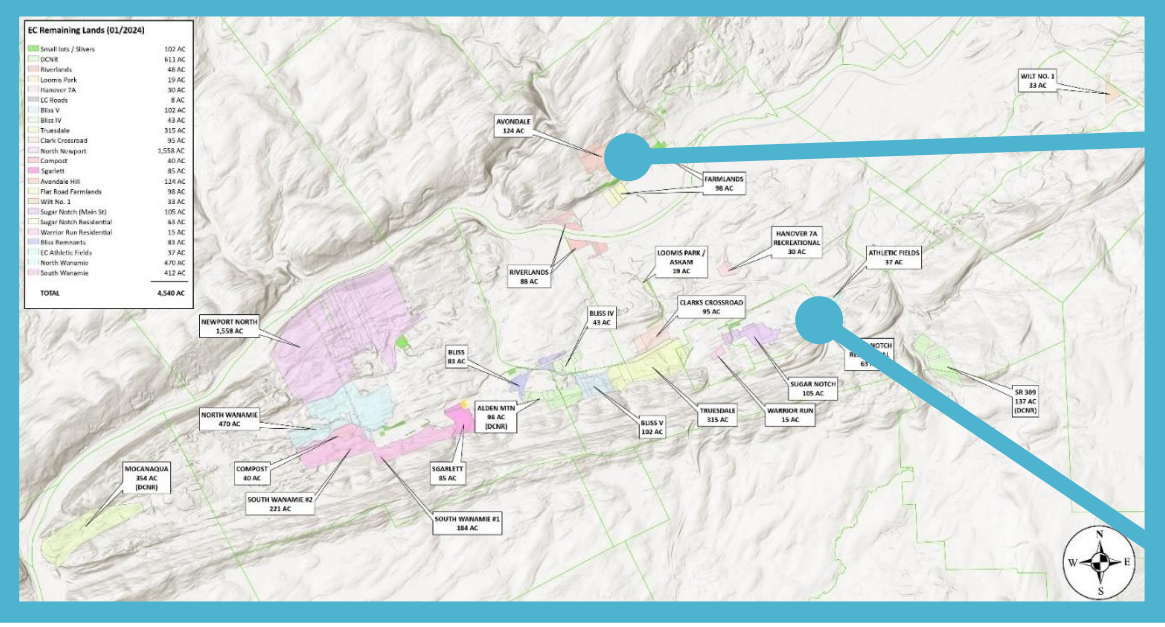
# SOLAR

## Opportunities

- Completed feasibility study for solar development on 6,000 acres (ARC Area Development)
- Three potential sites identified

## Constraints

- Reclamation needed
- PA solar legislation in holding pattern



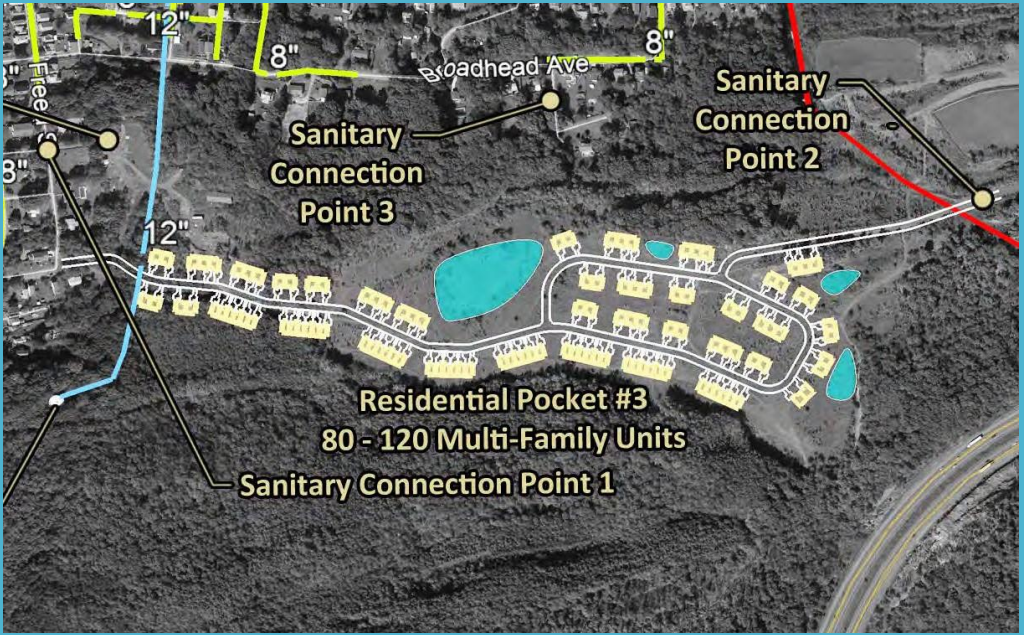
# HOUSING

## Needs

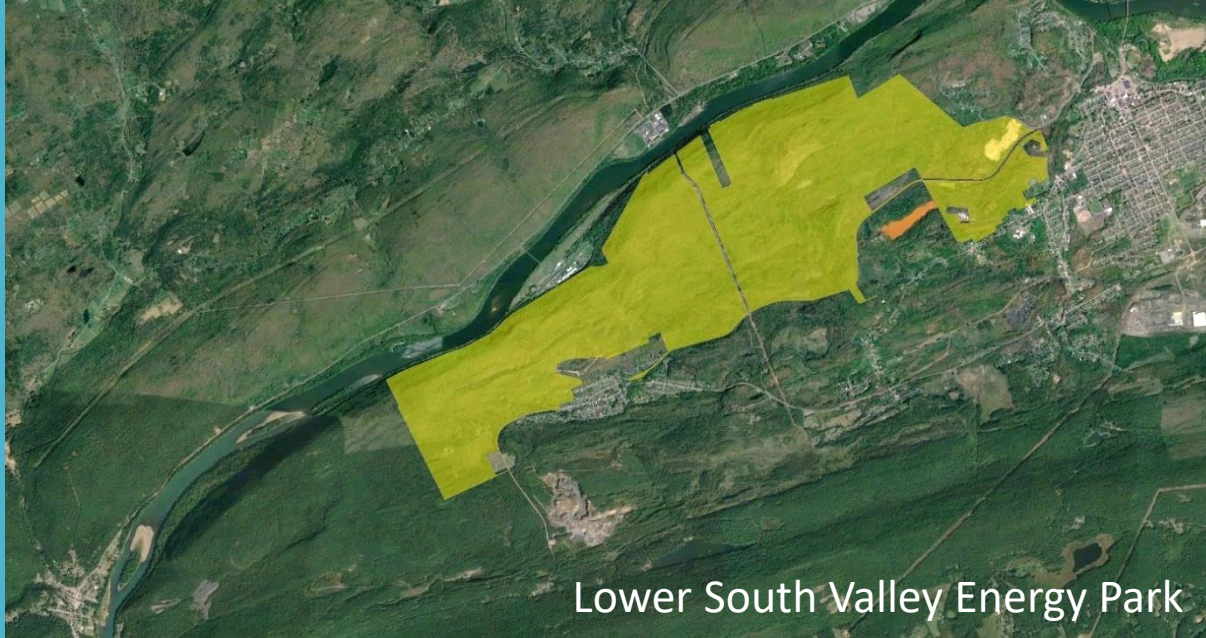
- Completed Housing Analysis in 2023 (USEPA TA Program)
- Very old housing stock
- Current deficit of 7,452 units
- Additional need from population growth of 1.4K – 2.4K units

## Constraints

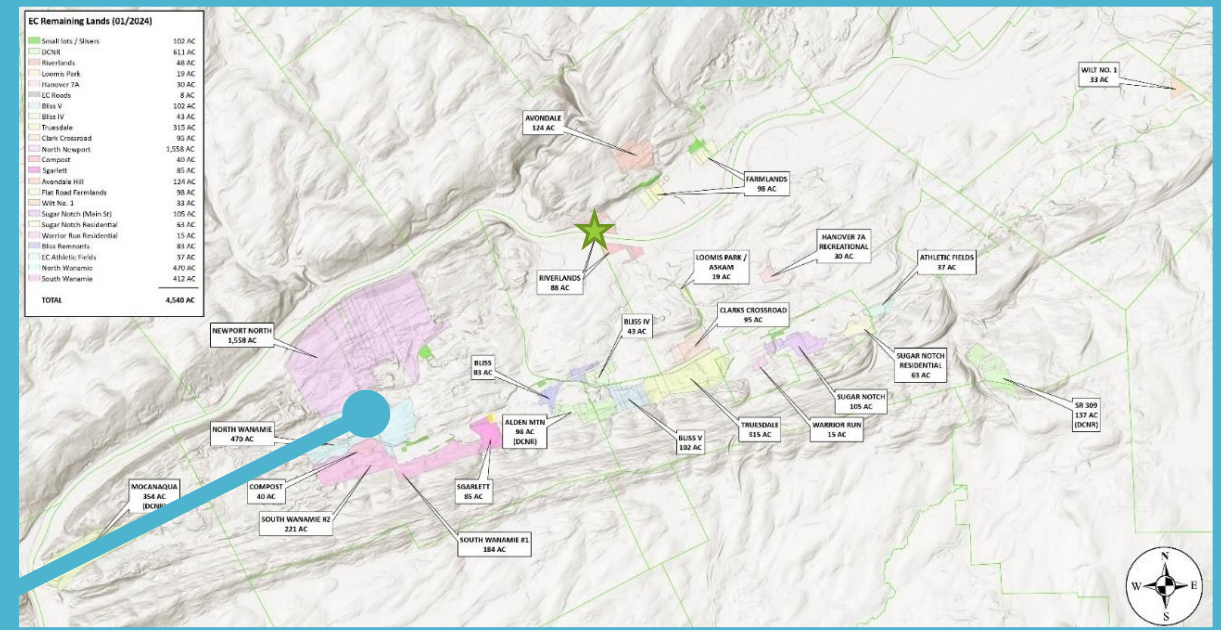
- Utility & transportation extensions







Lower South Valley Energy Park



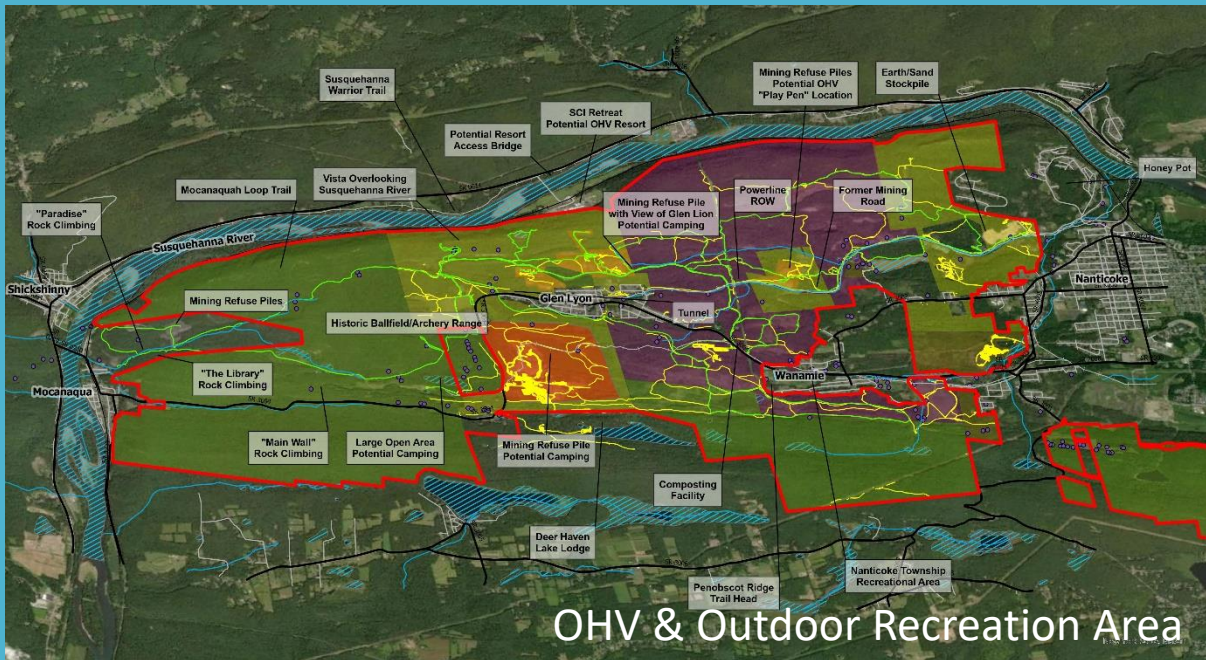
# NEWPORT TOWNSHIP

## Opportunities

- Completed OHV Area Study (PADCNR)
- Awarded \$1.3 million AML grant (PADEP)

## Constraints

- Utility & transportation development required
- Multiple land owners, including PA DCNR
- Facility ownership



OHV & Outdoor Recreation Area

# LESSONS



## **FOCUS**

grounded • strategic • mutable



## **PLAN**

early • iterative • flexible



## **EXPERIMENT**

open • informed • bounded



## **COMMUNICATE**

acknowledge • honest • consistent



## **COLLABORATE**

intentional • mutual • measured



## **PERSIST**

responsive • realistic • sustainable

# Thanks!

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