



PennFUTURE

Every environmental victory grows the economy.



Cindy Dunn, president and CEO, PennFuture

Williamsport, Pennsylvania
November 6, 2014

is a statewide public interest membership organization.

We successfully advocate for legislation that protects Pennsylvania's environment and economy and the health of its citizens (you).

We are the PA lead for the Chesapeake Choose Clean Water Coalition

Our law staff makes sure the rules are followed.

We have offices in Harrisburg, Philadelphia, Pittsburgh, and Wilkes-Barre and serve as the Pennsylvania affiliate for the National Wildlife Federation.

at one of our four offices.

PennFuture Central • Harrisburg

610 North Third Street
717.214.7920

PennFuture Northeast • Wilkes-Barre

8 West Market Street, Suite 901
570.208.1757

PennFuture Southeast • Philadelphia

1500 Walnut Street, Suite 502
215.545.9692

PennFuture Southwest • Pittsburgh

200 First Avenue, Suite 200
412.456.2780

What PennFuture is doing



PennFuture's work.

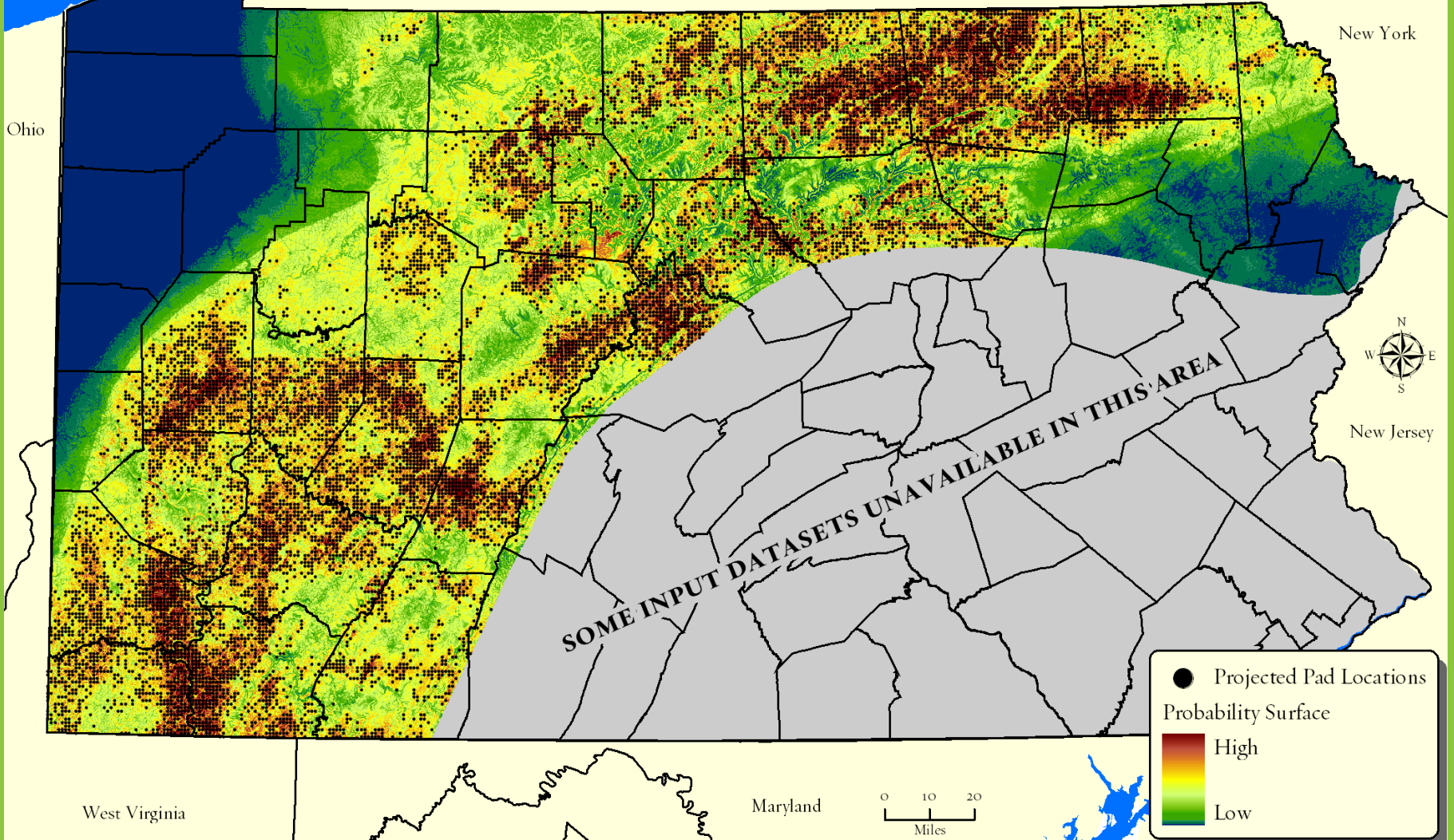
- Environmental legislation and regulation (air, land, water)
- Clean Energy and Energy Efficiency
- Support protection of residentially zoned areas
- Conservation funding
- Loyalsock Coalition
- Choose Clean Water lead for PA

Content and image resources



MEDIUM DEVELOPMENT SCENARIO

(10,000 NEW WELL PADS BY 2030 WITH AN AVERAGE OF 6 WELLS PER PAD)



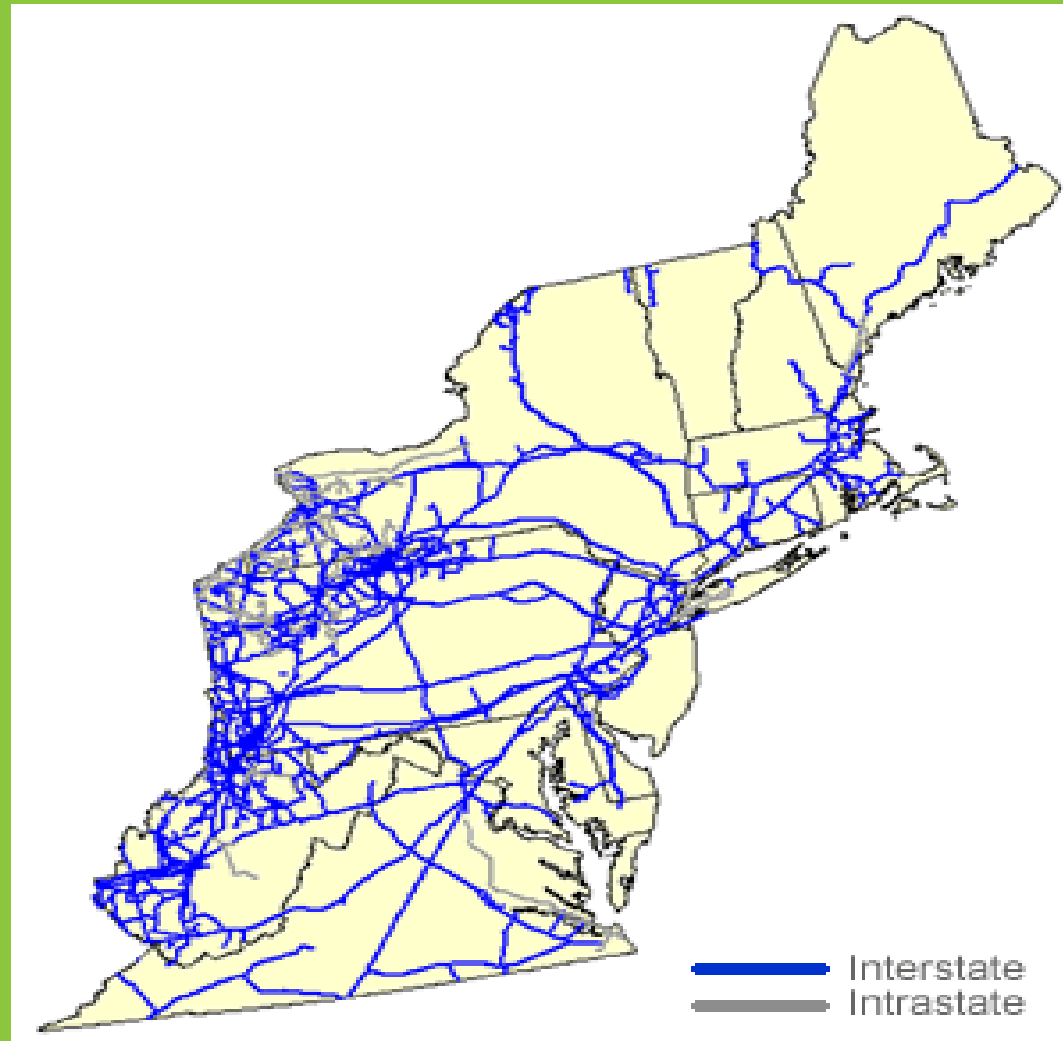


Compressor Stations (5 acres/station)



Photo: Mark Godfrey - TNC

FERC-Regulated Pipelines



Erosion and Sedimentation



Water Quality – Sediment and Nutrients

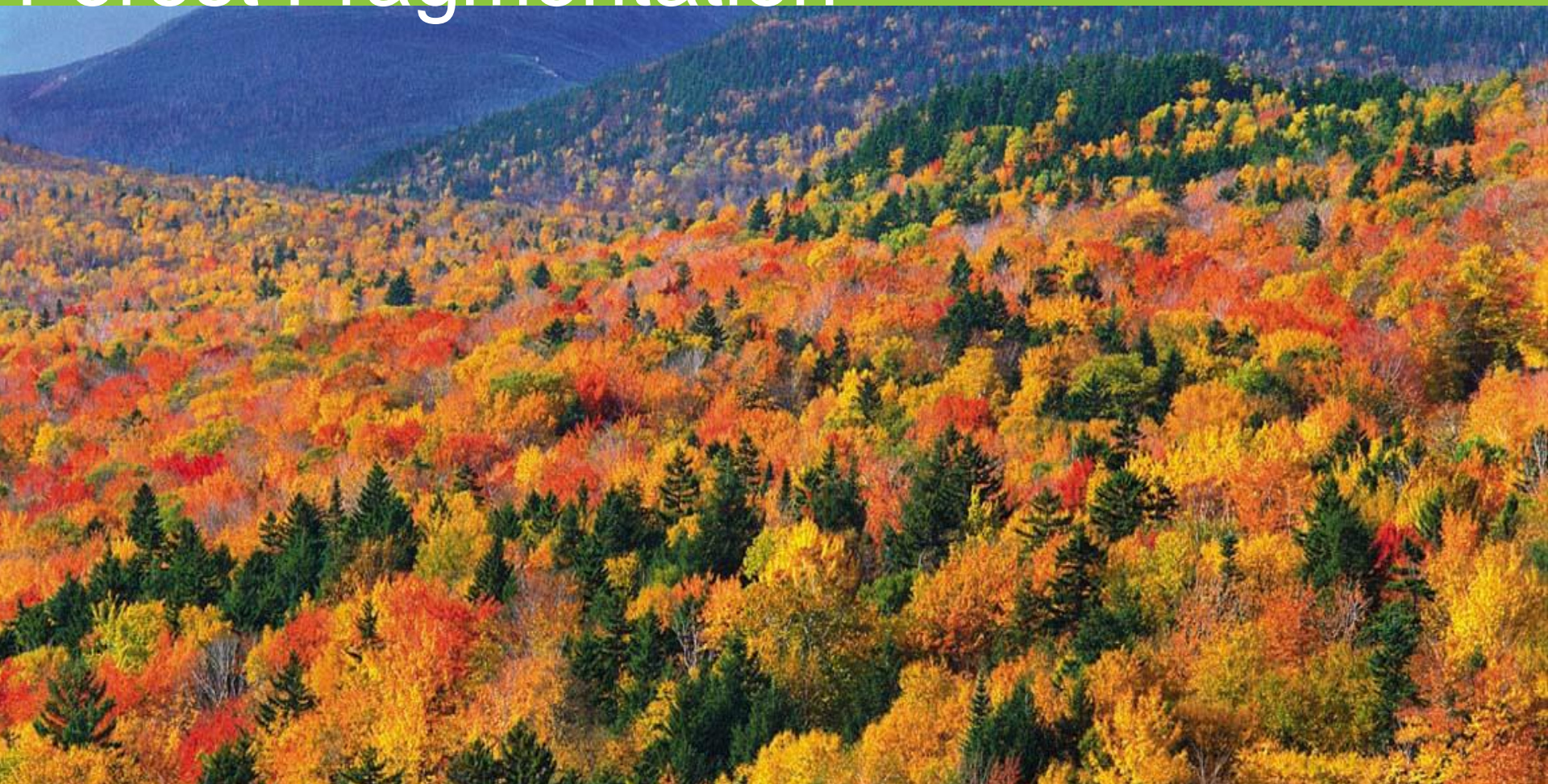


Photo: Patrick Drohan – Penn State



Photo: Josh Parrish –
TNC

Forest Fragmentation



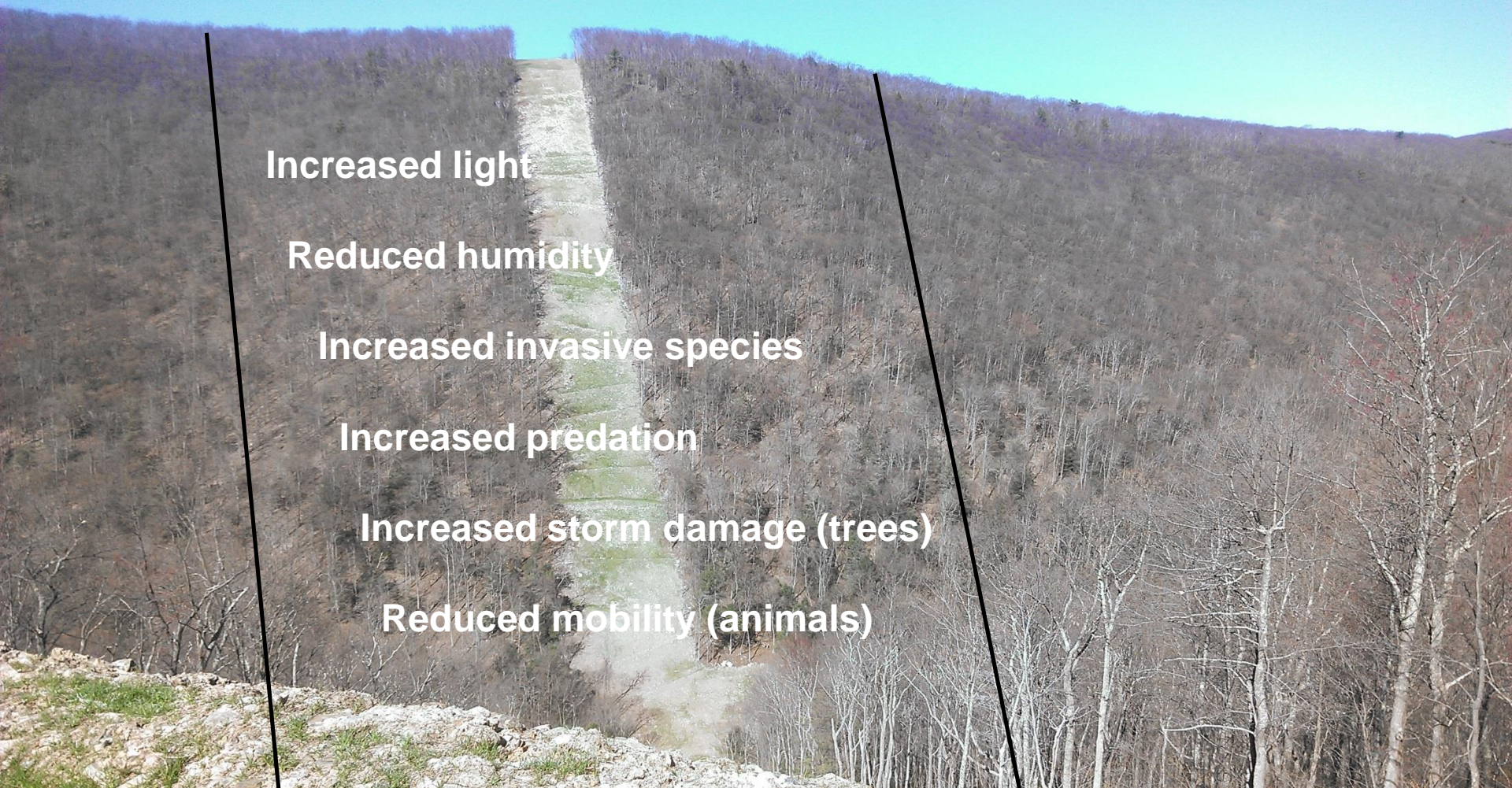
Land Use – Habitat Fragmentation

Oil/Gas Transmission Pipelines (12 acres/mile)



Nels Johnson – TNC

Edge Effects on Forest Interior Species



Increased light

Reduced humidity

Increased invasive species

Increased predation

Increased storm damage (trees)

Reduced mobility (animals)

Environmental Impacts of Transmission ROWs

Physical Impacts

- Soil disturbance/erosion
- Noise (electrostatic)
- Noise (compressor stations)
- VOC and methane emissions (natural gas)
- Light (large electric lines)
- Chemical use/spills
- Mowing/cutting vegetation



Photo: George Gress

Photo: George Gress - TNC

Ecological Impacts of Transmission ROWs



Photo: Mark Godfrey - TNC

- Habitat fragmentation
- Increased predation
- Vectors for invasive species
- Bird and bat fatalities (electric)
- Animal travel corridors
- Favorable sites for early successional/grassland species

Minimizing Impacts of Transmission ROWs

Responding to Impacts

- 1) Demonstrate Need, Regional Planning, Impact Fees
- 2) Co-Locate Pipelines With Other Right-of-Ways
- 3) Narrow Right-of-Ways
- 4) Ecologically-Based Right-of-Way Management



Photo: Tamara Gagnolet- TNC

Minimizing Impacts of Transmission ROWs

Options

- Negotiate routing early and often
- Work with other organizations to promote preferred routes and ROW maintenance
- Advocate EIS through FERC
- Specify desired vegetation treatments ahead of time
- Encourage hardscaping and landscaping



Photo: Tamará Gagnolet- TNC

How Many New Gas Pipelines in U.S?



Photo: Nels Johnson - TNC

- 298,000 miles of natural gas transmission pipelines in U.S.
- 160,000 miles of hazardous liquid pipelines (oil, gasoline, butane, etc.)
- Pipeline industry estimates more than 5,000 miles of large diameter natural gas transmission pipelines are being built annually.

Photo: Nels Johnson - TNC

How Many New Gas Pipelines in PA?



Photo: Nels Johnson - TNC

- PA had 9,000 miles of large diameter oil/gas pipelines in 2008
- Pipeline mileage in PA will at least quadruple by 2030.
- The gathering pipeline footprint alone is larger than the cumulative area impacted by all other Marcellus gas infrastructure combined.
- Total direct land impact could exceed 500,000 acres (1.7% of PA land area)

Riparian Buffers

- HB 1565- removes 150ft riparian buffer requirement for HQ/EV streams. Offsets (1:1) are now required in the same watershed
- Exception to mandatory requirement for all riparian buffers Section 102.14(d)(vii)
- “Oil and gas...for which site reclamation or restoration is part of the permit authorization in Chapters 78 and 86-90 and this chapter so long as any existing riparian buffer is undisturbed to the extent practicable”.

Stormwater management exemptions

Disturbances that require restoration (well pads) and disturbances associated with pipelines are exempt from detailed PCSM analysis. 25 Pa. Code 102.8(g) and (n)

Oil and gas development also exempt from requirement to obtain stormwater permit under federal NPDES program. Instead, they must get a less stringent general permit (ESCGP-2).

Public Lands

- The citizens of Pennsylvania are the largest owner of land within the Chesapeake Bay watershed.
 - We have 120 state parks.
 - They are in 61 of our 67 counties.
 - They cover more than 283,000 acres.
 - We have 20 state forests.
 - They are in 48 of our 67 counties.
 - They cover 2.2 million acres and comprise 13% of Pennsylvania's forested area.

- **1,486 acres:** Forest converted for natural gas development -- roads, well pads, pipelines
- **30 miles:** New roads constructed
- **131 miles:** Existing roads “improved” [widened]
- **104 miles:** Pipeline corridor constructed or widened
- **191:** Well pads constructed [average 3-5 acres each]

Public Lands

- Marcellus and other shale formations underlie 1.5 million acres of the state forest system.
 - About 44% [673,000 acres] is available for natural gas development.
- To date [May 2014], 386,000 acres have been leased.
- Potential to develop exists on 290,000 more acres through private leases.

Public Input

To date, public input has been limited.



Restoration

- Regulations for well pad restoration are inadequate – they require “to the extent practical” , with no regard for prior ecological function and there are no standards for pipeline restoration.
- Regulations for pipeline restoration does not exist



Water Use and Disposal



Water Concerns

- Lack of cradle-to-grave tracking
- Water withdrawal from headwaters during high-impact periods
- Cumulative impacts of sedimentation + forest fragmentation + water withdrawal



Water Concerns

- Water is permanently removed from the hydrologic cycle.
- Cheap Pennsylvania water reduces incentive to recycle.
- Loss of residential water supply



Auditor General Report

29 findings - DEP disagrees but do agree with 22 of the recommendations

DEP underfunded and understaffed

Need greater public transparency

Upgrade complaint tracking

Too great a reliance on voluntary measures where drinking water supplies were impacted

Community Impacts



Drinking water wells

- Over three million Pennsylvania residents rely on one million private water wells for their drinking water supply, with approximately 20,000 wells drilled annually.
- PA – Second only to Michigan in # of people served by private wells and remains one of two states lacking statewide regulations for private well construction.
- long overdue standards for private well water construction that will protect human health and water resources.

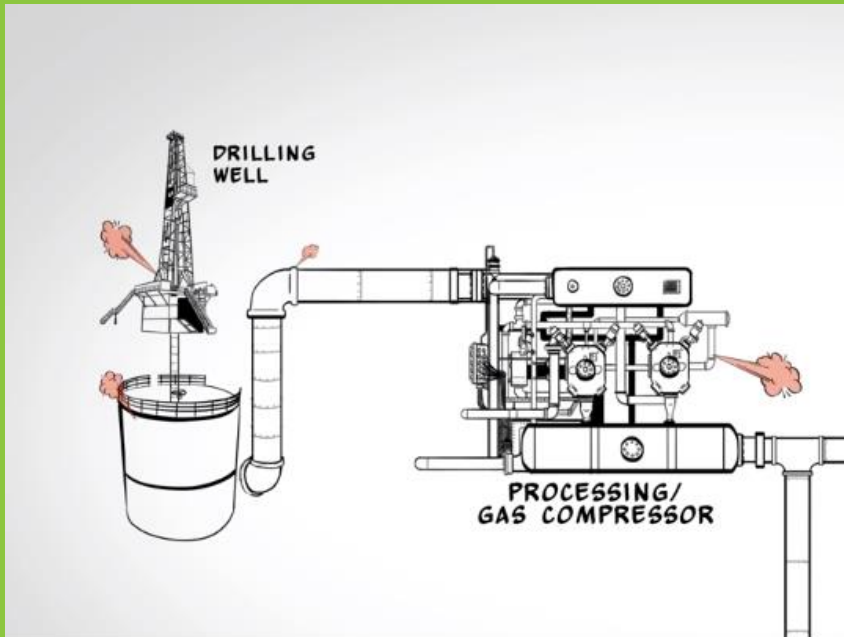


Drinking water wells

- This year, the House passed HB 343 sponsored by Rep. Ron Miller by a wide margin on June 27.
- PA citizens need this protection
- PA gas industry needs to know where the drinking water wells are



Methane Leakage



Pennsylvania needs comprehensive methane regulations

Remaining Concerns

- Southwestern Pennsylvania's wet gas – rising awareness of issues
- Health impact monitoring is inadequate.
- The impact fee is inadequate and Pennsylvania still doesn't have a severance tax.

A healthy environment and
a strong economy can work together.
One without the other
only exists in the short term.



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