

Environmental Health

Utah Citizens' Counsel Environmental Health Committee

Article 2. All Utahns, young and old, have the right to live and thrive in a healthy environment that includes clean air, land, and water, and share in the responsibility to pass that healthy environment on to succeeding generations.

Introduction and Background

Utah's rapid population growth and associated expanding infrastructure continues to exacerbate the state's environmental challenges. This year's report again addresses the issues of how to improve air quality and provide enough water for future needs. The new prison and the Inland Port Project developments in the northwest quadrant of Salt Lake City illustrate the need to adequately plan for the needed infrastructure and a serious evaluation of environmental and community impacts.¹ Attempts by developers to increase housing densities and reduce urban sprawl have met with resistance by parts of the public and some local officials in Salt Lake County.² Last year's report warned about the threats of global warming and recommended adoption of a revenue neutral tax on fossil fuel emissions.³ The record-breaking heat waves in 2018, globally and in the U.S., as well as devastating fires in Europe, California, and Utah evidence the need for urgent action to reduce the human contribution to global warming.⁴ The impact on water availability from the threat of a mega-drought in the western states warrants a special section in this year's report.

Air Quality

In last year's report, we welcomed 2017 Utah House Concurrent Resolution 18, which urged car buyers to consider smog ratings when purchasing new cars. Unfortunately, this past year has shown scant progress in the purchase of cars with lower pollution ratings. New data from the Utah State Tax Commission for the first two quarters of 2018 indicate that car buyers are ignoring pollution ratings. The more fuel-efficient passenger cars were only 24.7% of vehicles sold.⁵ A year earlier the number was 29%. This trend, if not reversed, will make reductions in air pollution on the Wasatch Front very difficult because vehicles are responsible for nearly 50% of emissions.⁶ Sales of electric vehicles (EV) and plug-in hybrid electric vehicles (PHEV) have increased but still represent less than 1% of new vehicles sold.⁷ A significant obstacle to increased sales of zero-emission vehicles (ZEVs) in Utah is the lack of inventory. For example, in a recent internet search we failed to find a Toyota Prius Prime Plus, a plug-in hybrid, within 100 miles of Salt Lake City. The 2018 Utah Legislature's House Bill (HB) 479 ("Zero Emission Vehicle Program"), which would have mandated more allocations to Utah of ZEVs by car manufacturers, did not pass.⁸ The 2018 Senate Bill (SB) 136 imposes an extra registration fee of \$122 for electric vehicles and an extra \$52 for plug-in hybrids.⁹ The rationale is that owners of these vehicles do not help pay for roads, which are funded by a tax on fossil fuels. This extra fee and the elimination in 2017 of Utah's tax credit for electric vehicles does not facilitate increased ZEV sales in Utah. The recent EPA proposal to relax vehicle fuel efficiency requirements also poses a threat to improving air quality nationally and in Utah.¹⁰

We are also particularly concerned about the clearly negative impact the proposed Utah Inland Port would have on air quality along the Wasatch Front. We live in an area that ranks 8th worst in

the country for short-term, small particulate pollution and 18th for ozone.¹¹ By definition, the proposed inland port will dramatically increase truck, train and airplane traffic to the Wasatch Front, and at this point there has not been an environmental impact study and no serious attempt by the Utah Inland Port Authority Board to address environmental concerns.¹² We cannot imagine how the proposed inland port could operate without significantly decreasing the quality of our already marginal air. At the very least, careful analysis and modeling of the air quality impact of the increased traffic needs to be completed before the State moves forward with this project.

Future of the Great Salt Lake: Implications of Water Use

In November 2016 the level of the Great Salt Lake reached its lowest level in recorded history.¹³ Since the arrival of the Mormon Pioneers in 1847 the level of the lake has dropped approximately 11 feet, representing a 48% loss of the lake's volume.¹⁴ As important, this loss of water has decreased the area of the lake bed by 50%,¹⁵ significantly increasing exposure of Wasatch Front residents to toxic air pollution during wind storms.¹⁶ Although natural fluctuations in rain and snowfall cause the level of the lake to rise and fall, a recent study has shown that there has not been a long-term decrease in regional stream flow and precipitation sufficient to cause the observed drop in volume of the lake.¹⁷ Instead, the researchers found that water development projects and river and stream diversions have resulted in a continuous reduction of water flow into the lake, approaching a 40% reduction in recent years. Current evaluations of state water resources indicate that Utahns consume a total of approximately 1.8 billion cubic meters of water that would otherwise enter the lake: agriculture use takes 63%; salt pond mineral production extracts 13%; municipal and industrial uses accounts for 11%; evapotranspiration from constructed wetlands accounts for 10%; and 3% results from reservoir evaporation.¹⁸ It turns out that we are the cause of our shrinking lake.

The authors of this study point out that future water development will further reduce lake inflow. For example, the Utah Division of Water Resources estimates that water consumption from the proposed Bear River Project would decrease the level of Great Salt Lake by approximately 8 inches.¹⁹ Although this change may seem small in the face of the previous 11-foot reduction, it will further increase salinity, reduce biodiversity of the ecosystem, and expose another 31 square miles of lakebed, contributing to more severe dust storms.

As the population of the Wasatch Front increases in the coming years, Utahns face a difficult dilemma. Do we find ways to conserve and dramatically reduce our water use, painful as that would be, or do we let the lake continue to decrease in size? Do we allow the day to come when the lake dries completely and the name of our capital city becomes a stark reminder of our failed environmental stewardship?

Are We Facing a Drought of Biblical Proportions?

This summer, as Californians debated whether the catastrophic drought of 2013-2017 had actually left their still-parched and wildfire plagued state,²⁰ no one questioned the reality of the expanding “exceptional” drought centered in the Four Corners region of Colorado, New Mexico, Arizona, and Utah.²¹ Stunning examples of just how dry the Four Corners region has become are the recent springtime closures of national forests in Colorado, New Mexico, and Arizona--an attempt to protect the forests from human caused wildfires.²² Severe drought extends northward

throughout the vast majority of our state,²³ providing conditions for an exceptionally destructive wildfire season that has already consumed five times the average acreage and doubled the firefighting cost.²⁴

Within the context of global climate warming,²⁵ recent examples of dying montane forests, massive wildfires, closed national forests, and threatened agriculture raise the specter of a future Southwest landscape in which all or most of the trees are dead, toxic dust storms rage, and agriculture is impossible. Unfortunately, this is the scenario predicted by a recent study published in *Science Advances*.²⁶ The researchers used state-of-the-art atmosphere “general circulation” models to simulate the variables that govern mega-drought risk. They defined mega-drought as “a multidecadal (35-year) period of aridity as bad as, if not worse than, the worst droughts of the 20th century.” Their modeling indicates that by the end of the century, if our emission of greenhouse gases continues unabated, regional temperature increases will push the risk of mega-drought above 90% if precipitation rates do not change and above 99% if precipitation decreases, as is predicted. Stated simply, this study suggests that before the end of the century, business-as-usual emissions of greenhouse gases would make a mega-drought a near certainty. It must be emphasized that a mega-drought in the Southwest would negatively impact essentially every aspect of our ecosystem and every aspect of our way of life. Literally, this study makes it reasonable to question whether civilization as we know it can persist in the American Southwest through the century. Fortunately, the researchers found that aggressive reduction in global greenhouse gas emissions to keep regional warming below 2° C would cut the risk of mega-drought nearly in half.

If this study were an outlier it would be sensible to ignore it. A growing series of investigations, however, indicate that climate warming will, in the near future, disproportionately impact the American Southwest.²⁷ We believe forecasted regional consequences of climate warming demand that Utahns adopt a leadership role in aggressively combating climate warming. The level of our action will determine the future of our children and grandchildren.

Recommendations:

- **Robert Davies (physicist at USU)** for his continuing efforts to educate the public and the Utah Legislature about climate change and the need to curb emissions of heat trapping gases
- **Utah chapters of the Citizens' Climate Lobby** for their efforts to promote passage of a Carbon Fee and Dividend policy
- **Utah Legislature's Clean Air Caucus** for its efforts to promote cleaner air
- **Salt Lake City's Climate Positive 2040 Program** and its goal to achieve 100% renewable energy for community electricity supply by 2032²⁸
- **UCAIR (Utah Clean Air partnership)** for its expanded outreach and public education efforts to reduce air pollution
- **Friends of Great Salt Lake** for their continuing efforts to protect the ecosystem of the Great Salt Lake through education, research, and advocacy
- **Utah Rivers Council** for its continuing advocacy to protect our wetlands and educate the public on the Lake Powell Pipeline and Bear River development projects
- **Pacific Corp, the parent company of Rocky Mountain Power**, for ongoing efforts to reduce CO₂ emissions from their coal-fired power plants²⁹

Recommendations:

- **We continue to promote the idea of a pollution fee for cars**, particularly those with high emissions, and we recommend reintroduction of Utah HB 457.
- **The Legislature should require that new car advertising include gas consumption and pollution ratings.**
- **Utah leaders and planners need to begin questioning the desirability and presumed inevitability of the projected doubling of population** in Utah. Such unrestrained growth will make it very difficult to improve air quality in the Wasatch Front counties.
- **The Legislature should reinstitute tax incentives for low emission and electric vehicles.**
- **Utah needs to follow California and 9 other states** to mandate a minimum percentage of ZEV vehicles as proposed by HB 479 in 2018.
- **We urge more municipalities in Utah to join Salt Lake City, Park City, Moab and Summit County** in striving to achieve 100% renewable energy and reduce greenhouse gas emissions by 80% by 2040.
- **Major development projects in the Wasatch Front counties**, such as the Inland Port, the new prison in Salt Lake City, and the Olympia Hills development **must include environmental evaluations that address impact on air quality, water availability, and wetlands around the Great Salt Lake.**
- **We continue to recommend that the state legislature place a price on greenhouse gases.** A carbon tax would provide incentive for innovation and reduced use of fossil fuels. HB 403, introduced in 2018 by Rep. Joel Briscoe, is a revenue neutral carbon tax plan that we endorse.
- **To protect against future reductions in the level of the Great Salt Lake and to preserve the lake's wetlands**, residents of the Wasatch Front need to take water conservation seriously and advocate against the Bear River Development Project.

Endnotes for Article 2 (Environmental Health)

¹ Stan Penfold, “Will air emissions cloud inland ports success?” *Salt Lake Tribune*, June 16, 2018, <https://www.sltrib.com/opinion/commentary/2018/06/16/stan-penfold-will-air-emissions-cloud-inland-ports-success/>. Panagioti Tsolkas, “Environmental Problems Taint Plan for New Prison in Utah,” *Prison Legal News*, February 2016, accessed August 8, 2018, <https://www.prisonlegalnews.org/news/2016/feb/2/environmental-problems-taint-plan-new-prison-utah/>.

² Simone Francis, “Southwest valley mayors unite to oppose Olympia Hills development,” *GOOD4UTAH.com*, posted June 06, 2018, accessed August 8, 2018, <https://www.good4utah.com/news/local-news/southwest-valley-mayors-unite-to-oppose-olympia-hills-development/1221561885>. Deseret News Editorial Board, “In our opinion: High-density growth highlights tensions between planners and residents,” *Deseret News*, December 26, 2017, accessed August 8, 2018, <https://www.deseretnews.com/article/865694409/In-our-opinion-High-density-growth-highlights-tensions-between-planners-and-residents.html>.

³ House Bill 403, sponsored in the 2018 legislative session by Representatives Joel K Briscoe, Becky Edwards, and Dixon Pitcher, placed a tax on carbon dioxide emissions. The tax would start at \$10 per metric ton CO₂ and increase annually at 3.5% plus inflation with a cap of \$100 in inflation-adjusted 2018 dollars, and would be used to reduce other taxes:

- Eliminate state portion of sales tax on grocery store food (~\$140M)
- Eliminate state portion of sales tax on residential and commercial consumption of electricity and fuels (~\$40M for residential and ~\$30M for commercial)
- Rebate state sales tax on mining and manufacturing equipment (~\$60M).
- Rebate state income tax to mining and manufacturing companies (~\$100M).
- It would also fund a 75% match of federal Earned Income Tax Credit for low-income working families at risk of Intergenerational Poverty (~\$50M).

The first priority for Carbon Fund revenue is zeroing out impacts of tax reductions on the General Fund, Education Fund, Transportation Infrastructure Fund of 2005, etc. If any revenue remains, second priority is providing up to \$50M/year to reduce local air pollution from sources including locomotives, school buses, and lawn and garden equipment via the CARROT Program (Clean Air Retrofit, Replacement, and Off-Road Technology Program). Any remaining revenue goes to the General Fund. Bill accessed October 1, 2018, <https://le.utah.gov/~2018/bills/static/HB0403.html>.

⁴ “Evidence,” *NASA Global Climate Change*, accessed August 13, 2018, <https://climate.nasa.gov/evidence/>. Shows multiple causes and effects on climate due to global warming.

⁵ Data of Utah vehicle sales for the first two quarters of 2018 were calculated from data on the Utah State Tax Commission website, accessed September 13, 2018 <https://tax.utah.gov/econstats/mv/new-vehicle-sales>.

⁶ “Debunking Utah’s Most Common Air Quality Myths,” *UCAIR (Utah Clean AIR partnership)* Advertisement on *KUTV.com*, accessed August 16, 2018, <https://kutv.com/sponsored/ucair/debunking-utahs-most-common-air-quality-myths>. **Myth:** Refineries and other industrial sources are the biggest air polluters along the Wasatch Front. **Fact:** Vehicle exhaust is by far the largest contributor to air pollution—roughly 48 percent. Refineries and large industrial facilities represent about 13 percent of total emissions along the Wasatch Front. Of that 13 percent, 3 percent comes from Utah refineries and about 10 percent from the remaining industrial source points.

⁷ Data on 2017 Utah sales of electric vehicles and plug in hybrid vehicles computed from the Auto Alliance website, accessed August 14, 2018, <https://autoalliance.org/in-your-state/UT/>. (EV at 0.44%, PHEV at 0.37% for a total of 0.81%).

⁸ HB 479, “Zero Emission Vehicle Program,” accessed August 8, 2018, <https://le.utah.gov/~2018/bills/static/HB0479.html>.

⁹ “2018 Legislative Roundup: Clean Energy Wins and Challenges” *Utah Clean Energy*, accessed August 14, 2018, <https://utahcleanenergy.org/issues/item/447-2018-legislative-roundup-clean-energy-wins-and-challenges>.

¹⁰ Opinion section, “Mayors: EPA move to roll back vehicle emissions standards threatens Utahns’ health, air quality improvements,” *Salt Lake Tribune*, April 15, 2018, accessed August 8, 2018, <https://www.sltrib.com/opinion/commentary/2018/04/14/mayors-epa-move-to-roll-back-vehicle-emissions-standards-threatens-utahns-health-air-quality-improvements/>. The proposed changes in the CAFÉ (Corporate Average Fuel Economy) standards would not only remove the future increases in fuel efficiencies of cars and light trucks but also rescind and prevent more stringent air pollution requirements imposed by individual states such as California.

¹¹ Denni Cawley, "UPHE Statement on Inland Port," *Utah Physicians for a Healthy Environment*, accessed August 19, 2018, <http://uphe.org/may-23uphe-inland-port/>.

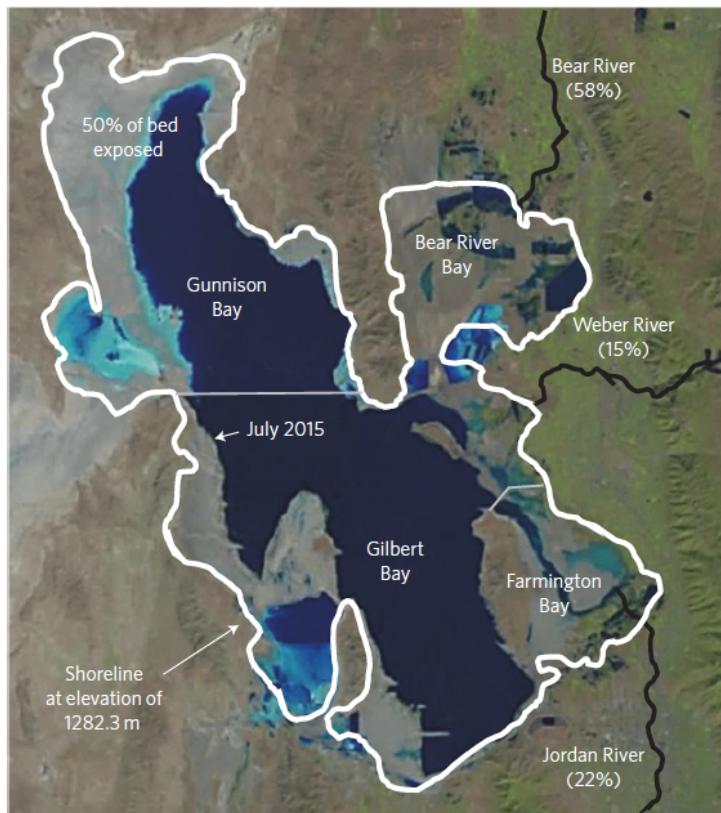
¹² Katie McKellar, "Environmental advocates warn they'll be 'watching closely' as Utah Inland Port board begins business," *Deseret News*, July 30, 2018, accessed August 19, 2018,

<https://www.deseretnews.com/article/900026408/after-last-months-false-start-inland-port-board-kicks-off-first-meeting.html>.

¹³ Kacey Deamer. "Utah's Great Salt Lake Is Shrinking," *Live Science*, accessed August 19, 2018, <https://www.livescience.com/57055-utah-great-salt-lake-shrinking.html>.

¹⁴ Wayne A. Wurtsbaugh, et al., (2017) "Decline of the world's saline lakes," *Nature Geoscience*, 10 (11) 816-821.

¹⁵ Ibid. "Influence of water use on the areal extent of Great Salt Lake, Utah." The white line shows the lake margin at the average no-diversion elevation of 1,282.3 m. The July 2015 NASA image shows the lake at near-record-low levels, exposing half of the lakebed.



¹⁶ "Decline of the world's saline lakes."

¹⁷ Ibid.

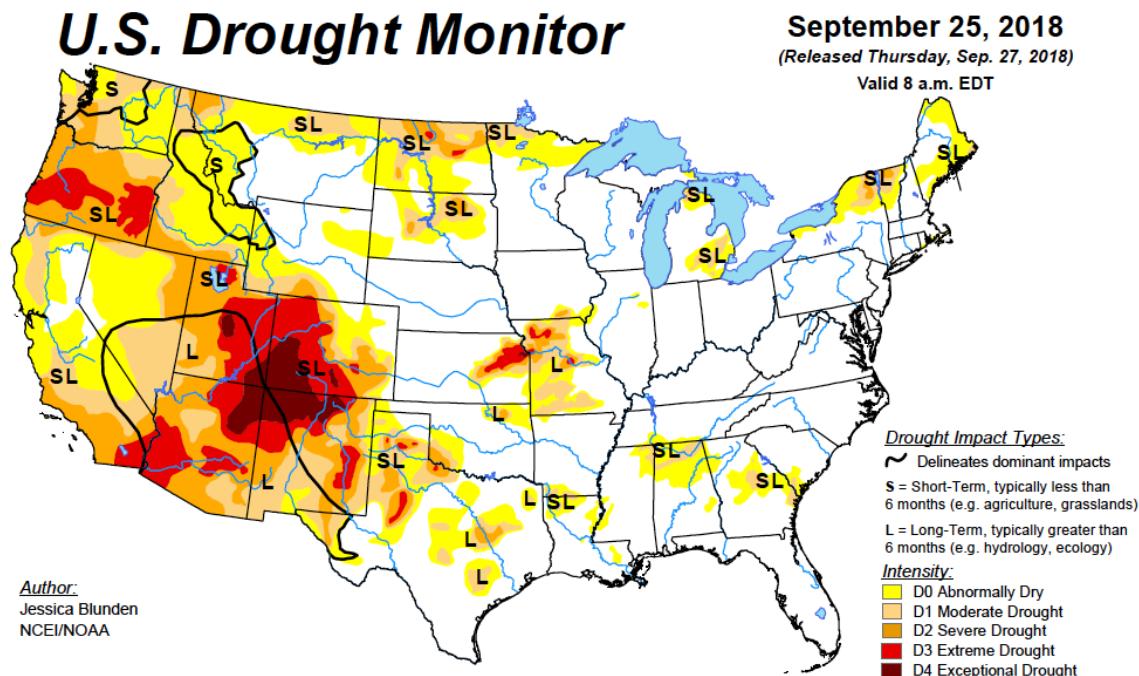
¹⁸ Ibid.

¹⁹ Ibid.

²⁰ "Forecast: More drought ahead for Ventura County, Southern California," *VC Star*, accessed June 20, 2018, <https://www.vestar.com/story/news/special-reports/outdoors/2018/06/08/forecast-more-drought-ahead-ventura-county-southern-california/629471002/>.

²¹ "United States Drought Monitor. Map for September 25, 2018," *The National Drought Mitigation Center, University of Nebraska-Lincoln*, accessed September 29, 2018, <http://droughtmonitor.unl.edu/CurrentMap.aspx>.

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"Experts: 'Alarming' drought conditions hit U.S. Southwest," *Denver Post*, accessed June 20, 2018, <https://www.denverpost.com/2018/05/23/colorado-southwest-drought/>.

²² "Extreme fire danger forces rare shutdown of national forests in West." *CBS News*, accessed June 20, 2018, <https://www.cbsnews.com/news/san-juan-national-forest-closed-extreme-fire-danger-2018-06-12/>.

²³ "United States Drought Monitor. Map for September 25, 2018."

²⁴ "Costs to Fight Wildfires in Utah Double This Year," *Insurance Journal*, accessed September 29, 2018, <https://www.insurancejournal.com/news/west/2018/09/24/502133.htm>.

²⁵ "Causes: A Blanket around the Earth," *NASA, Global Climate Change*, accessed September 19, 2017, <https://www.climate.nasa.gov/causes/>. Donald Wuebbles, et al., "Climate Science Special Report (CSSR) (Final Clearance, Fifth Order Draft)," *U.S. Global Change Research Program*, June 28, 2017, accessed September 19, 2017, <http://www.nytimes.com/packages/pdf/climate/2017/climate-report-final-draft-clean.pdf?mcubz=0>.

²⁶ T. R. Ault, J. S. Mankin, B. L. Cook, & J. E. Smerdon, (2016), "Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest," *Science Advances*, 2(10), e1600873.

²⁷ Gregg Garfin, et al., (2014). *Southwest: The Third National Climate Assessment*, accessed October 10, 2018, <https://nca2014.globalchange.gov/highlights/regions/southwest>. J. Funk, & S. Saunders (2014), "Rocky Mountain Forests at Risk," Union of Concerned Scientists, accessed October 10, 2018, <https://www.ucsusa.org/sites/default/files/attach/2014/09/Rocky-Mountain-Forests-at-Risk-Full-Report.pdf>.

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²⁸ Plan "Climate Positive 2040," *Salt Lake City Sustainability*, accessed October 4, 2018, <https://www.slc.gov/sustainability/climate-positive/>.

²⁹ In 2015, PacifiCorp closed the 172-megawatt Carbon Power Plant near Helper, Utah, permanently removing approximately one million tons of CO₂ emissions every year. In 2025, the 1,900-megawatt Intermountain Power Agency (a separate agency from PacifiCorp and Rocky Mt. Power) is scheduled to close the Intermountain Power Project near Delta, Utah. This will remove approximately twelve million tons of CO₂ emissions every year. Combined, closing these facilities will remove 40% of CO₂ emissions from Utah coal-fired power plants (as compared to 2014 GHG--greenhouse gas--emissions from these sources). "Safety Always, 2017 Annual Report," *Intermountain Power Agency*, accessed October 1, 2018, https://www.ipautah.com/wp-content/uploads/2017/12/IPA-Annual-2017_FINAL.pdf. In addition, PacifiCorp continues to invest in renewable energy systemwide, committing to add more than 1,100 megawatts in solar and wind capacity through power purchases to the more than 1,000 megawatts of installed wind capacity. "Global Climate Change," *PacifiCorp*, accessed October 1, 2018, <http://www.pacificorp.com/env/ec/gcc.html>.