

Newsletter: Energy and Life; Open space and Lafayette's energy challenge

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Imagine a landscape on a summer day in its simplicity: "Sunlight, Land, and Life." Expand that thought and sense its inherent lessons: "Solar energy, lessons from the Land, Human life as part of a living system." Then, consider: "The sun as the source of life, Open Space, Lafayette's energy future."

This essay explores relationships between our lives and the living system of Earth, of which we are a part. It highlights the potentially major role that our community's open spaces (official Open Spaces, Parks and even back yards or school yards) could play in our understanding and addressing of modern energy challenges.

Many people know that big changes are needed to make our human systems compatible with Earth systems that sustain us. Lafayette, as a community, reflects this officially on our city website: "*Anyone who has spent time in Lafayette as a citizen, visitor, or employee knows that our community is deeply committed to making good decisions for both our people and the planet. For many years, Lafayette has served as a sustainability leader among Colorado communities.*" ([See Lafayette Climate Goals: http://www.cityoflafayette.com/1938/Lafayette-Climate-Goals](http://www.cityoflafayette.com/1938/Lafayette-Climate-Goals)) This statement accompanies the recent city commitment *to 100% renewable energy by 2030 and an 80% reduction in greenhouse gas emissions by 2050.*

As Lafayette takes on these monumental energy goals, we will benefit by reminding ourselves of the value of land. Lafayette Open Space manages a significant portion of our undeveloped lands, and these are valuable as wildlife habitat, agricultural land, places of recreation and more (see <http://www.cityoflafayette.com/160/Open-Space>). But Open Spaces also hold many of the lessons and physical values that we will need to create a healthy and sustainable community for ourselves and our descendants. When we spend time in open spaces, we can sense energy principles and relationships much more clearly than when we are in front of a screen or in a classroom. Consider the following:

- **Land holds carbon, undisturbed land more so.** According to the Yale University Department of Forestry and Environmental Studies, "*more carbon resides in soil than in the atmosphere and all plant life combined; there are 2,500 billion tons of carbon in soil, compared with 800 billion tons in the atmosphere and 560 billion tons in plant and animal life. And compared to many proposed geoengineering fixes, storing carbon in soil is simple: It's a matter of returning carbon where it belongs.*" ([source](#)) Thus, Open Space lands play a significant part in carbon sequestration goals just by their very nature.
- Coal mines underlay most of Lafayette and our own community's history and coal mining plays a significant role in other Colorado communities today. As we embark upon energy challenges of the 21st century, **we can allow the land to help reclaim the carbon that we have released through the burning of fossil fuels, and also emulate how plants created coal and buried carbon in the first place.** One focal point of this quest is biochar – charcoal produced from plant matter and stored in the soil as a means of removing carbon dioxide from the atmosphere. Biochar has the potential to improve the fertility of land and help mitigate climate change. See this Colorado State Extension Service Fact sheet – <http://extension.colostate.edu/topic-areas/agriculture/biochar-in-colorado-0-509/>
- **Agriculture plays a huge part in the balance between atmospheric carbon and carbon in the**

soil. According to a [paper](#) published by the National Sustainable Agriculture Coalition Breakthrough Strategies and Solutions, LLC, “Carbon sequestration on agricultural lands is possible through a range of soil management strategies and could be substantial with widespread implementation. Sequestration of historic carbon emissions is now essential as mitigation alone is unlikely to stabilize our atmosphere.” As was explored in a previous Lafayette Open Space newsletter, Lafayette is home to agricultural open spaces including [Thomas Open Space](#) (owned by the people of Lafayette and farmed by Jason and Natalie Condon, owners of [Isabelle Farm](#)) and [Harney-Lastoka Open Space](#) (co-owned by Lafayette, Louisville, and Boulder County and which includes an organic farm and farm stand run by [7th Generations Farm](#)). The [Kerr Community Garden](#), opened in 2008, is also a part of Harney Lastoka Open Space. Sustainable agriculture is a goal of all of these agricultural Open Spaces, and energy / climate change will continue to be central to this quest.

- **Open Spaces are a living laboratory in which we can study and viscerally understand important energy principles:**

- The sun is the ultimate and most important energy source for Earth’s living system. Photosynthesis is the link between the sun and the physiology of the land including human life.
- Energy is transformed from one type to others. Sunlight is transformed into chemical energy via photosynthesis, mechanical energy, heat, and other forms.
- Heat is always a byproduct of most energy transformations. And yet, heat is a “precious commodity” because it is difficult to store. Animals and plants have adaptations that allow them to conserve heat (or deal with its absence or over-abundance).
- Energy efficiency is not the same thing as energy conservation. A living process can be efficient in its use of an energy resource, but still overuse a scarce energy resource. In addition to natural tendencies toward growth, most living systems have self-limiting adaptations as well.
- Symbiosis and synergy are built into healthy living systems. For an ecosystem to remain healthy, there is a constant “give and take.” In addition to competition for resources, all parts of a healthy community cooperate and share. As microbiologist, Lynn Margulis, once said, ‘symbiosis wrote the symphony of life; natural selection edits it.’ (Part of a speech at [2006 conference, “Gaia Theory; Model and Metaphor for the 21st Century](#)).

- **Open space yields principles to guide the formation of a sustainable economy.** When we use the above energy lessons (and other lessons from how our land lives) as a starting point, we can begin to design our own human systems, to fit in long term to this living system. For instance, [William McDonough and Partners](#) use [three principles](#) from living systems to guide their projects, whether that be architecture/building design or the design of a carpet manufacturing system.

- **Use “daily income” of solar energy** - don’t use up “savings” of fossil fuel
- **Waste = food** – Everything is a resource for something else
- **Celebrate diversity** - each place has its own diversity of flora and fauna, climate, soil etc. and its diversity of human culture and resources. A lot has been made of this recently, but not the opportunity of hearing diverse outlooks and worldviews of how human beings live in community with their natural surroundings.

William McDonough and Partners point out that “designs that respond to the challenges and opportunities offered by each place fit elegantly and effectively into their own niches.” When we realize that human beings are part of the land and that open spaces offer inherent value as

well as lessons and guidance, we can most effectively envision and create sustainable human systems.

A concluding thought: Human-made spaces such as buildings, sports arenas and plazas are important places to celebrate and strengthen community. On their own, however, they do not turn our collective attention to the land of which we are a part. When, however, we gather outdoors – whether on a picnic, a walk or event – we can start to sense, more fully, the vast story of our place. We can appreciate how interwoven our Human lives are with Sun and Land, and find the inspiration and creativity to meet the challenges of living in symbiosis with the rest of life. Open Spaces and parks are – in a holistic sense – our true community places.