frontiers in life sciences

Consensus Statement: Sustainable Phosphorus Summit

From 3-5 February 2011, more than 100 scientists, engineers, entrepreneurs, farmers, policy-makers, educators, artists, and others took part in The Sustainable Phosphorus Summit on the campus of Arizona State University in Tempe. The event was part of an emerging global dialogue around the diverse dimensions of human phosphorus use.

The Phoenix Phosphorus Declaration

We have achieved broad agreement on important issues surrounding phosphorus sustainability challenges and opportunities and seek to raise global awareness about them among all those with a stake in the future of food, water, and the biosphere. All of humanity, and indeed all living species, has this stake.

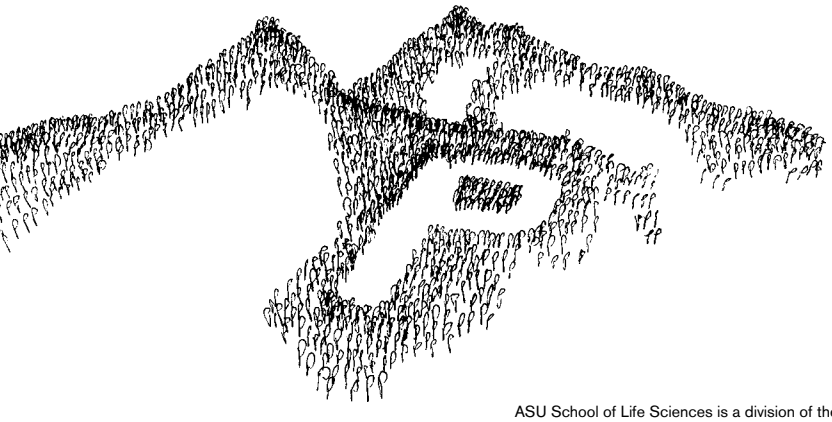
We find:

- **Essential and limited.** *Phosphorus is essential for all life because it is part of critical molecules like DNA. It is a limited natural resource needed to sustain the vitality and productivity of all ecosystems,* including farms.
- **Imbalanced cycle.** *Mining of phosphorus for fertilizer production has massively altered the cycling of phosphorus on Earth.* This increased phosphorus use has greatly expanded global capacity for food production but also has led to amplified phosphorus losses from cities, towns, and farms that can lead to degraded water quality, impair freshwater and marine fisheries, and alter natural biodiversity.
- **Food security.** *Phosphorus has a key role in global food security,* as reliable access to affordable fertilizer can allow farmers to improve yields and increase quality of life, especially in the developing world.
- **Recycle and reuse.** Currently, much phosphorus is lost in crop waste, food spoilage, and animal & human waste. *Recycling this phosphorus can reduce geopolitical and other uncertainties surrounding phosphorus fertilizer markets* and enhance farmer prosperity.
- **Reduce demand.** *Phosphorus natural resources can be extended* by improving efficiency of use in agriculture, reducing erosion, limiting losses in mining & industry, and eating lower in the food chain.
- **Interconnected.** *Phosphorus stewardship is coupled to other major global sustainability challenges,* including those involving energy, water, and other chemical elements.
- **Entrepreneurship.** There are great *economic opportunities to innovate and create new industries* for phosphorus supply diversification and for improved agricultural phosphorus efficiency. However, the suitability of such measures will differ for different environments, cultures, and contexts.

By closing the human phosphorus cycle and transforming wastes into resources and uncertainty into security, humanity can implement a “new alchemy” in which people become more secure and enjoy greater well-being in a healthy environment.

Participants in the 2011 Sustainable Phosphorus Summit Tempe, Arizona, USA

~ End of Declaration ~



For more information, visit:
sols.asu.edu/frontiers/2011/consensus.php

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