



Stepping Outside the Lines: Collaboration, pragmatism and stewardship in design, construction and maintenance of a restoration project.

Justin Howell - Owner/Manager Applied Ecology LLC

Restoration an Overview

- ❖ Turning back the clock?
- ❖ Fixing broken ecosystems?
- ❖ Building novel ecosystems?
- ❖ Building Infrastructure?

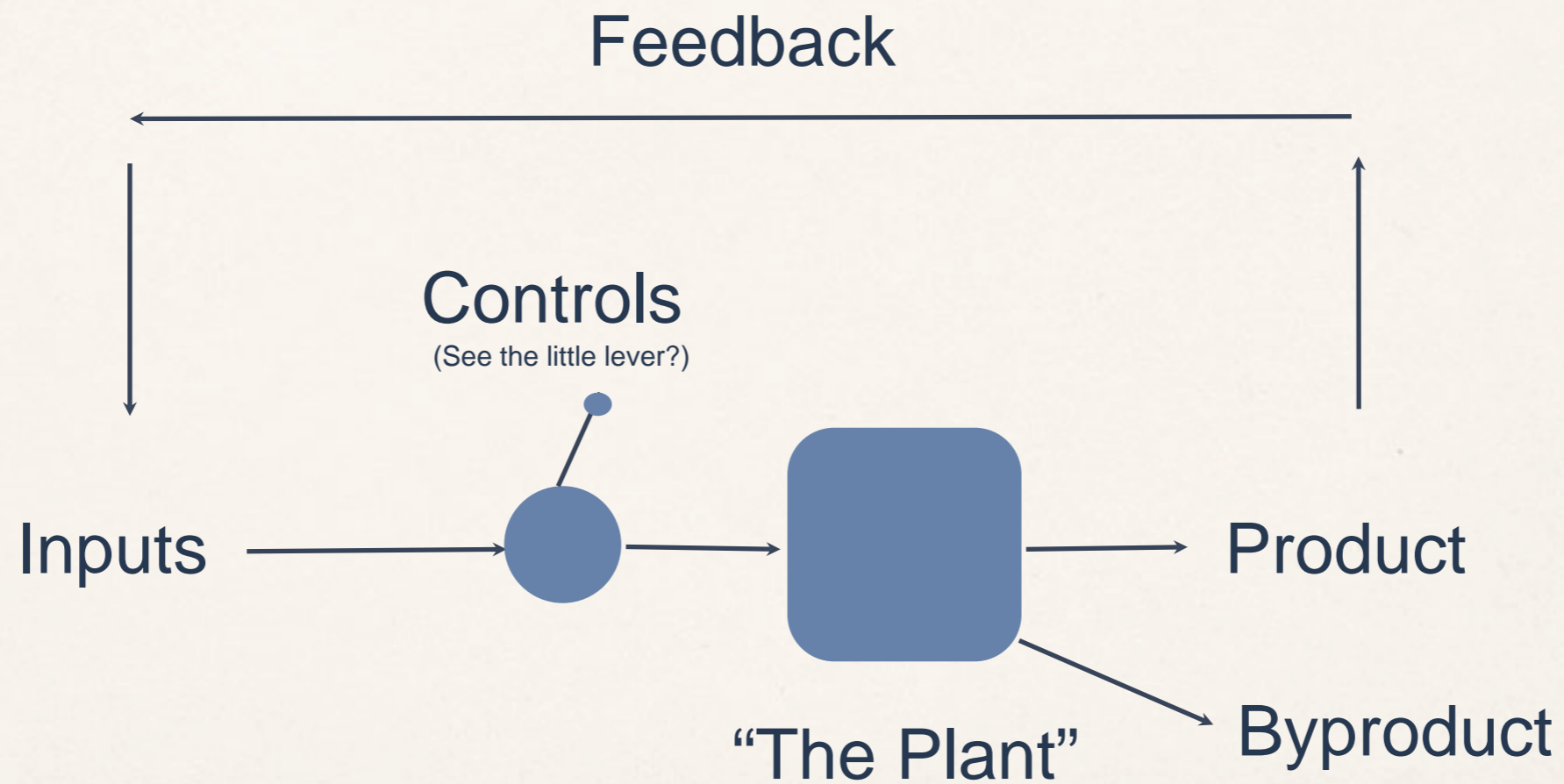


What Is Applied Ecology?

- ❖ Not a boy band.
- ❖ Not just a great local restoration company.
- ❖ Using the principals of ecology to design novel ecosystems based on parameters and constraints established by stake holders and known site conditions.

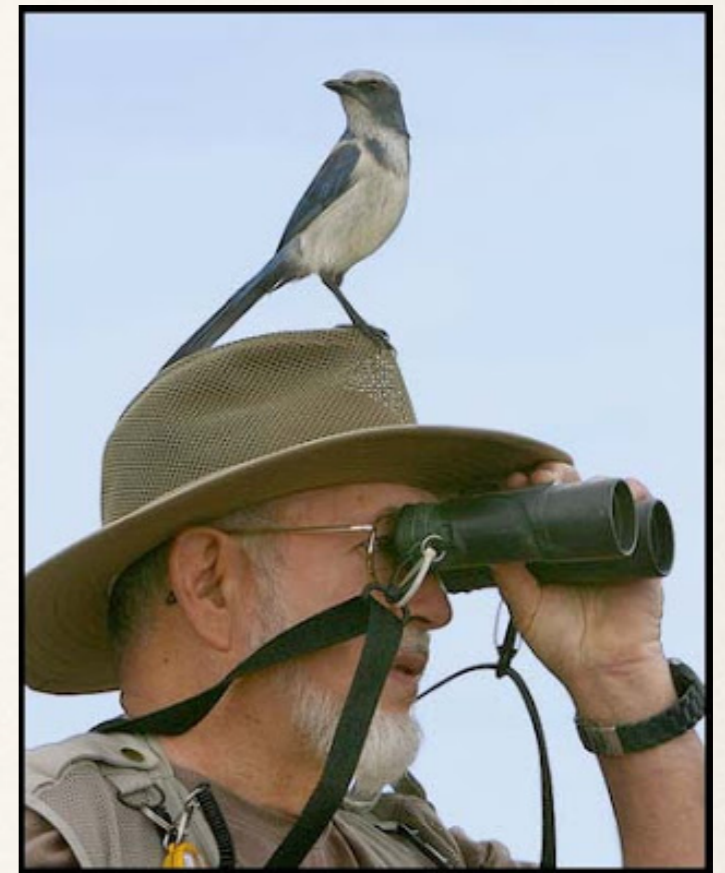


Designing “The Plant”



Product vs. Byproduct

- ❖ Monitoring!
- ❖ Product is the target condition.
- ❖ Byproduct is everything else.
- ❖ What do we do with the byproduct?
- ❖ We manipulate the controls to influence feedback and alter trajectory towards a better quality product.



Reality Check

(Or staying out of the place of blame)

- ❖ Is there ever a product without a byproduct? (I'm actually really asking this isn't merely rhetorical)
- ❖ Many byproducts in restoration are unanticipated despite thorough pre-construction analysis, modeling, reference etc...
- ❖ Often times we need to go *WAY* off script ("where am I going to find funding for this?") to pursue project goals.
- ❖ Don't place blame. Don't shame your collaborators. Calmly take stock and modify your plan.

Case Studies

- ❖ “I can honestly say every restoration project I have ever been a part of needed some kind of modification to either the installation plan or the long term maintenance strategy. Except the ones that didn’t have either.” - Justin Howell
- ❖ “Ecosystems are living things. They are in too much of a hurry to wait around for you to make up your mind” - Justin Howell
- ❖ “If you don’t like moving targets I suggest you give up ecological restoration and take up archery” - Justin Howell

McKenna Preserve - Soils/Conditions

- ❖ Private homes/timberland on former Weyerhaeuser production forest.
- ❖ Brush/invasive control mortality replacement plantings
- ❖ Rocky/quick soil.
- ❖ Gregarious Megafauna



Magnuson Wetland - Animals

- ❖ Large scale constructed wetland
- ❖ Super successful habitat restoration
- ❖ So successful that beavers moved in.



Cedar River Knotweed - Herbicide



- ❖ 12 miles, multiple year, knotweed control project.
- ❖ High visibility. Sensitive area.
- ❖ Herbicide injection as main control strategy.
- ❖ Switch to foliar application by year three.

Arroyos Hills - Pathogens



- ❖ Steep Bluff, sandy soils.
- ❖ Half mature madrone forest half Scotch broom
- ❖ Scared out of our wits by madrone blight.
- ❖ Instituted rigorous sanitation protocols. Scrub in/scrub out.

Madrona Landslide - Materials



- ❖ Multi parcel landslide mitigation
- ❖ Four separate land owners
- ❖ Plastic sheeting specification
- ❖ Variance granted for use of natural materials and replanting.
- ❖ 50% less expensive.

Thank You!



The Beaver of Dam-o-clese

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