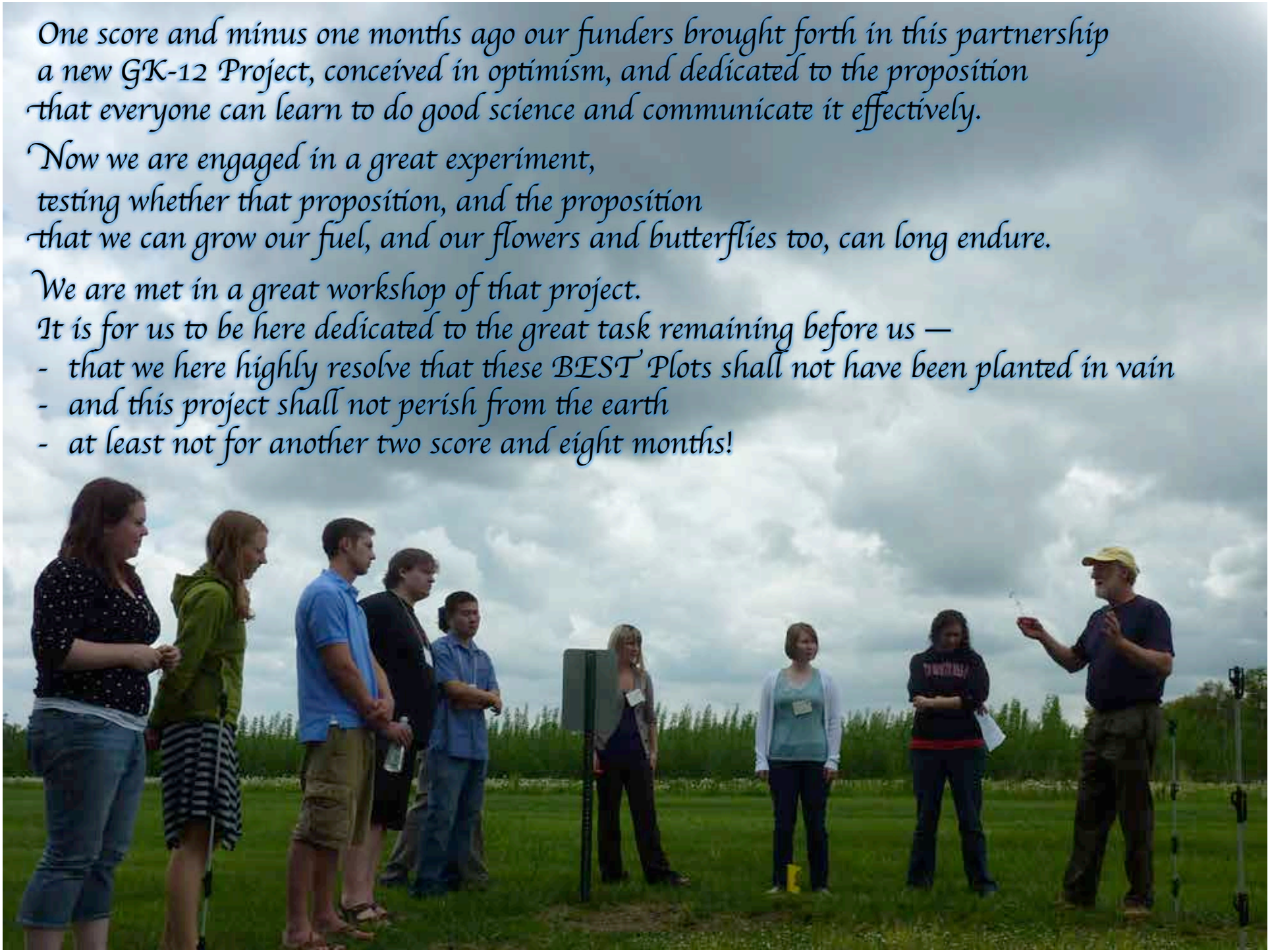
Tom Getty's brief Address

to the K-12 Partnership
October 5, 2011


One score and minus one months ago our funders brought forth in this partnership
a new GK-12 Project, conceived in optimism, and dedicated to the proposition
that everyone can learn to do good science and communicate it effectively.
Now we are engaged in a great experiment,
testing whether that proposition, and the proposition
that we can grow our fuel, and our flowers and butterflies too, can long endure.
We are met in a great workshop of that project.
It is for us to be here dedicated to the great task remaining before us —
- that we here highly resolve that these BEST Plots shall not have been planted in vain
- and this project shall not perish from the earth
- at least not for another two score and eight months!

GK12 Bioenergy Sustainability Project

The BeSt schoolyard Bioenergy Sustainability Experiment

Can we grow our fuel and our flowers and butterflies too?

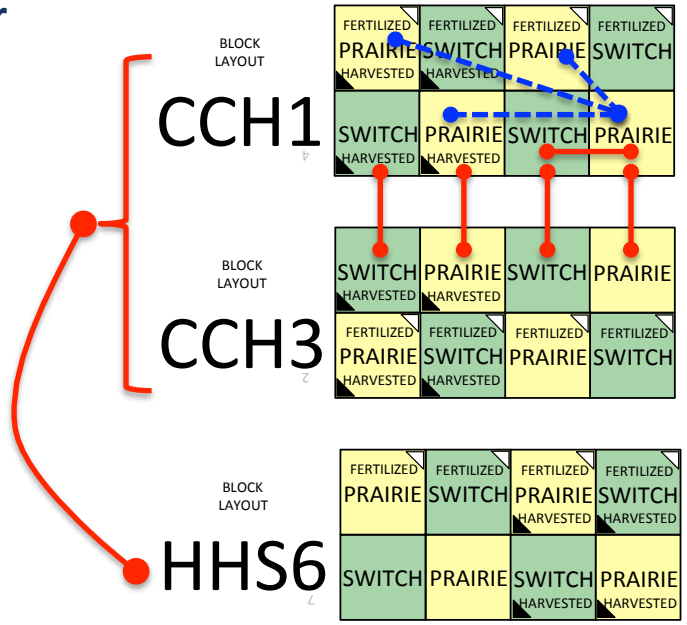
Dependent variables include: plant biomass; plant diversity; invertebrate diversity

Independent variables include:

- seed, harvest & fertilizer treatment effects within blocks
- block effects between blocks within a schoolyard/location
- soil & landscape effects across locations

Fast effects

Slow effects

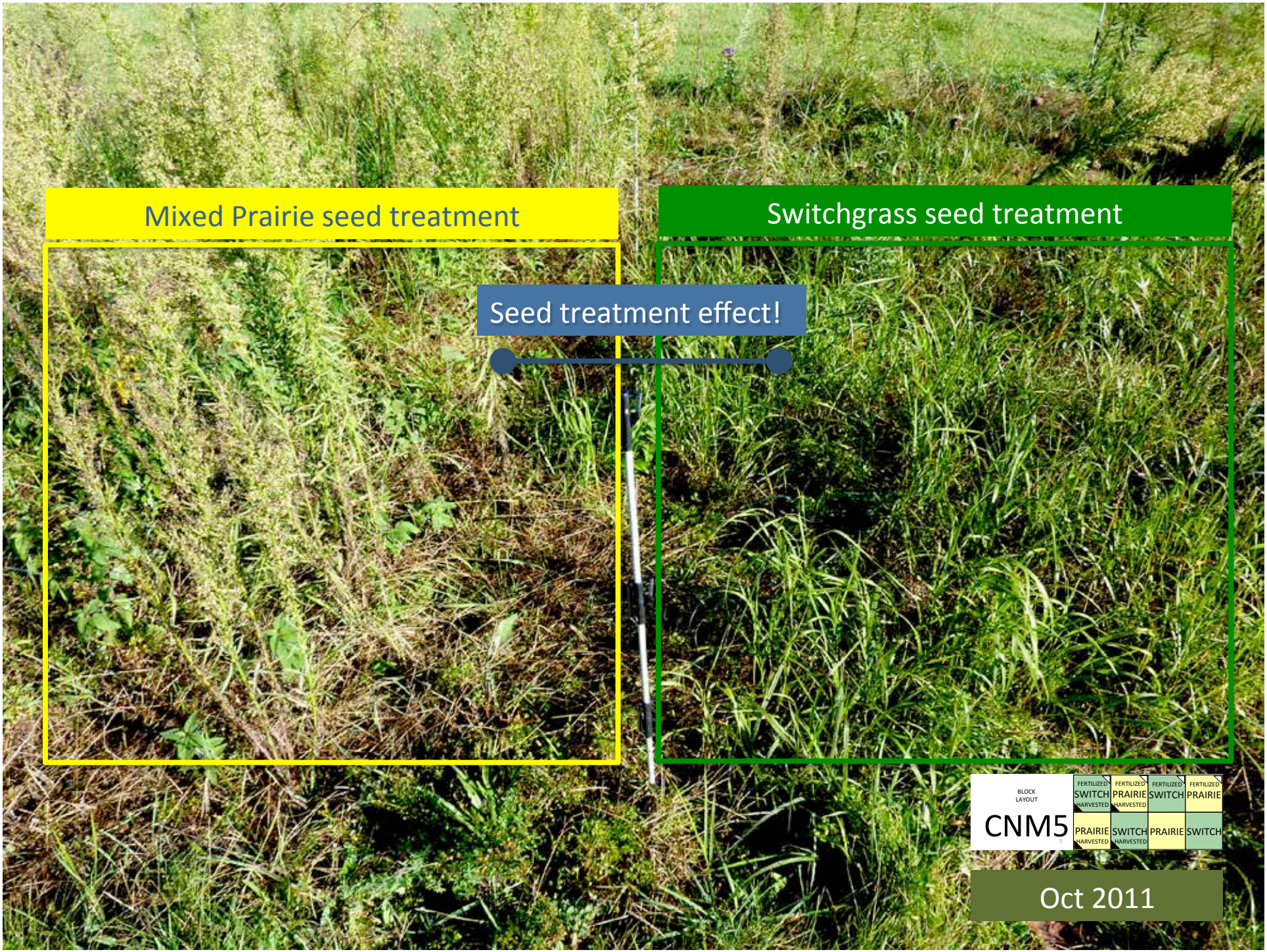


"Interactions" – productivity-diversity, fertilization x soil, fertilization x harvest, etc. …


MICHIGAN STATE UNIVERSITY
GK12
These research plots are an essential part of the Michigan State University, W.K. Kellogg Biological Station, GK-12 Schoolyard Research Network, a collaborative research and education project involving K-12 school districts in SW Michigan, supported by the National Science Foundation and other partners.
Please do not enter or disturb these research plots.
2
BLOCK LAYOUT
GLM2
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
Oct 2011


Oct 2011
FERTILIZED SWITCH
FERTILIZED PRAIRIE
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
SWITCH
PRAIRIE
BLOCK LAYOUT
GLM2
Notice the lawn
Seed treatment effect!


BLOCK LAYOUT
CNM5
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
PRAIRIE HARVESTED
SWITCH HARVESTED
PRAIRIE
SWITCH
Oct 2011
Notice the lawn


Mixed Prairie seed treatment
Switchgrass seed treatment
Seed treatment effect!
BLOCK LAYOUT
CNM5
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
PRAIRIE HARVESTED
SWITCH HARVESTED
PRAIRIE
SWITCH
Oct 2011


BLOCK LAYOUT
CNM5
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
PRAIRIE HARVESTED
SWITCH HARVESTED
PRAIRIE
SWITCH
Oct 2011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GK12
These research plots
are an essential part of
the Michigan State University,
W.K. Kellogg Biological Station,
GK-12 Schoolyard Research Network,
a collaborative research
and education project
involving K-12 school districts
in SW Michigan,
supported by
the National Science Foundation
and other partners
Please
do not smile or squash
these research plots.
1
BLOCK LAYOUT
CCH1
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE
FERTILIZED SWITCH
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
Oct 2011
Notice the lawn


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GK12S
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2
BLOCK LAYOUT
PAD2
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
Oct 2011
Notice the lawn


BLOCK LAYOUT
PAD2
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE HARVESTED
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
Oct 2011


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3
BLOCK LAYOUT
KBS3
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE
FERTILIZED SWITCH
Notice the lawn
Sept. 2011

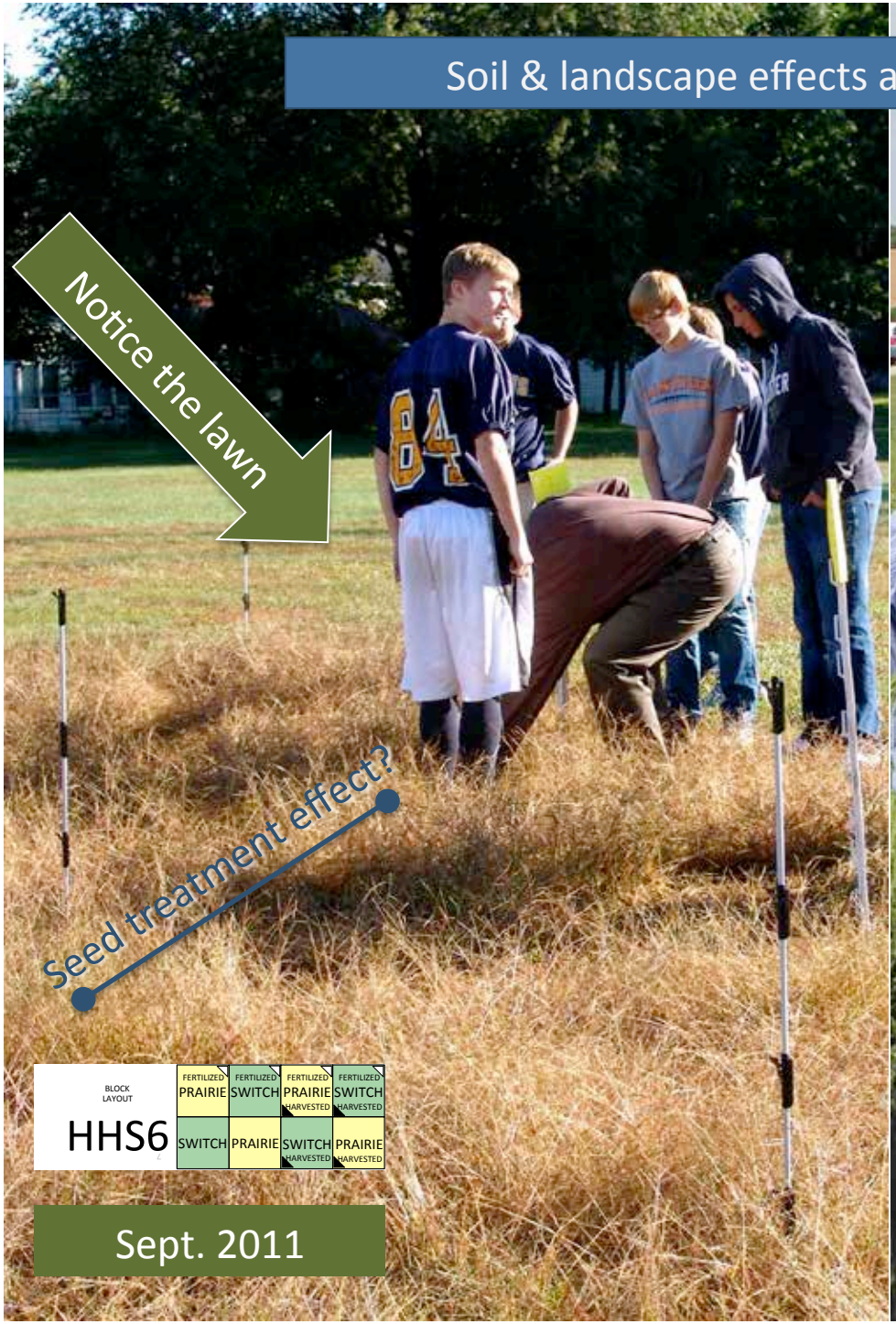

BLOCK
LAYOUT
KBS3
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE
FERTILIZED SWITCH
Sept. 2011

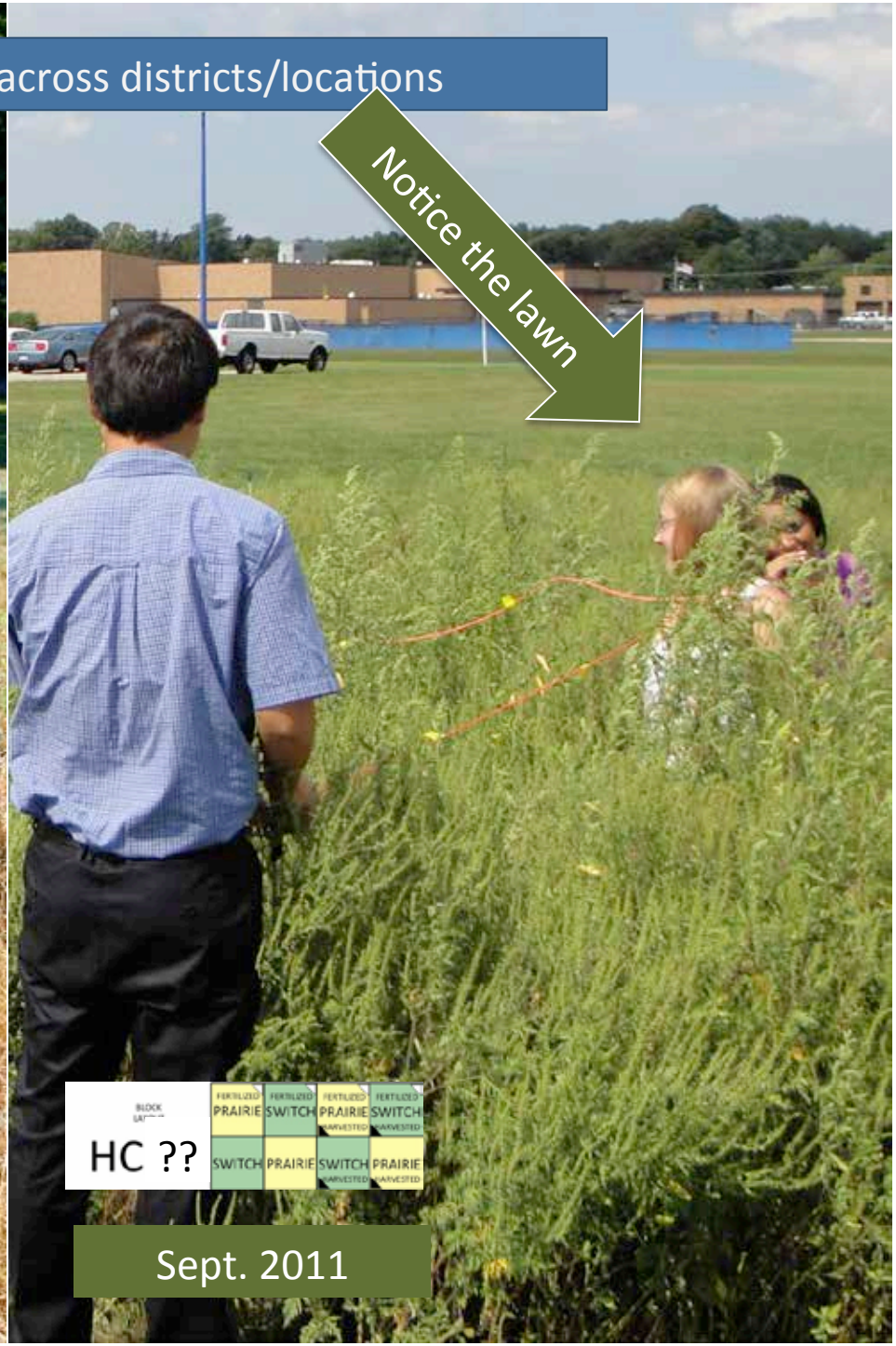

BLOCK LAYOUT
GMB2
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH *HARVESTED
FERTILIZED PRAIRIE *HARVESTED
PRAIRIE
SWITCH
PRAIRIE *HARVESTED
SWITCH *HARVESTED
Oct 2011


BLOCK LAYOUT
CHS3
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE
FERTILIZED SWITCH
Oct 2011


BLOCK LAYOUT
CHS3
SWITCH HARVESTED
PRAIRIE HARVESTED
SWITCH
PRAIRIE
FERTILIZED PRAIRIE HARVESTED
FERTILIZED SWITCH HARVESTED
FERTILIZED PRAIRIE
FERTILIZED SWITCH
Oct 2011

Soil & landscape effects across districts/locations



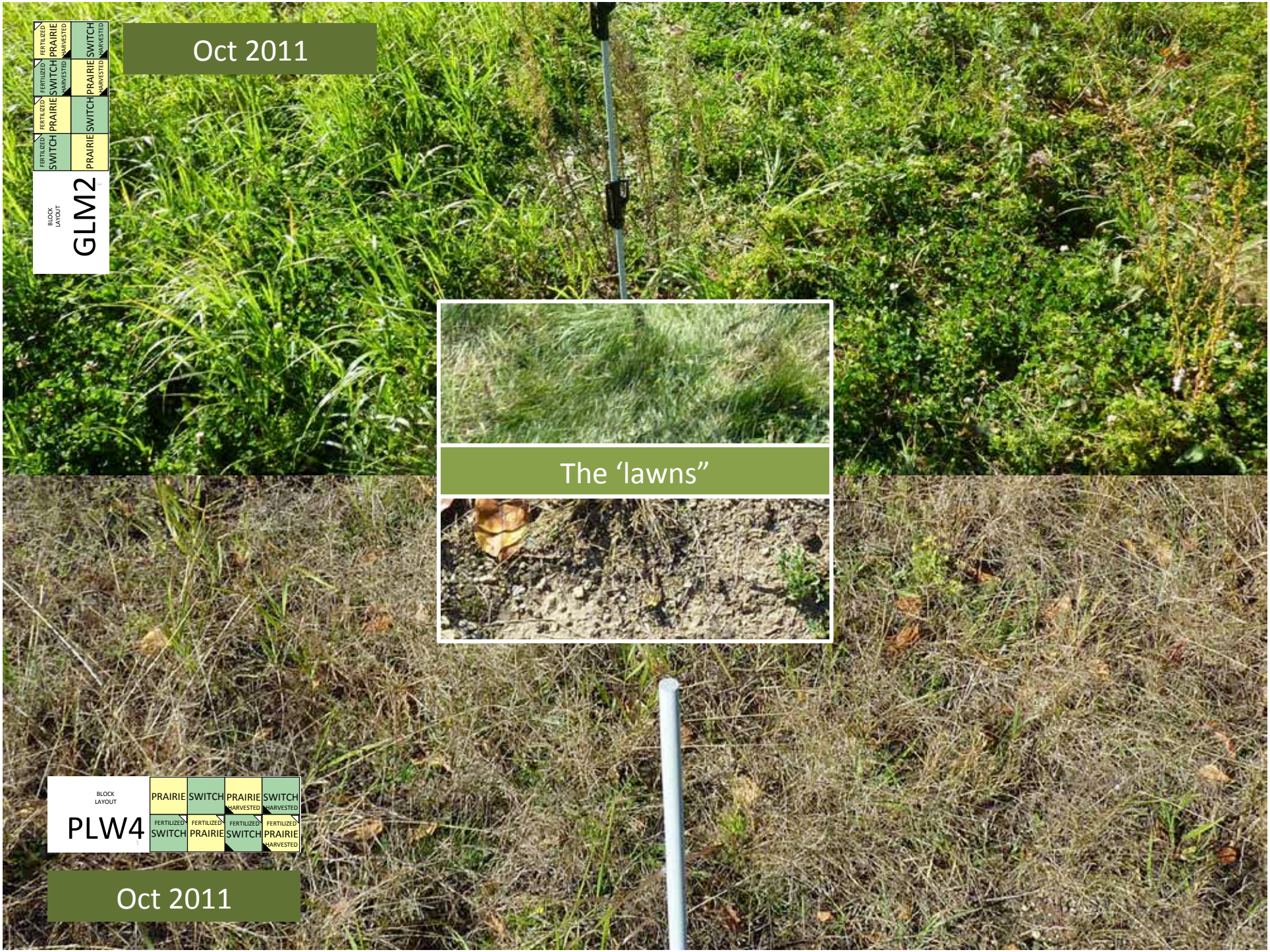


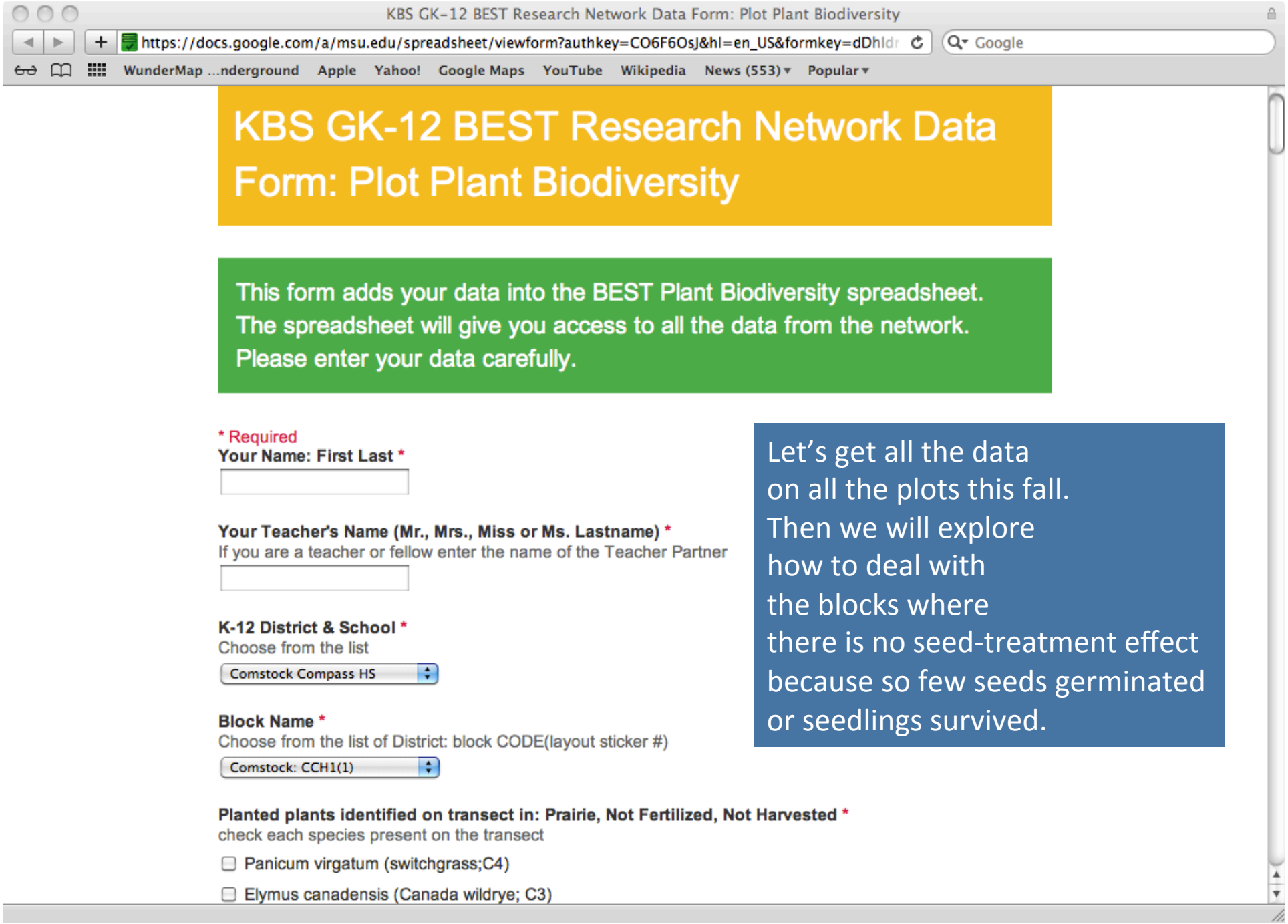

BLOCK LAYOUT
PLW4
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH
FERTILIZED PRAIRIE HARVESTED
Oct 2011


Seed treatment effect?
BLOCK LAYOUT
PLW4
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH
FERTILIZED PRAIRIE HARVESTED
Oct 2011

The "lawn" next to BLOCK LAYOUT PLW4

Oct 2011


Oct 2011
BLOCK LAYOUT
GLM2
FERTILIZED PRAIRIE HARVESTED
SWITCH HARVESTED
FERTILIZED SWITCH HARVESTED
PRAIRIE HARVESTED
FERTILIZED PRAIRIE
SWITCH
FERTILIZED SWITCH
PRAIRIE
The ‘lawns”
BLOCK LAYOUT
PLW4
PRAIRIE
SWITCH
PRAIRIE HARVESTED
SWITCH HARVESTED
FERTILIZED SWITCH
FERTILIZED PRAIRIE
FERTILIZED SWITCH
FERTILIZED PRAIRIE HARVESTED
Oct 2011


KBS GK-12 BEST Research Network Data Form: Plot Plant Biodiversity
https://docs.google.com/a/msu.edu/spreadsheet/viewform?authkey=CO6F6OsJ&hl=en_US&formkey=dDhldr
Google
WunderMap ...nderground
Apple
Yahoo!
Google Maps
YouTube
Wikipedia
News (553)
Popular
KBS GK-12 BEST Research Network Data Form: Plot Plant Biodiversity
This form adds your data into the BEST Plant Biodiversity spreadsheet.
The spreadsheet will give you access to all the data from the network.
Please enter your data carefully.
* Required
Your Name: First Last *
Your Teacher's Name (Mr., Mrs., Miss or Ms. Lastname) *
If you are a teacher or fellow enter the name of the Teacher Partner
K-12 District & School *
Choose from the list
Comstock Compass HS
Block Name *
Choose from the list of District: block CODE(layout sticker #)
Comstock: CCH1(1)
Planted plants identified on transect in: Prairie, Not Fertilized, Not Harvested *
check each species present on the transect
Panicum virgatum (switchgrass;C4)
Elymus canadensis (Canada wildrye; C3)
Let's get all the data
on all the plots this fall.
Then we will explore
how to deal with
the blocks where
there is no seed-treatment effect
because so few seeds germinated
or seedlings survived.