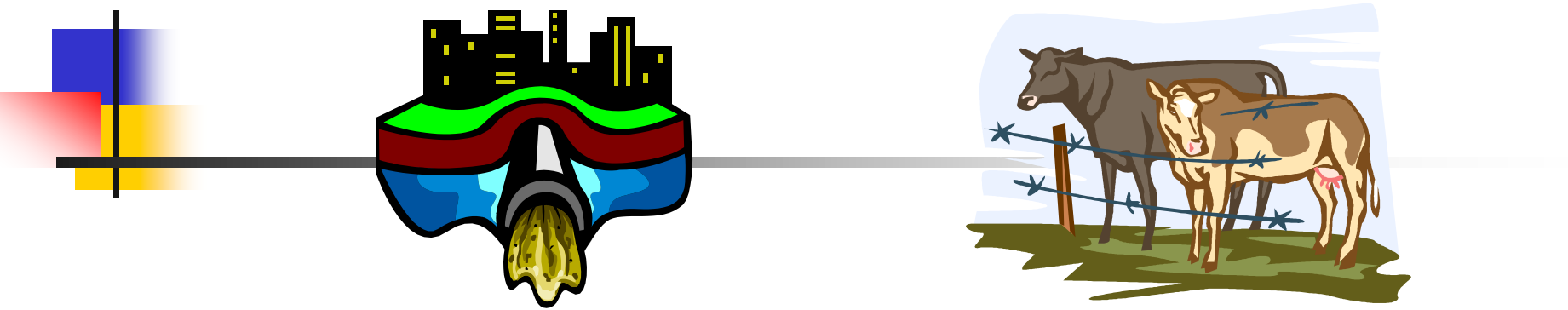


Watershed Projects and Agriculture



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Challenges with Trading



- The producers who are looking to get engaged with trading are probably the ones with the lowest levels of loss
 - Can they make changes that reduce losses to a level that is measurable in water quality
- Farmers want to protect water quality – they need to be involved throughout the process



Water Quality Trading

- Will changes in management show up in water quality
 - Annual variation
 - Lack of control in ag

P – Index (Management Tool)



- Excellent tool to evaluate the relative risk of fields or management practices against other fields or practices on the same farm

P – Index (Regulatory tool)



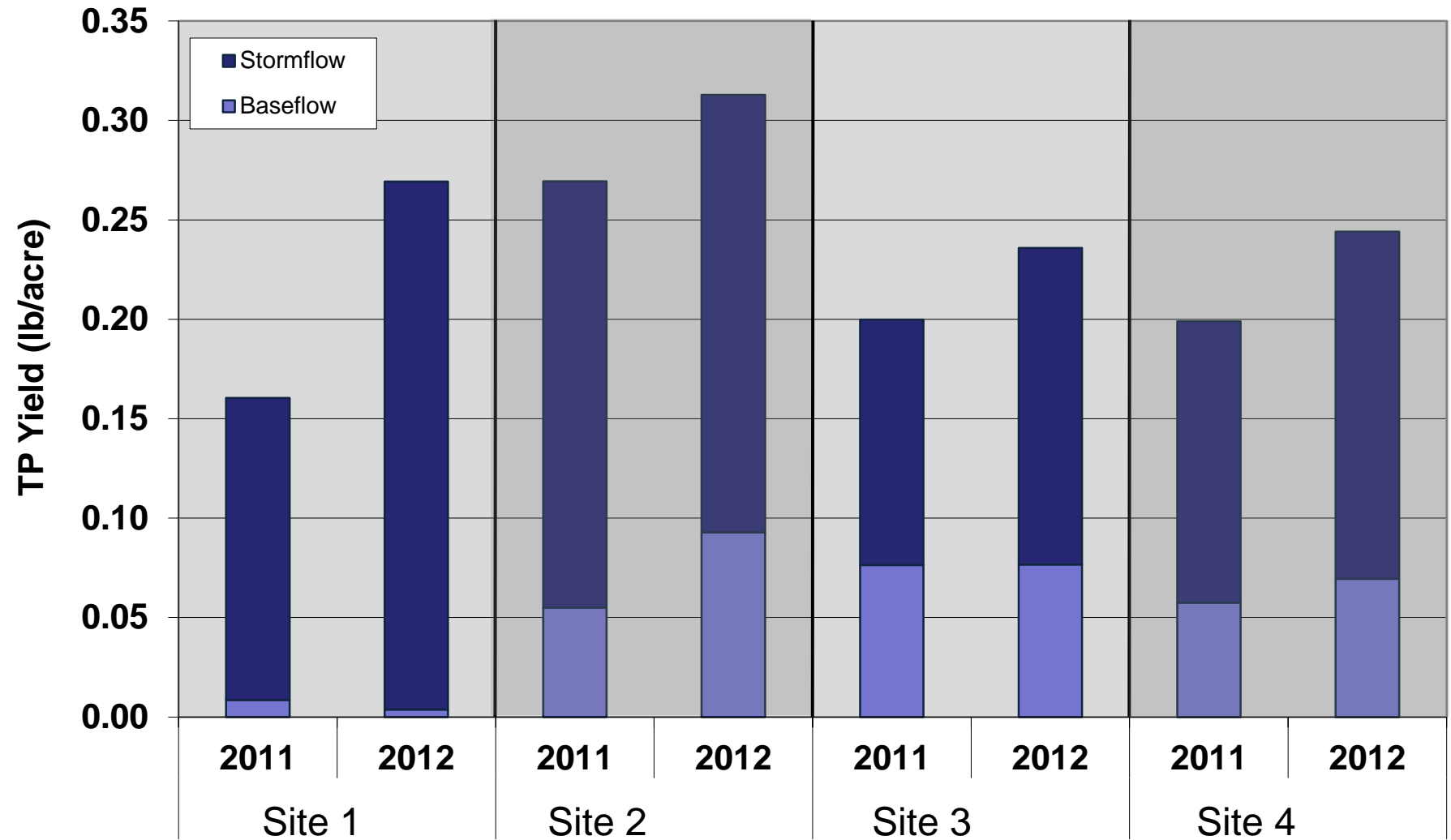
- Today the P-Index is a regulatory tool:
 - Croplands, pastures, and winter grazing areas shall average a phosphorus index of 6 or less over the accounting period and may not exceed a phosphorus index of 12 in any individual year within the accounting period.



Example Watershed

- Target watershed with a TMDL
- Adaptive management program:
 - **Need to reduce P loss by 0.25 lbs / acre**
 - **Producers were asked to decrease their P-index by 0.25 lbs and told that the watershed would then achieve its TMDL!**

Phosphorus Loss FY2011 vs. FY2012





Example Watershed

- 95% of all land (16,600 acres) had a soil test level below 50 ppm
- 11,000 acres (63% of all acres) had a PI of 1 or 2,
- 4,500 acres (25%) had a PI of 3 or 4
- Area identified by PI is incorrect based on data

Nutrient and Soil Conservation Assessment (SNAP):

Rot. Ave Soil Loss			Phosphorus Index			Soil Test Phosphorus (ppm)		
Ave	1.3		Ave	1.5		Ave	57.9	
Min	0		Min	0.0		Min	0	
Max	4.1		Max	6.0		Max	256	
Individual Field Data			Individual Field Data			Individual Field Data		
Loss	# fields	# Acres	Field PI	# fields	# Acres	Soil Test	# fields	# Acres
<0.5	27	316.6	0	20	266.2	< 20	23	290.2
0.6 - 2.0	62	586.7	1	46	384.0	21 - 50	38	330.5
2.1 - 4.0	20	238.0	2	26	303.8	51 - 90	23	236.5
4.1 - 5.0	1	7.9	3	11	150.5	91 - 150	21	269.9
> 5.1	0	0.0	4	4	32.2	151 - 200	3	14.2
			5	2	4.6	> 201	1	7.9
Total	110	1149.2	6	1	7.9			
			7	0	0	Total	109	1149.2
			>7	0	0			
			Total	110	1149.3			

The P-Index versus actual loss



- 2006 P Index

6.4

- 2007 P Index

1.3

- 2008 P Index

5.6

- 2006 Actual Loss

1.6

- 2007 Actual Loss

0.34

- 2008 Actual Loss *

6.3

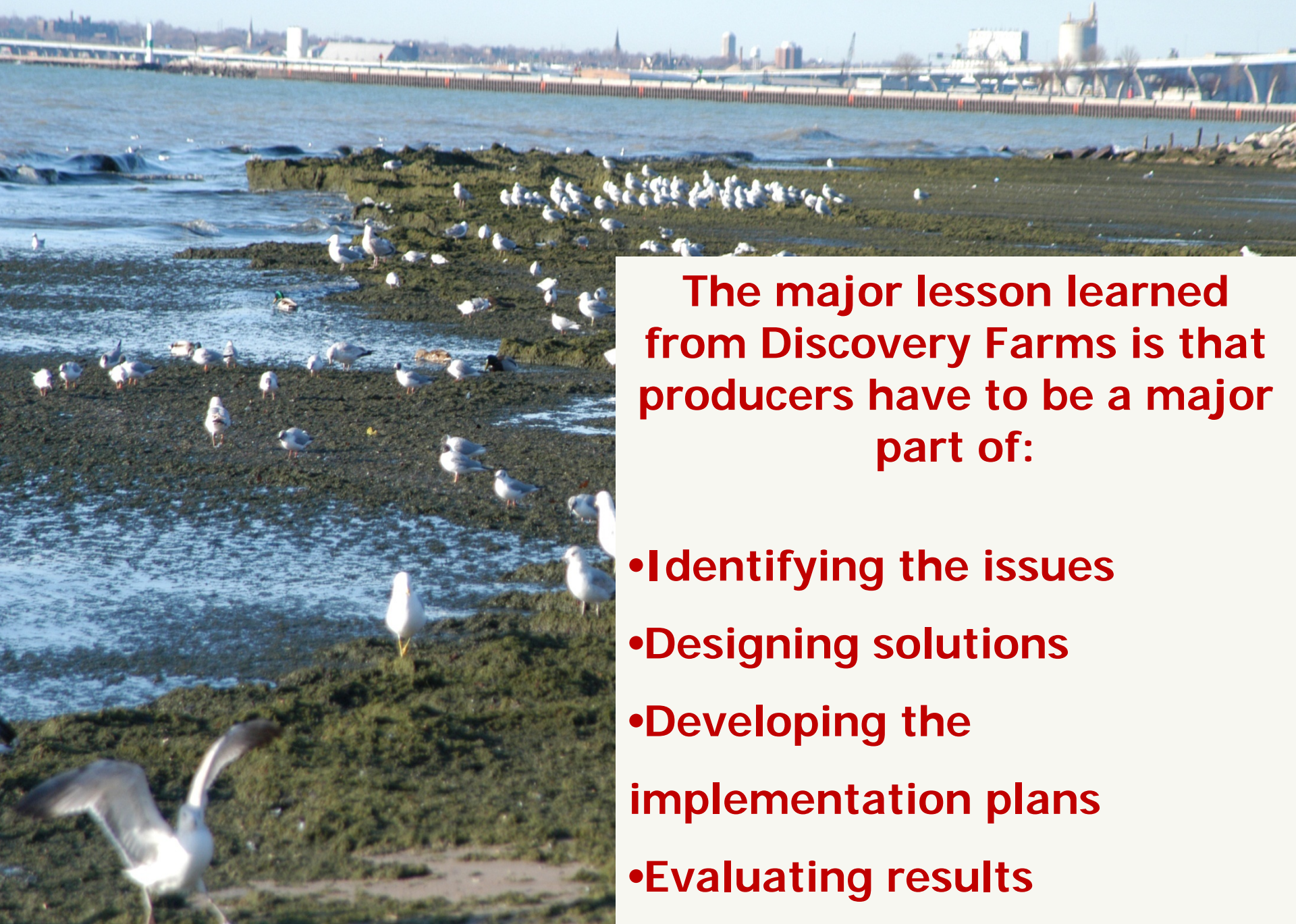
4.4 lbs delivered in 7.5" rain

New Challenge



- Data confidentiality
- Agencies having a larger regulatory role
- Where do farmers go for advice, evaluation and information?

Questions???



The major lesson learned from Discovery Farms is that producers have to be a major part of:

- **Identifying the issues**
- **Designing solutions**
- **Developing the implementation plans**
- **Evaluating results**