AN INITIATIVE OF

Making More From Sheep

Turning Pasture into Profit - Cooma

Jim Shovelton

Mike Stephens & Assoc

EVENT PARTNERS: Elders, LANDMARK look to us, Ruralco HOLDINGS LIMITED, SHEEPCRC

EVENT SUPPORTERS: SHEEPMEAT COUNCIL OF AUSTRALIA, STATE PRIMARY INDUSTRY AGENCIES

How do we:-

- **Wean 10% more lambs per hectare?**
- **Achieve 10% more carcase weight?**
- **Cut 10% more wool?**

What are the options?

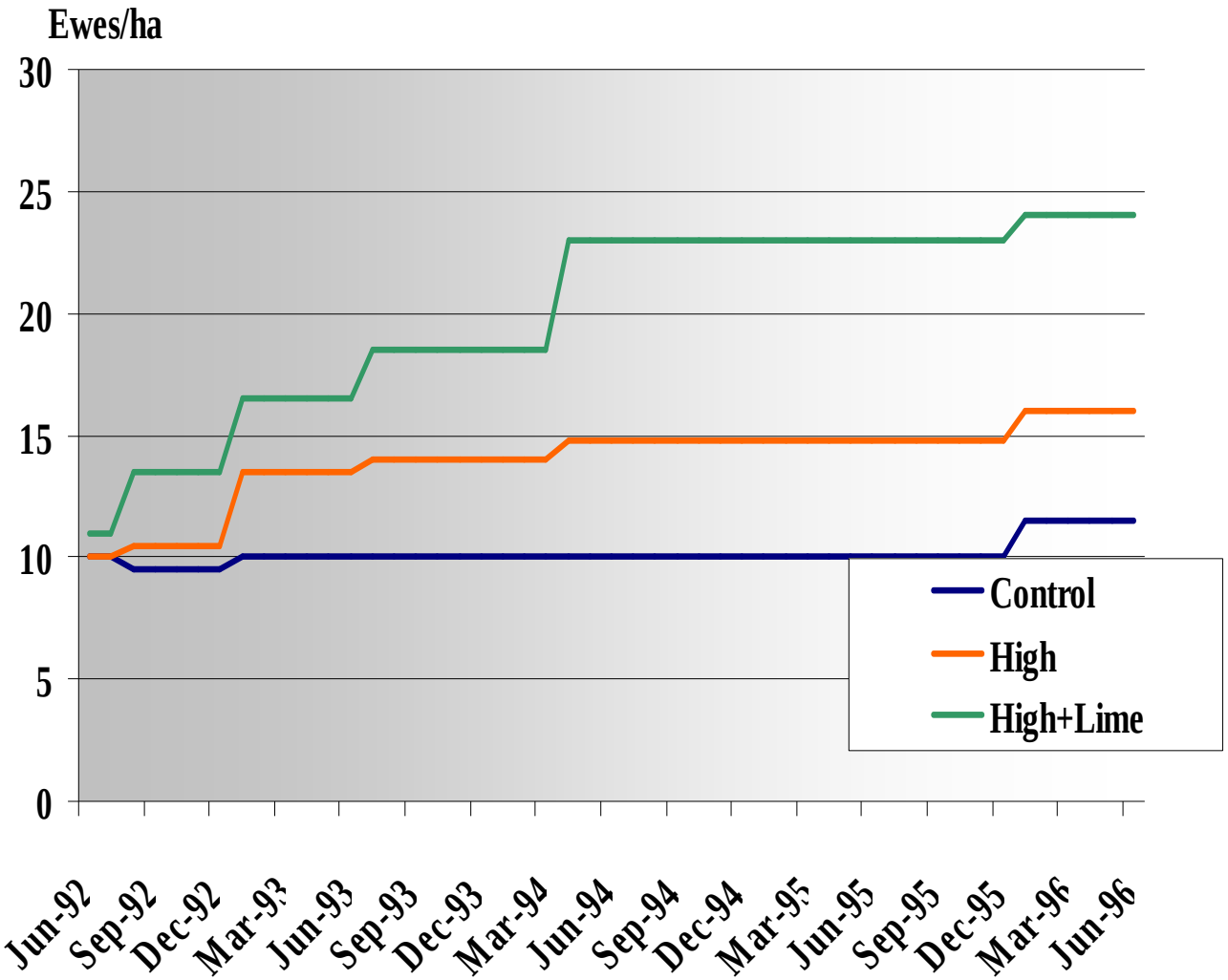
Making More From Sheep

- Improve grazing management
- Run more stock
  - Grow more feed
  - Grow better feed
- Produce more per animal
  - Improved genetics
  - Better feeding
  - Grow better feed
- Where is the best value for money?

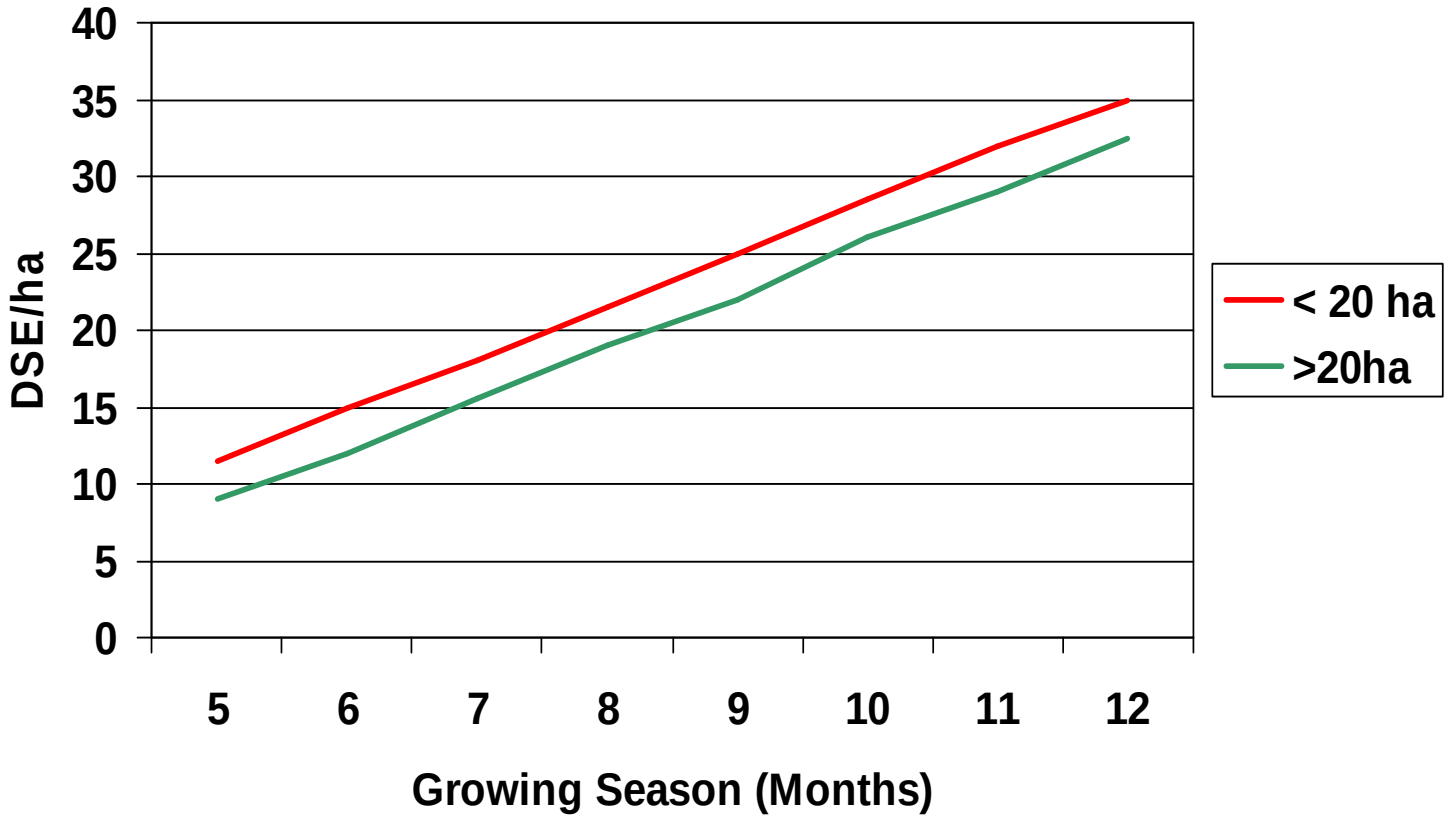
Effect of Fertilizer and Grazing System (PVI) on SR (ewes/ha)

Fertilizer	Set Stocked	Rotational	% Change (SR effect)
6 kg P/ha	8.0	9.5	19%
26 kg P/ha	13.2	14.9	13%
% Change (Fert effect)	65%	57%	

Changes in Stocking Rate, Yea, VIC



Effect of Growing Season on Stocking Rate



Saul & Kearney

- http://www.mla.com.au/Publications-tools-and-events/Publication-details?pubid=5011

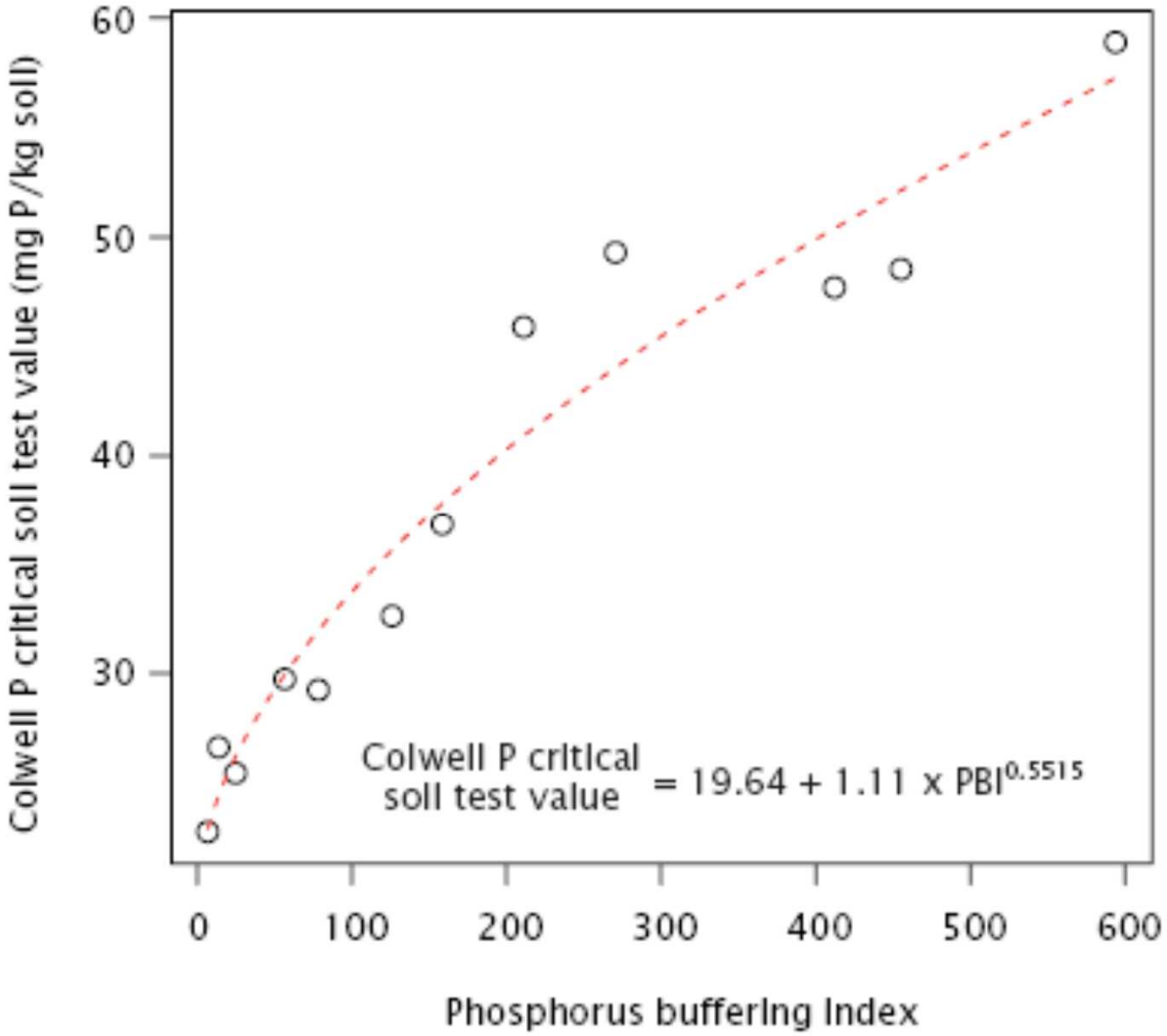
Five Easy Steps

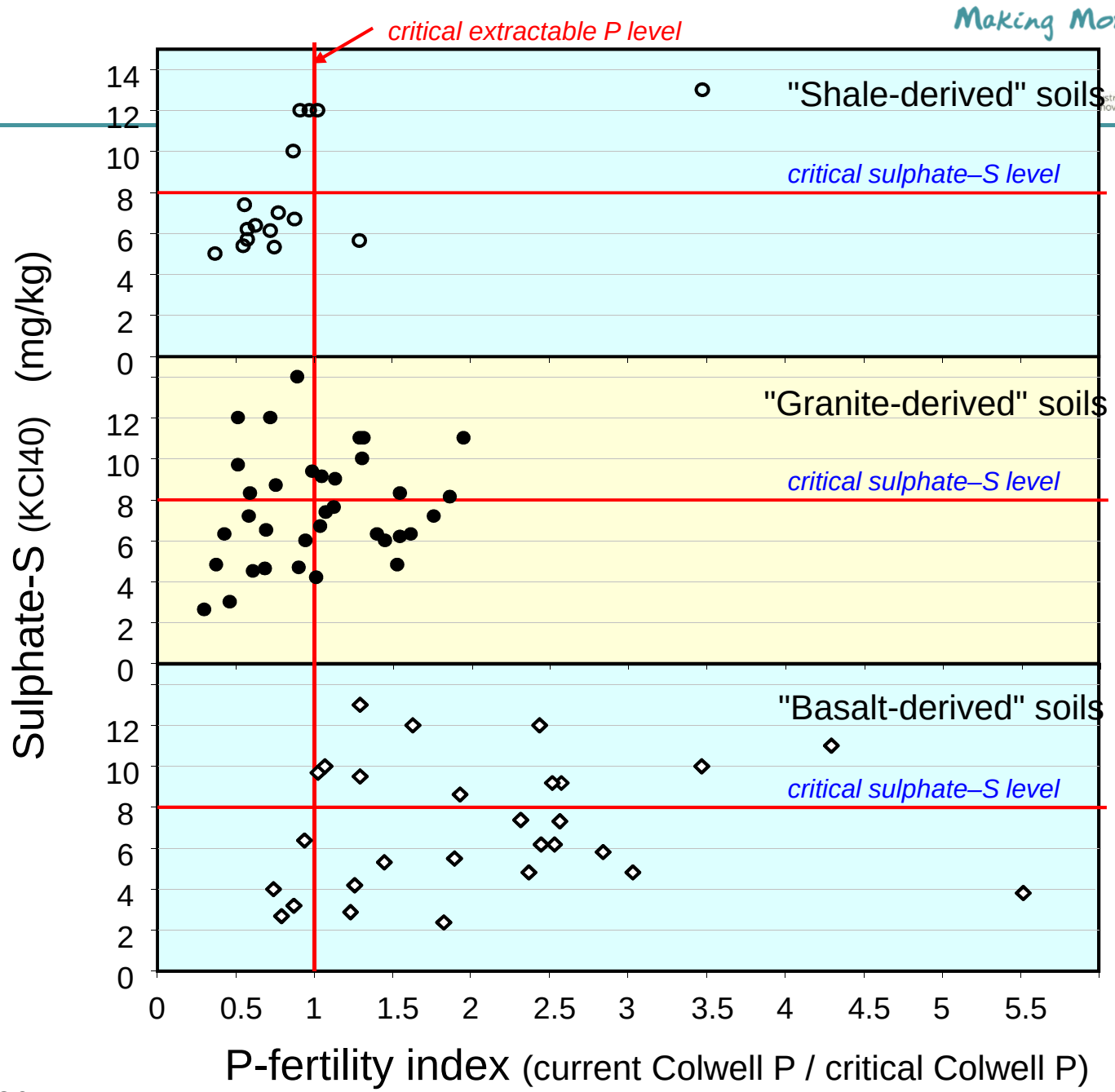
- Know your current stocking rate – estimate potential stocking rate = Potential gain
- What is your current soil P level and what is the critical soil level for your PBI?
- How much P will it take to get to the critical level?
- What will it cost for the fertilizer and the extra stock?
- What is the return on investment from lifting fertility?

- (How does the investment compare with other investments?)

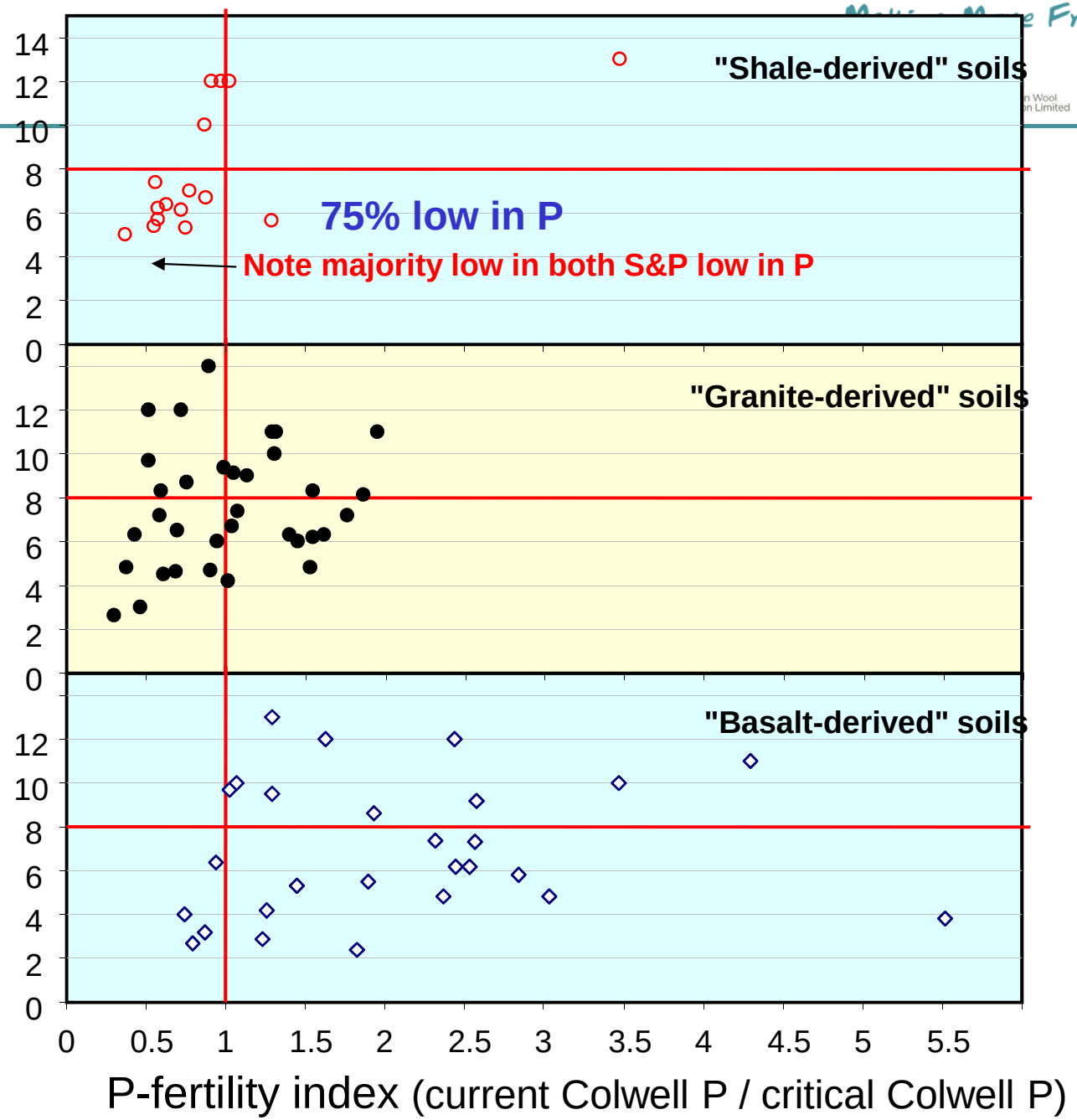
What do District soil tests tell us?

- What is the potential to lift production by increasing soil fertility?
- 108 soil samples taken in 2010 by Monaro Farming Systems members.


Colwell P critical soil test value (mg P/kg soil)
60
50
40
30
0
100
200
300
400
500
600
Phosphorus buffering Index
Colwell P critical soil test value = 19.64 + 1.11 x PBI^0.5515


critical extractable P level
"Shale-derived" soils
critical sulphate–S level
"Granite-derived" soils
critical sulphate–S level
"Basalt-derived" soils
critical sulphate–S level
Sulphate-S (KCl40) (mg/kg)
P-fertility index (current Colwell P / critical Colwell P)
0
2
4
6
8
10
12
14
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5

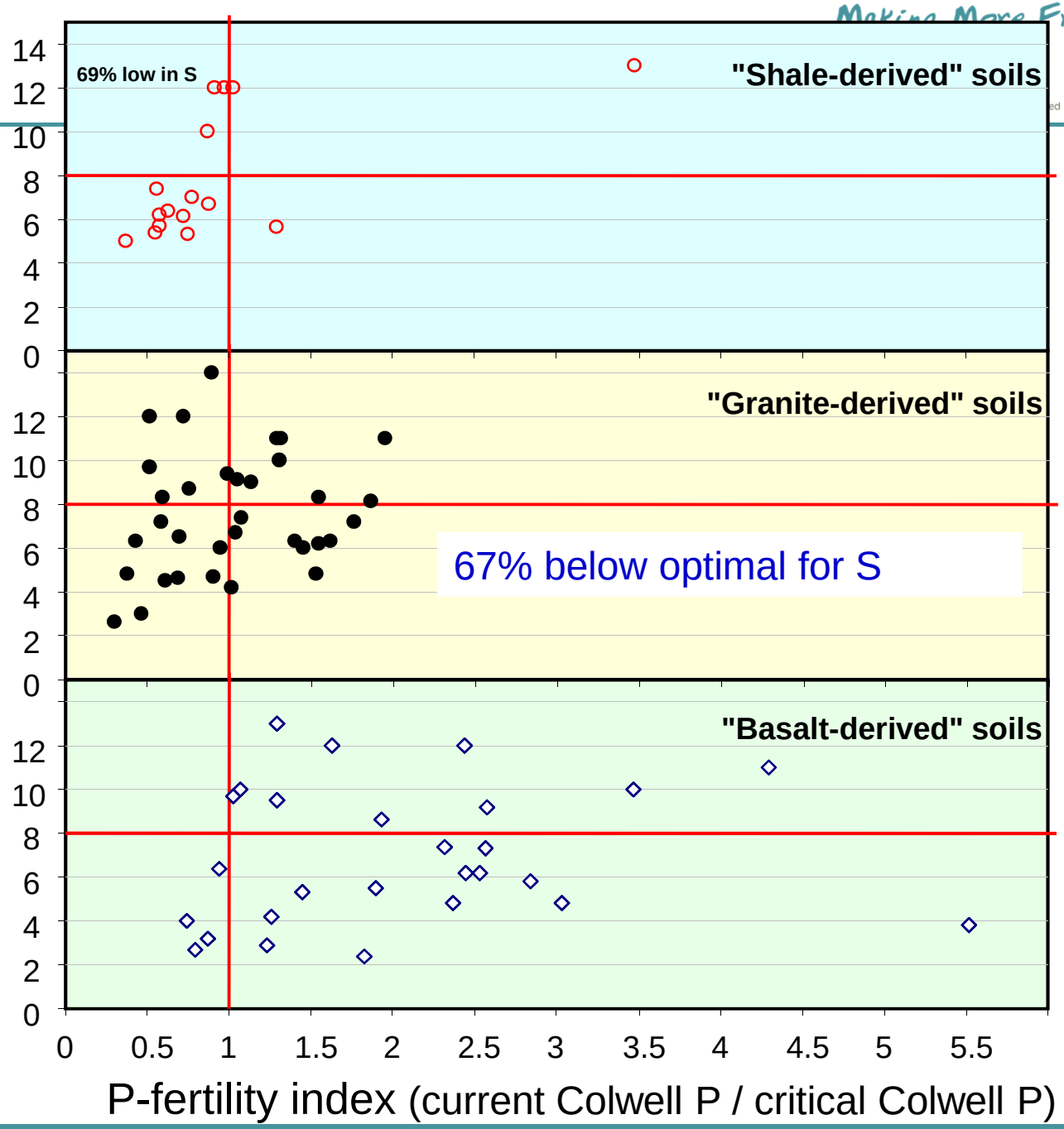
69% low in S

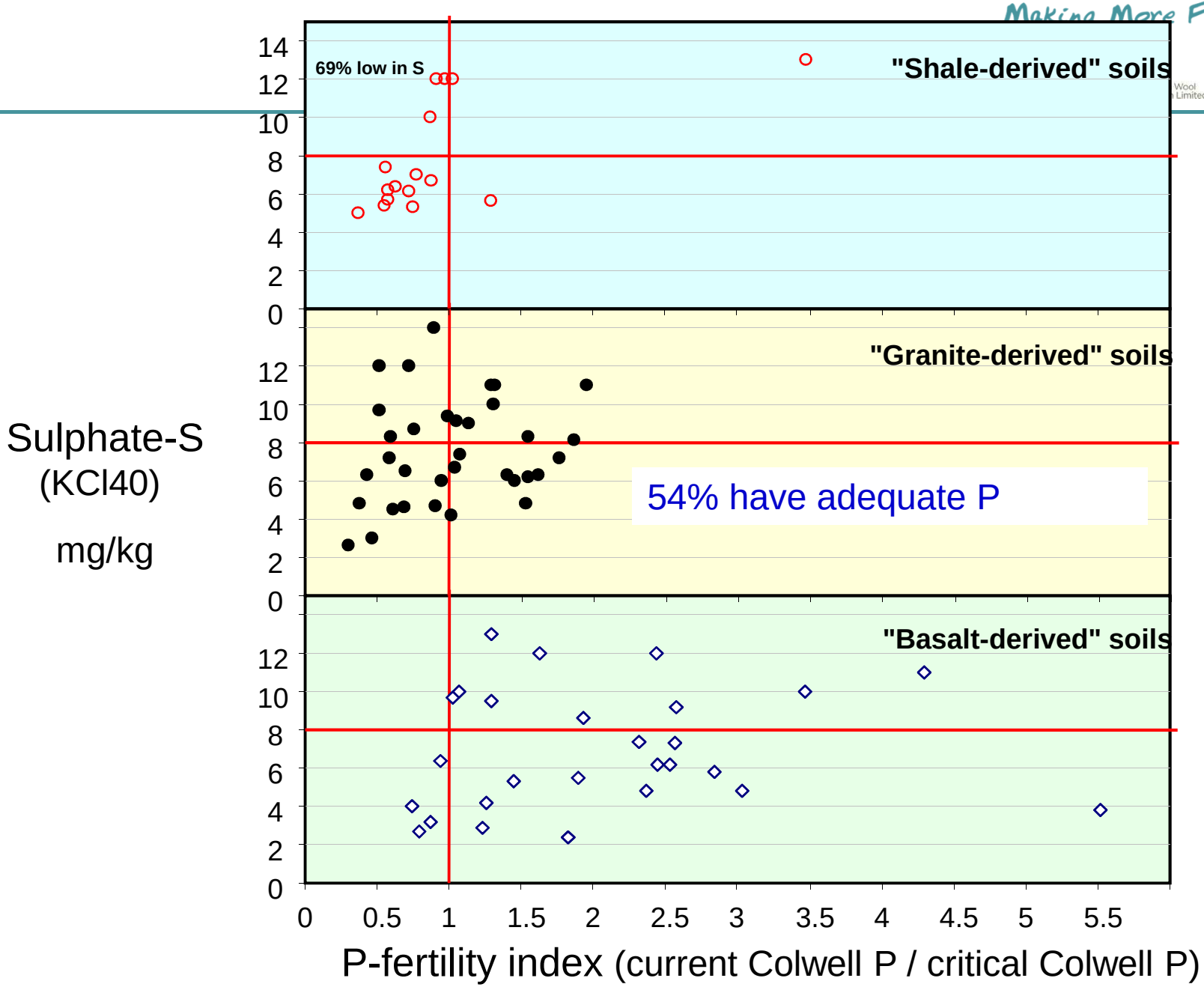

"Shale-derived" soils
75% low in P
Note majority low in both S&P low in P
"Granite-derived" soils
"Basalt-derived" soils
Sulphate-S (KCl40) mg/kg
0 2 4 6 8 10 12 14
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5
P-fertility index (current Colwell P / critical Colwell P)

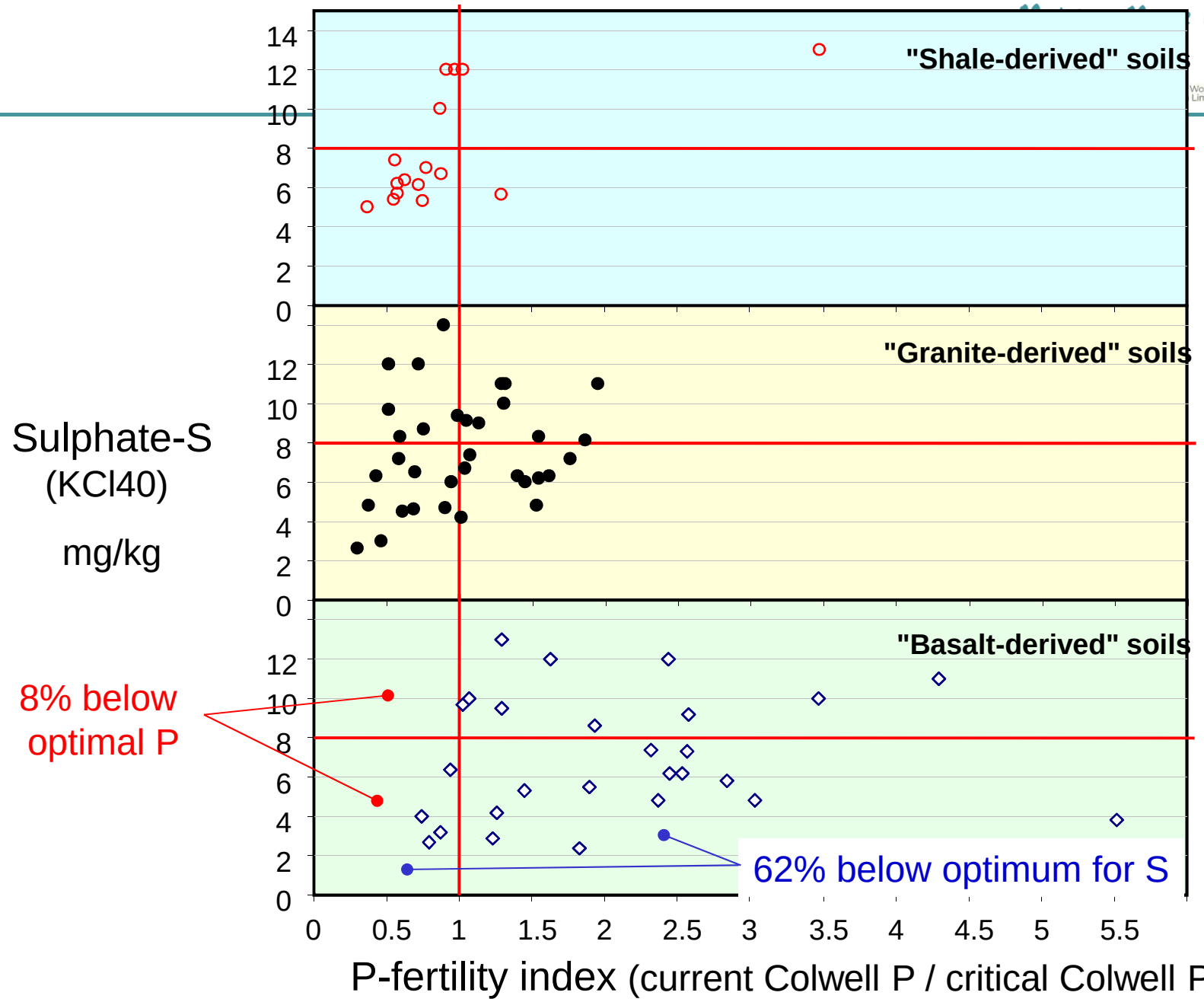
46% below optimal P

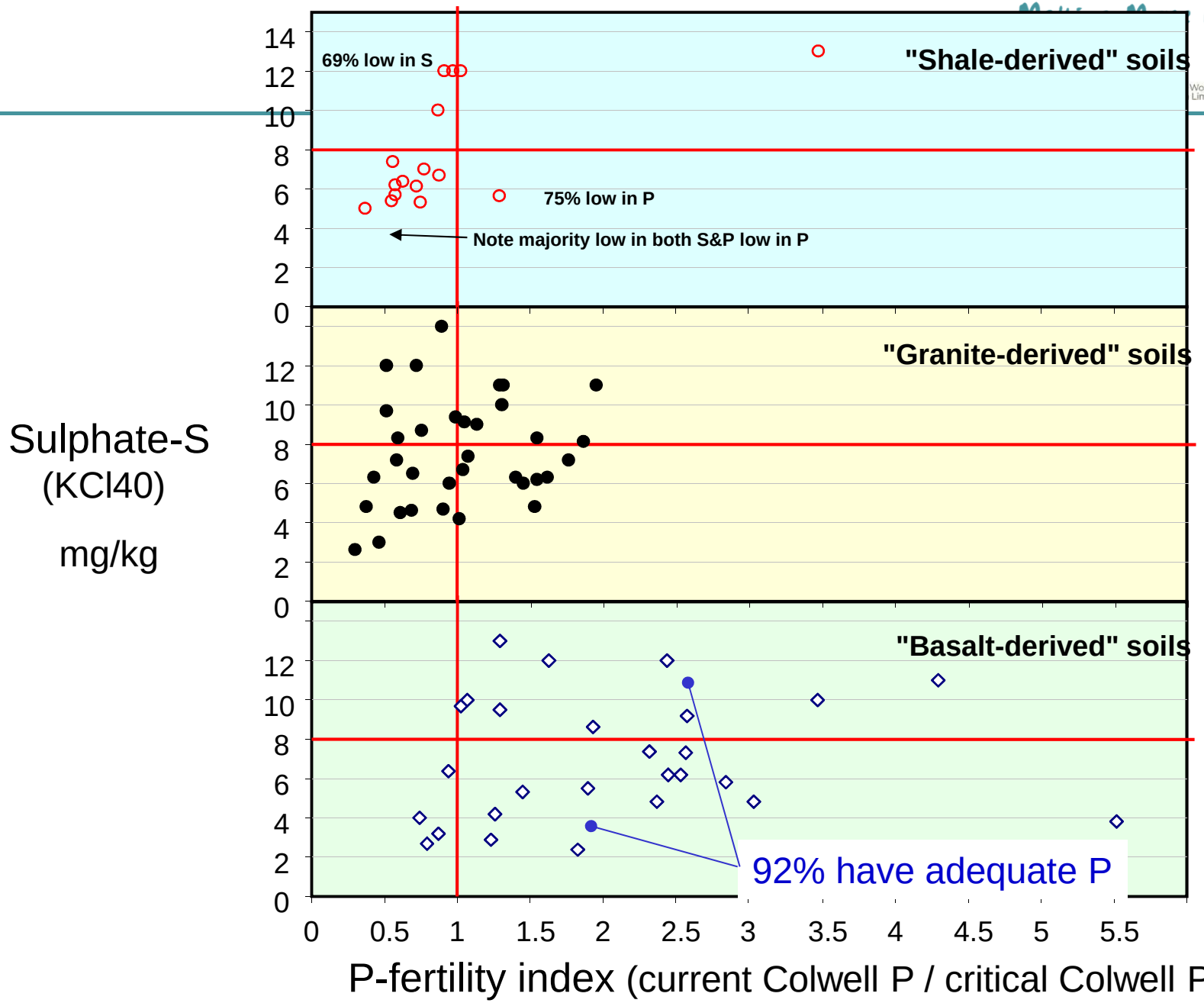
Sulphate-S (KCl40)

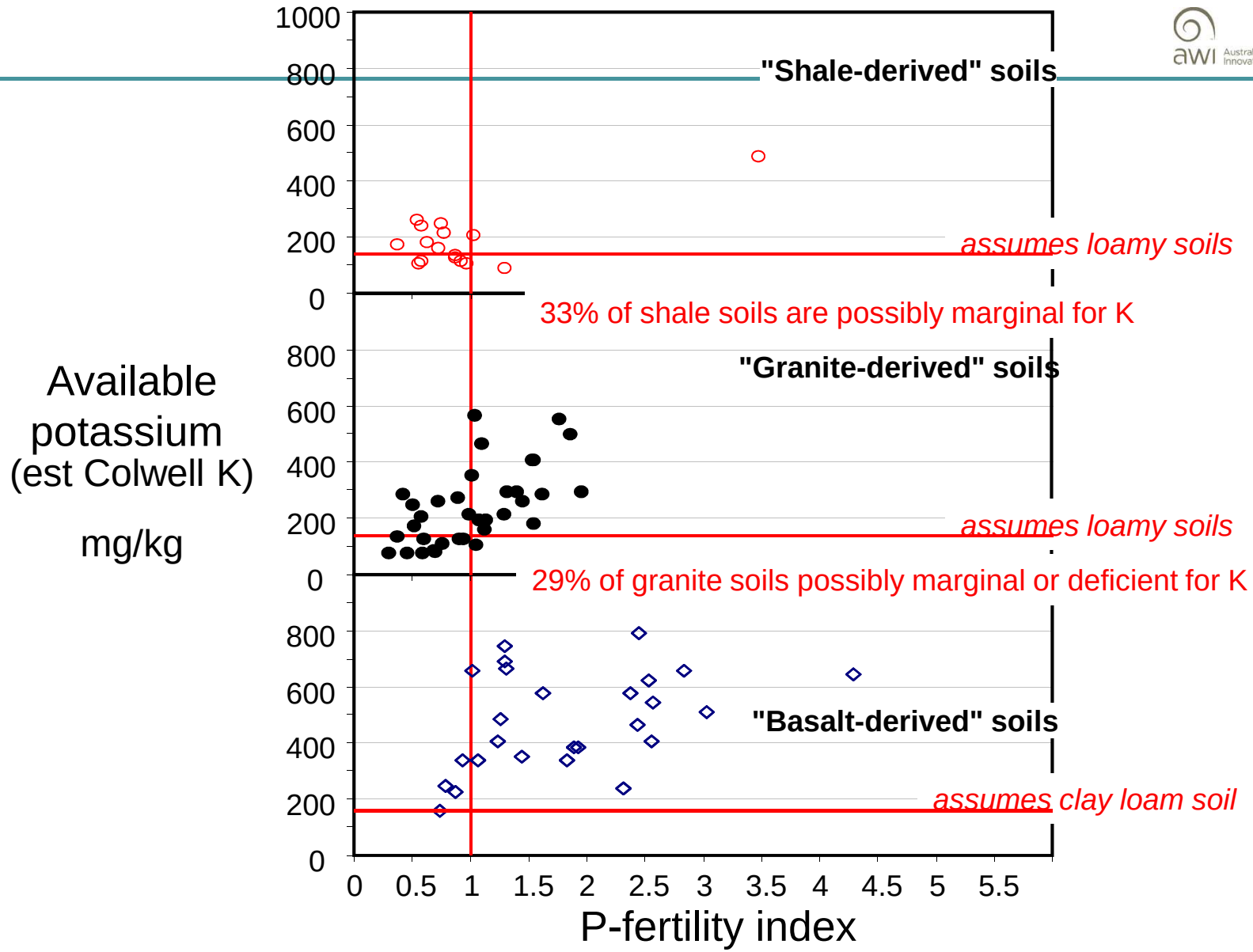
mg/kg



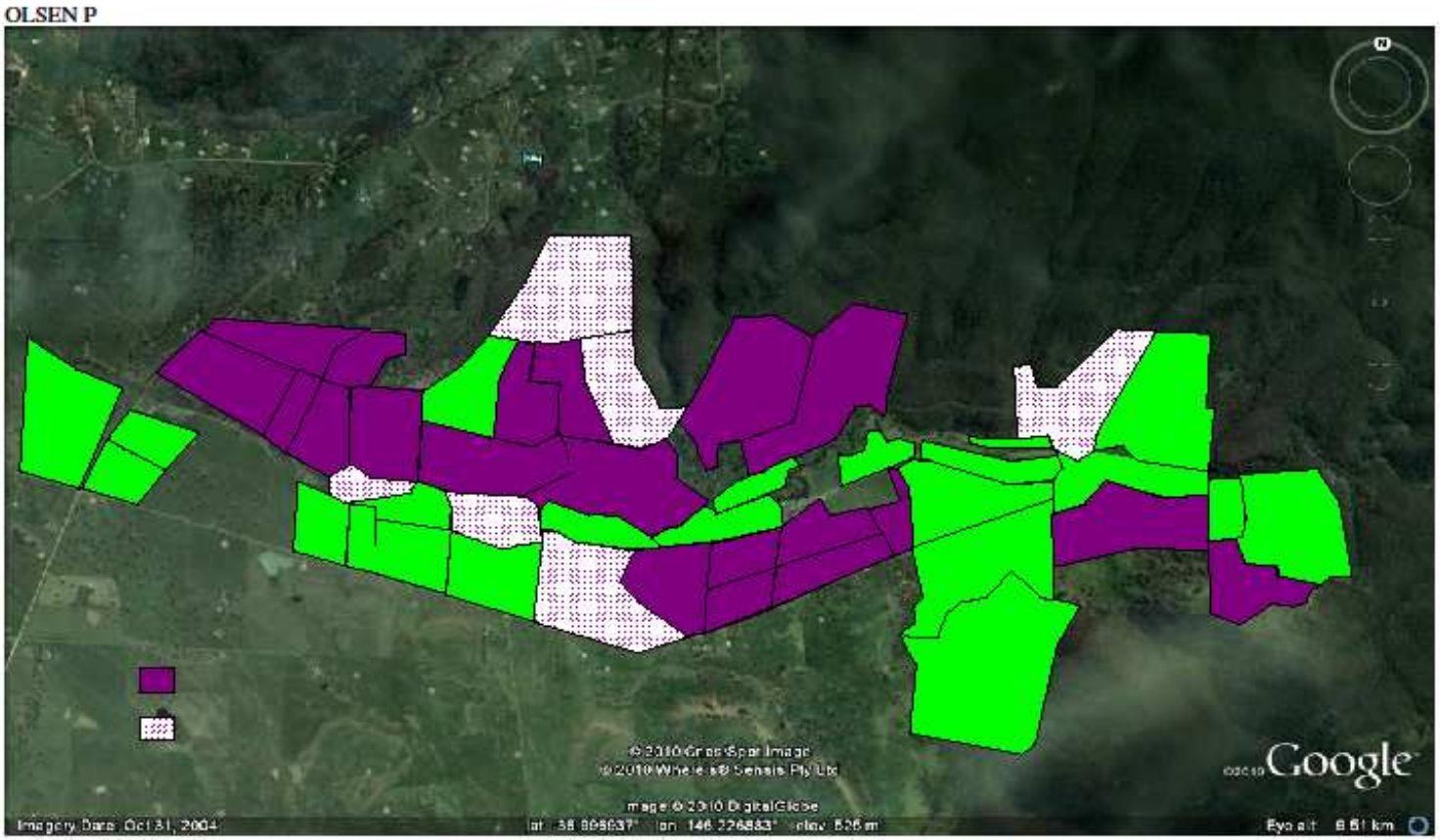

69% low in S
"Shale-derived" soils
"Granite-derived" soils
"Basalt-derived" soils
54% have adequate P
Sulphate-S (KCl40) mg/kg
P-fertility index (current Colwell P / critical Colwell P)
0
2
4
6
8
10
12
14
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5


"Shale-derived" soils
"Granite-derived" soils
"Basalt-derived" soils
Sulphate-S
(KCl40)
mg/kg
8% below
optimal P
62% below optimum for S
0
2
4
6
8
10
12
14
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
P-fertility index (current Colwell P / critical Colwell P)


"Shale-derived" soils
"Granite-derived" soils
"Basalt-derived" soils
69% low in S
75% low in P
Note majority low in both S&P low in P
92% have adequate P
Sulphate-S (KCl40) mg/kg
P-fertility index (current Colwell P / critical Colwell P)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
0
2
4
6
8
10
12
14


Available potassium (est Colwell K) mg/kg
"Shale-derived" soils
assumes loamy soils
33% of shale soils are possibly marginal for K
"Granite-derived" soils
assumes loamy soils
29% of granite soils possibly marginal or deficient for K
"Basalt-derived" soils
assumes clay loam soil
P-fertility index
0
200
400
600
800
1000
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5

What about variation on a farm?



Adequate P

Marginal P

P deficient

What about within paddock variation?

ANALYSIS	TOP THIRD TOPSOIL	MIDDLE THIRD TOPSOIL	BOTTOM THIRD TOPSOIL	TOPSOIL (Ave)
pH (CaCl2)				4.3
Phosphorus (Olsen)				18.4
Potassium (Colwell				146.7
Sulphur (KCL40				10.9
Magnesium (Exch)				0.39
Aluminium % of cations				16.7%

What about within paddock variation?

ANALYSIS		TOP THIRD TOPSOIL	MIDDLE THIRD TOPSOIL	BOTTOM THIRD TOPSOIL	TOPSOIL (Ave)
pH	(CaCl2)		4.3		4.3
Phosphorus	(Olsen)		20.3		18.4
Potassium	(Colwell		174.0		146.7
Sulphur	(KCL40		13.3		10.9
Magnesium	(Exch)		0.47		0.39
Aluminium % of cations			14.8%		16.7%

What about within paddock variation?

ANALYSIS		TOP THIRD TOPSOIL	MIDDLE THIRD TOPSOIL	BOTTOM THIRD TOPSOIL	TOPSOIL (Ave)
pH	(CaCl2)	4.4	4.3		4.3
Phosphorus	(Olsen)	20.2	20.3		18.4
Potassium	(Colwell	177.0	174.0		146.7
Sulphur	(KCL40	10.4	13.3		10.9
Magnesium	(Exch)	0.42	0.47		0.39
Aluminium % of cations		10.8%	14.8%		16.7%

What about within paddock variation?

ANALYSIS		TOP THIRD TOPSOIL	MIDDLE THIRD TOPSOIL	BOTTOM THIRD TOPSOIL	TOPSOIL (Ave)
pH	(CaCl2)	4.4	4.3	4.2	4.3
Phosphorus	(Olsen)	20.2	20.3	14.7	18.4
Potassium	(Colwell	177.0	174.0	89.0	146.7
Sulphur	(KCL40	10.4	13.3	8.9	10.9
Magnesium	(Exch)	0.42	0.47	0.27?	0.39
Aluminium % of cations		10.8%	14.8%	24.4%	16.7%

What about Pasture Establishment?

PASTURE IMPROVEMENT CALCULATOR

http://www.evergraze.com.au/_literature_64948/Pasture_improvement_calculator

Pasture improvement calculator

- Know your current stocking rate – estimate potential stocking rate = Potential gain
- Will you get benefit from improved feed quality?
- What will it cost you to sow down a pasture?
- Will you lose any production in the year of sowing?
- How long will it take to get to the potential stocking rate?
- What will be the cost of the extra stock?
- What is the return on investment from sowing down?

Key Messages

- Focus on what gives the best return for the $ spent
- The right stocking rate is the basis for good levels of production
  - Increased lambs/ha, increased wool/ha and increased meat/ha
- The major driver of stocking rate after rainfall is soil fertility.
- There is large variation in soil fertility
- Don’t fertilize where it is not needed.
- Comprehensively soil test and prioritize paddocks on the basis of cost and likely returns to remove limitations
- Use the 5 easy steps