Nutrient Target Adjustments

Gary Shenk
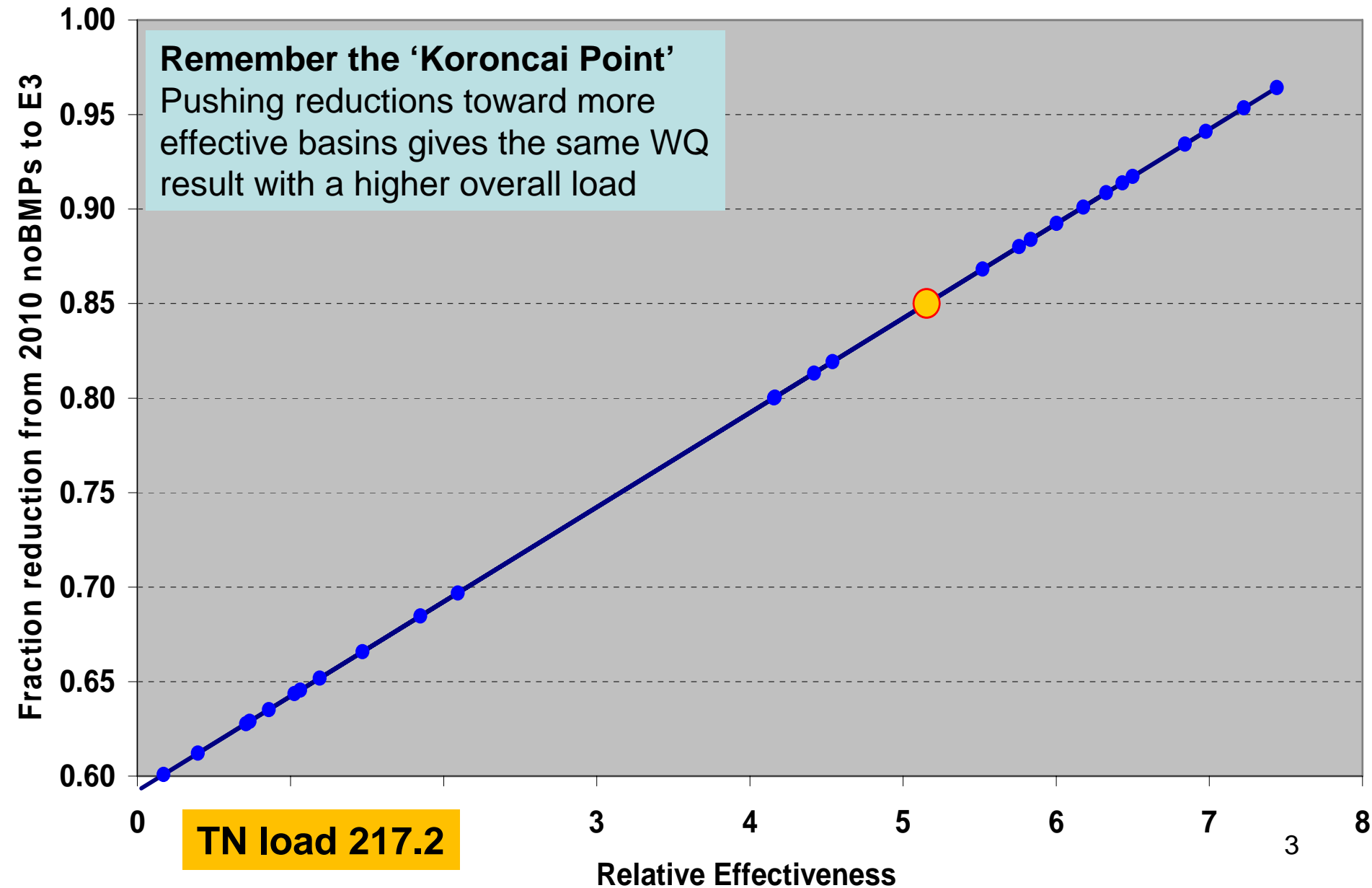
WQGIT

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Sample TN Target Loads at 85% Level of Effort

Chart showing "Fraction reduction from 2010 noBMPs to E3" (y-axis, 0.60 to 1.00) versus "Relative Effectiveness" (x-axis, 0 to 8). A horizontal line of blue data points at 0.85, with one highlighted yellow/red point near x = 5.2.

TN load 198.6

2

Sample TN `Target Loads` **at 85% Level of Effort**

Remember the 'Koroncai Point'
Pushing reductions toward more effective basins gives the same WQ result with a higher overall load

Fraction reduction from 2010 noBMPs to E3

TN load 217.2

Relative Effectiveness
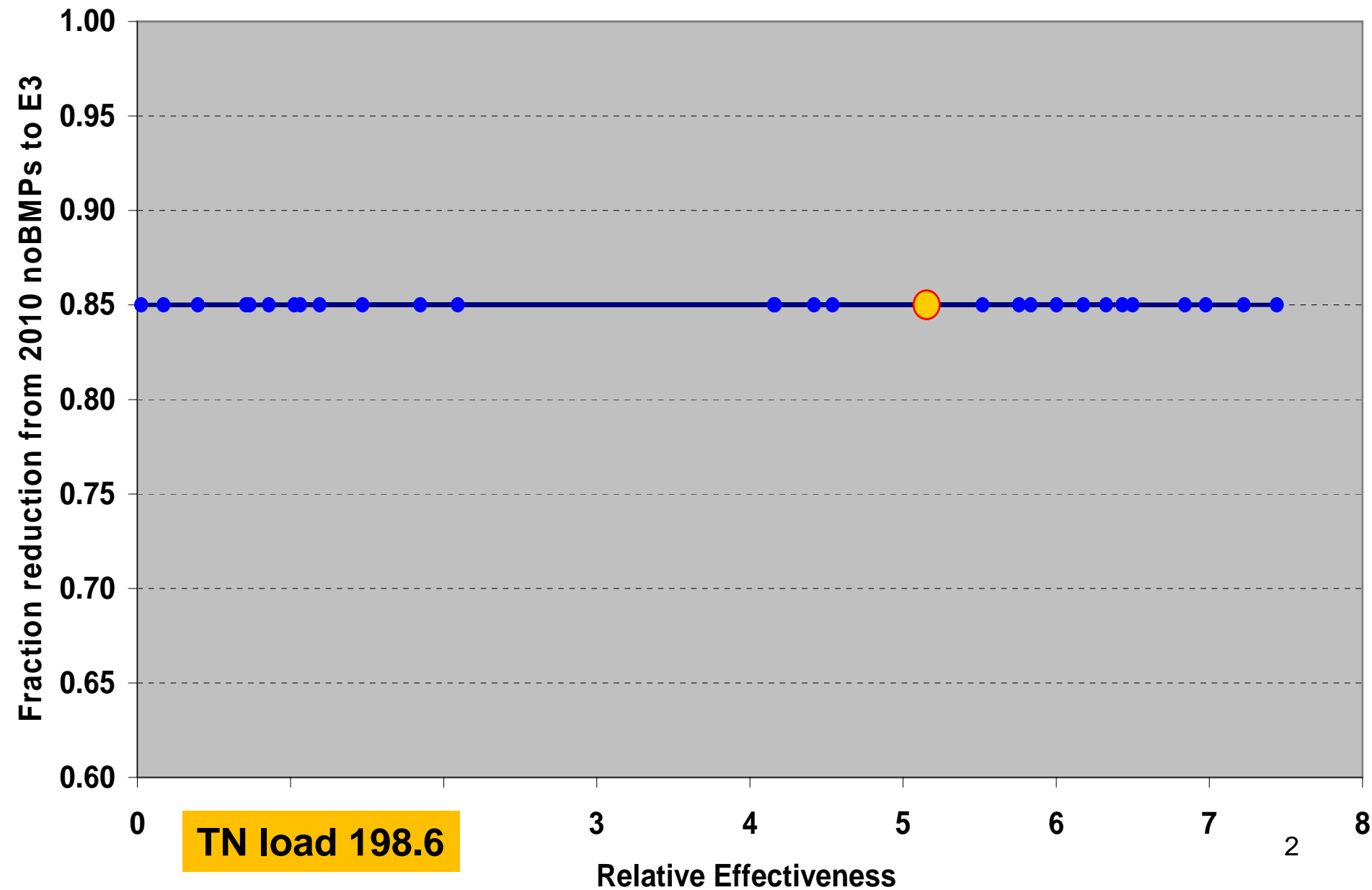
Pivot Point

- The Koroncai point equation also gives us the adjustment equation.

$$\sum \left(DeliveredLoad \right) \times \left(EstuarineDelivery \right) = C$$

- Delivered Algal Units * Oxygen per AU = Oxygen

- $Targ_{(redx)}$ X $EDF_{(redx)}$ = $Targ_{(incr)}$ X $EDF_{(incr)}$

Adjustment Equation

- $\text{Targ}_{(redx)} \times \text{EDF}_{(redx)} = \text{Targ}_{(incr)} \times \text{EDF}_{(incr)}$

- PA wants to increase Potomac AFL target by 1 Mlbs by decreasing Susquehanna target

- $\text{EDF}_{(potm\ A)} = 6.2$ $\text{EDF}_{(susq)} = 10.3$

- $\text{Targ}_{(redx)} = 1.0 \text{ Mlbs} \times 6.2/10.3 = 0.6 \text{ Mlbs}$

- PA can increase N or P in Potomac 1 lb for each 0.6 lb reduction in Susquehanna

The Fine Print

- Theoretical trading ratio is based on no WQ change in the combination of CB3-5 and POTMH.
- Local water quality must be preserved.
  - Can't raise target where local water is non-attaining.
  - Each adjustment may require model runs to determine if the trade leads to a violation of any standards.
  - Must confirm with state that trade will not lead to violation of free-flowing water quality standards, including antidegradation
- What if multiple states want to transfer load into the Potomac and the total trade would violate standards while none of the individuals would?
  - EPA will not approve adjustments that, individually or cumulatively, lead to a violation of any standards