

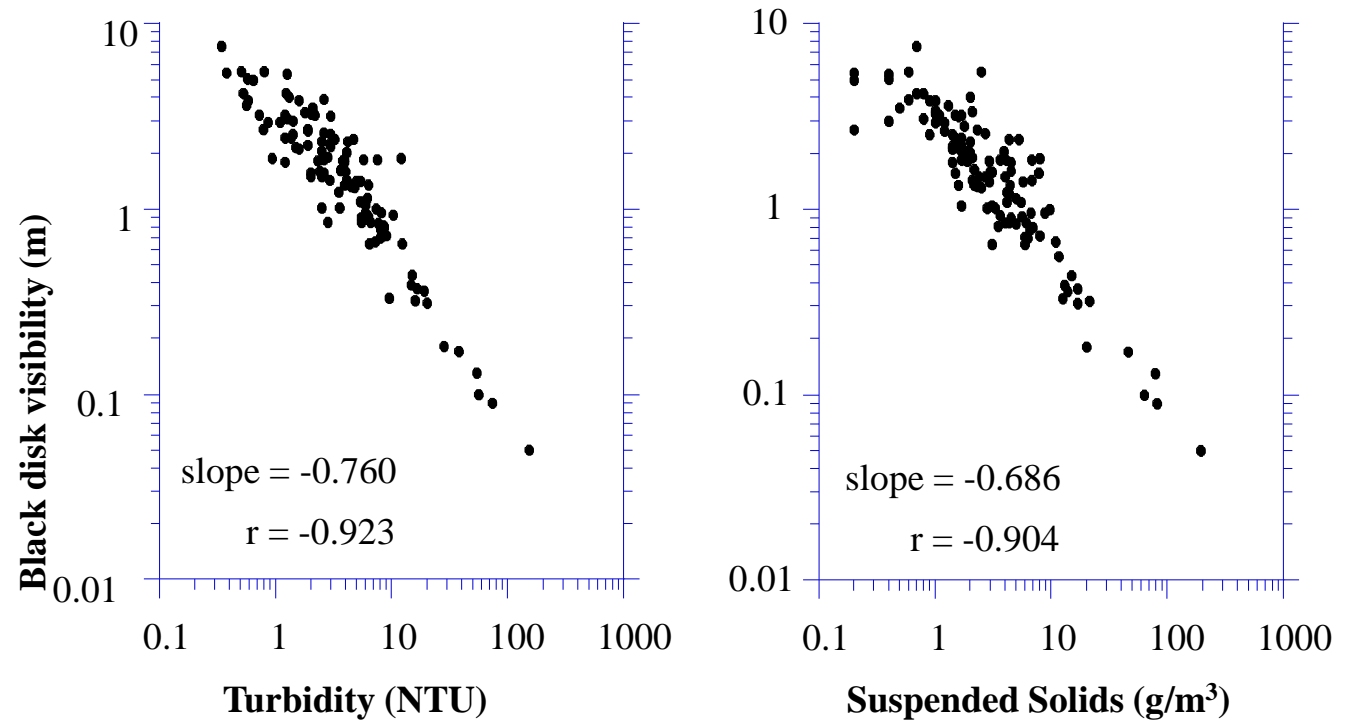
Monitoring sediment and clarity

- Black disk visibility (clarity) (c.\$400)
 - Relates directly to aesthetics
 - Useful over full range of clarity
 - Use in small streams limited by pool length for sighting
- SHMAK clarity tube (\$180)
 - Useful for dirtier water (vis <1 m)
 - Simple tool for runoff monitoring
- Turbidity sensors (\$1000-3000)
 - Indirect measure of clarity and SS
 - OK for all stream sizes
 - Need turbidimeter
 - Handheld field
 - Lab bench
 - Continuous recorders



Black disk clarity is strongly related with SS and turbidity

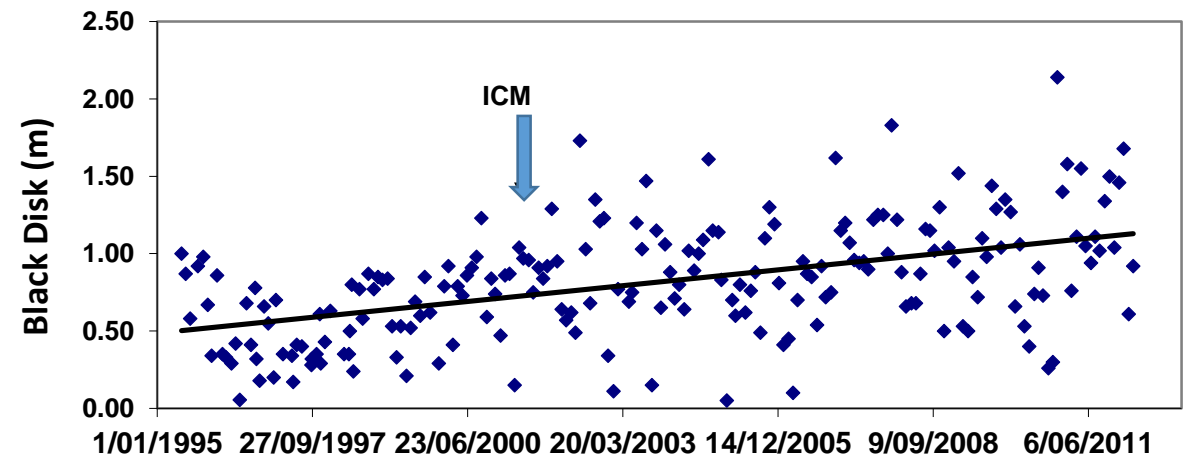
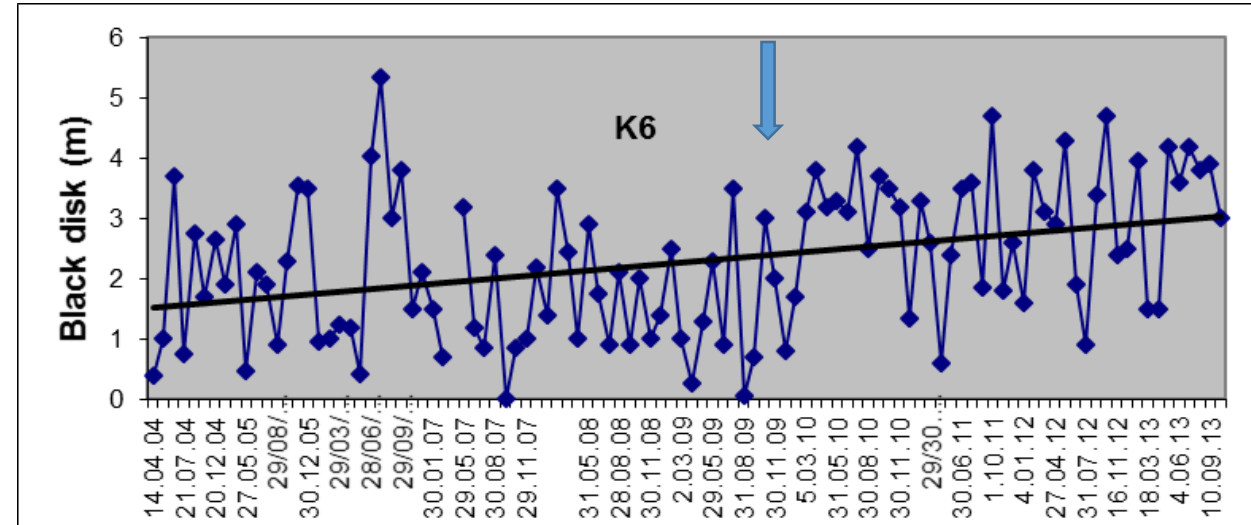
- Each can be calculated from others



e.g., Coromandel stream data

Monthly measurements can show responses to land management change

- Top = response to riparian fencing and planting in Waitao Stream, Tauranga
- Bottom = response to integrated catchment management (ICM) at Whatawhata
 - 30% pine afforestation,
 - cattle exclusion fencing and
 - riparian poplars



Could land managers measure compliance?

Depends on

- stream configuration on farm
 - Upstream/downstream of whole farm
 - Are both sides of stream on 1 farm?
 - Or focus on representative farm tributary (or tributaries) that only drain 1 property
 - Focus on farm hotspots?
 - May need flexible protocol to fit farm catchment “plumbing”
- Protocols in place and trust assured by QA checks