FACStream

A Forensic Method for Assessing Streams in Colorado

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Federal Compensatory Mitigation

“No net loss of wetlands!”

1987
Compensatory Mitigation

“No net loss of aquatic functions!”

2008 Rule
Assessment

Evaluation or estimation of the nature, quality, or ability of something.

judgment, opinion...
FACStream

Functional Assessment of Colorado Streams

Information Framework

Forensic Method
In-stream Riparian Watershed

V\text{bio} V\text{str} V\text{stab} V\text{con} V\text{morph} V\text{deb} V\text{veg} V\text{chem} V\text{sed} V\text{hyd} Cond.
"We are given a scaffold upon which to put all the evidence to make our case, but the exact way we build it is up to us."
Debris Supply

Riparian Vegetation

Chemical Supply

Sediment Supply

Water Supply

Condition Score

$V_{bio}$

$V_{str}$

$V_{stab}$

$V_{con}$

$V_{morph}$

$V_{deg}$

$V_{veg}$

$V_{chem}$

$V_{sed}$

$V_{hyd}$

Cond.
Impairment
Grade
Score

Negligible
Mild
Significant
Severe
Profound

Grade
A
B
C
D
F

Score
100
90
80
70
60
50

Degree of impairment
Evidence = Stressors

Reference
“Innocent until proven guilty”
**Forensic Method**

- **Case** = Weight of evidence
- **Clues** = Stressors/impacts
- **Inductive reasoning**
- **Knowledge/training**

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### Level 1

**Limited data**

- Intuition, obvious clues

### Level 2

**Rapid Assessment**

- Stressor analysis

### Level 3

**Intensive Assessment**

- Predictive models, quantitative metrics

### Increasing detail/rigor

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Health Assessment

Level 1

Level 2

Level 3