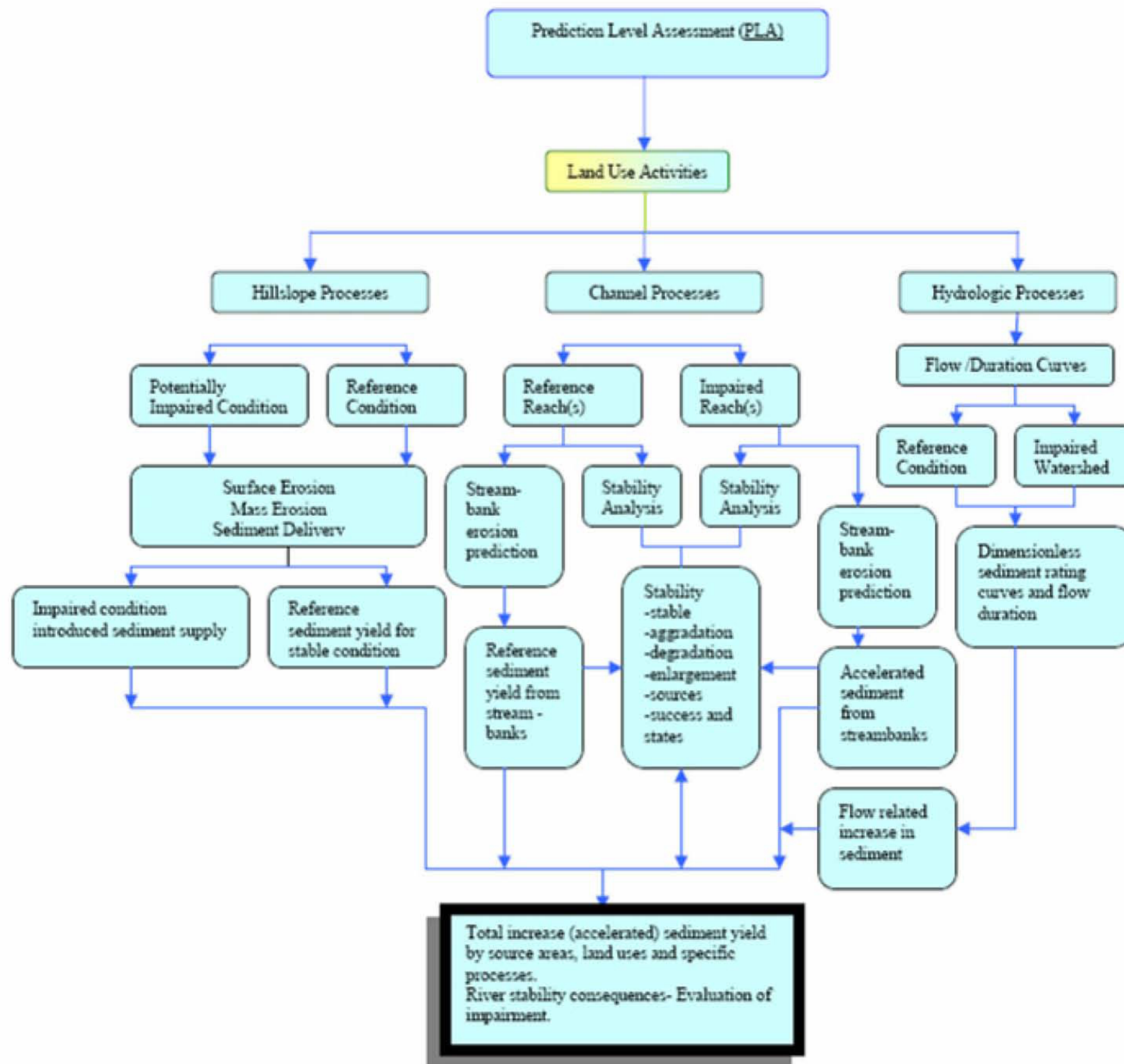**Flowchart 10**. The general procedural sequence of Prediction Level Assessment (**PLA**).

Flowchart 11. PLA showing reference condition analysis parallel with impaired condition

Start
Sub-watersheds/streams selected from RRISC assessment for High / very high risk

1. Regional curves USGS gages

2. Drainage area

5. Stream classification: width/depth ratio, sinuosity, entrenchment ratio, materials, slope

3. Field verification measurement, bankfull discharge, cross-section area

18. Channel characteristics that change depth, width, velocity, slope, shear stress and unit stream power

19. Bedload transport (stream power)

6. Detailed morphological relations (dimensionless ratios)
- Meander length
- Radius of curvature
- Belt width
- Depth
- Slope
- Bed features (pools, riffles, glides, runs)
- Width/depth ratio
- Meander width ratio

4. Bankfull discharge, bankfull dimension

7. Stability Analysis
Departure Analysis
(Dimension Pattern Profile)
Degree of incision
Width/Depth Ratio
Confinement
Entrenchment
Bed features
Flow regime
Debris
Deposition
Meander pattern
Riparian vegetation
Altered state
Pfankuch Stability Rating
Bank Height Ratio

21. Introduced sediment hillslope process

20. Hillslope processes sediment supply from
- Mass wasting
- Roads
- Surface erosion

22. Entrainment competency calculation
Bar sample
Bed sample

24. Aggradation Potential
Deposition Pattern
Meander Pattern

8. Streambank erosion prediction (BEHI, NBS)

23. Change in sediment transport relations (excess power and/or excess sediment)

25. Degradation
BHR ER
Excess flow

10. Flow modification
- Storm Drain
- Reservoirs
- Diversions
- Increase flow
- Decrease flow
- Clear water discharge
- Water yield
- Vegetation altered
- WRENSS

9. Stream bank erosion rates (tons/yr)

28. Total sediment ton/year

29. Compare to baseline sediment yield

26. Enlargement

27. Stream succession state shift

13. Reference dimensionless sediment, bedload, rating curves

11. Dimensionless flow duration curves

Legend

From sub-routine process analysis

14. Convert to dimensional suspended sediment, bedload rating curve

12. Measure bankfull; Q, suspended sediment, bedload

17. Flow related increase above baseline

30. Potential consequence of instability/ sediment changes that affect beneficial uses

15. Convert to dimensioned, flow duration curve

16. Calculate sediment yield for baseline existing condition – flow related sediment yield.

Flowchart 8. Procedural sequence for prediction Level Assessment (**PLA**) for channel process.