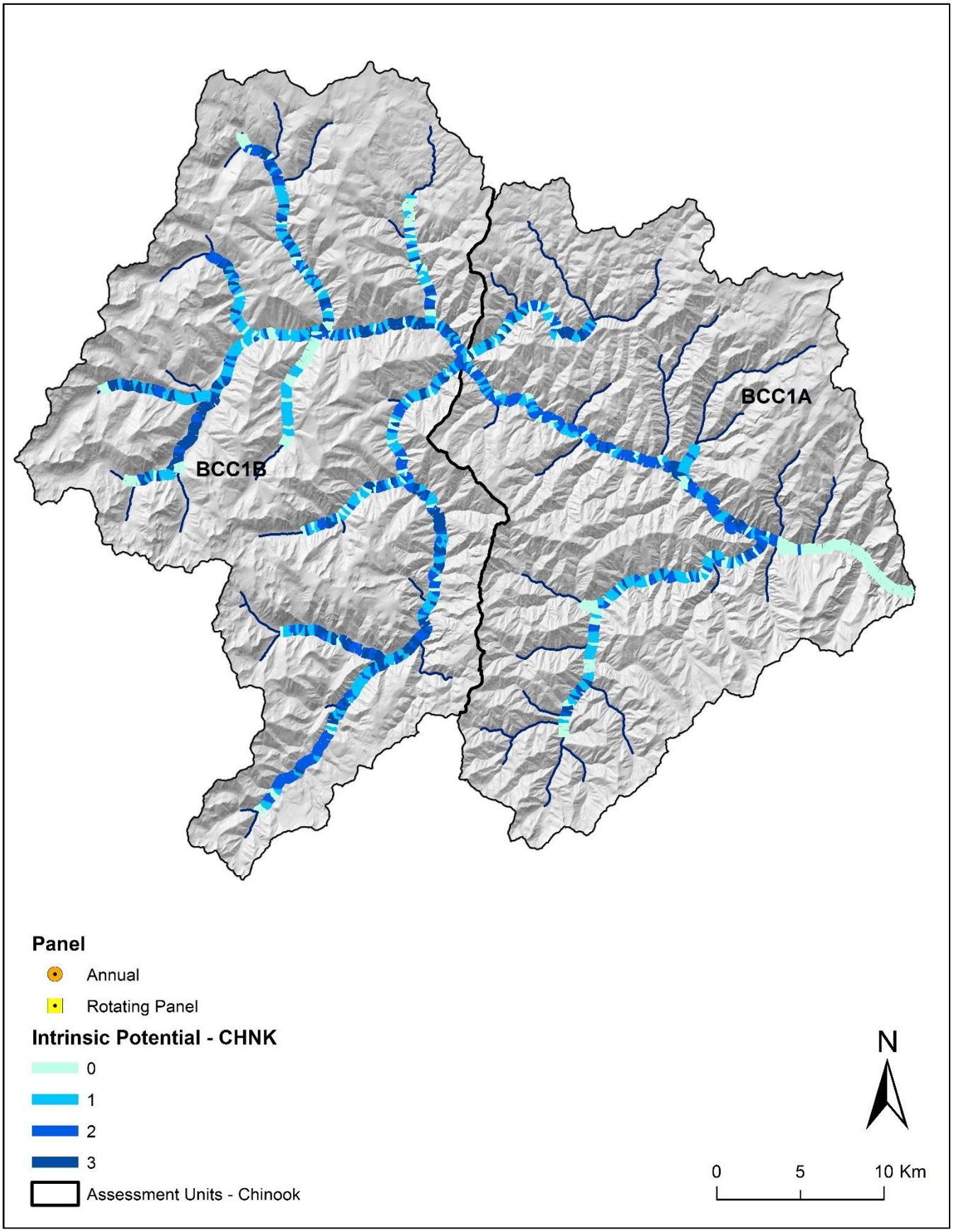
Big Creek: Summary of CHaMP Metrics and Modeled Products

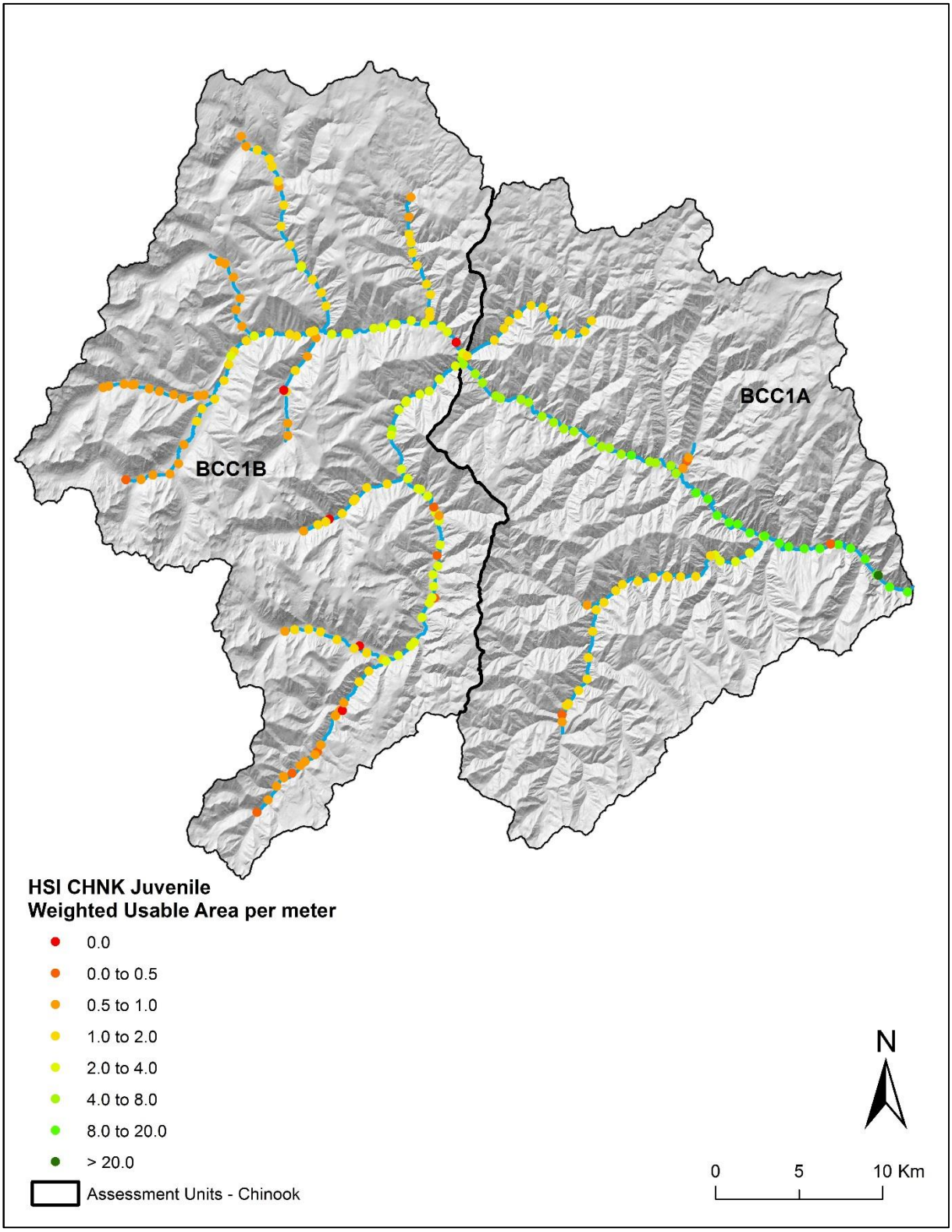
- CHaMP metrics are directly measured at each CHaMP site according to probabilistic sampling design. Metric included in this summary are:
  - Sinuosity
  - Substrate < 2 mm
  - Substrate < 6 mm
- Modeled products are built from CHaMP data and additional mechanistic or empirical knowledge, assessed at each CHaMP Site
  - Habitat Suitability Index (HSI)
  - Net Rate of Energy Investment (NREI)
  - Quantile Regression Forest (QRF)
- Modeled products built from regional spatial data layers and mechanistic models.
  - Riparian Condition Assessment (RCA)
  - Riparian Vegetation Departure (RVD)
  - Riparian Vegetation Conversion Type (RVCT)

Chinook Intrinsic Potential



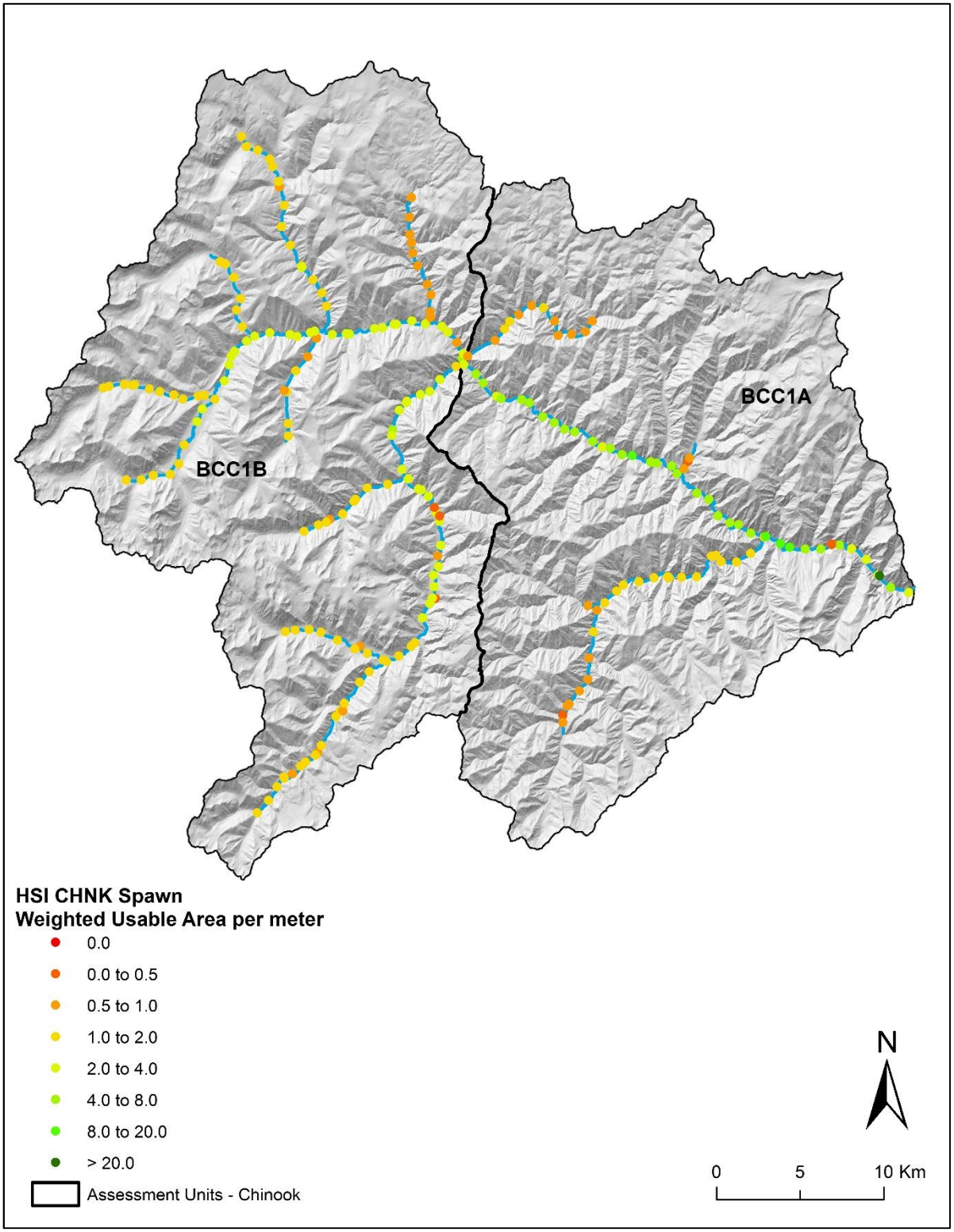
Chinook Juvenile Weighted Usable Area

- Source: Habitat Suitability Index (HSI) Model
- Definition: Suitable habitat area (m^2) per meter of stream length for Juvenile Chinook



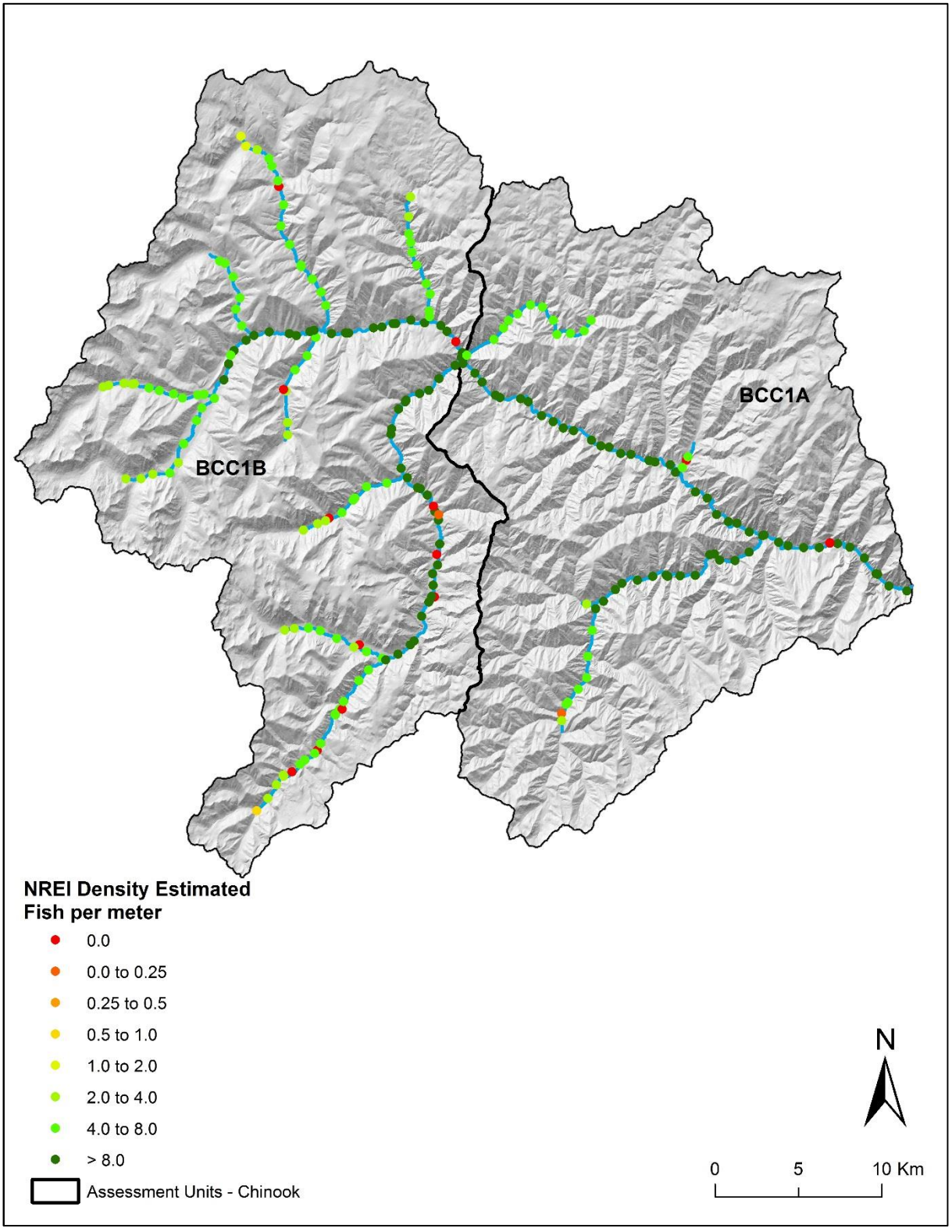
Chinook Spawner Weighted Usable Area

- Source: Habitat Suitability Index (HSI) Model
- Definition: Suitable Spawning habitat area (m^2) per meter of stream length for Chinook



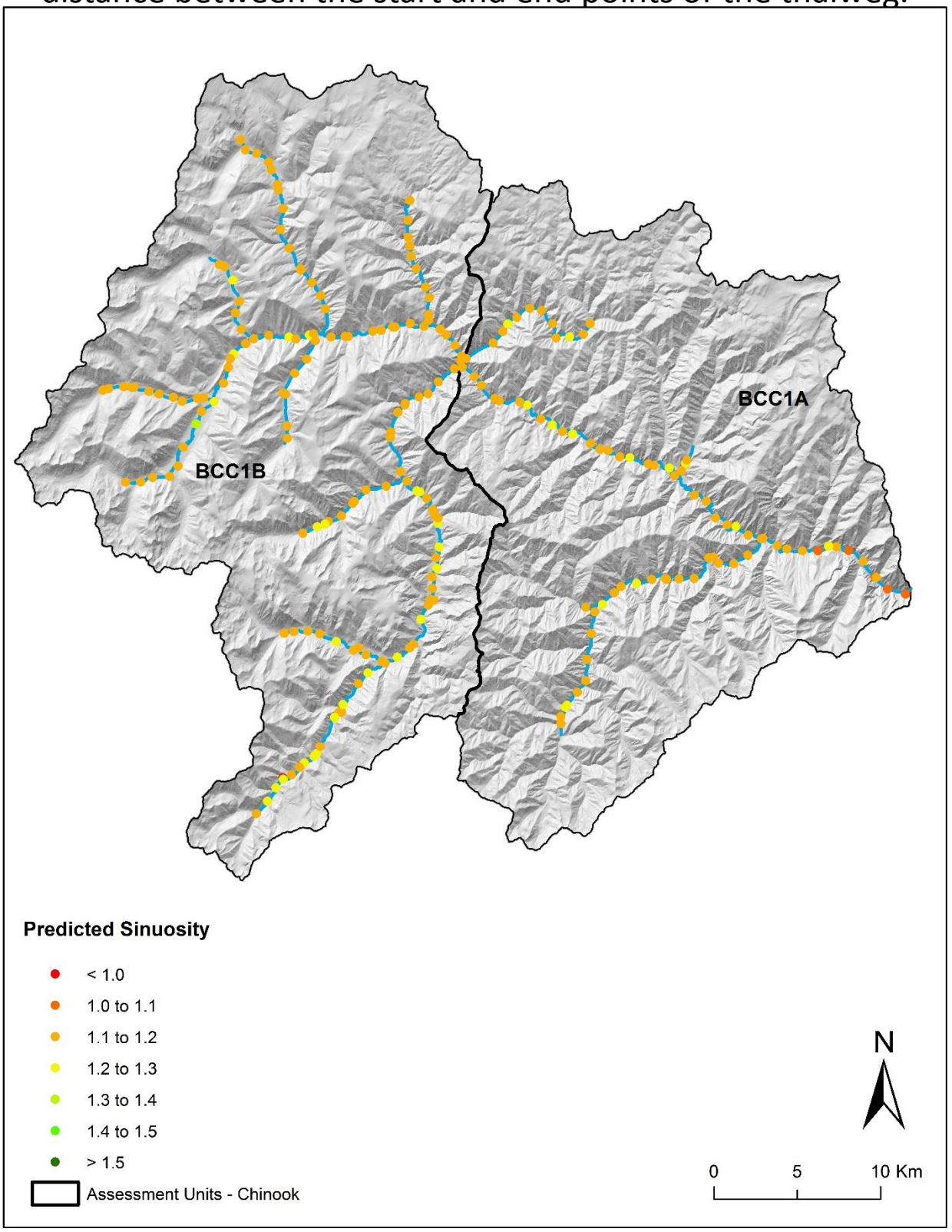
Juvenile Salmonid Capacity

- Source: Net Rate of Energy Intake (NREI) Model
- Definition: Carrying capacity (fish) per meter of stream length



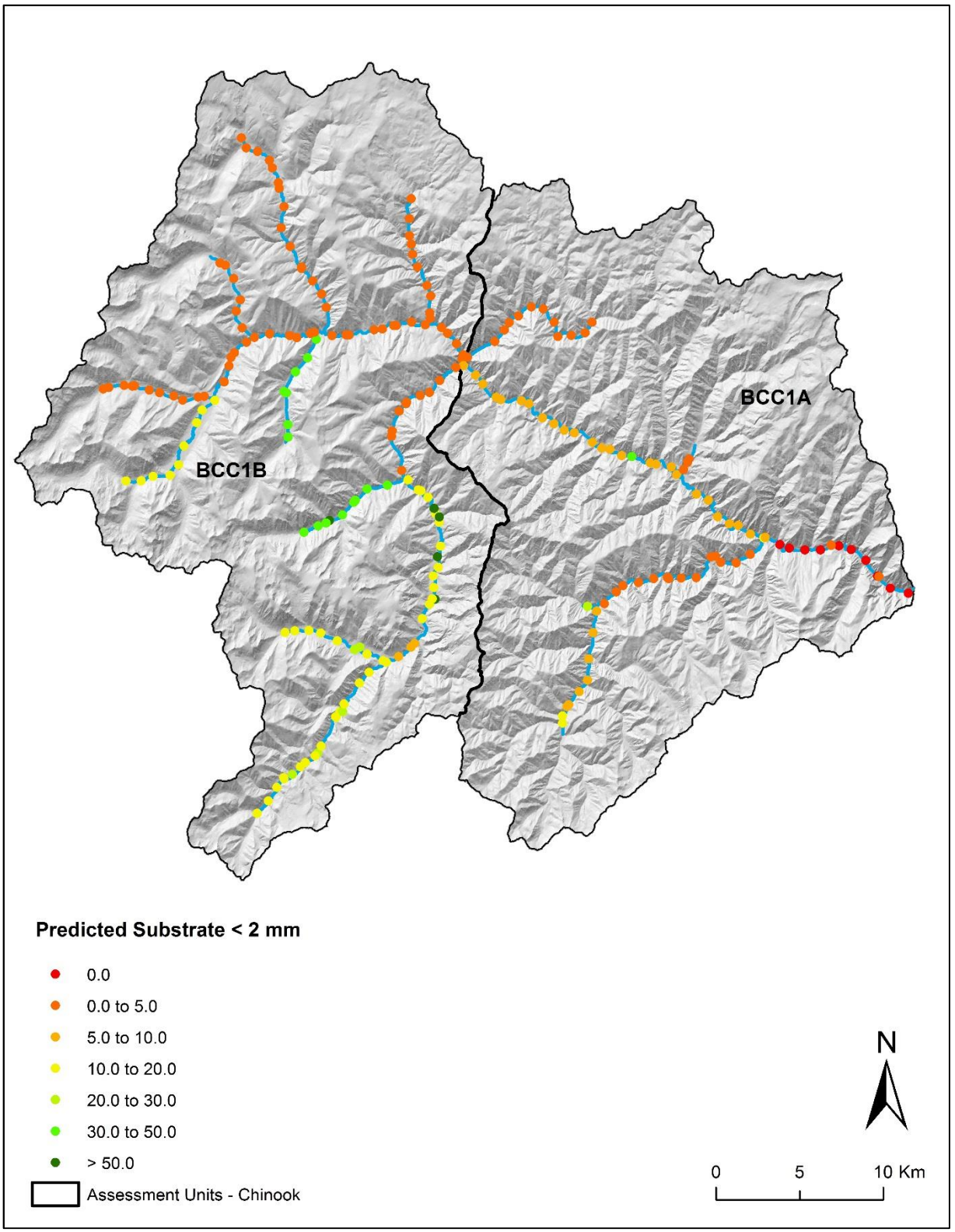
Sinuosity

- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Ratio of the thalweg length to the straight line distance between the start and end points of the thalweg.



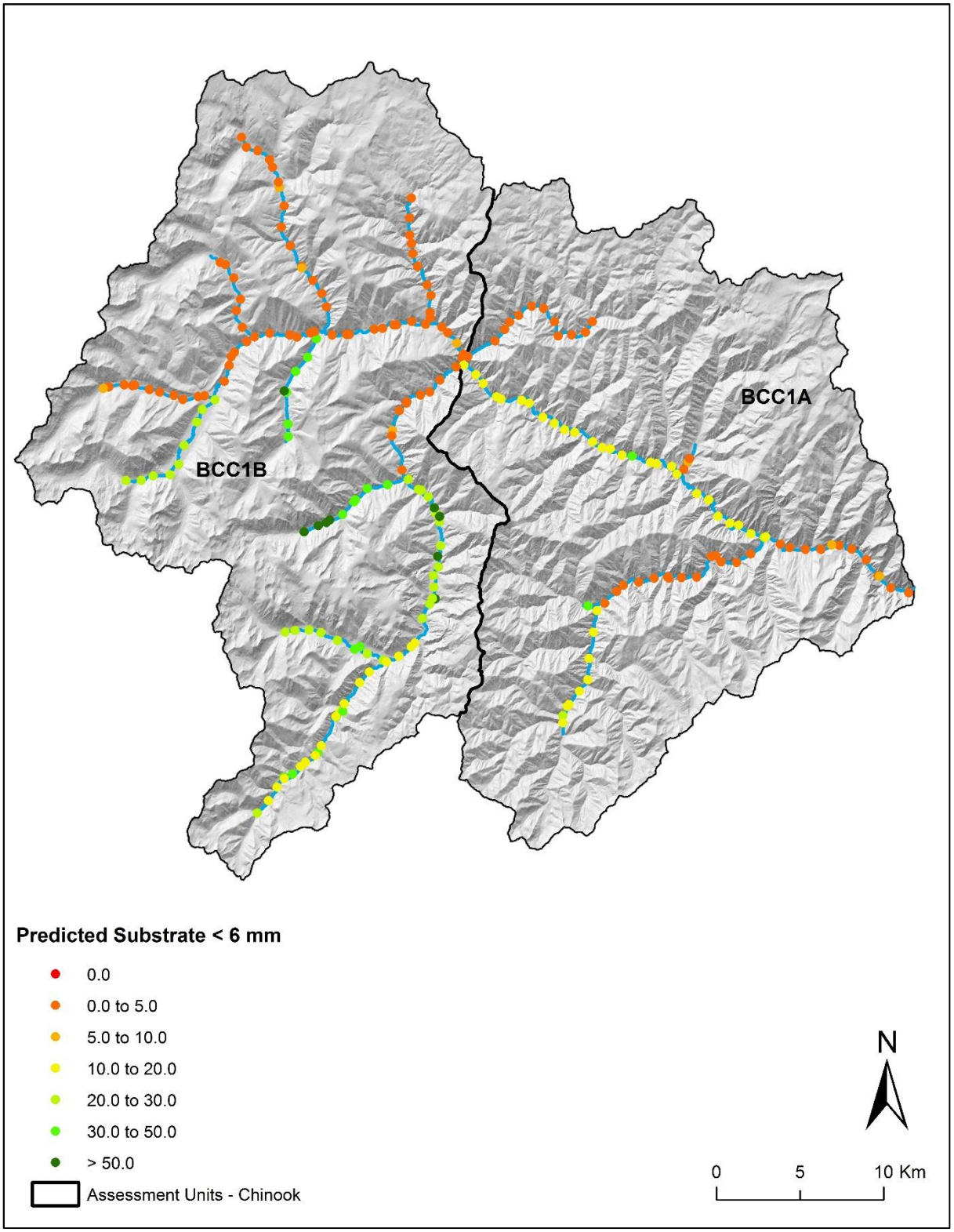
Substrate < 2 mm

- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Average percentage of pool tail substrates comprised of fine sediment <2 mm



Substrate < 6 mm

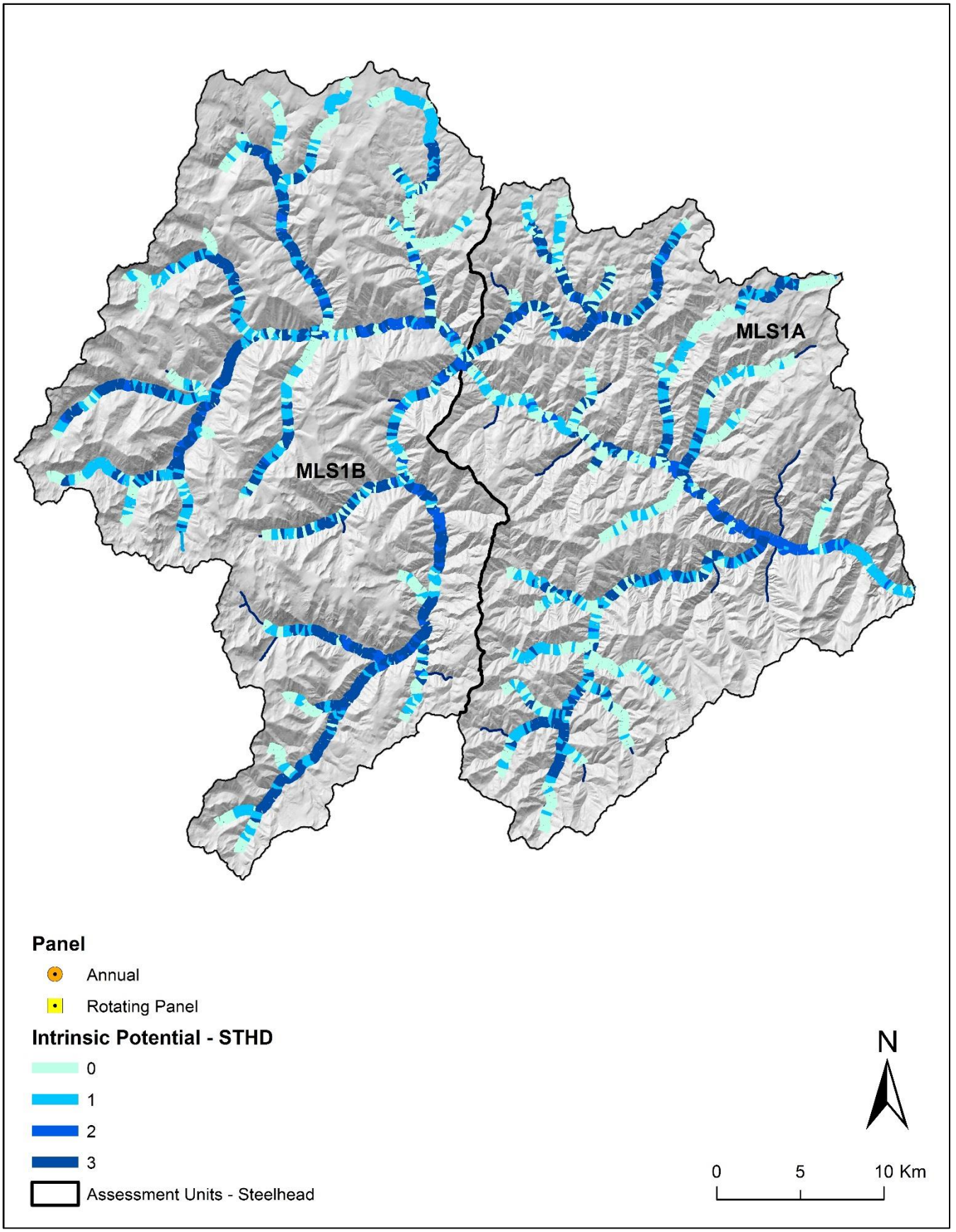
- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Average percentage of pool tail substrates comprised of fine sediment <6 mm



Summary by Steelhead Assessment Unit

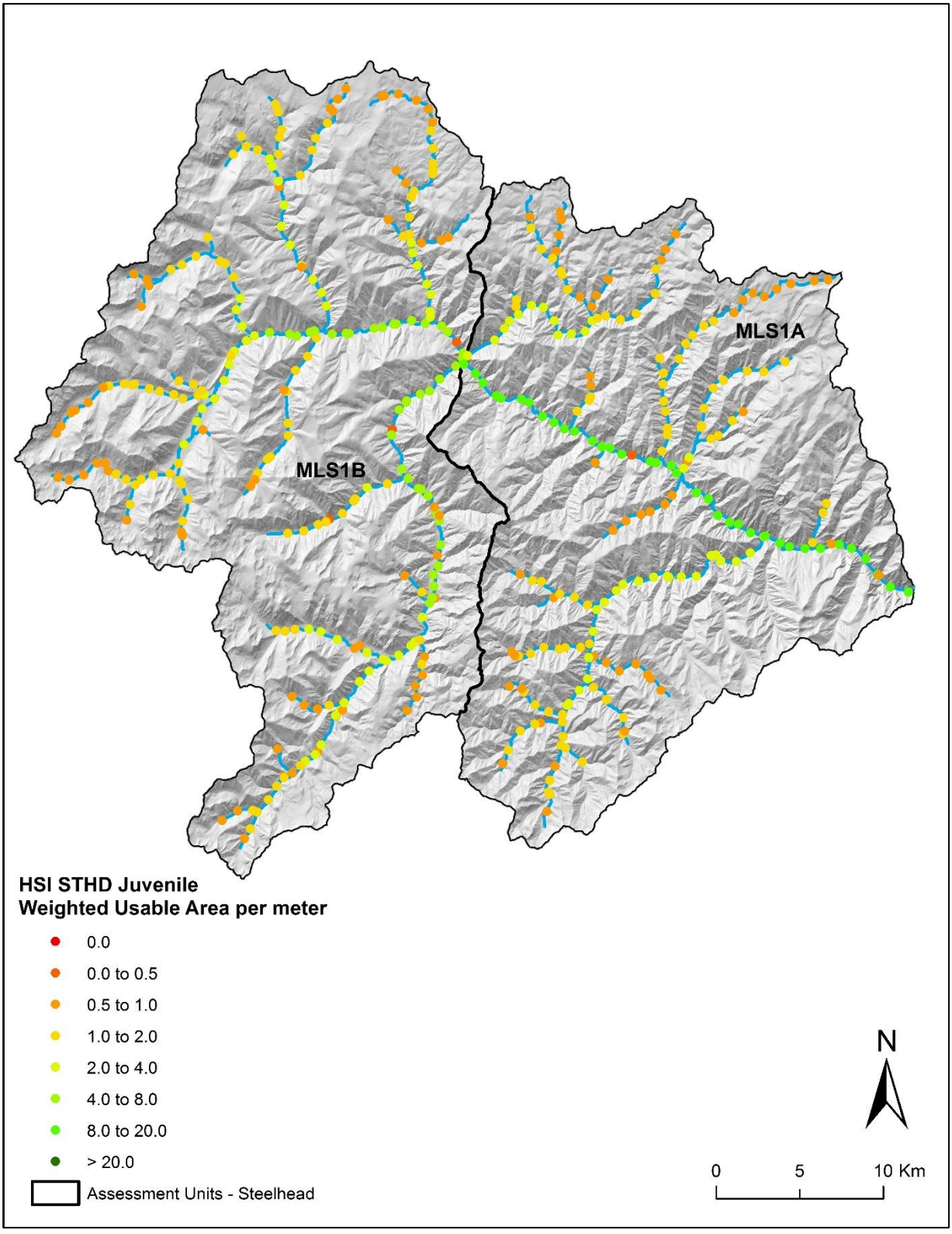
Big Creek: Summary of CHaMP Metrics and Modeled Products

Steelhead Intrinsic Potential



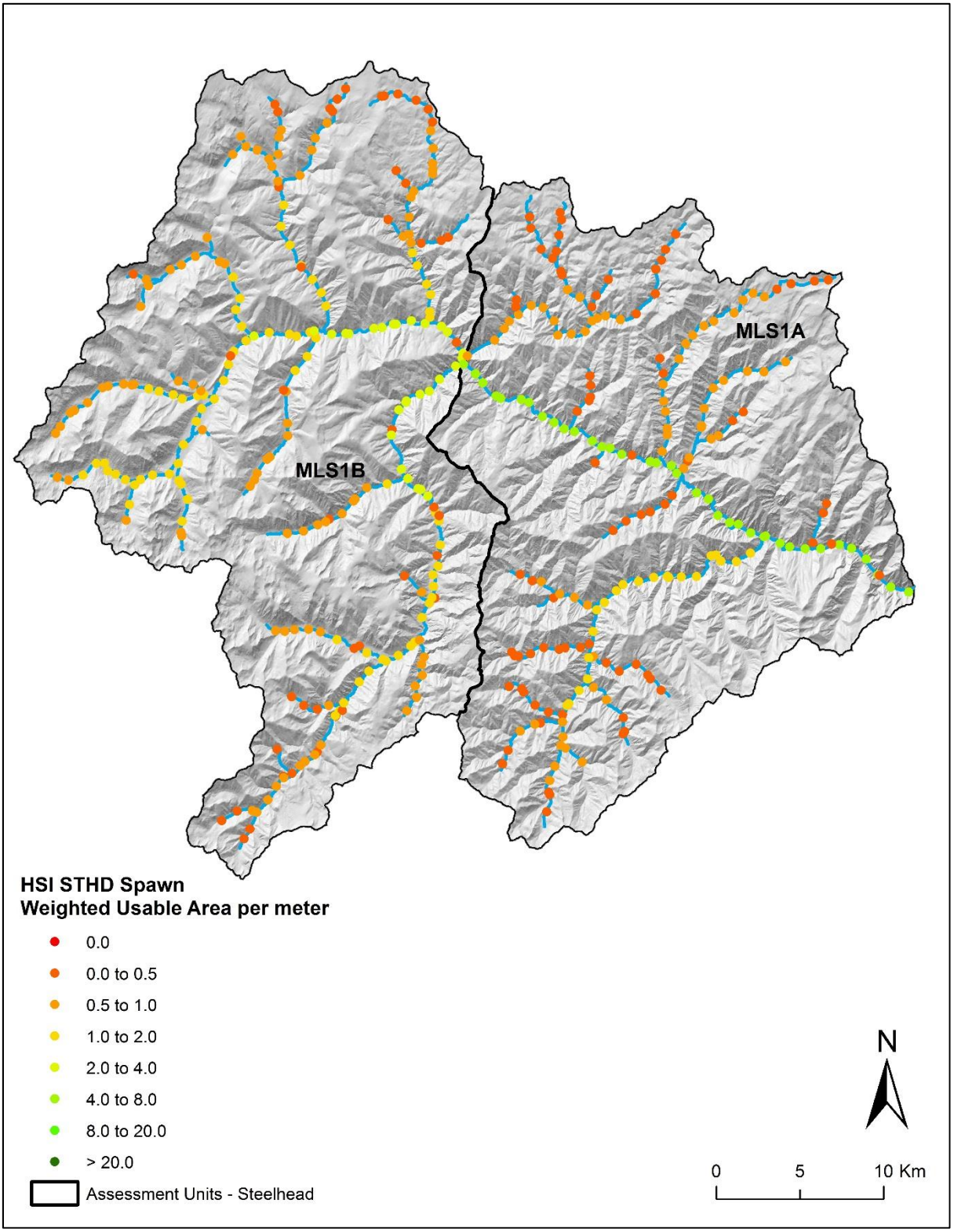
Steelhead Juvenile Weighted Usable Area

- Source: Habitat Suitability Index (HSI) Model
- Definition: Suitable habitat area (m^2) per meter of stream length for Juvenile Steelhead



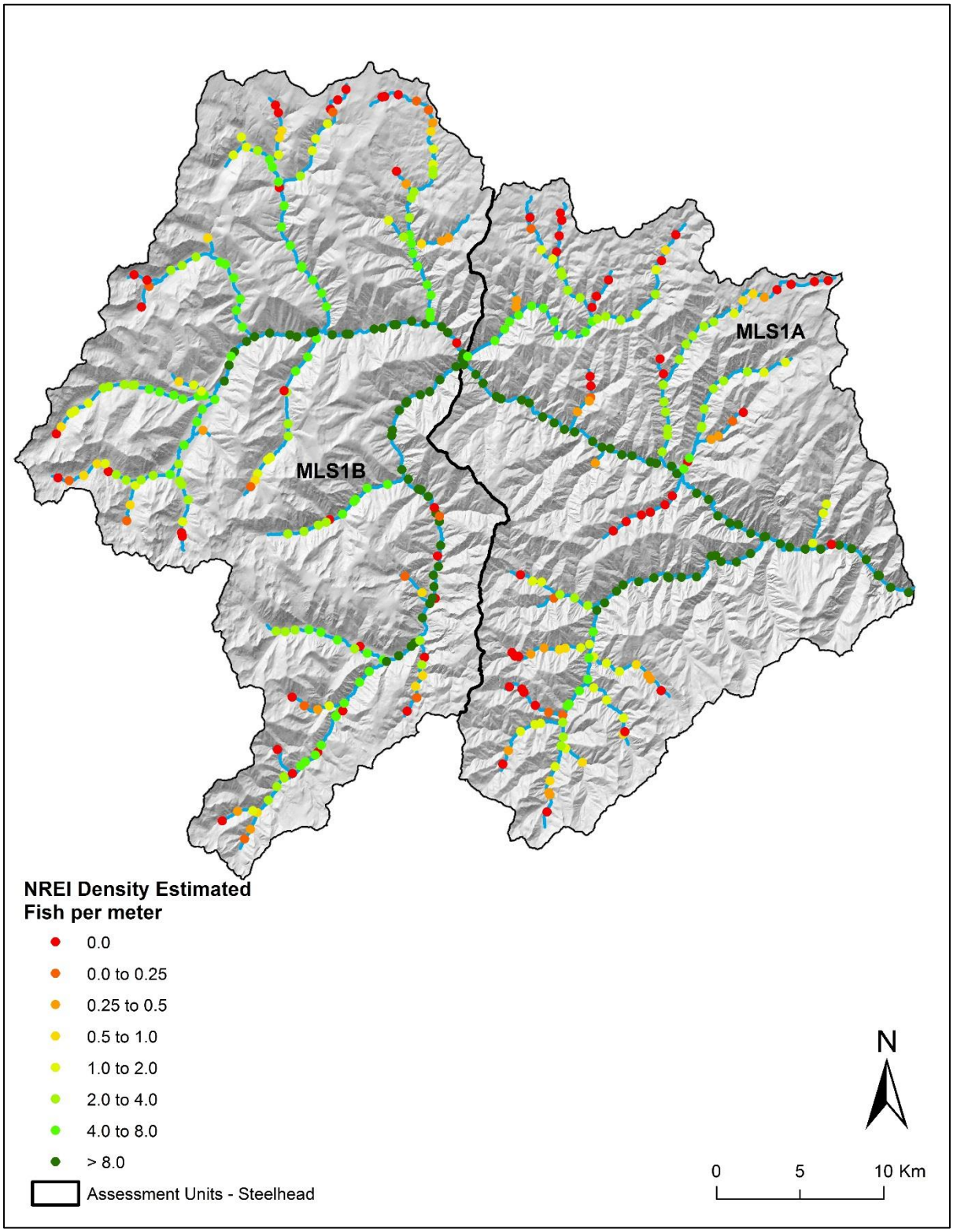
Steelhead Spawner Weighted Usable Area

- Source: Habitat Suitability Index (HSI) Model
- Definition: Suitable Spawning habitat area (m^2) per meter of stream length for Steelhead



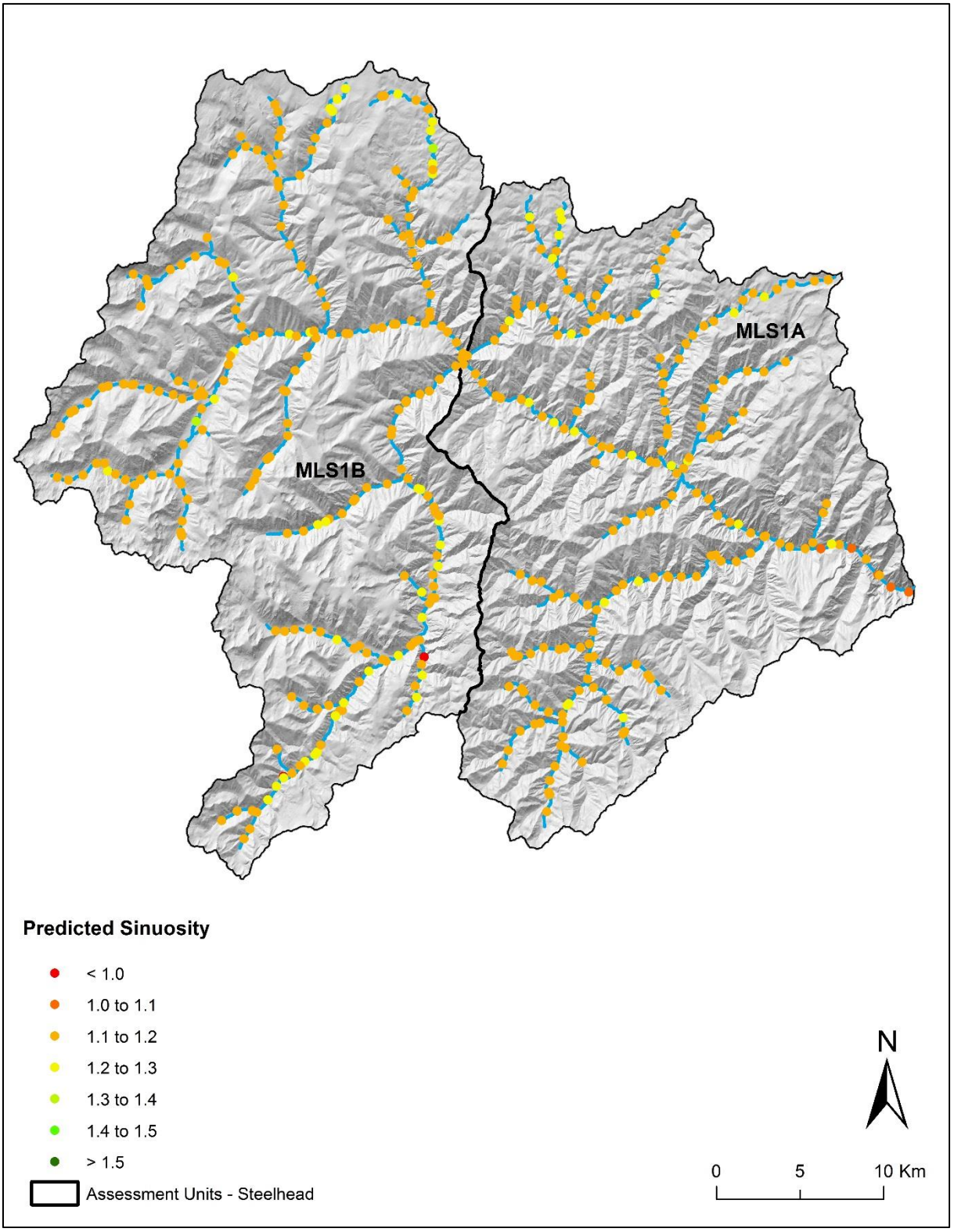
Juvenile Salmonid Capacity

- Source: Net Rate of Energy Intake (NREI) Model
- Definition: Carrying capacity (fish) per meter of stream length



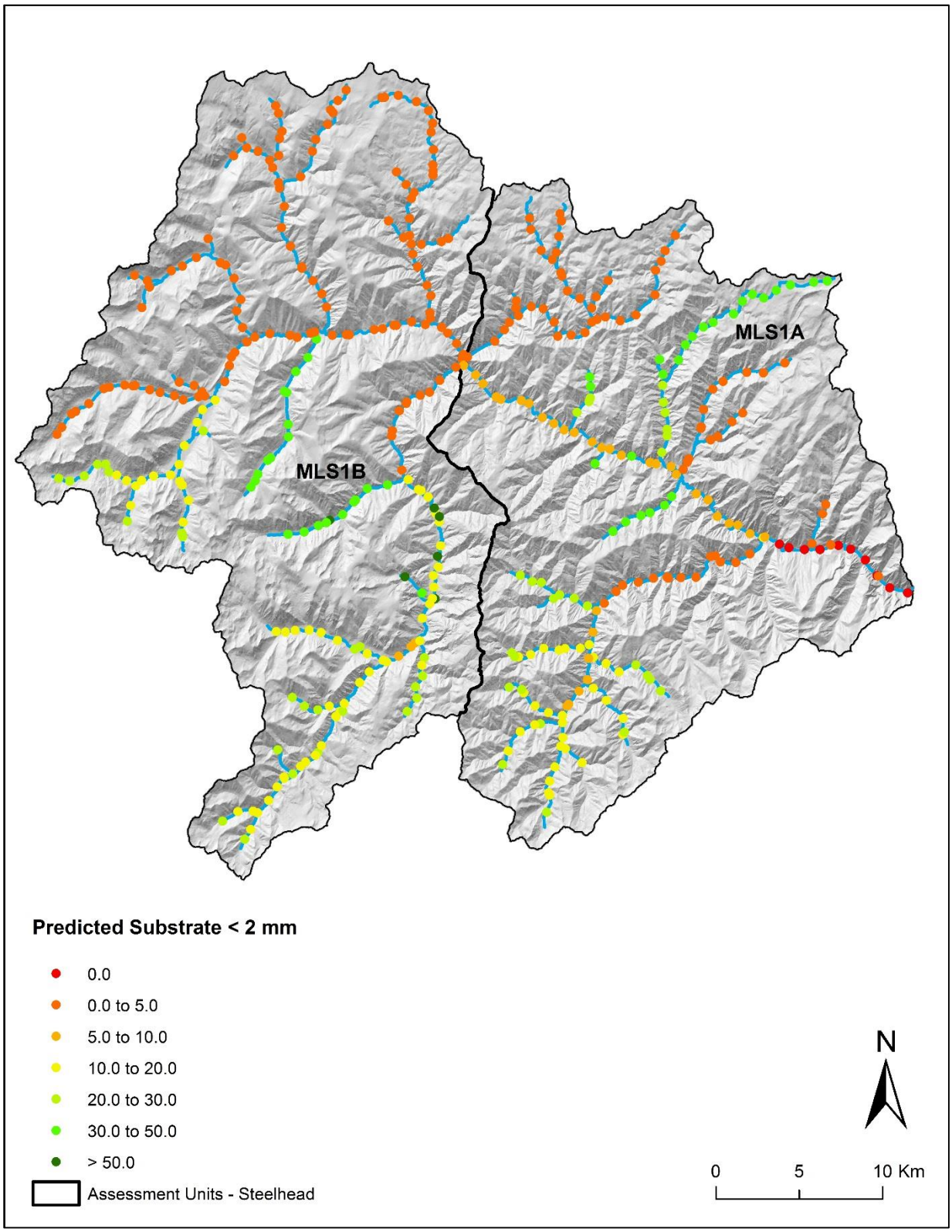
Sinuosity

- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Ratio of the thalweg length to the straight line distance between the start and end points of the thalweg.



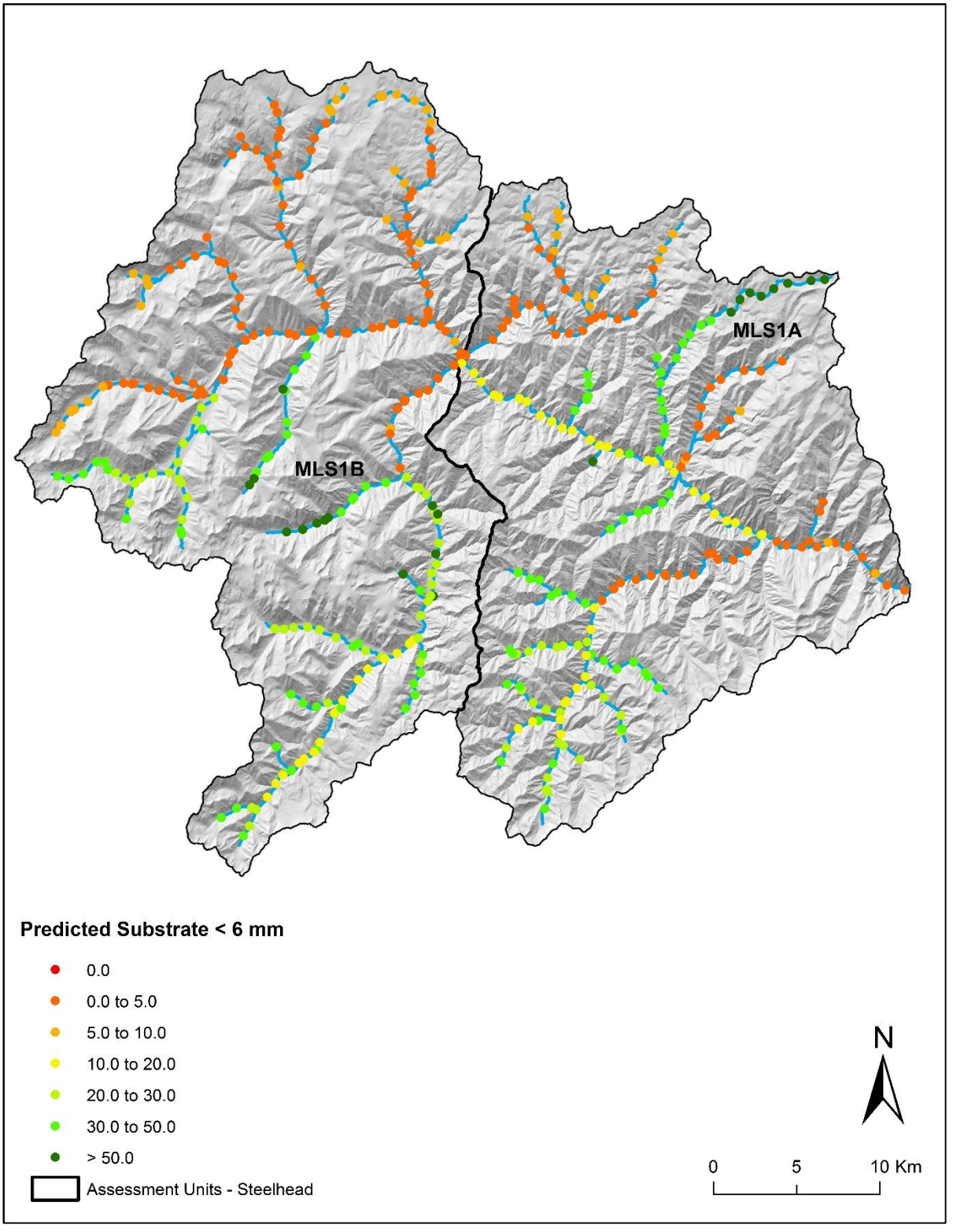
Substrate < 2 mm

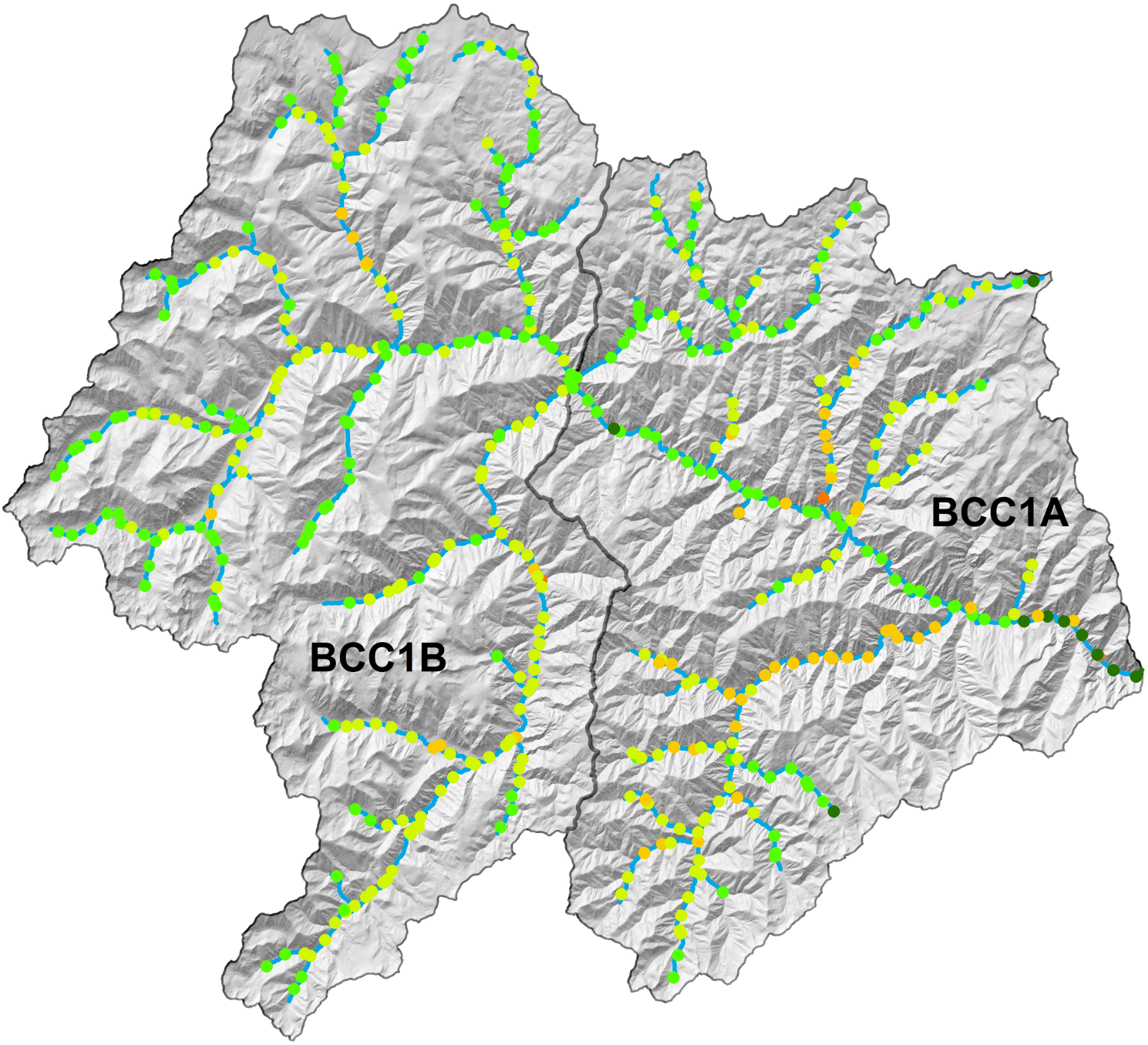
- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Average percentage of pool tail substrates comprised of fine sediment <2 mm



Substrate < 6 mm

- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Average percentage of pool tail substrates comprised of fine sediment <6 mm





QRF Capacity Estimates
Juvenile Chinook

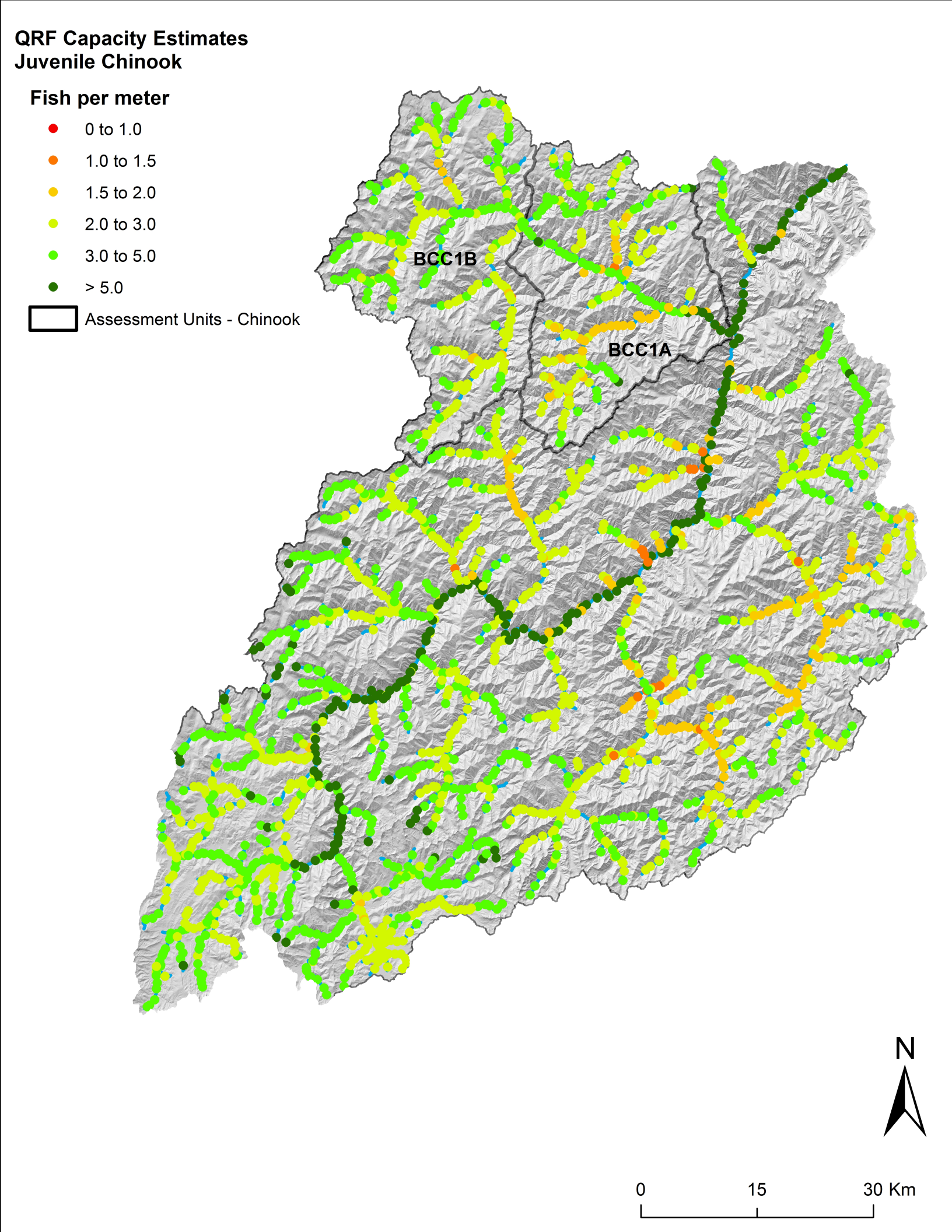
Fish per meter

- 0 to 1.0
- 1.0 to 1.5
- 1.5 to 2.0
- 2.0 to 3.0
- 3.0 to 5.0
- > 5.0

Assessment Units - Chinook

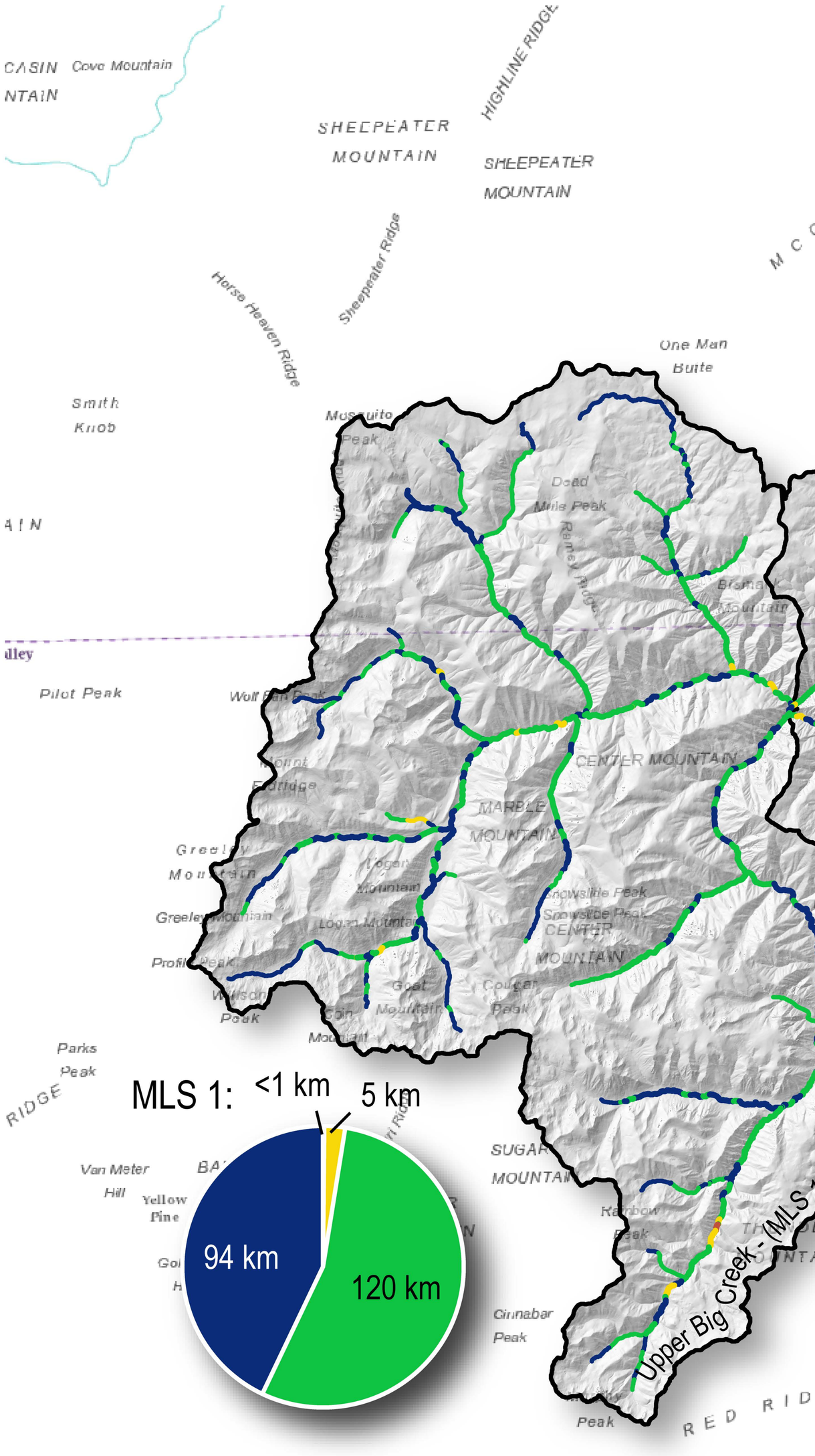
N

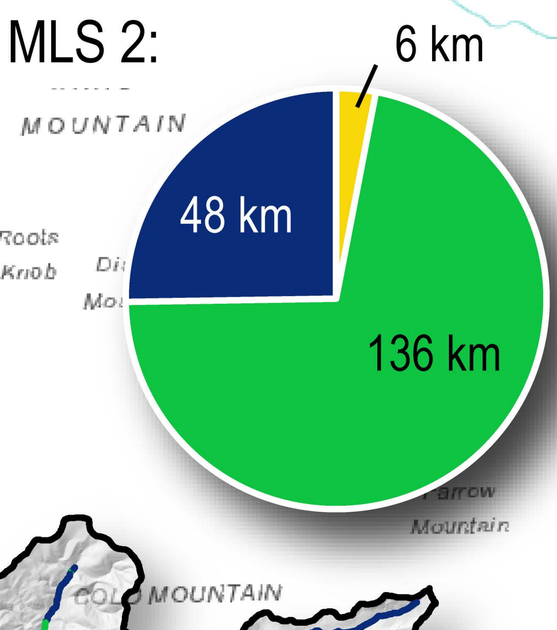
0 5 10 Km


QRF Capacity Estimates
Juvenile Chinook
Fish per meter
0 to 1.0
1.0 to 1.5
1.5 to 2.0
2.0 to 3.0
3.0 to 5.0
> 5.0
Assessment Units - Chinook
BCC1B
BCC1A
N
0
15
30 Km

RIPARIAN CONDITION ASSESSMENT

Considering riparian departure, land use intensity & floodplain accessibility





Upper Big Creek - (MLS 1)

Lower Big Creek - (MLS 2)

RCA - Riparian Condition Assessment

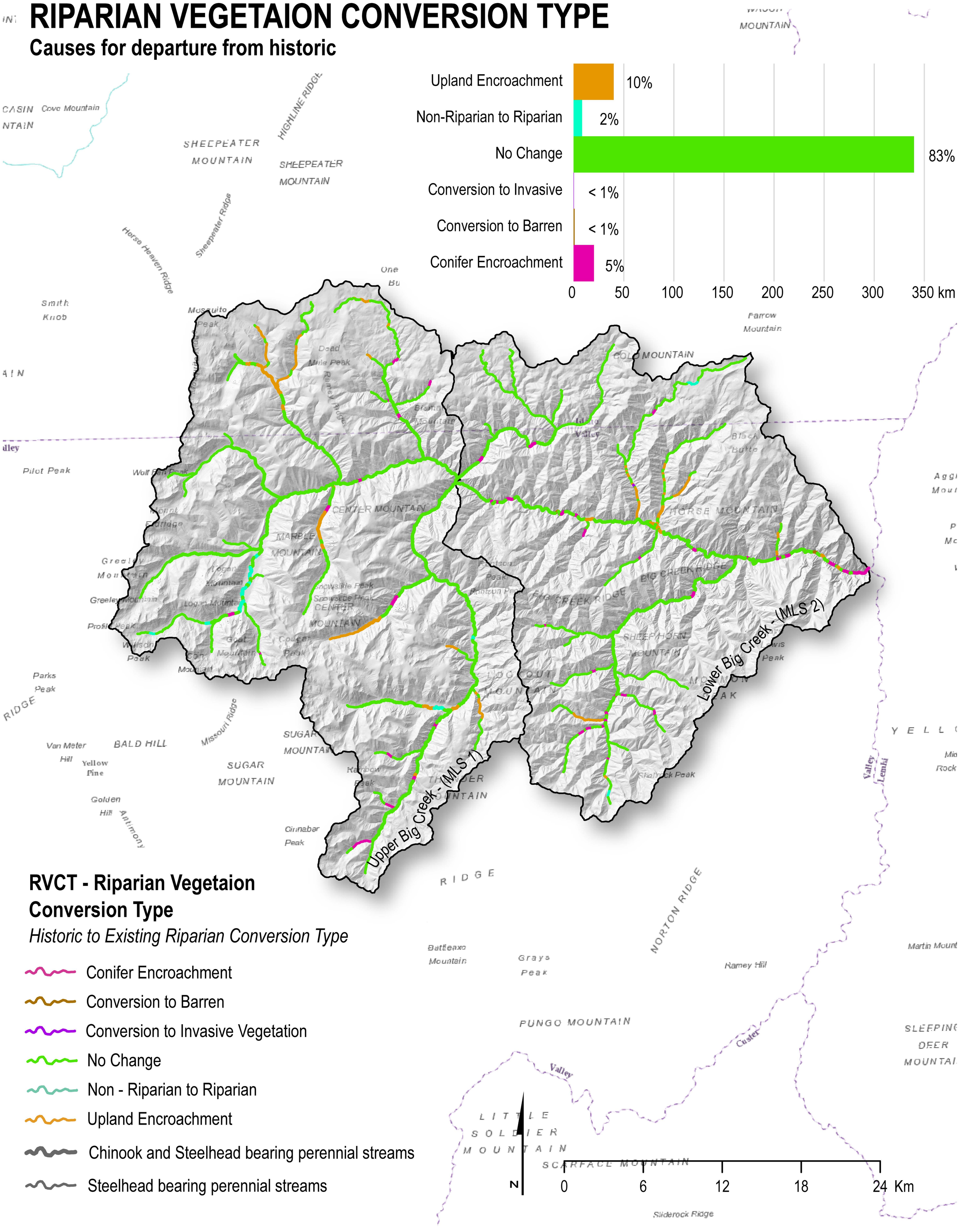
Status

- Poor
- Moderate
- Good
- Intact
- Chinook and Steelhead bearing perennial streams
- Steelhead bearing perennial streams

N 0 6 12 18 24 Km

RIPARIAN VEGETAION CONVERSION TYPE

Causes for departure from historic



RVCT - Riparian Vegetaion Conversion Type

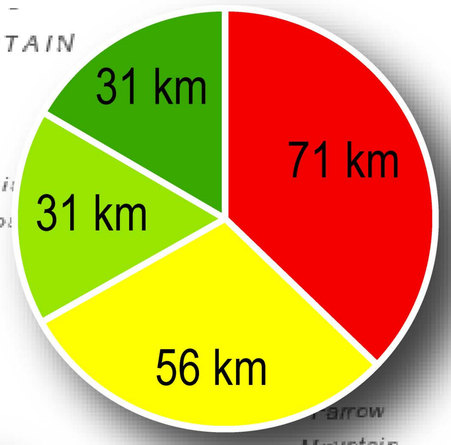
Historic to Existing Riparian Conversion Type

- Conifer Encroachment
- Conversion to Barren
- Conversion to Invasive Vegetation
- No Change
- Non - Riparian to Riparian
- Upland Encroachment
- Chinook and Steelhead bearing perennial streams
- Steelhead bearing perennial streams

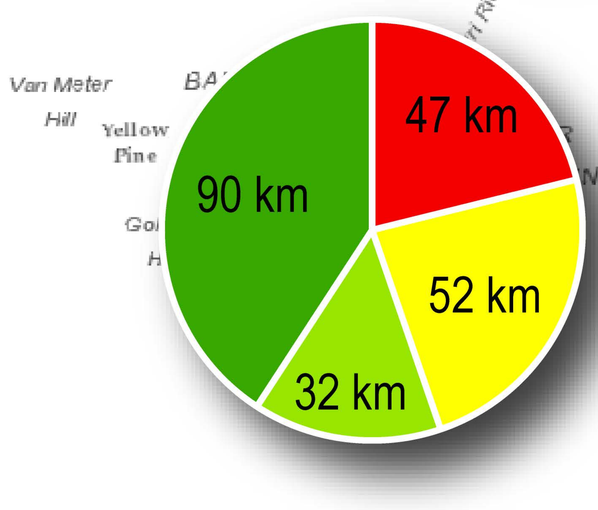
RIPARIAN VEGETATION DEPARTURE

Estimate of current departure from historic within valley bottom

MLS 2:



MLS 1:



Lower Big Creek - (MLS 2)

Upper Big Creek - (MLS 1)

RVD - Riparian Vegetation Departure

Current Departure from Historic

- Large Departure: > 66%
- Significant Departure: 33% to 66%
- Minor Departure: 10% to 33%
- Negligible Departure: < 10%
- Chinook and Steelhead bearing perennial streams
- Steelhead bearing perennial streams

N 0 6 12 18 24 Km