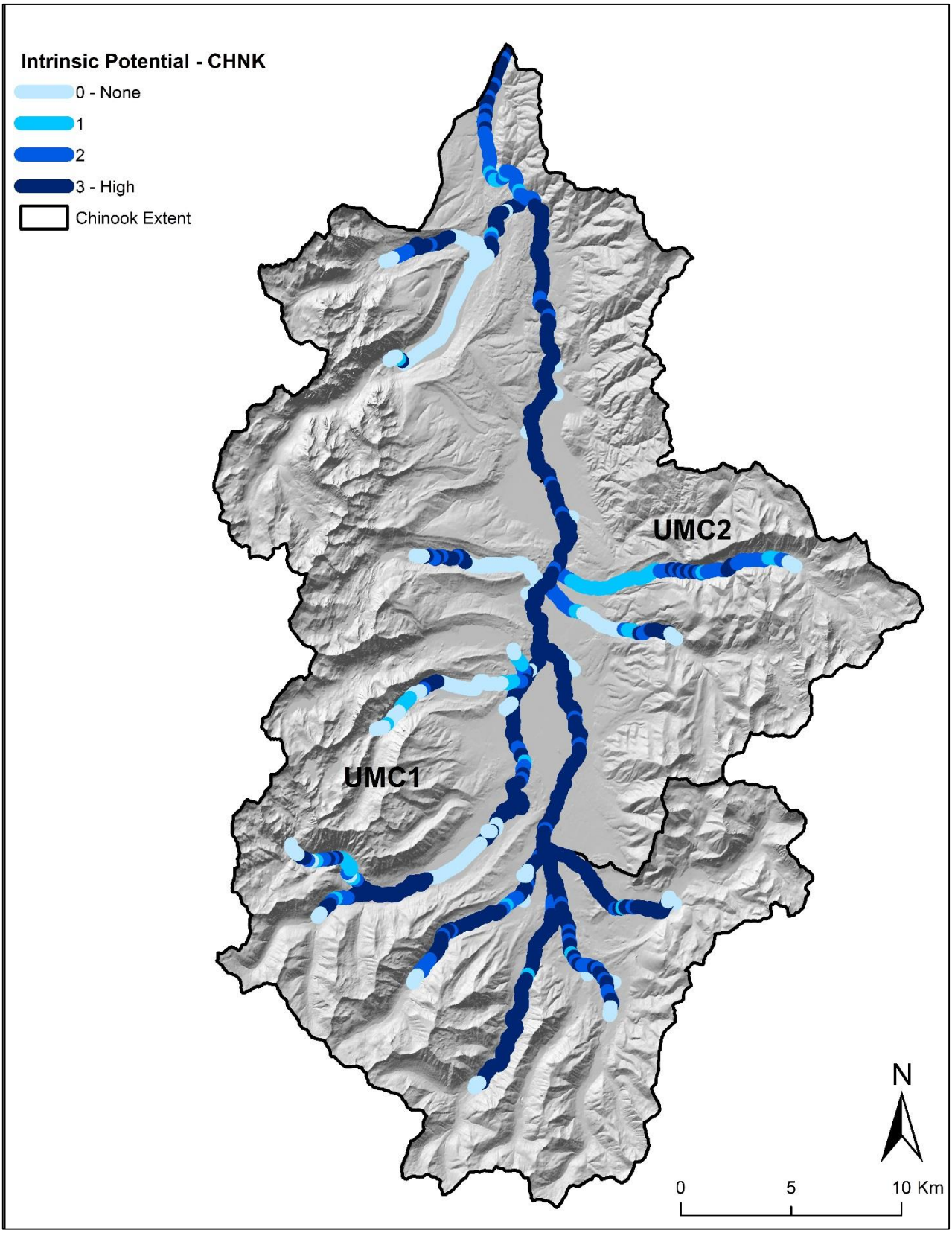
Upper Salmon: Summary of CHaMP Metrics and Modeled Products

- 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 Capacity (QRF)
  - Riparian Condition Assessment (RCA)
  - Riparian Vegetation Conversion Type (RVCT)
  - Riparian Condition Departure (RCD)
  - Large Wood Recruitment Potential (LWD)
  - Stream Temperature Exceedance (TEMP)

Summary by Chinook Assessment Unit

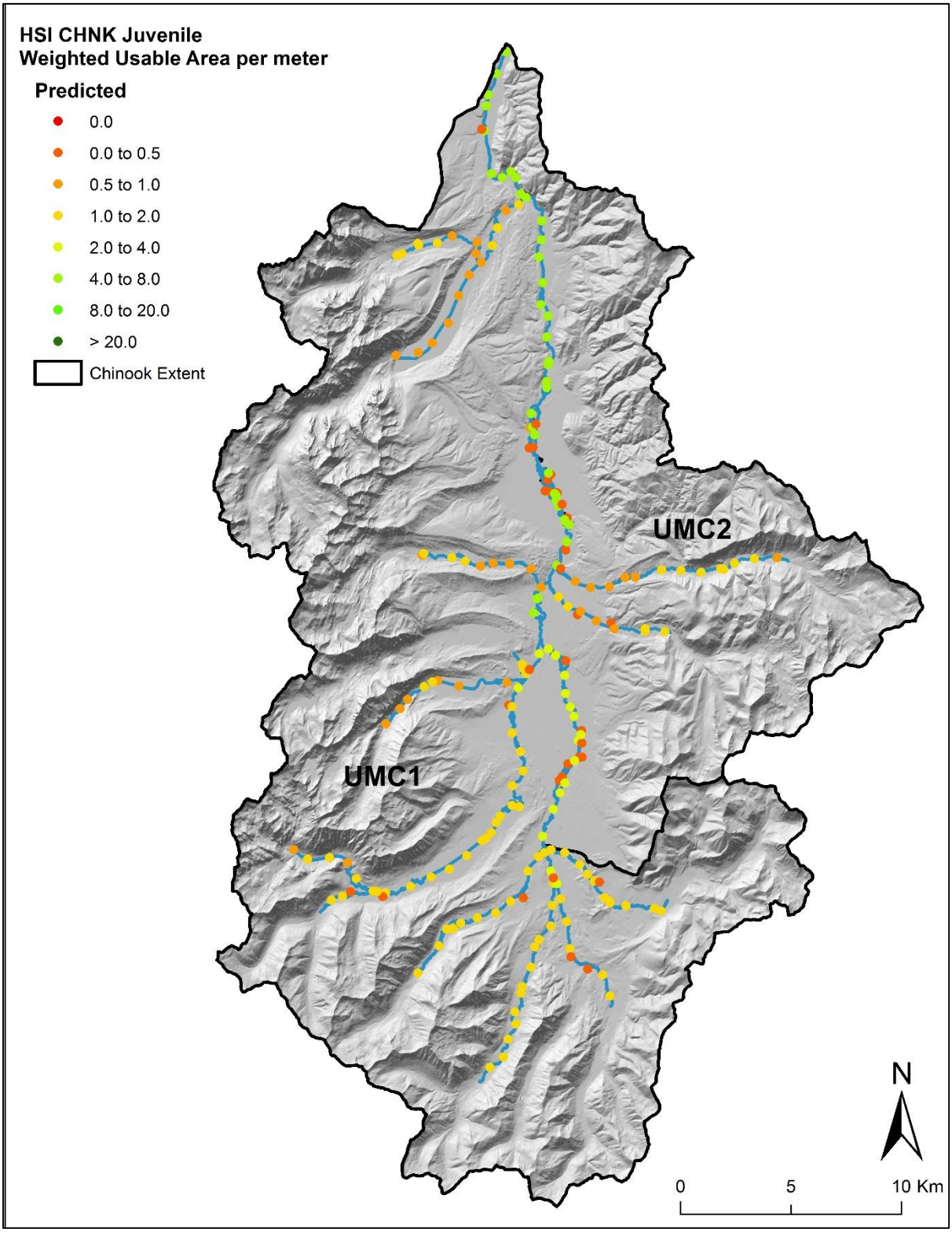
Upper Salmon: Summary of CHaMP Metrics and Modeled Products

Chinook Intrinsic Potential



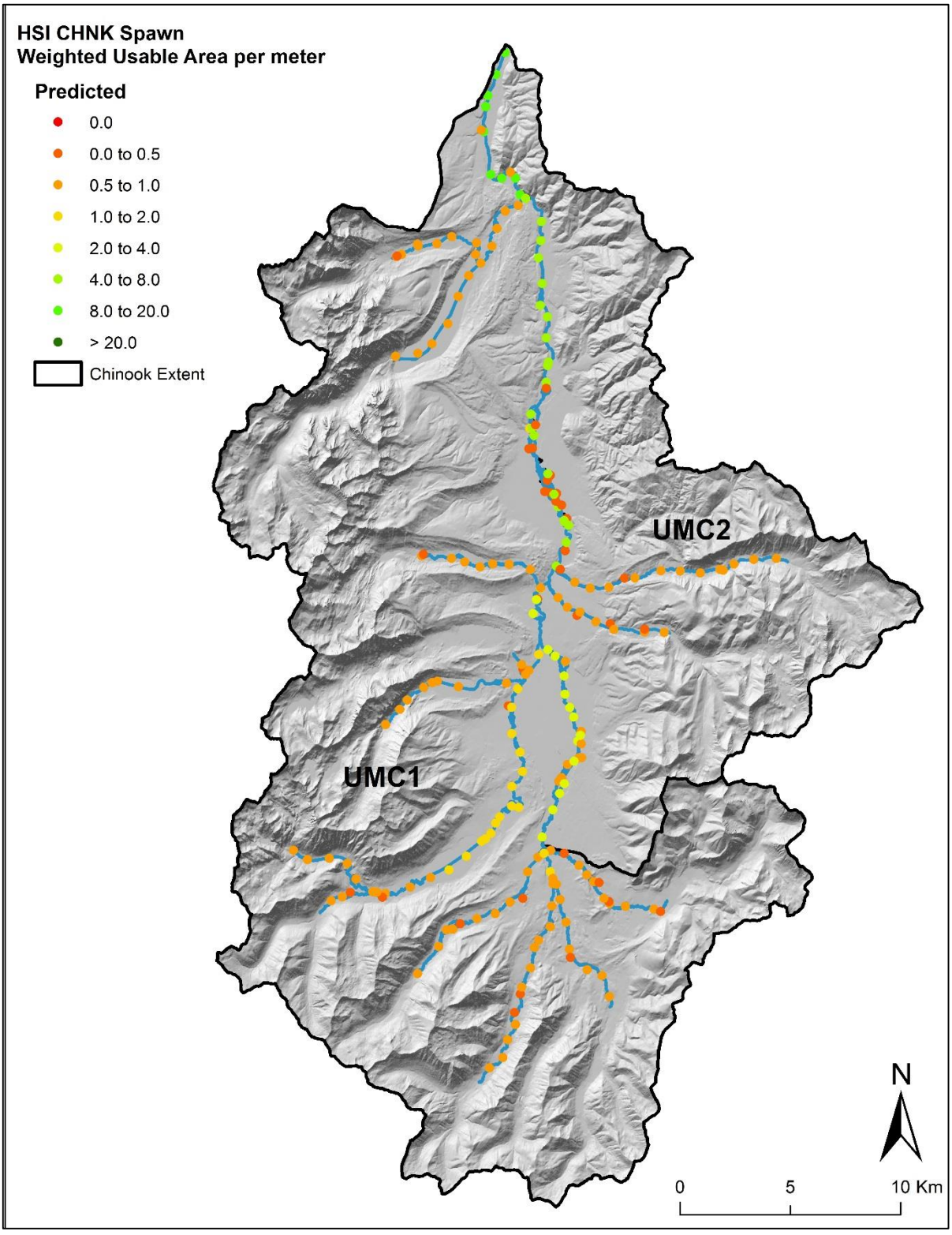
Chinook Juvenile Weighted Usable Area

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



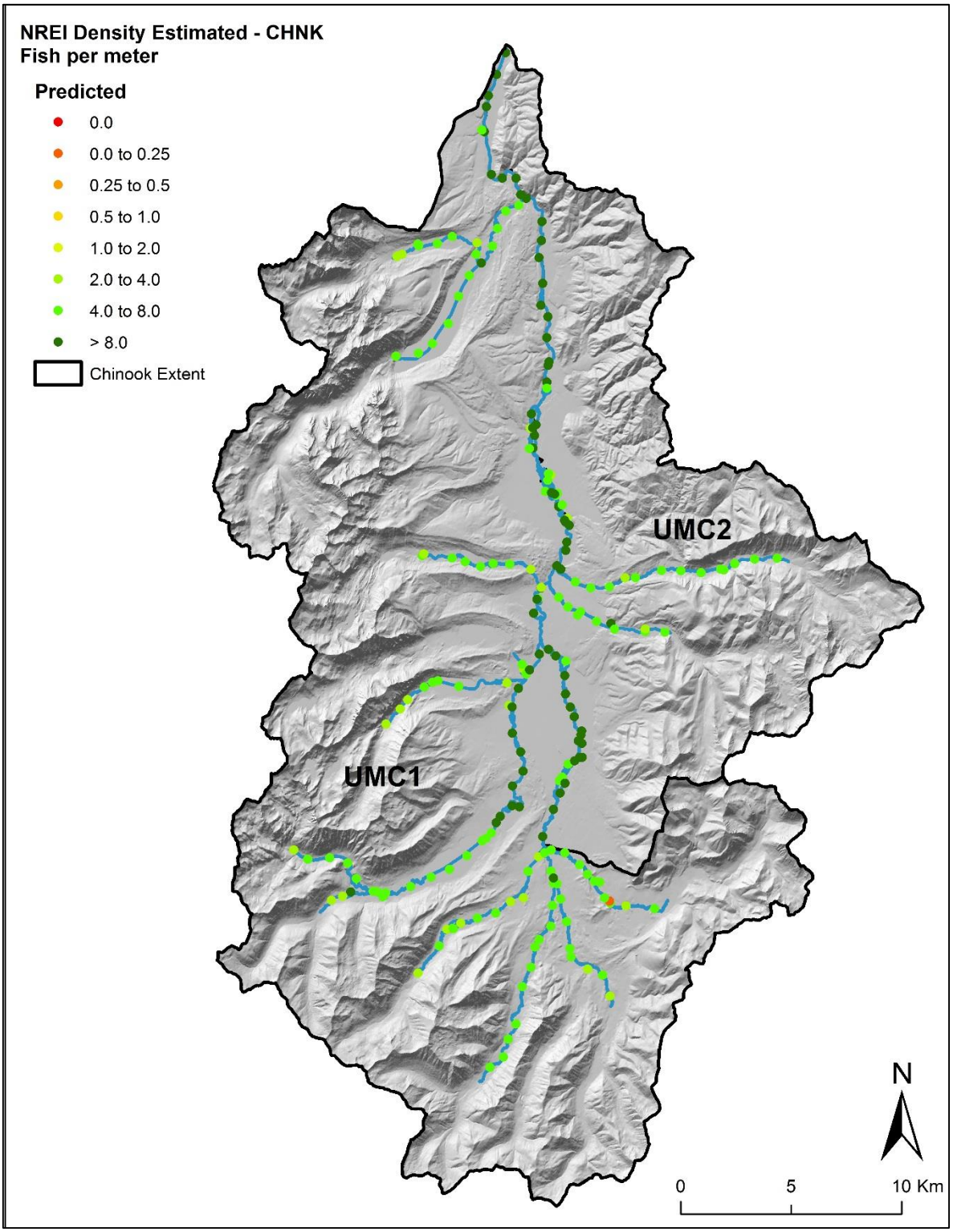
Chinook Spawner Weighted Usable Area

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



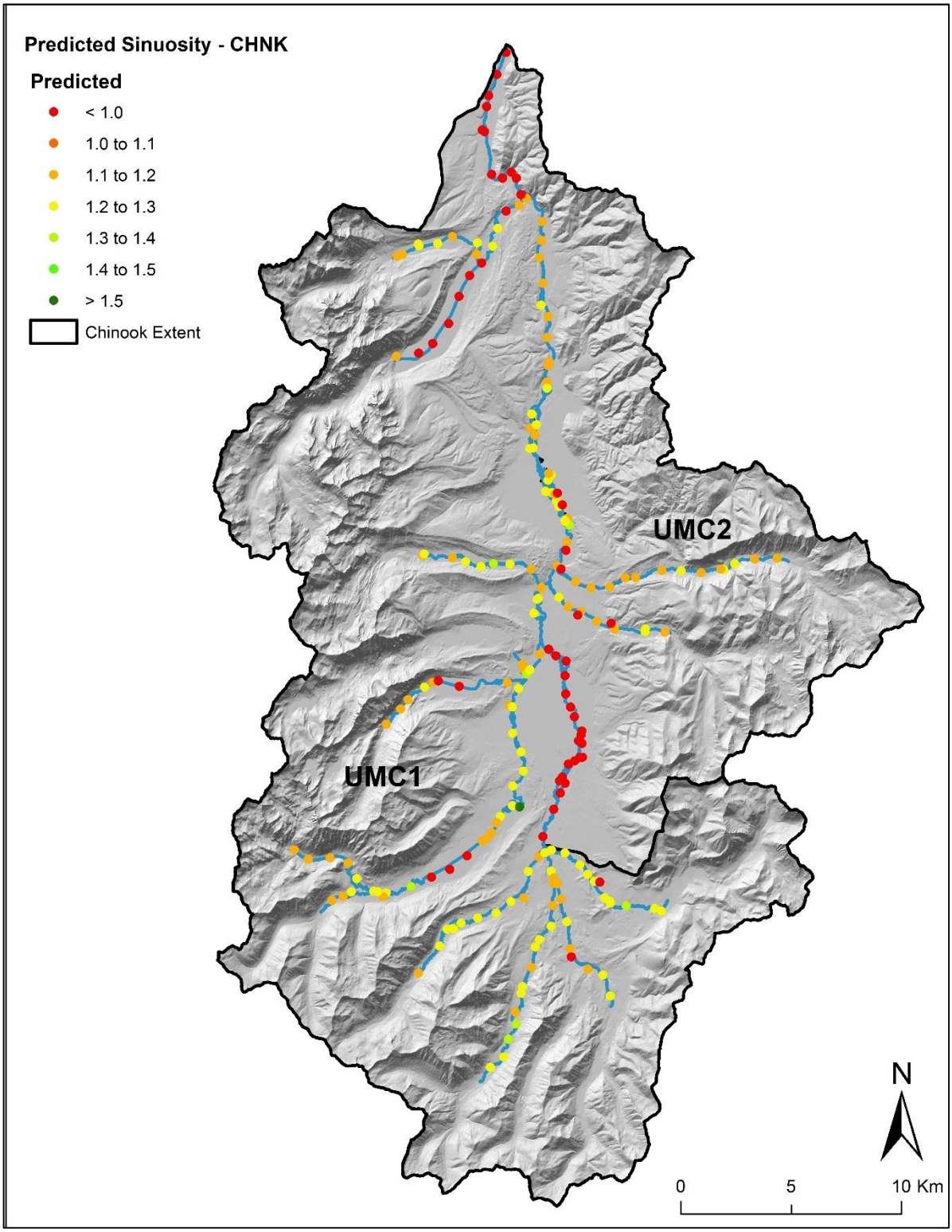
Juvenile Salmonid Capacity

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



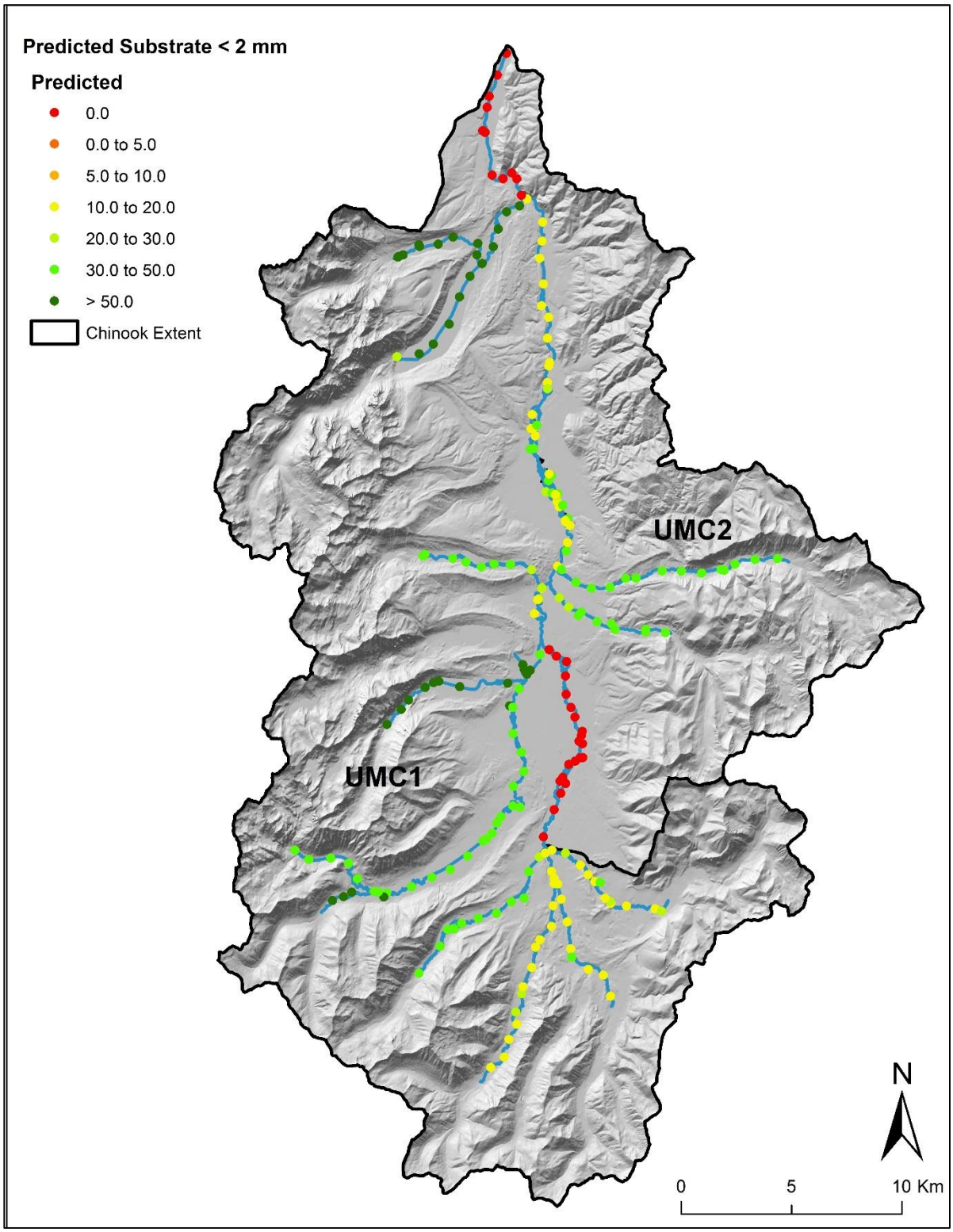
Sinuosity

- 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.



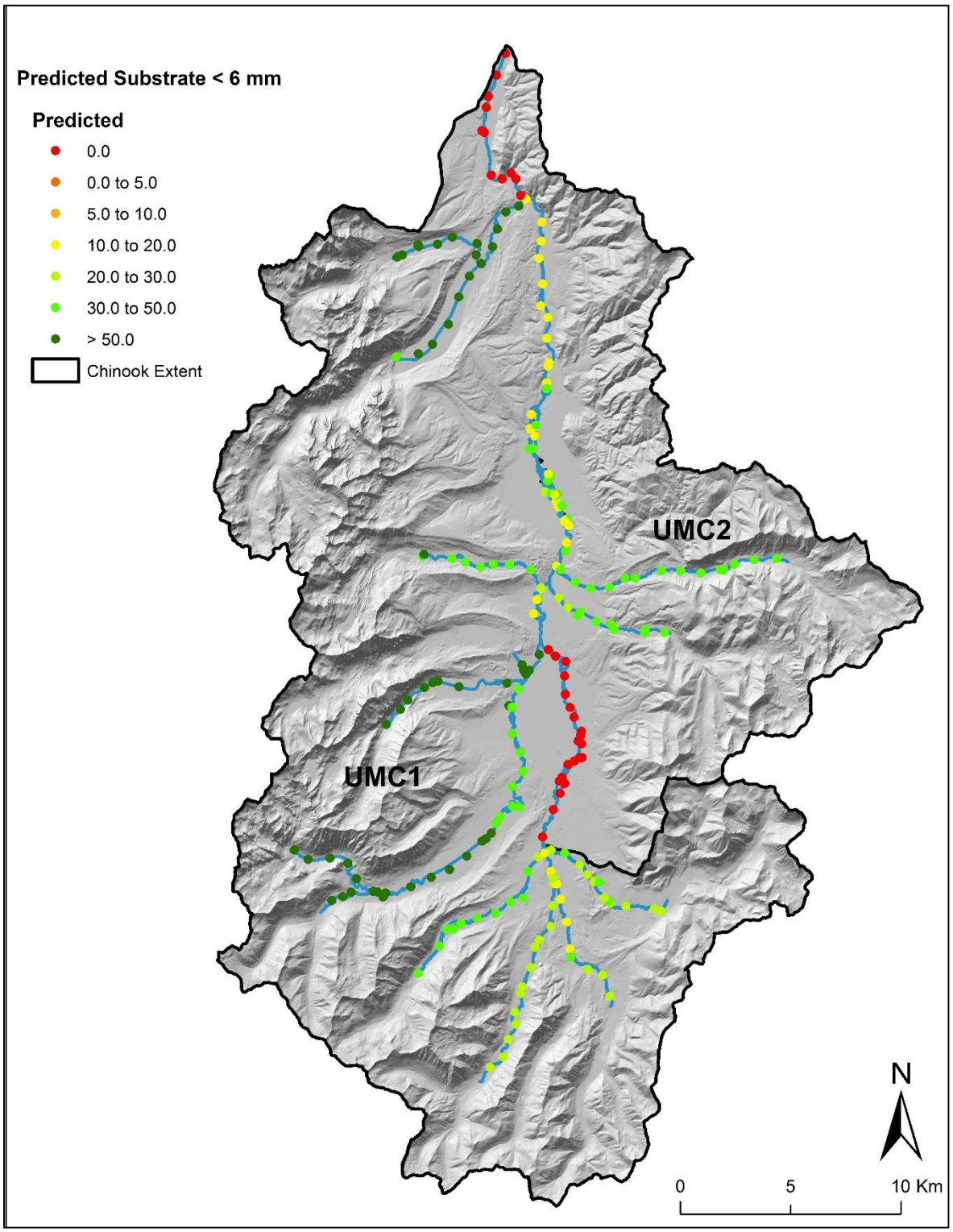
Substrate < 2 mm

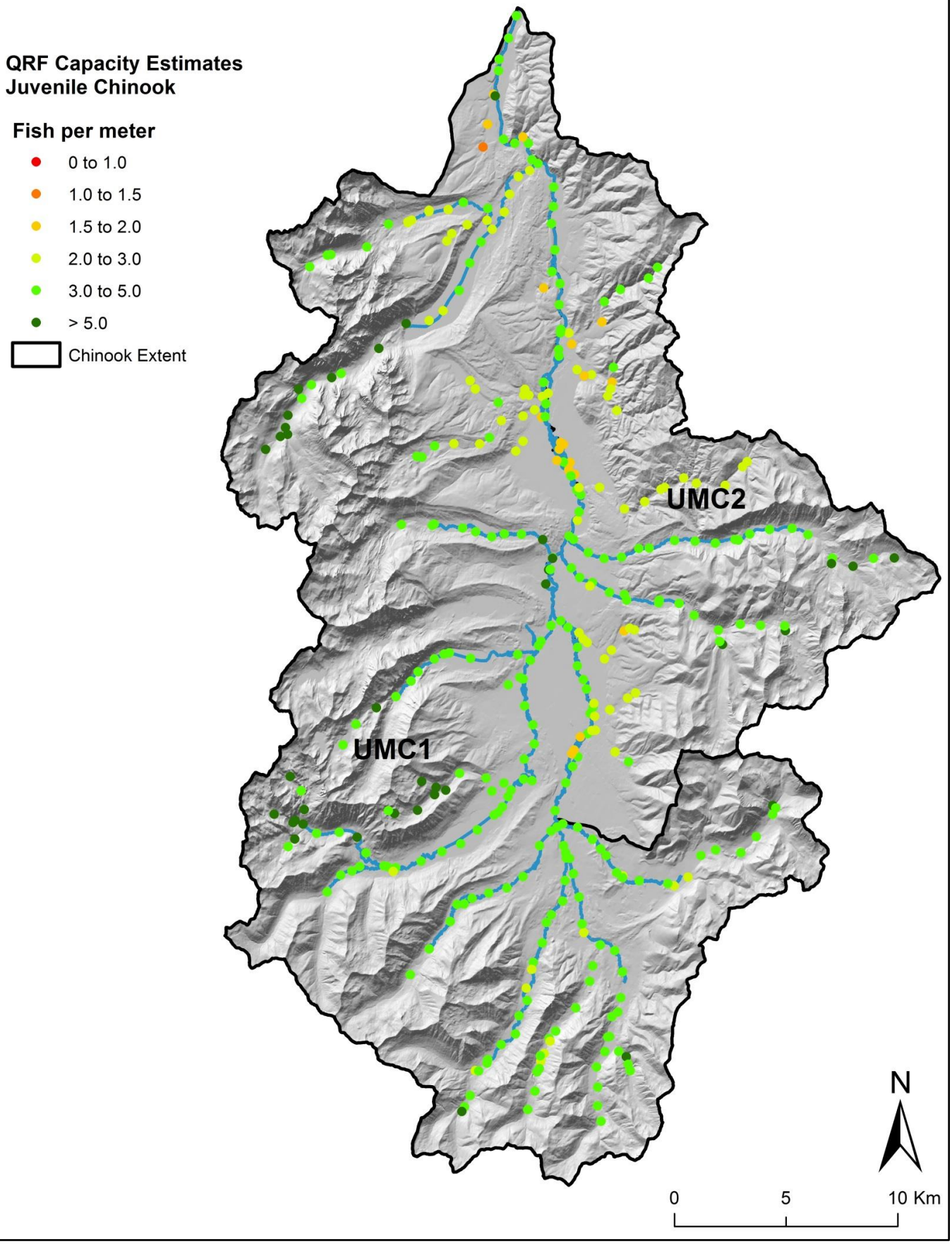
- Source: CHaMP Metrics (www.champmonitoring.org)
- Definition: Average percentage of pool tail substrates comprised of fine sediment <2 mm



Substrate < 6 mm

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

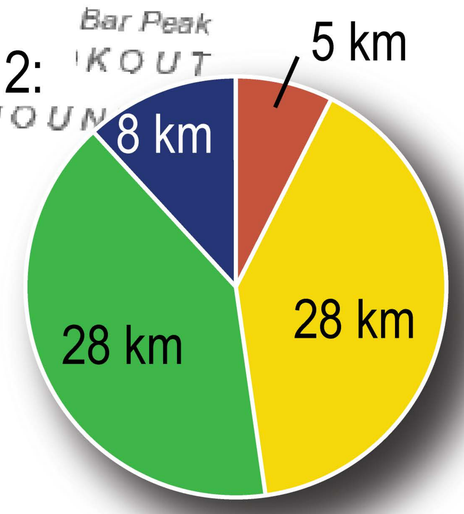



QRF Capacity Estimates
Juvenile Chinook
Fish per meter
0 to 1.0
1.0 to 1.5
1.5 to 2.0
2.0 to 3.0
3.0 to 5.0
> 5.0
Chinook Extent
UMC2
UMC1
N
0
5
10 Km

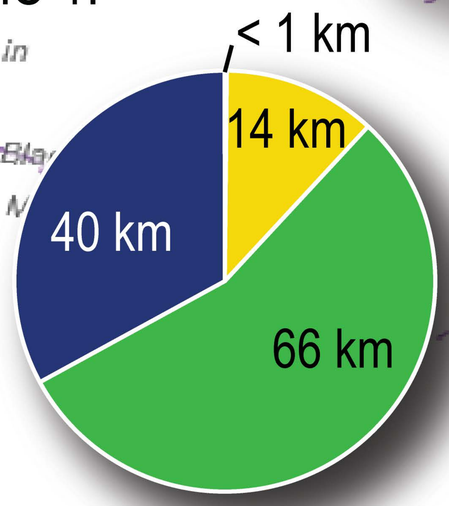
RIPARIAN CONDITION ASSESSMENT

Considering riparian departure, land use intensity & floodplain accessibility

UMC 2:



UMC 1:



Salmon River East Tributaries - (UMC 2)

Salmon River West Tributraies - (UMC 1)

RCA - Riparian Condition Assessment

Status

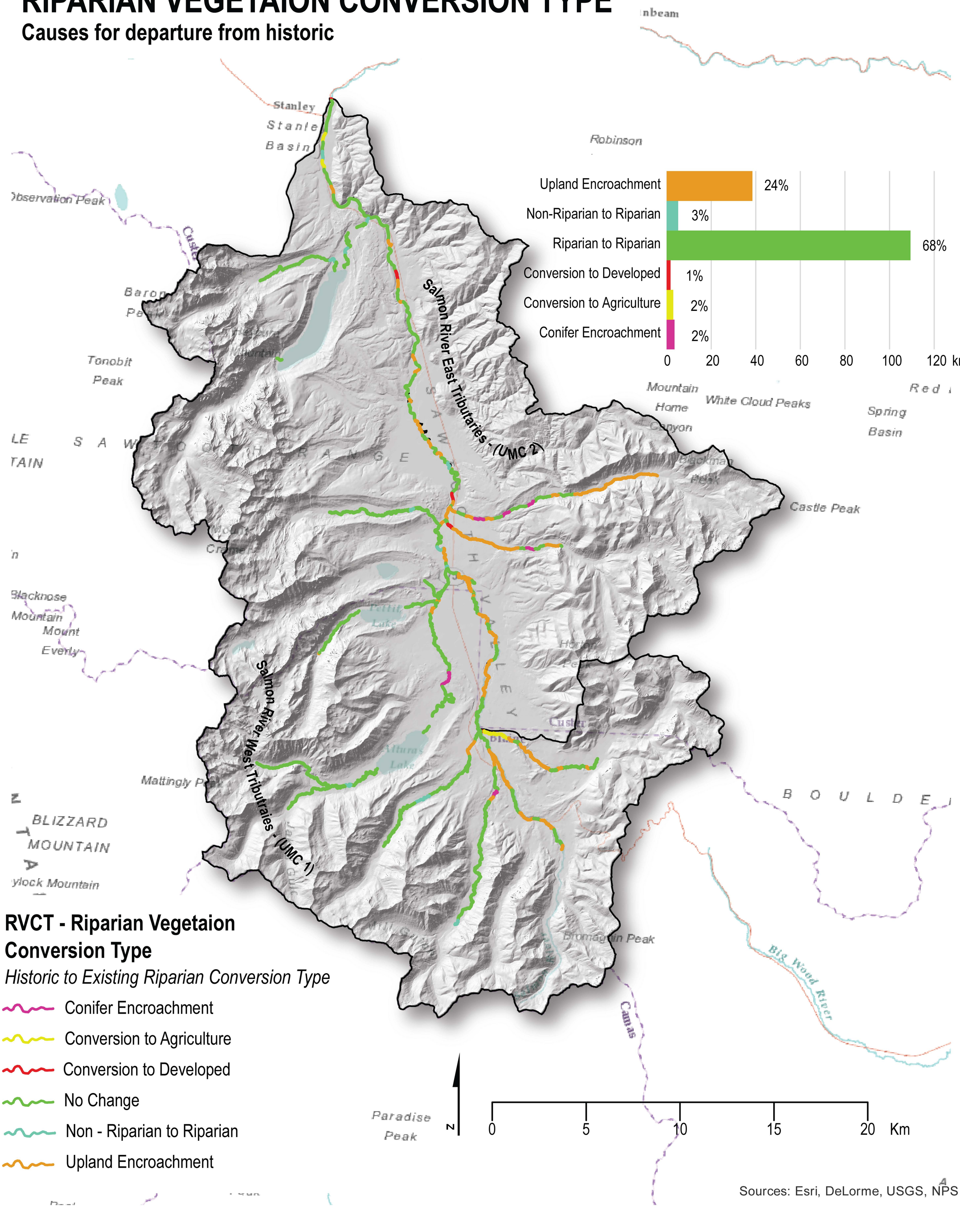
- Poor
- Moderate
- Good
- Intact

0 5 10 15 20 Km

Sources: Esri, DeLorme, USGS, NPS

RIPARIAN VEGETAION CONVERSION TYPE

Causes for departure from historic



RVCT - Riparian Vegetaion Conversion Type

Historic to Existing Riparian Conversion Type

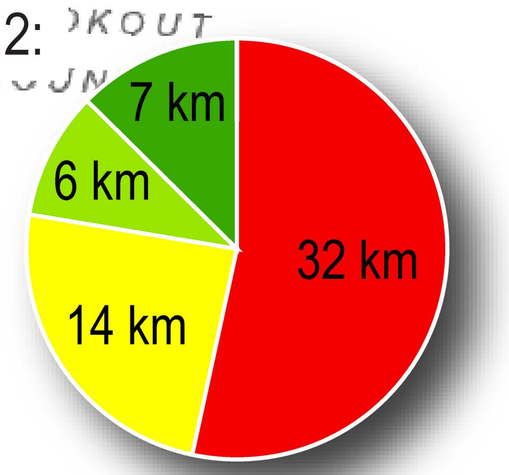
- Conifer Encroachment
- Conversion to Agriculture
- Conversion to Developed
- No Change
- Non - Riparian to Riparian
- Upland Encroachment

Sources: Esri, DeLorme, USGS, NPS

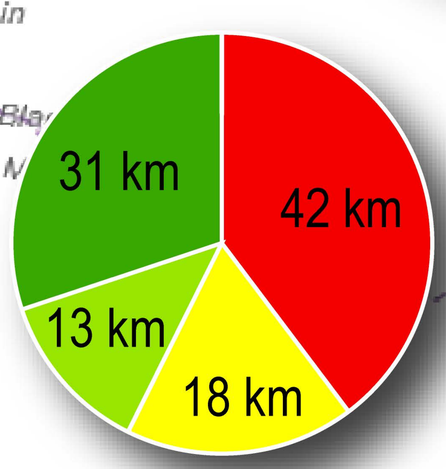
RIPARIAN VEGETAION DEPARTURE

Estimate of current departure from historic within valley bottom

UMC 2:



UMC 1:



RVD - Riparian Vegetaion Departure

Current Departure from Historic

- Large Departure: > 66%
- Significant Departure: 33% to 66%
- Minor Departure: 10% to 33%
- Negligable Departure: < 10%

Sources: Esri, DeLorme, USGS, NPS

LARGE WOODY DEBRIS RECRUITMENT POTENTIAL

UMC 2:

UMC 1:

Salmon River East Tributaries - (UMC 2)

Salmon River West Tributraies - (UMC 1)

LWD Recruitment Potential

Probability of LWD Recruitment

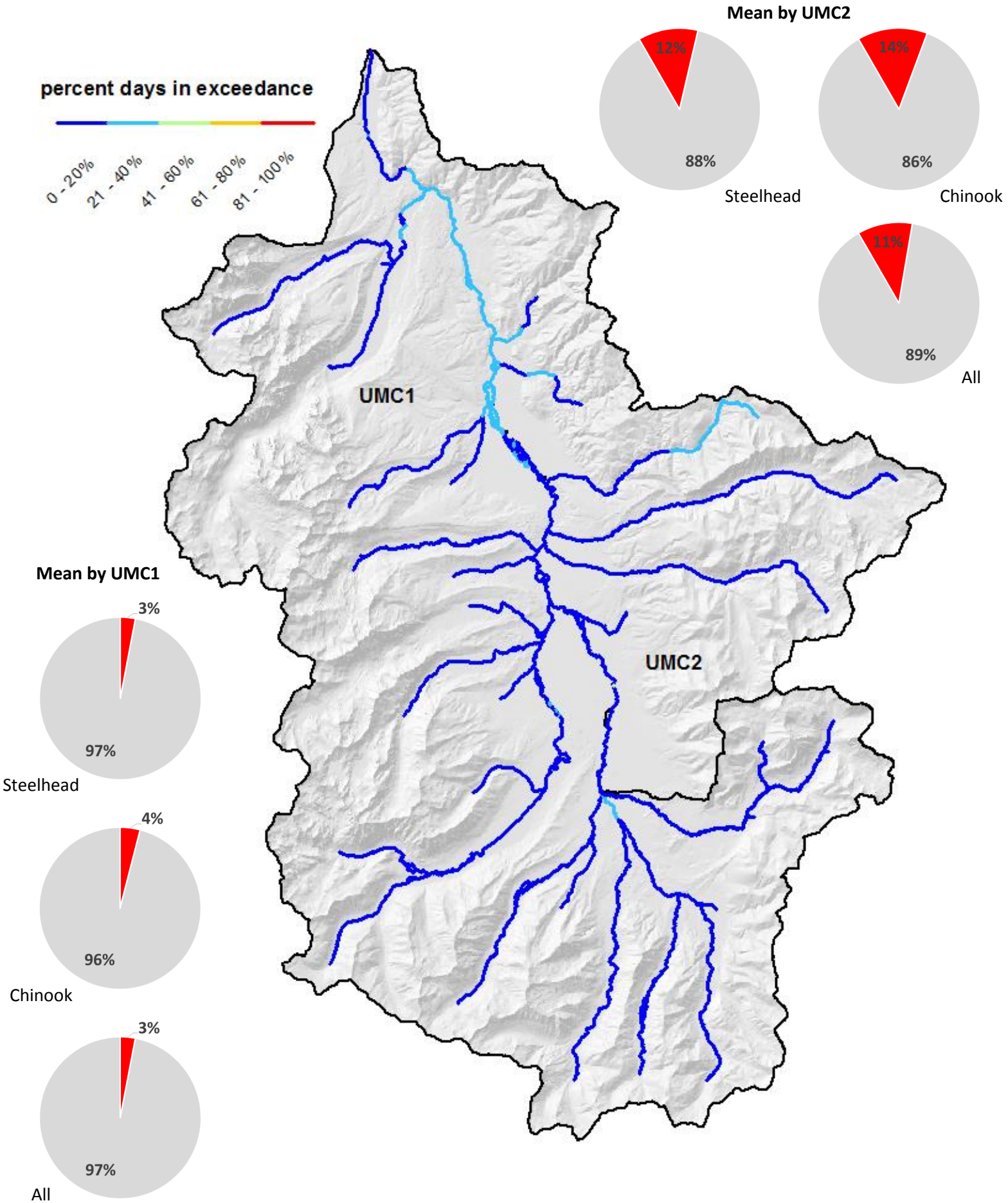
- Minimal < 33%
- Moderate 33% to 66%
- High 66% to 85%
- Very High > 85%

0 5 10 15 20 Km

Sources: Esri, DeLorme, USGS, NPS

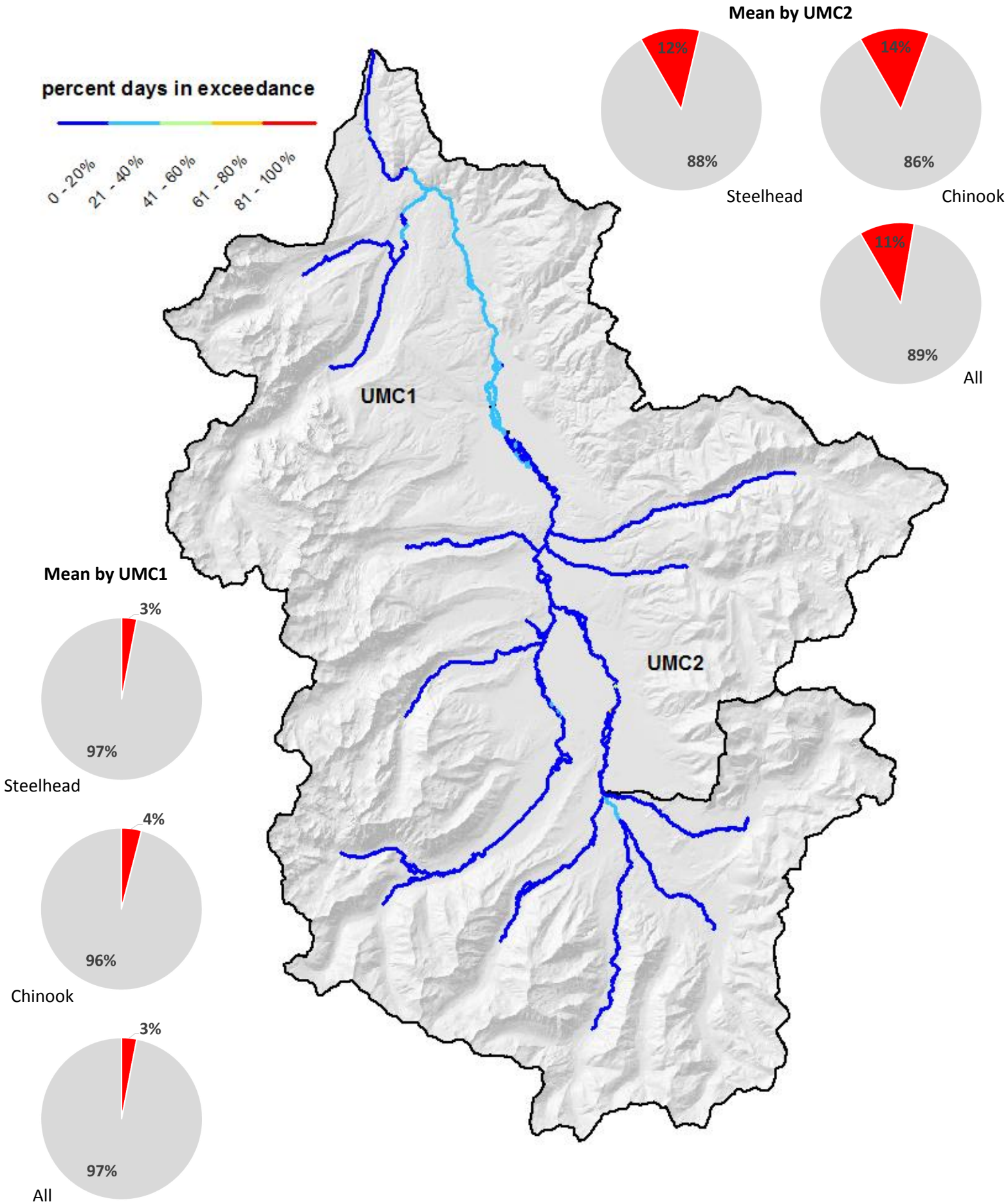
Upper Salmon River 2011

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Steelhead extent



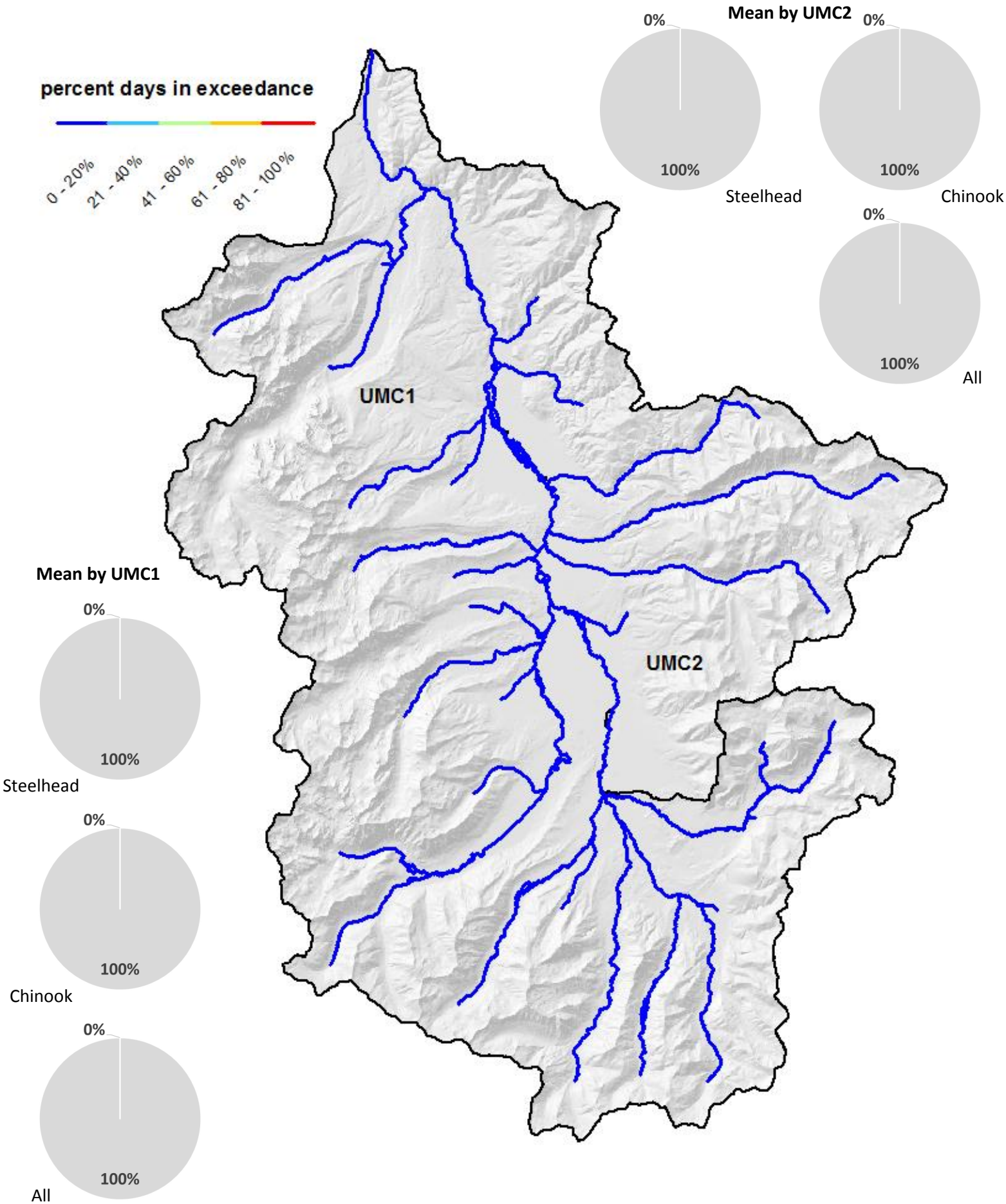
Upper Salmon River 2011

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Chinook extent



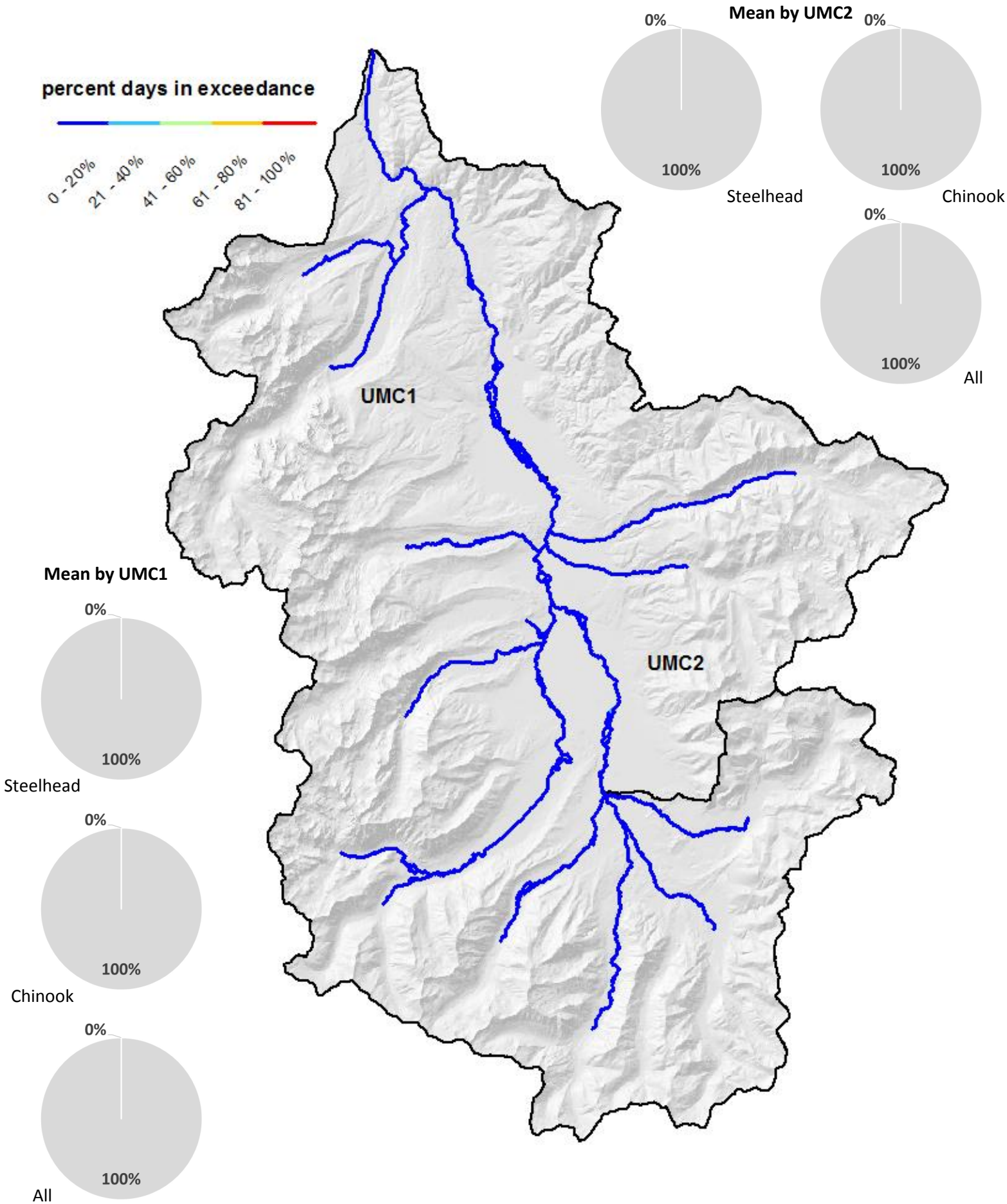
Upper Salmon River 2011

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Steelhead extent



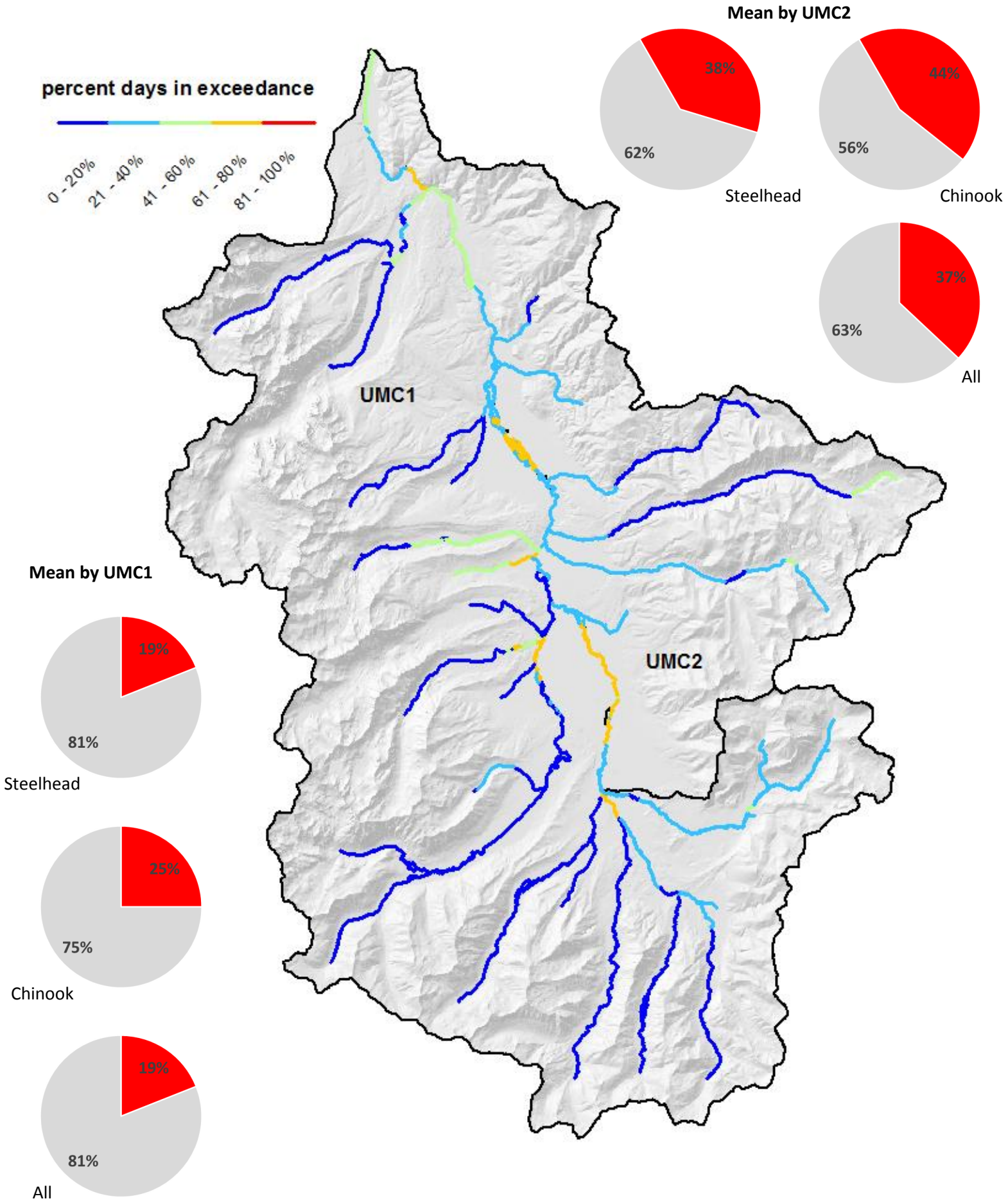
Upper Salmon River 2011

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Chinook extent



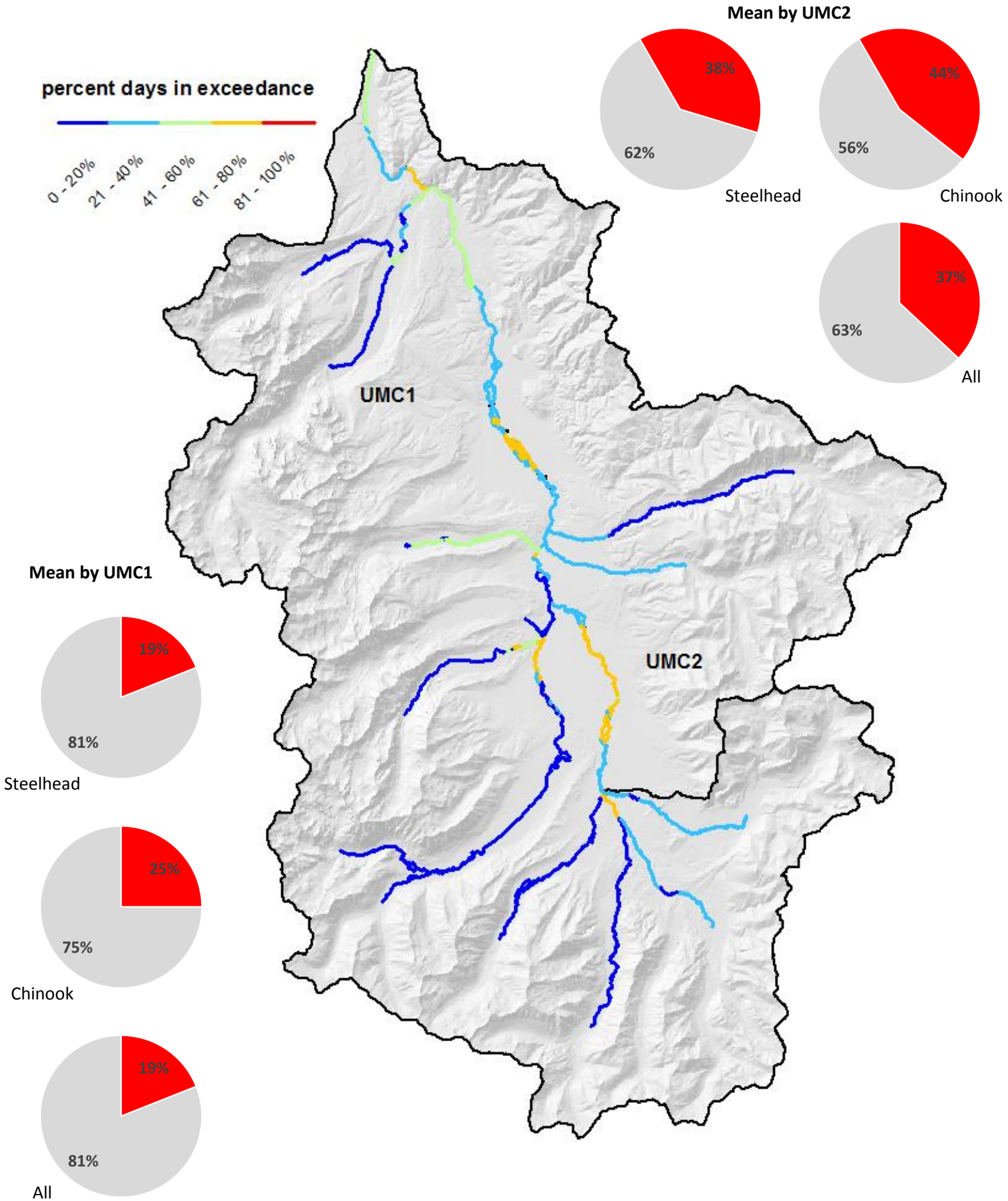
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Steelhead extent



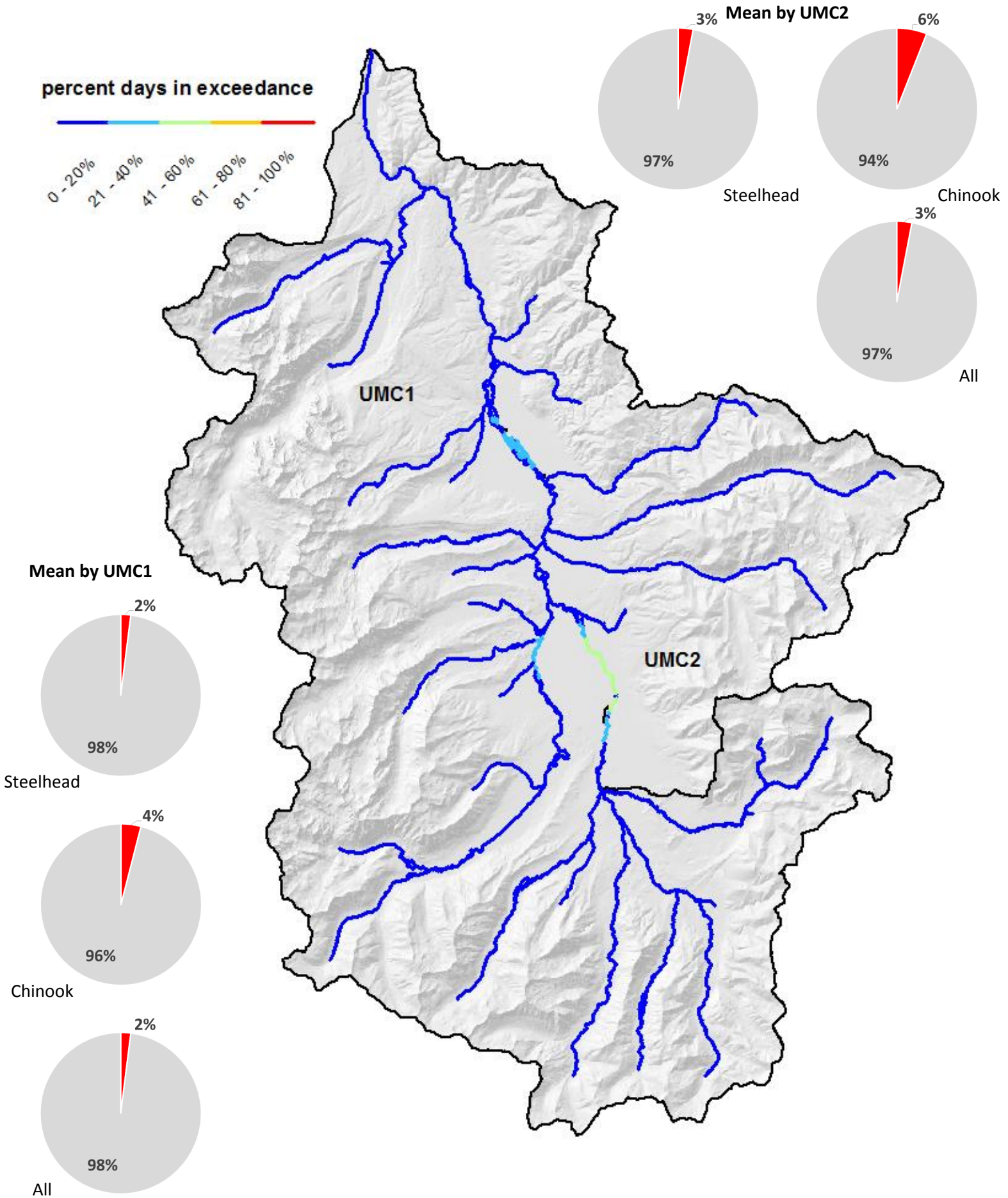
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Chinook extent



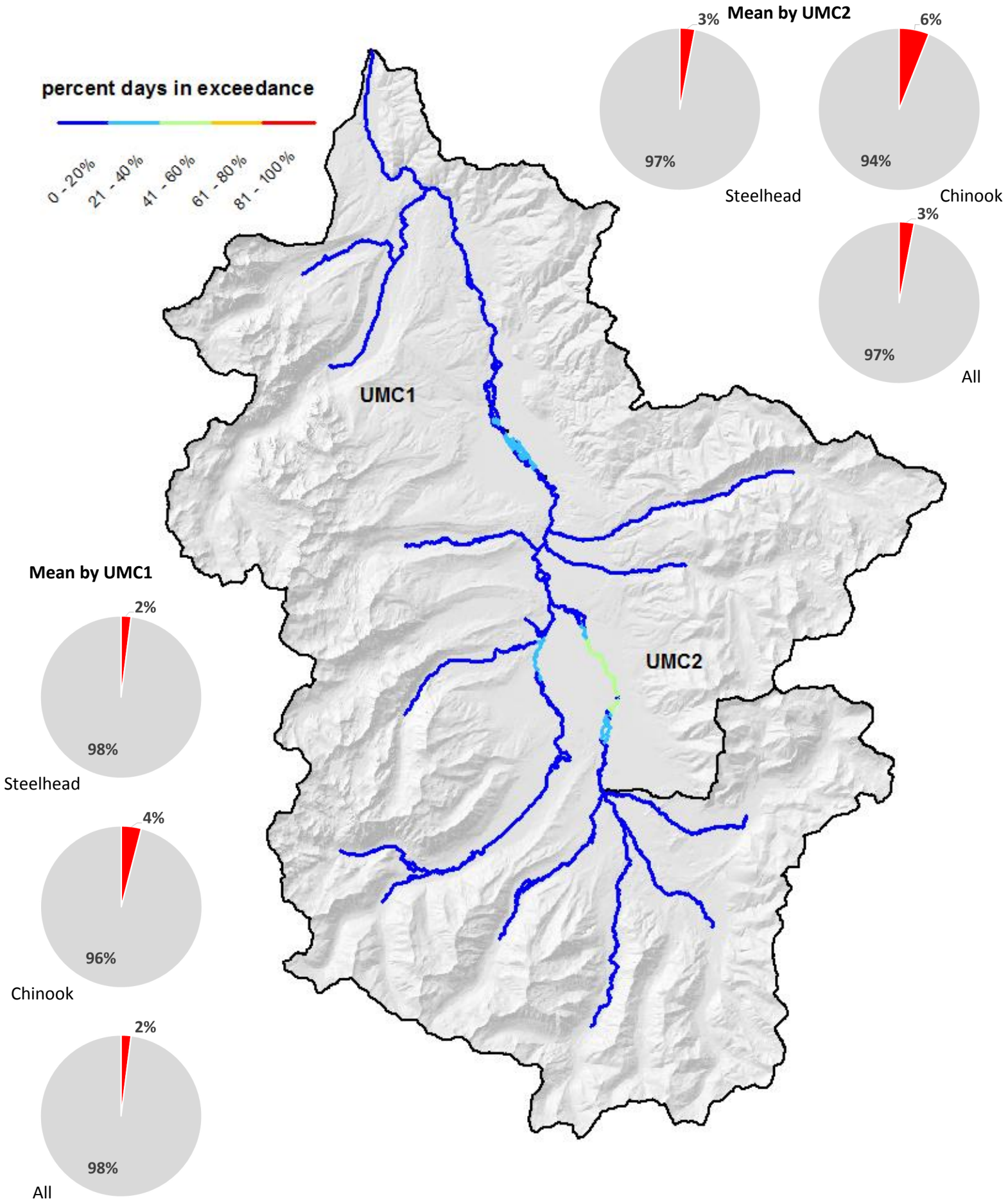
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Steelhead extent



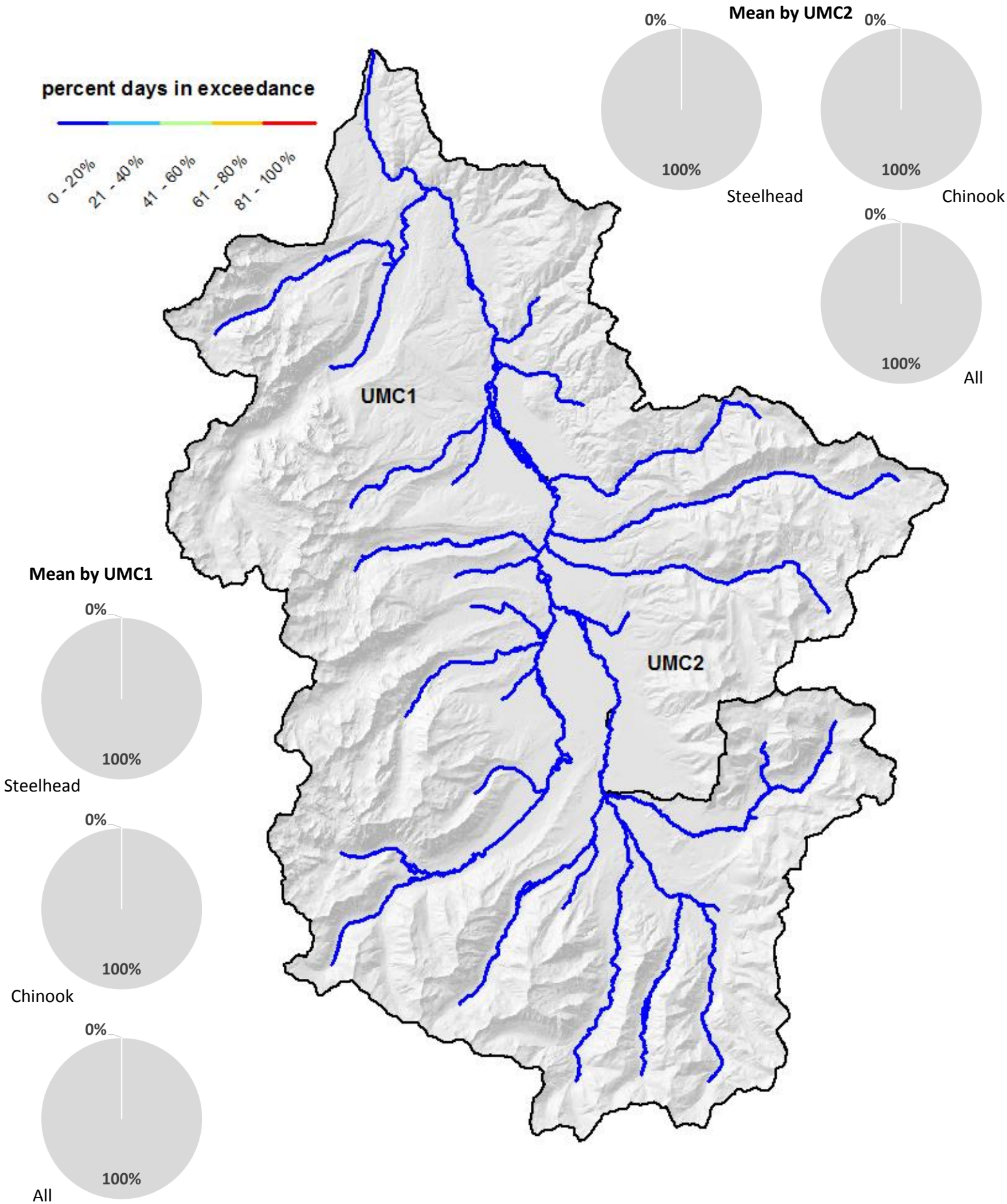
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Chinook extent



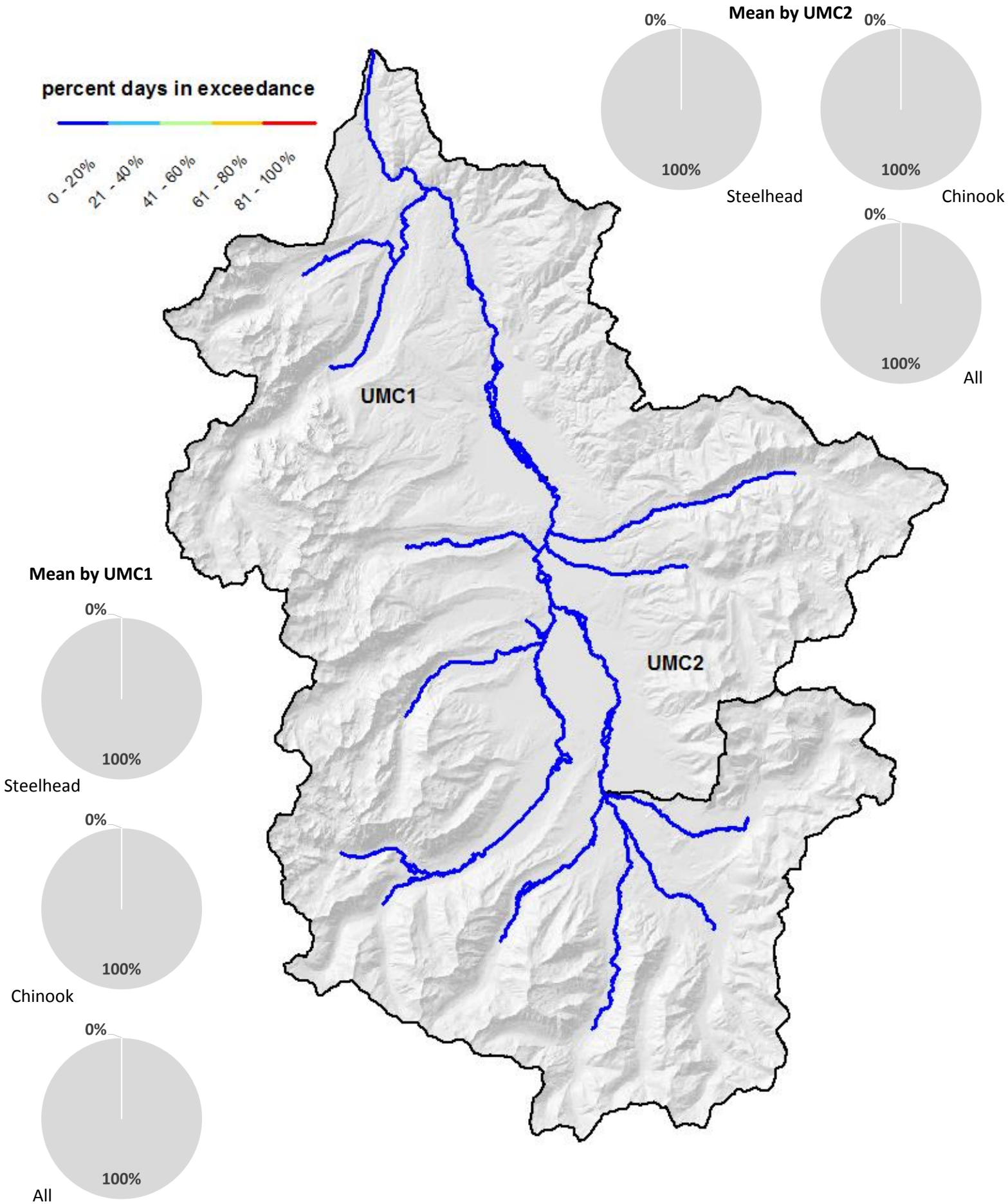
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 22°C maximum stream temperature
Steelhead extent



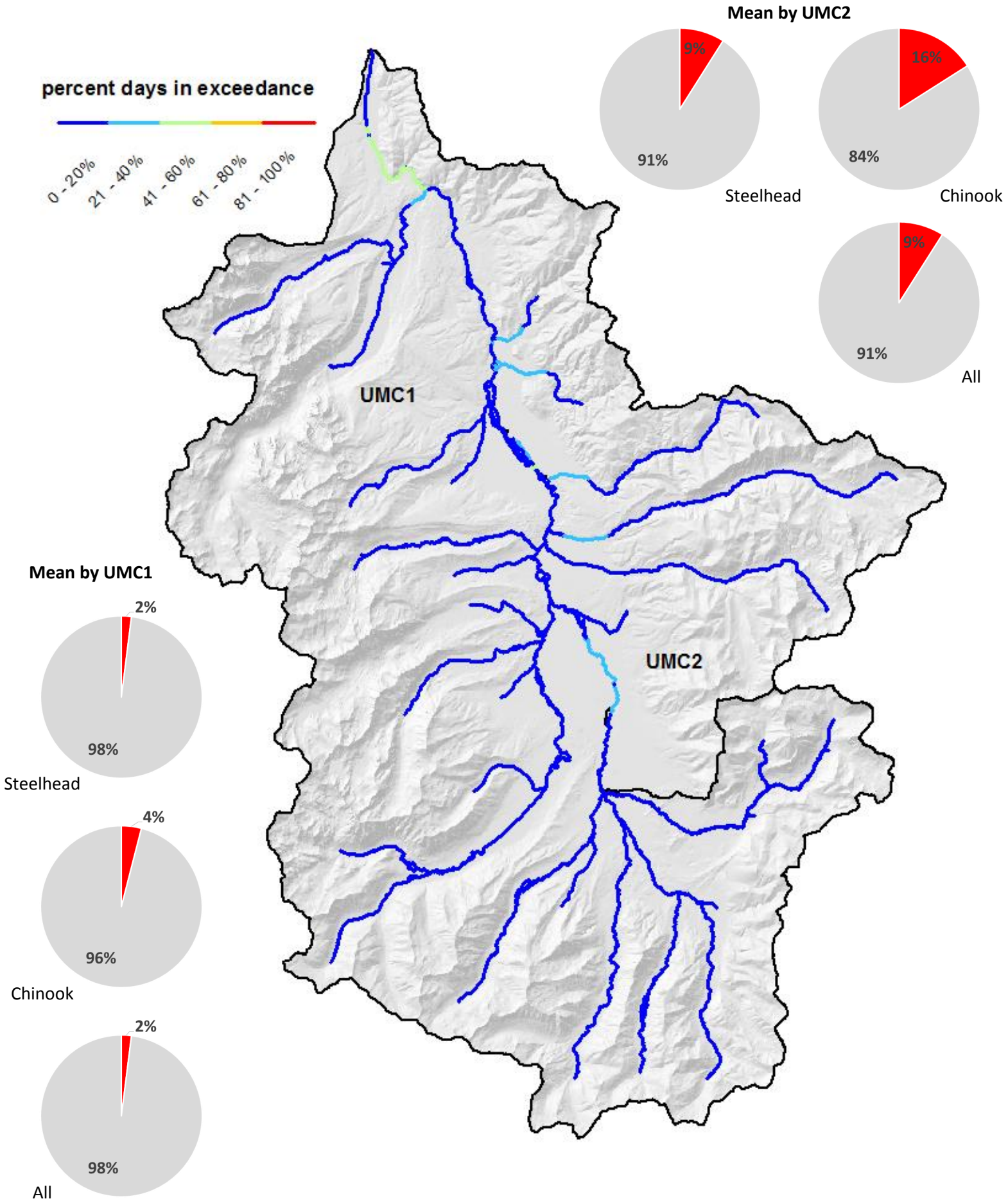
Upper Salmon River 2012

Percent summer days (20 July – 31 August) in exceedance of 22°C maximum stream temperature
Chinook extent



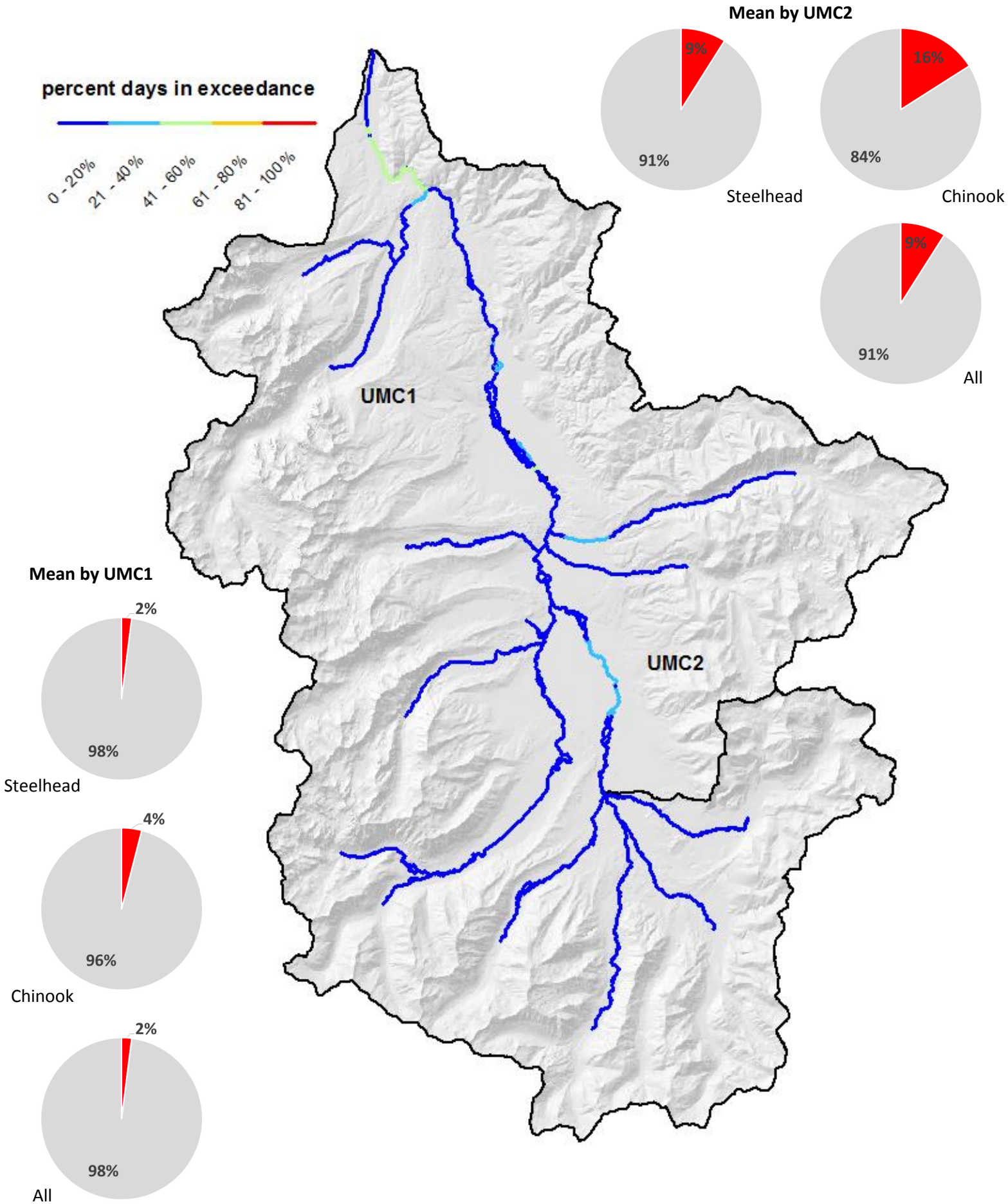
Upper Salmon River 2013

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Steelhead extent



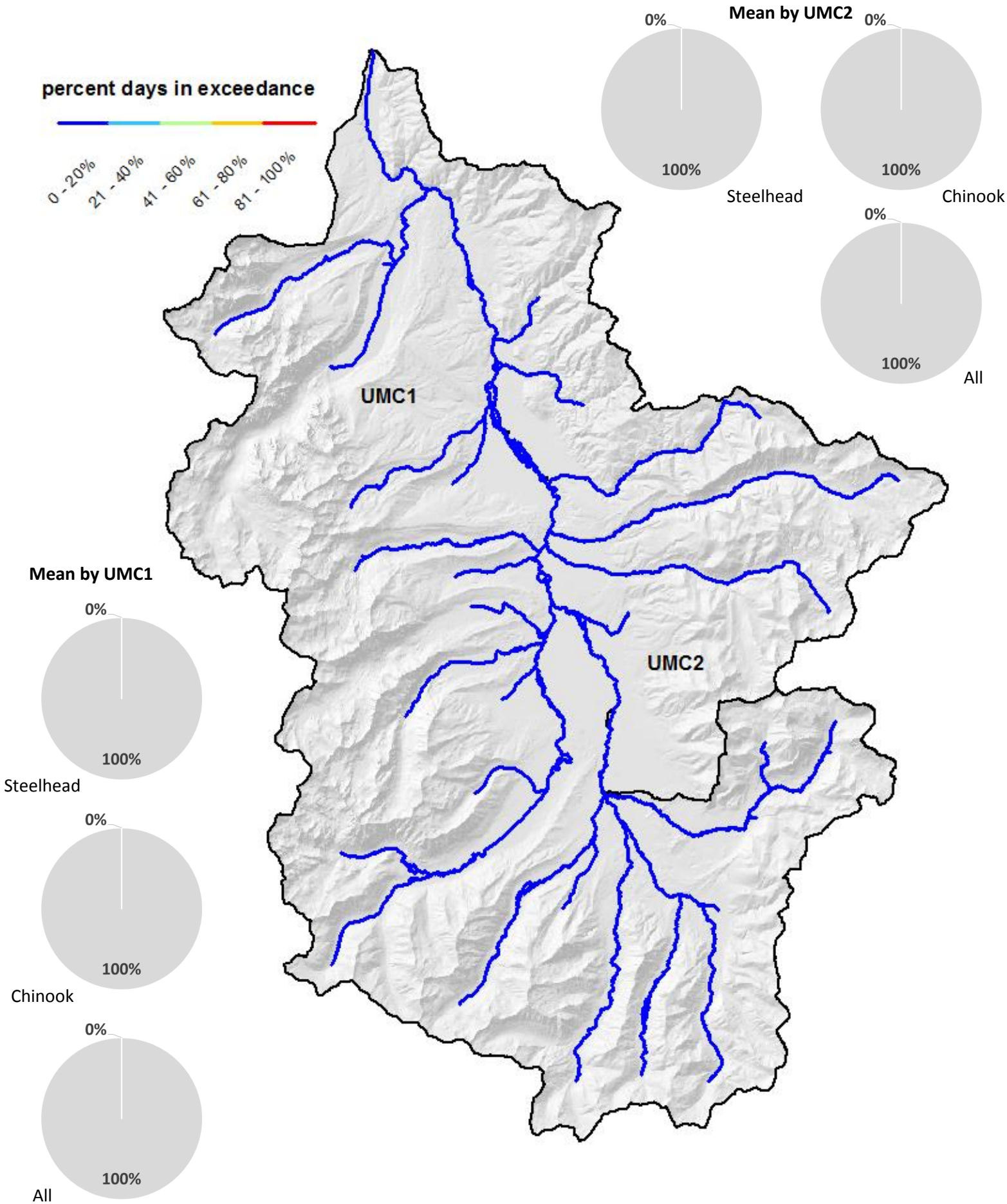
Upper Salmon River 2013

Percent summer days (20 July – 31 August) in exceedance of 18°C maximum stream temperature
Chinook extent



Upper Salmon River 2013

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Steelhead extent



Upper Salmon River 2013

Percent summer days (20 July – 31 August) in exceedance of 20°C maximum stream temperature
Chinook extent