

# Summer Temperature and Athabasca Rainbow Trout

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## Species Information

**Common Name:** Athabasca Rainbow Trout

**Genus:** *Oncorhynchus mykiss*

## Stressor Details

**Stressor Name:** Temperature

**Units:** °C

**Metric:** Summer Stream Temperature

**Scale:** linear

**Function Type:** continuous

**Vital Rate/Process:** System Capacity

## Life Stage & Context

**Life Stages:** Adults

**Geography:** Alberta foothills watersheds, excluding National Parks

**Activity:** All activities

**Season:** Summer (August and September)

## Descriptions

### Function Derivation

Landscape correlation; Published/Peer-reviewed data; Published/Non-peer-reviewed; Empirical data;

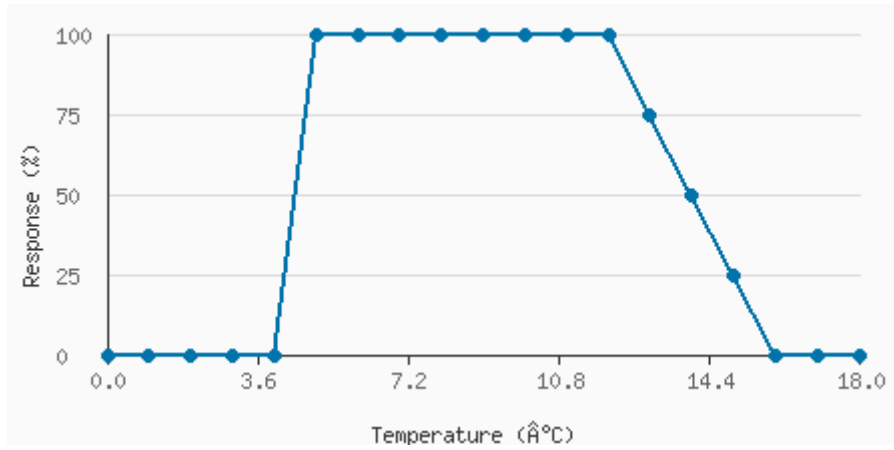
### Transferability of Function

This function was developed and applied to Athabasca Rainbow Trout in Alberta foothills watersheds. The data comes from landscape correlation with Alberta native Rainbow Trout streams and is supported by values in the published literature. The function is species and range specific but could potentially be applied to other Athabasca Rainbow Trout populations with caution. It should not be applied to other populations or subspecies of Rainbow Trout, as the thermal preference of Athabasca Rainbow Trout is reported to be lower.

### Source of Stressor Data

Athabasca Rainbow Trout and Westslope Cutthroat Trout inputs were derived from modelled mean summer stream temperature (°C) provided by ALCES Online© within the spatial unit of interest (e.g., HUC 10 watershed).

## Stressor Response Data



Temperature (oC)	Mean System Capacity (%)	SD	low.limit	up.limit
0	0	0	0	100
1	0	0	0	100
2	0	0	0	100
3	0	0	0	100
4	0	0	0	100
5	100	0	0	100
6	100	0	0	100
7	100	0	0	100
8	100	0	0	100
9	100	0	0	100
10	100	0	0	100
11	100	0	0	100
12	100	0	0	100
13	75	0	0	100
14	50	0	0	100
15	25	0	0	100
16	0	0	0	100
17	0	0	0	100
18	0	0	0	100

## Citations

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Kwain, W. 1975. Embryonic development, early growth, and meristic variation in rainbow trout (*Salmo gairdneri*) exposed to combinations of light intensity and temperature. *Journal Fisheries Research Board of Canada* 32: 397-402.

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