

# Master Temp Logger Code

ZachHorstman

1/14/2021

This report includes every known temperature logger we have recovered (2015-2020). Sites are listed in alphabetical order. Use the Index on the left to easily navigate to graphs.

Note: Some recorded temperatures may have been of air temperature if stream dried up.

```
## Warning: package 'RODBC' was built under R version 4.0.3

## Warning: package 'tidyverse' was built under R version 4.0.3

## -- Attaching packages ----

## v ggplot2 3.3.2      v purrr    0.3.4
## v tibble   3.0.1      v dplyr    1.0.0
## v tidyverse 1.1.0     v stringr  1.4.0
## v readr    1.3.1      vforcats  0.5.0

## Warning: package 'stringr' was built under R version 4.0.3

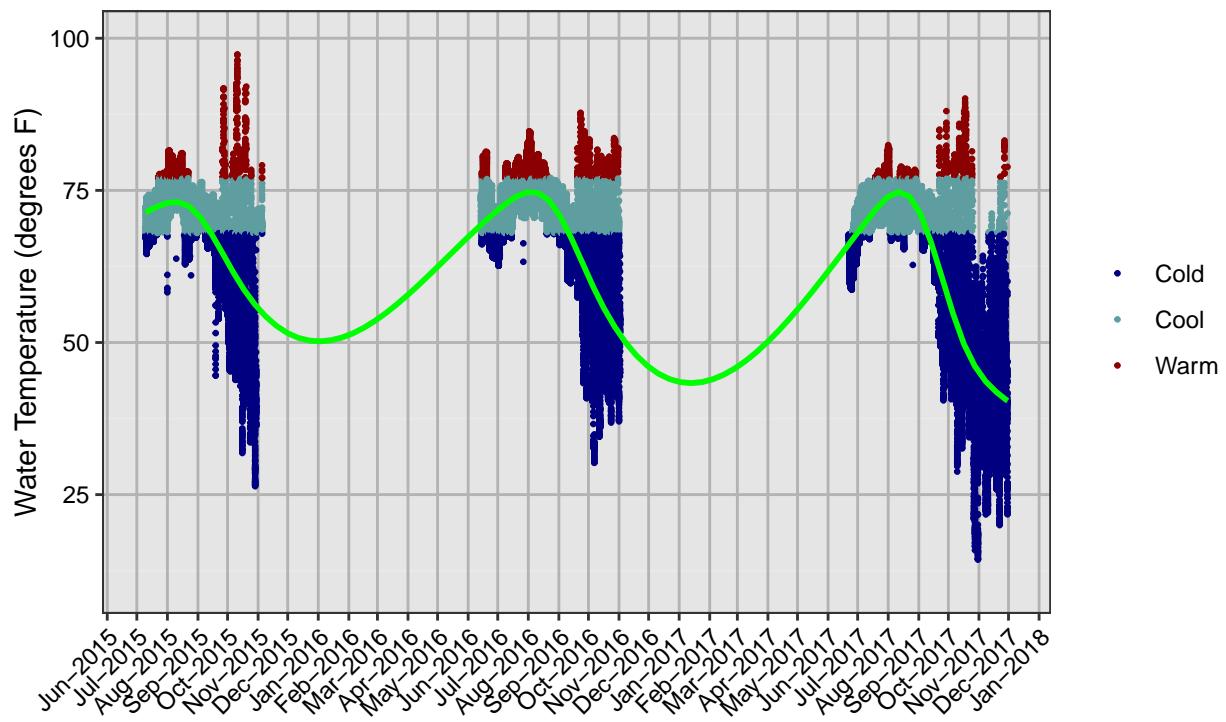
## -- Conflicts -----
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()   masks stats::lag()
```

## Alliance Drainage

```
## 'geom_smooth()' using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Alliance Drainage

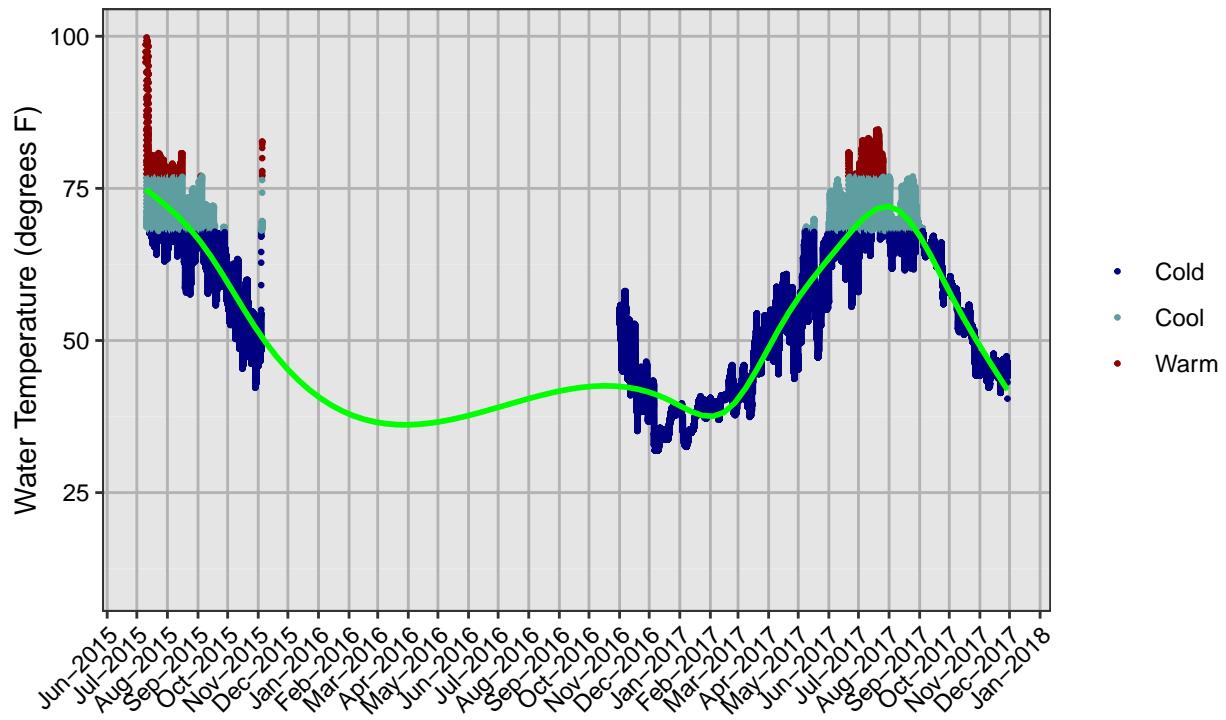


## Bone Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bone Creek – Site 1

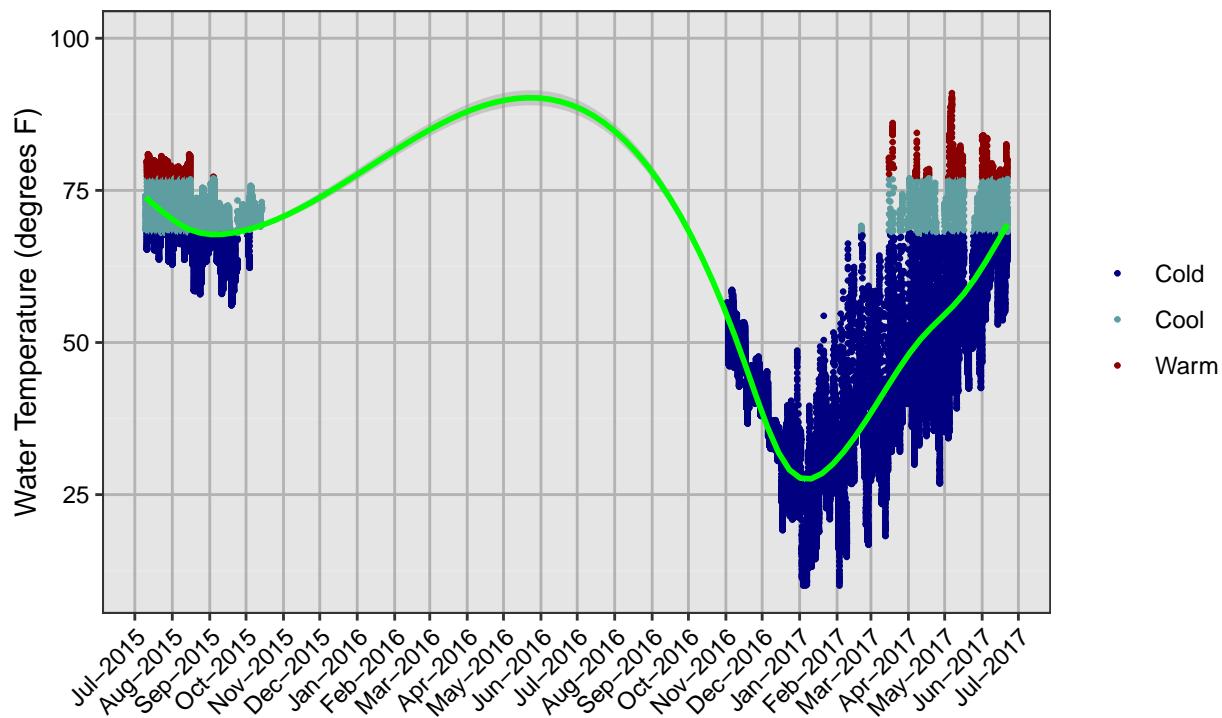


## Bone Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bone Creek – Site 2

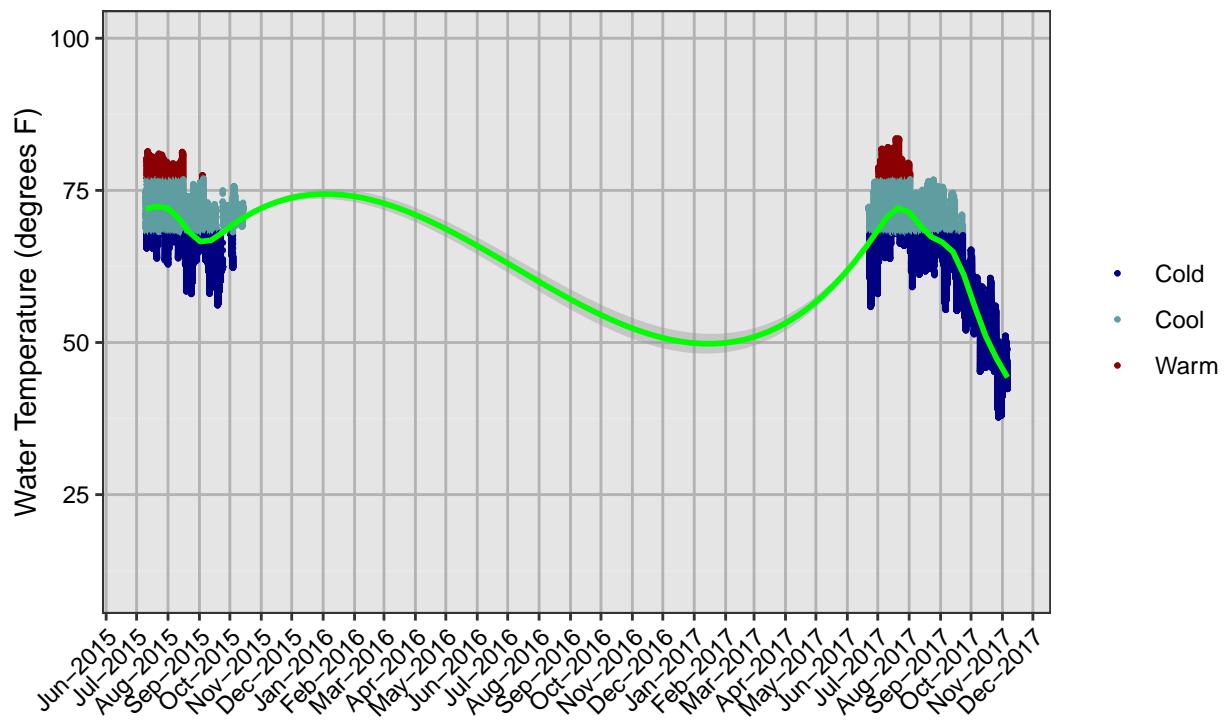


## Bone Creek - Site 3

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bone Creek – Site 3

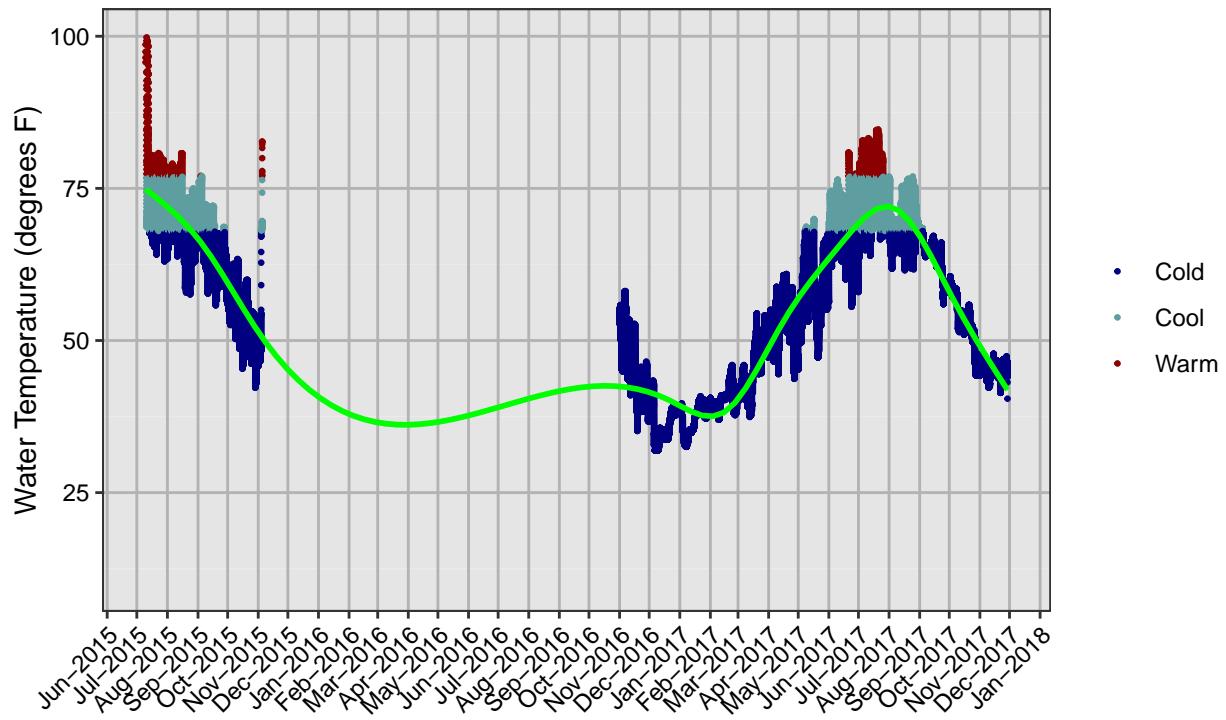


## Bone Creek - Site 4

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bone Creek – Site 4

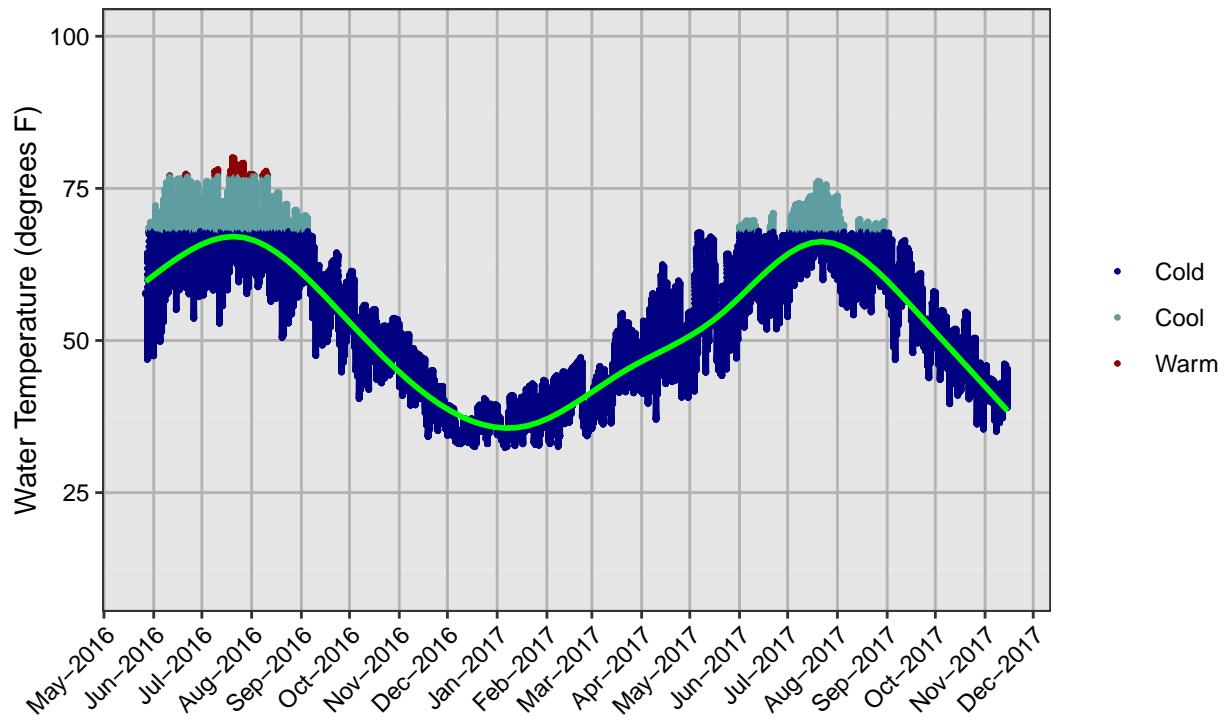


## Bordeaux Creek - Cliffs

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bordeaux Creek – Cliffs

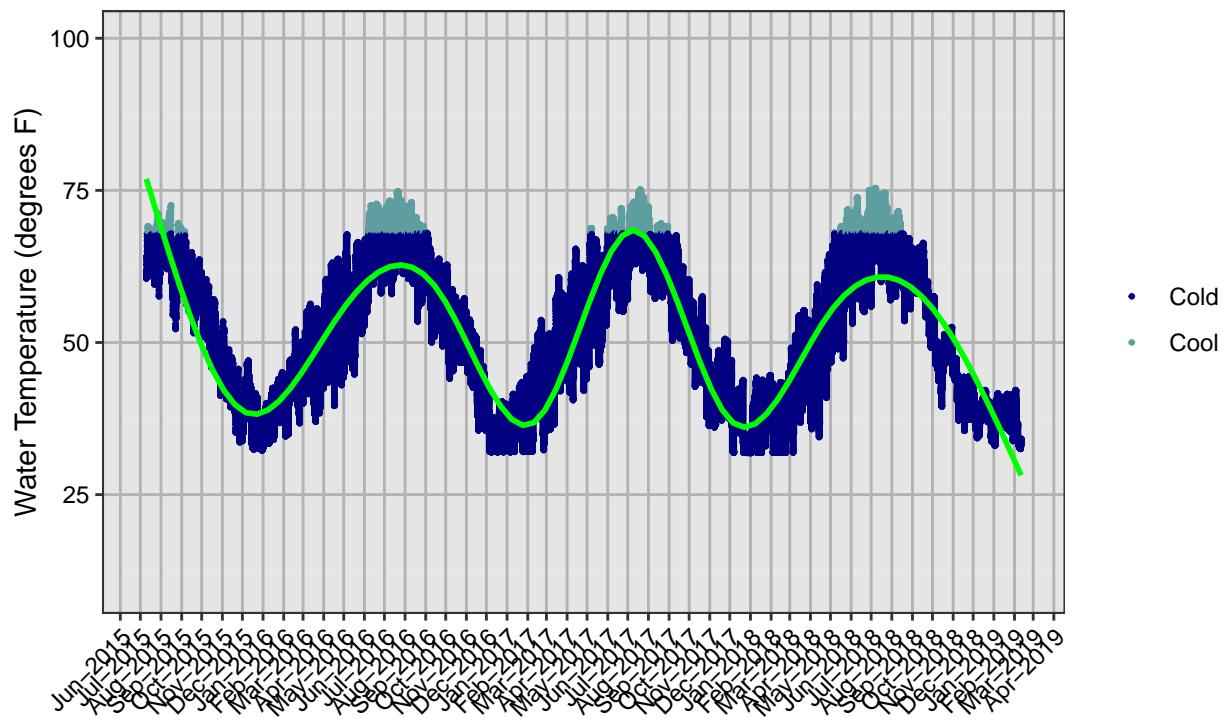


## Bordeaux - North

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Bordeaux Creek – North

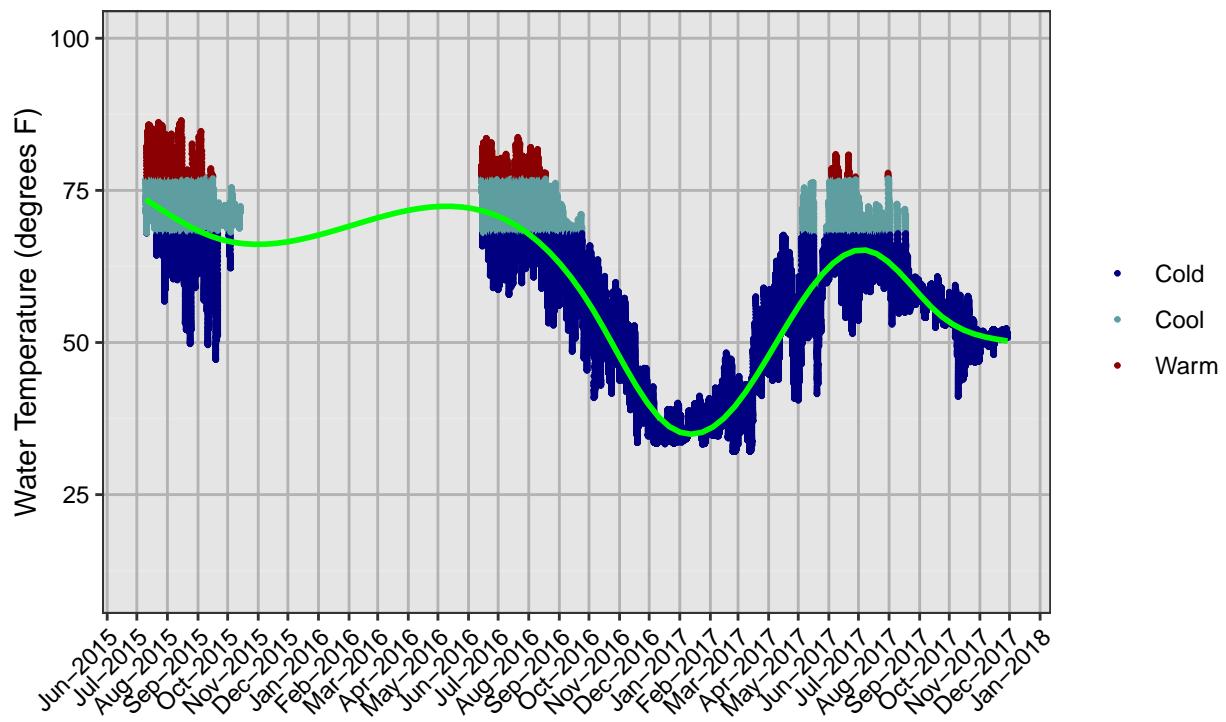


## Cedar Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Cedar Creek – Site 1

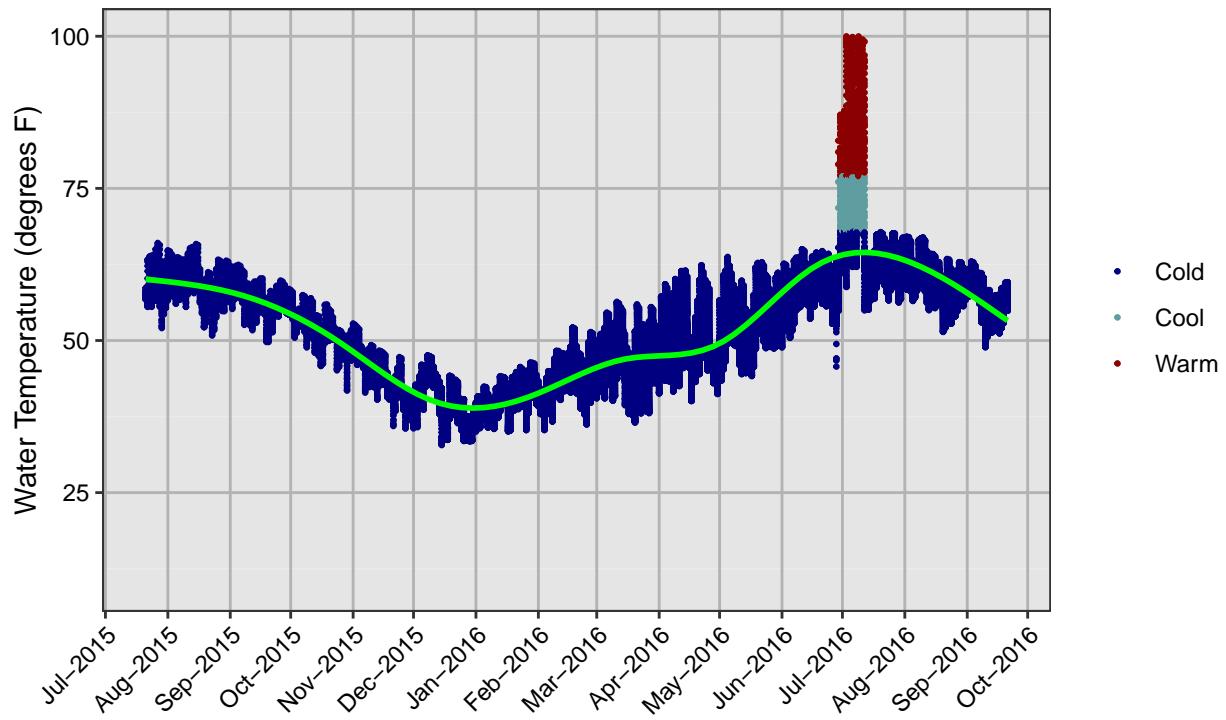


## Chadron Creek - Above Discharge

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

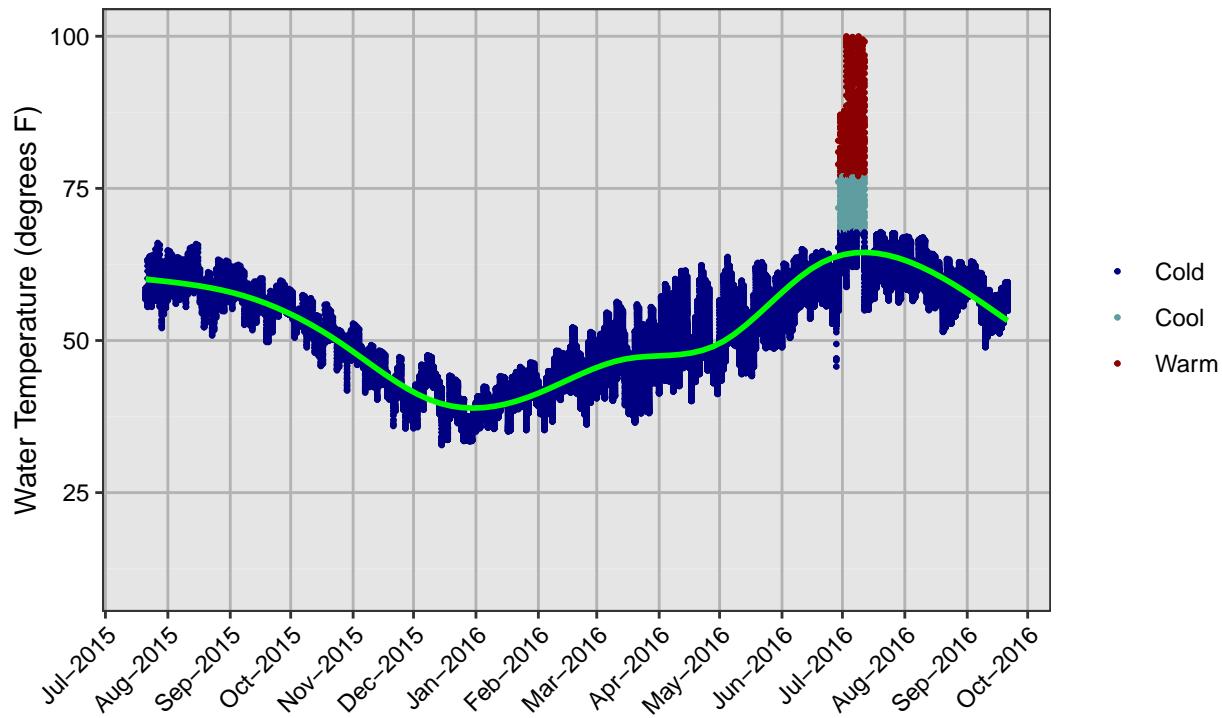
### Chadron Creek – Above Discharge



## Chadron Creek - Below Discharge

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Chadron Creek – Below Discharge

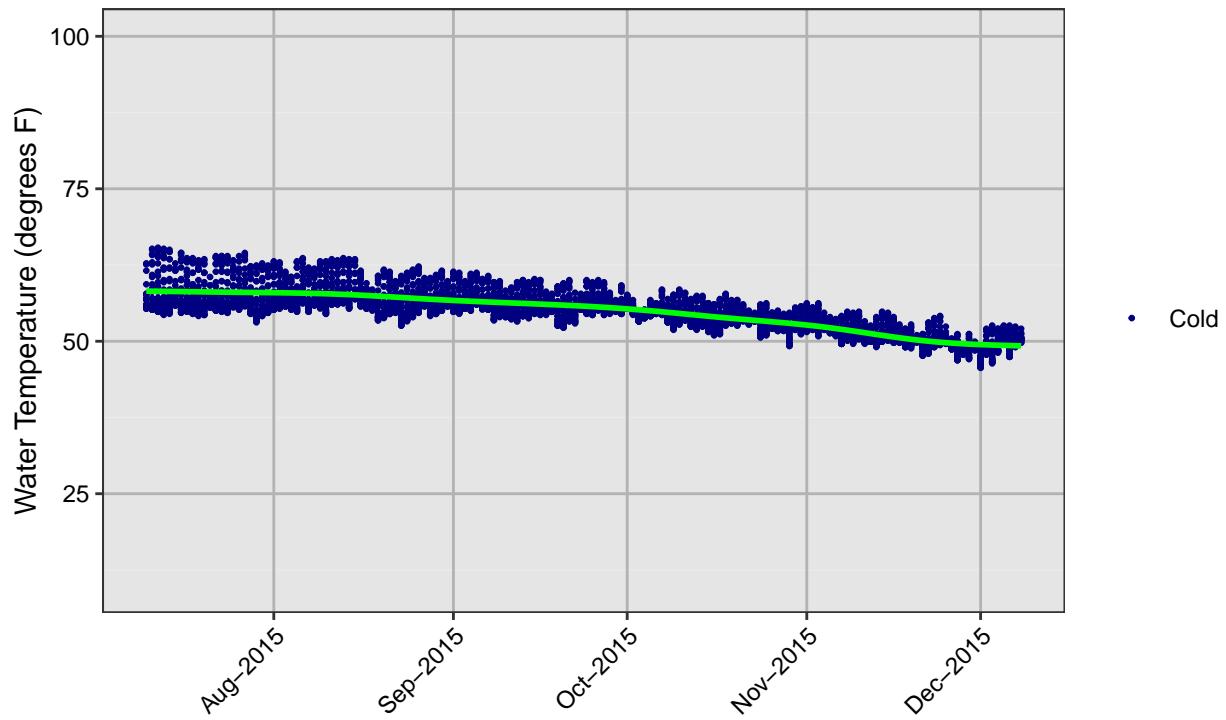


## Chadron Creek - CCR Headwaters (WMA)

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

### Chadron Creek – CCR Headwaters (WMA)

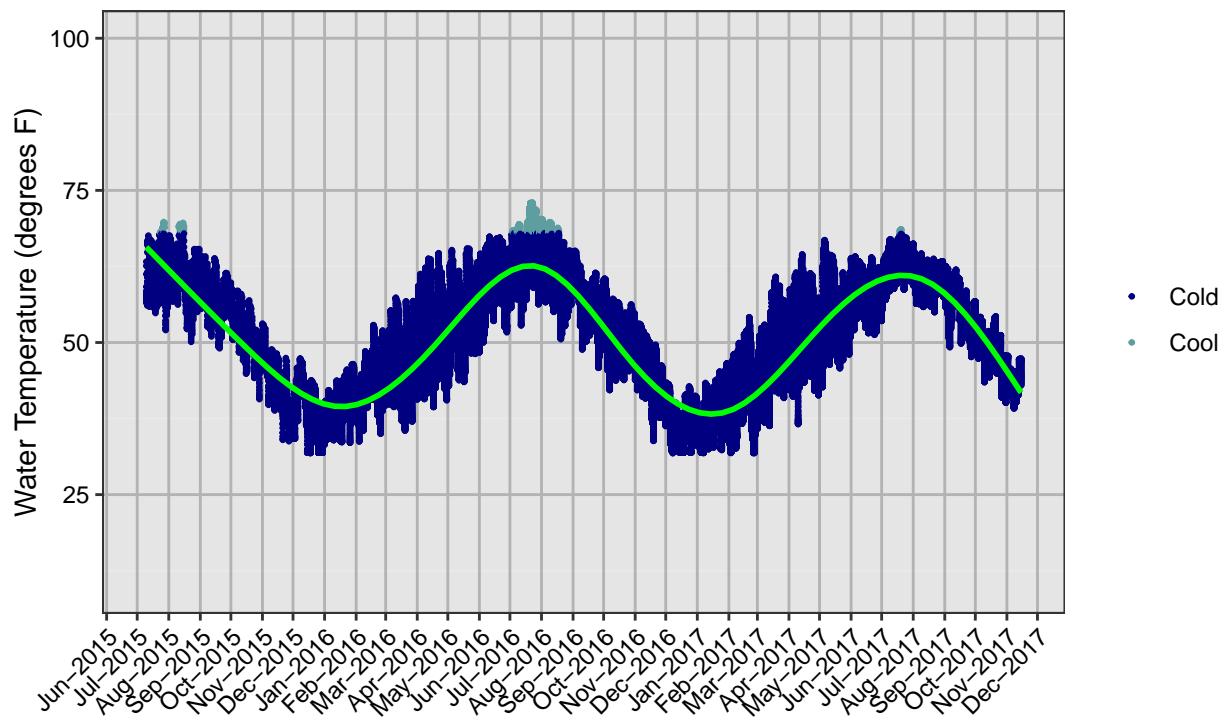


## Chadron Creek - Park Entrance

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

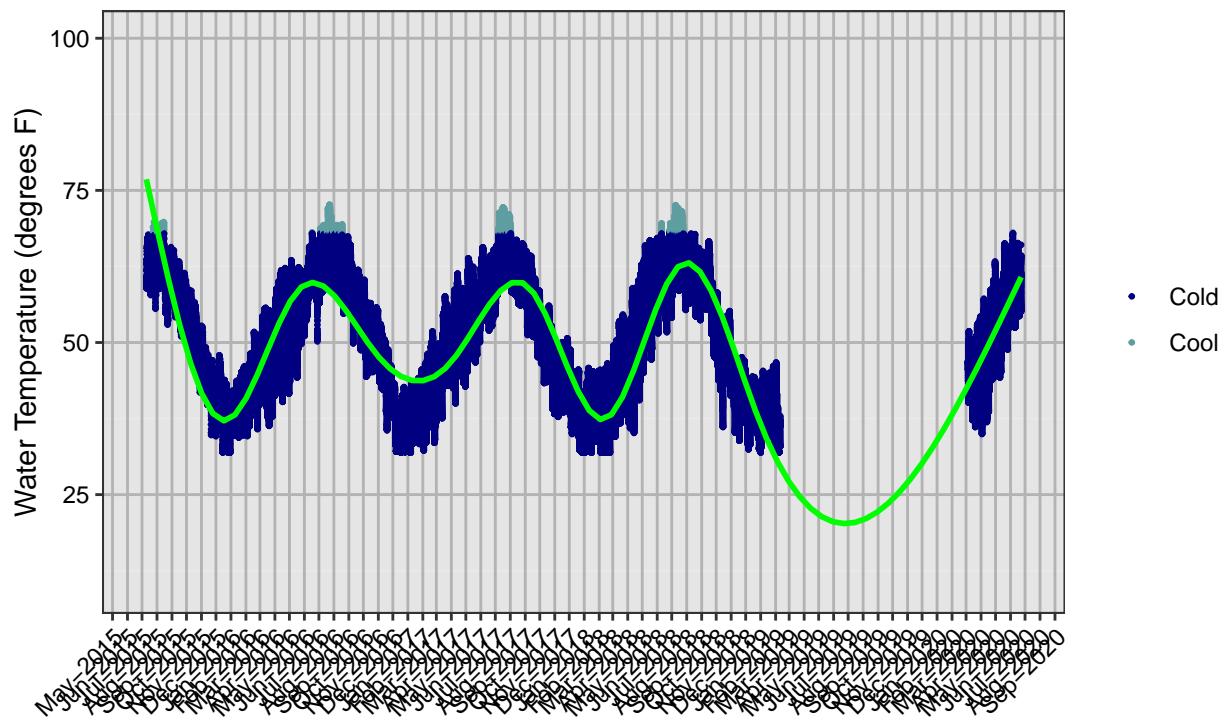
### Chadron Creek – Park Entrance



## Chadron Creek - Park Exit

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Chadron Creek – Park Exit

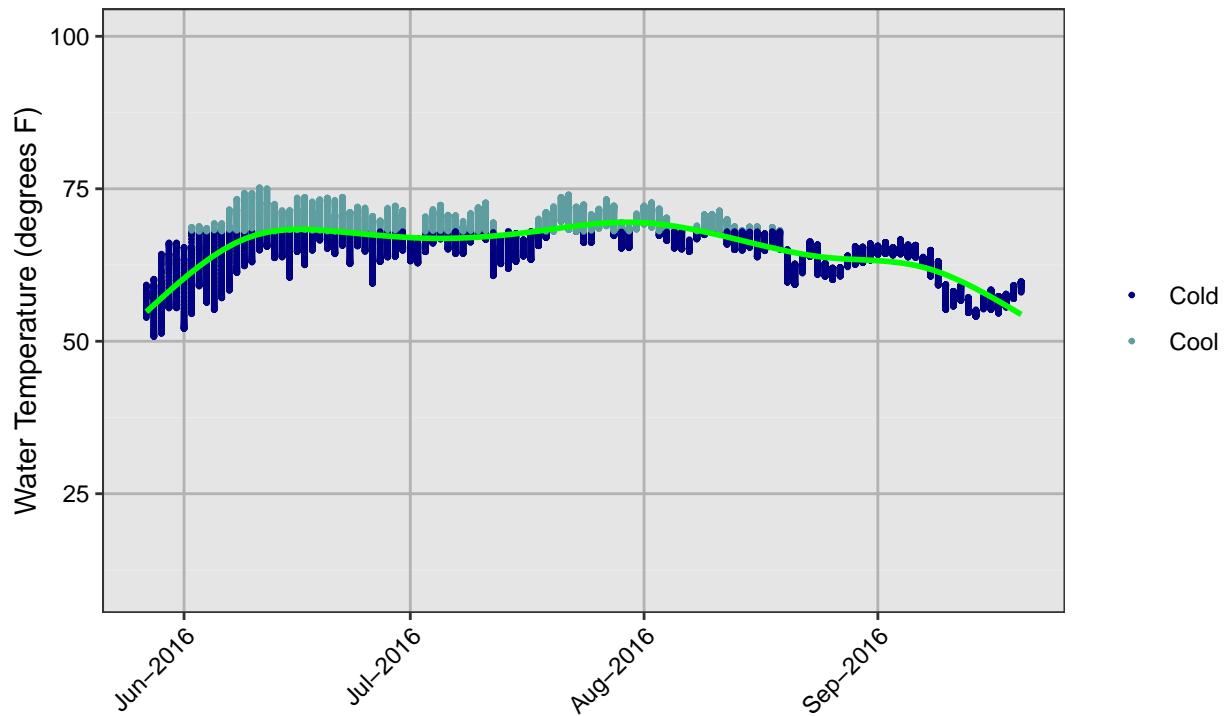


## Deadmans Creek

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Deadmans Creek

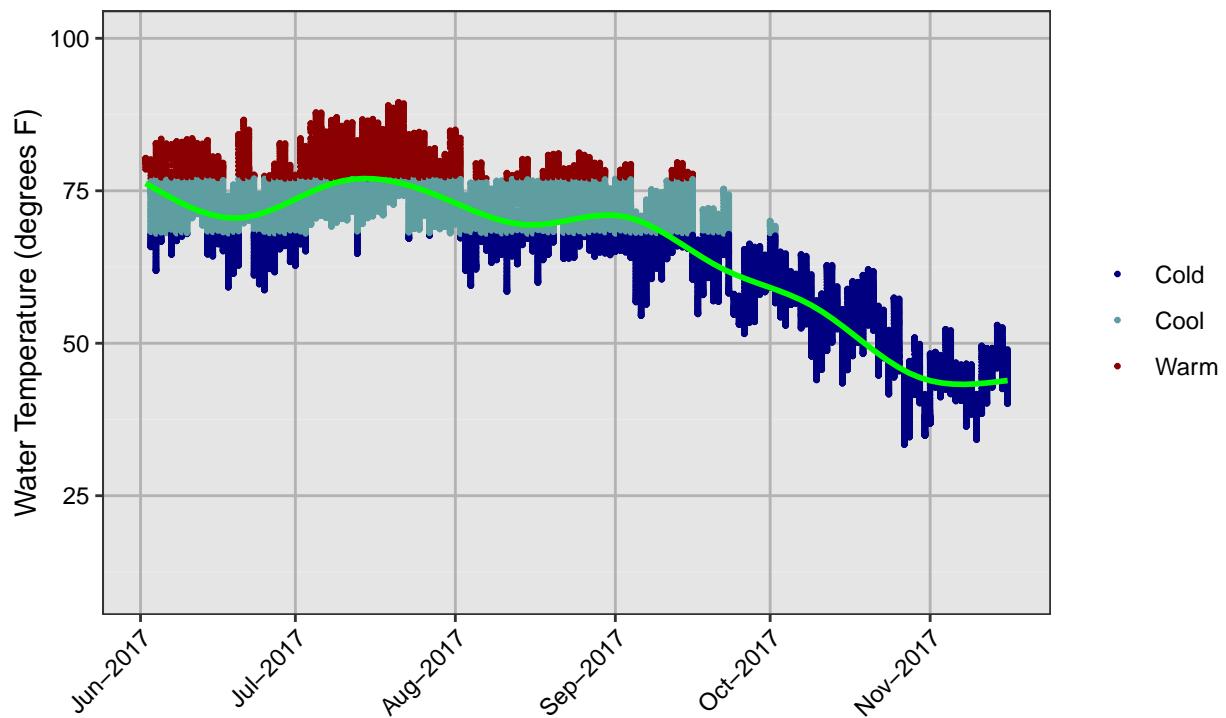


## Dismal River - Dunning

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Dismal River – Dunning

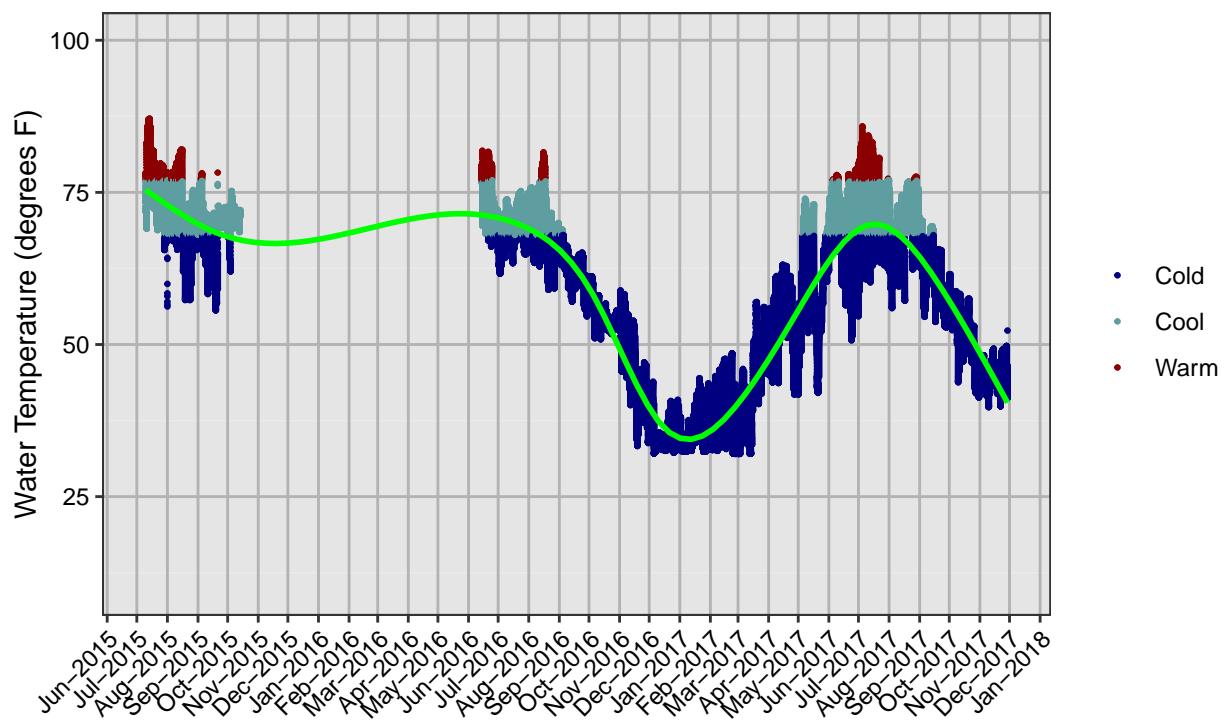


## Dry Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Dry Creek – Site 1

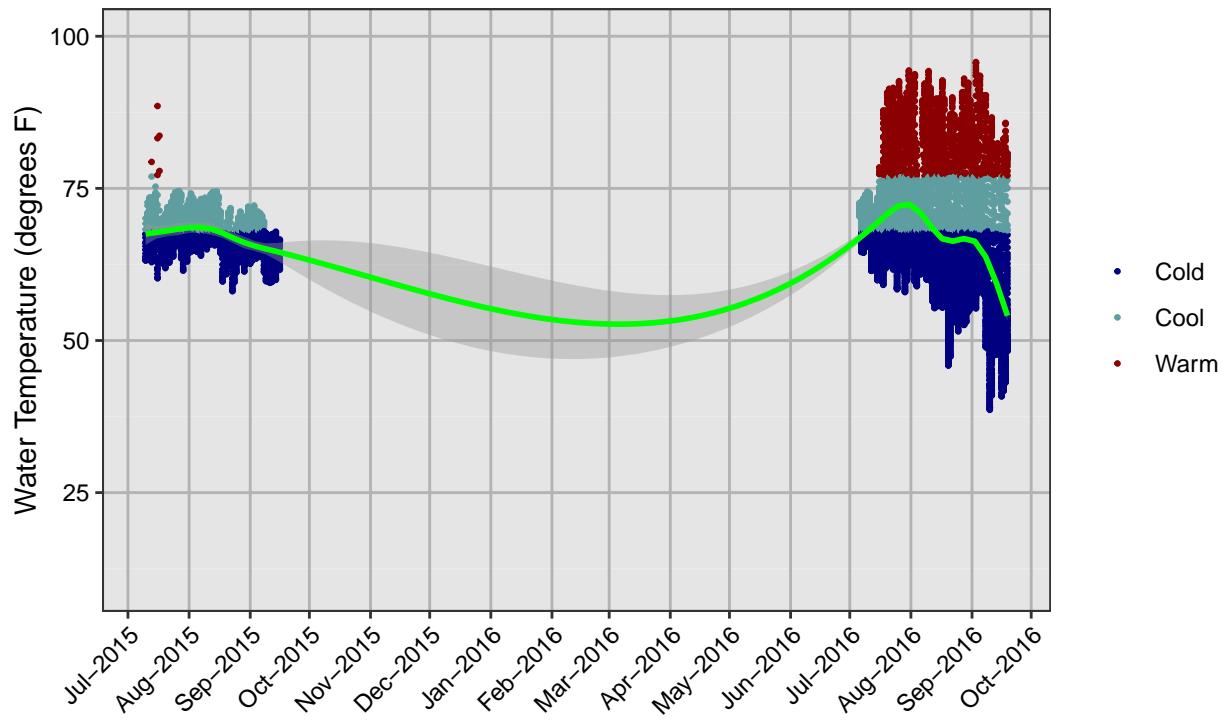


## Dry Spottedtail Creek - Hanson

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

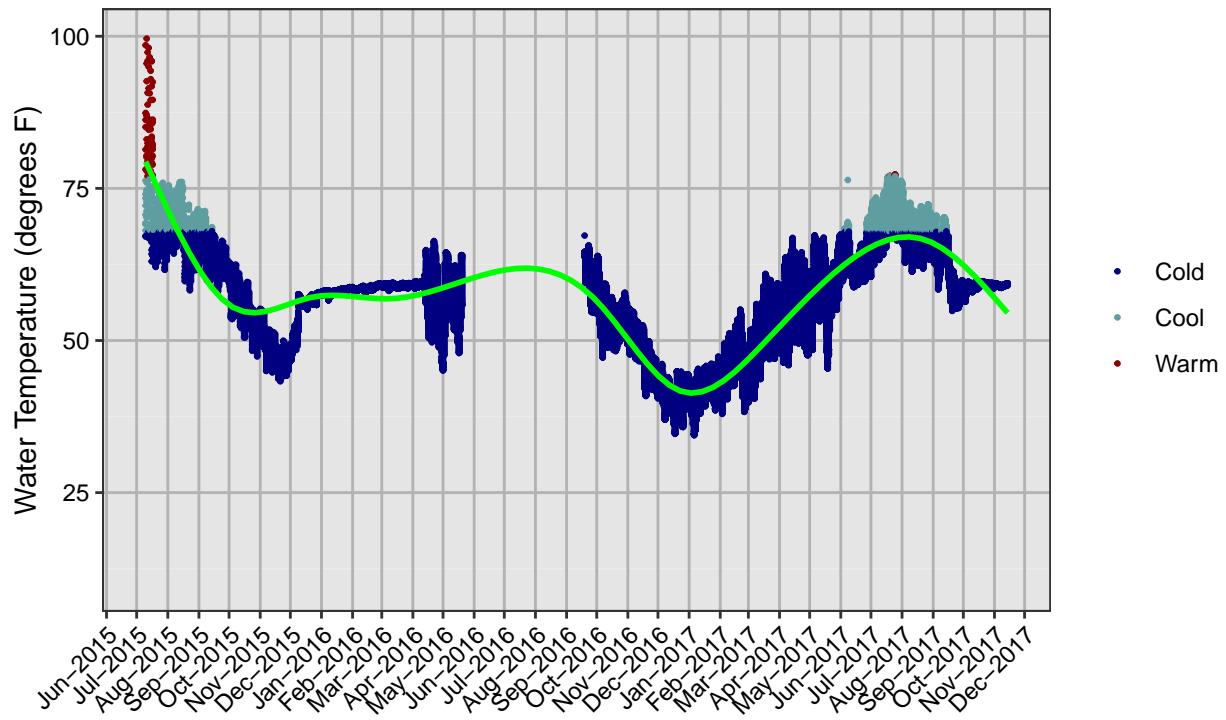
### Dry Spottedtail Creek – Hanson



## Dry Spottedtail Creek - Steffl

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Dry Spottedtail Creek – Steffl

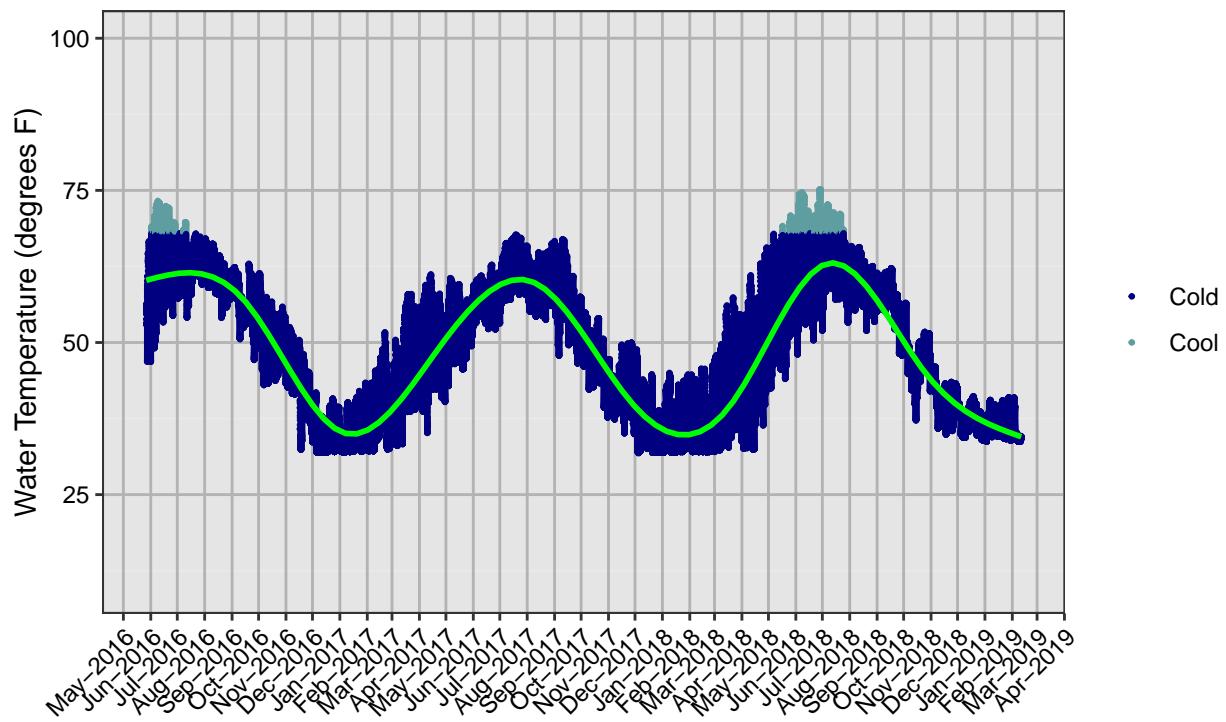


## East Ash Creek - USFS

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

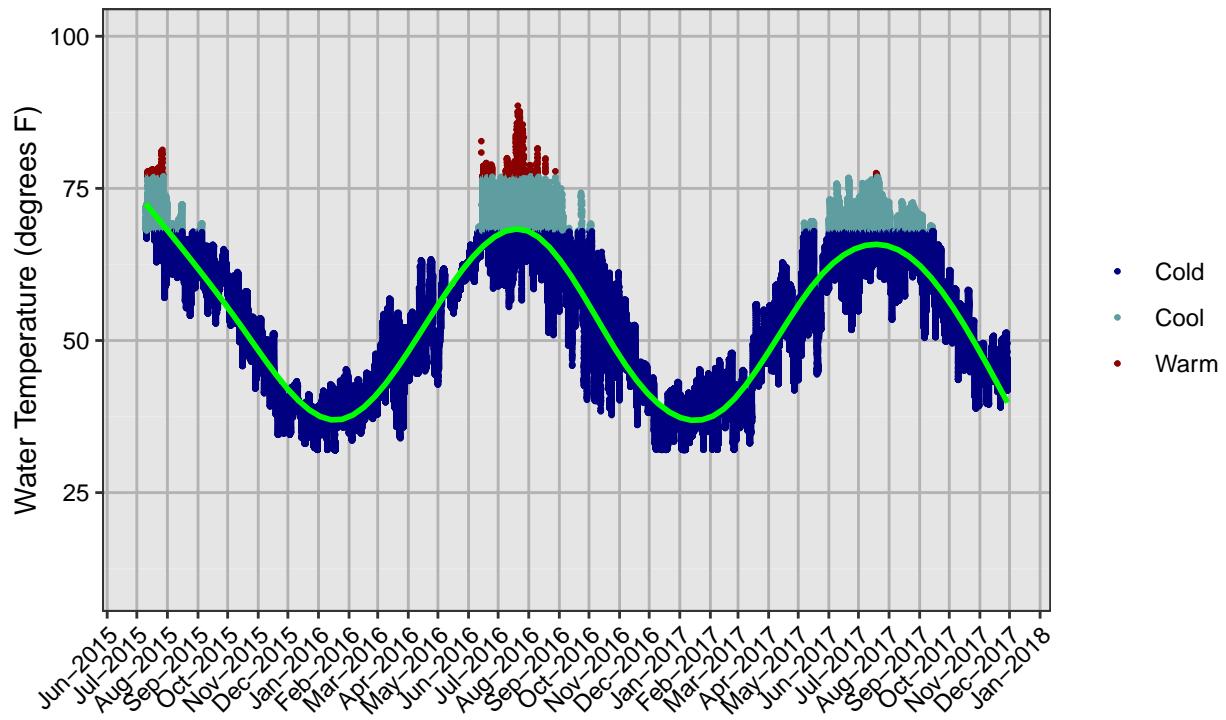
East Ash Creek – USFS



## Evergreen Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Evergreen Creek – Site 1

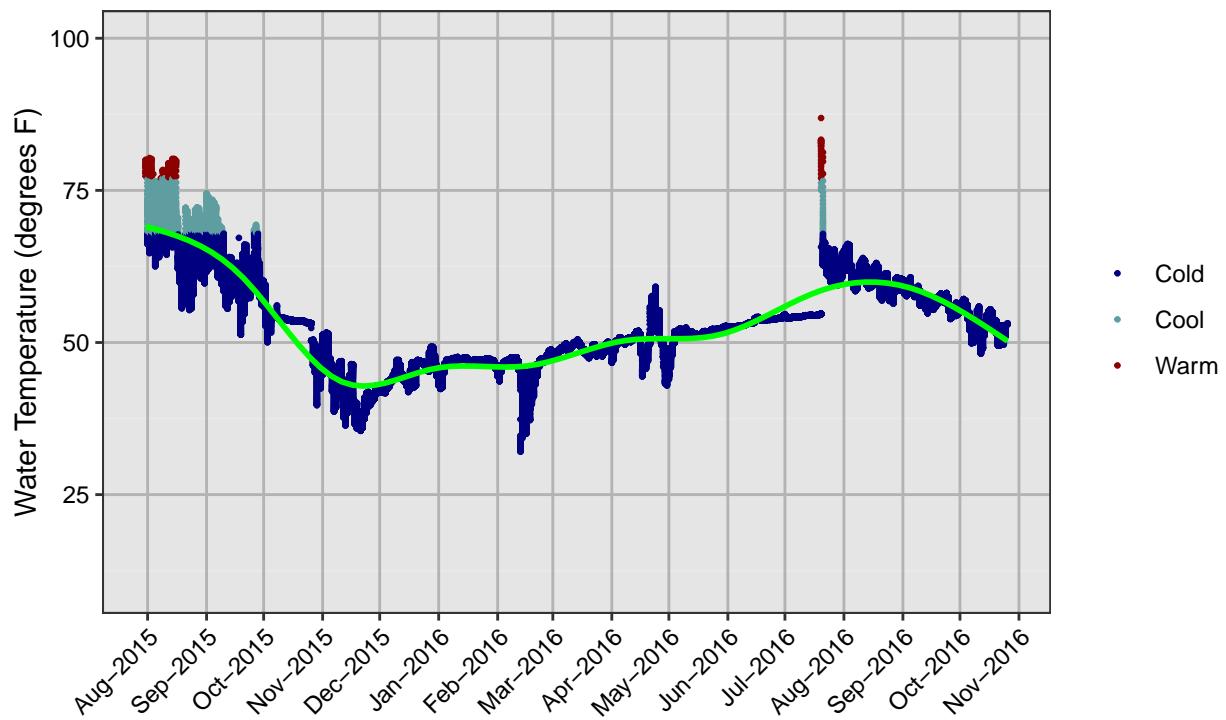


## Gordon Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Gordon Creek – Site 1

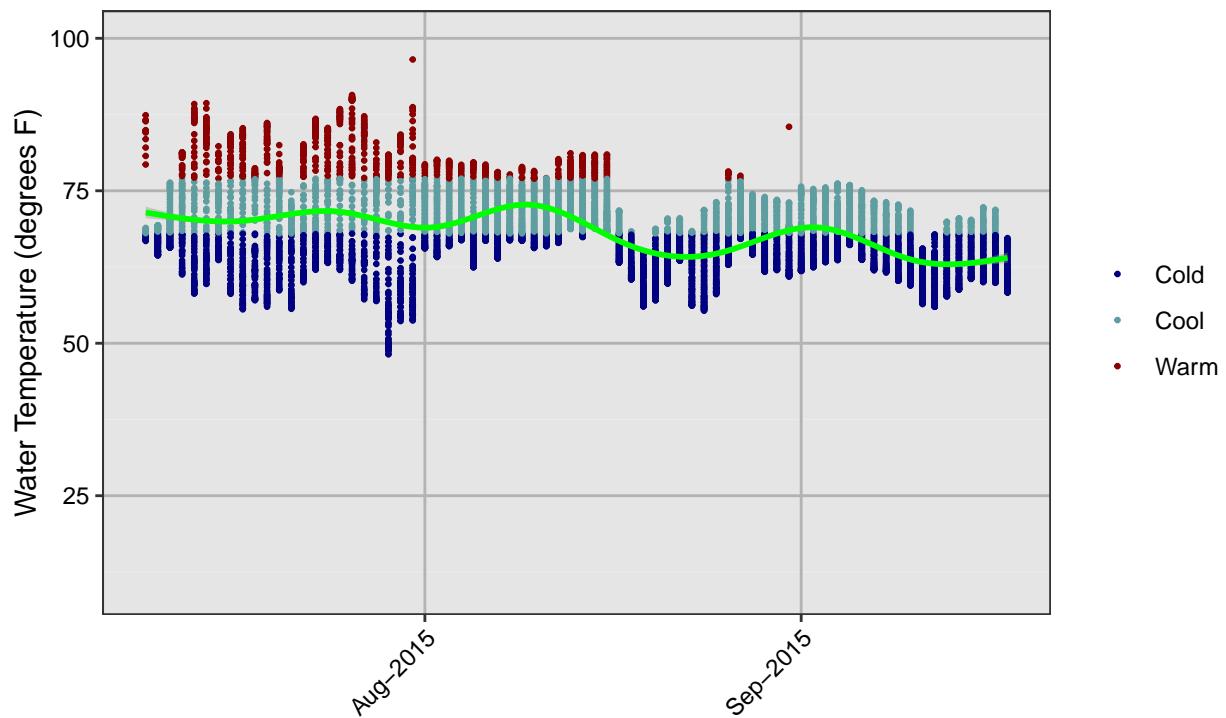


## Gordon Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Gordon Creek – Site 2

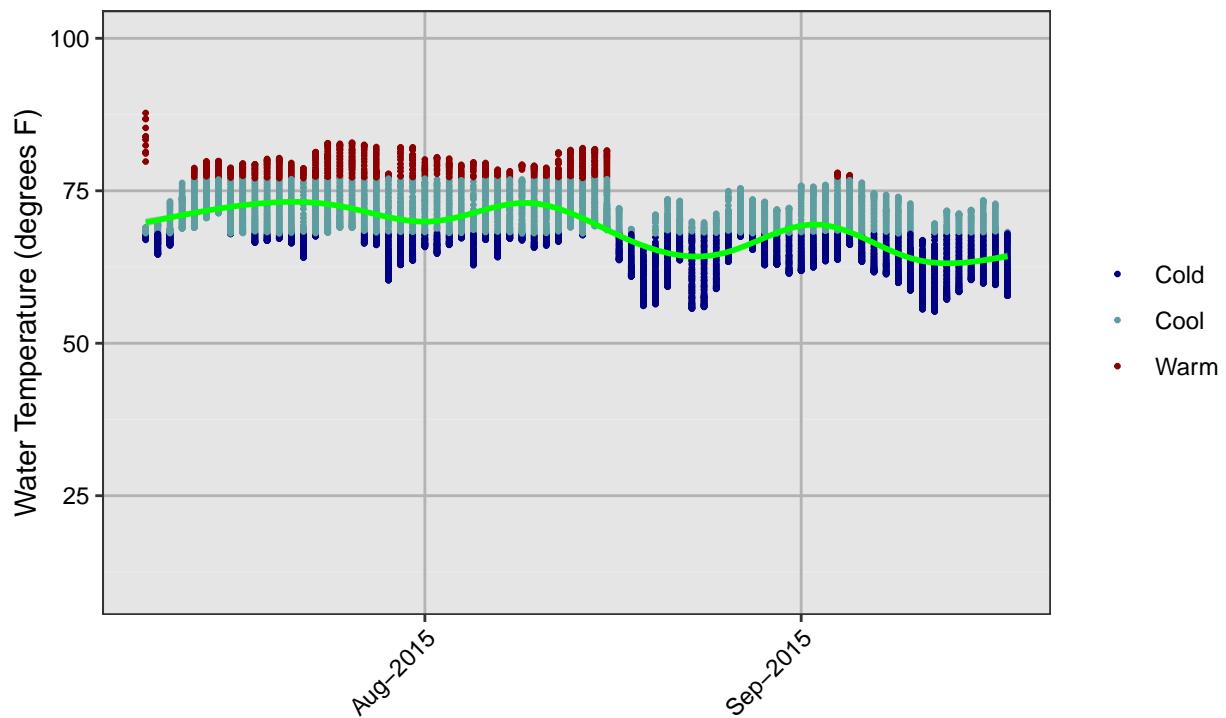


## Gordon Creek - Site 3

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Gordon Creek – Site 3

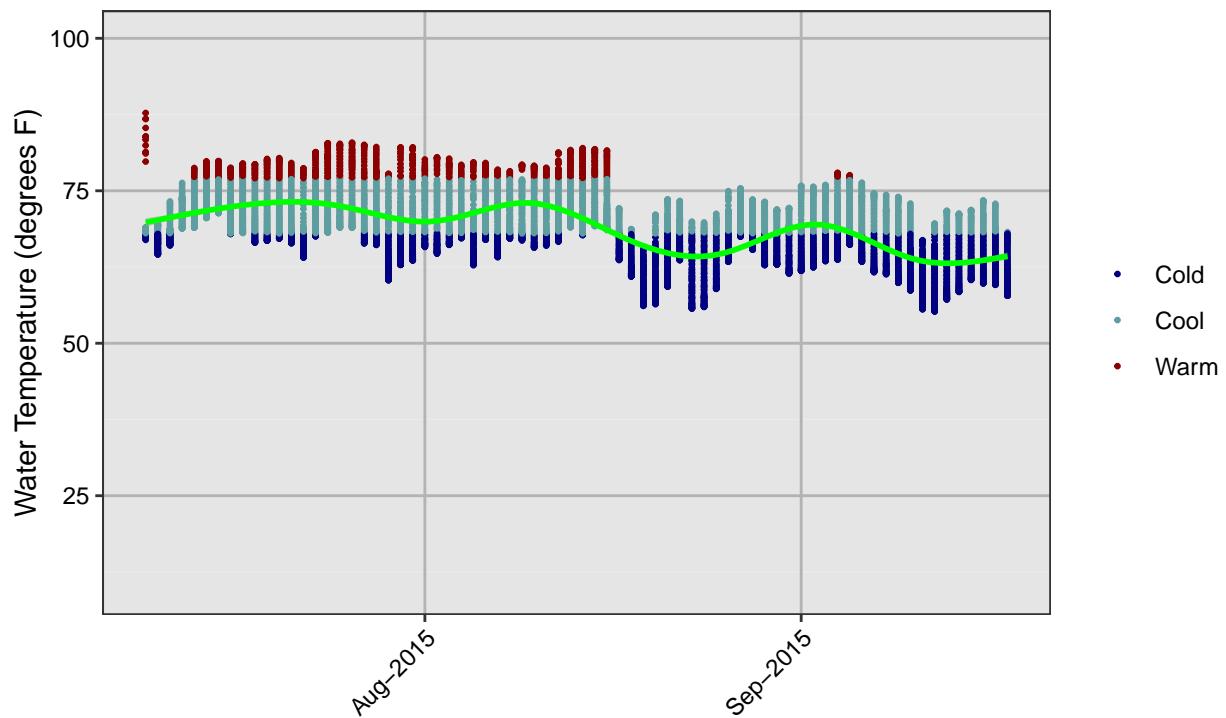


## Gordon Creek - Site 4

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Gordon Creek – Site 4

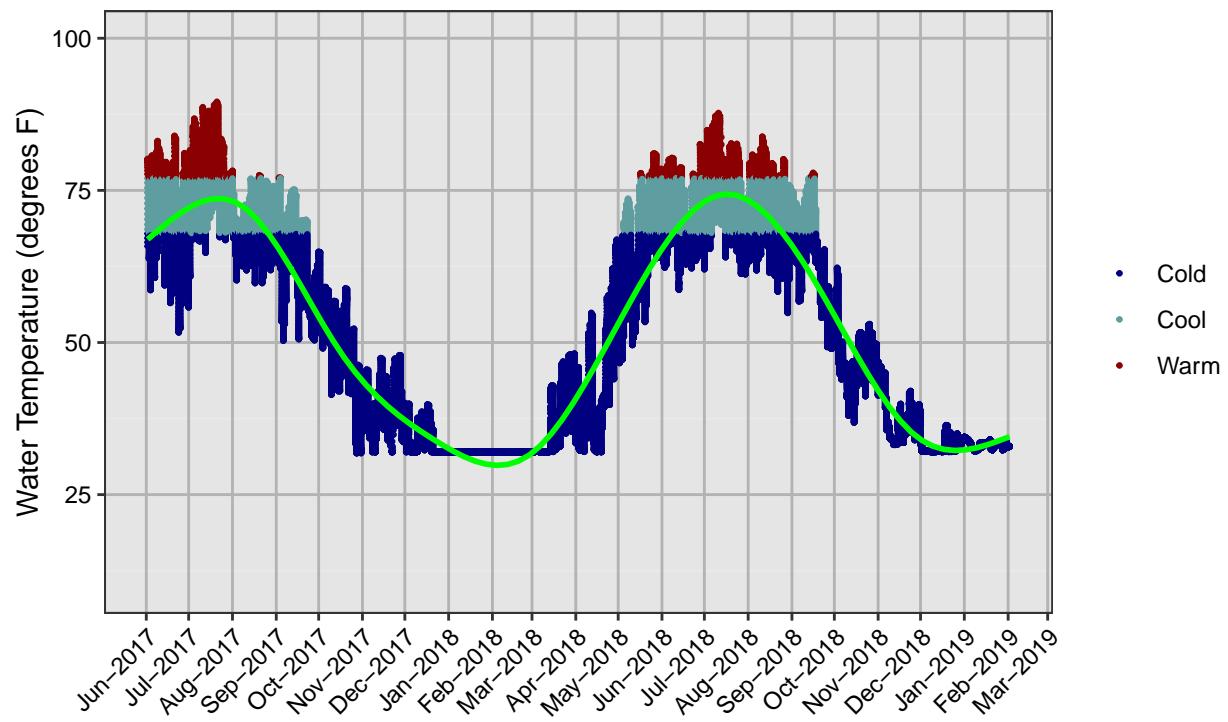


## Holt Creek - WMA

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

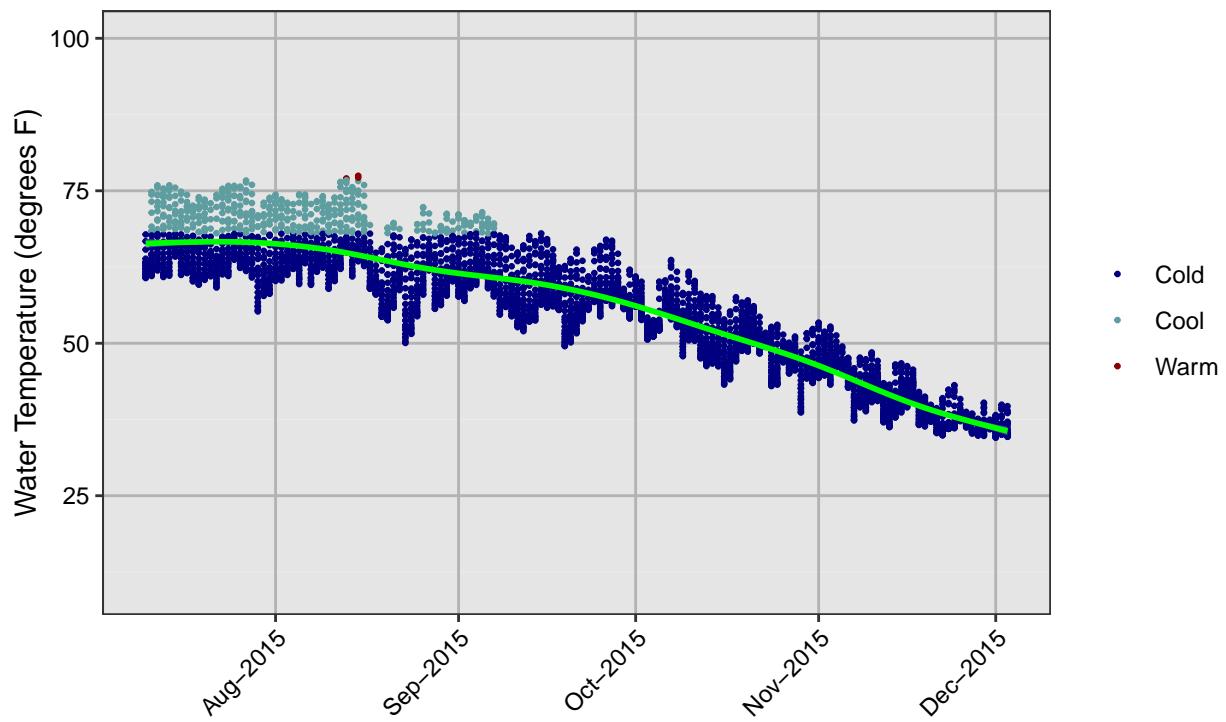
Holt Creek– WMA



## Larabee Creek - Dolezal

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

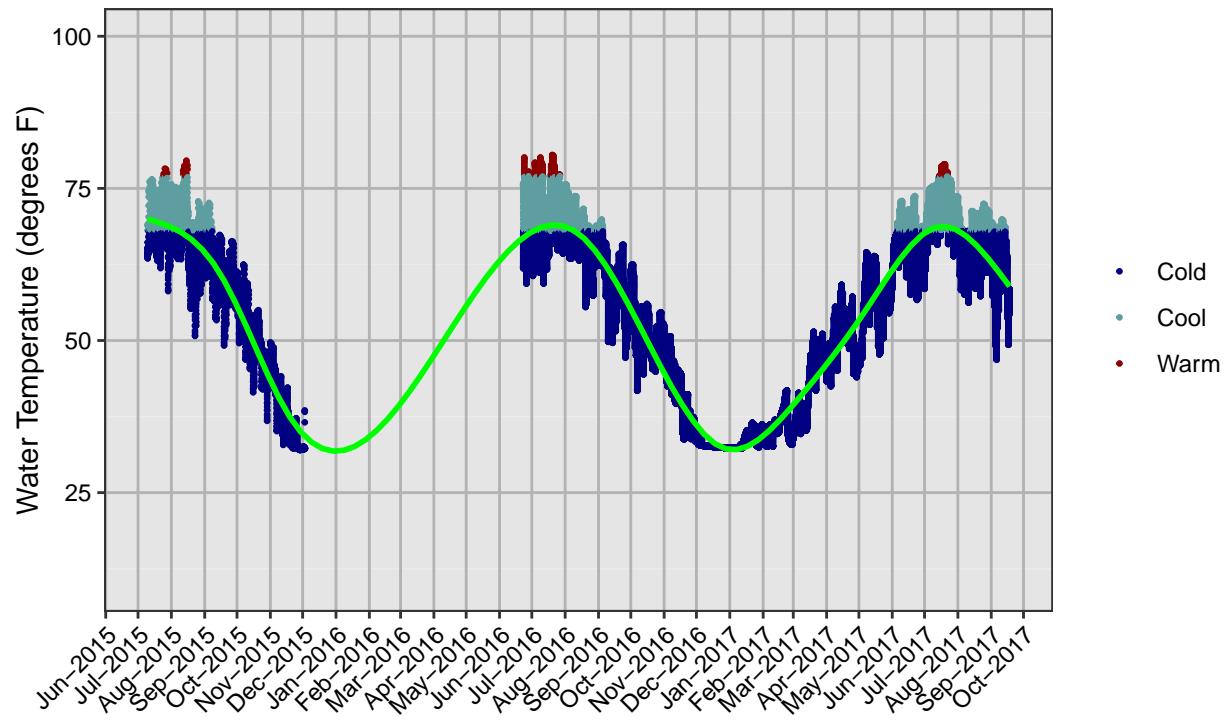
## Hourly Water Temps Larabee Creek – Dolezal



## Larabee Creek - Forney

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

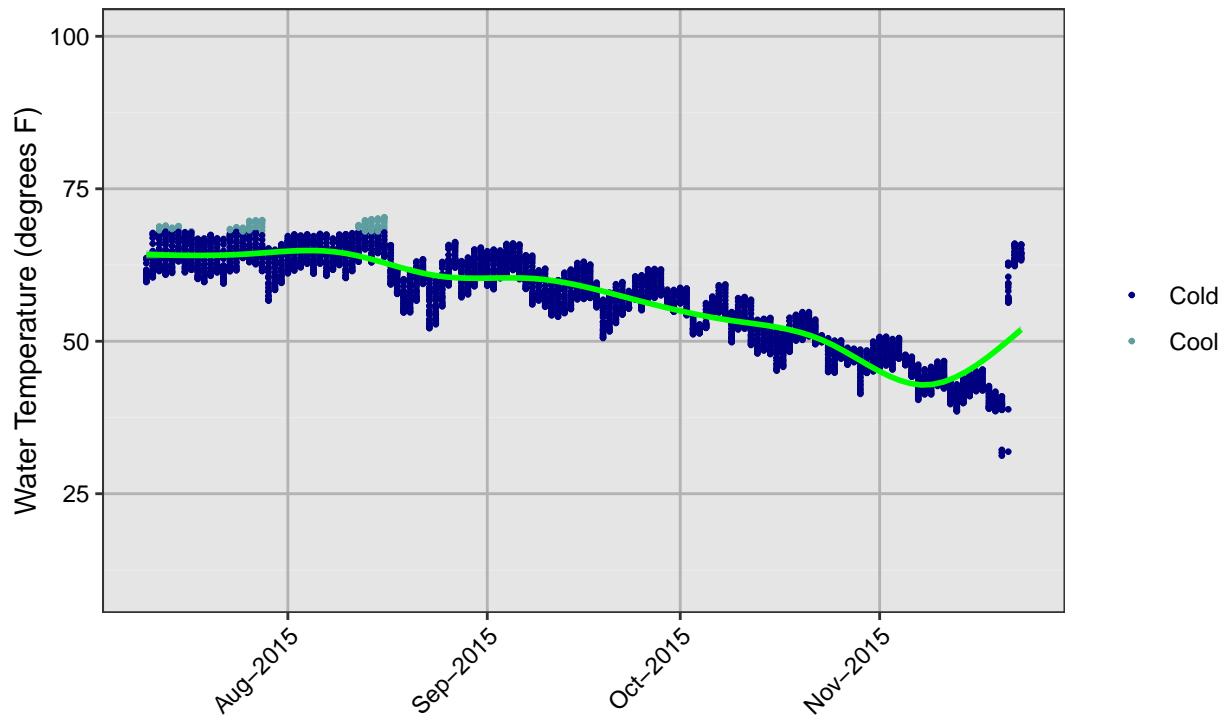
## Hourly Water Temps Larabee Creek – Forney



## Larabee Creek - School

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

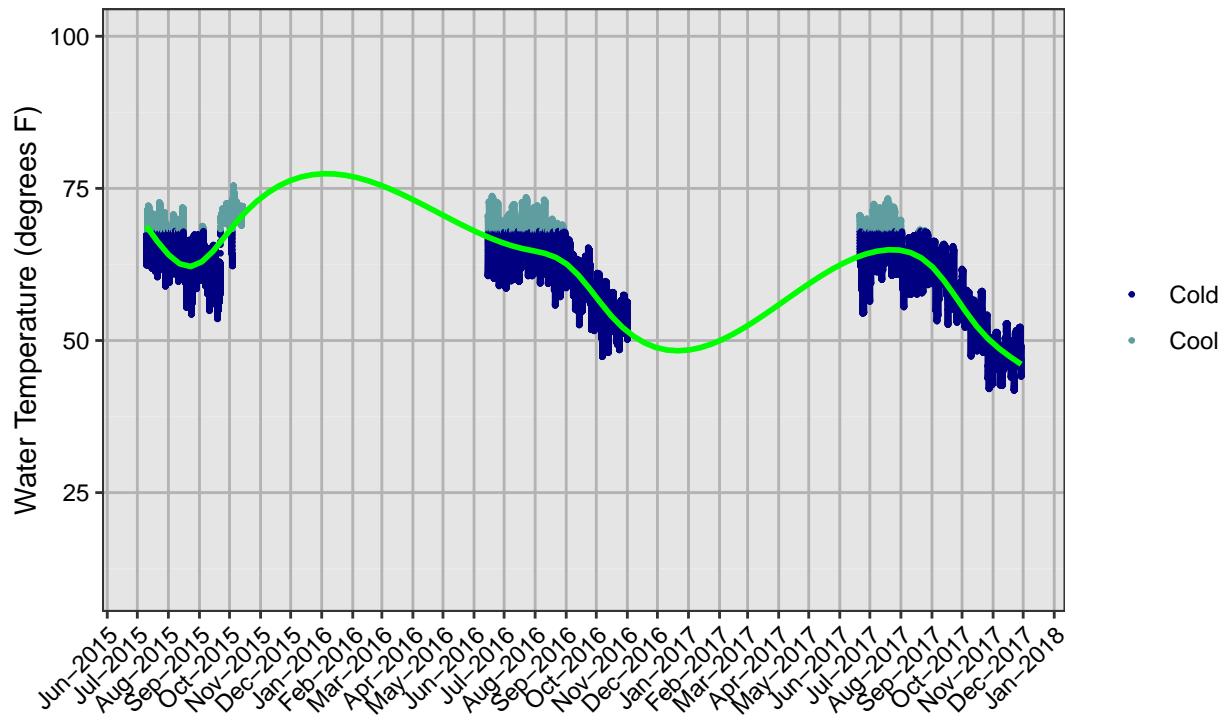
## Hourly Water Temps Larabee Creek – School



## Long Pine Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

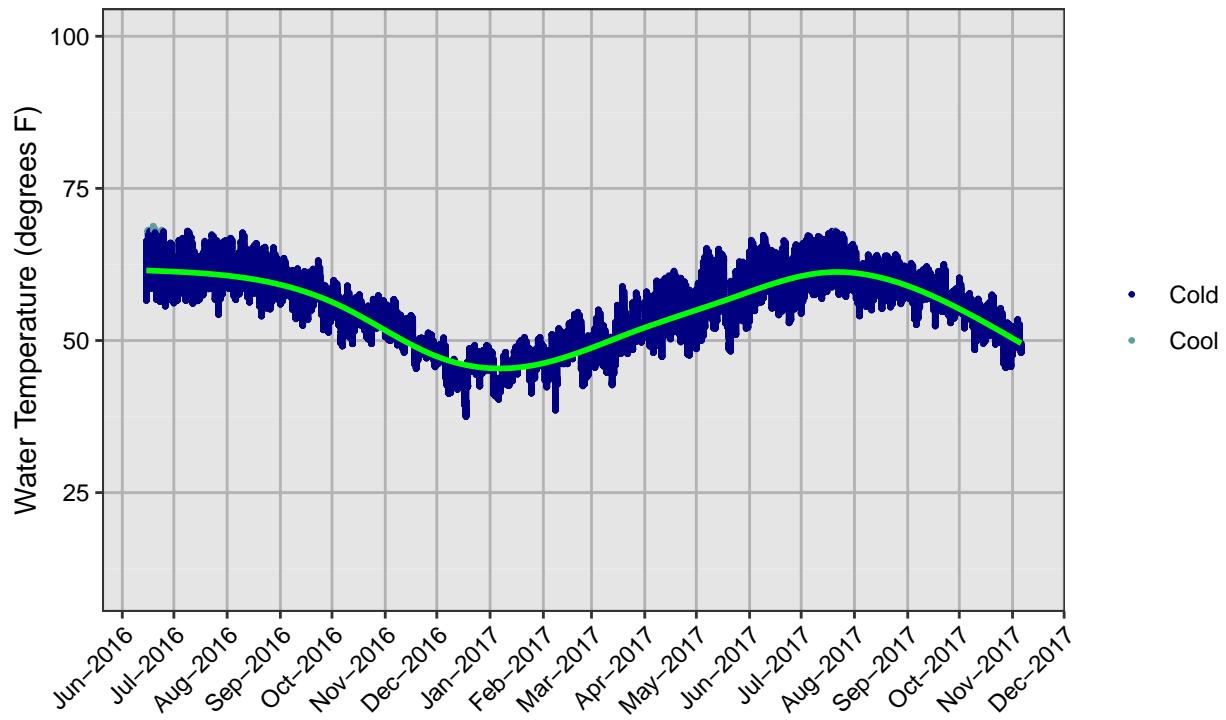
## Hourly Water Temps Long Pine Creek – Site 2



## Long Pine Creek - Site 3

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

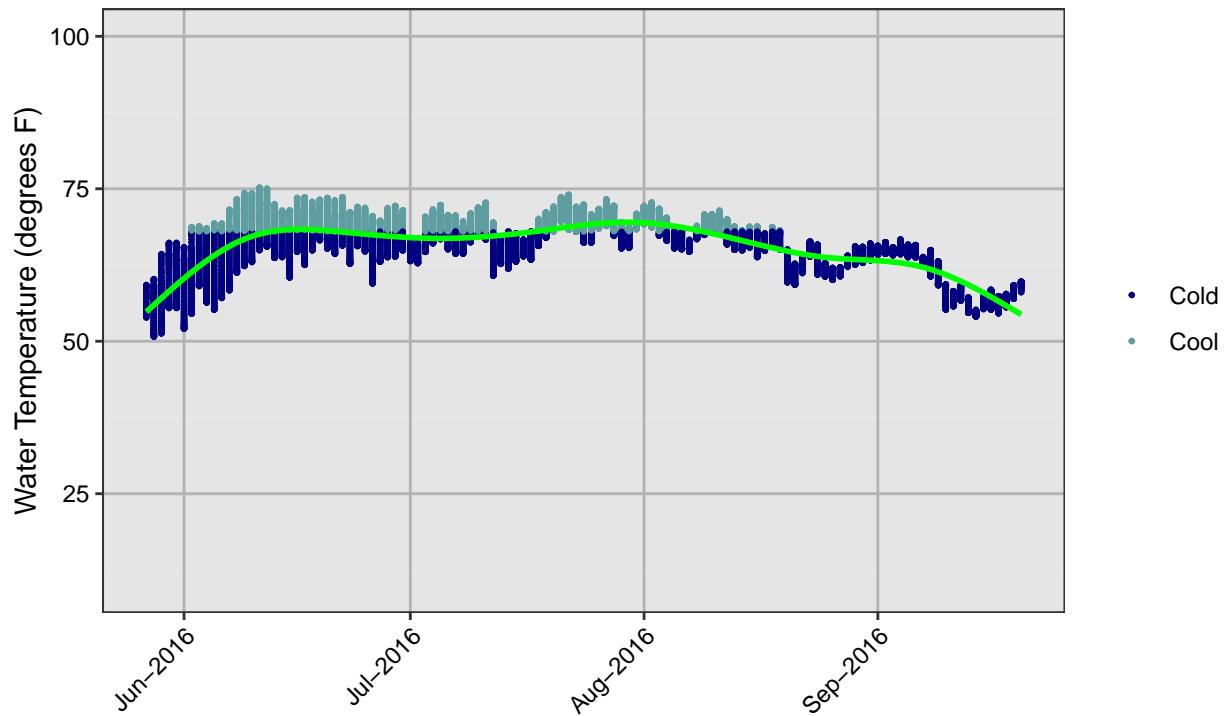
## Hourly Water Temps Long Pine Creek – Site 3



## Long Pine Creek - Site 4

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

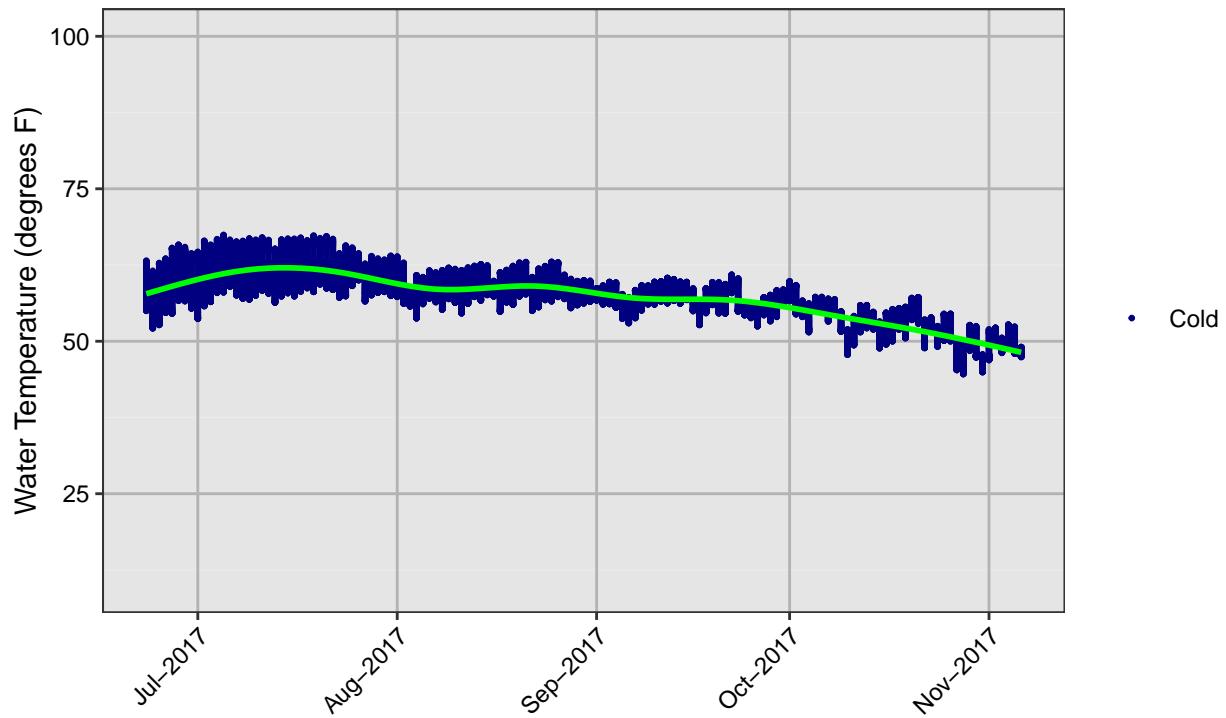
## Hourly Water Temps Long Pine Creek – Site 4



## Long Pine Creek - Site 6

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Long Pine Creek – Site 6

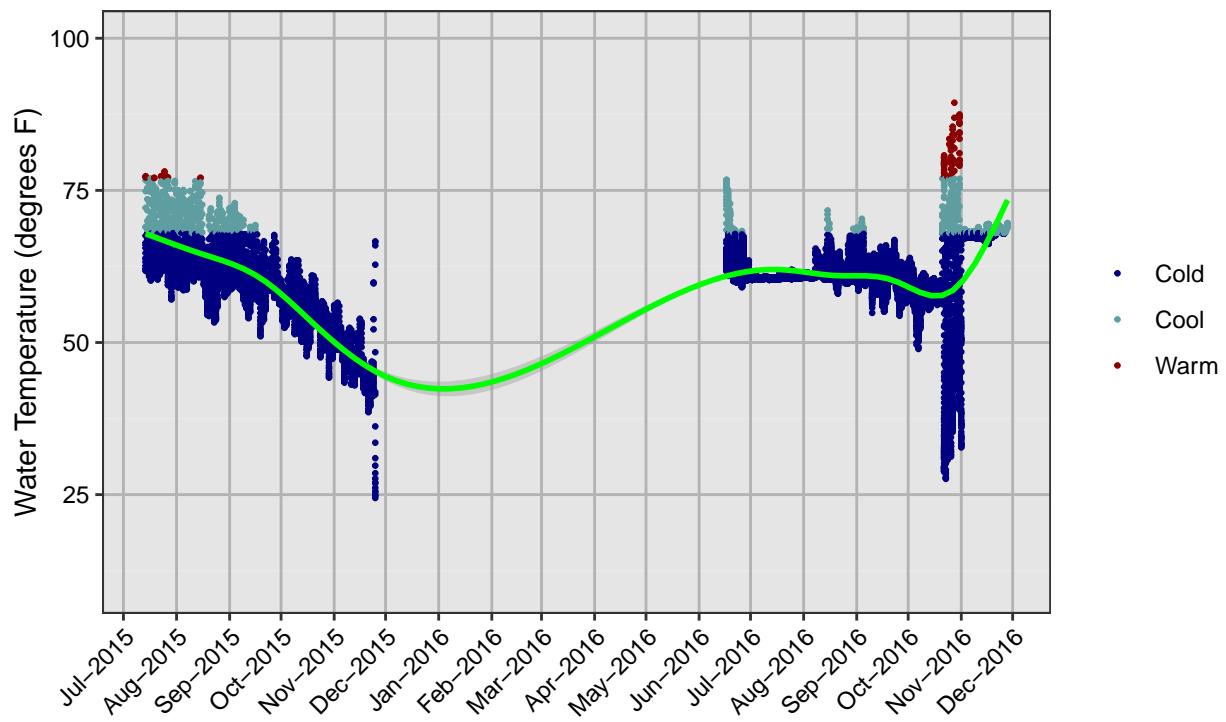


## Middle Loup River - Middle Branch

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

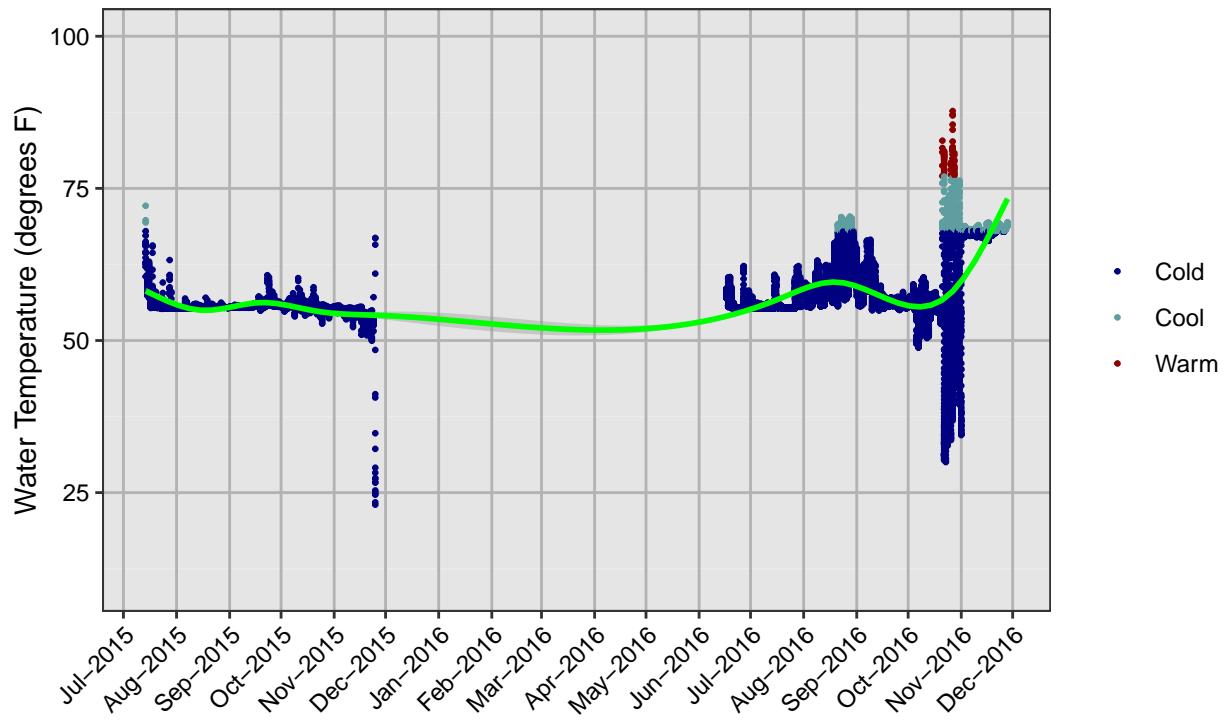
### Middle Loup River – Middle Branch



## Middle Loup River - Mullens

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Middle Loup River – Mullens

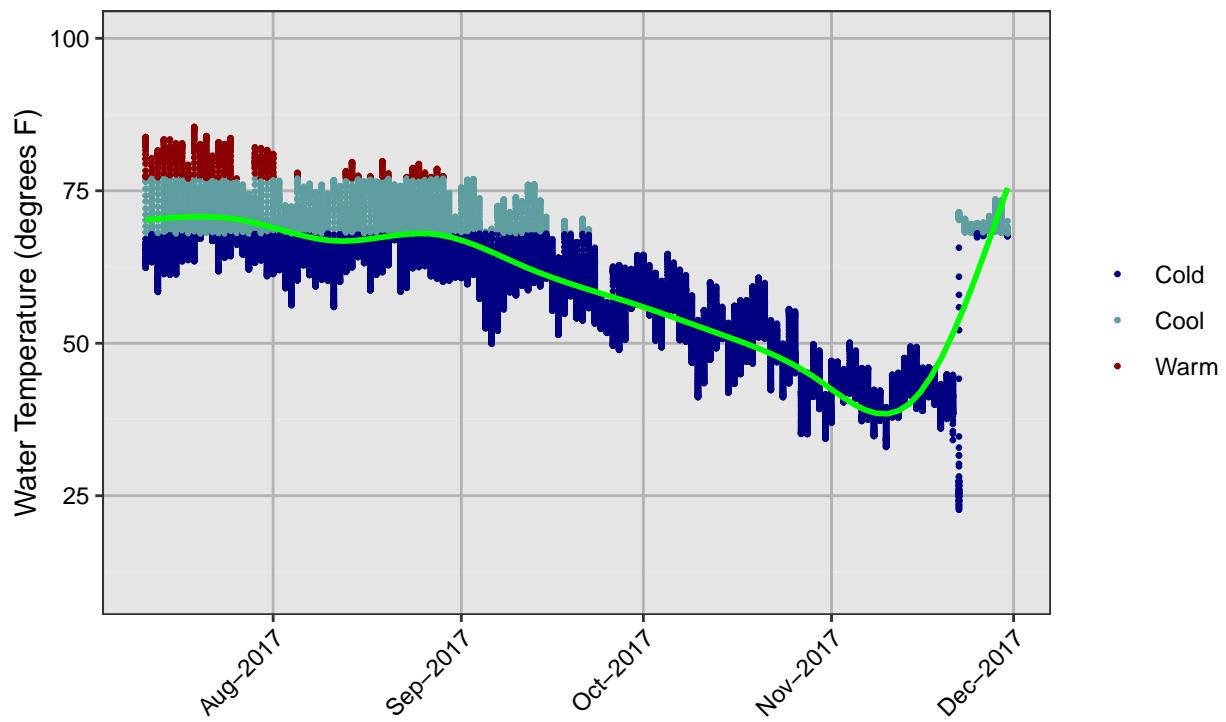


## Middle Loup River - South Branch

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

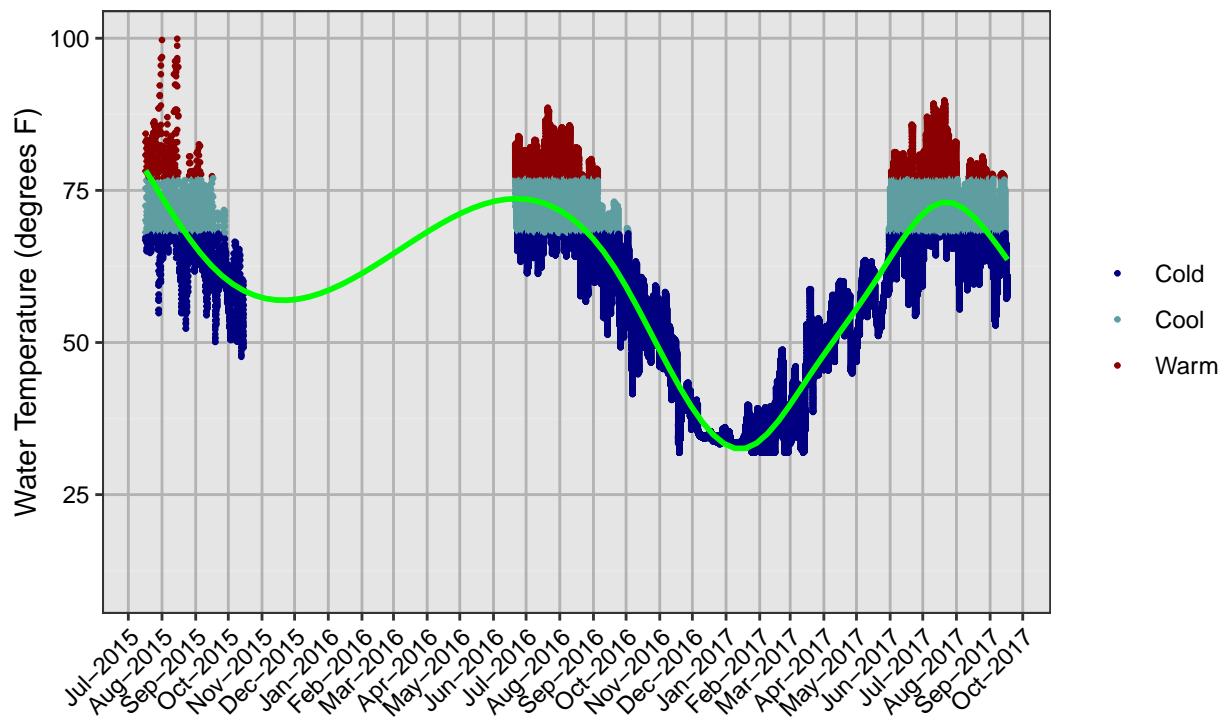
### Middle Loup River – South Branch



## Minnechaduza Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

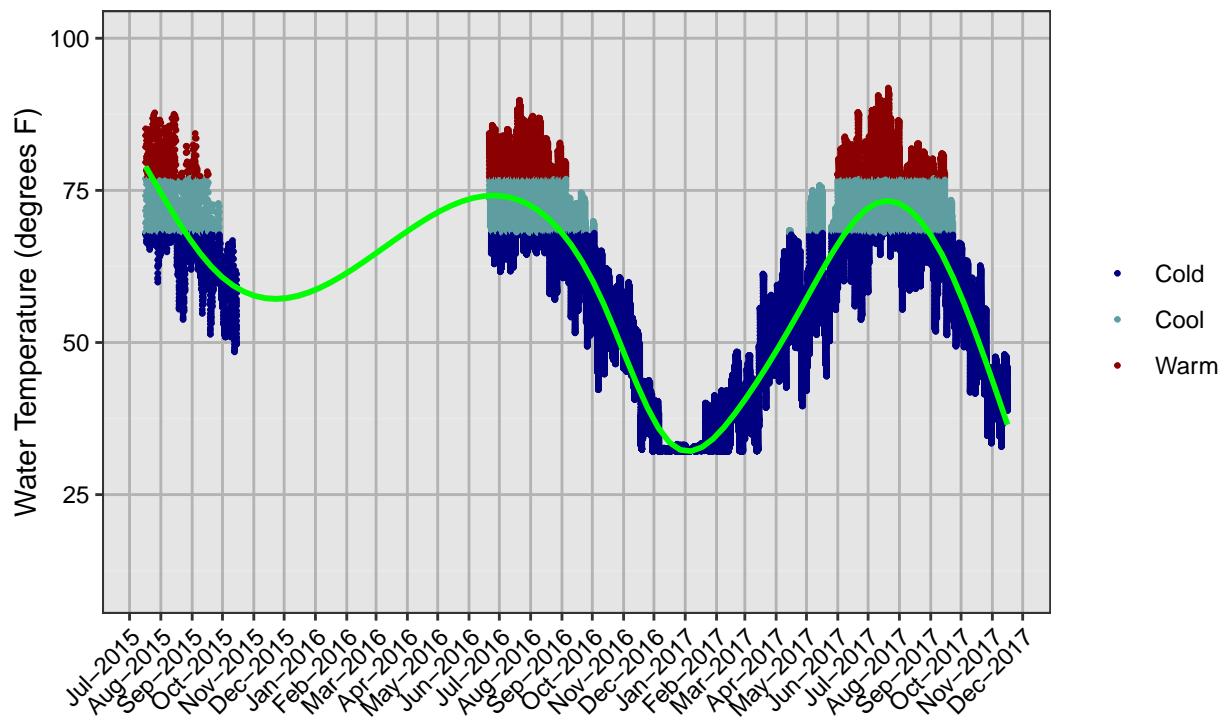
## Hourly Water Temps Minnechaduza Creek – Site 1



## Minnechaduza Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

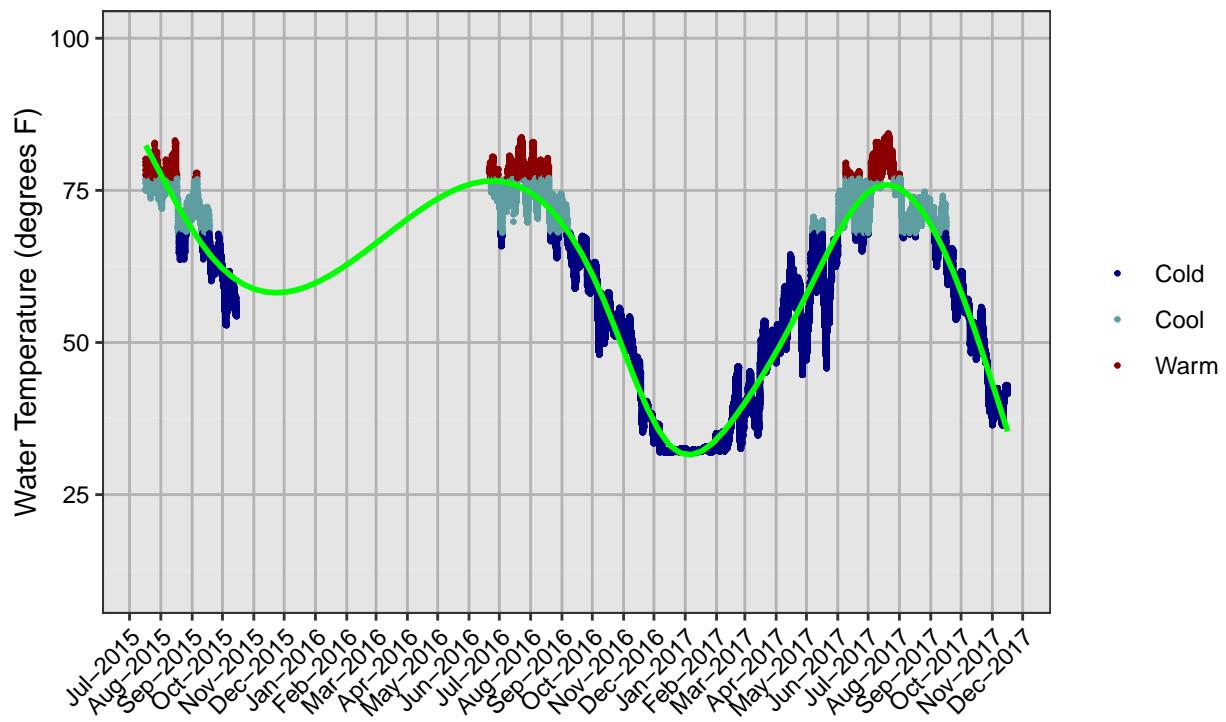
## Hourly Water Temps Minnechaduza Creek – Site 2



## Minnechaduza Creek - Site 3

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Minnechaduza Creek – Site 3

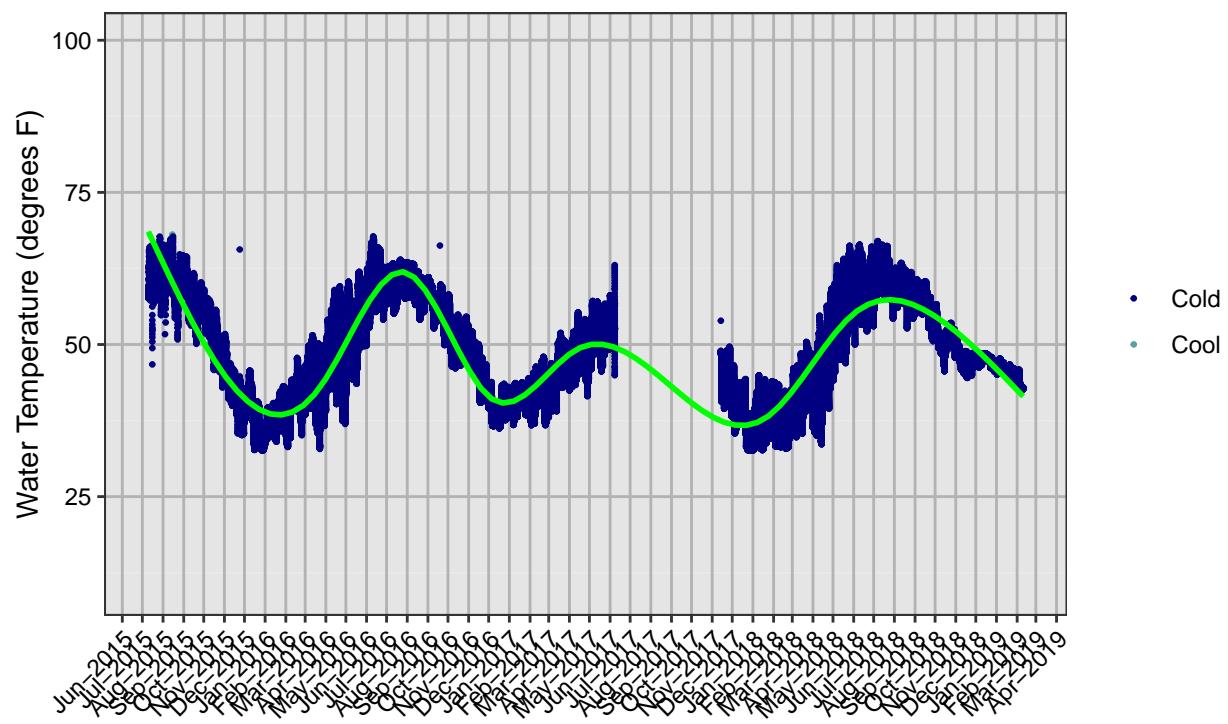


## Monroe Creek

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

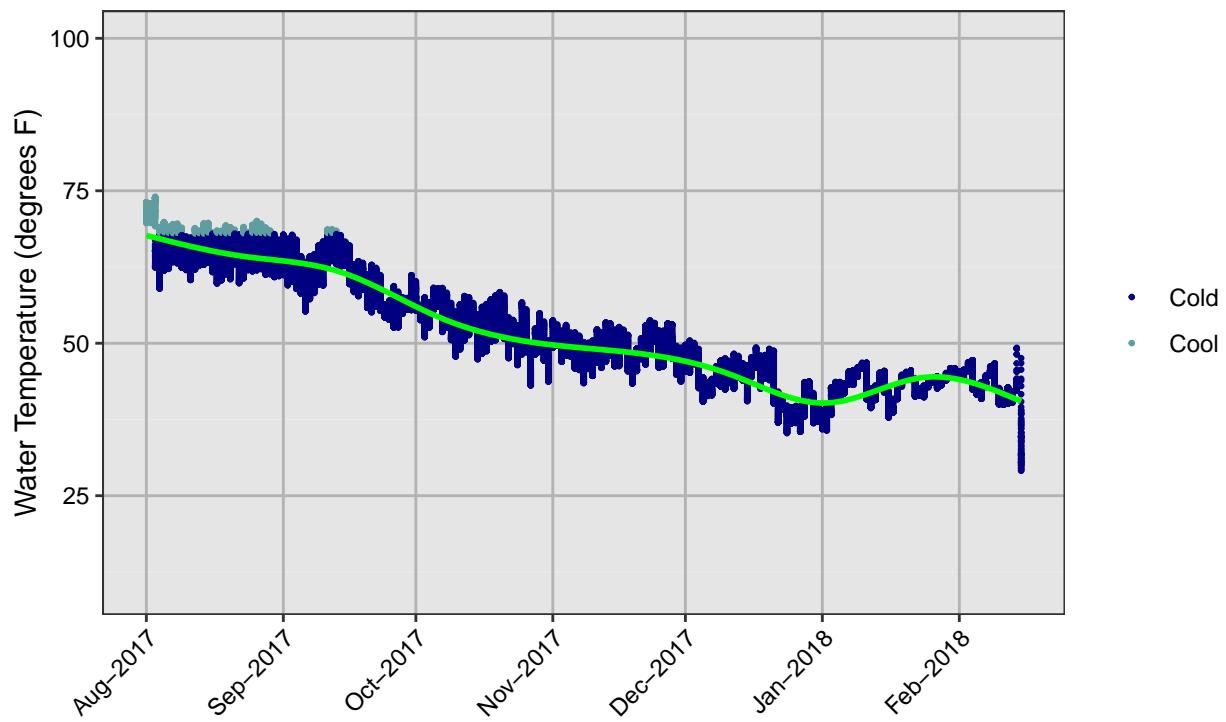
Monroe Creek



## Nine Mile Creek - Lower

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Nine Mile Creek – Lower

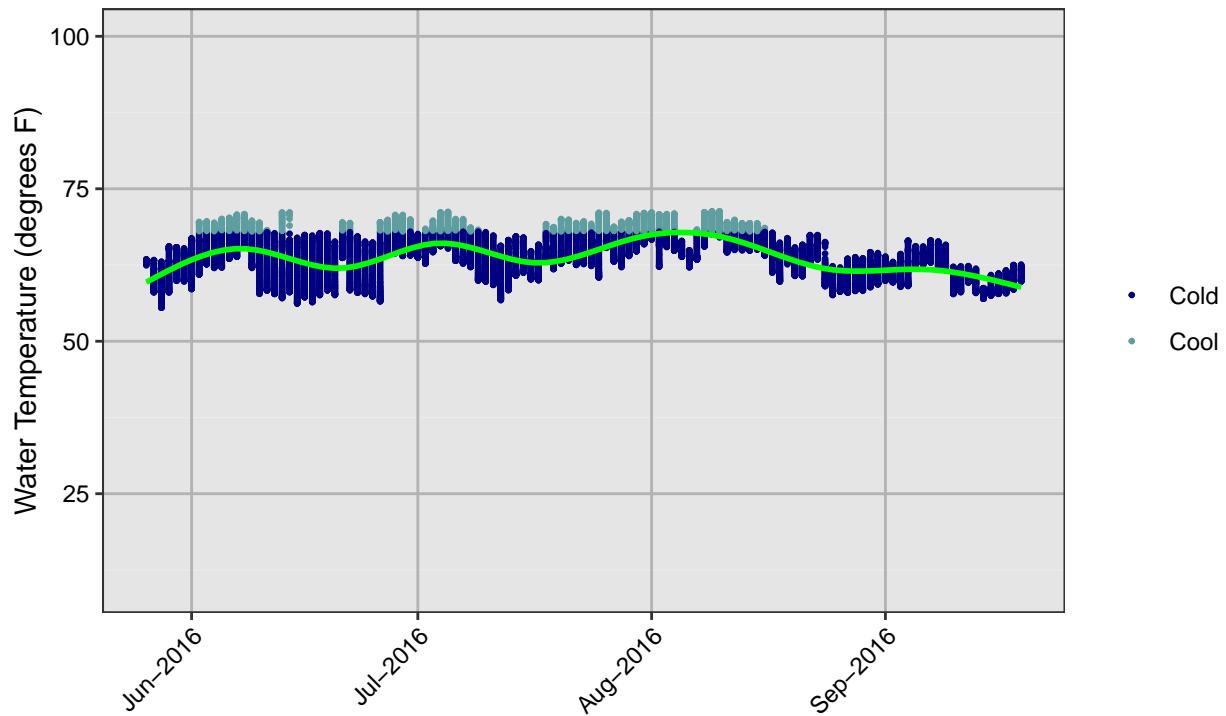


## Nine Mile Creek - OFW

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Nine Mile Creek – OFW

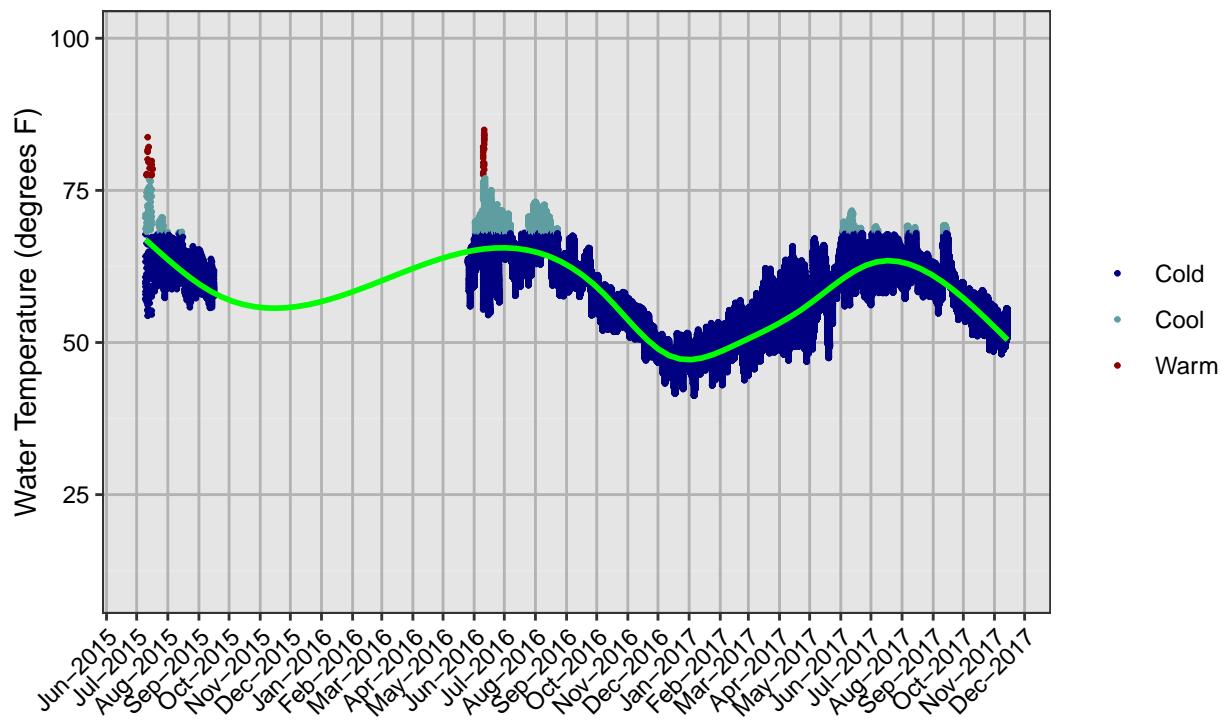


## Nine Mile Creek - WMA

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Nine Mile Creek – WMA

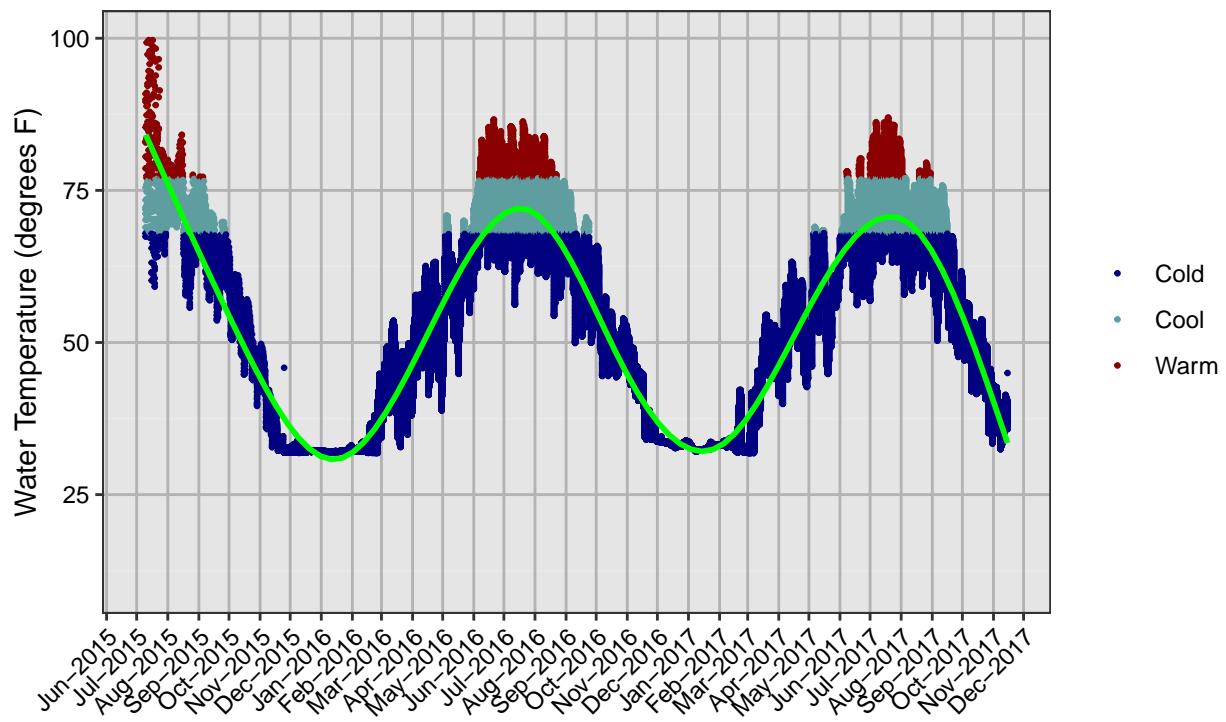


## Niobrara River - Highway 71

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

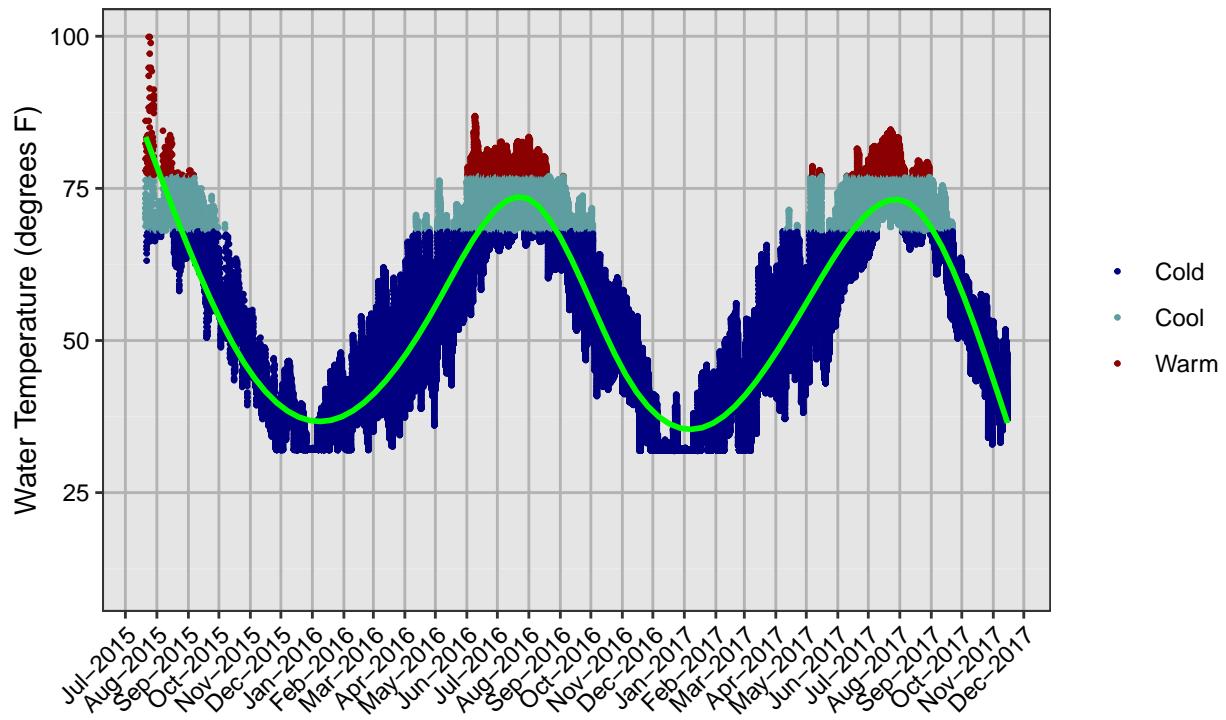
Niobara River – Hwy 71



## Niobrara River - Highway 385

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

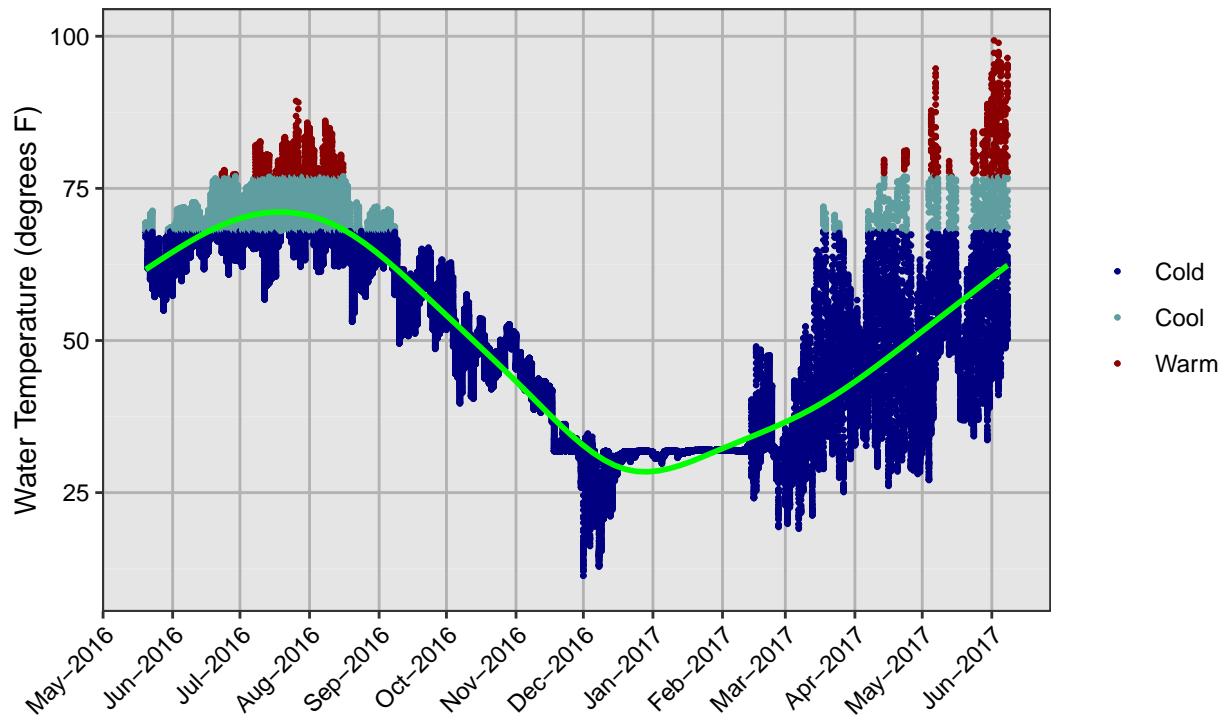
## Hourly Water Temps Niobrara River – Hwy 385



## Niobrara River - Pink Schoolhouse

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Niobrara River – Pink Schoolhouse

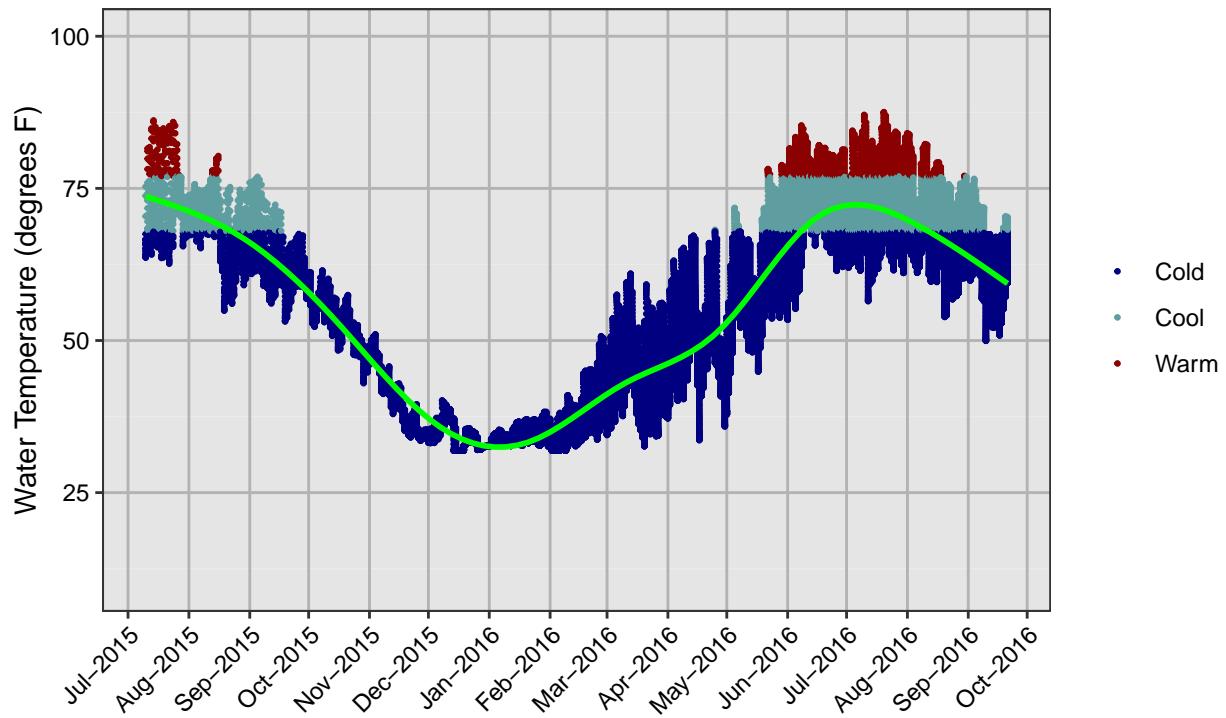


## Pine Creek - Middle

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Pine Creek – Middle

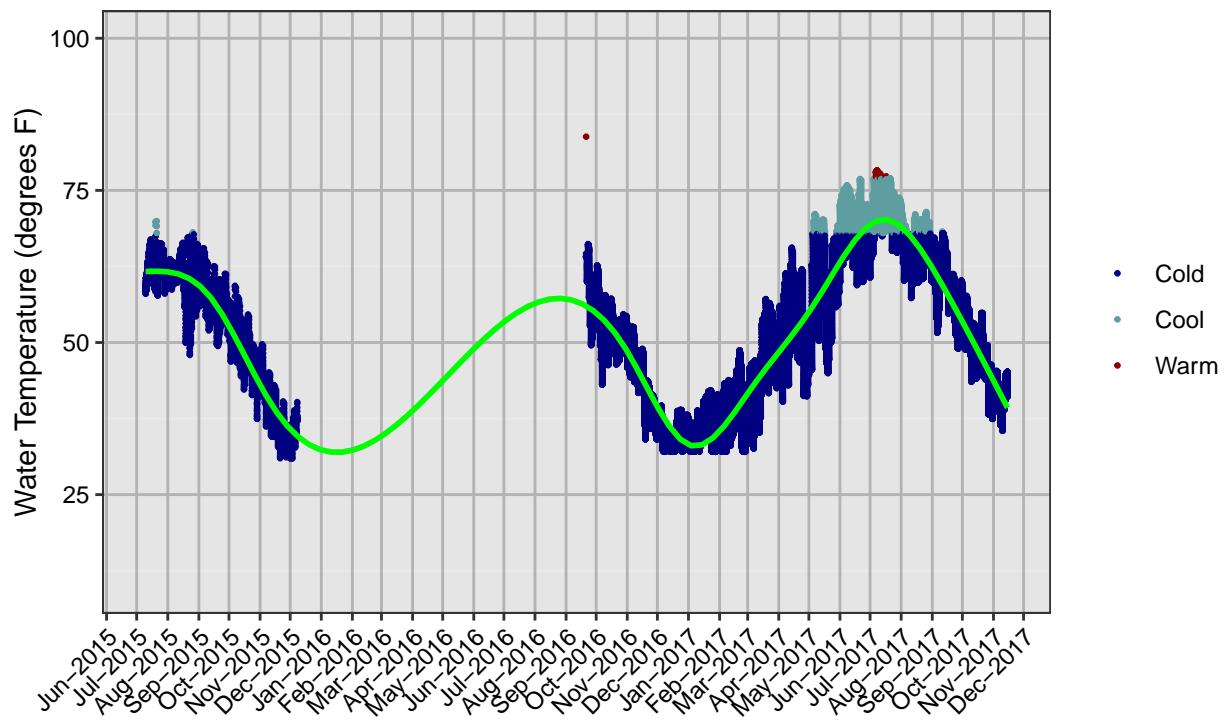


## Pine Creek - North

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Pine Creek – North

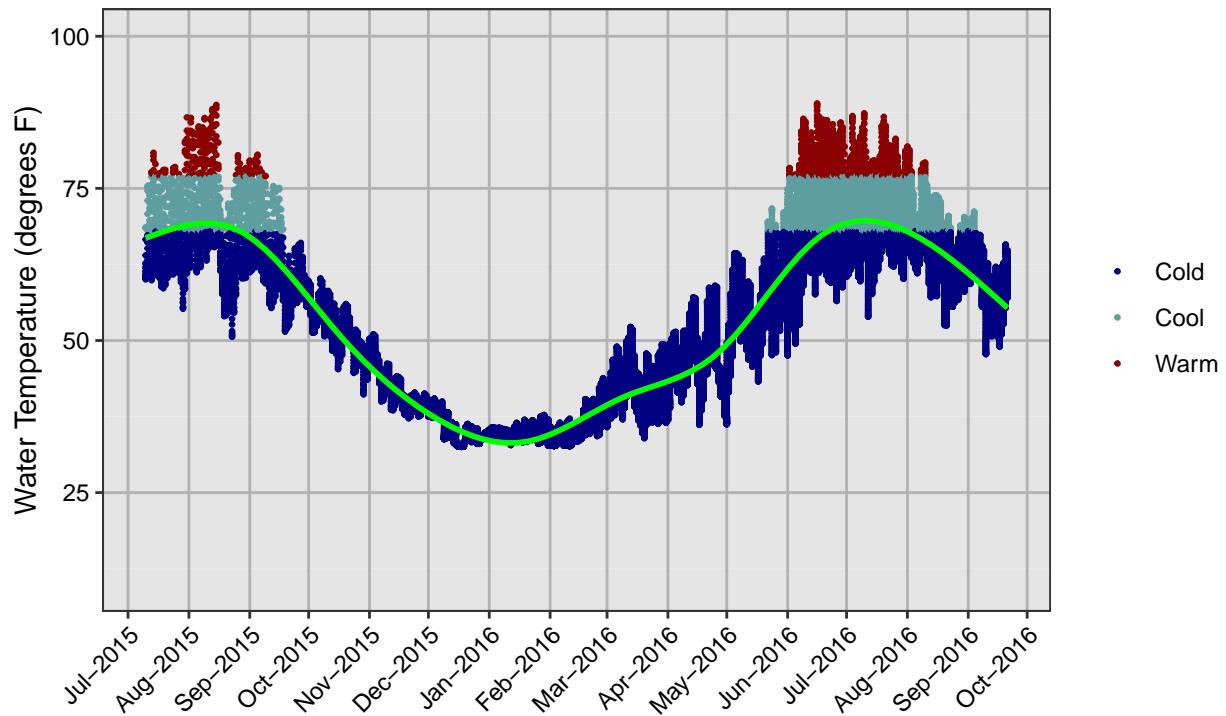


## Pine Creek - South

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Pine Creek – South

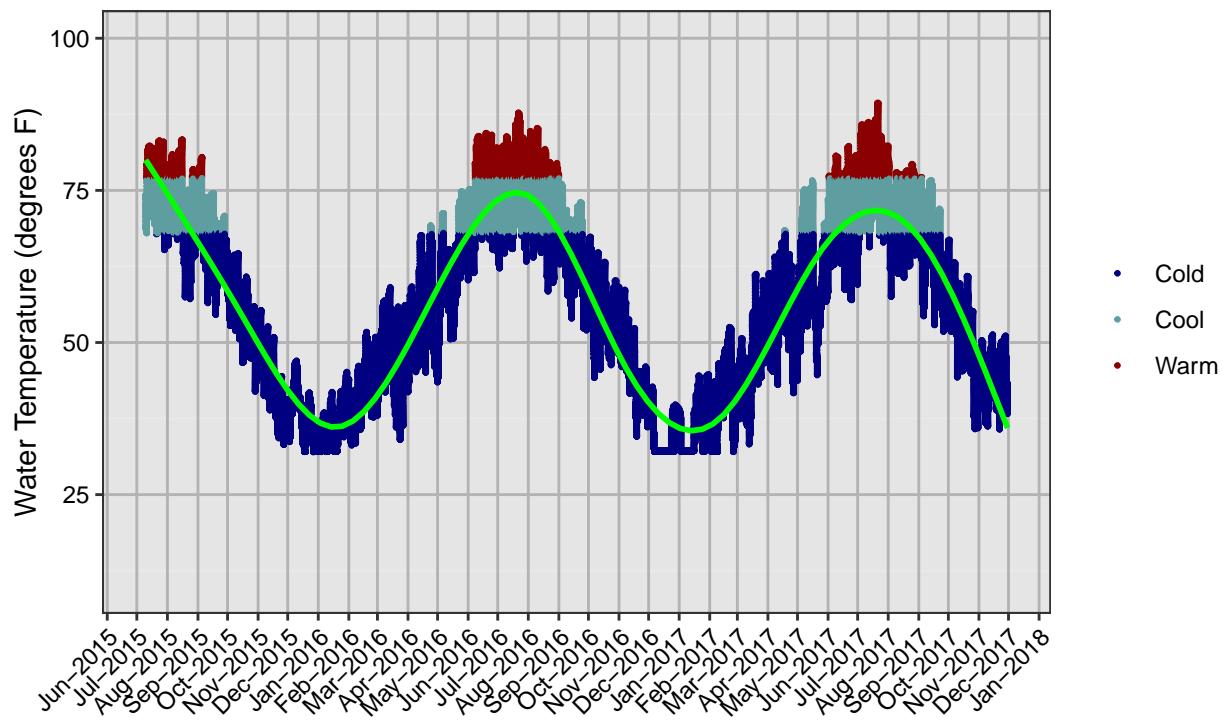


## Plum Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 1

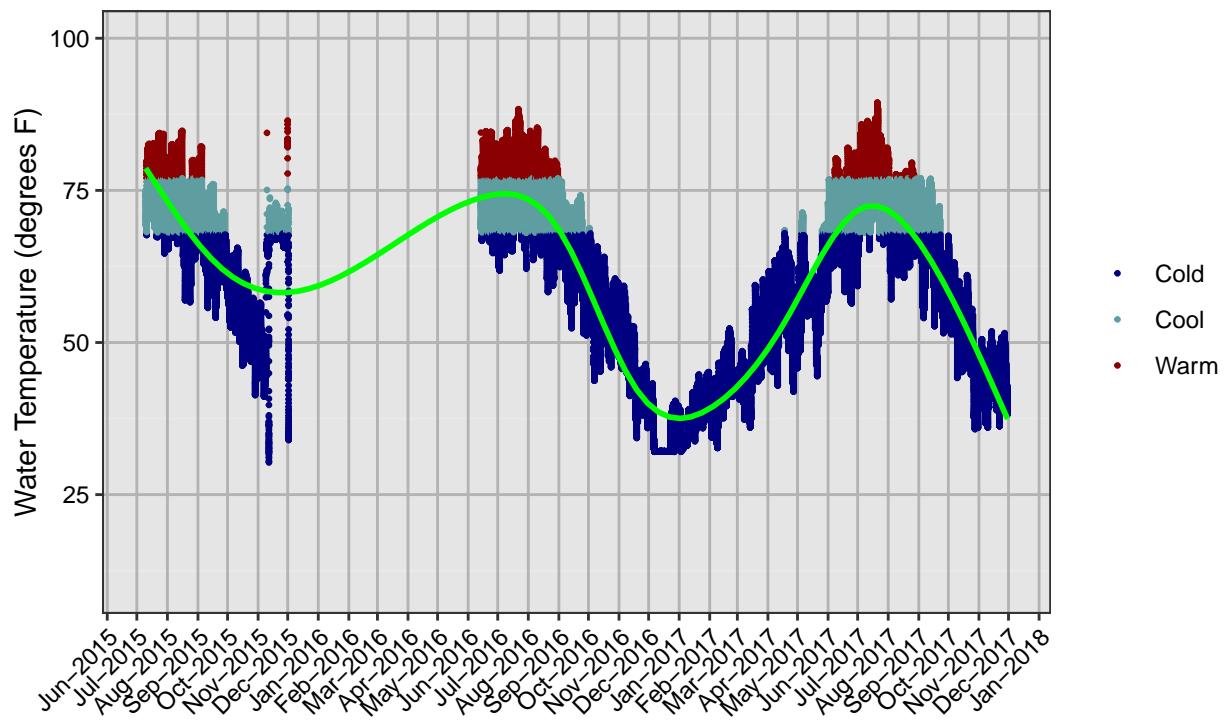


## Plum Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 2

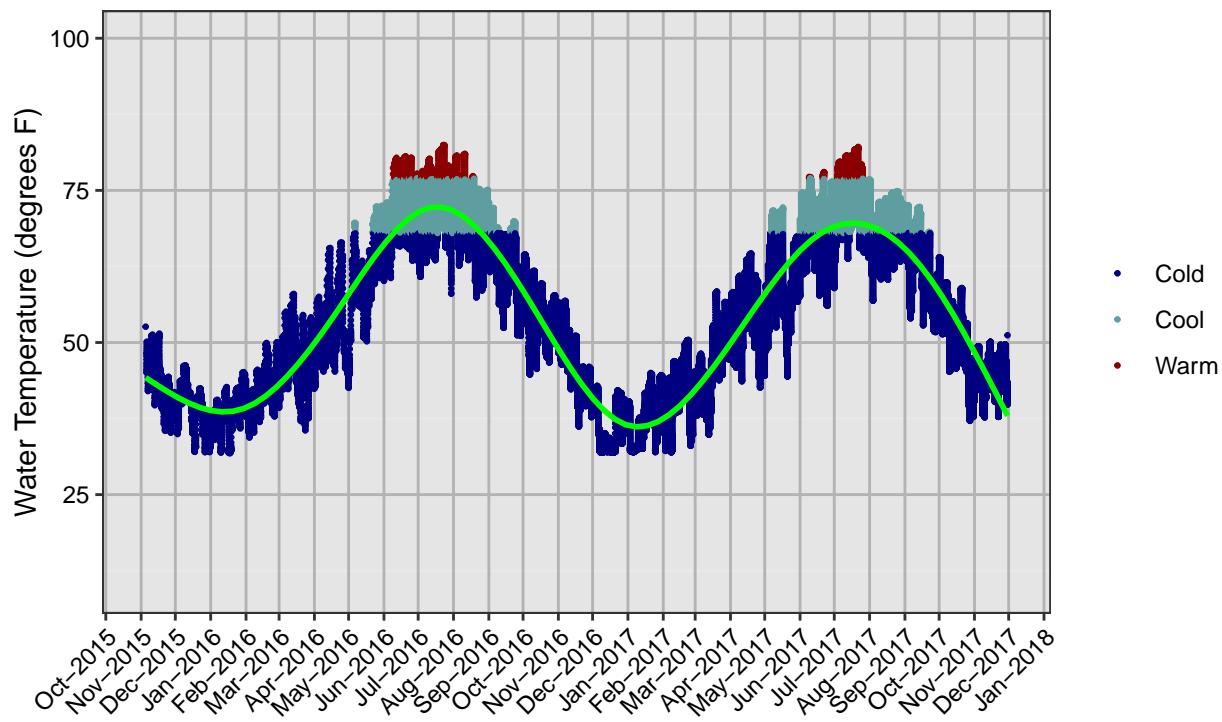


## Plum Creek - Site 3

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 3

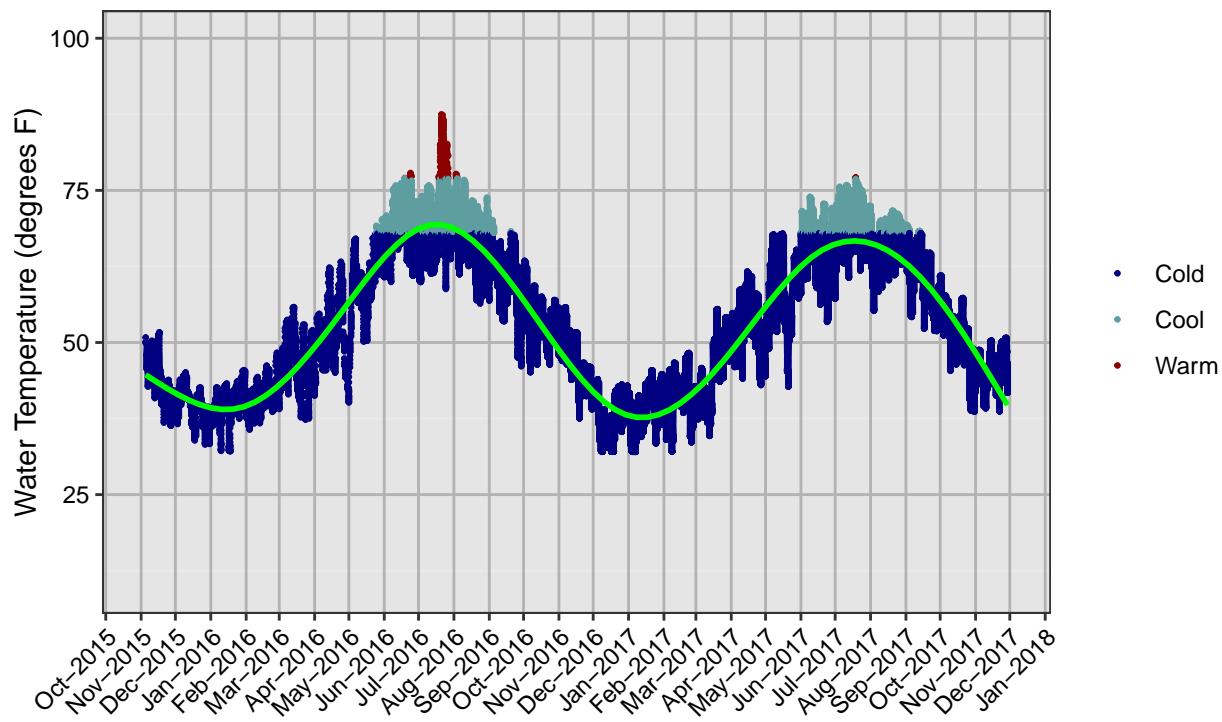


## Plum Creek - Site 4

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek– Site 4

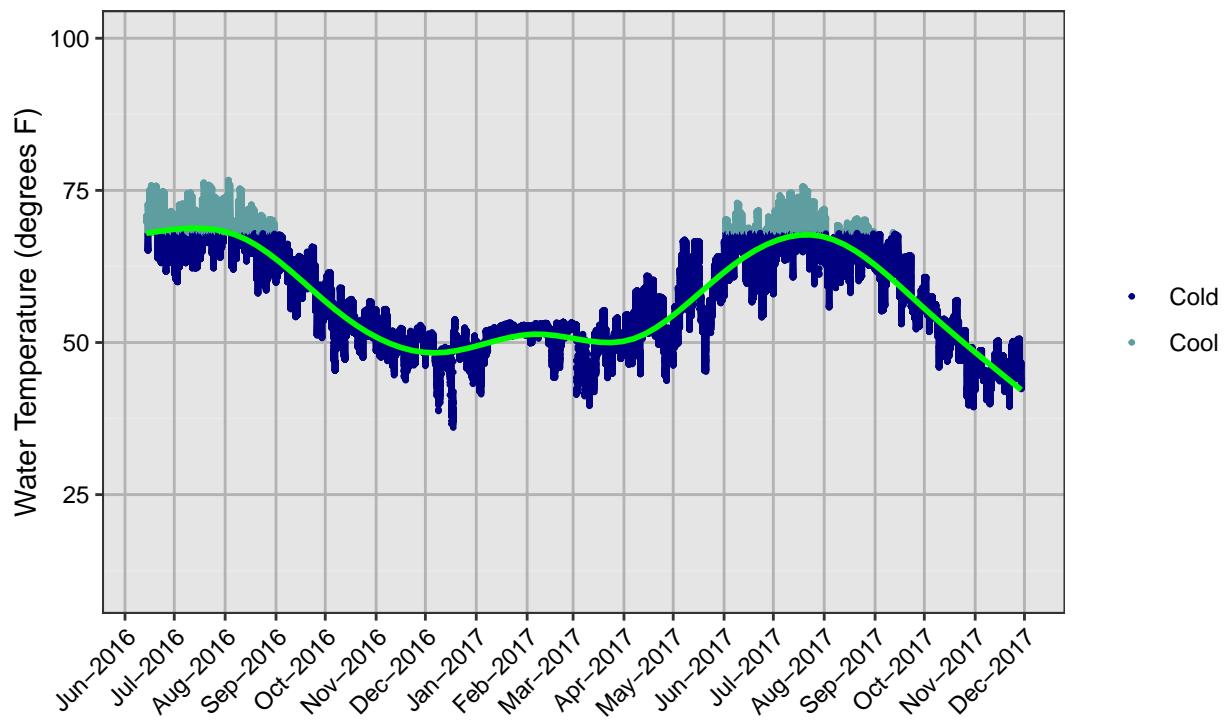


## Plum Creek - Site 5

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 5

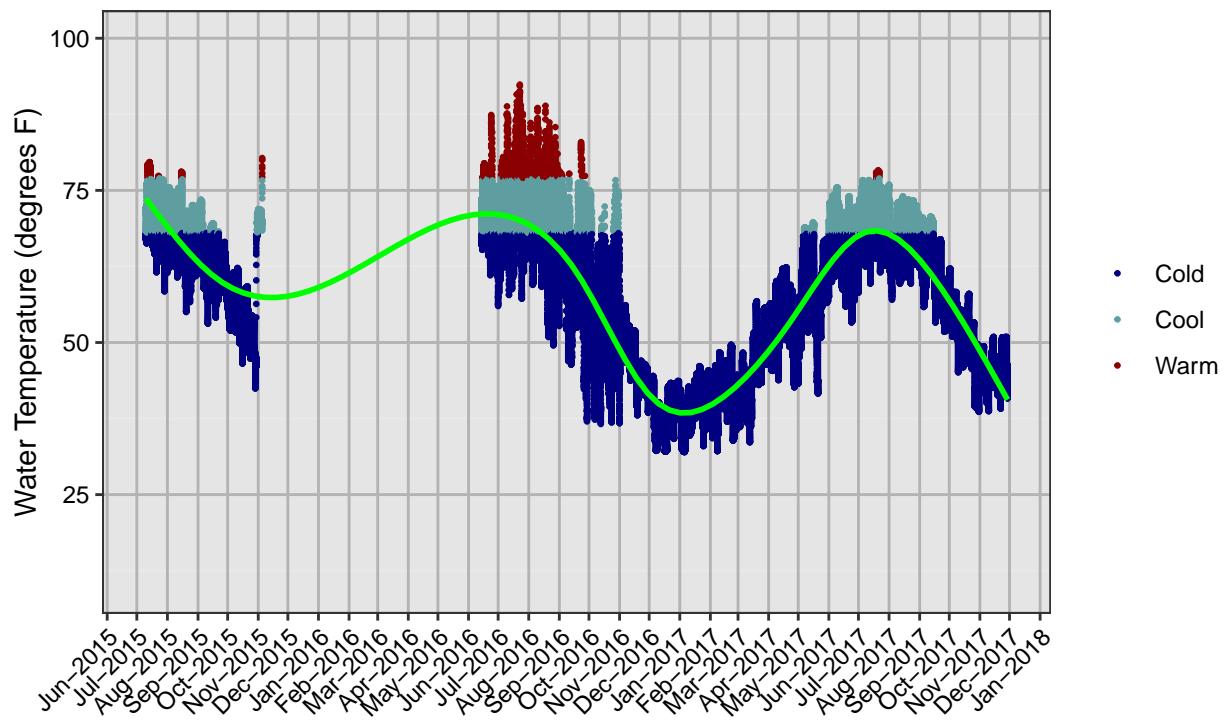


## Plum Creek - Site 6

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 6

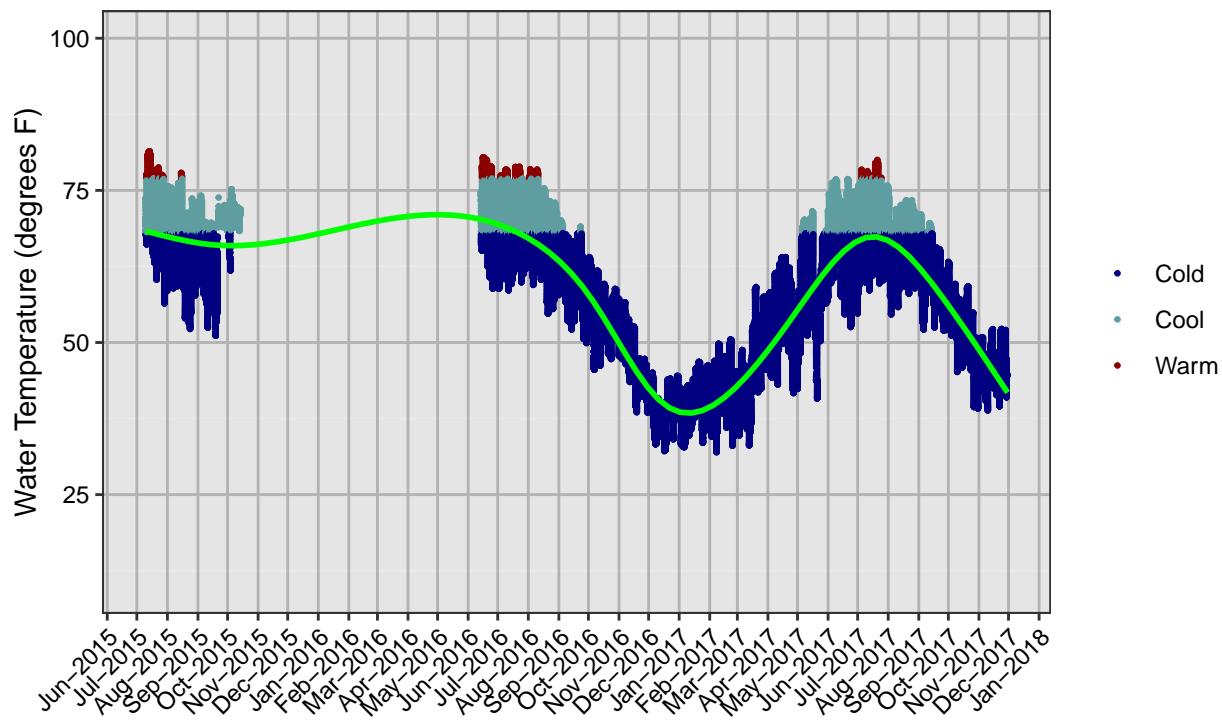


## Plum Creek - Site 7

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 7

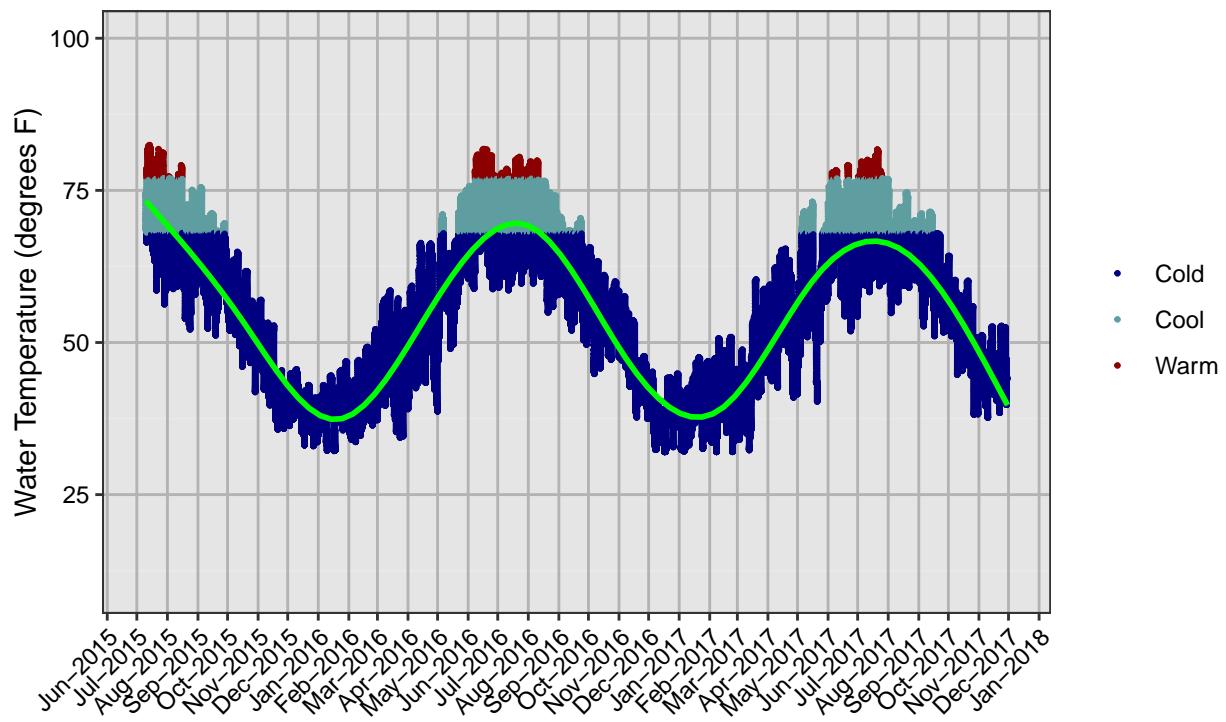


## Plum Creek - Site 8

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 8

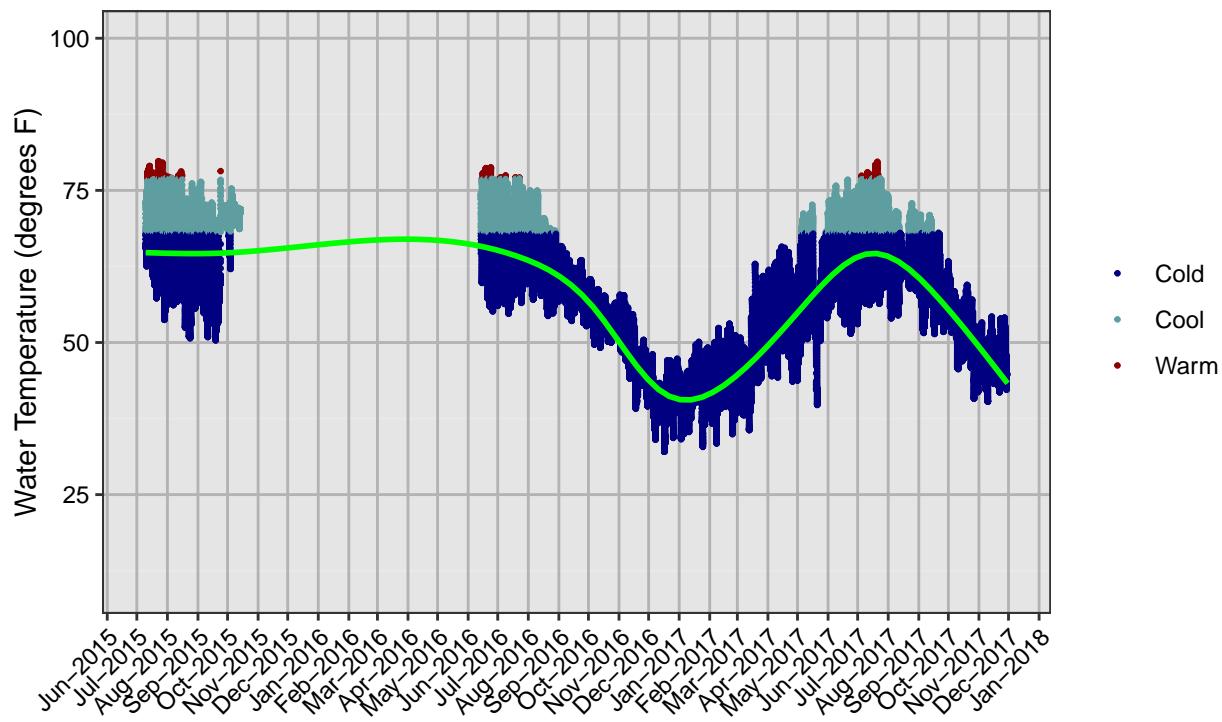


## Plum Creek - Site 9

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Plum Creek – Site 9

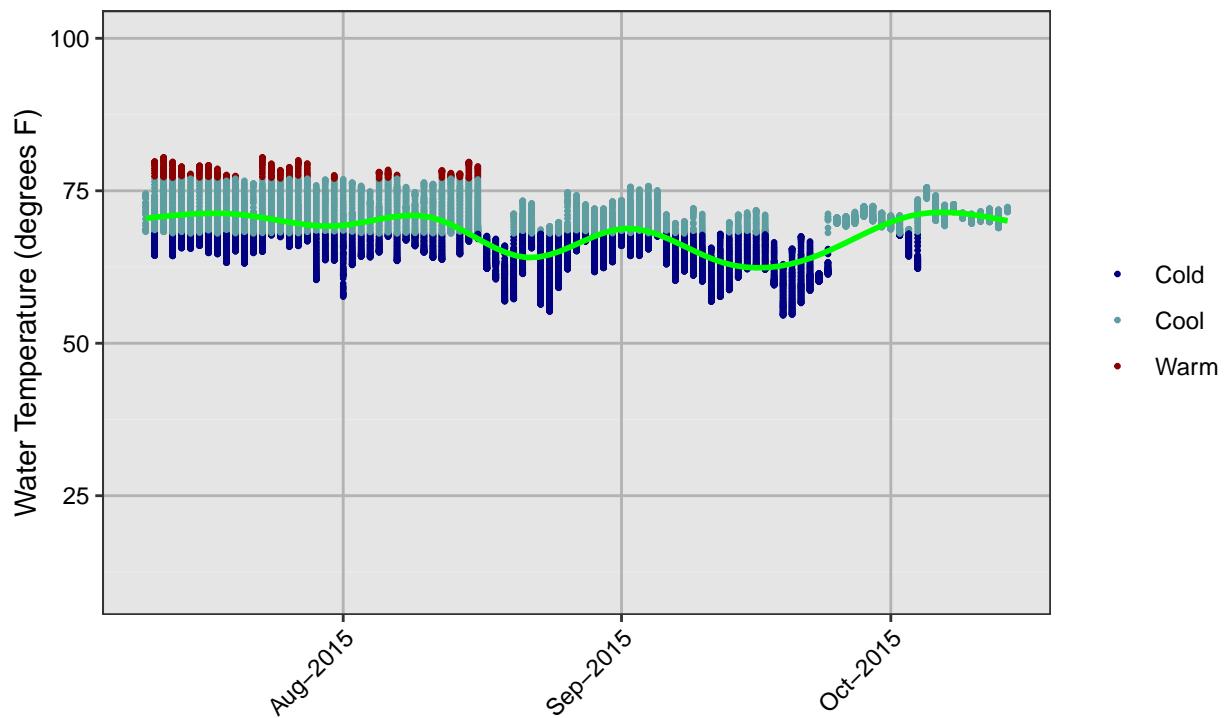


## Dand Draw - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Sand Draw – Site 1

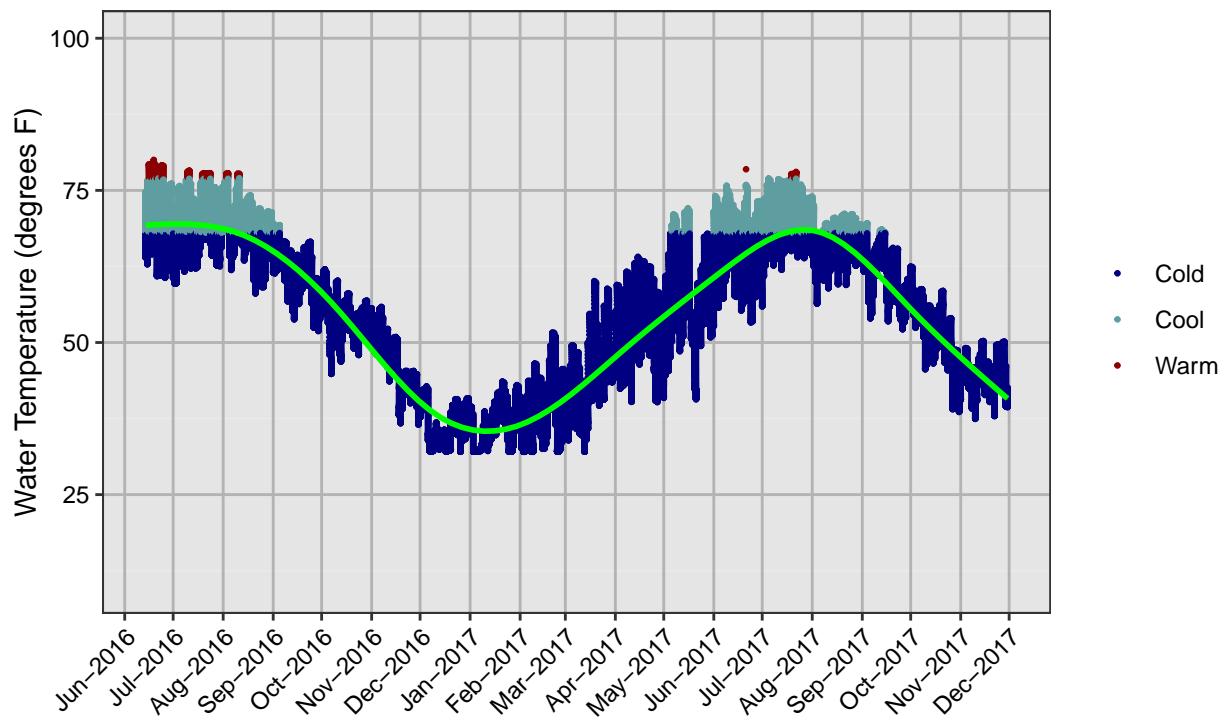


## Sand Draw - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

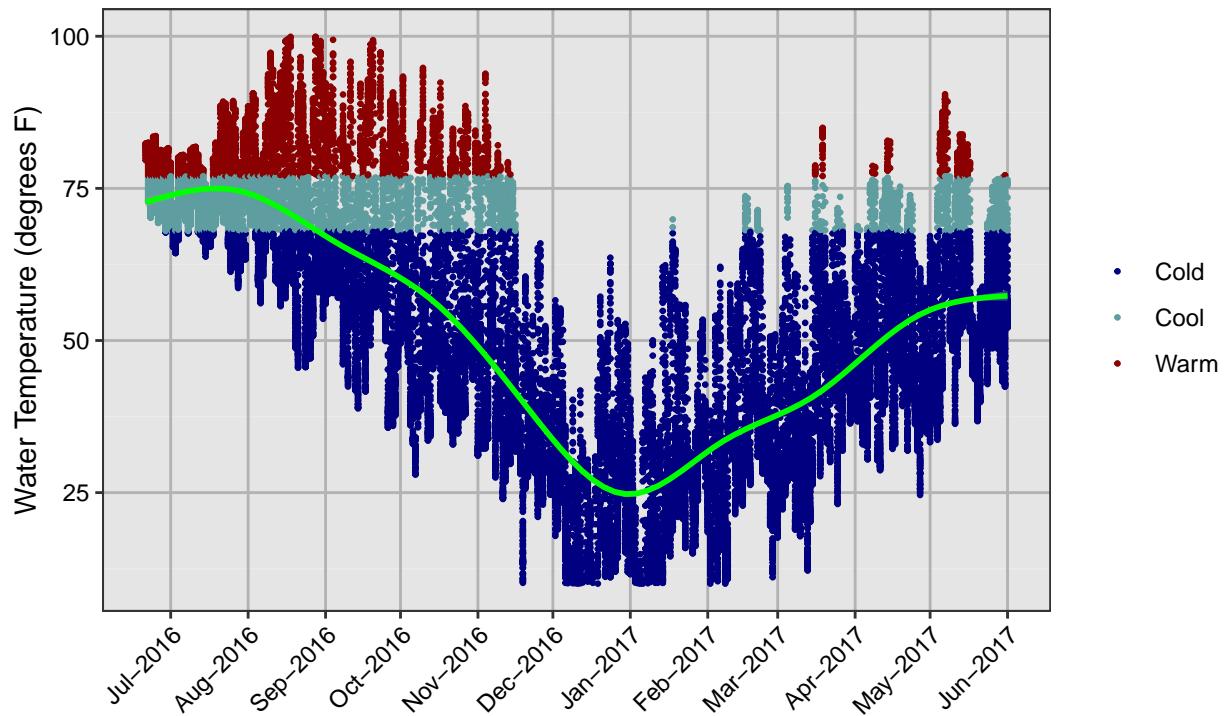
Sand Draw – Site 2



## Schlagel Creek - New WMA

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

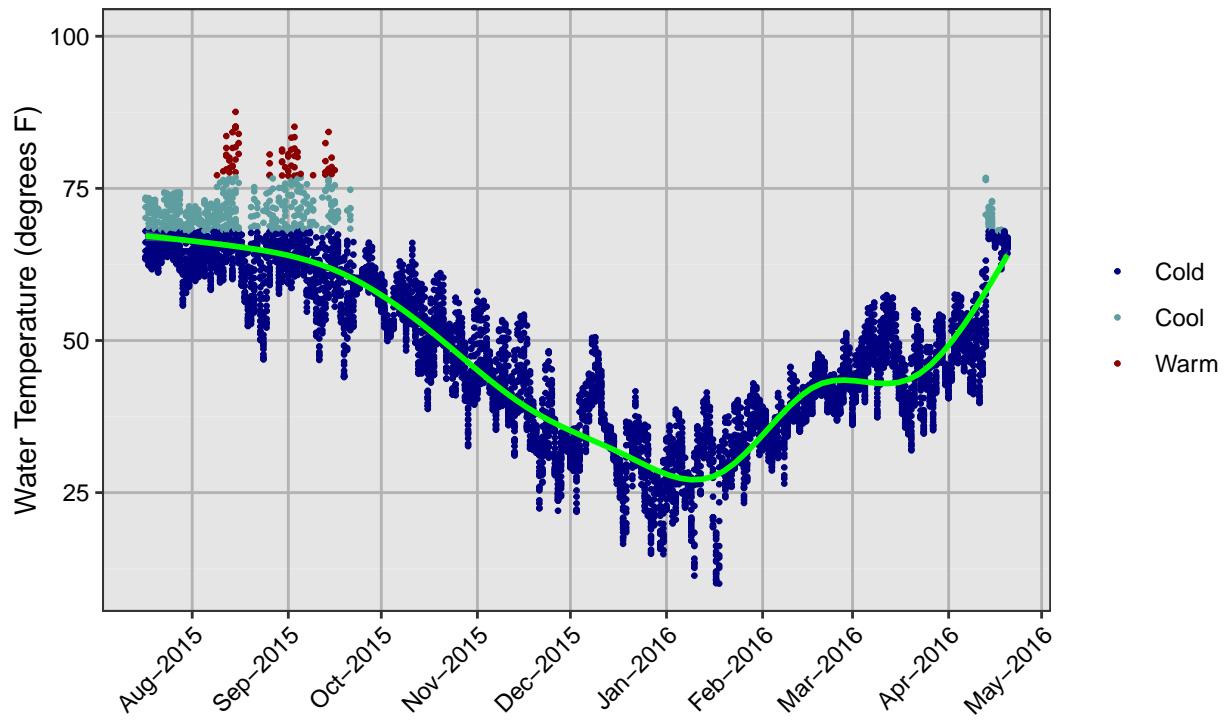
## Hourly Water Temps Schlagel Creek – New WMA



## Schlagel Creek - Swanson

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

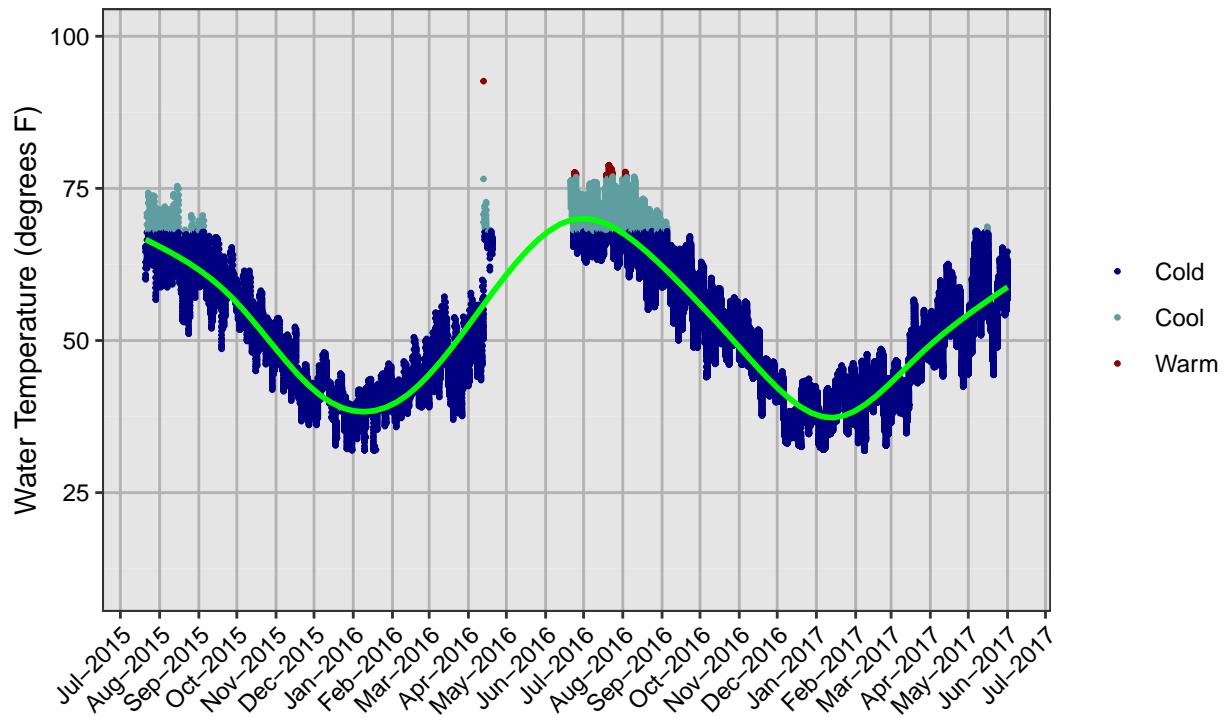
## Hourly Water Temps Schlagel Creek – Swanson



## Schlagel Creek - Vanderplow

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Schlagel Creek – Vanderplow

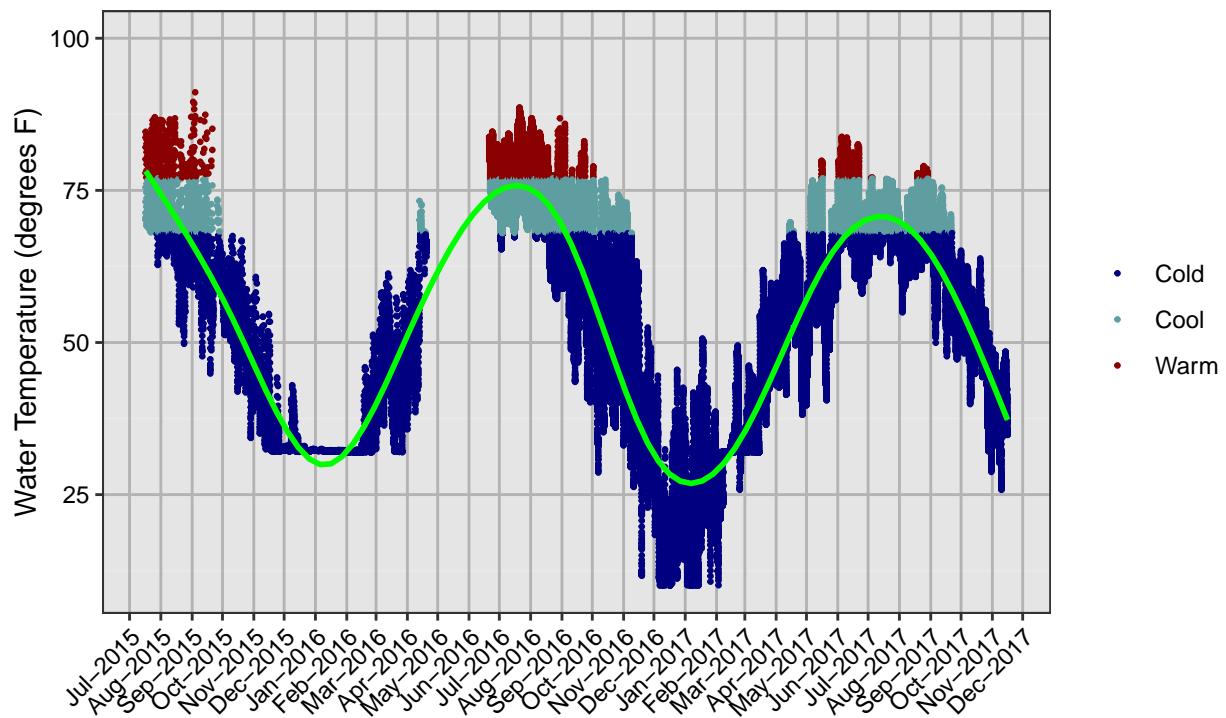


## Schlagel Creek - WMA

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Schlagel Creek – WMA

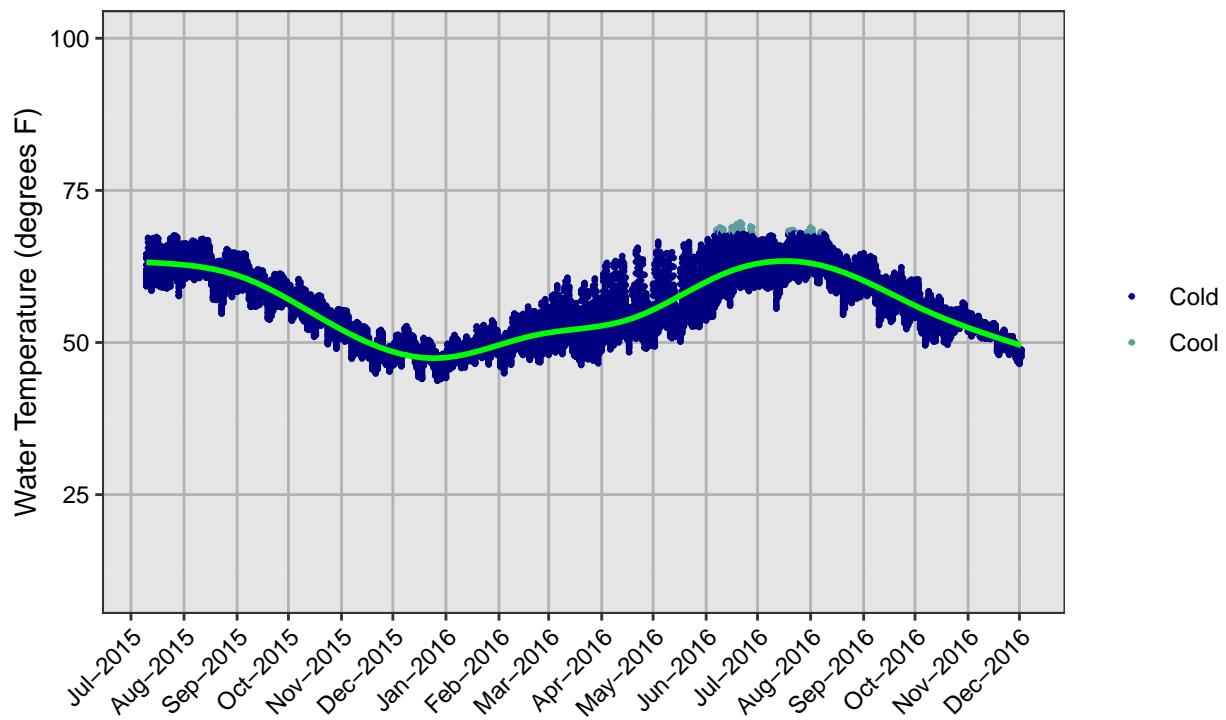


## Sheep Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Sheep Creek – Site 1

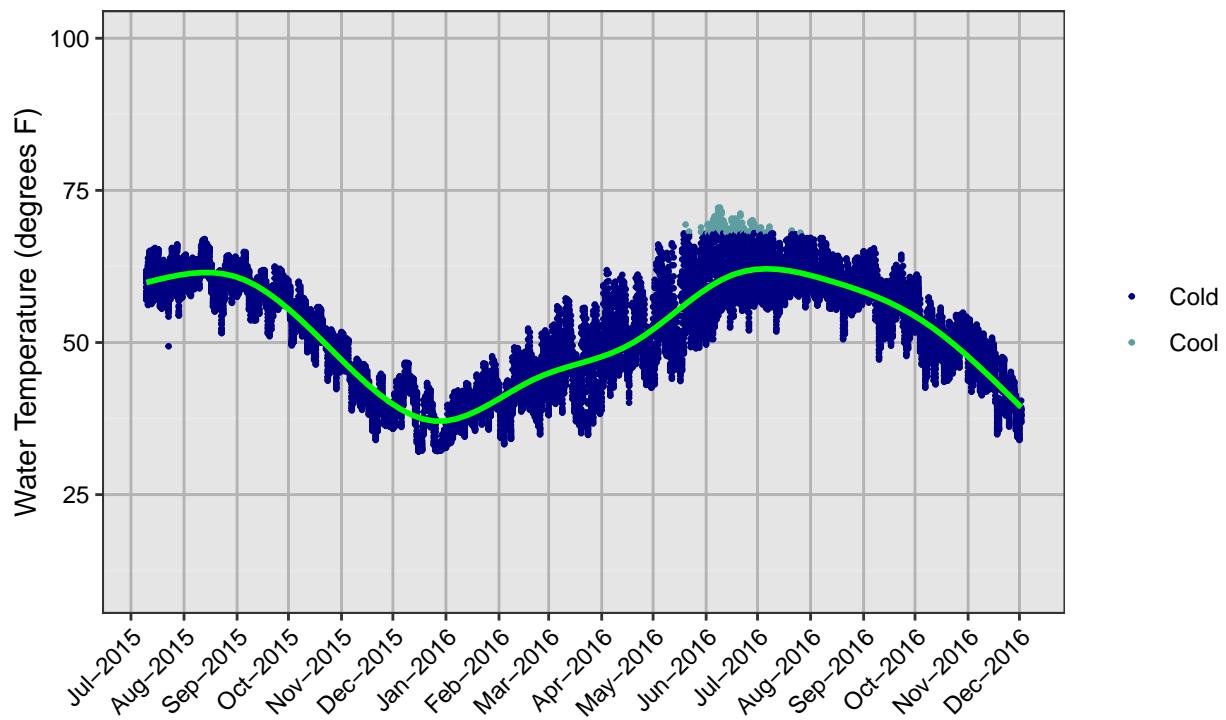


## Sheep Creek - Site 2

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

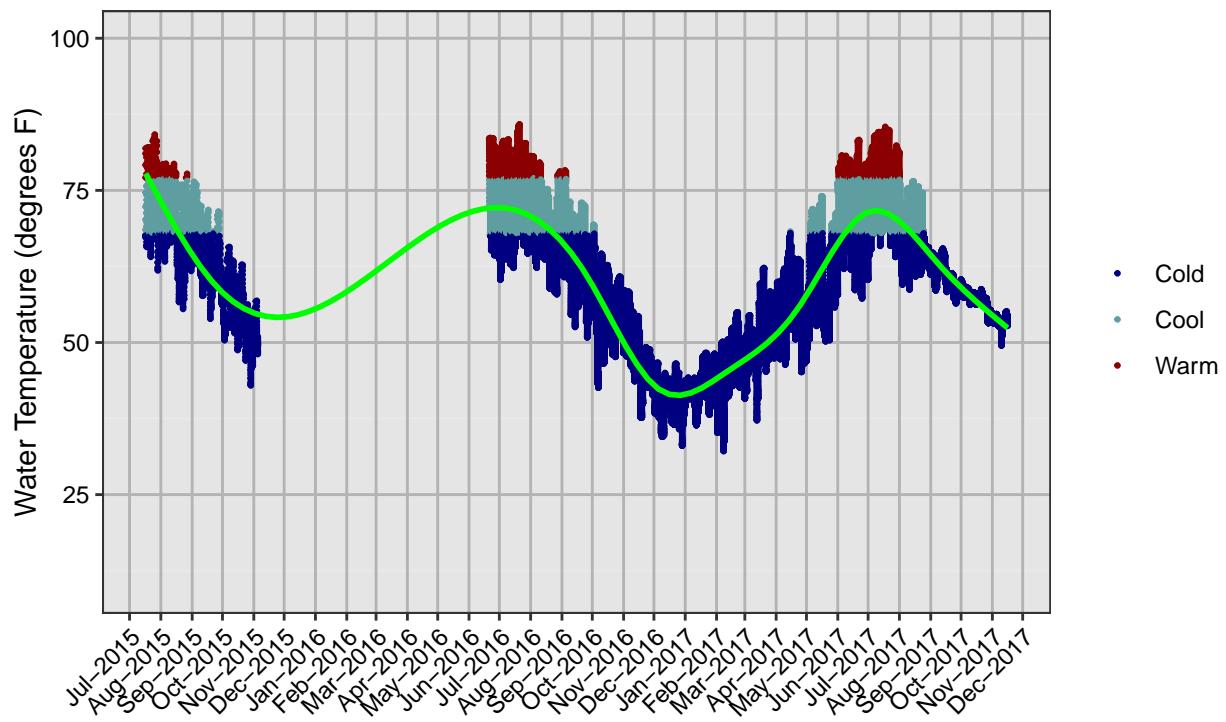
Sheep Creek – Site 2



## Snake River - Adamson

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Snake River – Adamson

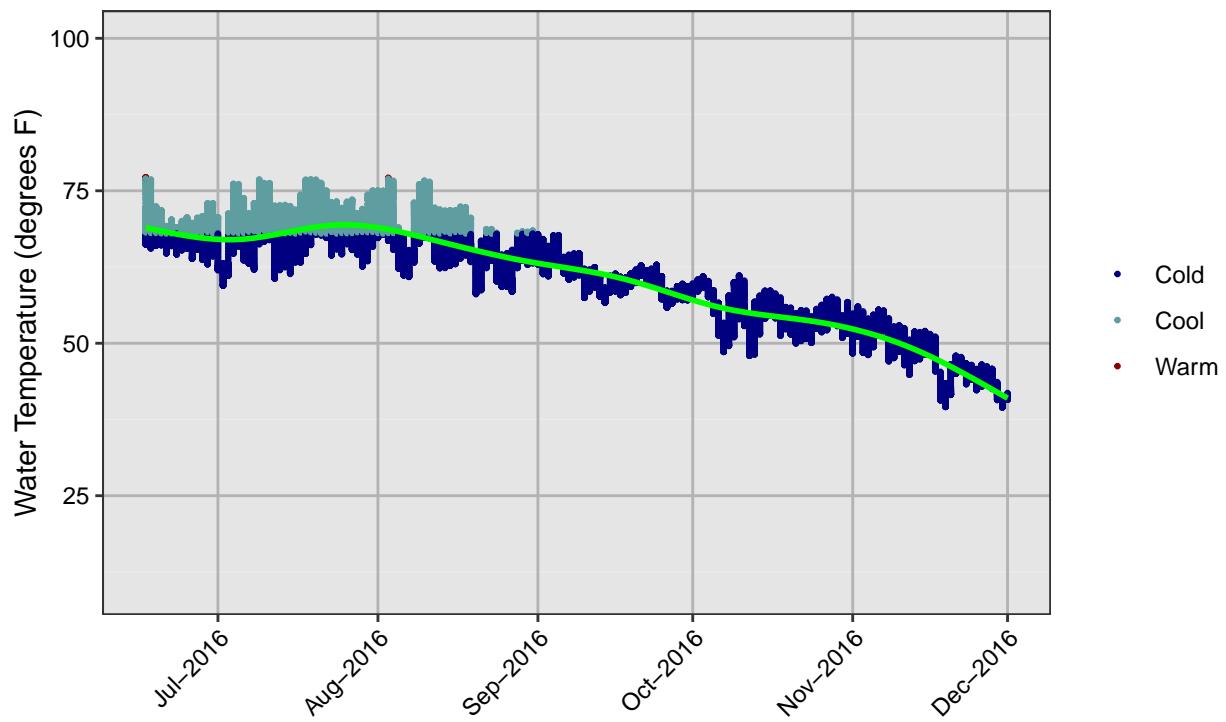


## Snake River - Highway 61

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Snake River – Hwy 61

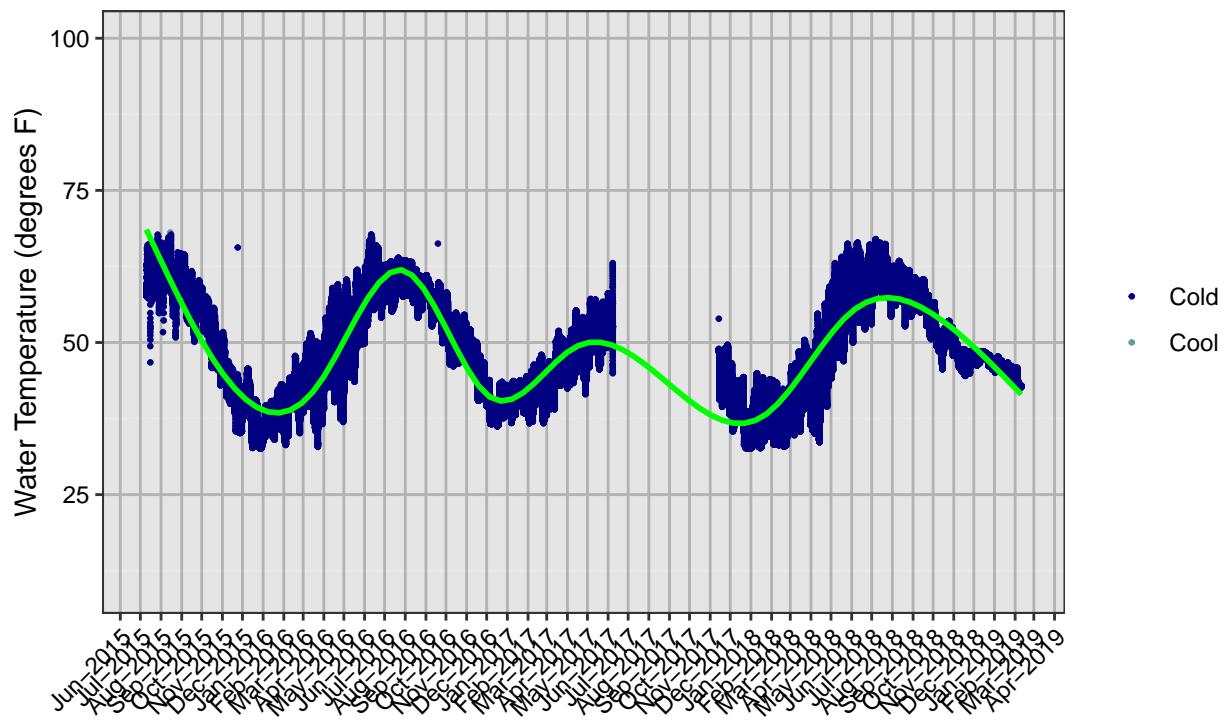


## Snake River - Upper

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

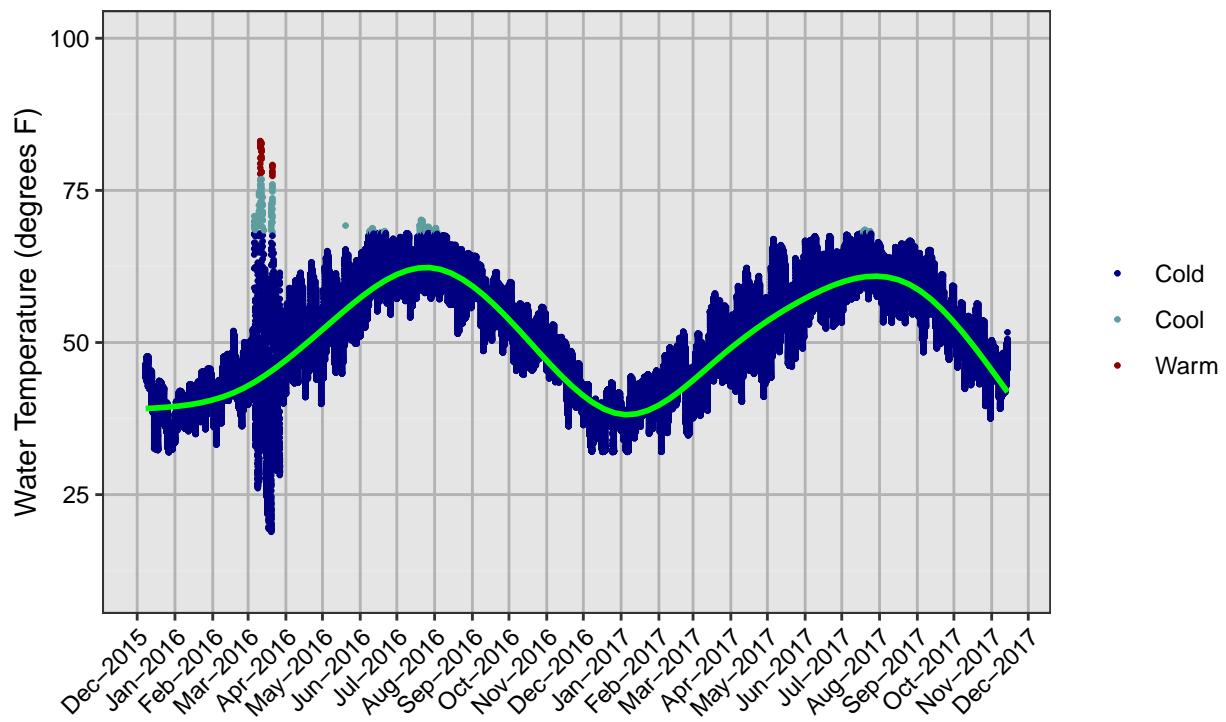
Snake River – Upper



## Soldier Creek - Middle Branch

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps Soldier Creek – Middle Branch

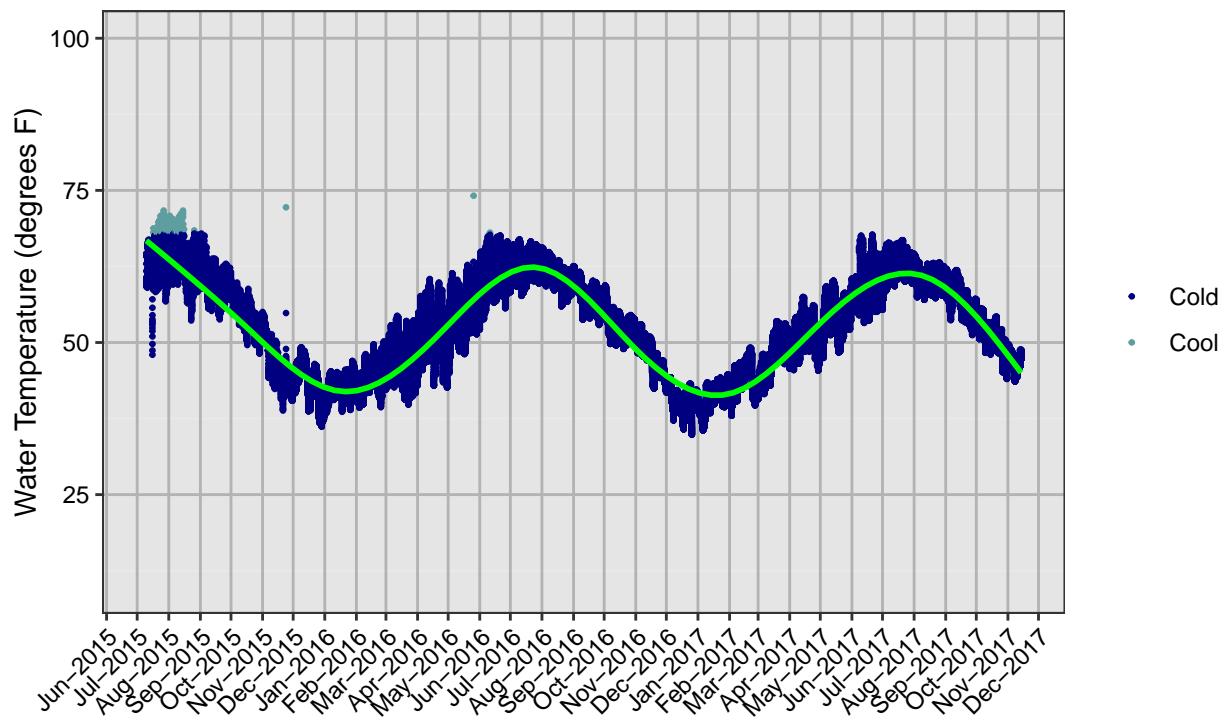


## Sowbelly Creek

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

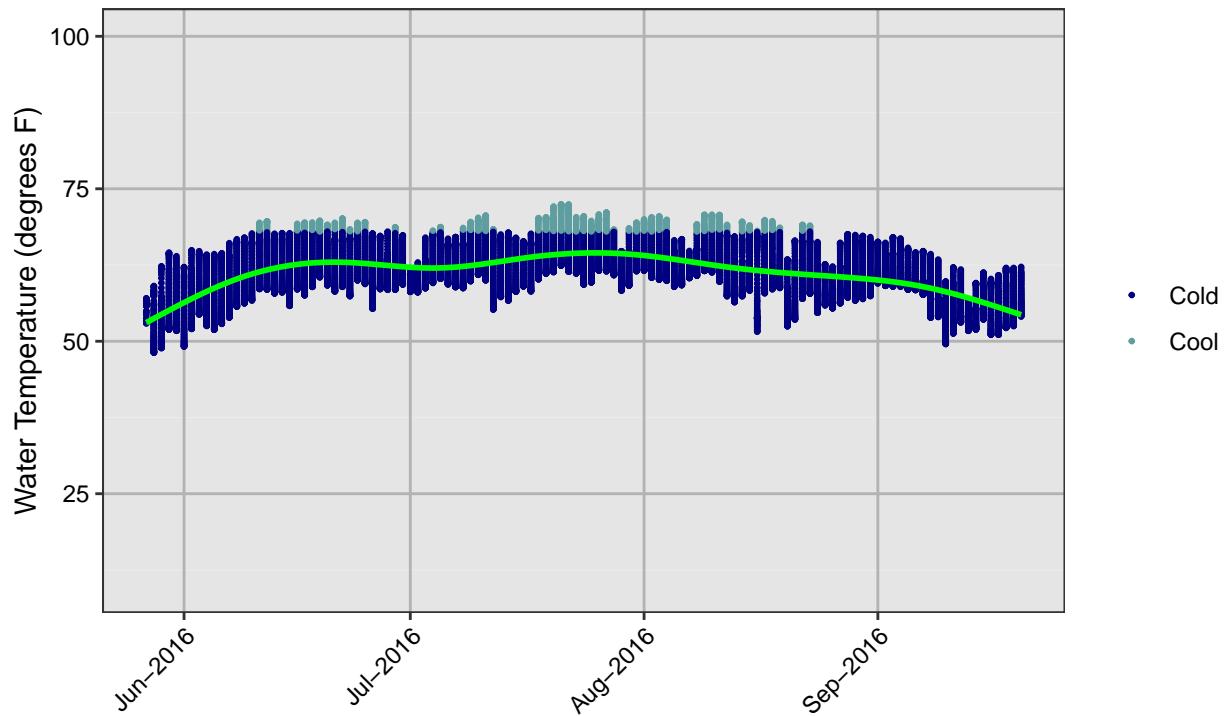
Sowbelly Creek



## West Ash Creek - USFS

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps West Ash Creek – USFS

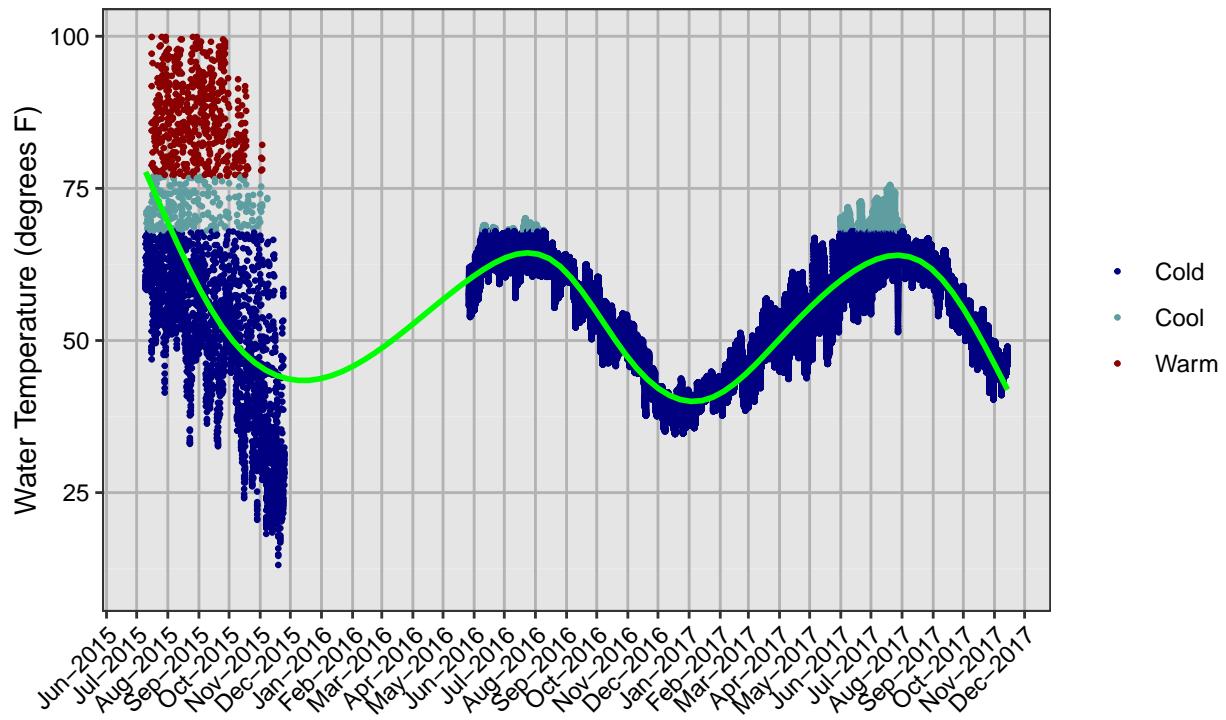


## White River - Andrews

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

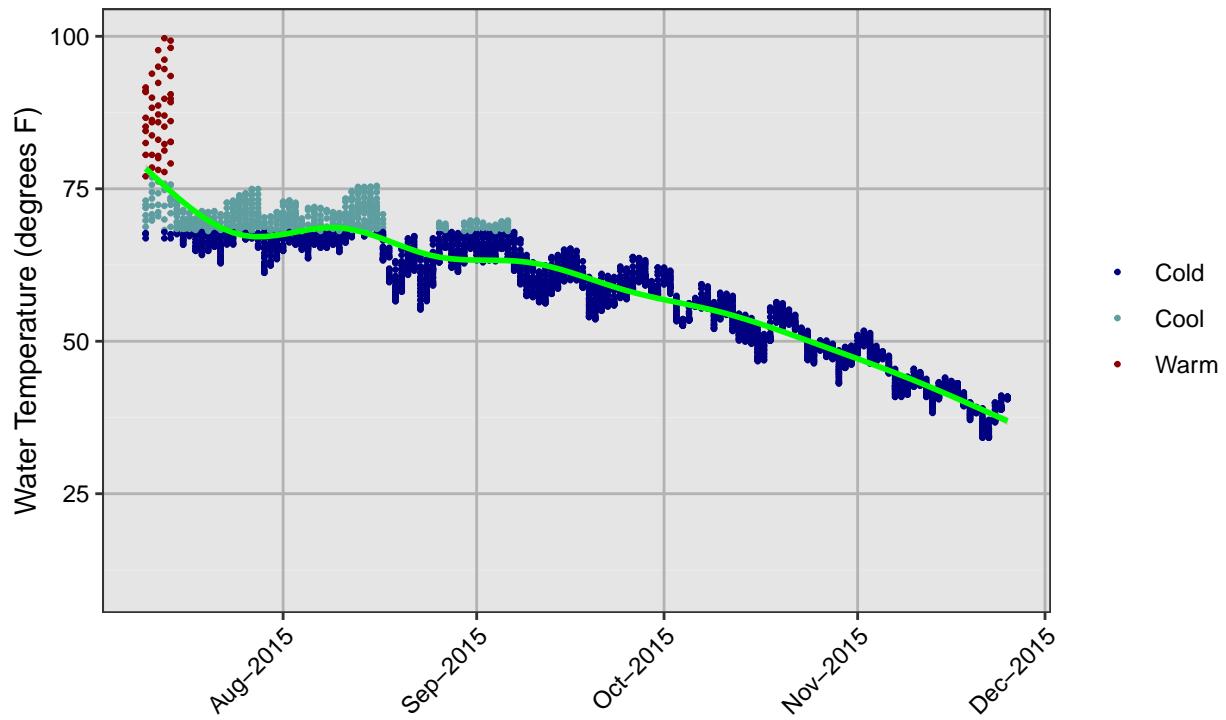
White River – Andrews



## White River - East Fort Rob

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

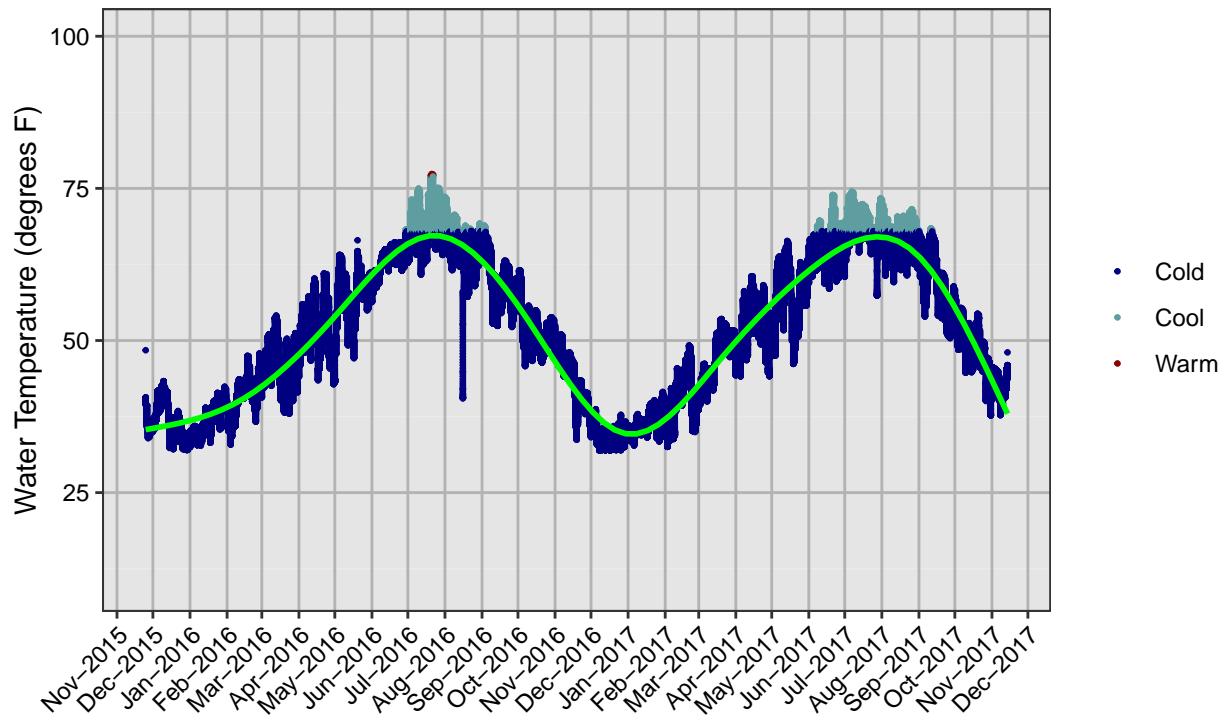
## Hourly Water Temps White River – East Fort Rob



White River = Golf Course

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps White River – Golf Course

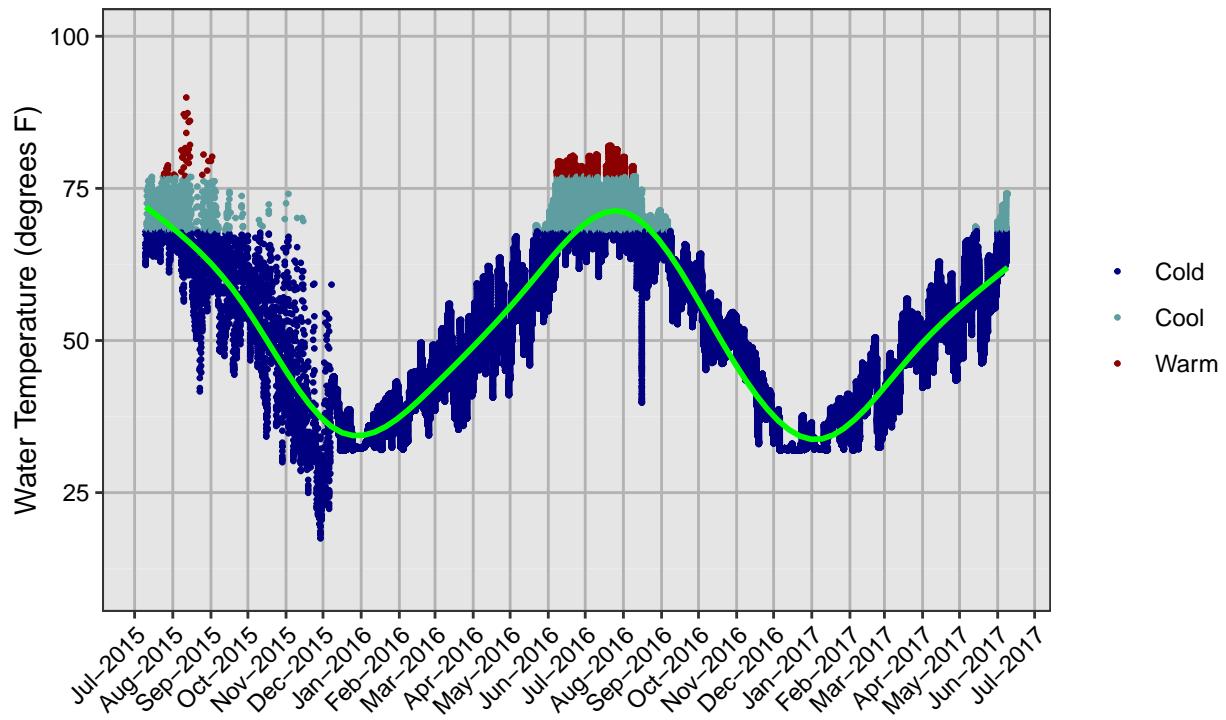


## White River - Swinging Bridge

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

### White River – Swinging Bridge

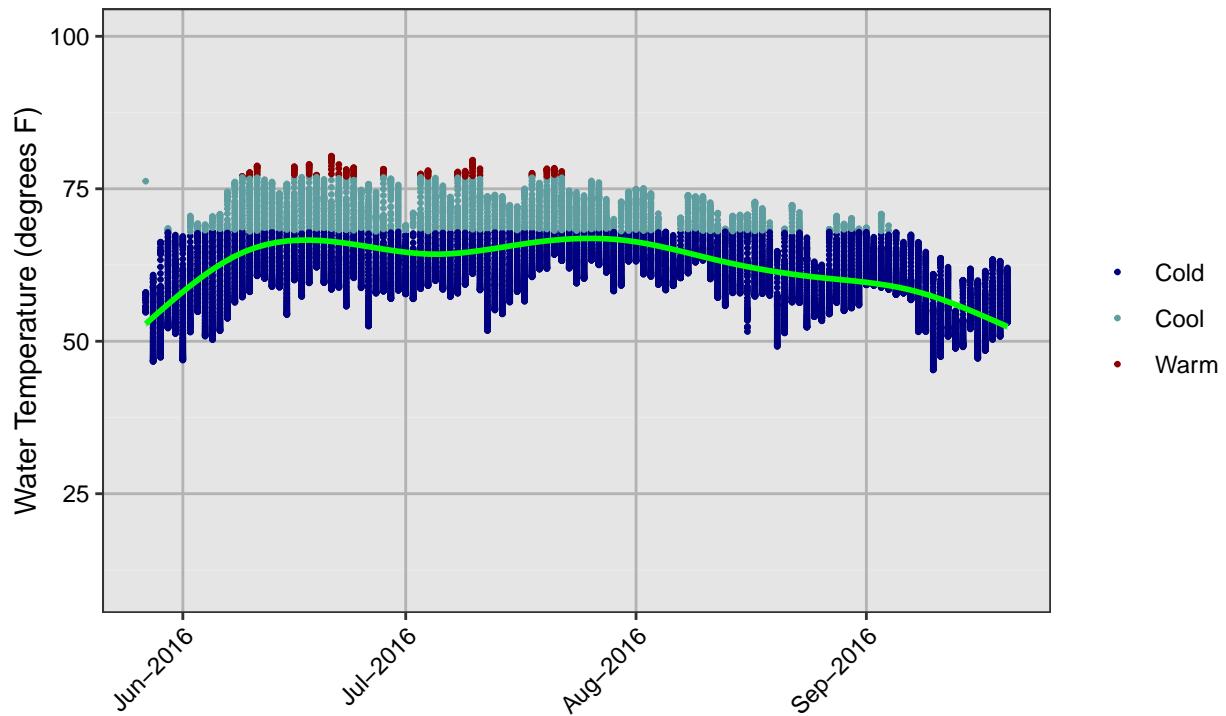


## White Clay Creek

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

White Clay Creek



## Willow Creek - Site 1

```
## `geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'
```

## Hourly Water Temps

Willow Creek – Site 1

