

# Climatic Change Implications for Hydrologic Systems in the Sierra Nevada

## Section V

### How to Use the Calculator

# The Calculator is written in Microsoft “.NetFramework”

## Available free from Microsoft:

<http://www.microsoft.com/downloads/details.aspx?familyid=a8f5654f-088e-40b2-bbdb-a83353618b38&displaylang=en>

Right click on the hyperlink above and open hyperlink. The MS .NET Framework page will appear from the Microsoft site. Follow instructions to download and install on your computer.

- **Microsoft .NET Framework 1.1 Service Pack 1**

- Quick Info
- **File Name:**  
NDP1.1sp1-KB867460-X86.exe
- **Version:**  
1.0
- **Date Published:**  
5/31/2005
- **Language:**  
English
- **Download Size:**  
10453 KB
- **Estimated Download Time:**  
25 min @ 56K
- **Change Language**
- 

- **Overview**

The primary focus of Microsoft .NET Framework 1.1 Service Pack 1 (SP1) is improved security. In addition, the service pack includes roll-ups of all reported customer issues found after the release of the Microsoft .NET Framework 1.1. Of particular note, SP1 provides better support for consuming WSDL documents, Data Execution prevention and protection from security issues such as buffer overruns.

- **Quick Description**

Download the latest .NET Framework 1.1 Service Pack from Microsoft.

- **On This Page**

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- [Similar Downloads](#)

- **System Requirements**

**Supported Operating Systems:** TabletPC; Windows 2000; Windows 2000 Advanced Server; Windows 2000 Professional Edition ; Windows 2000 Server; Windows 2000 Service Pack 2; Windows 2000 Service Pack 3; Windows 2000 Service Pack 4; Windows 98; Windows 98 Second Edition; Windows ME; Windows NT; Windows Server 2003 Service Pack 1 for Itanium-bas; Windows Server 2003, Datacenter Edition for 64-Bit; Windows Server 2003, Datacenter x64 Edition; Windows Server 2003, Enterprise Edition for Itanium; Windows Server 2003, Enterprise x64 Edition; Windows Server 2003, Standard x64 Edition; Windows XP; Windows XP 64-bit; Windows XP for Itanium-based Systems Version 2003; Windows XP Home Edition ; Windows XP Media Center Edition; Windows XP Professional 64-Bit Edition (Itanium) ; Windows XP Professional 64-Bit Edition (Itanium) 2; Windows XP Professional Edition ; Windows XP Service Pack 1; Windows XP Service Pack 2

- **Software Requirements:**

Microsoft Internet Explorer 5.01 or later ([install Internet Explorer 6.0](#)).

# Climate Change Yield Calculator Screen (above 3000 ft)

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 3000-3500

Precipitation: Base

Temperature: Base

Winter Acre/Feet

Spring Acre/Feet

Annual Acre/Feet

Snow (wc4-1) Inches

| Elevation           | Vegetation | Aspect   | Area  |
|---------------------|------------|----------|-------|
| Feet                |            |          | Acres |
| 3000-3500           | Bare       | South    | 0     |
| 3000-3500           | Forest     | South    | 0     |
| 3000-3500           | Shrub      | South    | 0     |
| 3000-3500           | Bare       | North    | 0     |
| 3000-3500           | Forest     | North    | 0     |
| 3000-3500           | Shrub      | North    | 0     |
| 3000-3500           | Bare       | E/W/Flat | 0     |
| 3000-3500           | Forest     | E/W/Flat | 0     |
| 3000-3500           | Shrub      | E/W/Flat | 0     |
| Total Area Entered: |            |          | 0     |

Base Condition

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Climatic Change Alternative

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Comparison to Base

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| Avg: | +0% | +0% | +0% | +0% |
| Wet: | +0% | +0% | +0% | +0% |
| Dry: | +0% | +0% | +0% | +0% |

# Climate Change Yield Calculator Screen (below 3000 ft)

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 2500-3000

Precipitation: Base

Temperature: Base

Winter: Acre/Feet

Spring: Acre/Feet

Annual: Acre/Feet

Snow (wc4-1): Inches

| Elevation | Vegetation | Aspect | Area  |
|-----------|------------|--------|-------|
| Feet      |            |        | Acres |
| 2500-3000 | Bare       | NA     | 0     |
| 2500-3000 | Forest     | NA     | 0     |
| 2500-3000 | Shrub      | NA     | 0     |

Below 3000 ft, Hru's are simplified to vegetation options only.

Total Area Entered: 0

|                             | Winter | Spring | Annual | Snow (wc4-1) |
|-----------------------------|--------|--------|--------|--------------|
| Base Condition              |        |        |        |              |
| Avg:                        | 0      | 0      | 0      | 0.0          |
| Wet:                        | 0      | 0      | 0      | 0.0          |
| Dry:                        | 0      | 0      | 0      | 0.0          |
| Climatic Change Alternative |        |        |        |              |
| Avg:                        | 0      | 0      | 0      | 0.0          |
| Wet:                        | 0      | 0      | 0      | 0.0          |
| Dry:                        | 0      | 0      | 0      | 0.0          |
| Comparison to Base          |        |        |        |              |
| Avg:                        | +0%    | +0%    | +0%    | +0%          |
| Wet:                        | +0%    | +0%    | +0%    | +0%          |
| Dry:                        | +0%    | +0%    | +0%    | +0%          |

# Main Pull Down Menu

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

- New
- Open
- Save
- Save As...
- Exit

Watershed Region: North

Elevation Range: 3000-3500

Precipitation: Base

Temperature: Base

Winter Spring Annual Snow (wc4-1)

Acre/Feet Acre/Feet Acre/Feet Inches

Elevation: Feet

| Elevation | Vegetation | Watershed | Area | Unit      |
|-----------|------------|-----------|------|-----------|
| 3000-3500 | Bare       | South     | 0    | Acre/Feet |
| 3000-3500 | Forest     | South     | 0    | Acre/Feet |
| 3000-3500 | Shrub      | South     | 0    | Acre/Feet |
| 3000-3500 | Bare       | North     | 0    | Acre/Feet |
| 3000-3500 | Forest     | North     | 0    | Acre/Feet |
| 3000-3500 | Shrub      | North     | 0    | Acre/Feet |
| 3000-3500 | Bare       | E/W/Flat  | 0    | Acre/Feet |
| 3000-3500 | Forest     | E/W/Flat  | 0    | Acre/Feet |
| 3000-3500 | Shrub      | E/W/Flat  | 0    | Acre/Feet |

Total Area Entered: 0

Base Condition

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Climatic Change Alternative

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Comparison to Base

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | +0%    | +0%    | +0%    | +0%          |
| Wet: | +0%    | +0%    | +0%    | +0%          |
| Dry: | +0%    | +0%    | +0%    | +0%          |

The File Menu will:

- New** = clear the calculator
- Open** = open existing XML files
- Save** = save XML
- Save as** = XML with new name
- Exit**

First Select Region on WS Region pulldown menu (Click Sierra Nevada Map for Regions)

**Sierra Nevada West Slope Watersheds Climatic Change Alternatives**

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: South  
Central  
North

Precipitation: Base

Temperature: Base

Winter Acre/Feet Spring Acre/Feet Annual Acre/Feet Snow (wc4-1) Inches

| Elevation           | Vegetation | Aspect   | Area  |
|---------------------|------------|----------|-------|
| Feet                |            |          | Acres |
| 3000-3500           | Bare       | South    | 0     |
| 3000-3500           | Forest     | South    | 0     |
| 3000-3500           | Shrub      | South    | 0     |
| 3000-3500           | Bare       | North    | 0     |
| 3000-3500           | Forest     | North    | 0     |
| 3000-3500           | Shrub      | North    | 0     |
| 3000-3500           | Bare       | E/W/Flat | 0     |
| 3000-3500           | Forest     | E/W/Flat | 0     |
| 3000-3500           | Shrub      | E/W/Flat | 0     |
| Total Area Entered: |            |          | 0     |

Base Condition

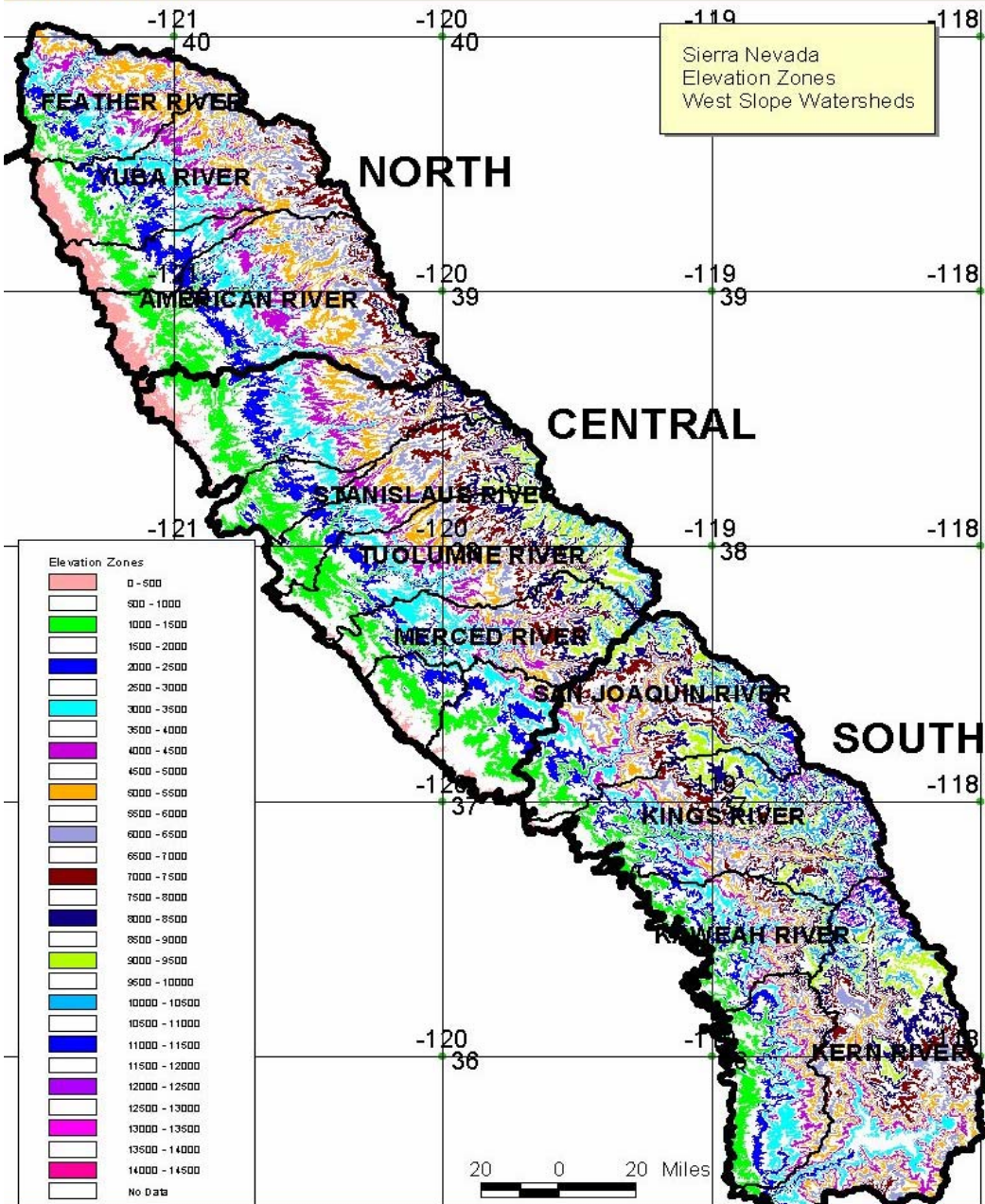
|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Climatic Change Alternative

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Comparison to Base

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| Avg: | +0% | +0% | +0% | +0% |
| Wet: | +0% | +0% | +0% | +0% |
| Dry: | +0% | +0% | +0% | +0% |



Sierra Nevada  
Elevation Zones  
West Slope Watersheds

The map shows which watersheds are included in each region.

Elevation Range menu offers 25 separate bands from 0 to 12,500 feet.

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 3000-3500

8500-9000  
9000-9500  
9500-10000  
10000-10500  
10500-11000  
11000-11500  
11500-12000  
12000-12500

Precipitation: Base

Temperature: Base

Winter Spring Annual Snow (wc4-1)

Acre/Feet Acre/Feet Acre/Feet Inches

Elevation Vegetation Area

Feet

|                     |        |          |   |
|---------------------|--------|----------|---|
| 3000-3500           | Bare   | South    | 0 |
| 3000-3500           | Forest | South    | 0 |
| 3000-3500           | Shrub  | South    | 0 |
| 3000-3500           | Bare   | North    | 0 |
| 3000-3500           | Forest | North    | 0 |
| 3000-3500           | Shrub  | North    | 0 |
| 3000-3500           | Bare   | E/W/Flat | 0 |
| 3000-3500           | Forest | E/W/Flat | 0 |
| 3000-3500           | Shrub  | E/W/Flat | 0 |
| Total Area Entered: |        |          | 0 |

Base Condition

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Climatic Change Alternative

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Comparison to Base

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| Avg: | +0% | +0% | +0% | +0% |
| Wet: | +0% | +0% | +0% | +0% |
| Dry: | +0% | +0% | +0% | +0% |

Elevation can be entered in feet or in meters.

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 914-1067

Precipitation: Base

Temperature: Base

Winter: Acre/Feet

Spring: Acre/Feet

Annual: Acre/Feet

Snow (wc4-1): Inches

| Elevation           | Vegetation | Aspect   | Area  |
|---------------------|------------|----------|-------|
| Meters              |            |          | Acres |
| 914-1067            | Bare       | South    | 0     |
| 914-1067            | Forest     | South    | 0     |
| 914-1067            | Shrub      | South    | 0     |
| 914-1067            | Bare       | North    | 0     |
| 914-1067            | Forest     | North    | 0     |
| 914-1067            | Shrub      | North    | 0     |
| 914-1067            | Bare       | E/W/Flat | 0     |
| 914-1067            | Forest     | E/W/Flat | 0     |
| 914-1067            | Shrub      | E/W/Flat | 0     |
| Total Area Entered: |            |          | 0     |

Base Condition

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Climatic Change Alternative

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Comparison to Base

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| Avg: | +0% | +0% | +0% | +0% |
| Wet: | +0% | +0% | +0% | +0% |
| Dry: | +0% | +0% | +0% | +0% |

Area can be entered in acres, square miles, or square kilometers.

Sierra Nevada West Slope Watersheds Climatic Change Alternatives

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 3000-3500

Precipitation: Base

Temperature: Base

Winter: Acre/Feet

Spring: Acre/Feet

Annual: Acre/Feet

Snow (wc4-1): Inches

| Elevation           | Vegetation | Aspect   | Area      |
|---------------------|------------|----------|-----------|
| Feet                |            |          | Sq. Km.   |
| 3000-3500           | Bare       | South    | Acre/Feet |
| 3000-3500           | Forest     | South    | Sq. Mi.   |
| 3000-3500           | Shrub      | South    | Sq. Km.   |
| 3000-3500           | Bare       | North    | 0.00      |
| 3000-3500           | Forest     | North    | 0.00      |
| 3000-3500           | Shrub      | North    | 0.00      |
| 3000-3500           | Bare       | E/W/Flat | 0.00      |
| 3000-3500           | Forest     | E/W/Flat | 0.00      |
| 3000-3500           | Shrub      | E/W/Flat | 0.00      |
| Total Area Entered: |            |          | 0.00      |

Base Condition

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Climatic Change Alternative

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Comparison to Base

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | +0%    | +0%    | +0%    | +0%          |
| Wet: | +0%    | +0%    | +0%    | +0%          |
| Dry: | +0%    | +0%    | +0%    | +0%          |

Watershed Yield is measured in Acre-Feet, Inches of runoff, or cubic meters.

**Sierra Nevada West Slope Watersheds Climatic Change Alternatives**

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 4000-4500

Precipitation: Base

Temperature: Base

Winter Spring Annual Snow (wc4-1)

Acre/Feet Acre/Feet Acre/Feet Inches

| Elevation           | Vegetation | Aspect   | Area |
|---------------------|------------|----------|------|
| 4000-4500           | Bare       | South    | 0    |
| 4000-4500           | Forest     | South    | 0    |
| 4000-4500           | Shrub      | South    | 0    |
| 4000-4500           | Bare       | North    | 0    |
| 4000-4500           | Forest     | North    | 0    |
| 4000-4500           | Shrub      | North    | 0    |
| 4000-4500           | Bare       | E/W/Flat | 0    |
| 4000-4500           | Forest     | E/W/Flat | 0    |
| 4000-4500           | Shrub      | E/W/Flat | 0    |
| Total Area Entered: |            |          | 0    |

Base Condition

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Climatic Change Alternative

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Comparison to Base

|      | Winter | Spring | Annual | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | +0%    | +0%    | +0%    | +0%          |
| Wet: | +0%    | +0%    | +0%    | +0%          |
| Dry: | +0%    | +0%    | +0%    | +0%          |

# Climate Change Scenarios: French Meadows change selecting +4 degree C

**Sierra Nevada West Slope Watersheds Climatic Change Alternatives**

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 9000-9500

Precipitation: Base

Temperature: Base +4°C

Winter Acre/Feet

Spring Acre/Feet

Snow (wc4-1) Inches

| Elevation           | Vegetation | Aspect   | Area   |
|---------------------|------------|----------|--------|
| Feet                |            |          | Acres  |
| 9000-9500           | Bare       | South    | 0      |
| 9000-9500           | Forest     | South    | 0      |
| 9000-9500           | Shrub      | South    | 0      |
| 9000-9500           | Bare       | North    | 0      |
| 9000-9500           | Forest     | North    | 0      |
| 9000-9500           | Shrub      | North    | 0      |
| 9000-9500           | Bare       | E/W/Flat | 0      |
| 9000-9500           | Forest     | E/W/Flat | 0      |
| 9000-9500           | Shrub      | E/W/Flat | 0      |
| Total Area Entered: |            |          | 28,631 |

|      | Winter | Spring  | Snow (wc4-1) |
|------|--------|---------|--------------|
| Avg: | 11,165 | 59,437  | 70,602       |
| Wet: | 11,809 | 123,199 | 135,007      |
| Dry: | 19,302 | 30,879  | 50,181       |

Climatic Change Alternative

|      | Winter | Spring | Snow (wc4-1) |
|------|--------|--------|--------------|
| Avg: | 37,920 | 19,012 | 56,932       |
| Wet: | 54,157 | 57,604 | 111,761      |
| Dry: | 38,076 | 7,831  | 45,908       |

Comparison to Base

|      | Winter | Spring | Snow (wc4-1) |
|------|--------|--------|--------------|
| Avg: | +240%  | -68%   | -19%         |
| Wet: | +359%  | -53%   | -17%         |
| Dry: | +97%   | -75%   | -9%          |

D:\AnEPA\Calculator\FRENCH.xml

Precipitation change is entered from +25% to -25% in 5% increments

**Sierra Nevada West Slope Watersheds Climatic Change Alternatives**

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 4000-4500

Elevation: Feet  
 Vegetation: Bare, Forest, Shrub  
 Aspect: South, North, E/W/Flat  
 Area: Acres

Precipitation: Base -25%  
 Temperature: Base -25%  
 Winter: Acre/Feet  
 Spring: Acre/Feet  
 Summer: Bas  
 Snow (wc4-1): Inches

|      | Winter | Spring | Summer | Snow (wc4-1) |
|------|--------|--------|--------|--------------|
| Avg: | 0      | 0      | 0      | 0.0          |
| Wet: | 0      | 0      | 0      | 0.0          |
| Dry: | 0      | 0      | 0      | 0.0          |

Climatic Change Alternative

|      |   |   |   |     |
|------|---|---|---|-----|
| Avg: | 0 | 0 | 0 | 0.0 |
| Wet: | 0 | 0 | 0 | 0.0 |
| Dry: | 0 | 0 | 0 | 0.0 |

Comparison to Base

|      |     |     |     |     |
|------|-----|-----|-----|-----|
| Avg: | +0% | +0% | +0% | +0% |
| Wet: | +0% | +0% | +0% | +0% |
| Dry: | +0% | +0% | +0% | +0% |

Total Area Entered: 0

# Example Scenario for French Meadows with +4 degree C and -25% precipitation

**Sierra Nevada West Slope Watersheds Climatic Change Alternatives**

File

Sierra Nevada Map

Watershed Region: North

Elevation Range: 8500-9000

Precipitation: Base -25%

Temperature: Base +4°C

Winter Spring Annual Snow (wc4-1)

Acre/Feet Acre/Feet Acre/Feet Inches

| Elevation           | Vegetation | Aspect   | Area   |
|---------------------|------------|----------|--------|
| Feet                |            |          | Acres  |
| 8500-9000           | Bare       | South    | 8      |
| 8500-9000           | Forest     | South    | 41     |
| 8500-9000           | Shrub      | South    | 111    |
| 8500-9000           | Bare       | North    | 1      |
| 8500-9000           | Forest     | North    | 1      |
| 8500-9000           | Shrub      | North    | 1      |
| 8500-9000           | Bare       | E/W/Flat | 3      |
| 8500-9000           | Forest     | E/W/Flat | 4      |
| 8500-9000           | Shrub      | E/W/Flat | 16     |
| Total Area Entered: |            |          | 28,631 |

|                             | Winter | Spring  | Annual  | Snow (wc4-1) |
|-----------------------------|--------|---------|---------|--------------|
| Base Condition              |        |         |         |              |
| Avg:                        | 11,165 | 59,437  | 70,602  | 27.3         |
| Wet:                        | 11,809 | 123,199 | 135,007 | 43.6         |
| Dry:                        | 19,302 | 30,879  | 50,181  | 14.3         |
| Climatic Change Alternative |        |         |         |              |
| Avg:                        | 19,930 | 10,411  | 30,341  | 1.3          |
| Wet:                        | 29,145 | 34,386  | 63,531  | 4.1          |
| Dry:                        | 19,780 | 4,198   | 23,978  | 0.1          |
| Comparison to Base          |        |         |         |              |
| Avg:                        | +79%   | -82%    | -57%    | -95%         |
| Wet:                        | +147%  | -72%    | -53%    | -91%         |
| Dry:                        | +2%    | -86%    | -52%    | -100%        |

D:\AnEPA\Calculator\FRENCH.xml