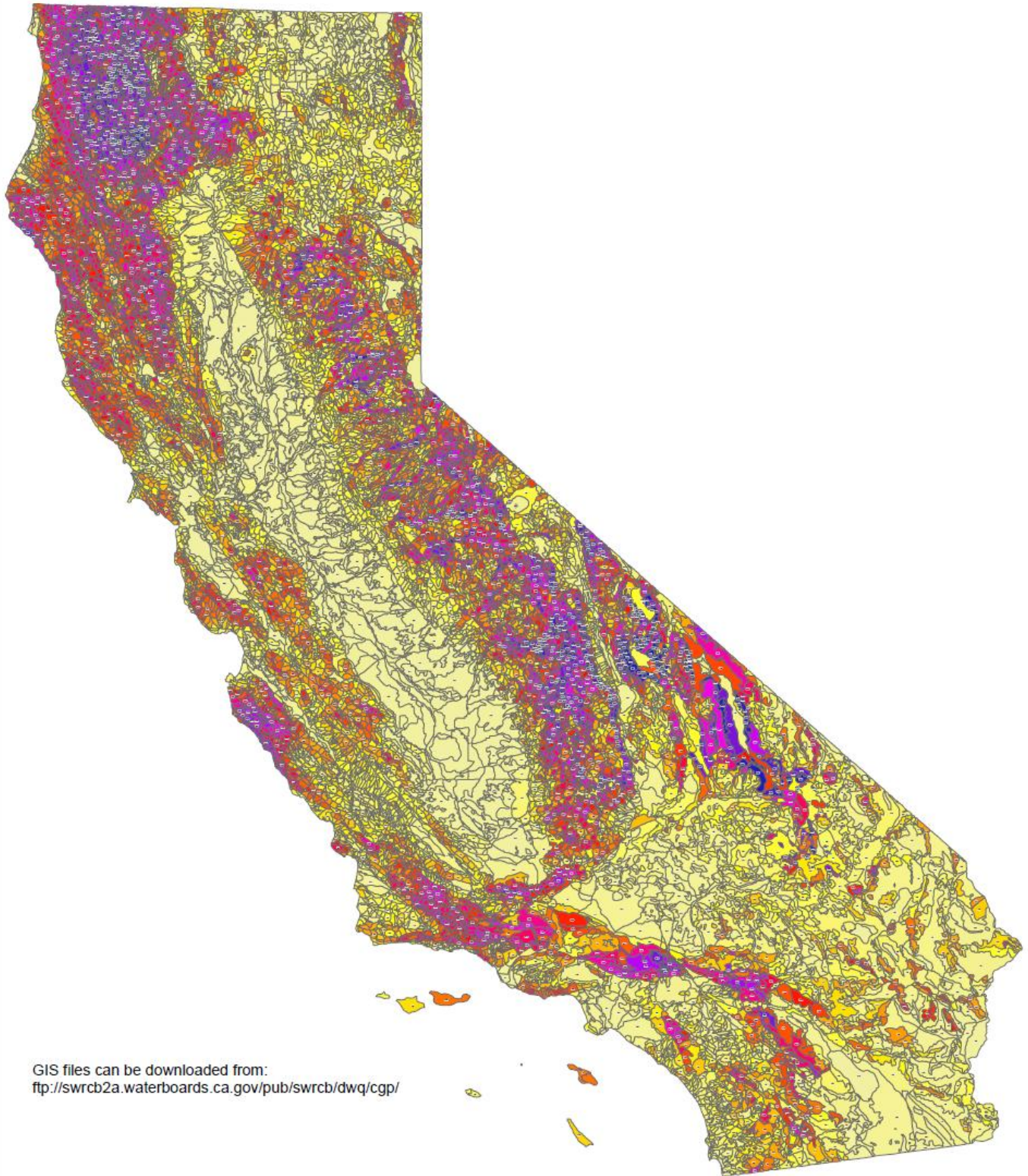


# RUSLE LS Values



GIS files can be downloaded from:  
<ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/>



0 25 50 100 Miles

Data Source: *State Water Resources Control Board*

## RUSLE LS Factor Watershed Map Methodology

### **Objective:**

To provide guidance for the Revised Universal Soil Loss Equation (RUSLE) LS Factor with regards to the Construction General Permit. The LS Factor represents the effect of topography on erosion. Using the methodology, a discharger will be able to identify the appropriate areally-weighted LS Factor value for a construction project based on site location.

### **Background:**

The LS factor represents the effect of topography on erosion (i.e. soil loss) which combines the effects of a hillslope length factor, L, and a hillslope-gradient factor, S. In general, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. For more information on the Construction General Permit and references for the RUSLE, please visit:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/construction.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml)

### **Data and Method:**

A model for the LS Factor was created using ArcGIS ModelBuilder based on the methodology in Engel et al (2005). A 30 m digital elevation model (DEM) was used in conjunction with the ArcHydro extension to derive the model inputs. The resulting raster file representing the LS Factors for the state was then converted into a vector file.

### **Contact:**

Please contact the Storm Water help desk with any questions or comments:

- Phone: 916-341-5537
- Email: [stormwater@waterboards.ca.gov](mailto:stormwater@waterboards.ca.gov)

Geographic Information System (GIS) Data can be accessed at:

<ftp://swrcb2a.waterboards.ca.gov/pub/swrcb/dwq/cgp/Risk/>

### **Reference:**

Kyoung Jae Lim, Myung Sagong, First Bernard Engel, Zhenxu Tang, Joongdae Choi, and Ki-Sung Kim., 2005. GIS-based sediment assessment tool. *Catena - ELSEVIER*, 64 (2005), 61-80.

<https://engineering.purdue.edu/ABE/People/Papers/bernard.a.engel.1/gis.pdf>