

Supplement 7.8. R commands to calculate the local estimate of variance

*N. Scott Urquhart, Retired, Department of Statistics, Colorado State University, Fort Collins,
Colorado, USA.*

This supplement provides R code used for calculating the local estimate of variance as presented in Chapter 7 examples. See Supplement 7.1 for additional details.

```

library(psurvey.design)
library(psurvey.analysis)

data <- read.csv("D:/SAS/ODFW2008/OrPlan_98_08_Reach_Reduced.UTM.csv",
header=T)

dim(data)
names(data)
attach(data)

### notes:
#
# on regions:
#
# 1-NC: Lines 1-381 are in Region 1 n=381 (NC = North Coast)
# 2-MC: Lines 382-731 are in Region 2 n=350 (MC =Middle Coast)
# 3-MS: Lines 732-1067 are in Region 3 n=336
# 4-UMP: lines 1068-1408 are in Region 4 n=341 (UMP= Umpqua Basin)
# 5-SC: Lines 1409-1823 are in Region 5 n=415 (SC = South Coast)

region.id<-c(levels(data[,2])[1:5]),"ALL")
varloc<-c(12:44)
locloc<-array(c(1,382,732,1068,1409,1,381,731,1067,1408,1823,1823),dim=c(6,2))
local.var.est<-data.frame(array(0,c(198,5)))
dimnames(local.var.est)<-list(1:198, c("Response","Region","Count","Local
Variance","SRS Variance"))
for (i in 1:33) {
  for(j in 1:6){
temp<-total.est(data[locloc[j,1]:locloc[j,2],varloc[i]],rep(1,(locloc[j,2]-lo
cloc[j,1])+1)),data[locloc[j,1]:locloc[j,2],45],data[locloc[j,1]:locloc[j,2],4
6])
local.var.est[(6*(i-1)+j),1]<-(names(data)[varloc[i]])
local.var.est[(6*(i-1)+j),2]<-region.id[j]
local.var.est[(6*(i-1)+j),3]<-temp[1,2]
local.var.est[(6*(i-1)+j),4]<-(temp[1,4]**2)/temp[1,2]
local.var.est[(6*(i-1)+j),5]<-temp[3,3]
print (c(i,j))
}
}
local.var.est

```