

# Plot the CDF and Associated Confidence Limits

## Description

This function creates a CDF plot. Input data for the plots is provided by a data frame utilizing the same structure as the data frame named "CDF" that is included in the output object produced by function cont.analysis, but the data frame includes only the values for a single CDF. Confidence limits for the CDF also are plotted.

## Usage

```
cdf.plot(cdfest, units.cdf="Percent", type.cdf="Continuous", logx="", xlbl=NULL,
        ylbl="Percent", ylbl.r=NULL, figlab=NULL, legloc="BR", confcut=5, conflev=95, ...)
```

## Arguments

<code>cdfest</code>	data frame utilizing the same structure as the data frame named "CDF" that is included in the output object produced by function cont.analysis. The data frame must contain only a single cdf estimate.
<code>units.cdf</code>	indicator for the type of units in which the CDF is plotted, where "Percent" means the plot is in terms of percent of the population, and "Units" means the plot is in terms of units of the population. The default is "Percent".
<code>type.cdf</code>	character string consisting of the value "Continuous" or "Ordinal" that controls the type of CDF plot for each indicator. The default is "Continuous".
<code>logx</code>	character string consisting of the value "" or "x" that controls whether the x axis uses the original scale ("" ) or the base 10 logarithmic scale ("x"). The default is "".
<code>xlbl</code>	character string providing the x-axis label. If this argument equals NULL, then the indicator name is used as the label. The default is NULL.
<code>ylbl</code>	character string providing the the y-axis label. The default is "Percent".
<code>ylbl.r</code>	character string providing the label for the right side y-axis, where NULL means a label is not created, and "Same" means the label is the same as the left side label (i.e., argument ylbl). The default is NULL.
<code>figlab</code>	character string providing the plot title. The default is NULL.
<code>legloc</code>	indicator for location of the plot legend, where "BR" means bottom right, "BL" means bottom left, "TR" means top right, and "TL" means top left. The default is "BR".
<code>confcut</code>	numeric value that controls plotting confidence limits at the CDF extremes. Confidence limits for CDF values (percent scale) less than confcut or greater than 100 minus confcut are not plotted. A value of zero means confidence limits are plotted for the complete range of the CDF. The default is 5.
<code>conflev</code>	numeric value of the confidence level used for confidence limits. The default is 95.
<code>...</code>	additional arguments passed to the plot function.

## Value

A plot of the CDF and its associated confidence limits.

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## References

Diaz-Ramos, S., D.L. Stevens, Jr., and A.R. Olsen. (1996). *EMAP Statistical Methods Manual*. EPA/620/R-96/XXX. Corvallis, OR: U.S. Environmental Protection Agency, Office of Research and Development, National Health Effects and Environmental Research Laboratory, Western Ecology Division.

## See Also

[interp.cdf](#), [interp.axis](#)

## Examples

```
mysiteID <- paste("Site", 1:100, sep="")
mysites <- data.frame(siteID=mysiteID, Active=rep(TRUE, 100))
mysubpop <- data.frame(siteID=mysiteID, All.Sites=rep("All Sites",100),
  Resource.Class=rep(c("Good","Poor"), c(55,45)))
mydesign <- data.frame(siteID=mysiteID, wgt=runif(100, 10, 100),
  xcoord=runif(100), ycoord=runif(100), stratum=rep(c("Stratum1",
    "Stratum2"), 50))
ContVar <- rnorm(100, 10, 1)
mydata.cont <- data.frame(siteID=mysiteID, ContVar=ContVar)
mypopsize <- list(All.Sites=c(Stratum1=3500, Stratum2=2000),
  Resource.Class=list(Good=c(Stratum1=2500, Stratum2=1500),
    Poor=c(Stratum1=1000, Stratum2=500)))
myanalysis <- cont.analysis(sites=mysites, subpop=mysubpop, design=mydesign,
  data.cont=mydata.cont, popsize=mypopsize)
par(mfrow=c(2,1))
keep <- myanalysis$CDF$Type == "Resource.Class" &
  myanalysis$CDF$Subpopulation == "Good"
cdf.plot(myanalysis$CDF[keep,], xlbl="ContVar", ylbl="Percent of Stream Length",
  ylbl.r="Stream Length (km)", figlab="Estimates for Resource Class: Good")
keep <- myanalysis$CDF$Type == "Resource.Class" &
  myanalysis$CDF$Subpopulation == "Poor"
cdf.plot(myanalysis$CDF[keep,], xlbl="ContVar", ylbl="Percent of Stream Length",
  ylbl.r="Same", figlab="Estimates for Resource Class: Poor")
```