**Relief.plots.r**

**Purpose**  This function is used for German Bank only and is used to show the tow location for proposed tows on the bank.

**Version Control**  Likely several version of this kicking around.

**Required packages:** PBSmapping, CircStats (the locally derived functions have their own package needs as well)

**Locally Derived Functions**

1. getdis.r

**Section 1**

On German Bank we have detailed bathymetric data, and the bottom type is pretty garbage in places, so this file will produce a 3-D plot of the local bathymetry around proposed tows on German Bank. These relief plots can be saved as pdf’s or png’s or just sent to your screen. There’s a complex little dance that is done to select the correct bathymetry file as the German Bank Bathymetry has been sliced up into 77 files (it takes far too long to load in the one master Bathymetry file for the bank). You could also enter the bathymetric as an object (with X, Y, Z coordinates) instead of loading these German Bank files. Also, if looking at past tracks on German Bank you can set tracks = T to add those to the figures.

***Argument(s)***

1. poly.lst The bank survey, if there is a stratified survey this includes all these data.

A second list is required with this that contains the survey information for the bank. format required is poly.lst = list(survey\_detail\_polygon,survey\_information)

1. bounding.poly The boundary polygon for the bank.
2. ntows The number of tows on the bank. If there are repeat tows this is total

number - number of repeats. Default is missing

1. bank.plot Do you want to make a bank.plot. T/F, default = F,
2. mindist The minimum distance between points. Default = 1, this is used in

genran and if repeated tows to weed out tows too close to each other

1. pool.size What size is the pool you are pulling from. Essentially this is multiplier to

give larger pools for random allocation. Default = 4

1. repeated.tows Are their repeated tows. Default = NULL. A dataframe with a list of the

repeated tows (EID, X,Y, stratum are required columns)

1. lplace If making a plot where to put the legend. Default ='bottomleft'
2. show.pool Plot the entire pool of randomly generated points. T/F default = F
3. seed Set a seed so that your results can be reproduced. Default = NULL which

uses R random number generation. Any integer will result in producing a reproducible random number draw.