**Purpose:** This function uses PEDstrata to get the stratified mean and variances for the survey data

**Version Control:** Multiple versions exist, usually duplicates of each other but no guarantees.

Required packages: PEDstrata, survey, splancs

**Section 1**

To get the meat weights there are 3 options used. The first 2 use the results of a MW-SH model either with year as a random effect or with all the data pooled and just using on MW-SH relationship for all the dat. The 3rd option using some other data to estimate meat weight, as far as I can figure that other data has to be the condition factor (which has already been calculated via some type of model). The raw biomass and abundances for each bin and tow are calculated and summed up for the 3 size categories (pre/rec/com). Mean abundance/biomass per tow for each strata is then calculated and an overall bank aboundance and biomass gets estimated. Now PEDstrata kicks in to get our our stratified estiamtes fo these things along with the standard errors. We also grab the average weight, shell height and weight of recruits in here.

**Function Arguments Summary**

1. shf Shell height frequency data
2. htwt.fit Shell height Meat Weight model fit
3. years Years of interest, not required.
4. RS Size a scallop becomes a recruit: Defalut = 80
5. CS Size a scallop becomes commercial: Default = 100
6. bk The bank of interest. Default = "GBa". Potenial options are (GBa, GBb,

BBn, BBs,Ger, Mid, Sab)

1. areas An object with the strata numbers/names and the area covered by each

stratum.

1. mw.par How is meat weight to be calculated. Default = 'annual', options are

('fixed' or 'annual') alternatively some variant of "CF" is used if the meat weight is being calculated from condition factor. Need to have mw.par = column name that includes CF data for this option to work properly.

1. err: What CV to calculate. Default ='str' for stratified design, "rnd" will

calculate the random survey design CV.