# November 30 2021

**# Updated January 26 2022 using corrected programs (corrected for substitution bug) and additional fishery-level substitution rules**

attach("/Users/clennert/Documents/R/poststratification/CL programs\_stock assessment/spp comp programs\_from 2000/spp comp\_R functions\_V3.RData",pos=2)

get.VB.output.new.V2.f("Unloading2000-2020.txt","CAE-LatLon2000-2020.txt","LengthMM2000-2020.txt","LengthFreq2000-2020.txt",2020,2020)

well.estimates.2020<-well.estimates.f(lfgrpd.20202020[lfgrpd.20202020$year.firstset==2020,],lfmm.20202020)

> cae.stratflg.20202020<-create.strat.flg.f(cae.20202020$latc5,cae.20202020$lonc5,is.lwrght=F,cae.20202020$month,cae.20202020$setype,cae.20202020$class)

[1] "\*\*\* Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using catch stratification: Juan/Haikun BET spatial movement model ALL set types 10S 10N"

[1] "Using fishery stratification: Juan/Haikun BET movement model ALL set types 10S 10N"

> lfgrpd.stratflg.20202020<-create.strat.flg.f(lfgrpd.20202020$lat.5deg,lfgrpd.20202020$lon.5deg,is.lwrght=T,floor(lfgrpd.20202020$moda/100),lfgrpd.20202020$setype,lfgrpd.20202020$class)

[1] "\*\*\* Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using catch stratification: Juan/Haikun BET spatial movement model ALL set types 10S 10N"

[1] "Using fishery stratification: Juan/Haikun BET movement model ALL set types 10S 10N"

> get.catch.estimates.V2.f(cae.20202020,cae.stratflg.20202020,total.unlds.20202020,lfgrpd.20202020,lfgrpd.stratflg.20202020,lfmm.20202020,2020,2,well.estimates.2020,area.substitution.mat.BET.movemodel.ALL)

[1] "\*\*\* Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using catch stratification: Juan/Haikun BET spatial movement model ALL set types 10S 10N"

[1] "Using fishery stratification: Juan/Haikun BET movement model ALL set types 10S 10N"

[1] "\*\*\* create.fishery.flg.f: Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using fishery stratification: Juan/Haikun BET spatial movement model 10S 10N"

[1] "WARNING: Reached step (4) in get.sub.f looking for substitute; please tell CL"

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> fishery.estimates.2020<-fishery.estimates.f(stratum.estimates.2020.withsamps,stratum.estimates.2020.NOsamps,2020)

[1] "\*\*\* create.fishery.flg.f: Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using fishery stratification: Juan/Haikun BET spatial movement model 10S 10N"

[1] "\*\*\* create.fishery.flg.f: Please edit first to make sure stratum definitions are correct \*\*\*"

[1] "Using fishery stratification: Juan/Haikun BET spatial movement model 10S 10N"

> sum(fishery.estimates.2020$catch.samps$bet[substr(fishery.estimates.2020$fishery.defn.samps$geararea.quarter,1,2)=="FO"]) + sum(fishery.estimates.2020$catch.NOsamps$bet[substr(fishery.estimates.2020$fishery.defn.NOsamps$geararea.quarter,1,2)=="FO"])

[1] 76527.42

> sum(fishery.estimates.2020$catch.samps$bet[substr(fishery.estimates.2020$fishery.defn.samps$geararea.quarter,1,2)=="FO"])

[1] 45296.43

> 76527-45296

[1] 31231

> save.image("/Users/clennert/Documents/R/poststratification/CL programs\_stock assessment/spp comp programs\_from 2000/current\_estimates/BET for 2020\_revised\_run Jan 26 2022.RData")

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# adding the SA estimates to the plot shown at the June 2021 meeting

load("C:<[\\Users\\clennert\\Documents\\R\\Haikun\\P-S index\\cae](file:///\\Users\\clennert\\Documents\\R\\Haikun\\P-S%20index\\cae)> data\_1975-2020\_for Haikun.RData")

tmpcl<-tapply(cae.19752020.frm$log.bet[cae.19752020.frm$year>=2000],cae.19752020.frm$year[cae.19752020.frm$year>=2000],sum)

tmpfsr<-c(92966,59748,55901,51296,64005,66256,82176,62187,73851,75889,57059,55587,65035,48337,59797,60975,55269,65443,63815,68553,74529)

tmpsa<-c(85883,56395,55512,49756,60124,64675,83433,63829,70989,70540,56734,50493,63458,50217,57119,61801,56219,62898,59186,75602,73576)

plot(seq(2000,2020),tmpfsr,type="b",ylim=c(0,100000),ylab="BET OBJ catch (mt)",xlab="Year",lwd=1.5)

lines(seq(2000,2020),tmpcl,type="b",col=2,lwd=1.5)

lines(seq(2000,2020),tmpsa,type="b",col=5,lwd=1.5)

quantile(abs((tmpfsr-tmpsa)/tmpfsr))

0% 25% 50% 75% 100%

0.005695859 0.017188659 0.038753707 0.060635888 0.102825551