r\_hatij = mg GHG m-2 d-1 plugging x values into regression equation and exponentiating gives us a rate of emissions in mg per square meter, per day for lake *j* under scenario *i*

y\_hatij = r\_hatij\*size\*106 multiplying the rate by the size of lake *j* (in meters) gives us emissions in mg per day for each lake

z\_hatij = y\_hatij\*10-9 converting from mg to tonnes

Z\_hati = Σj z\_hatij  summing over all lakes gives us total emissions in tonnes per day

Z\_hat2 - Z\_hat1 differencing total emissions per day between scenarios gives us incremental change in emissions per day