How to calculate an area-weighted average in GRASS

```
# set the computational region to the value raster
g.region rast=rast_val -ap

# convert the value raster to area vector
r.to.vect rast_val out=vect_val type=area

# overlay the value vector and area vector
v.overlay ainput=vect_val binput=vect_area oper=or output=vect_val_area

# calculate and validate the area-weighted area value grouped by area
vector;
# this command doesn't update anything
v.db.select vect_val_area col="b_cat,sum(a_value*a_area)/sum(a_area)" \
  group=b_cat

# add and populate a new column with the area-weighted average
v.db.update vect_area col=avg_val \
  qcol="(select sum(a_value*a_area)/sum(a_area) from vect_val_area \
         where vect_val_area.b_cat=vect_area.cat group by b_cat)"
```

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