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

# calculate the cell areas of the area vector
v.to.db vect_val op=area col=area_m2

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

# 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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