
Subject: Re: cgmap_gshhs.pro minarea issue
Posted by [pvelissariou](#) on Fri, 22 Nov 2013 17:34:29 GMT
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On Thursday, November 21, 2013 7:09:28 PM UTC-5, pvelis...@fsu.edu wrote:

> Apparently, in the recent versions (≥ 2.2) of gshhs database
>
> the units of the header.area changed from $1/10 \text{ km}^2$ to $1/10 \text{ m}^2$.
>
> For cgmap_gshhs to work properly the line:
>
> `polygonArea = header.area * 0.1` (ok for gshhs < 2.2)
>
> should be changed to:
>
> `polygonArea = header.area * 1.0e-7` (for gshhs ≥ 2.2)

David,

From gshhs.c file we have:

```
line = (h.area) ? 0 : 1; /* Either Polygon (0) or Line (1) (if no area) */
if (version  $\geq 9$ ) { /* Variable magnitude for area scale */
    m = h.flag >> 26;
    scale = pow (10.0, (double)m); /* Area scale */
}
area = h.area / scale; /* Now im  $\text{km}^2$  */
f_area = h.area_full / scale; /* Now im  $\text{km}^2$  */
```

so, in the cgmap_gshhs.pro
we should have something like:
`magnitude = 10.0 ^ ( - ISHFT(f, -26) )` for version ≥ 9
and
`magnitude = 0.1` for version < 9

and
`polygonArea = header.area * magnitude`

in order to produce the correct results for the polygon area
