

On-going ADS Database Issues

Southern pine beetle

Per R8 Regional FHM off-plot survey guidelines, R8 reports spots per county and dead trees per spot with an acreage total and standard 150 TPA.

I turn them into polygons by buffering w/ the proper radius to equal acres that are submitted.

- Locations are random and not GPS locations
- These data pose problems when printing because small polygons don't always display depending on map scale.
- Acres in the national database don't reflect acres submitted in other tables like FPIS, which go into the Condition's Report

Non-standard Mortality coding

The ADS standards state that dead TPA and/or number of trees is the measure of mortality.

NA (mostly SFO) reports mortality using various combinations of PATTERN and/or SEVERITY codes. PATTERN and SEVERITY are measures of defoliation, according to the standards. In 2006 Maine reported balsam woolly adelgid mortality using large, state-wide bands based on climatic zones with a different TPA per band.

- using the pattern and/or severity codes with mortality is something only NA does. Actually, they use it for all damage types.
- not reporting any tpa and/or tree count with mortality is something all regions do, but the percentage of acres is relatively small - **except for NA**.
- depicting more things as "scattered" reinforces the likely misconception that all else in "continuous", which it is not, which is why we try to stress the notion of acres "with" mortality

Perhaps looking at depicting the mortality map by TPA ranges might have more meaning and doesn't get us in the game of adding codes that weren't meant to be a measure of mortality. However, one can argue if you don't know the total TPA or live TPA, the dead TPA is relatively meaningless.

(IMHO - I think in general terms, a higher dead TPA denotes greater intensity of mortality – that's why Maine varied the TPA for their large bands of damage. However, I know this isn't ALWAYS the case.)

Do we think about adding a severity rating along with tpa for mortality polygons to somehow illustrate the intensity issue?

Or, do we eliminate tpa/no_trees from the national database altogether seeing as we've never used it to do any national summaries?

As a related note, it was brought to my attention that there is an acreage issue with data coming into the St. Paul FO for 2007. States are reporting polygons with much lower acreage than the calculated area of the polygon. Again, this is likely due to a “scattered” damage issue and not wanting to report all the acres as damage.

A tree/cover type density layer would greatly help with this issue.

Multi-Agent Codes

Use of multi-agent codes varies by region and complicates report summaries. Codes like 80002 (subalpine fir mortality), 80003 (5 needle pine decline) and 80004 (pinyon pine mortality) have bark beetle components that make it tricky to automate queries for reporting. For example, should a summary for mountain pine beetle always include the 80003 code as well, or only under certain situations?

It was stated at the 2007 R2 ADS wrapup meeting that bark beetle codes submitted by Wyoming over the past several years were being changed to multi-agent codes by the Region. When we do bark beetle reports we generally lump these back into the “matching” bark beetle code, so the data was going full circle. This was acceptable to the entomologists, but an interesting realization! They are no longer changing what WY reports.

Overlapping polygons.

While overlapping polygons are not allowed in Arc/INFO coverages because they don't follow arc/node topology rules, shapefiles don't have topology so overlaps are allowed. SDE does not have topology per se, but can have topology rules against overlaps. There are no topology rules against overlaps in the National ADS database to allow for the occasional overlap between Regions such as on the Idaho/Washington border and around Lake Tahoe. Generally, these don't amount to enough acres to be a concern. The other type of overlap that is allowed is “pancake stacks” that result when the ADS data submitted by the Regions is normalized and loaded in the national database. “Pancake stacks” only occur when there is more than one observation for a single polygon (ie. DCA1, 2, 3 filled in). Database queries are written to avoid double counting these types of overlaps. Tabular database queries can't find other types of overlaps They must be identified and resolved spatially. Regional GIS persons or surveyors themselves are supposed to reconcile any polygon overlaps before the data is submitted to the national database.

It was brought to my attention that data submitted by the Morgantown FO has overlapping polygons. I took a look and indeed there are some areas where small, mostly gypsy moth, polygons overlap a larger gm polygon. This is also the case with flown polygons overlapping each other. This is a data quality issue and should be a concern to regional persons who might use the data. Any acres that are calculated from polygons that overlap will be over counted in some way.

At the national level, great care has been taken to account for the ‘pancake stack’ issue when totaling acres, but it is assumed that other types of overlaps are resolved at the Region.

Fire polys.

Should these even be in the national database? Mostly they are submitted as reference, but some report mortality due to fire.

Flown / Not Flown

- Missing Surveyor and/or date information for some Regions (NA-SFO, R8- SPB)
- Entire states depicted as flown – most likely not a reality, just an easy way to submit data.
- Missing flown data where damage polygons are recorded.
- Overlapping flown boundaries that don’t get reconciled.

Metadata

We have a standard metadata document for the National Database as a whole, but it does not really incorporate any extra information the Regions might submit.

If metadata is submitted, it is varied and not consistent among Regions.