



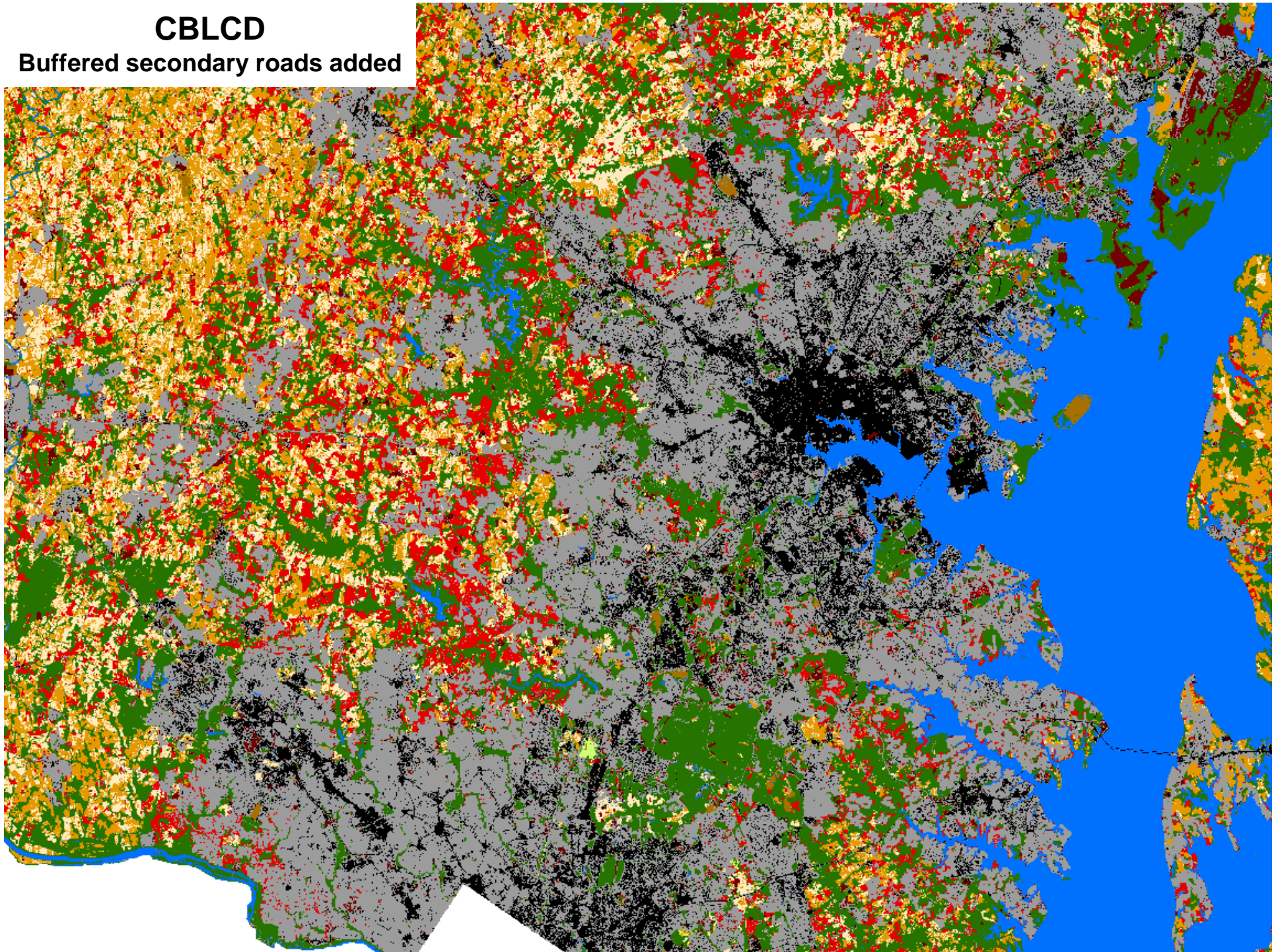
Estimating the Area of Turf Grass (lawns) in the Bay Watershed

**Peter Claggett,
Eastern Geographic Science Center
U.S. Geological Survey**

**Forestry Workgroup Call
December 7, 2011**

CBLCD

Buffered secondary roads added



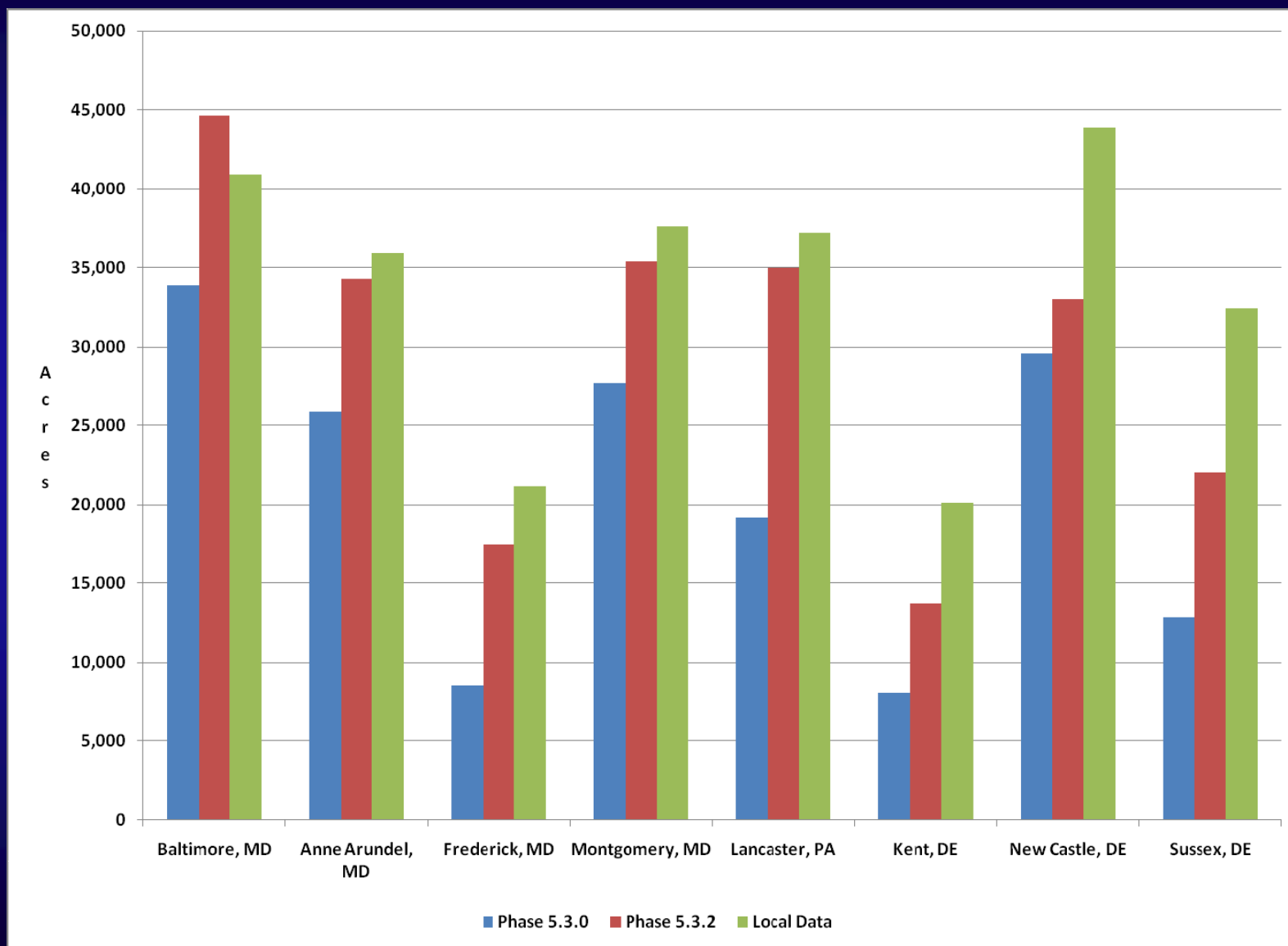
Estimating Impervious Surface Area (Landsat vs. Modeled Data)

Model Version	Impervious Surface (circa 2006)	Pervious Surface (circa 2006)
CBLCD (similar to NLCD)	809,311	2,341,555
Modeled with multiple datasets	1,269,018	3,398,701

2005 Turf Grass Estimate (Turf Industry Data apportioned to watershed) = 3,790,000 ac

County-level Impervious Surface Estimates

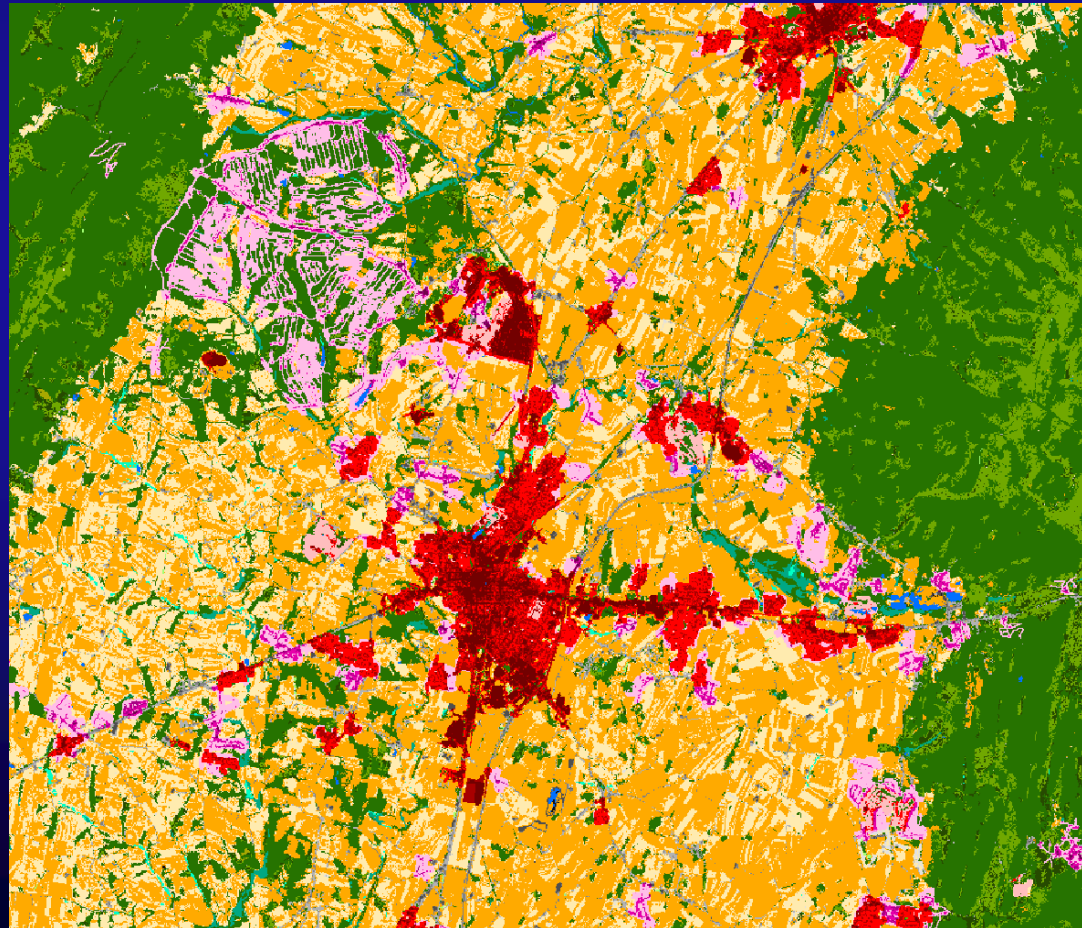
Landsat (Phase 5.3.0), Modeled (Phase 5.3.2), and Local Data



Capturing low density residential development improved accuracy of agricultural classes

P530 2006 Farmland Acres in Maryland =	2,116,531 acres
P532 2006 Farmland Acres in Maryland =	1,639,198 acres
USDA 2007 Ag Census	= 1,558,546 acres

P 5.3.0



P532 Turf Grass Acres in Maryland = 973,510 acres
NASS Estimate = 1,134,000 acres

Why the difference?

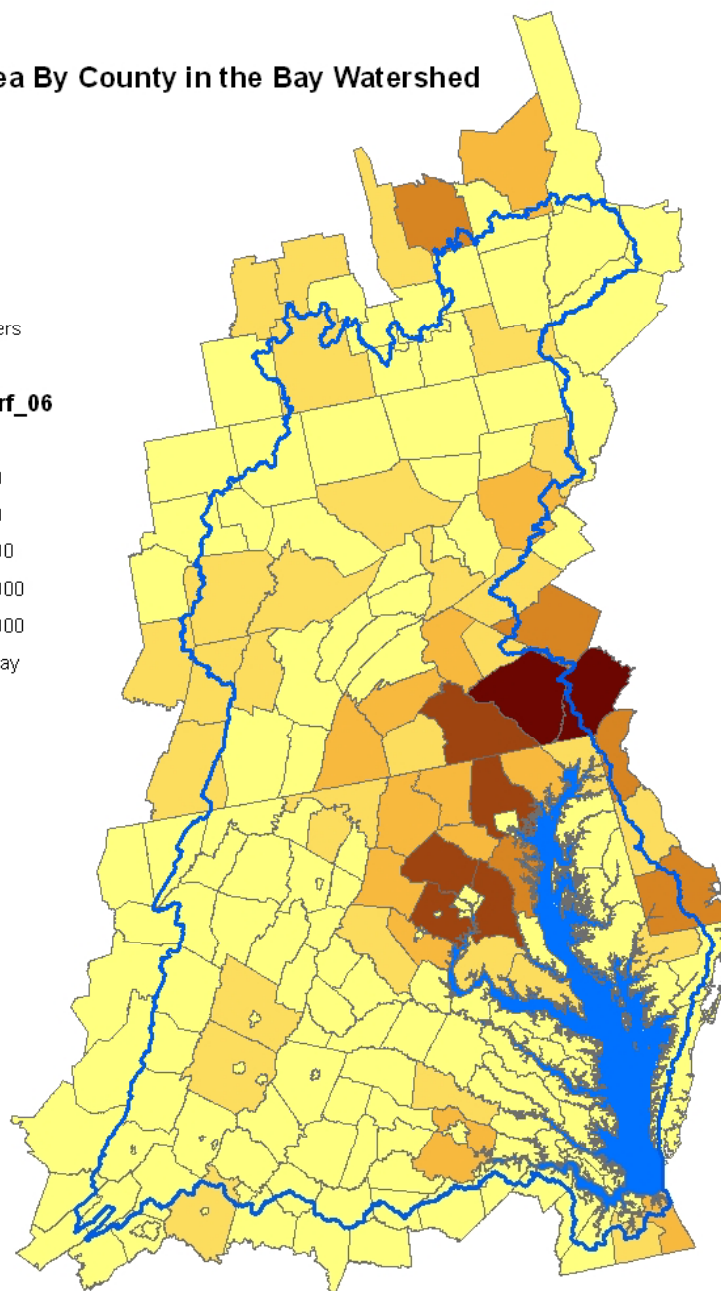
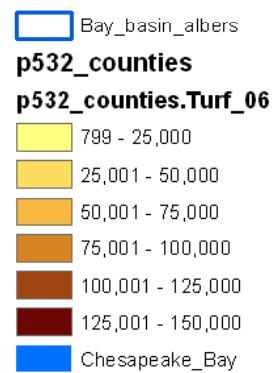
1. P532 does not capture turf grass associated road right-of-ways, and isolated commercial, industrial, and institutional establishments.
2. Turf Industry estimate is used to substantiate the economic importance of the industry. Therefore, it probably represents the upper bounds of the probable extent of turf grass.

Turfgrass areas used and maintained in Maryland, 2005					
Sector	Turf Acres	Percent of Turf Acres	New Turf Established	Cost of Establishing New Turf	Average Cost per Acre to Establish New Turf
	- acres -	- percent -	- acres -	- dollars -	- dollars -
Airports	5,000	0.4	----	----	
Cemeteries	4,200	0.4	130	361,000	2,777
Religious Facilities	9,400	0.8	250	581,000	2,324
Parks and Athletic Fields	21,800	1.9	320	3,275,000	10,234
Golf Courses	16,400	1.4	310	2,105,000	6,790
County Government	78,200	6.9	480	3,914,000	8,154
State Highways	9,000	0.8	650	1,570,000	2,415
Apartments	7,500	0.7	200	765,000	3,825
Lawn Care	^{1/}		^{1/}	^{1/}	
Sod Farms	8,000	0.7	^{2/}	^{2/}	
Single Family Homes	936,900	82.6	28,190	73,112,000	2,594
Schools	38,400	3.4	360	3,481,000	9,669
Total	1,134,800		30,890	89,164,000	2,887

¹ Maryland Department of Natural Resources, 2006.
² USDA, National Agricultural Statistics Service, Maryland Field Office, 2006.

Turf Grass Area By County in the Bay Watershed

Legend



Contact Information:

Peter Claggett
Research Geographer
U.S. Geological Survey

410-267-5771

pclaggett@usgs.gov