

Phase 7 Land Use

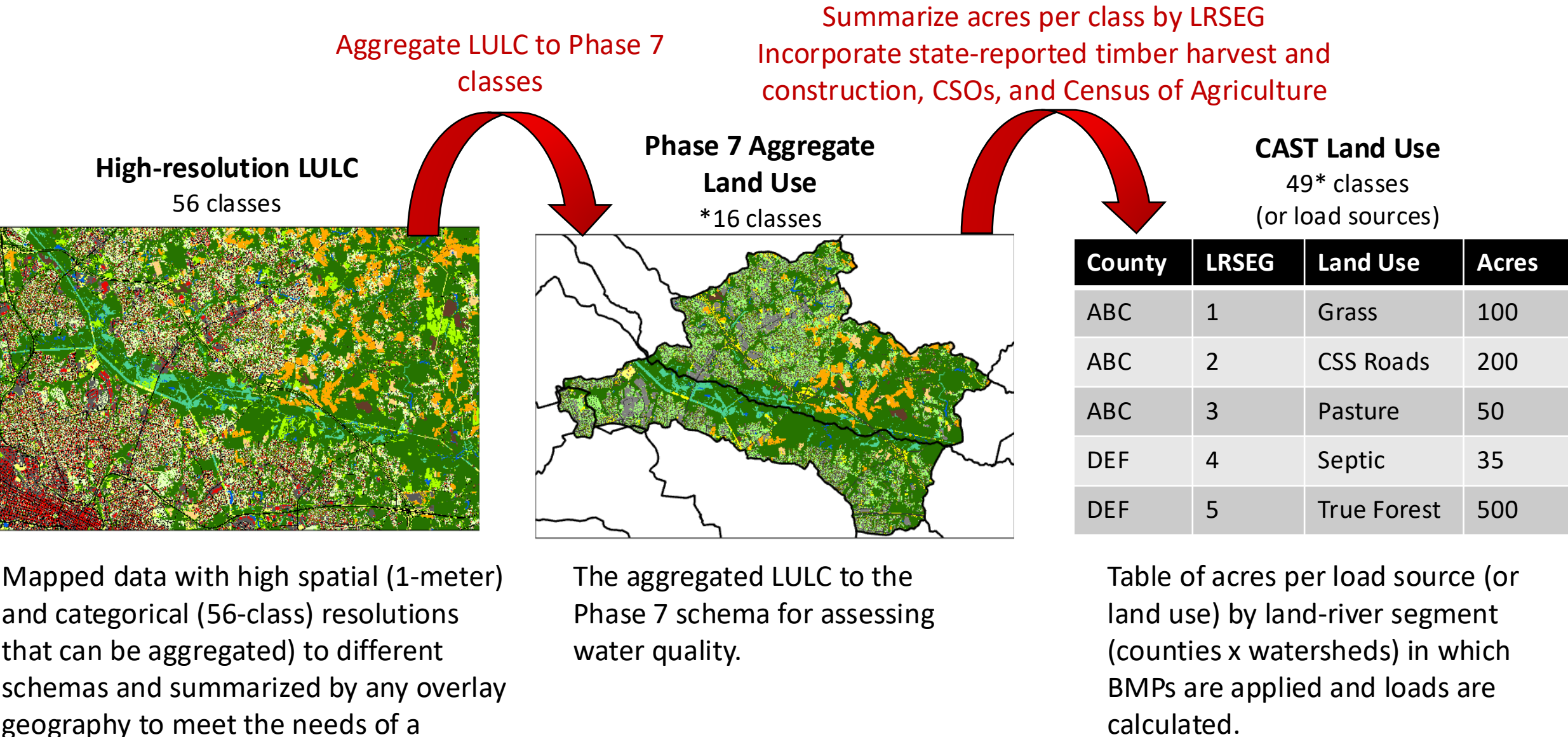
Sarah M. McDonald

USGS, Lower Mississippi Gulf Water Science Center

Land Use Work Group

June 18th, 2025

Summary: How are the Land Use Products Related?



CSO = Combined Sewer Overflows
* Final classification schema for Phase 7 has not yet been approved.

Decision: Move bare shore (adjacent to non-tidal water) to Water

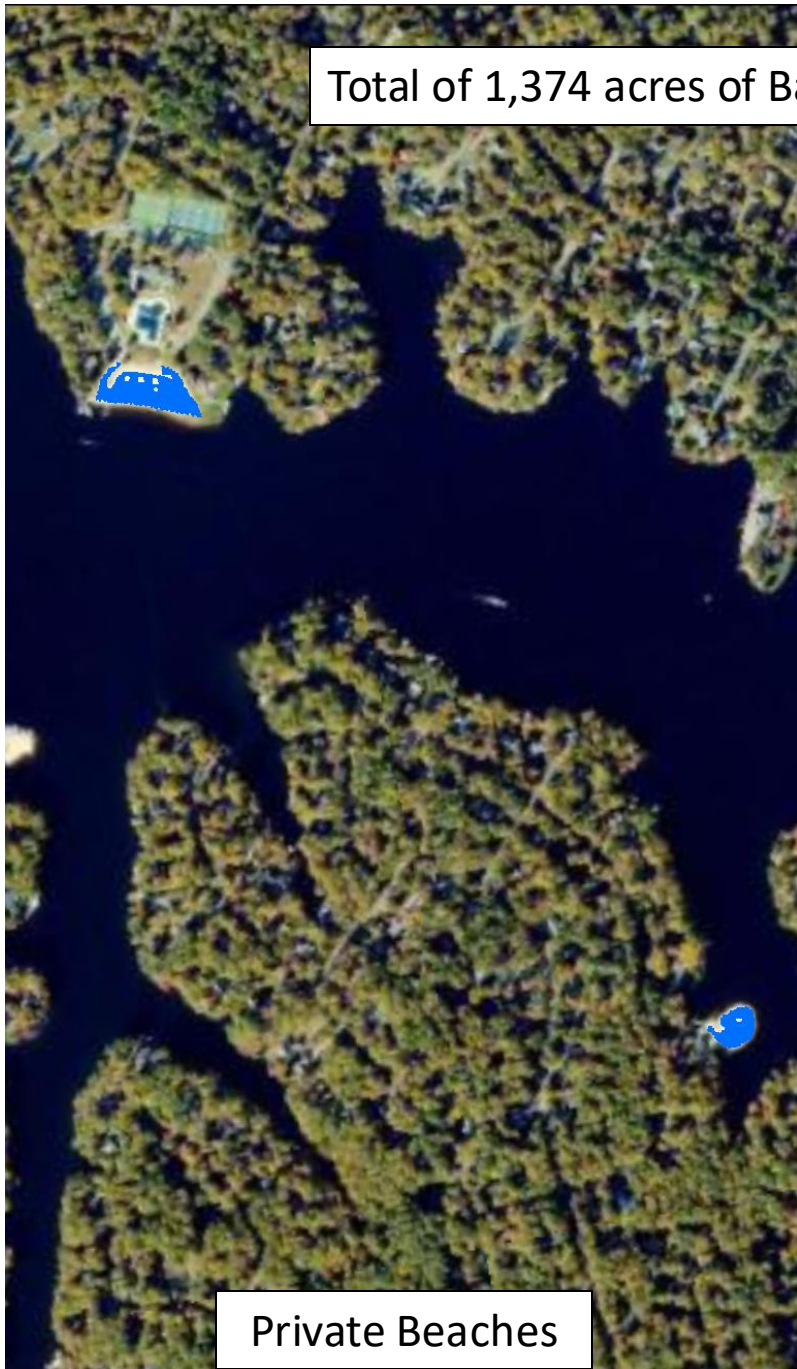
Why?

Bare shore represents beaches and sandbars that vary with water level

Mixed Open (now Compacted Pervious) was a mixed bag of land uses that couldn't be distinguished – but now they can!

Bare shore near tidal waters and wetlands are **not** included because tidal areas are handled in the Main Bay Model, not CAST

Total of 1,374 acres of Bare Shore in the Chesapeake Bay Watershed, including tidal shorelines



Private Beaches



Beach Next to a Lake



Sand bars

Proposed Aggregation of High-Res LULC for Phase 7

1. Impervious, Roads

Roads

2. Impervious, Non-Roads

Structures

Other Impervious (Parking lots, driveways)

Extractive Impervious

3. Tree Canopy Over Impervious

4.

(adjacent to non-tidal water)

5. to Water

6. Solar Infrastructure

Solar Field Panel Arrays

7. Solar Pervious

Solar Field Herbaceous

Solar Field Shrubland

8. Compacted Pervious

Extractive Barren

Suspended Succession Barren

Suspended Succession Herbaceous

Suspended Succession Shrubland

Natural Succession Herbaceous (urban areas)

9. Construction

Bare Developed

10.

11. Harvested Forest (2)

Harvested Forest Barren

Harvested Forest Herbaceous

Natural Succession Barren (Rural areas)

Reported Data from States

12. Wetlands, Riverine Non-forested

Riverine Wetlands Barren

Riverine Wetlands Herbaceous

Riverine Wetlands Shrubland

Riverine Wetlands Harvested Forest

13. Wetlands, Terrene Non-forested

Terrene Wetlands Barren

Terrene Wetlands Herbaceous

Terrene Wetlands Shrubland

Terrene Wetlands Harvested Forest

14. Cropland

Cropland Barren

Cropland Herbaceous

Orchards and Vineyards Barren

Orchards and Vineyards Herbaceous

Orchards and Vineyards Shrubland

15. Pasture and Hay

Pasture and Hay Barren

Pasture and Hay Herbaceous

16. Water

Lakes & Reservoirs

Riverine Ponds

Terrene Ponds

Streams and Rivers (visible water)

Bare Shore- adjacent to non-tidal waters

Remaining Aggregation Decisions at Other Workgroups

Proposed Aggregation of High-Res LULC for Phase 7

1. Impervious, Roads

Roads
2. Impervious, Non-Roads

Structures
Other Impervious (Parking lots, driveways)
Extractive Impervious
3. Tree Canopy Over Impervious

TC over Roads
TC over Structures
TC over Other Impervious
4. Turf Grass

Turf Grass
5. Tree Canopy over Turf Grass

Tree Canopy over Turf Grass
6. Solar Infrastructure

Solar Field Panel Arrays
7. Solar Pervious

Solar Field Herbaceous
Solar Field Shrubland
8. Compacted Pervious

Extractive Barren
Suspended Succession Barren
Suspended Succession Herbaceous
Suspended Succession Shrubland
Natural Succession Herbaceous (urban areas)
9. Construction

Bare Developed
Solar Field Barren
Natural Succession Barren (Urban areas)
Reported Data from States
10. Forest

Forest
Forested, Other
Natural Succession Herbaceous (rural areas)
Natural Succession Shrubland
Riverine Wetlands Tree Canopy
Riverine Wetlands Forest
Terrene Wetlands Tree Canopy
Terrene Wetlands Forest
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Harvested Forest Herbaceous
Natural Succession Barren (Rural areas)
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Riverine Wetlands Herbaceous
Riverine Wetlands Shrubland
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Terrene Wetlands Barren
Terrene Wetlands Herbaceous
Terrene Wetlands Shrubland
Terrene Wetlands Harvested Forest
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Cropland Barren
Cropland Herbaceous
Orchards and Vineyards Barren
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Lakes & Reservoirs
Riverine Ponds
Terrene Ponds
Streams and Rivers (visible water)
Bare Shore- adjacent to non-tidal waters

Blue = LULC 56-class schema
White = Phase 7 Rollup schema

Proposed Aggregation of High-Res LULC for Phase 7

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Roads
2. Impervious, Non-Roads

Structures

Other Impervious (Parking lots, driveways)

Extractive Impervious
3. Tree Canopy Over Impervious

TC over Roads

TC over Structures

TC over Other Impervious
4. Turf Grass

Turf Grass
5. Tree Canopy over Turf Grass

Tree Canopy over Turf Grass
6. Solar Infrastructure

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Riverine Ponds

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White = Phase 7 Rollup schema (no proposed change)
Yellow = LULC 56-class schema (proposed change)
Orange = Phase 7 Rollup schema (proposed change)

Proposed Aggregation of High-Res LULC for Phase 7

1. Impervious, Roads

20 Roads

2. Impervious, Non-Roads

- 21 Structures
- 22 Other Impervious (Parking lots, driveways)
- 31 Extractive Impervious

3. Tree Canopy Over Impervious

- 23 TC over Roads
- 24 TC over Structures
- 25 TC over Other Impervious

4. Turf Grass

27 Turf Grass

5. Tree Canopy over Turf Grass

26 Tree Canopy over Turf Grass

6. Solar Infrastructure

32 Solar Field Panel Arrays

7. Solar Pervious

- 34 Solar Field Herbaceous
- 35 Solar Field Shrubland

8. Compacted Pervious

- Extractive Barren
- Suspended Succession Barren
- Suspended Succession Herbaceous
- Suspended Succession Shrubland
- Natural Succession Herbaceous (urban areas)

9. Construction

- Bare Developed
- Solar Field Barren
- Natural Succession Barren (Urban areas)
- Reported Data from States

10. Forest

- Forest
- Forested, Other
- Natural Succession Herbaceous (rural areas)
- Natural Succession Shrubland
- Riverine Wetlands Tree Canopy
- Riverine Wetlands Forest
- Terrene Wetlands Tree Canopy
- Terrene Wetlands Forest

11. Harvested Forest (2)

- Harvested Forest Barren
- Harvested Forest Herbaceous
- Natural Succession Barren (Rural areas)
- Reported Data from States

12. Wetlands, Riverine Non-forested

What's the Recommendation?

Explicit mapping of construction in high-res LULC to be reconciled with reported construction and methods to use mapped change for default construction where not reported.

What was it in Phase 6?

Mixed Open

Who's leading?

Watershed Technical Workgroup (WTWG)

What's the recommendation status?

No formal recommendation has yet occurred at the WTWG. This topic will be discussed at the August 7th meeting.

13 Terrene Wetlands

14 Streams and Rivers (visible water)

15 Bare Shore- adjacent to lakes

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Proposed Aggregation of High-Res LULC for Phase 7

1. Impervious, Roads Roads	8. Compacted Pervious Extractive Barren Suspended Succession Barren Suspended Succession Herbaceous Suspended Succession Shrubland Natural Succession Herbaceous (urban areas)	12. Wetlands, Riverine Non-forested Riverine Wetlands Barren Riverine Wetlands Herbaceous Riverine Wetlands Shrubland Riverine Wetlands Harvested Forest
2. Impervious, Non-Roads Structures Other Impervious (Parking lots, driveways) Extractive Impervious		13. Wetlands, Terrene Non-forested Terrene Wetlands Barren Terrene Wetlands Herbaceous Terrene Wetlands Shrubland Terrene Wetlands Harvested Forest
3. Tree Canopy Over Impervious TC over Roads TC over Structures TC over Other Impervious	What's the Recommendation? Final approval of Phase 7 Land Use Aggregation Who's leading? Land Use Workgroup (LUWG) What's the recommendation status? Vote at September 17th LUWG Meeting	
4. Turf Grass Turf Grass		14. Wetlands, Terrene Forested Terrene Wetlands Barren Terrene Wetlands Herbaceous Terrene Wetlands Shrubland Terrene Wetlands Harvested Forest
5. Tree Canopy over Turf Grass Tree Canopy over Turf Grass	10. Wetlands, Riverine Forested Riverine Wetlands Forest Terrene Wetlands Tree Canopy Terrene Wetlands Forest	15. Pasture and Hay Pasture and Hay Barren Pasture and Hay Herbaceous
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7. Solar Pervious Solar Field Herbaceous Solar Field Shrubland		

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Summary of Phase 7 Aggregation Decisions

Recommendation	Phase 6 Class	Workgroup Lead	Recommendation Status	Next update
Add two Solar classes (infrastructure and pervious)	Mixed Open and Impervious, Non-Roads	Urban Stormwater	Approved by USWG	Update WQGIT
Move Natural Succession LULC classes	Mixed Open	Forestry	Approved by FWG	Update WQGIT
Use mapped agricultural footprint as acres of ag. Use mapped distinction of Cropland and Pasture/Hay acres.	Cropland and Pasture	Ag Modeling Team	Pending future discussion	Update WQGIT
Rename Mixed Open to Compacted Pervious	Mixed Open	Land Use	Approved by LUWG	Update WQGIT
Move Bare Shore LULC class to Water	Mixed Open	Land Use	Ongoing	LUWG June 18 th
Construction reconciliation	Mixed Open	Watershed Technical	Ongoing	WTWG August 7th
Confirm final aggregation		Land Use	Ongoing	LUWG September 17 th

Questions?

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