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Agricultural Outlook Forum
U.S. Department of Agriculture
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Bees in North America

Sam Droege

Bees in North America

The Whirlwind Tour



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Bees are Vegetarian Wasps



20,000 Named Species Worldwide



20,000 More to Describe



~4,000 Species in U.S.



~ 400 Undescribed in U.S.



Diversity Highest in the Southwest



100+ Species at Any Location



Overlapping Populations



Honey Bees are from Mars



20% of Species are Nest Parasites



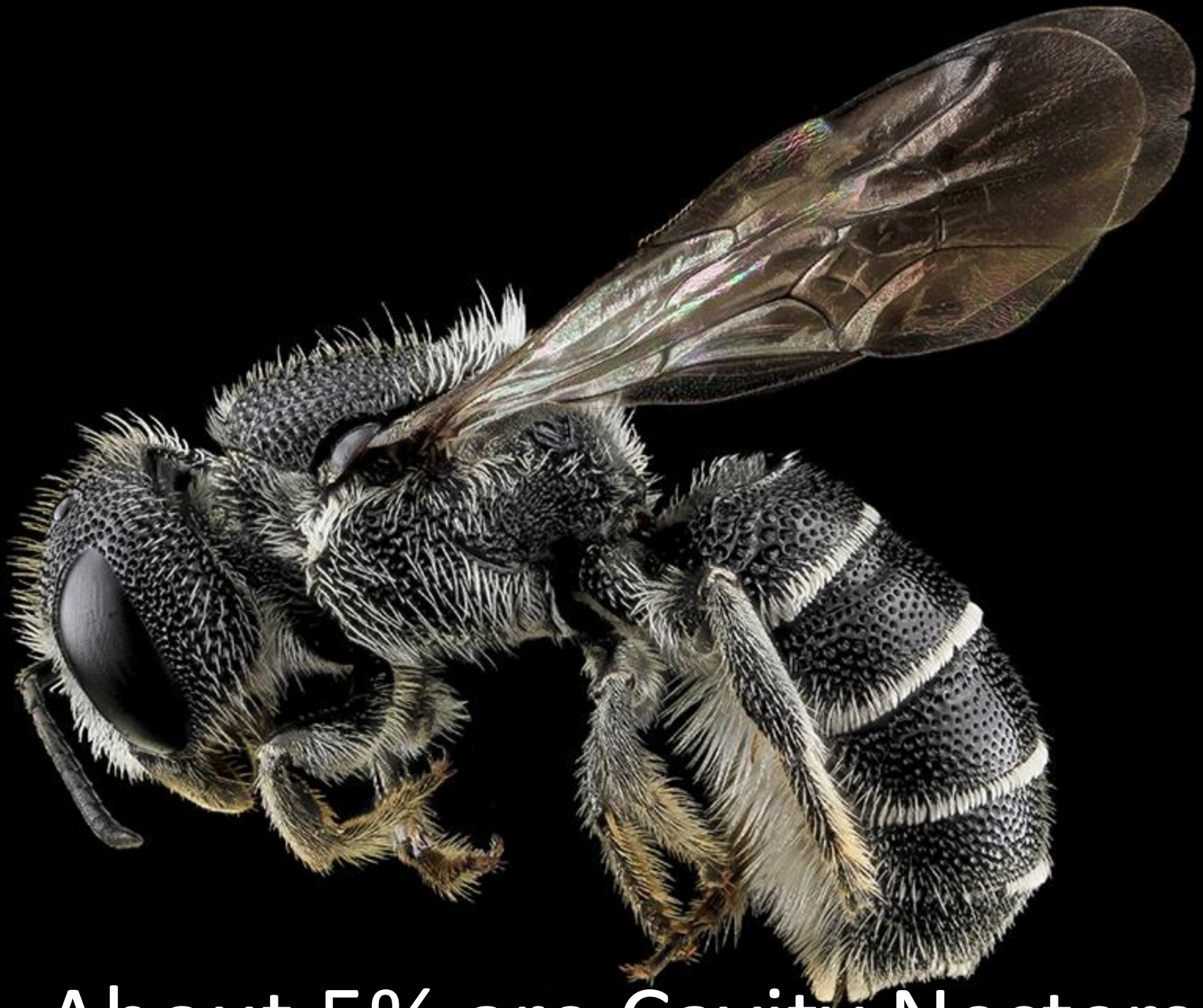
1% of Bees are Not Native



20-25% of Bees are Pollen Specialists



Squash and Sunflowers have
Specialist Bees



About 5% are Cavity Nesters



Hole Nesting Species Can Be
Directly Manipulated



Most Nest in the Ground



Carries Pollen Internally



Carries Pollen Under Abdomen

Males Do Transfer Pollen When
Nectaring, Do Not Help at Nests





Bees Must Know the Right Song



Most Native Bees Do Not/Can
Not Sting



Native Bees at Times can Provide
the Bulk of Crop Pollination



Bees Are Good at Finding
Blooming Plants



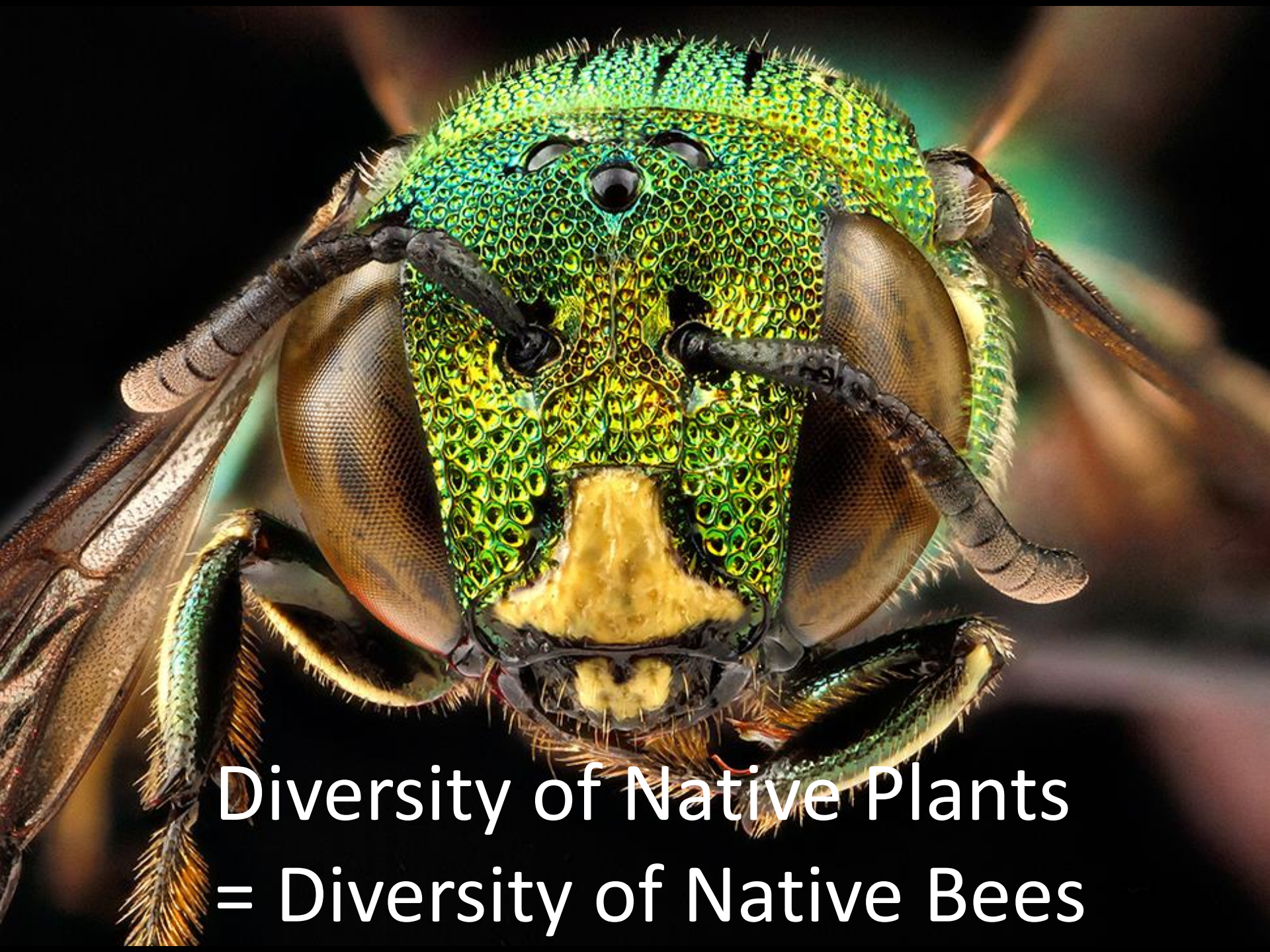
Woodland Habitats = Orchard Bees



Row Crops = Native Bee Sink



Soybean Yield Boost



Diversity of Native Plants
= Diversity of Native Bees

Interdigitating Native Habitat With Orchard/Cropland





Habitat Management for Ag Sites



Native Bee Decline = Habitat Loss



Status of Most Native Bees is
Unknown

Native Bees
Retained by
Quality Native
Habitat





East of the 100th = Loss of
Open Country Species



49 Bumble Bee Species



Eastern Bumble Bee Greenhouse
Orchard Production



Loss of Bumble Bees due to
Introduced European Parasites



Loss of Meadowland/
Diverse Plant Assemblages



Overplanting Trees



Herbiciding and Mowing of
Roadsides/ ROW



Sand and Gravel Mine Restoration

Xerces Society



Soft Edges



Pile of Dirt





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20,000 Species Worldwide



Squash and Sunflowers have
Specialist Bees