SC DEPARTMENT *of*
ENVIRONMENTAL
SERVICES

Hydrology & Climate Implications for Invasive Aquatic Plants in South Carolina

SCDES Water Summit

May 19, 2026

What is the Aquatic Nuisance Plants Program?

Why control aquatic plants?

- Invasive and nuisance plants cause big problems
  - Obstruct navigation on waterways
  - Outcompete native species → reduced biodiversity
  - Restrict water flow and clog water intakes for drinking water, power plants, irrigation
  - Damage boats and infrastructure
  - Contribute to fish kills
  - Harbor disease vectors such as mosquitoes

Aquatic Invasive Plants in South Carolina

Illegal Species (Partial List)

• Alligatorweed	*Alternanthera philoxeroides*
• Brazilian elodea	*Egeria densa*
• Common reed	*Phragmites australis*
• Eurasian watermilfoil	*Myriophyllum spicatum*
• Giant salvinia	*Salvinia molesta*
• Hydrilla	*Hydrilla verticillata*
• Slender naiad	*Najas minor*
• Water hyacinth	*Pontederia crassipes*
• Water primrose	*Ludwigia hexapetala*
• Water lettuce	*Pistia stratiotes*

Full list available at: https://www.clemson.edu/public/regulatory/plant-industry/plant-pest-regulations/state-plant-pest-information/pests_list.html.

Water hyacinth (*Pontederia crassipes*)

Alligatorweed (*Alternanthera philoxeroides*)

Giant salvinia (*Salvinia molesta*)

Hydrilla (*Hydrilla verticillata*)

Giant salvinia weevil
by Judson Riser, Santee Cooper

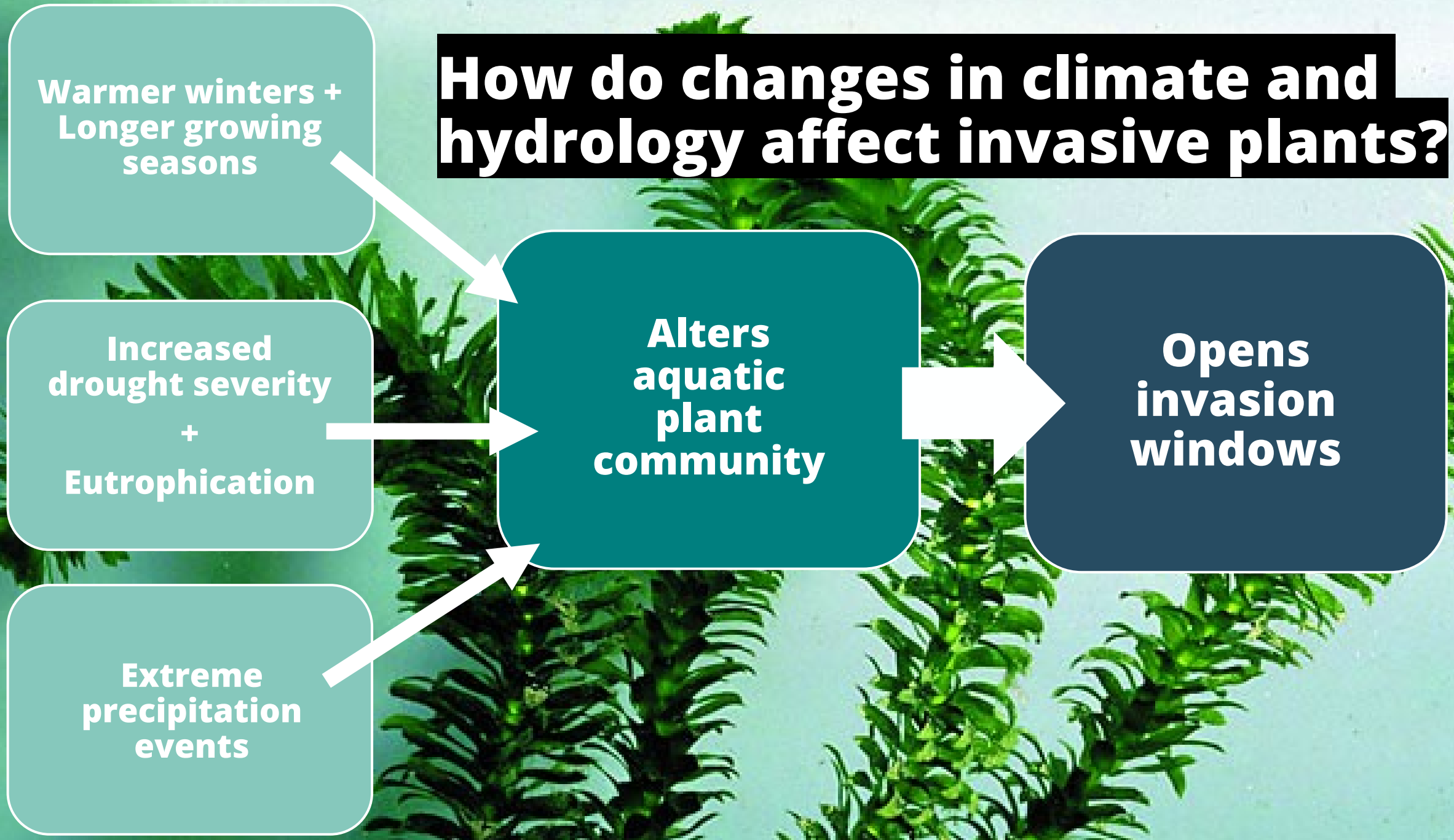
Alligatorweed flea beetle
by Chelsea Bohaty, USACE

Biological Controls

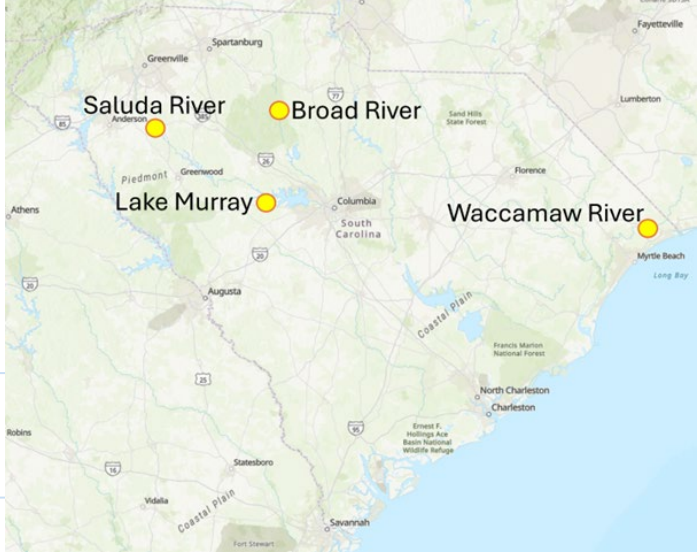
- Salvinia Weevils
- Alligatorweed Flea Beetles
- Sterile Grass Carp

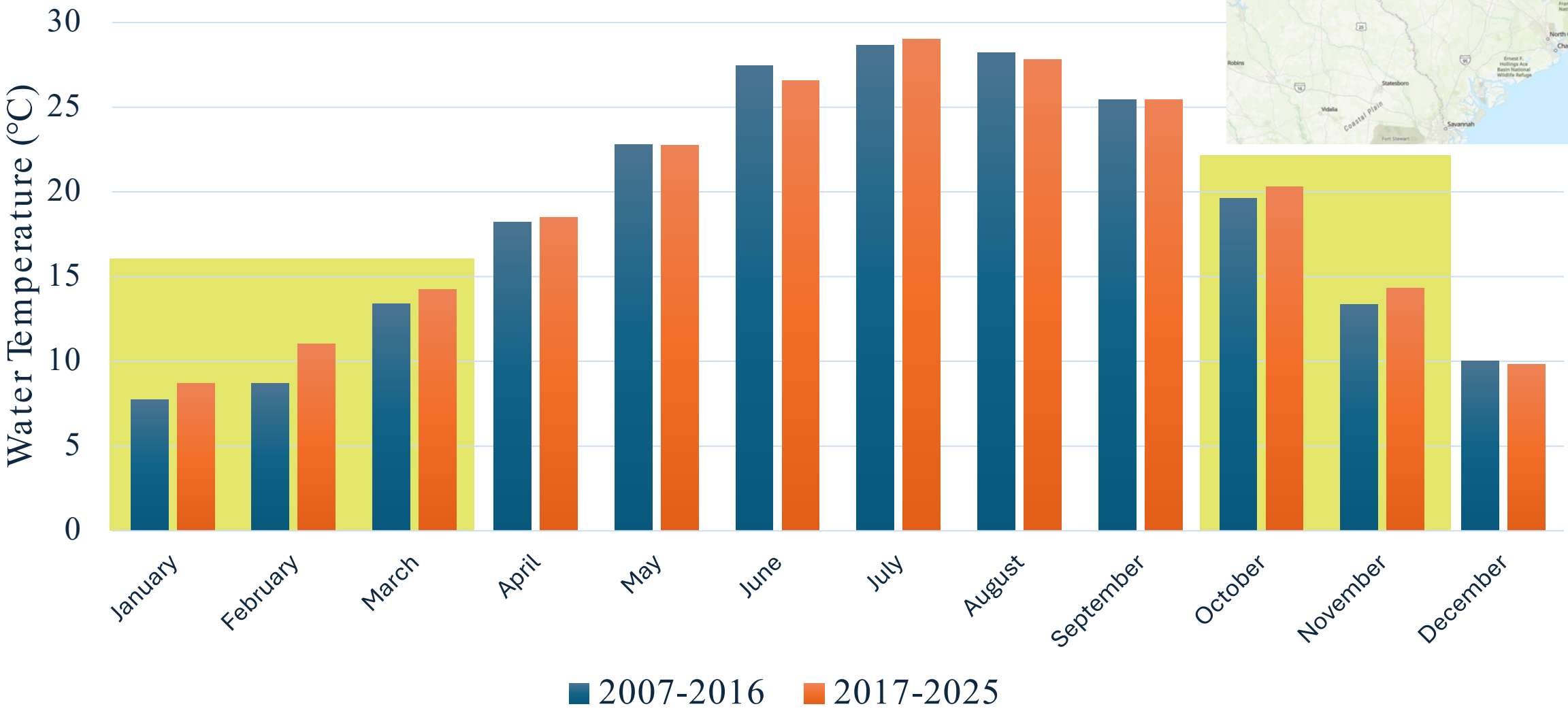
Physical, Mechanical & Chemical Controls

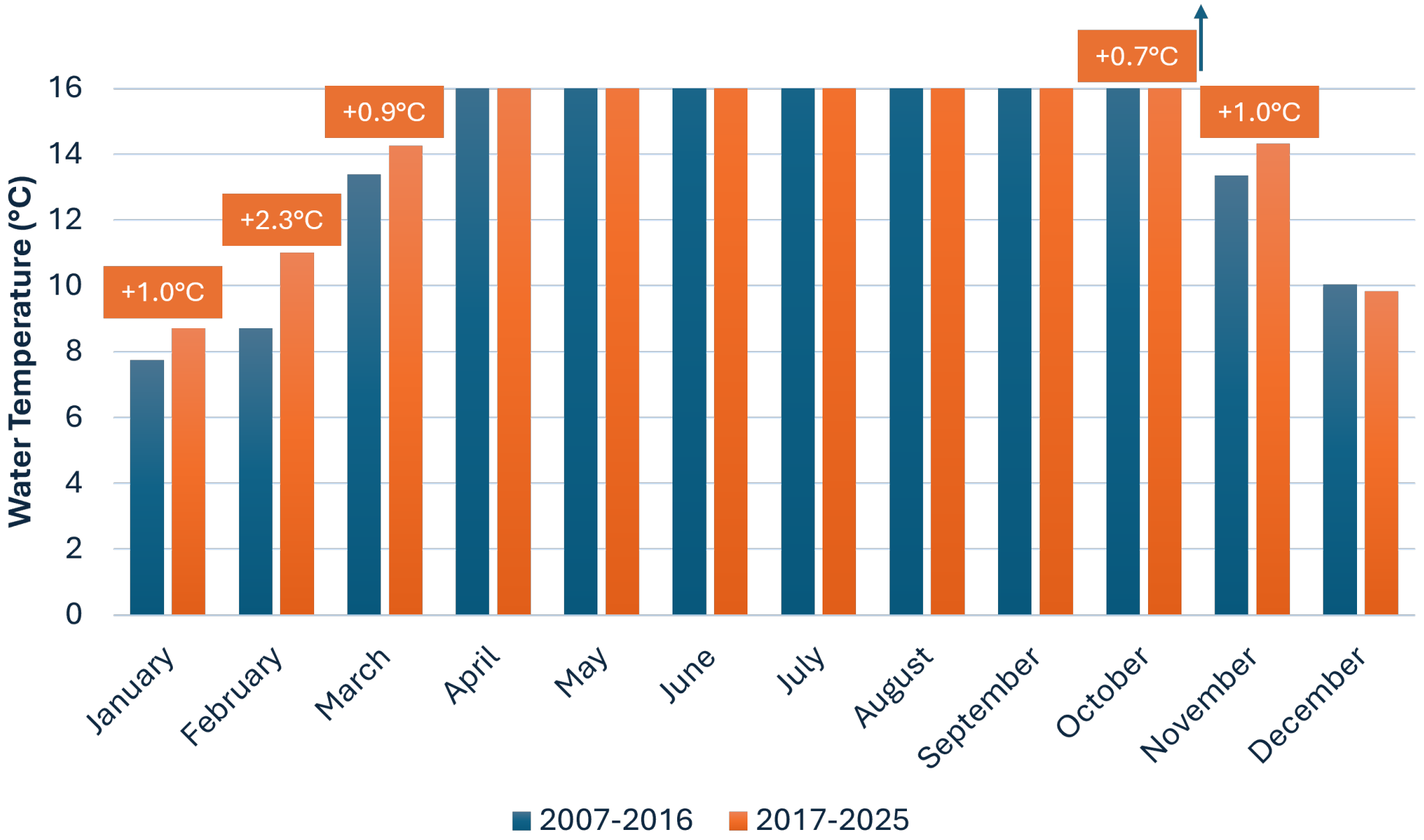
How do changes in climate and hydrology affect invasive plants?



Warming winter waters in SC






Water Temperature (°C)
16
14
12
10
8
6
4
2
0
+1.0°C
+2.3°C
+0.9°C
+0.7°C
+1.0°C
January
February
March
April
May
June
July
August
September
October
November
December
2007-2016
2017-2025

Drought Conditions

- Increased salinity
- Saltwater intrusion
- Shallower water
- Slower flow
- Eutrophication
- Lower dissolved oxygen

Common reed
(*Phragmites australis*)

Giant salvinia (*Salvinia molesta*)
Lake Marion

Extreme Precipitation→ High Flows

- Invasive plants move downstream
- Reduced persistence of chemical/biological controls

Management Response

- Predict range expansions of nearby invasives
- Adapt control strategies to changing conditions
- Focus on prevention, early detection, and rapid response to invasion

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Invasive species prevention: You can help

DO'S:

- Clean up after your pets
- Leave or plant native vegetation along shorelines.
- If you take boats, gear or pets to a waterbody, clean them before going to another waterbody

DON'TS:

- Don't overuse herbicides/pesticides/fertilizers
- NEVER apply herbicide to public waters
- Don't dump bait
- Don't dump your aquarium in public waters
- NEVER remove grass carp from public waters

@SouthCarolinaDES

Contact us

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