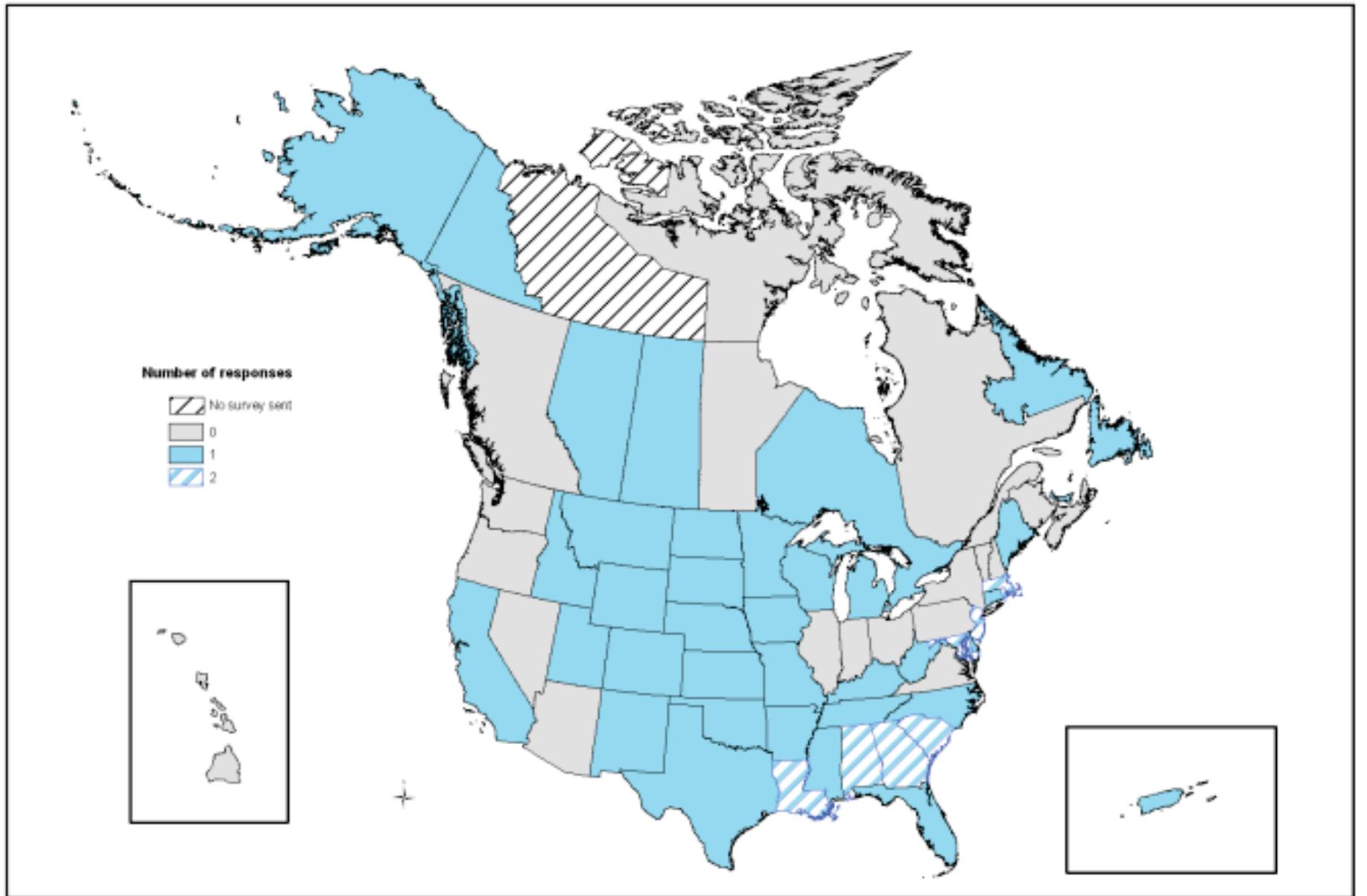


**2013 Esri International User Conference**

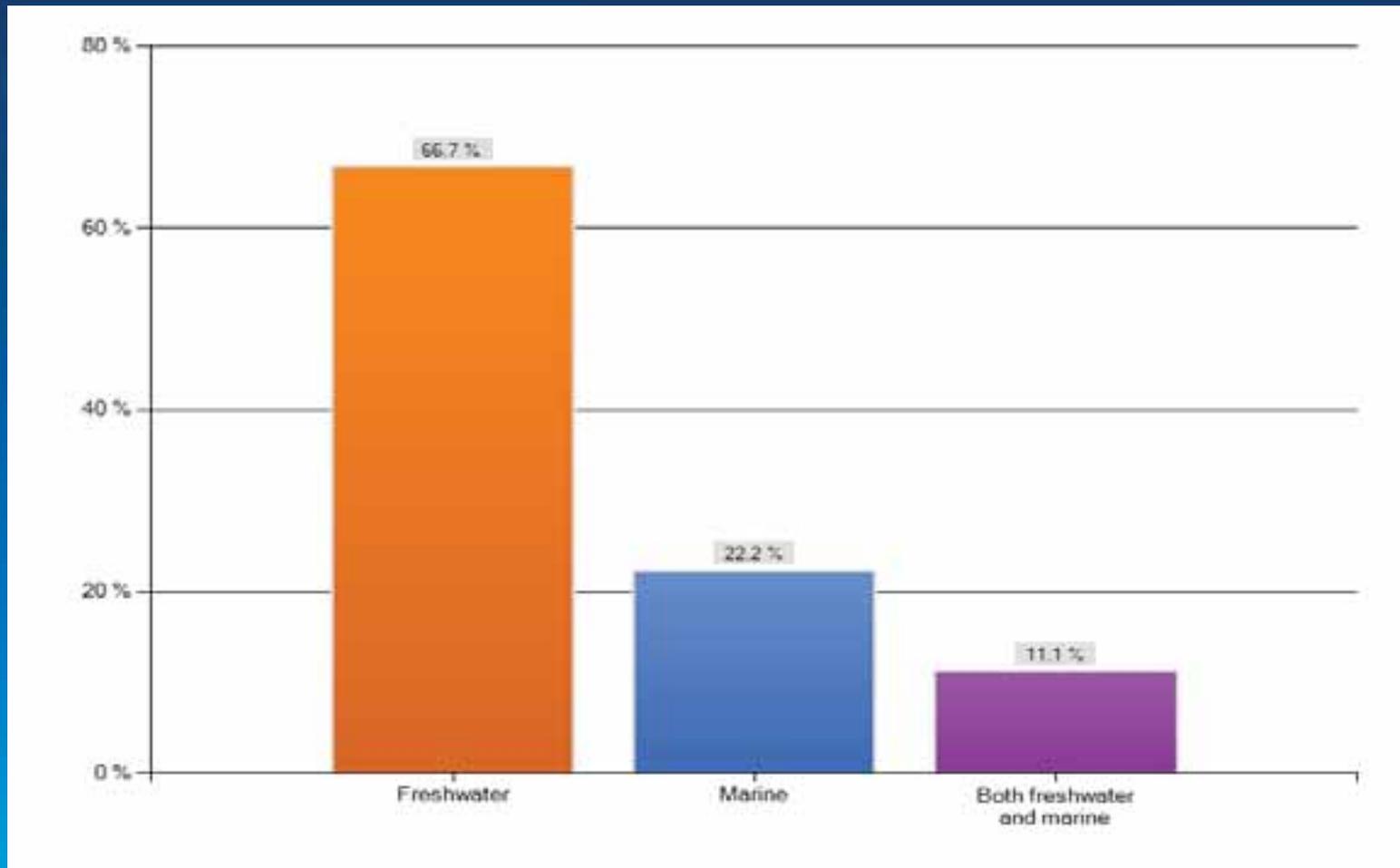
July 8–12, 2013 | San Diego, California

# **GIS use by fisheries scientists in the United States and Canada**

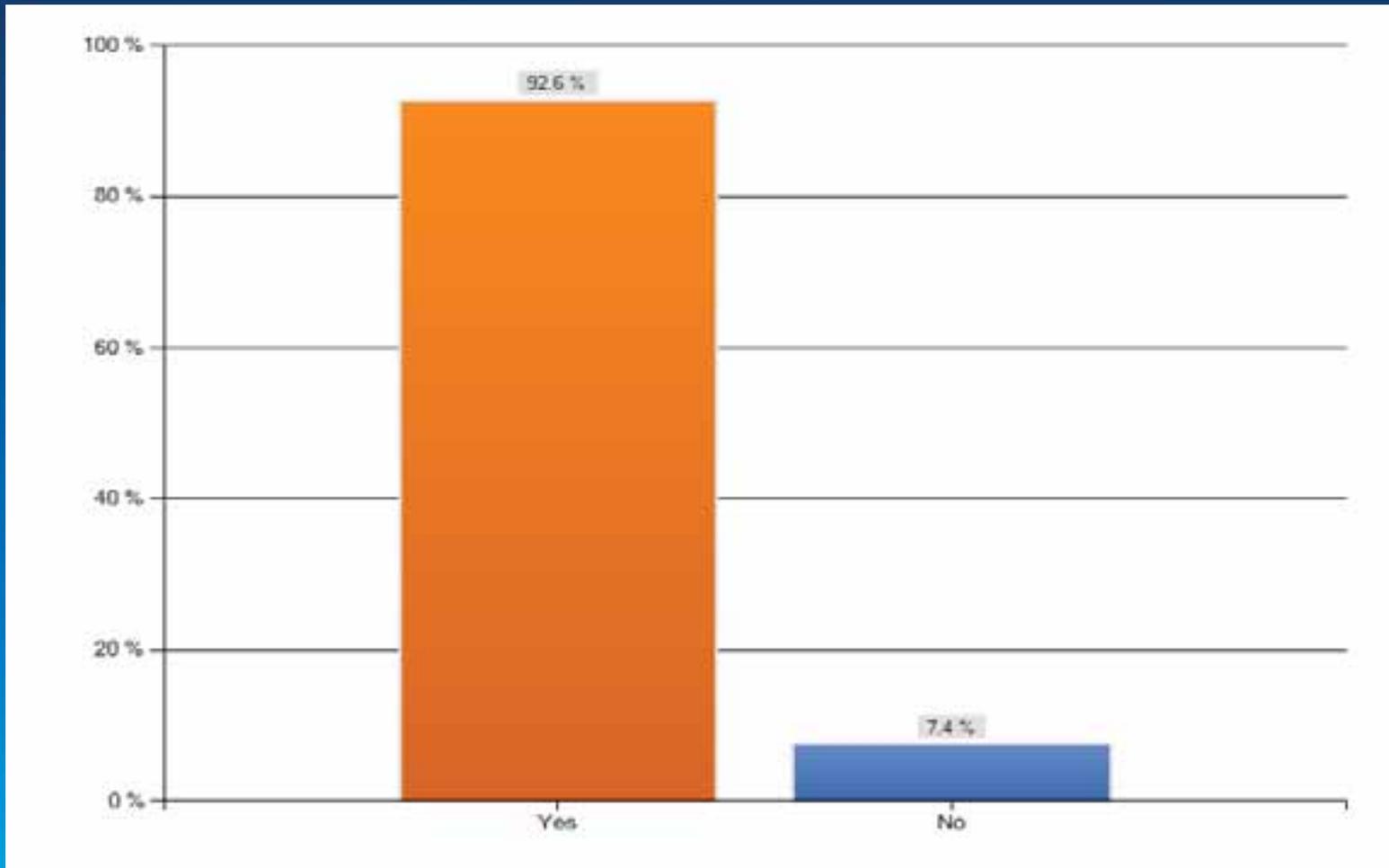
Brandon Eder and Ben Neely



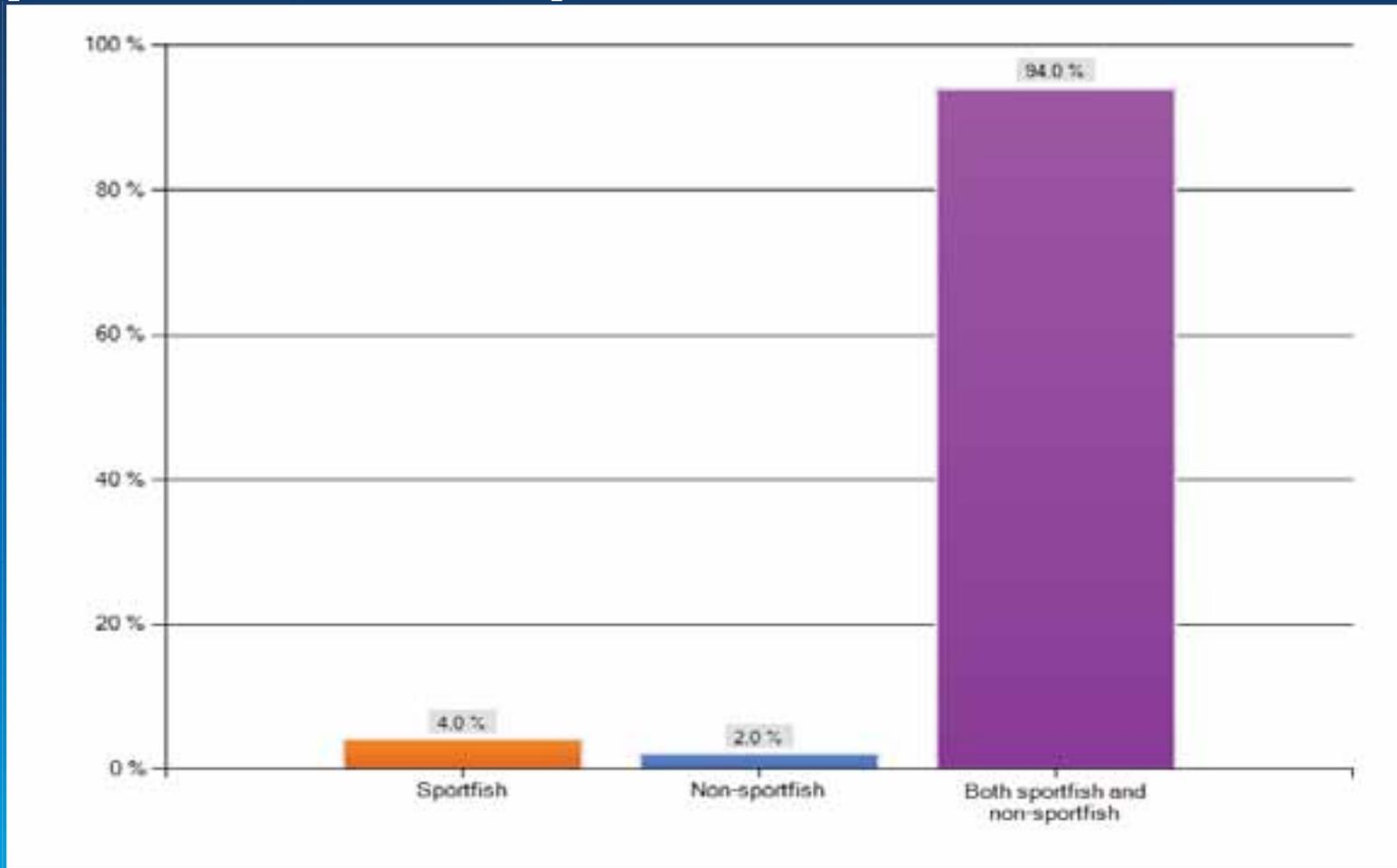
# Do you oversee your agency's freshwater division, marine or both?



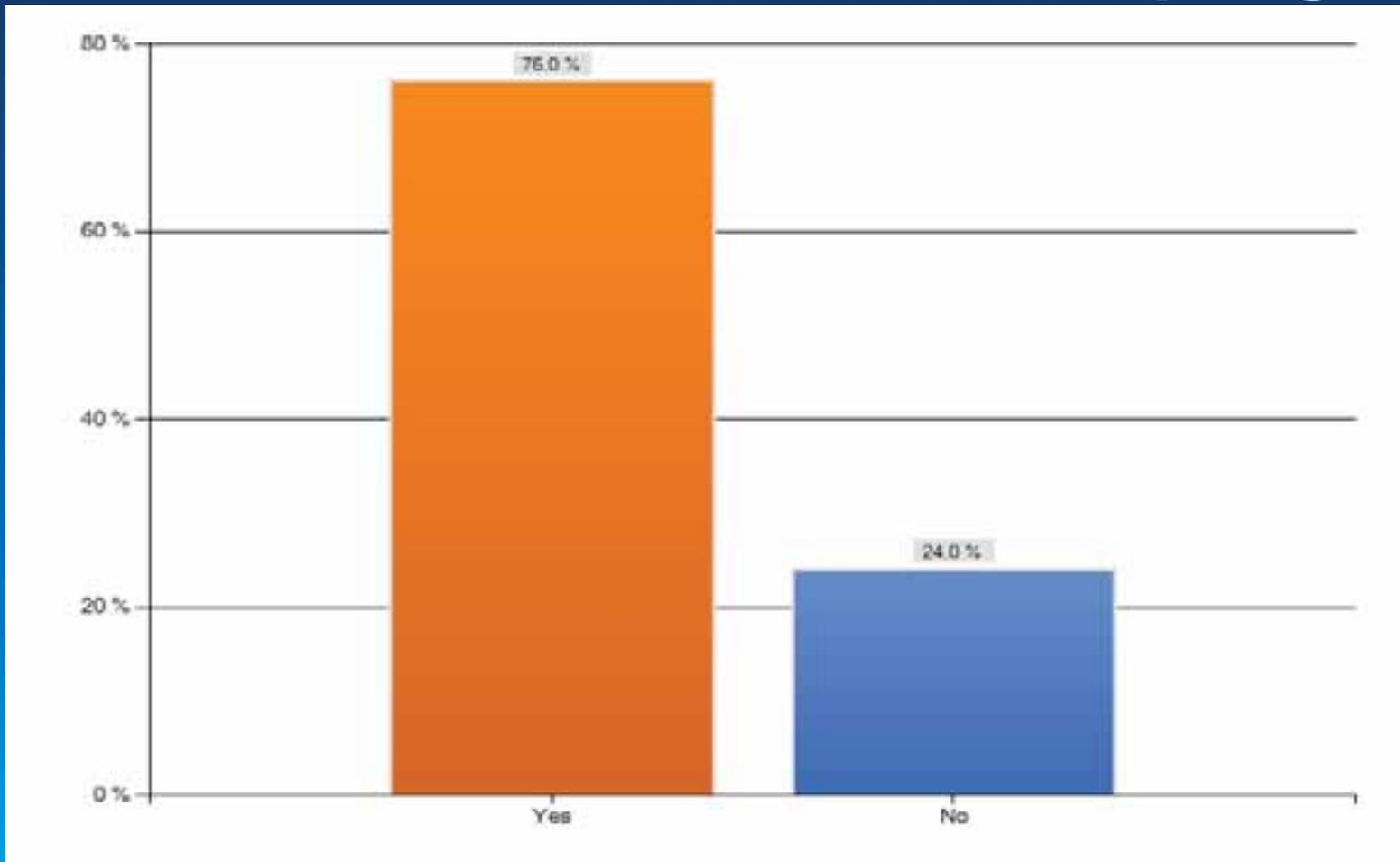
# Are GIS used by your division as a tool to help manage fish populations?



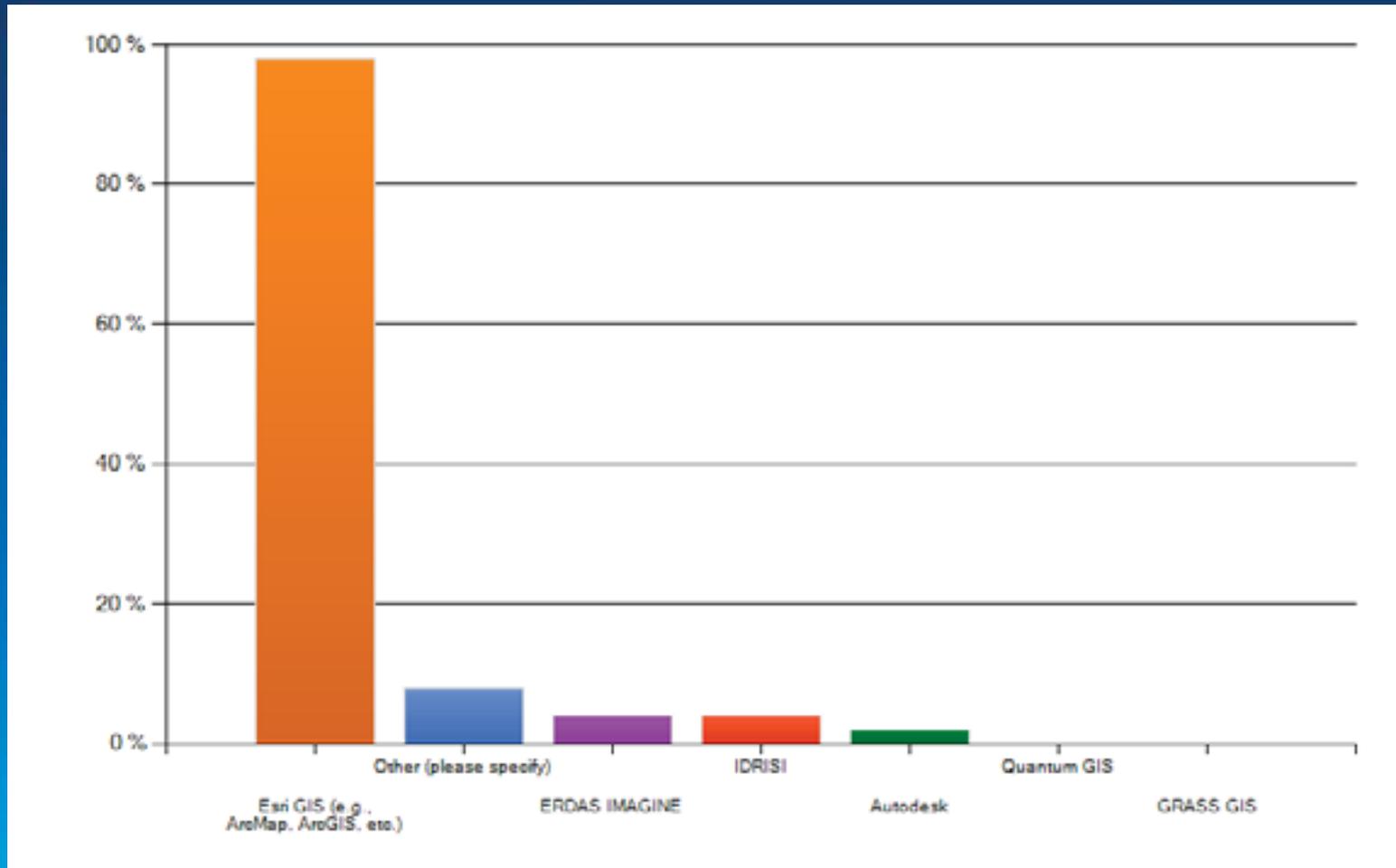
# Are GIS used for management of sportfish, non-sportfish or both?



# Are GIS used as part of your standardized fish or habitat sampling?



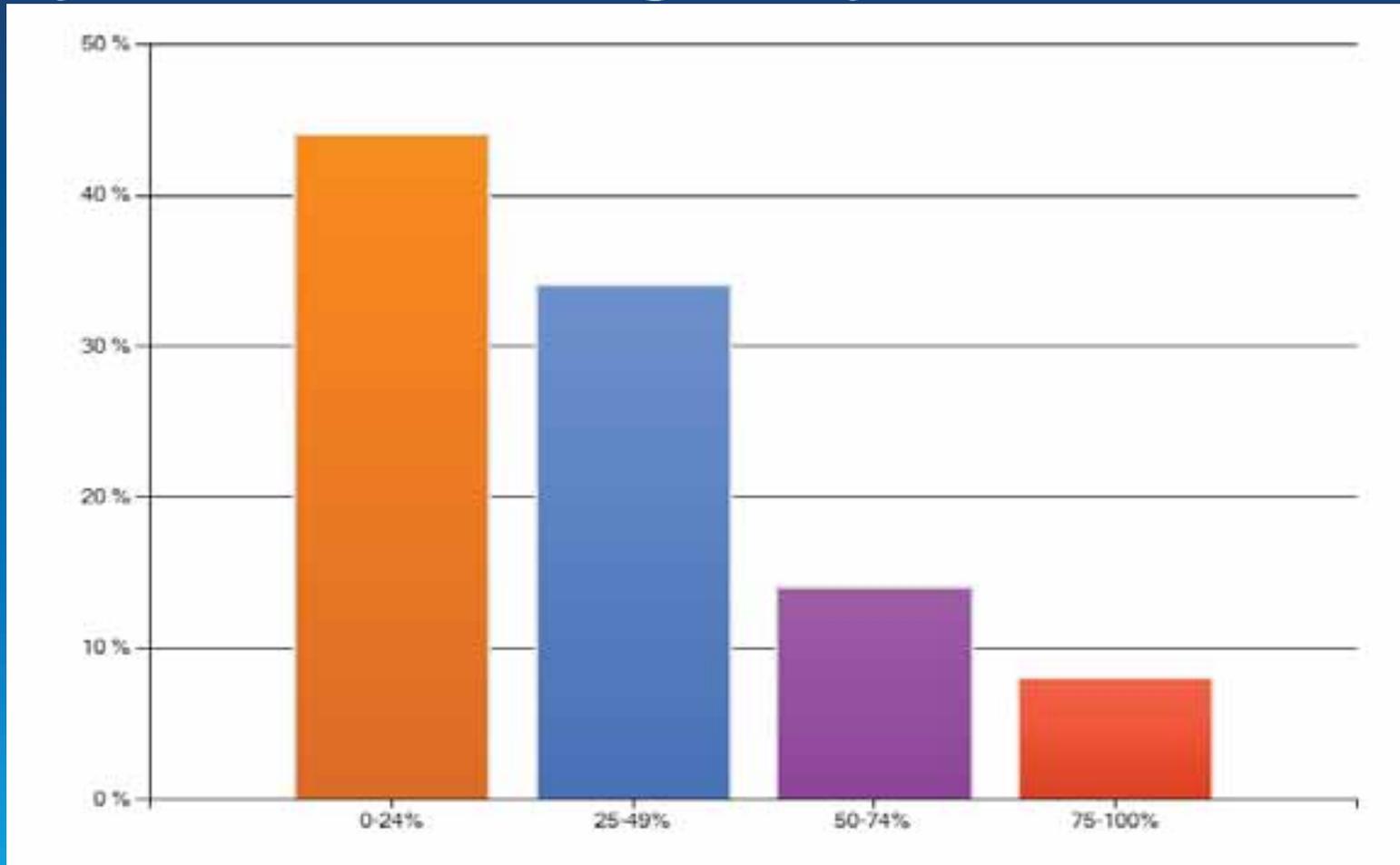
# What GIS program(s) is/are used by your division?



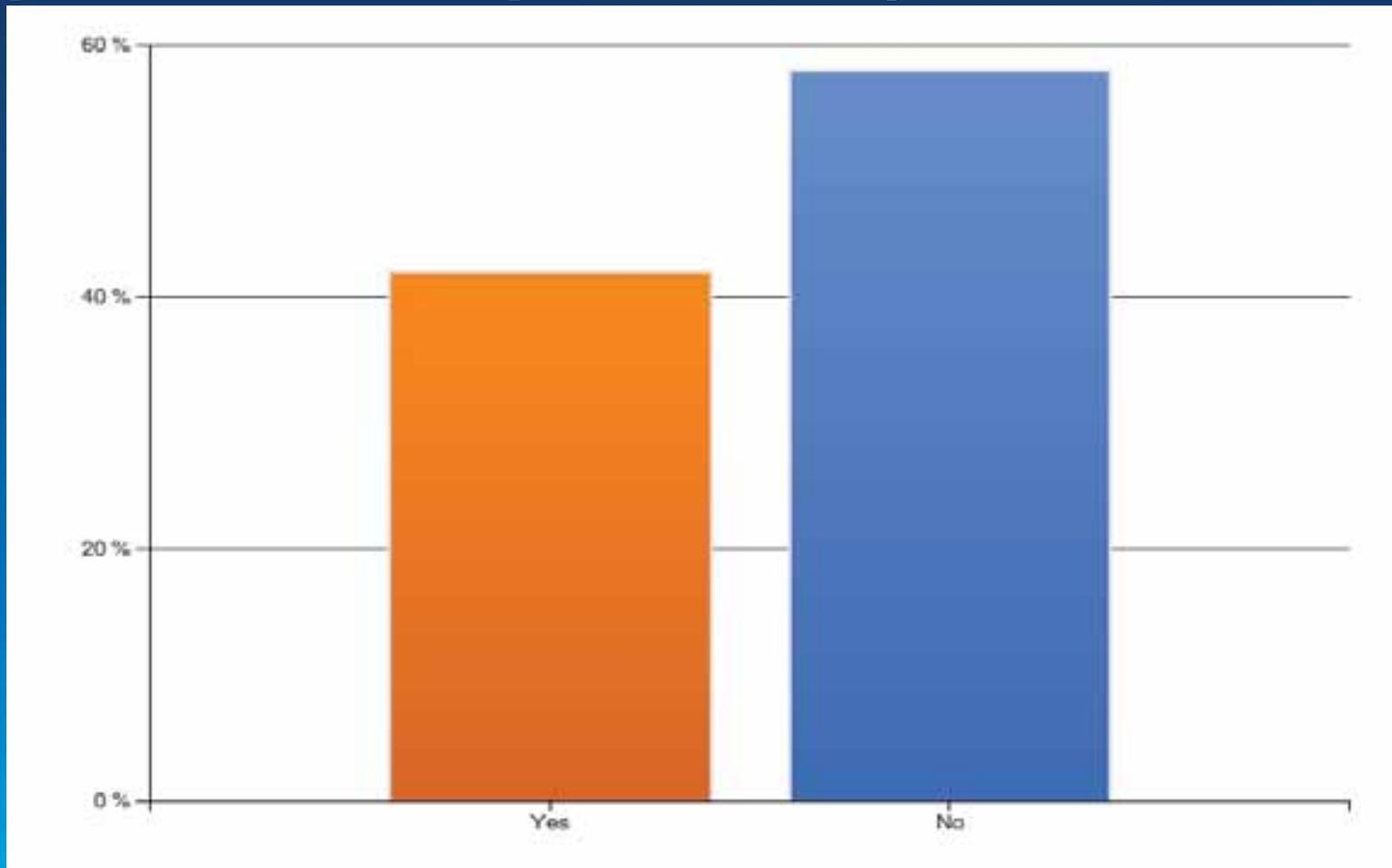
# Summary, Part I

- GIS widely used by fisheries agencies
  - Marine and freshwater
  - Used to sample fish and habitat
- Esri products dominate use
- Free or open software not used

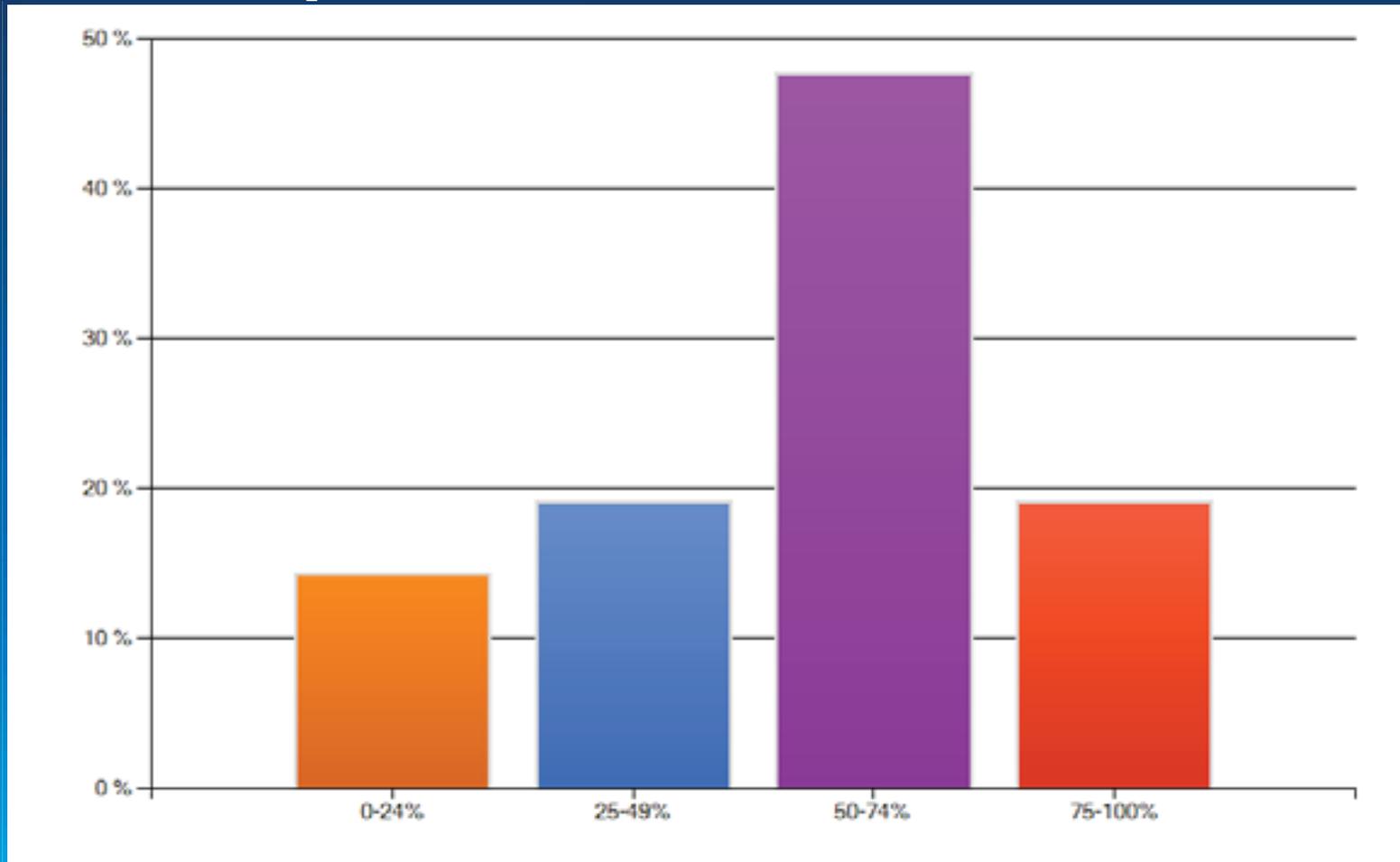
# What percentage of fisheries biologists in your division regularly uses GIS?



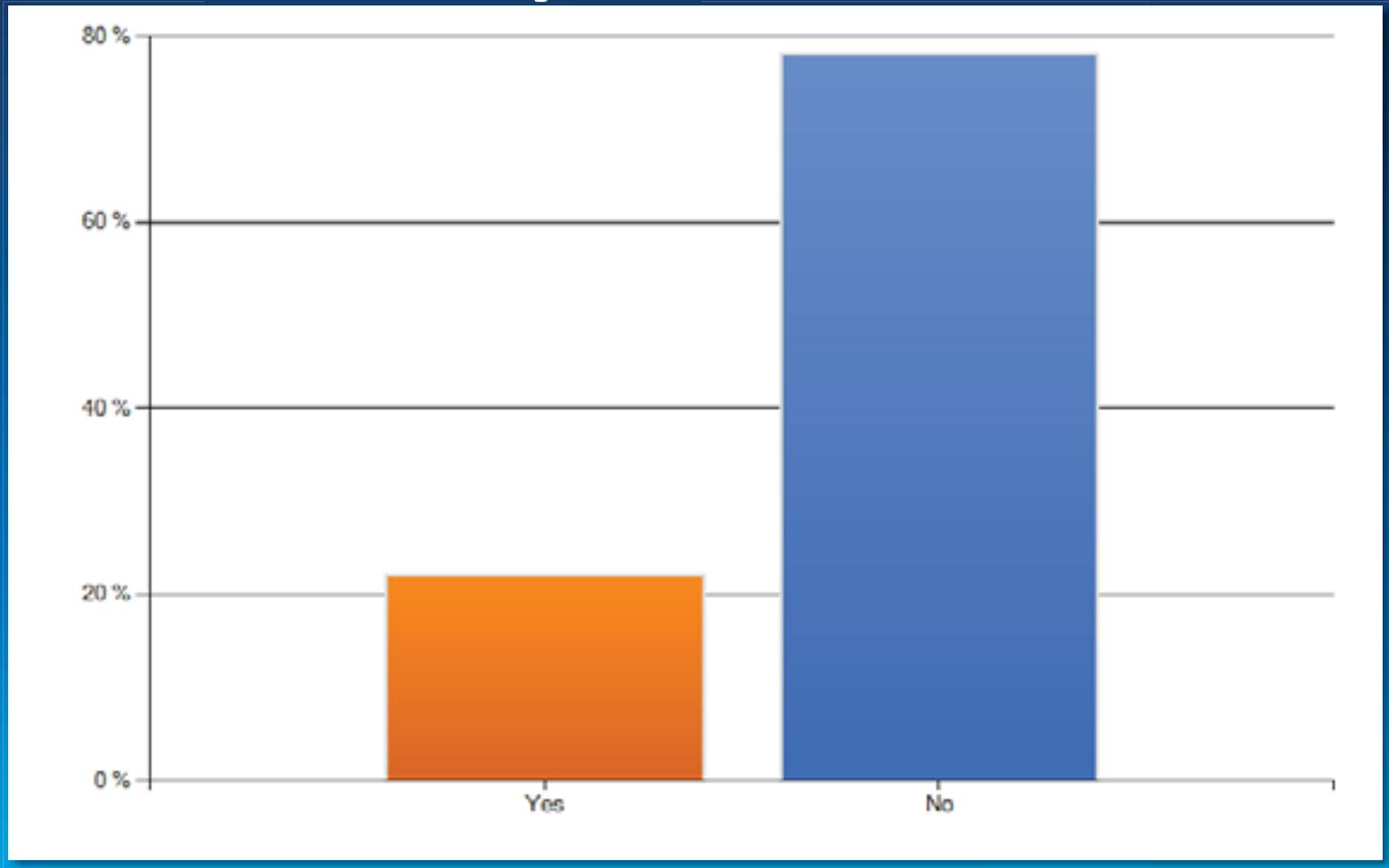
# Does your division have a GIS specialist for spatial analyses of data?



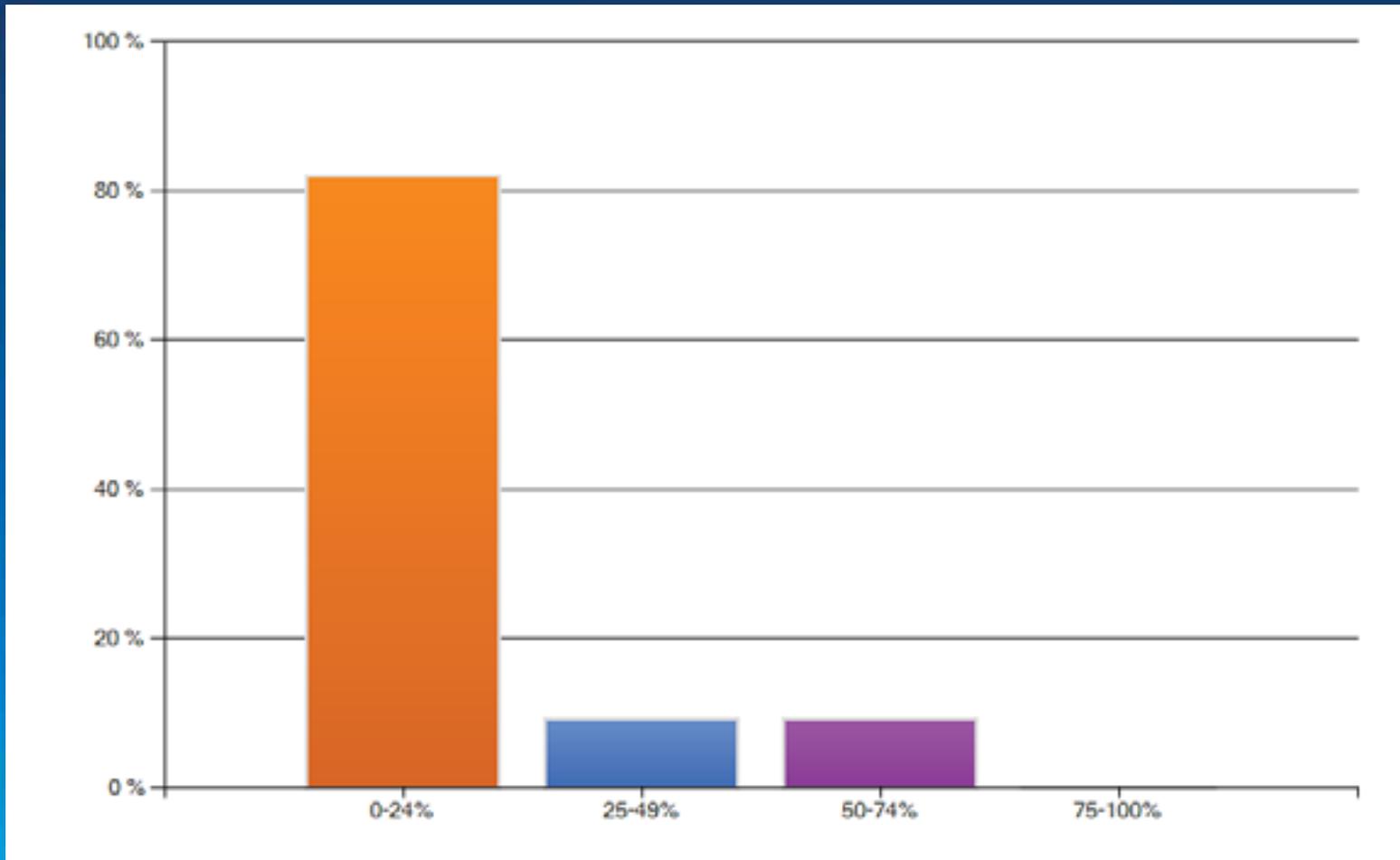
# What percentage of GIS work is done by the GIS specialist?



# Does your division contract services to assist with analyses of data?



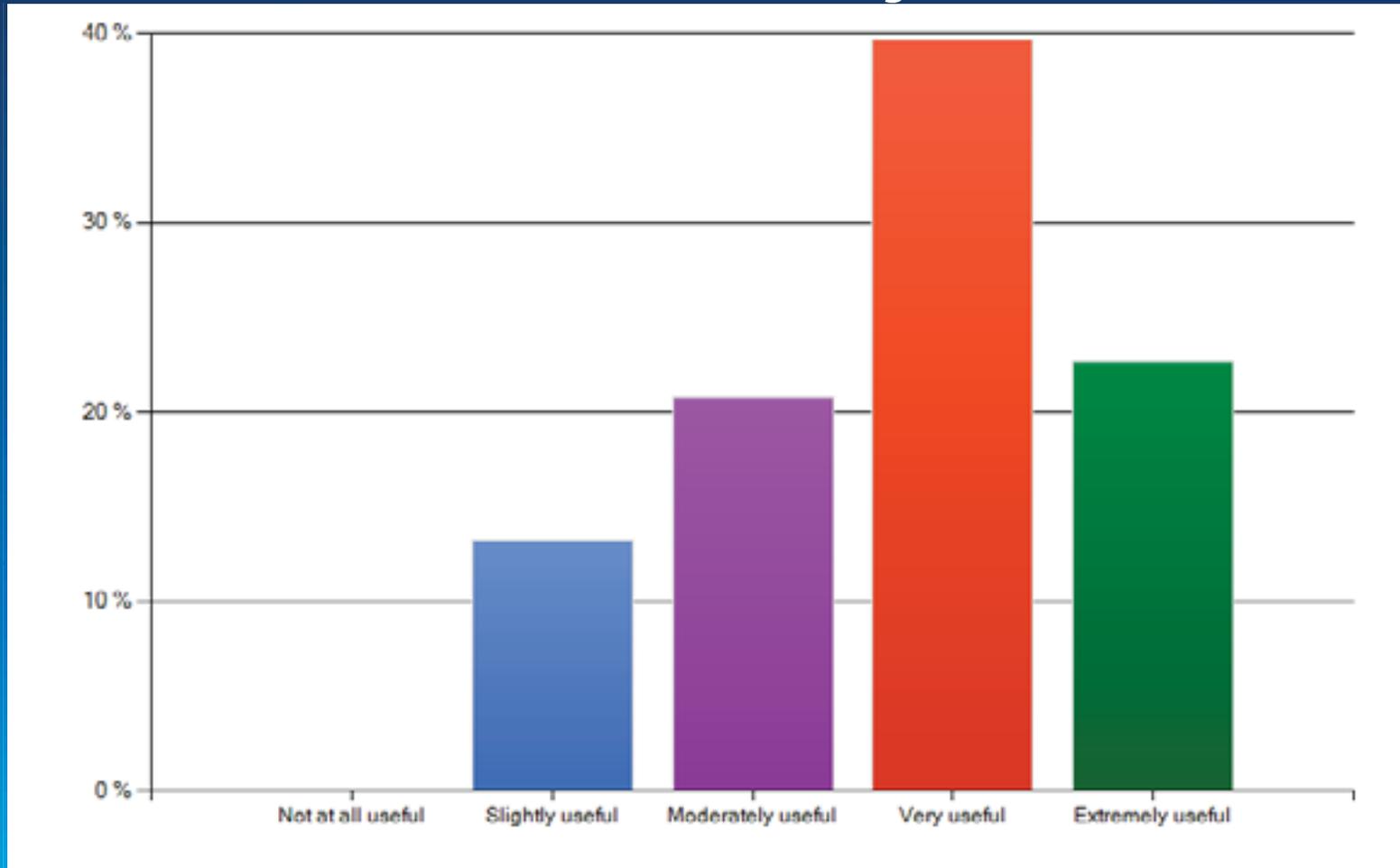
# What percentage of GIS work is contracted?



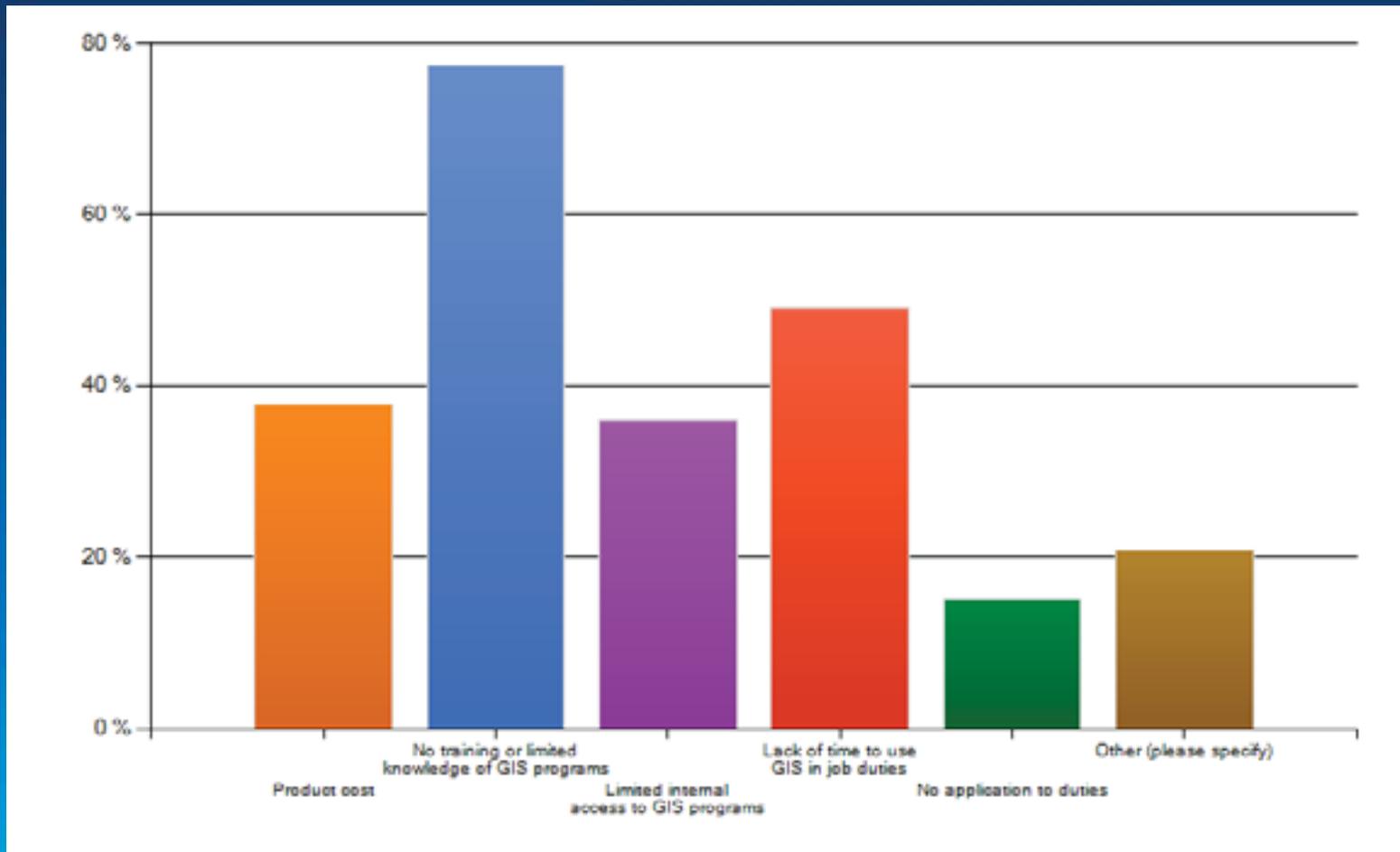
# Summary, Part II

- Majority of agencies report <50% of bio's using
- Over 50% of agencies have GIS specialist
- Most agencies don't contract work
- Lots of work being done by a few people

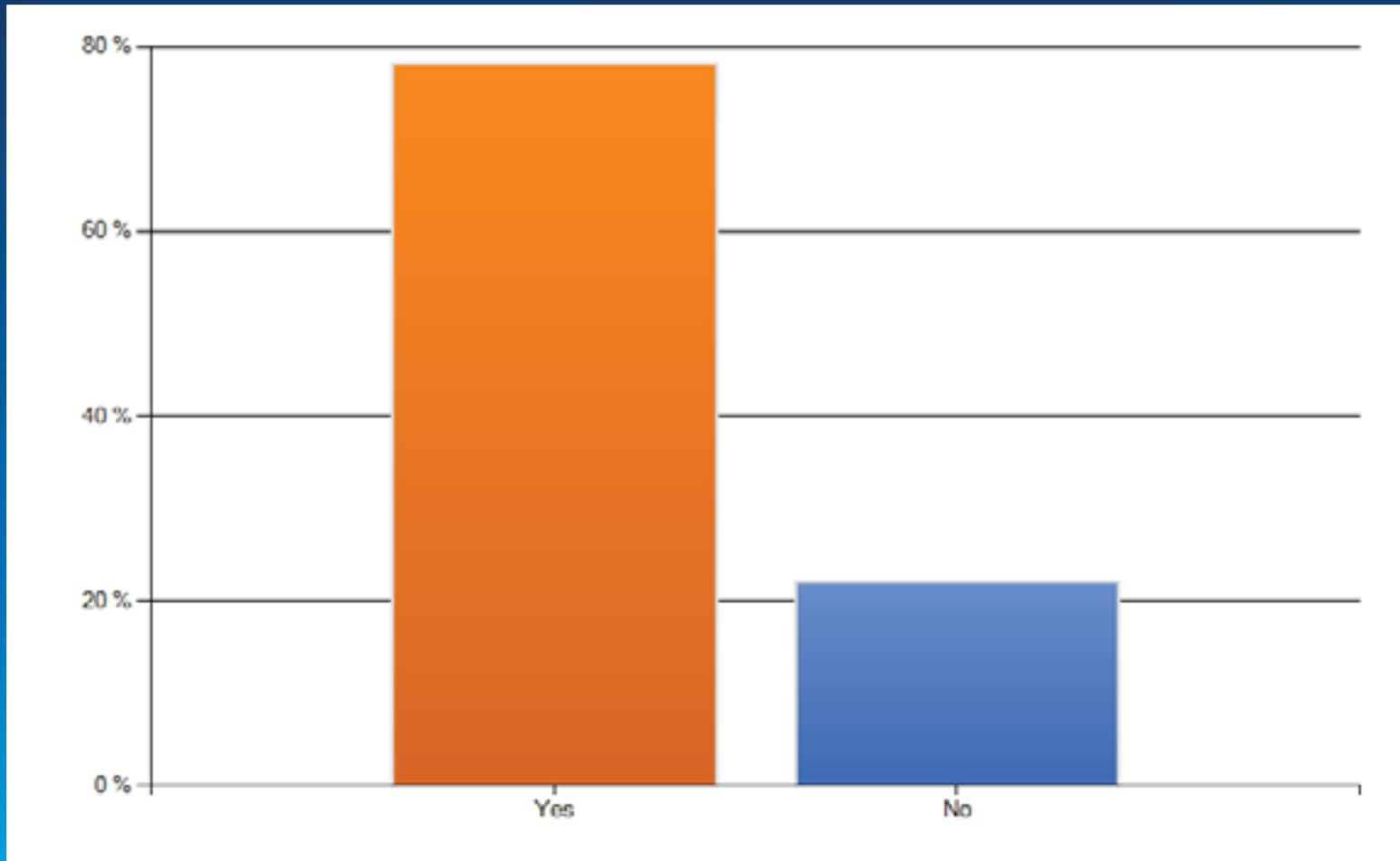
# How useful are GIS to help your agency achieve its mission or objectives?



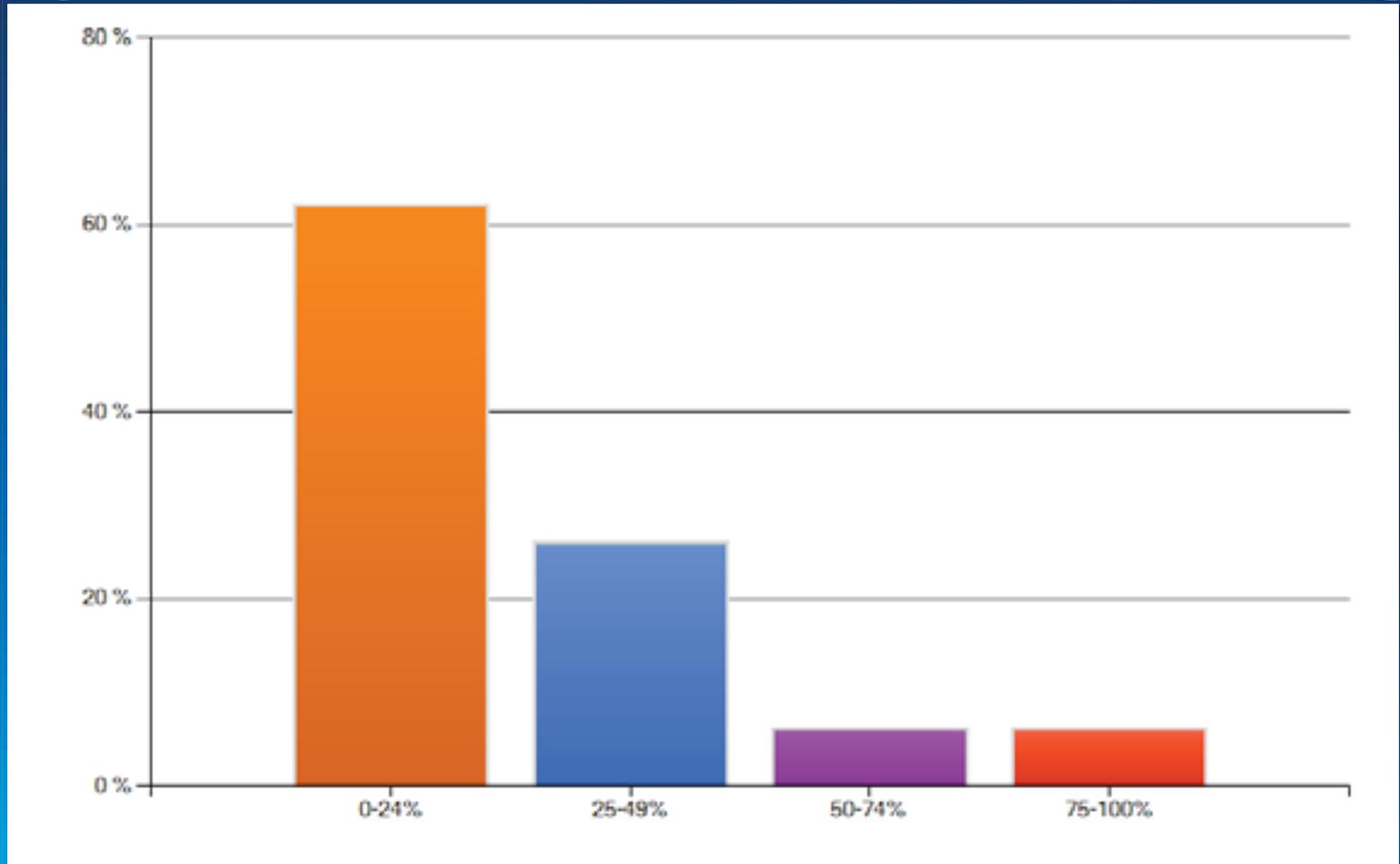
# What limits GIS from being used more by fisheries biologists in your division?



# Does your agency provide resources for biologists to enhance GIS knowledge?



# What percentage of fisheries biologists in your division have taken GIS training?



**Please provide examples of how fisheries biologists in your division have used GIS to better manage and/or research fish populations or fisheries.**

Fish distributions/movements	47
Sampling design	35
Angler maps/bathymetry	18
Habitat mapping	14

# Summary, Part III

- Majority believe GIS “very useful” or “extremely useful”
- No training largest perceived obstacle
- Most agencies provide resources for training
- Few bio’s take advantage
- Save \$ by training employees

# Summary, Final

- High use, by few individuals
- Encourage bio's to explore continuing education
- Options re: software
- Promote training at local and regional fisheries conferences (AFS chapter meetings, Midwest)
- May save cost by training employees vs. contracting
- Strong use of GIS in fisheries – valuable tool for the biologist

## Thank you to:

- USACE , Omaha and Federal Aid in Sport Fish Restoration grant F22R to the Kansas Department of Wildlife, Parks, and Tourism.
- D. Gabelhouse Jr., D. Nygren and S. Steffen for help with survey design.
- All who responded to the survey.

# GIS use by fisheries scientists in the US and Canada

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