

Summary of Survey 2 Results

DRIFT PLAINS (REGION 6)

*Objective of Survey 2: To inform the status of specific threats and importance of various conservation actions for **habitats** within individual **planning regions** in Indiana (Elements 3 and 4)*

Survey About Threats to and Conservation Needs for Fish and Wildlife Habitats in Indiana

— In Support of the 2015 Indiana State Wildlife Action Plan—

DNR
Indiana Department
of Natural Resources



Flow of Survey 2:

1. Introduction
2. Planning region and habitat selection
3. Status and trends in habitat
4. Threats and trends of threats to habitats
5. Conservation actions for habitats
6. Relative ranking of conservation actions in each planning region
7. Organizational adaptation and evaluation
8. Additional Comments

Survey About Threats to and Conservation Needs for Fish and Wildlife Habitats in Indiana

— In Support of the 2015 Indiana State Wildlife Action Plan—

DNR
Indiana Department
of Natural Resources



Flow of Survey 2:

1. Introduction
2. Planning region and habitat selection
3. Status and trends in habitat
4. Threats and trends of threats to habitats
5. Conservation actions for habitats
6. Relative ranking of conservation actions in each planning region
7. Organizational adaptation and evaluation
8. Additional Comments

Survey 2 Participation Rates

Sent online to directly to 972 conservation professionals, stakeholders, species experts, property managers, etc.

“Open” link provided for other individuals to participate

Recorded 362 full and partial responses

- 285 direct distribution
- 77 open link

For which of the following SWAP planning regions do you consider yourself knowledgeable to provide information on the status of, threats to, and relevant conservation actions for fish and wildlife habitats?

Drift Plains (Region 6) – 18.7% (54)

Habitat type:	Proportion of respondents:	N:
Aquatic systems	34.6%	18
Agricultural lands	42.3%	8
Barren lands	15.4%	8
Developed Lands	11.5%	6
Forests	75.0%	39
Grasslands	40.4%	21
Subterranean systems	9.6%	5
Wetlands	48.1%	25

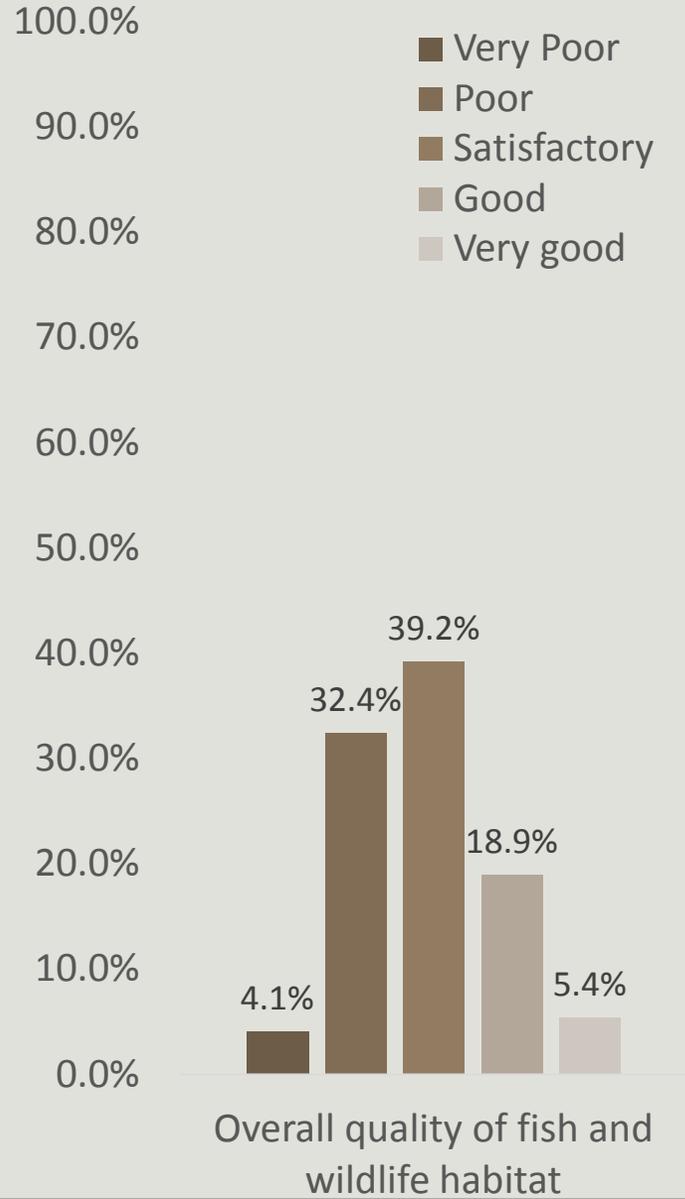
*Summary of trends in **habitat** within the Drift Plains (Region 6)*

11. How would you describe the **overall quality** of fish and wildlife habitats within **HABITAT** in the REGION?

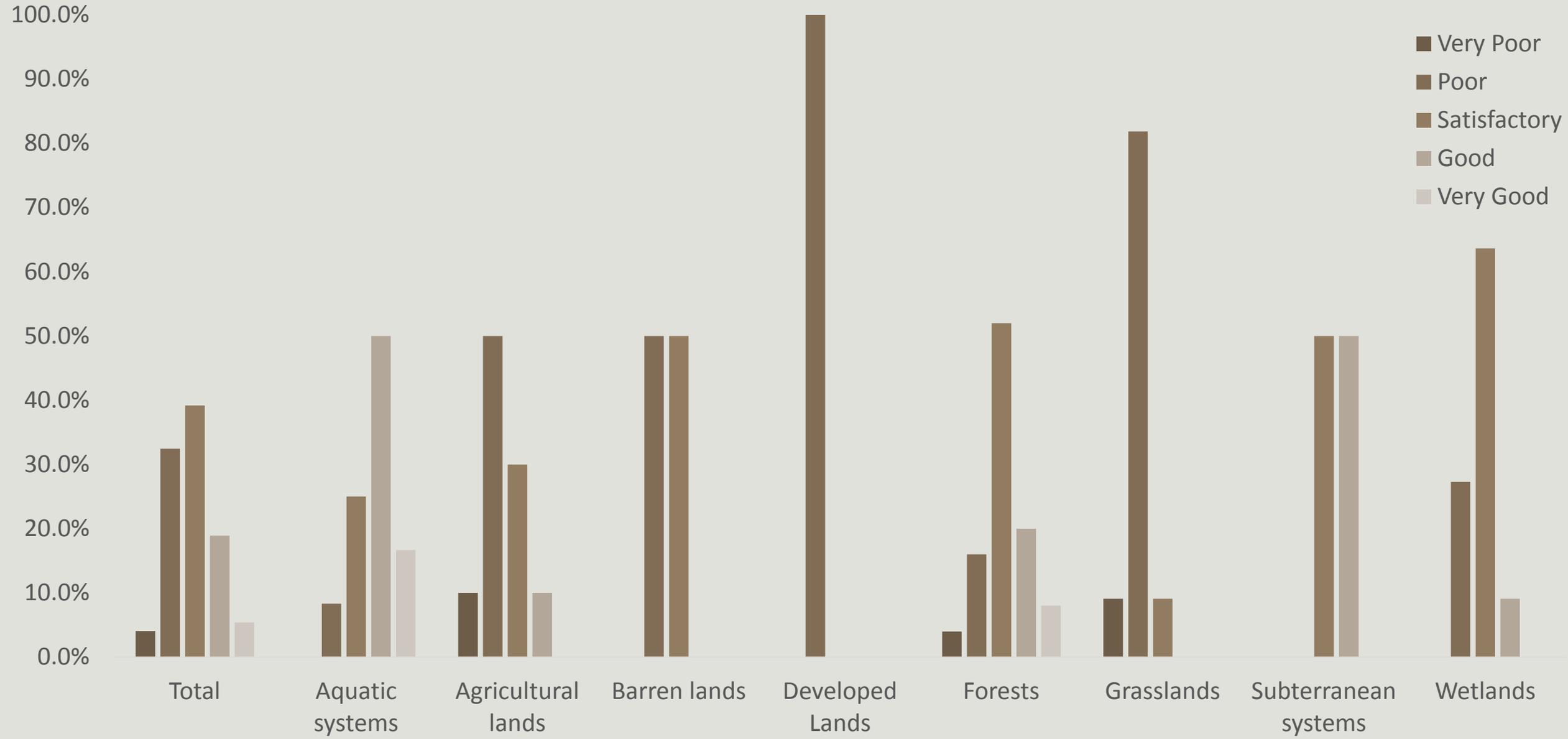
12. How would you describe the total amount and overall quality of fish and wildlife habitats within **HABITAT** in the REGION since 2005?

13. How would you predict about the total amount and overall quality of fish and wildlife habitats within **HABITAT** in the REGION over the next 10 years? (Check one for each line item)

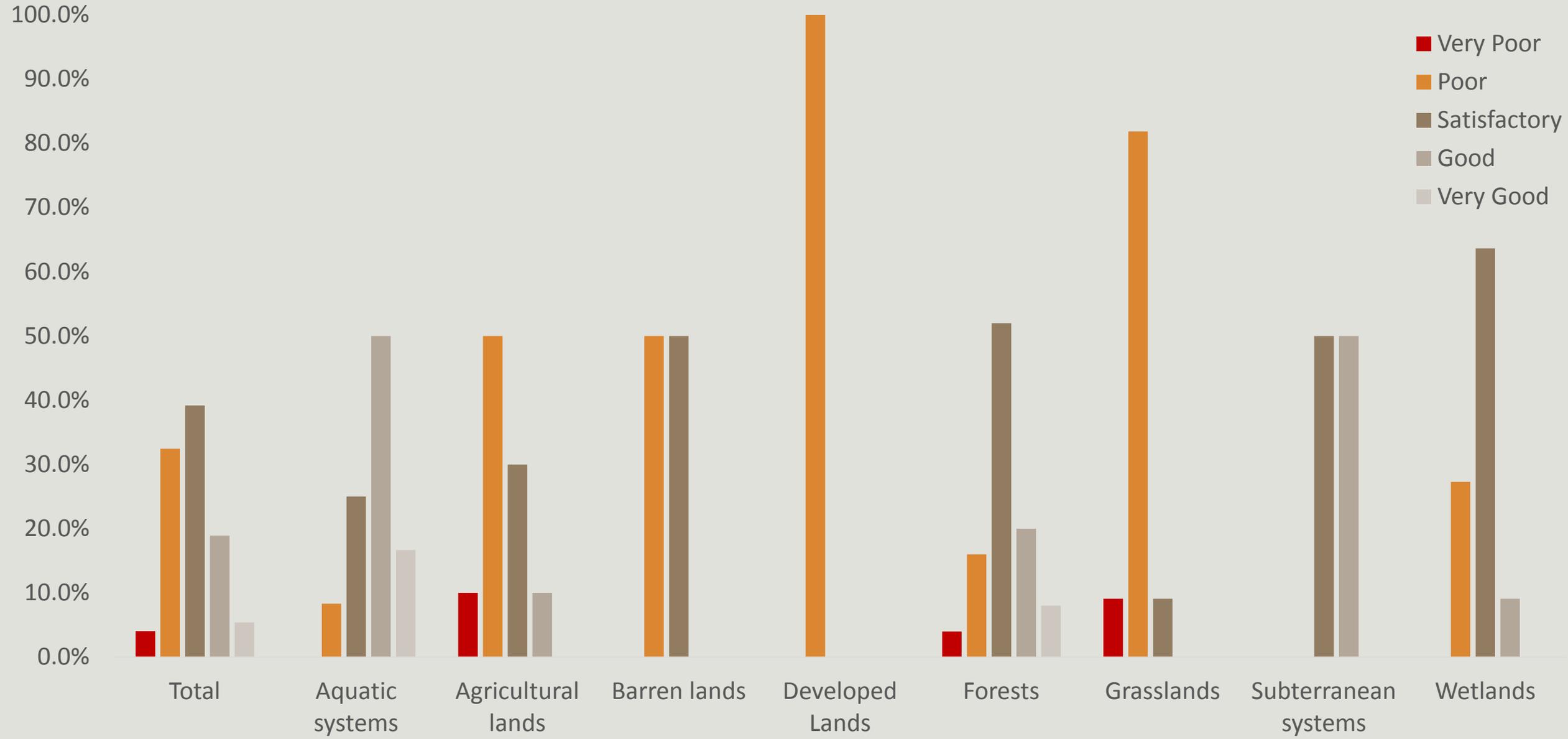
Summary of Habitat Status in the Drift Plains (Region 6)



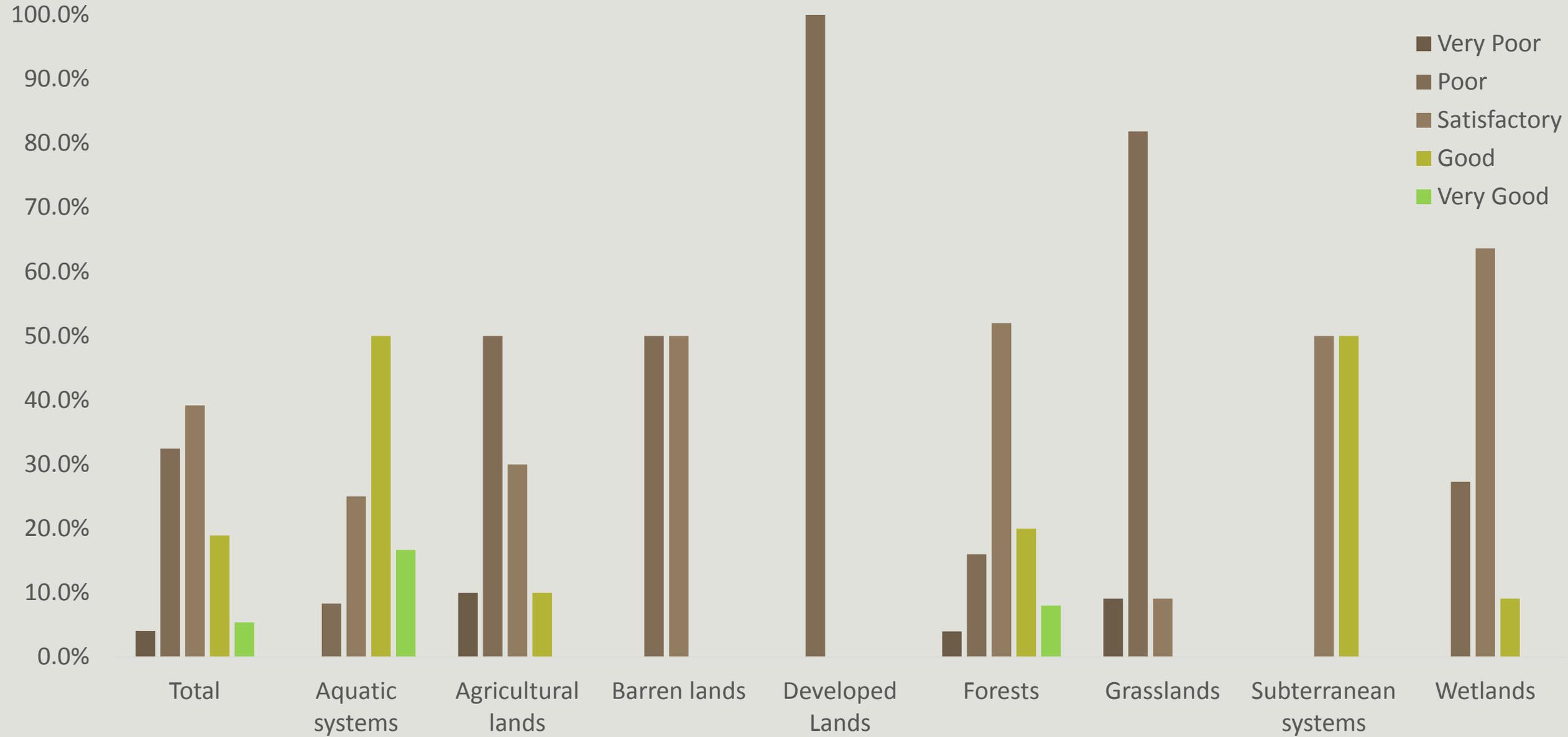
Overall Quality of Fish and Wildlife Habitats



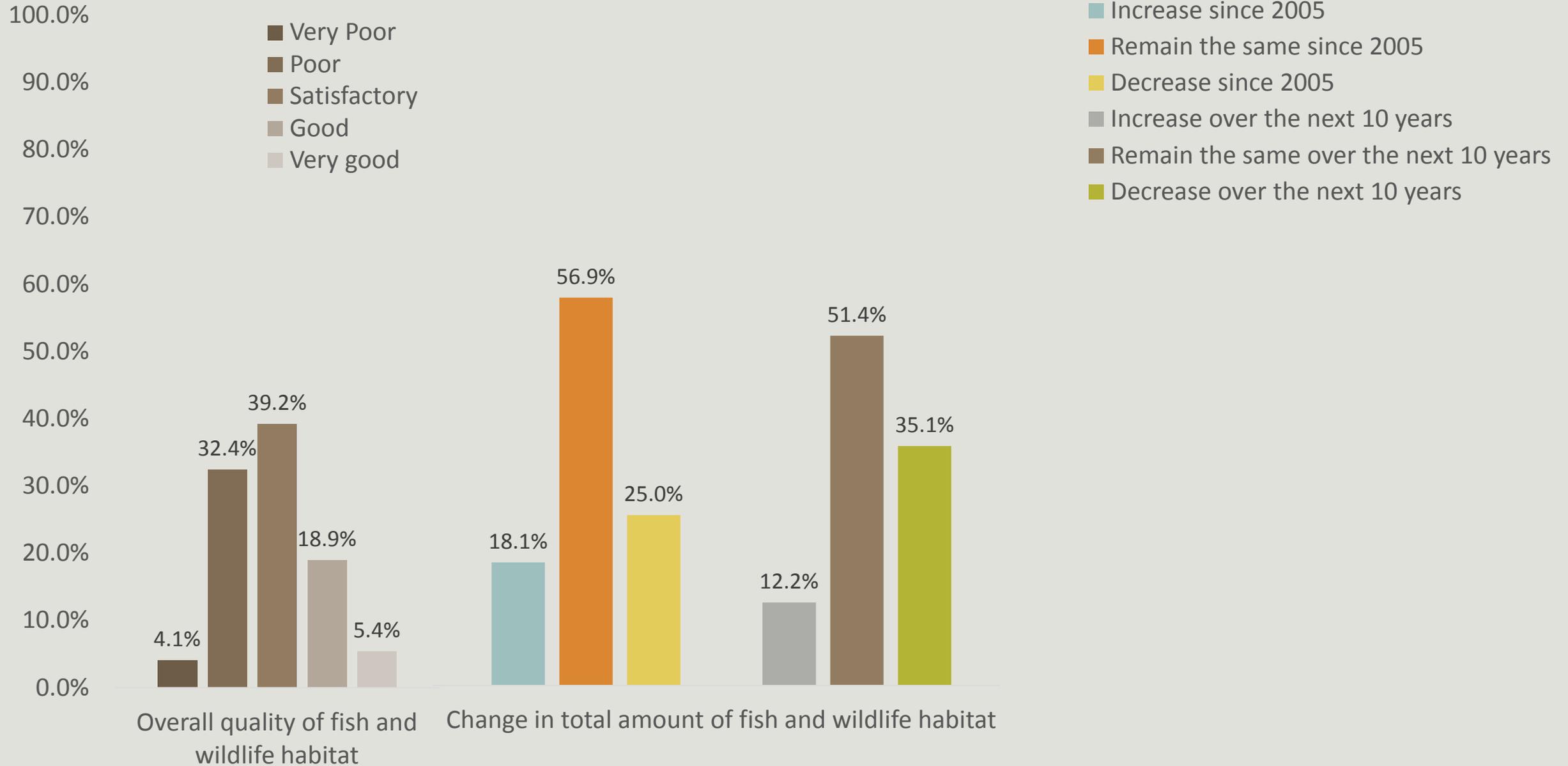
Overall Quality of Fish and Wildlife Habitats



Overall Quality of Fish and Wildlife Habitats

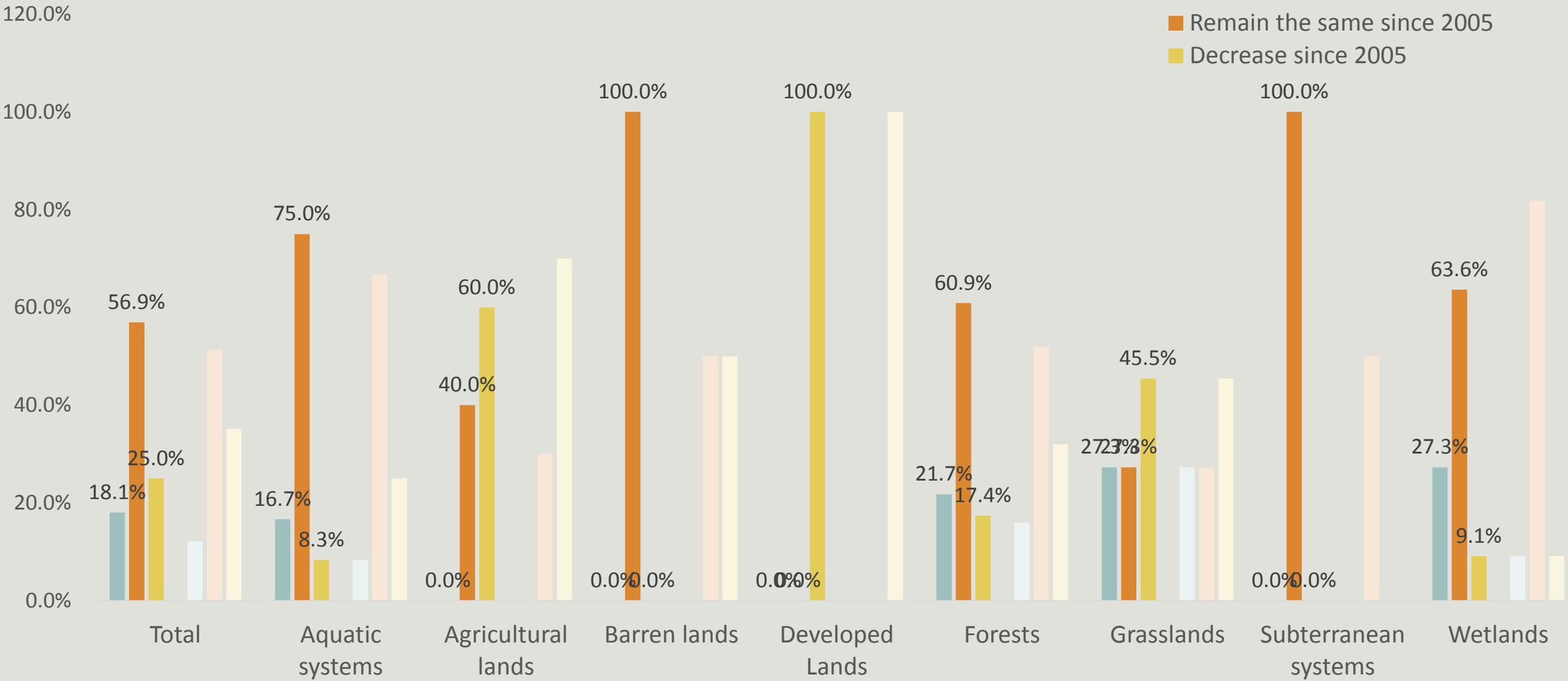


Summary of Habitat Status in the Drift Plains (Region 6)

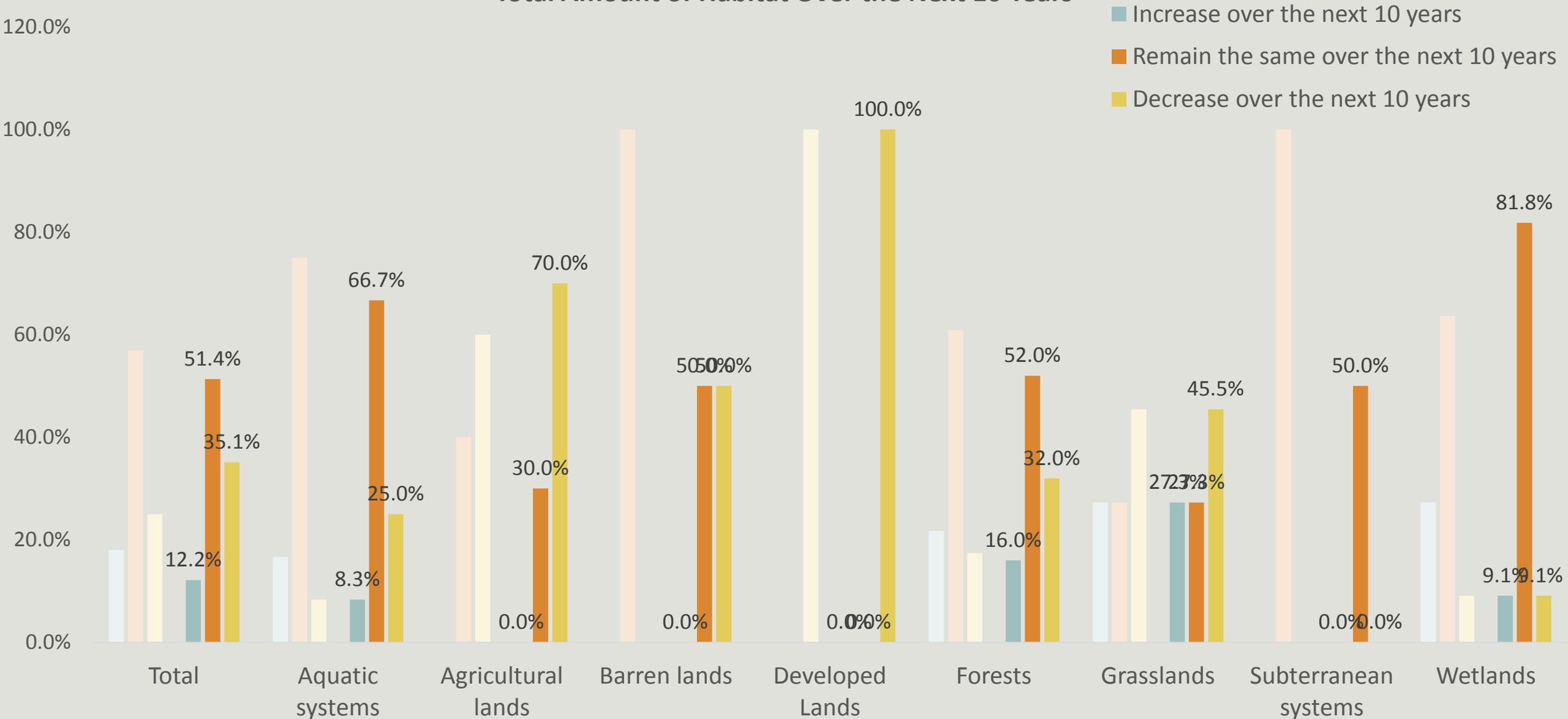


Total Amount of Habitat Since 2005

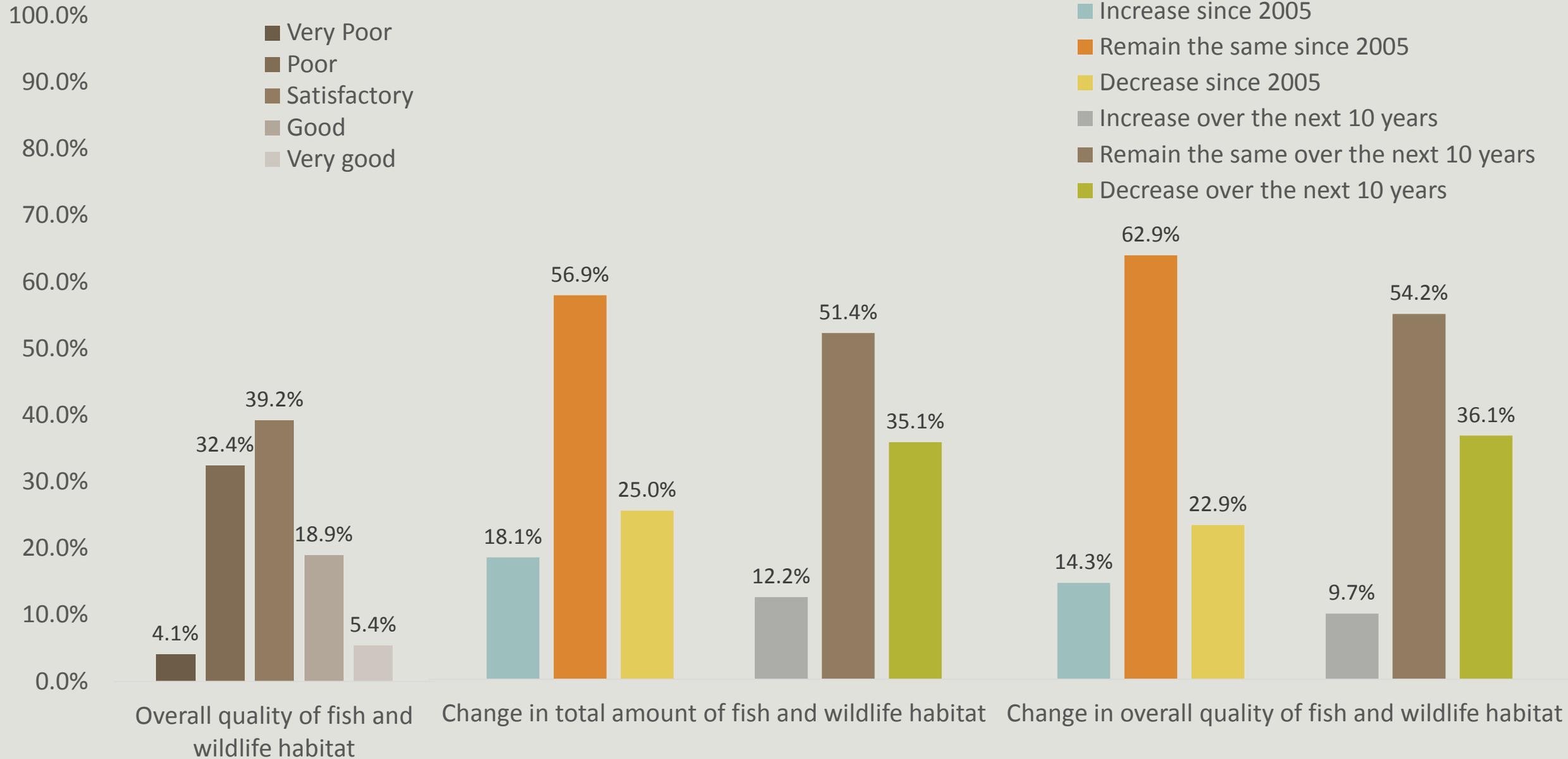
- Increase since 2005
- Remain the same since 2005
- Decrease since 2005



Total Amount of Habitat Over the Next 10 Years

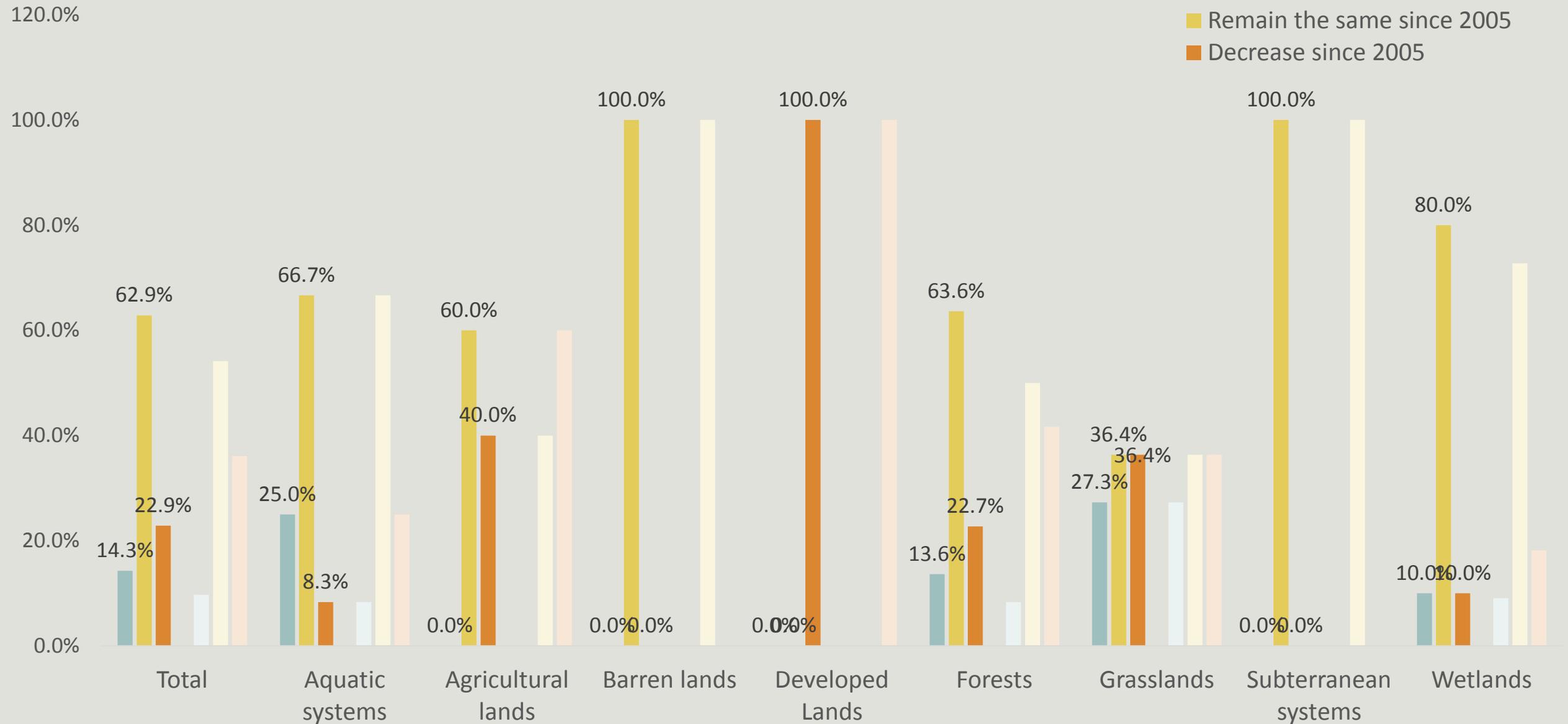


Summary of Habitat Status in the Drift Plains (Region 6)



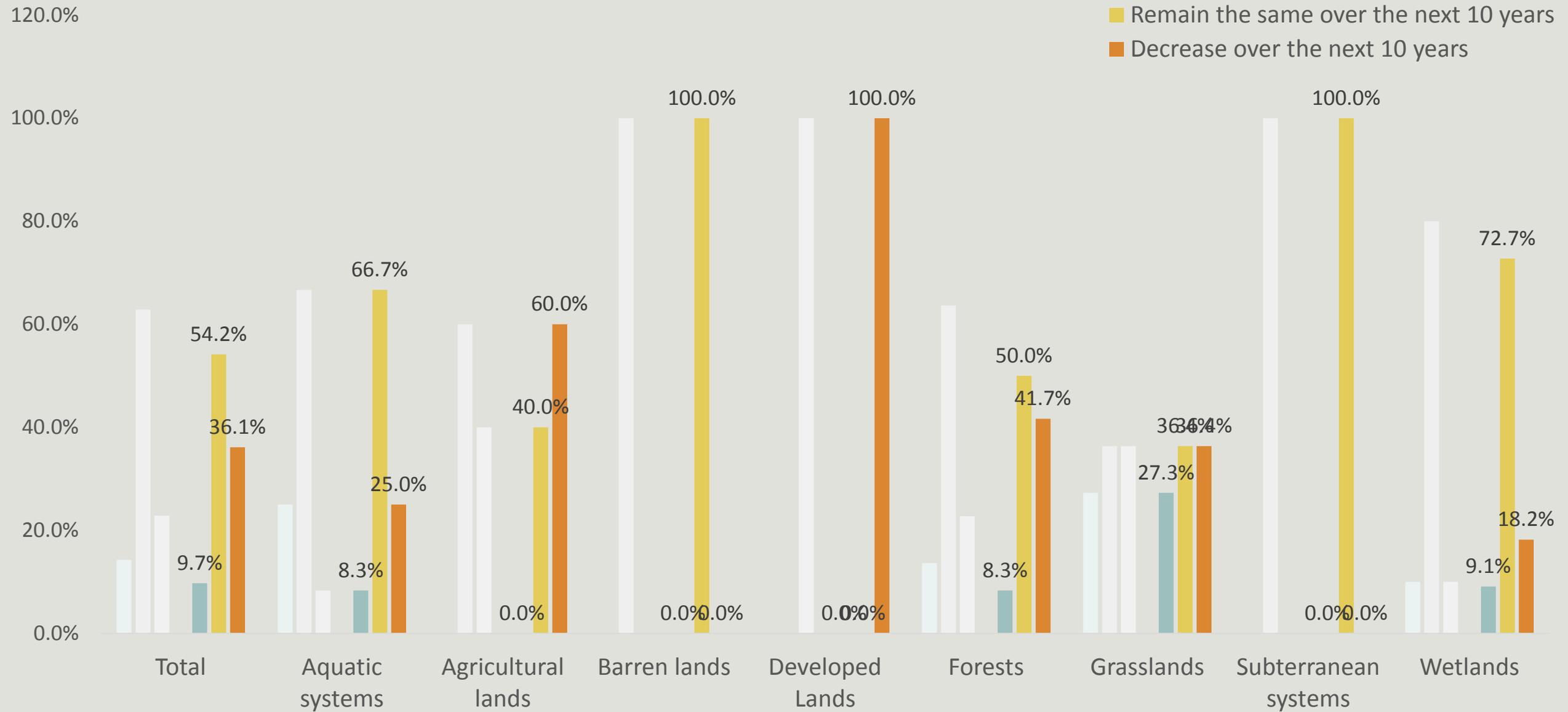
Overall Quality of Habitat Since 2005

- Increase since 2005
- Remain the same since 2005
- Decrease since 2005



Overall Quality of Habitat Over the Next 10 Years

- Increase over the next 10 years
- Remain the same over the next 10 years
- Decrease over the next 10 years



Threats to Habitats in Drift Plains (Region 6)

Broad Threat Category



Category Ranking



Specific threats, ranking
and anticipated changes

Agriculture and
Aquaculture



Significant Threat



Conversion of habitat to annual crops
Annual and perennial nontimber crops
Livestock farming and ranching
Wood and pulp plantations
Aquaculture

Energy Production and
Mining



Moderate Threat



Mining and quarrying
Fossil fuel energy production
Oil and gas drilling
Shale gas development (e.g., fracking)
Renewable energy production

Residential and
Commercial Development



Minor Threat



Housing and urban areas
Commercial and industrial areas
Tourism and recreation areas (e.g., sites
with a substantial footprint – golf
courses, campgrounds, etc.)

Agriculture and Aquaculture



Significant Threat



Conversion of habitat to annual crops
Annual and perennial nontimber crops
Livestock farming and ranching
Wood and pulp plantations
Aquaculture



Energy Production and Mining



Moderate Threat



Mining and quarrying
Fossil fuel energy production
Oil and gas drilling
Shale gas development (e.g., fracking)
Renewable energy production



Residential and Commercial Development



Minor Threat



Housing and urban areas
Commercial and industrial areas
Tourism and recreation areas (e.g., golf courses, campgrounds, etc.)



Threat Category:	Rating as “significant” or “moderate” threat:	N:
Agriculture and aquaculture	87.7%	64
Residential and commercial development	83.6%	61
Invasives and other problematic species and genes	69.6%	48
Human intrusion and disturbance	67.2%	45
Natural systems modifications	63.4%	45
Pollution	58.0%	40
Other stressors	50.9%	28
Climate change and severe weather	40.6%	28
Transportation and service corridors	38.6%	27
Biological resource use	34.8%	23
Energy production and mining	33.3%	22

Threat Category:	Rating as “significant” or “moderate” threat:	N:
Agriculture and aquaculture	87.7%	64
Residential and commercial development	83.6%	61
Invasives and other problematic species and genes	69.6%	48
Human intrusion and disturbance	67.2%	45
Natural systems modifications	63.4%	45
Pollution	58.0%	40
Other stressors	50.9%	28
Climate change and severe weather	40.6%	28
Transportation and service corridors	38.6%	27
Biological resource use	34.8%	23
Energy production and mining	33.3%	22

15. You indicated a number of general categories as significant or moderate threats to fish and wildlife habitats within **HABITAT** in the Drift Plains (Region 6). Please indicate which of the following are specific threats to fish and wildlife habitats within HABITAT in the Drift Plains (Region 6).

Agriculture and Aquaculture – 1st

Threats from farming and ranching as a result of agricultural expansion and intensification, including silviculture, mariculture, and aquaculture

Specific Threat:	Rating as significant or moderate:	N:	Trend:
Conversion of habitat to annual crops	91.7%	55	Increase
Annual and perennial nontimber crops	72.4%	42	Increase
Livestock farming and ranching	65.5%	38	Remain the same
Wood and pulp plantations	31.4%	16	Remain the same
Aquaculture	27.0%	10	Remain the same

Residential and Commercial Development – 2nd

Threats from human settlements or other nonagricultural land uses with a substantial footprint

Specific Threat:	Rating as significant or moderate:	N:	Trend:
Housing and urban areas	93.2%	55	Increase
Commercial and industrial areas	84.7%	50	Increase
Tourism and recreation areas (e.g., sites with a substantial footprint – golf courses, campgrounds, etc.)	35.1%	20	Increase

Invasives and Other Problematic Species/Genes – 3rd

Threats from non-native and native plants, animals, pathogens/microbes, or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread, and/or increase in abundance

Specific Threat:	Rating as significant or moderate:	N:	Trend:
Invasive/alien species	100.0%	45	Increase
Plant diseases	72.7%	32	Increase
Problematic native species (e.g. overabundant native deer or algae)	71.7%	33	Increase
Introduced genetic material (such as crop, seed stock, biocontrol, stocked/released species, etc.)	48.6%	18	Increase

Human Intrusion and Disturbance – 4th

Threats from human activities that alter, destroy, and disturb habitats and species associated with nonconsumptive uses of biological resources.

Specific Threat:	Rating as significant or moderate:	N:	Trend:
Recreation activities (e.g., ATVs, trail use, horseback riding, high-speed boating, canoeing)	79.1%	34	Increase

Natural Systems Modification – 5th

Threats from human activities that alter, destroy, and disturb habitats and species associated with nonconsumptive uses of biological resources

Specific Threat:	Rating as significant or moderate:	N:	Trend
Conversion of natural habitats to other land uses	90.7%	39	Increase
Over-mowing of natural areas	64.1%	25	Remain the same
Fire and fire suppression	53.7%	22	Remain the same
Dams and water management/use	51.3%	20	Remain the same
Log jam removal	44.7%	17	Remain the same

Pollution— 6th

Threats from introduction of exotic and/or excess materials or energy from point and nonpoint sources

Specific Threat:	Rating as significant or moderate:	N:	Trend
Agriculture, residential, and forestry effluents	82.1%	32	Increase
Runoff from roads/service corridors	79.5%	31	Increase
Point source pollution from commercial/industrial sources	74.4%	29	Tie - Increase/Remain the same
Household sewage and urban water waste	66.7%	26	Increase
Chemical spills	63.2%	24	Remain the same
Garbage and solid waste	59.0%	23	Increase
Excess energy (e.g., noise/light pollution, warm water discharge, etc.)	54.1%	20	Increase
Air pollution (e.g., smoke, mercury emissions)	53.8%	21	Tie - Increase/Remain the same

Other Stressors – 7th

Additional threats and stressors directly affecting habitats, such as diseases and genetic diversity issues

Specific Threat:	Rating as significant or moderate:	N:	Trend
Low genetic diversity (due to reduced population size, species inbreeding, etc.)	76.9%	20	Increase
Diseases	81.8%	18	Increase

Remaining Threat Categories

8 Climate change and severe weather: *Long-term climactic changes that may be linked to global warming and other severe climactic or weather events outside the natural range of variation that could wipe out vulnerable species or habitat.*

9. Transportation and service corridors: *Threats from long, narrow transport corridors and the vehicles that use them, including associated wildlife mortality*

10. Biological resource use: *Threats from consumptive use of “wild” biological resources including deliberate and unintentional harvesting effects; also persecution or control of specific species*

11. Energy production and mining: *Threats from production of nonbiological resources*

Conservation Actions for Habitats in the Drift Plains (Region 6)

Broad Action Category

Category Ranking

Actions for
Habitat A

Actions for
Habitat B

17. Please indicate the importance of the following general categories of conservation actions for fish and wildlife habitats within **HABITAT** in the Drift Plains (Region 6) over the next 10 years,

Action Category:	Rating as “very important” or “moderately important”:	N:
Land/water/species management	90.6%	58
Livelihood, economic, and other incentives	77.4%	48
Education and awareness	76.4%	55
Land/water protection	76.1%	51
Law and policy	71.9%	46
External capacity building	61.7%	37

17. Considering your responsibility within your agency/organization, please indicate whether you have taken a general category of conservation actions for fish and wildlife habitats within **HABITAT** in the **Drift Plains (Region 6)** since 2005 or have plans to do so.

Threat Category:	Rank	Yes		No	
		%	N	%	N
Land/water/species management	1st	87.5%	35	12.5%	5
Livelihood, economic, and other incentives	2nd	69.0%	20	31.0%	9
Education and awareness	3rd	87.2%	34	12.8%	5
Land/water protection	4th	67.6%	25	32.4%	12
Law and policy	5th	56.0%	14	44.0%	11
External capacity building	6th	64.0%	16	36.0%	9

18. Please indicate the importance of the following specific conservation actions within these general categories for fish and wildlife habitats within HABITAT in the Drift Plains (Region 6).

Land/Water/Species Management – 1st

Actions directed at conserving or restoring sites, habitats, and the wider environment as well as actions directed at managing or restoring species, focused on the species of concern itself.

Action	Rating as “very important” or “moderately important” N:	
Manage urban woodlots	100.0%	1
Promote diversity of grassland types and successional stages	100.0%	9
Promote diversity of wetland types and successional stages	100.0%	8
Reduce stream bank erosion	100.0%	8
Restore habitats and natural systems in HABITAT	97.8%	45
Reduce losses of fish and wildlife habitats (due to agriculture, urban sprawl, commercial development, etc.)	93.0%	53
Increase acres of riparian buffers	92.7%	51
Reestablish natural disturbance regimes in HABITAT	92.1%	35
Promote diversity of forest types and successional stages	90.0%	18
Protect adjacent buffer zones	88.9%	16
Restore and integrate diversity of habitats into crop-production dominated landscapes	88.9%	8
Develop and promote farming technologies and practices that have conservation benefits (e.g., cover crops, no till)	87.7%	50
Species reintroduction. Please specify:	86.7%	13
Link existing habitat blocks through corridor enhancement in HABITAT	85.5%	47
Decrease number of combined sewer overflow events	81.3%	13
Reduce nutrient and toxin loads (e.g., heavy metals, pharmaceuticals, fertilizers, insecticides)	78.9%	45
Control invasive species in HABITAT	75.4%	43
Protect natural water regimes (e.g., withdraws, warm-water discharge)	75.0%	6
Reduce stream head cutting	75.0%	6
Control problematic native species in HABITAT	69.1%	38
Increase acres enrolled in the Classified Forest and Wildlands Program	66.1%	37
Protect and enhance undeveloped shorelines	64.3%	9
Decrease E. coli counts	62.5%	10
Improve integrated pest management	55.6%	5
Improve drainage management	52.8%	28
Manage biofuel grasslands	42.9%	6
Reduce recreational overuse of HABITAT	40.0%	18
Dam removal	37.5%	6
Mine reclamation	36.6%	15
Ex situ conservation (protection of a species outside of its natural habitat). Please specify:	17.1%	6
Remove log jams	12.5%	1
Restore and integrate diversity of habitats into developed landscapes	0.0%	0

Livelihood, economic, and other incentives – 2nd

Actions to use economic and other incentives to influence behavior

Action Category:	Rating as “very important” or “moderately important”:	N:
Promote conservation payment programs (e.g., payment for ecosystem services, conservation easements)	93.2%	41
Promote nonmonetary values of natural systems within the state	78.3%	36
Manage recreational opportunities to be compatible with fish and wildlife habitats	71.7%	33
Support substitution of alternatives for environmentally harmful products and processes	65.2%	30
Link natural resources to livelihoods through nature tourism	56.8%	25
Promote market forces (e.g., creation of a nitrogen trading market, promotion of alternative agricultural markets) as a tool for conservation	45.2%	19

Education and Awareness – 3rd

Actions directed at people to improve understanding and skills, and influence behavior.

Action Category:	Rating as “very important” or “moderately important”:	N:
Educational programs in general	96.3%	52
Educational programs specifically for K-12	92.6%	50
Training programs for stakeholders	86.8%	46
Improvement of signage and other communication materials in conservation areas	55.6%	30

Land/Water Protection – 4th

Actions to identify, establish, or expand parks and other legally protected areas, and to protect resource rights

Action Category:	Rating as “very important” or “moderately important”:	N:
Reduce conversion to cropland	91.7%	44
Preserve currently existing corridors	87.8%	43
Acquire conservation easements to protect important wildlife habitats	84.0%	42
Build/strengthen CRP partnerships	82.6%	38
Acquire currently unprotected HABITAT	81.0%	34

Law and policy – 5th

Actions to develop, change, influence, and help implement formal legislation, regulations, and voluntary standards.

Action Category:	Rating as “very important” or “moderately important”:	N:
Improve compliance with and enforcement of current policies	88.4%	38
Increase regulations on invasive species	80.0%	36
Reduce urban sprawl through planning and zoning	77.3%	34
Set private sector standards and codes	62.5%	25
Establish legal lake levels	60.0%	3
Establish submergent vegetation control guidelines	60.0%	3
Change current laws, policies, and regulations. Please specify:	59.4%	19
Increase compliance of existing rules and regulations for aquatic systems	50.0%	3
Establish rules and guidelines for piers and other structures	40.0%	2

External capacity building – 6th

Actions to build the infrastructure to do better conservation

Action Category:	Rating as “very important” or “moderately important”:	N:
Increase state’s capacity for research and monitoring of conservation actions	91.7%	33
Promote use of research and science in conservation decision-making processes	91.7%	33
Develop alliances and partnerships (e.g., between producers, landowners, and conservation professionals)	86.1%	31
Strengthen conservation financing	77.1%	27
Promote green infrastructure	61.8%	21
Develop institutions and civil society	46.4%	13