Leadership Attitudes and Public Attitudes on Climate Change

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Today, I will talk about the primary purposes for communicating climate-related information and the audiences that need to be addressed.

- **We live in a democracy and it is always important for as many citizens to be well informed about the critical issues of our time.**
- **But, we do not live in a nation governed by one large town meeting. On all issues, the pathways for the communication of public preferences and demands are highly structured, involving political parties, interest groups, and various social and political coalitions.**
- **In the case of more complex policy issues – including science and climate issues – the process of finding and communicating the public will is far more structured and even less direct. Too often, science and climate policy leaders and groups fail to understand the policy system and try to play by inappropriate rules.**
- **And when you play by the wrong rules, you often fail.**

There are two primary purposes for communicating climate information:

- First, some messages are designed to persuade the recipients to change their personal behaviors. We encourage re-cycling of paper and glass and other materials and the conservation of energy through various personal use decisions. Communication for this purpose must be targeted to virtually all adults, although the precise message may vary to appeal to specific behaviors or objectives.
- Second, some messages are designed to influence public policy. We often think of this kind of message as being political or being related to elections, but I want to suggest that it is equally important to communicate to policy leaders who are engaged in issue formulation and policy debates outside the electoral system. Communication for this purpose is often focused on narrower groups that are, or may become, involved in the policy process.

I want to focus primarily on communication for the purpose of influencing public policy on climate issues.

- **I want to begin by describing the formulation of public policy on complex issues generally, but with special attention to science policy and climate policy.**
- **After a brief overview of the structure of the process, I will look at some data that I have collected from national studies of policy leaders and from nation surveys of citizens.**
- **I will conclude with a brief discussion of short-term and longer-term communication strategies.**

It is important to distinguish between issues that are decided primarily through elections and issues that are decided through legislative processes.

- **Elections are important because they determine the individuals and parties that control major branches of government. Selecting the occupants of the White House, Senate, and House of Representatives are important decisions.**
- **Presidential elections are usually determined by a small set of broad issues and by public perceptions of leadership characteristics and ability.**
- **Most legislative seats are "safe" and fewer than 10% of legislative seats at the national level are at risk each year.**
- **This electoral system produces a set of office holders and provides some broad policy framework for the country, but it sometimes produces policy gridlock. It usually provides limited guidance on specific scientific or technological policy issues.**

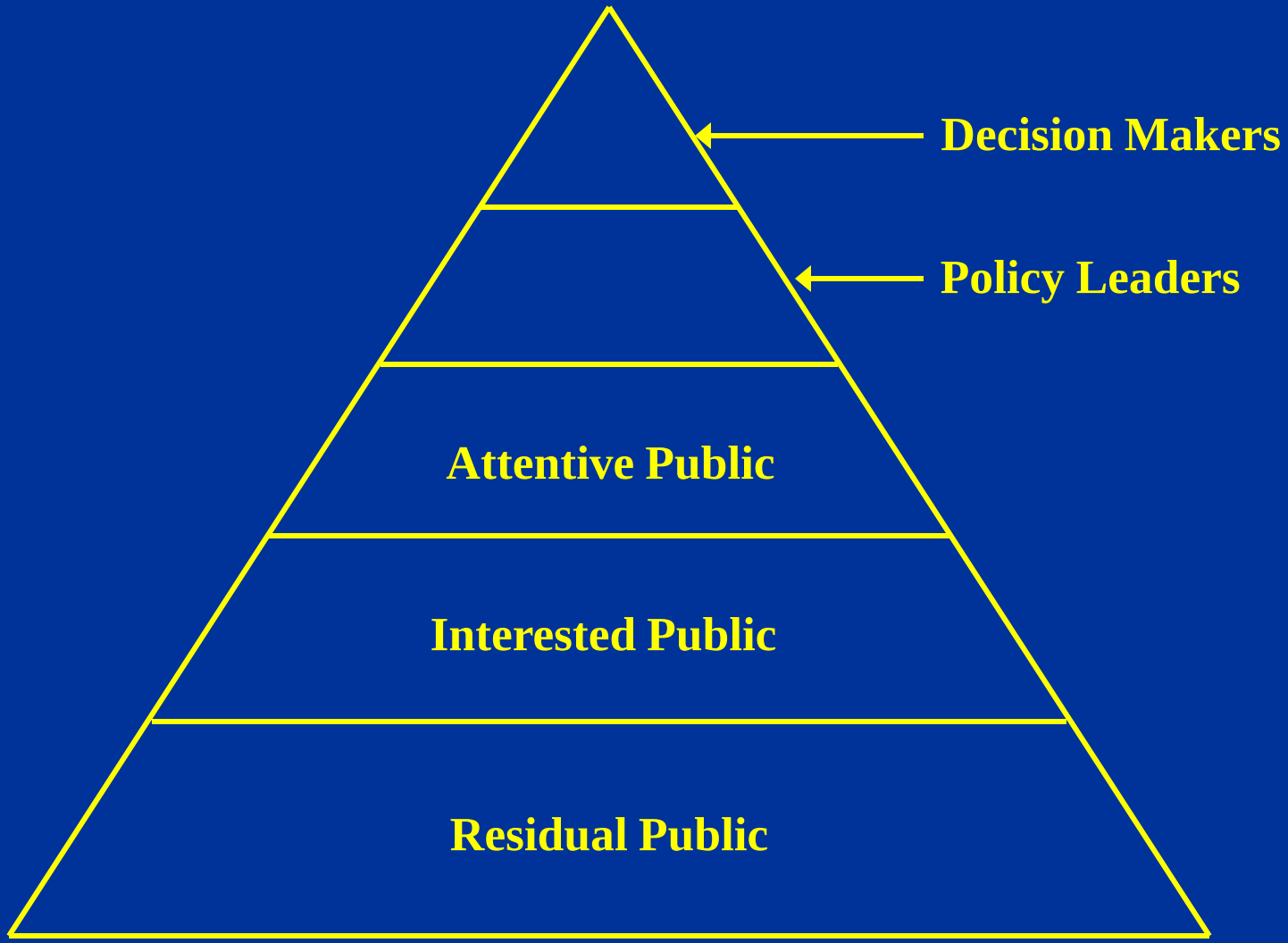
On specialized issues such as climate change, elections provide limited guidance.

- **No presidential candidate has ever been elected or defeated because of a science policy issue.**
- **No House or Senate candidate has ever been elected or defeated over a science policy issue.**

Because they are complex and require some level of scientific literacy, science policy and climate change issues are decided outside the electoral process.

Rosenau calls this “citizenship between elections.”

A stratified model of the formulation of public policy



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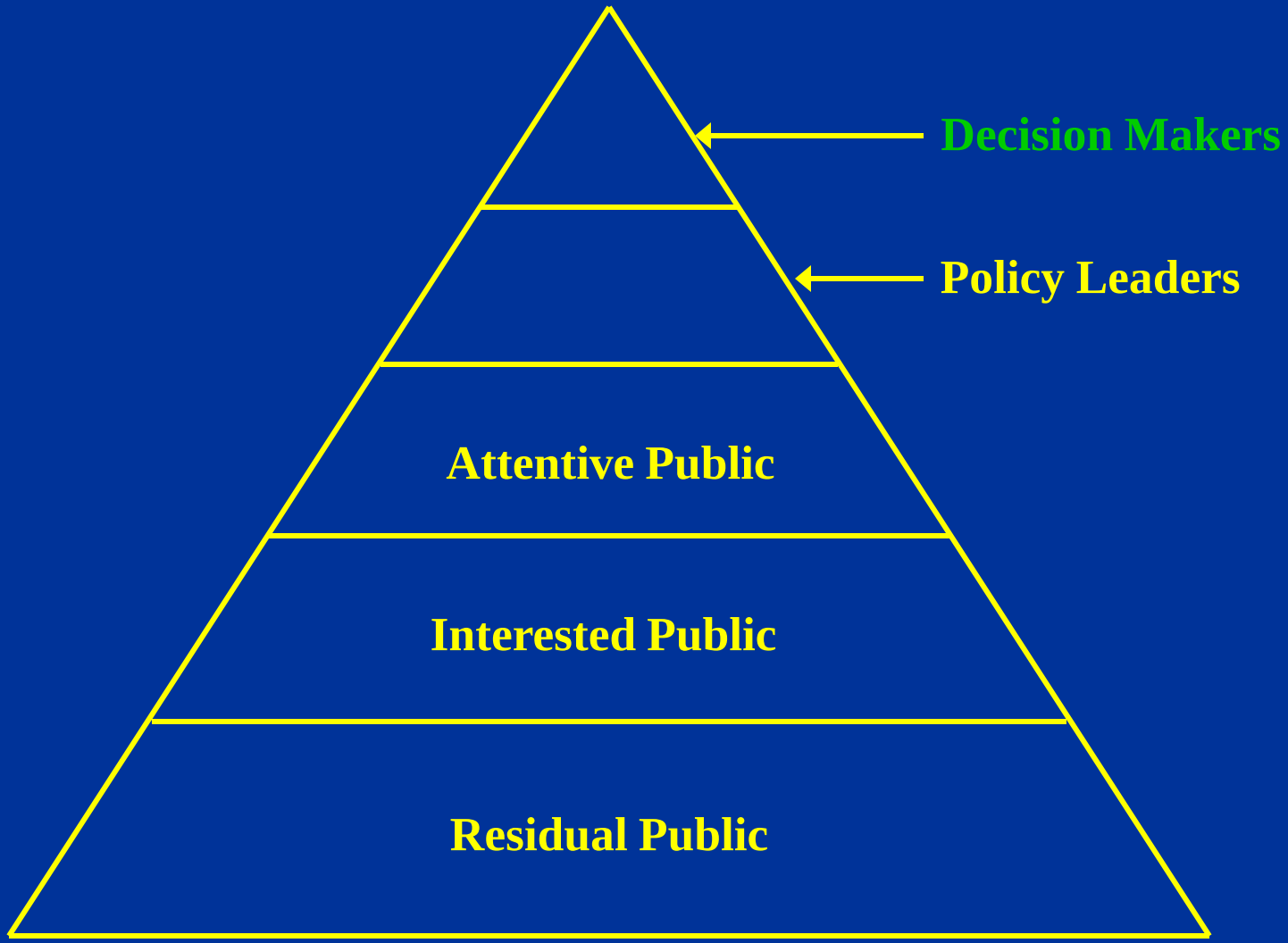

For science policy and climate policy issues, the decision-makers include:

- The President and his cabinet members with responsibilities for science, technology, and climate policy and the heads of selected agencies.
- The leadership of the House or Senate and the members of House and Senate committees that have responsibility for science, technology, and climate policy matters.
- On some occasions, the members of the Supreme Court and judges in the federal judiciary.
- The total number of decision-makers in science, technology, and climate policy is approximately 200.

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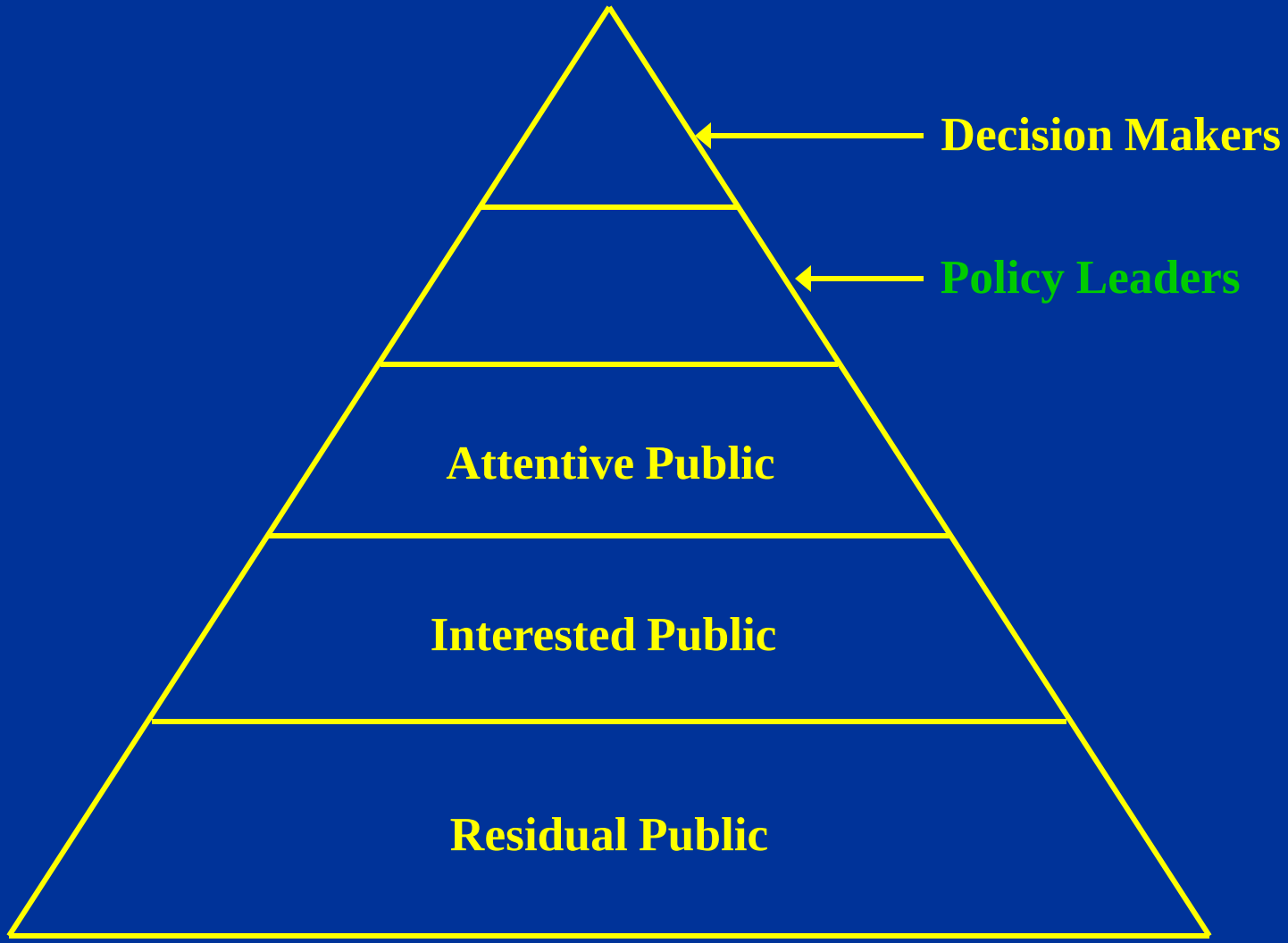

For science policy and climate issues, the policy leaders include:

- The officers and board members of national scientific and engineering societies and associations.
- Members of the NAS, NAE, and IOM.
- Officers and board members of major corporations involved in science, engineering, energy, or other climate-related markets.
- Officers of universities engaged in a significant level of scientific, engineering, or climate research.
- Winners of a Nobel Prize or a Fields Medal.
- Individuals who testified before a congressional committee (House or Senate) on a science policy or climate policy matter.
- Members of major executive branch science or climate advisory committees at the secretarial or agency level.
- Approximately 8,500 individuals qualified as a science policy leader in 2003. We estimate that approximately 9,500 to 10,000 individuals will qualify as science or climate policy leaders in 2010.

Within this pyramidal system, policy leaders play a critical role by:

- **Monitoring public policy from the perspective of the scientific or climate community and defining critical issues that need to be addressed.**
- **Organizing other leaders to identify policy solutions and to advance those policy solutions to decision-makers.**
- **Negotiating with decision-makers about policy choices.**
- **Organizing the appropriate attentive public or publics when direct negotiations with policy makers are not productive or when there is significant disagreement among policy leaders themselves.**

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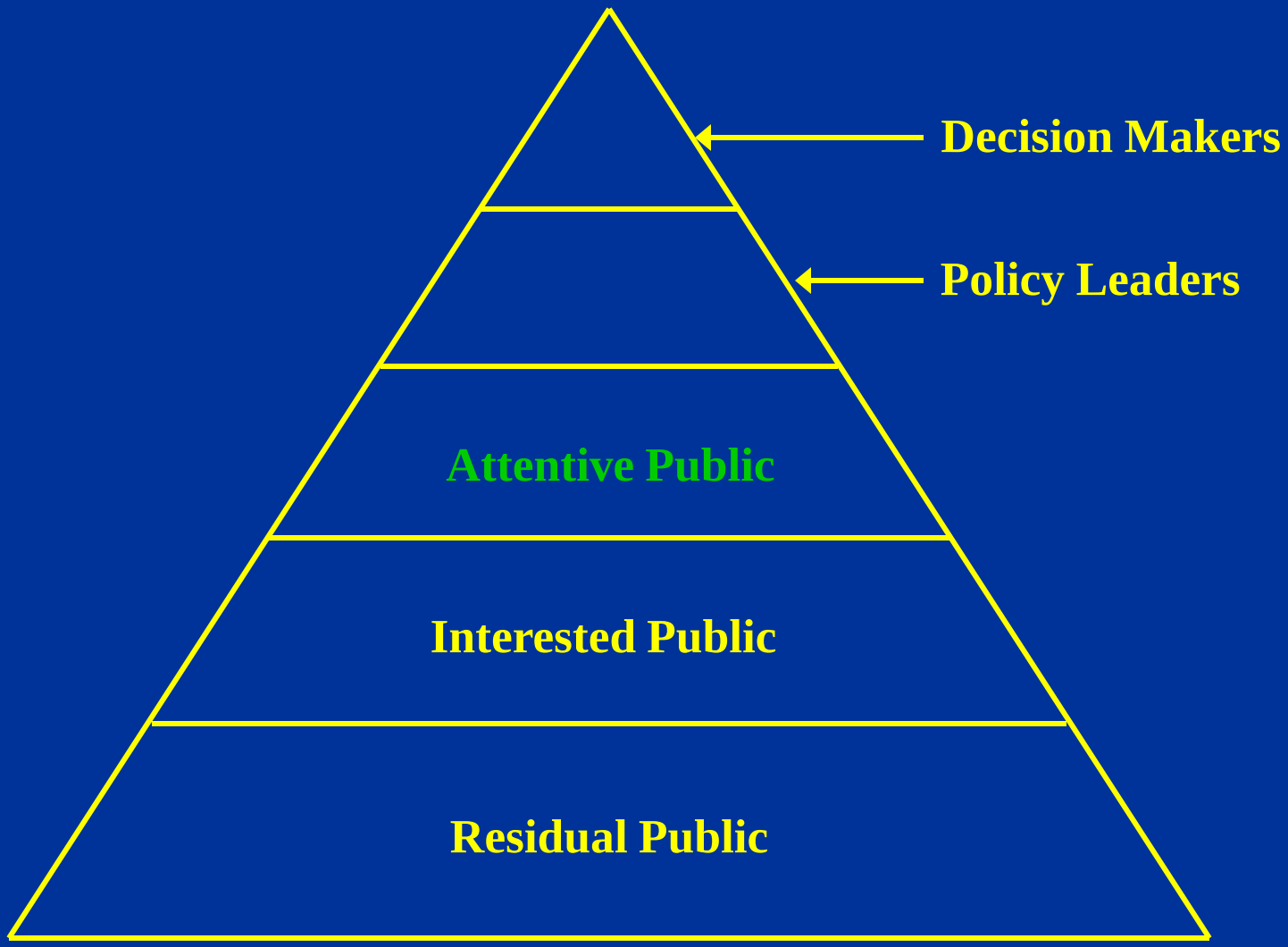

The attentive publics for science, technology, and climate policy includes all adults who:

- report that they are "very interested" in new scientific discoveries, new inventions and technologies, or climate change issues, and
- indicate that they are "very well informed" about either new scientific discoveries, or new inventions and technologies, or climate change issues, and
- are regular readers of a daily newspaper, a weekly news magazine, or a monthly science magazine; regular viewers of television news programming; or frequent users of the Internet and other electronic sources to obtain science or climate information.
- In 2007, 12.9% of American adults were attentive to science, technology, and climate change issues – about 30 million individuals.

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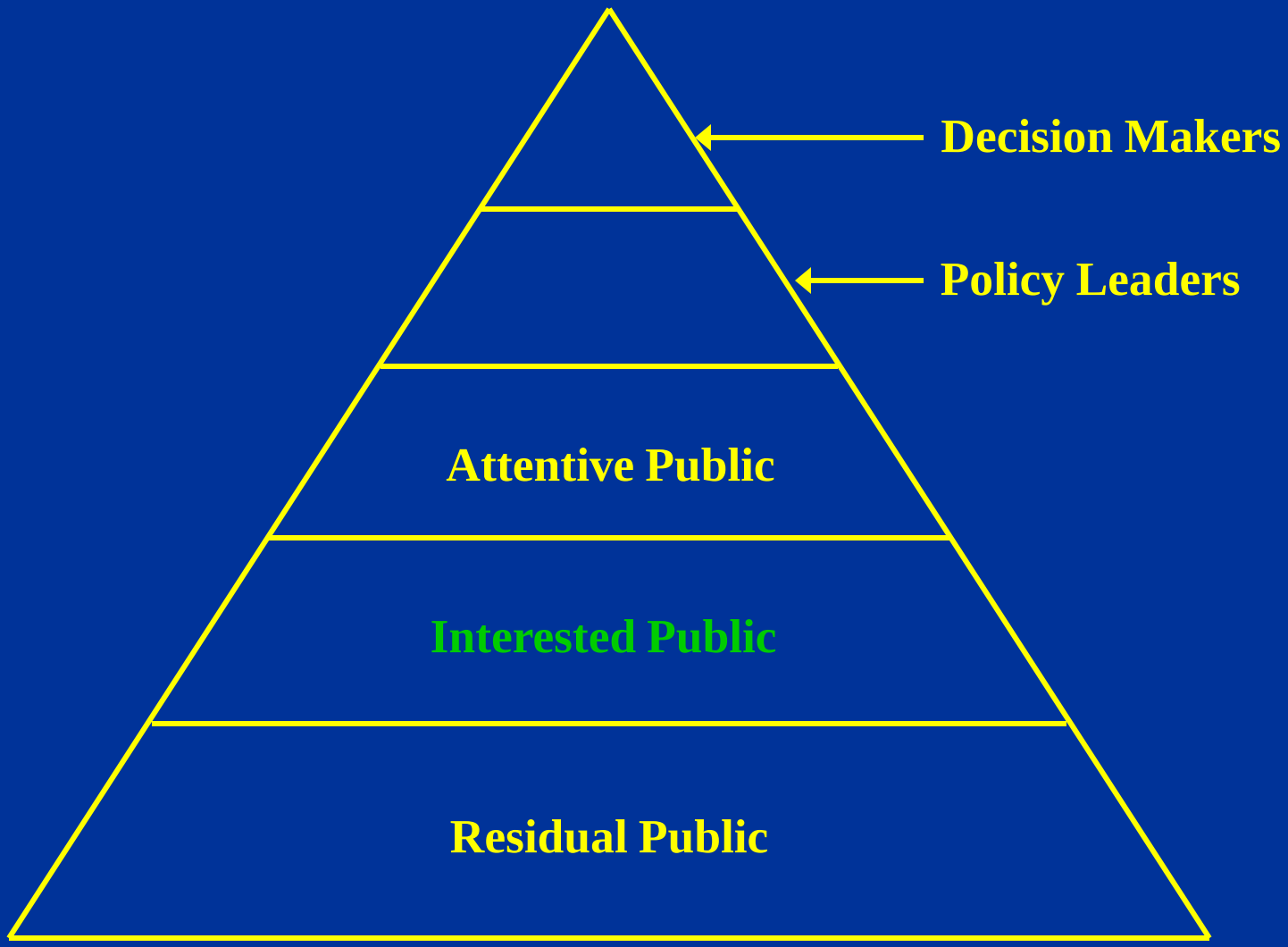
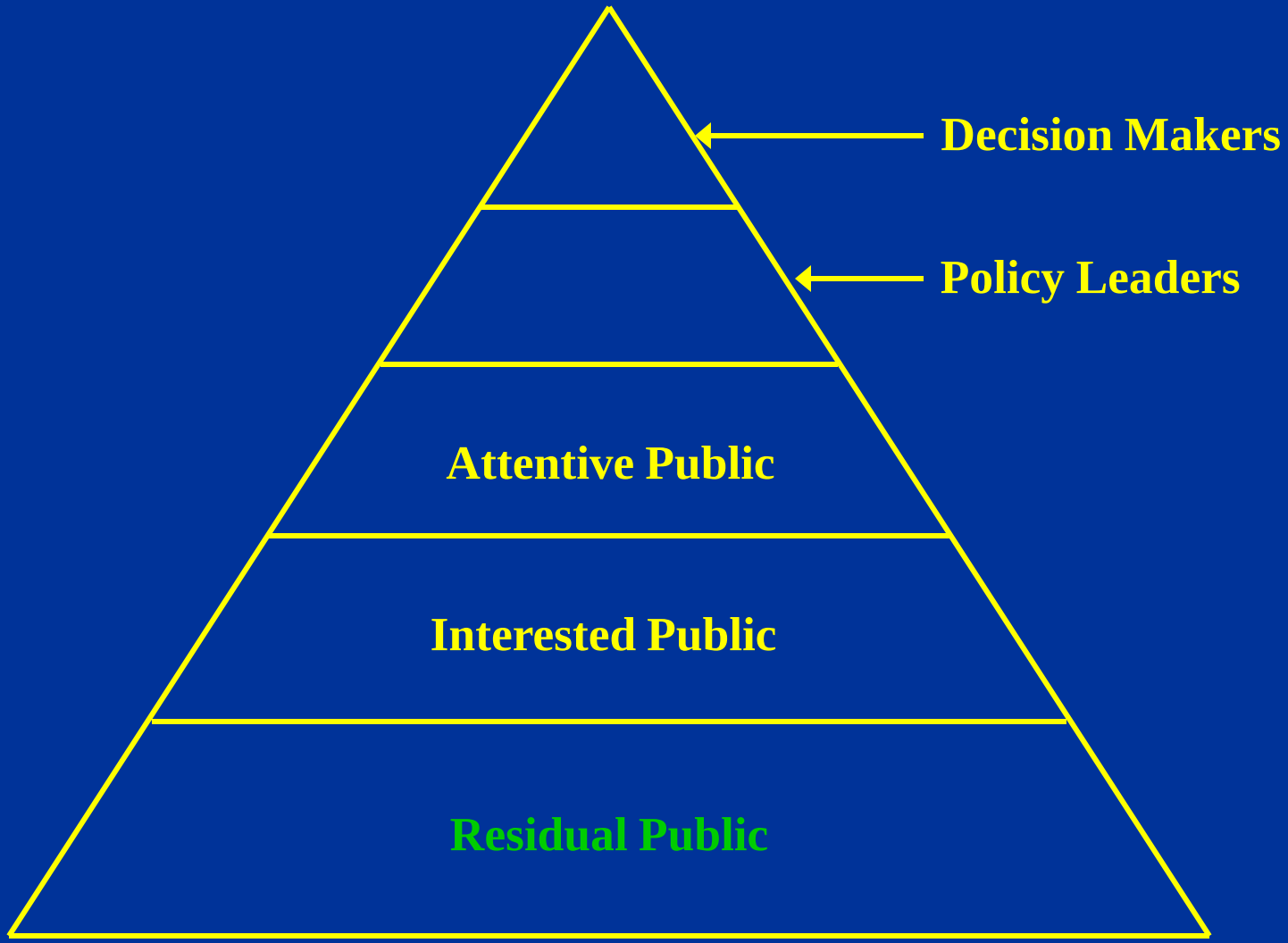


The interested publics for science, technology, and climate policy includes all adults who:

- report that they are "very interested" in new scientific discoveries, new inventions and technologies, or climate change issues.
- do no think that they are very well informed about science or climate policy.
- In 2007, 36.4% of American adults were interested science, technology, and climate issues – about about 85 million individuals.

A stratified model of the formulation of public policy



Within this stratified system, it is important to have a clear communication strategy to reach policy leaders and the attentive public that focuses on science and climate issues.

- **In the short term, it is essential to have effective communication with science policy leaders, climate policy leaders, and other leadership groups that may become involved in this issue. You cannot assume that all of the scientific community is adequately informed about climate change matters or that they share your concerns about this issue.**
- **In the longer term, it is important to build a large and well informed attentive public that can intervene in the political process when needed. In the introduction to my book *The American People and Science Policy*, Gabriel Almond referred to the attentive public for science policy as the "reserve army" for that issue.**

I have been conducting national surveys of science policy leaders, environmental policy leaders, and energy policy leaders since 1981.

- **It is useful to look at the attitudes of science policy leaders on climate related issues.**
- **It is also important to examine their level of understanding of selected scientific issues and constructs.**
- **And it is essential to understand which sources of information that they trust and distrust on science policy matters.**

Leadership priorities for federal spending, 2003.

	Science Policy Leaders
The development & improvement of fuel cells and other alternative energy sources	8.3 (.08)
Basic research on the human genome and its relationship to health and disease	8.2 (.09)
Disease-oriented biomedical research (apart from genomics)	8.1 (.10)
Basic biology research (apart from disease applications)	7.6 (.09)
Global climate change research	7.4 (.11)
The development of nanotechnology	7.2 (.10)
Earth science research, including oceanographic and polar research	7.1 (.09)
Basic high energy physics such as the work at Fermi, Brookhaven, or CERN	6.4 (.10)
Agricultural research focused on the genetic modification of plants and animals	6.3 (.10)
The development of a new generation of space-based telescopes such as Hubble….	6.1 (.11)
Defense-related research and development	6.0 (.11)
The continuation of deep-space exploration	5.6 (.13)
The development of a new generation of space vehicles	4.7 (.12)
The conduct of scientific research on the International Space Station	3.9 (.13)

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Leadership understanding of selected concepts.

	Science Policy Leaders		
	CU	GS	LF
The electromagnetic spectrum.	51%	25%	24%
The concept of plate tectonics.	43	41	16
The concept and causes of global warming.	41	54	5
The concept of ozone depletion & recovery	36	50	14
The origin & composition of a laser beam.	36	42	22
The process of nuclear fusion.	32	43	25
The age of our Sun.	27	47	26

CU = clear understanding GS = general sense LF = less familiar

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Leadership trust in information sources.

	Science Policy Leaders
A report from the National Academy of Sciences	8.7 (.06)
An article in *Science* or *Nature*	8.3 (.07)
A report by a scientist from a major university	7.4 (.08)
A report from the National Aeronautics and Space Administration	6.6 (.10)
A story in the *New York Times* or the *Washington Post*	6.4 (.09)
A story in the *Wall Street Journal*	6.1 (.10)
A report from a Congressional committee on science & technology	6.1 (.19)
A report from the Department of Defense	5.1 (.12)
A story in *Time* or *Newsweek*	4.9 (.11)
A story on CNN	4.5 (.10)
A story on a network television news show	3.5 (.10)

It is also useful to look briefly at the attitudes of the attentive, interested, and residual publics for science and climate policy.

- **When there are disputes that cannot be resolved between policy leaders and decision-makers, policy leaders seek to communicate with the attentive public and to mobilize these attentive citizens to contact their political leaders – the decision-makers. The Internet has greatly expanded the speed and the volume of this kind of policy contacting.**
- **In a number of books and articles over the last 20 years, I have argued that the attentive public for specific issues such as climate change is an important topic because they already follow the issue, have reasonably clear ideas about the nature of the dispute, and are comfortable participating in the political process.**

If the present rate of fossil fuel use continues, serious long-term environmental damage will occur.

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree	N
Attentive Public	2	10	1	32	56	182
Interested Public	4	13	3	48	32	512
Residual Public	4	20	6	53	17	713
All adults	4	16	4	48	28	1,407

Gamma = .36

The primary human activity that causes global warming is the burning of fossil fuels such as coal and oil.			
	False	True	N
Attentive Public	24	76	182
Interested Public	42	58	512
Residual Public	54	46	713
All adults	46	54	1,407
Gamma = .35			

Global warming is increasing primarily because the level of direct radiation from the Sun is increasing.

	True	False	N
Attentive Public	50	50	182
Interested Public	40	60	512
Residual Public	66	34	713
All adults	62	38	1,407

Gamma = .19

Nuclear power plants destroy the ozone layer.			
	True	False	N
Attentive Public	39	61	182
Interested Public	56	44	512
Residual Public	64	36	713
All adults	58	42	1,407
Gamma = .27			

What can we conclude from this review of the purposes and audiences for the communication of climate information?

- First, NOAA and the leading advocates for public policies to address climate change need to recognize the specialized structure of policy communication and work within that structure. It is essential to build broad leadership agreement among science policy leaders, climate policy leaders, energy policy leaders, and numerous other relevant leadership groups.

What can we conclude from this review of the purposes and audiences for the communication of climate information?

- Second, it is important to recognize that there are science policy decision-makers and policy leaders who need a more sophisticated level of information. There is a strong core of decision-maker and leadership support for positive climate policies, but too often then do not have a command of the essential constructs and arguments necessary to make a compelling case when confronted with well-informed opponents.

What can we conclude from this review of the purposes and audiences for the communication of climate information?

- Finally, the attentive publics for science , technology, and climate change will play a critical role in the system as climate issues become a part of the emerging system of ideological politics. The forthcoming Congressional debates on climate policy will be only the first of years of public policy debate over climate. As I demonstrated with recent survey data, there is a high level of support with a thin level of understanding. This is not a good formula for political success. The attentive publics for science and technology and for climate policy are easy to identify and it is important for NOAA and other climate-sensitive organizations to focus a substantial communication effort on the important segment of the American public.