

IVM Case Study & ANSI Standard Revisions

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- Integrated Vegetation Management (IVM)
Implementation and External Engagement at BGE
- Caveat – I am retired from BGE and this presentation represents what BGE has done in the past. I make no claim to represent BGE's current activities regarding IVM or for other activities

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Baltimore Gas and Electric (BGE) Service Territory

Founded: 1816 — nation's first gas utility and one of the first electric utilities

CEO: Calvin G. Butler Jr.

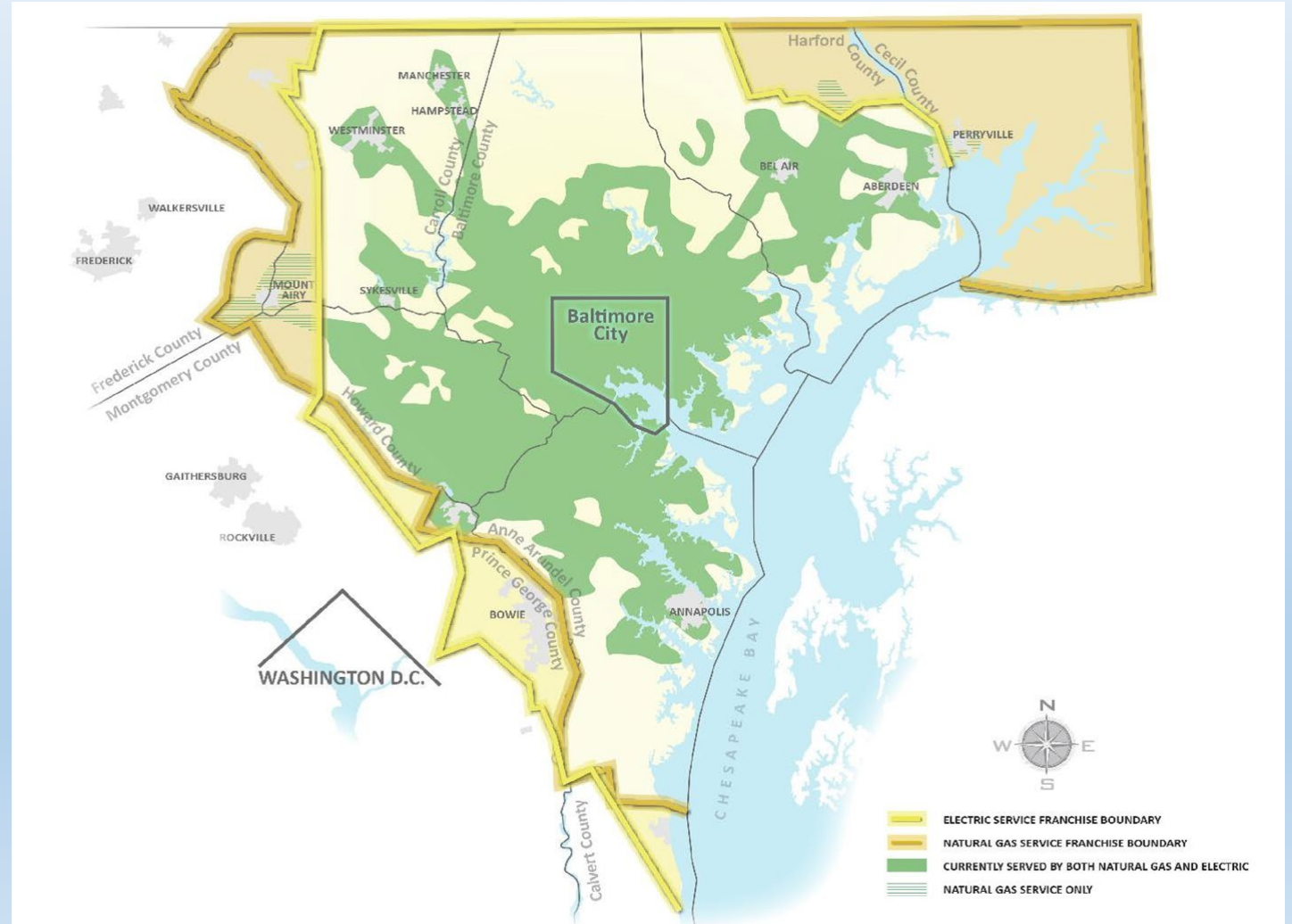
Employees: 3,200

Customers Served: 1.25 million+ electric and 650,000+ gas customers

Region: State of Maryland

Electric service ~2,300 square miles

Gas service ~800 square miles



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BGE Vegetation Management Practices

- Electric Transmission Lines - ~ 530 right-of-way (ROW) miles
 - ~10,500 acres
- Gas Transmission and Over High Pressure (OHP) Gas Distribution Lines – Approximately 170 miles
 - ~1,000 acres
- Electric Transmission Mowing – once a year is the standard (default) practice and covers approximately 7,000 acres
 - Historically, any area that was mowable was mowed and otherwise was managed by herbicide treatments on a 5-year cycle
- Systematically Manage all off-ROW 'danger' trees to preclude falling into the facilities for all transmission lines
- Beginning in 2009, introduced 'chemically facilitated' IVM instead of mowing on electric transmission ROW
- Chemically facilitated IVM equates to using herbicides to facilitate biological controls (management of vegetation....using plant competition, allelopathy, animals, insects, or pathogens)

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BGE Standard Vegetation Maintenance Practices for Transmission Lines Annual Mowing



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IVM History at BGE – The Formative Years

- Contemplated using IVM for a number of years but didn't do so for a variety of reasons – internal resistance from field personnel and reliability concerns, etc.
- In 2008/2009 timeframe an implementation opportunity presented itself
- During the course of managing > 200 kV ROW to mitigate regrowth of tall-growing species by mowing and hand-cutting, environmental concerns were raised by local residents and others

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IVM at BGE – the Formative Years: South River Greenway Reclamation



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IVM at BGE – the Formative Years: Outreach and Engagement

- We secured a mutually agreed upon consultant (Rick Johnstone - IVM Partners) to help bridge the gap between BGE and the external constituents
- Extensive outreach engagement in Columbia with residents and elected officials
- Two initial areas were converted – the Lake Elkhorn area in Columbia, MD and the South River Greenway in Davidsonville, MD
- Ultimately developed cooperative arrangements to conduct pollinator, bird and other studies on the R/W

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IVM at BGE – the Formative Years: South River Greenway - After



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IVM at BGE – the Formative Years: Conversion – Columbia



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IVM at BGE – the Formative Years: USFWS Patuxent Research Refuge

- The Patuxent Wildlife Refuge in Laurel, MD was an area on which we used a hodge-podge of management techniques to control vegetation on the ROW
- Patuxent is a large (12,841 acre) tract of land situated between Baltimore and Washington
- We tried for years to change practices
- One of the members involved with the South River Greenway was a US Fish and Wildlife Service Field biologist who was excited with the sustainable habitat possibilities associated with IVM
- He became a bridge with the Patuxent staff to help convince them to buy into IVM

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IVM at BGE – the Formative Years: Patuxent Research Refuge - Before



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IVM at BGE – the Formative Years: Patuxent Research Refuge - After



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IVM at BGE – Moving into Maturity

- The shift to IVM occurred at ***Patuxent*** and bird studies were implemented and research on pollinators began
- This work has since expanded to our other two sites in ***Columbia*** and the ***South River Greenway***
- One other study being conducted by our IVM consultant is documenting the cover type changes that are occurring on the 3 sites
- A third project commenced two years ago to study a whole host of elements – soil microbes, plant cover, insects, etc.
- These three sites are classified as the Pilot sites

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IVM at BGE – Investing the Future

- Since the implementation of the pilot sites, BGE began to implement 'operational' IVM sites
- Educational tours have been conducted on the Pilot areas with regulators and environmental constituents (close proximity to DC and the State Capital)
- The tours have been very favorably received
- Educational Signage along pedestrian path in Columbia
- Biodiversity has increased based on plant and insect studies – particularly for pollinators
- Invasive plants are being managed

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IVM at BGE – Educational Opportunities (Active)



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IVM at BGE – Educational Opportunities (Passive)



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IVM at BGE – Return on Investment: General

- An outgrowth was that State regulators were favorably impressed with IVM and made IVM as a Certificate of Public Convenience and Necessity (CPCN) licensing requirement for new or rebuilt electric transmission facilities
- Two BGE electric transmission projects have been successfully implemented under this new requirement
- One (our first) gas project is in the ‘pipeline’
- BGE has acquired Wildlife Habitat Council (WHC) certifications for the 3 pilot sites and National Wildlife Federation (NWF) certifications for all IVM locations

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IVM at BGE – Return on Investment: Maryland DNR Park Service

- For a number of years we have been softly promoting IVM with State Agencies
- State law was implemented State Agencies to develop management plans to promote pollinator habitat
- Within the past year, BGE has entered into an arrangement with the MD DNR Park Service to implement IVM on transmission rights-of-way within State Parks in BGE's service territory - ~ 425 acres

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IVM at BGE – Maryland DNR Park Service: Reclamation

- Park Service working to implement IVM on State-owned land adjacent to BGE ROW. Facilitated by revised IVM Standard.



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IVM at BGE - Baltimore City: Proposed

- One additional IVM site in the pipeline involves Baltimore City in the heart of a very urban residential/commercial/industrial area
- An approximate 5 acre area has historically been a point of contention between local residents and BGE
- They desired frequent mowing – 5 + times per year
- The location had potential to provide benefits in an underserved area
- Garden plots and urban farming were suggested and rejected
- IVM was floated with the community, City officials and elected officials
- Had to overcome 'grass height' ordinance - < 8 inch threshold
- IVM ultimately received a favorable reception
- A walking path is also part of the plan
- MOU developed
- Obstacles still being addressed

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IVM at BGE – Baltimore City: Proposed
Before After



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IVM at BGE – Positive Outcomes

- Patuxent Wildlife Refuge
- South River Greenway
- Columbia – Lake Elkhorn Constituency
- MD DNR – State Parks
- Baltimore City – Gas R/W and Potential Electric R/W
- Other Projects in Various Counties

Research and Studies

- Bee research
- Bird studies
- Soil biota studies
- Vegetation cover type changes

Certifications

- Wildlife Habitat Council, National Wildlife Federation, Audubon

Beneficial regulatory outcomes

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IVM at BGE – Sustainable Phase

Lessons Learned

- Outreach, Outreach and More Outreach with Education Component
- Develop Partnerships
- Develop Studies/Research
- Follow the ANSI A300, Part 7, IVM Standard
- Follow the ISA IVM BMP
- Evaluate the ROW Stewardship Accreditation Model



ANSI A300 IVM STANDARD CHANGES

- ANSI A300 Vegetation Management Standards are revised on a 5-year cycle.
- The Part 7, IVM standard was revised after an almost 2-year effort and published in December 2018.
- The subcommittee consisted of a dedicated team of experts on IVM.
- Two public comment periods.
- Significant Changes? No longer a utility-only standard is first and foremost.
- Designed to be part of a continuum beginning with the Standard to the Standard Annex (white paper concept) to the IVM BMP and in alignment with the ROW Stewardship Accreditation Principles.
- Aligns with the latest published research and the principles of IPM.
- Many other modifications.....

ANSI A300 IVM STANDARD CHANGES

All A300 Standards **(Boilerplate)** – Purpose(1.2)

- In current versions of Pruning (Part 1) and Risk Assessment (Part 9)
- **(Modified from current version of IVM Standard)** ANSI A300 standards are intended for the development of work practices, written specifications, best practices, regulations and other measures of performance. (Added best practices and regulations and other measures of performance).
- **(Added) 1.2.1** These standards may be excerpted or incorporated by reference; however, *they are not intended to be adopted in their entirety into laws and regulations or as work specifications without additional information and clarification* (see Annex D – Specification writing guidelines).

ANSI A300 IVM STANDARD CHANGES

IVM Standard Body

- Purpose (70.1) – No longer focused solely on utility ROW's
 - Current - The purpose of this document is to provide standards for developing specifications to implement an integrated approach to management of vegetation on **utility rights of way**.
 - New - The purpose of Part 7, IVM is to provide performance standards for integrated vegetation management, and to guide the development of written specifications, best practices, training materials, regulations, and other performance measures.

ANSI A300 IVM STANDARD CHANGES

Reasons for IVM (70.2)

- Current - The reason for Integrated Vegetation Management is to create, promote, and conserve sustainable plant communities that are compatible with the intended use of the site, and discourage incompatible plants that may pose concerns, including safety, security, access, fire hazard, utility service reliability, emergency restoration, visibility, line-of-sight requirements, regulatory compliance, and environmental, or other specific concerns.
- New (streamlined) - The reason for IVM is to create, promote, and conserve sustainable plant communities that are compatible with the intended use of the site, and manage incompatible plants that may conflict with the intended use of the site.

ANSI A300 IVM STANDARD CHANGES

Implementation (70.3) – Key Changes

- (70.3.1) Different verbiage than current version - IVM operations shall comply with applicable laws and regulations. (This reference enabled streamlining of Normative References).
- (70.3.2) Expanded from current version - Specifications and plans for IVM shall be written and administered by a vegetation manager, **a qualified professional, familiar with the science of ecosystem management and IVM practices.**
- (70.3.3) New - Managers and practitioners shall account for the effects of various IVM methods based upon knowledge of plant lifecycles and ecosystem processes.

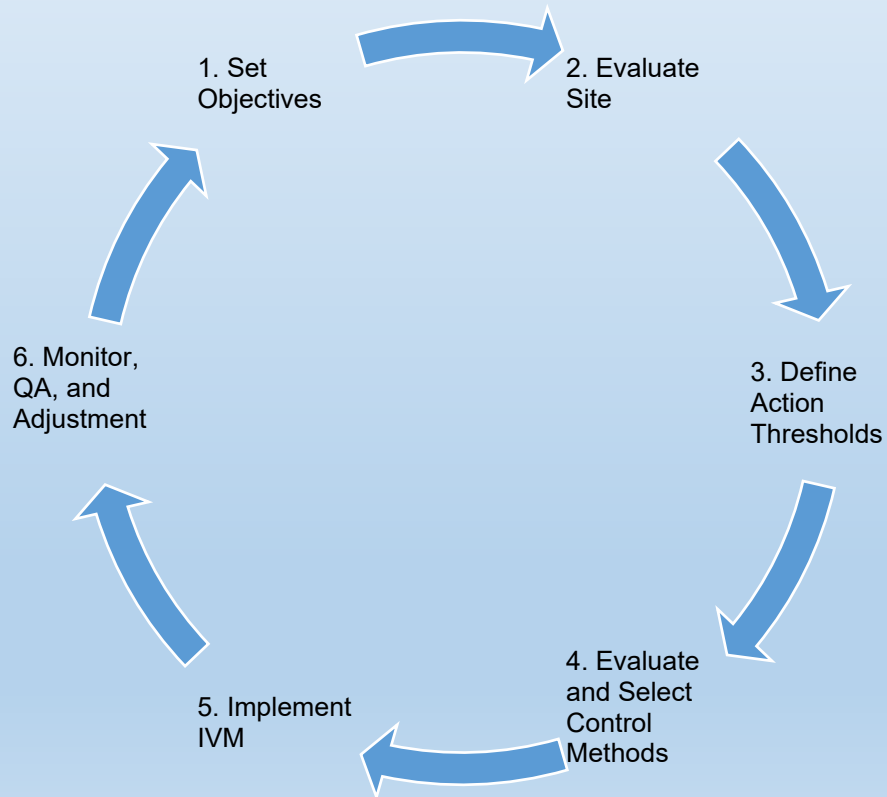
ANSI A300 IVM STANDARD CHANGES

The Rest of the Story....

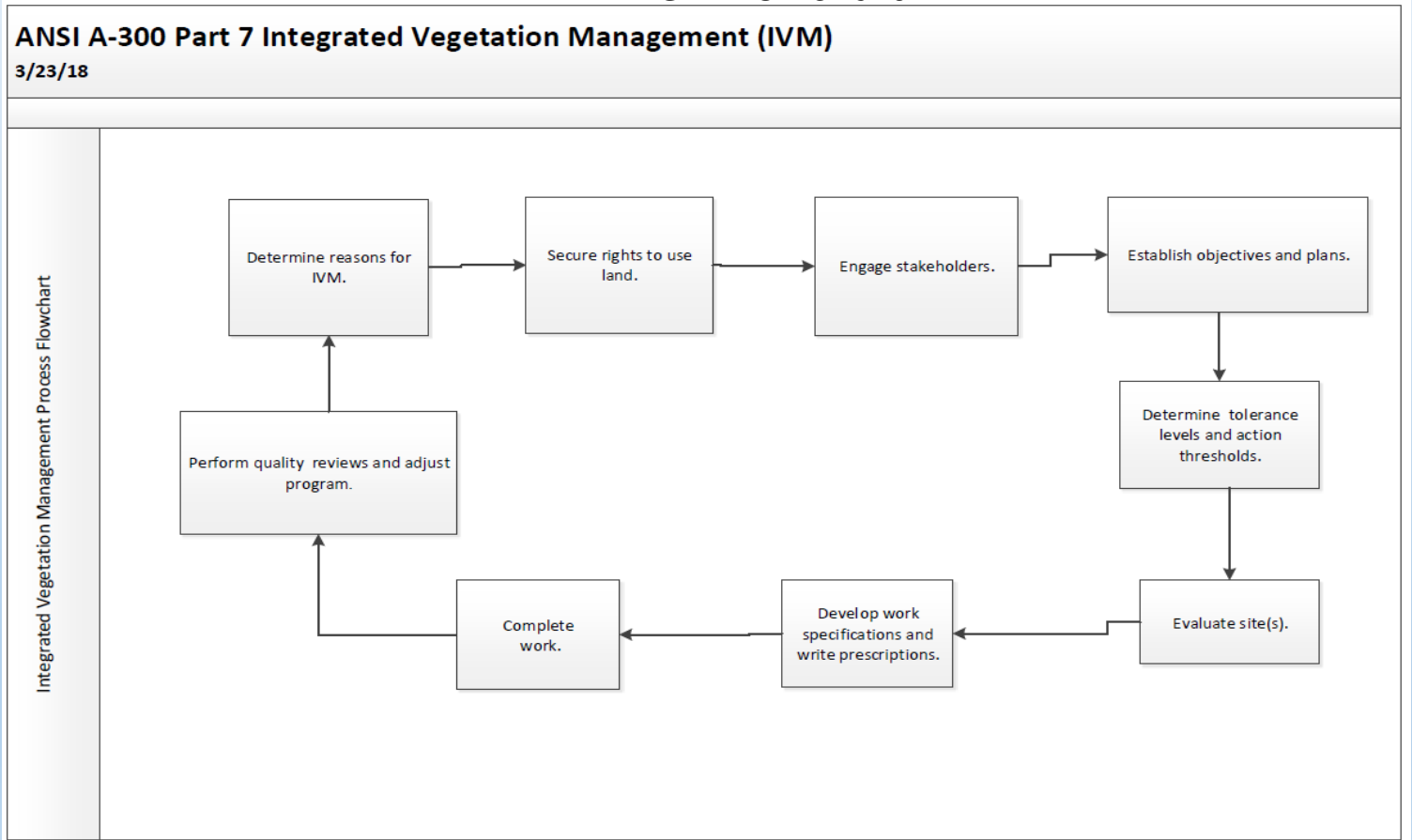
- At this point, there is a divergence in ordering and content between the current and new standards.
- The new standard was reordered to generally line-up with the 10 Principles of the ROW Stewardship Accreditation Standards for Assessing IVM Excellence.
- The Stewardship model was designed to follow a logical flow of how to set-up and implement an IVM program and to ultimately assess the success of the program.

ANSI A300 IVM STANDARD CHANGES

Old Flowchart



New Flowchart



ANSI A300 IVM STANDARD CHANGES

Right of Use (72) – Concept not appreciably addressed in the current standard. Helps to ensure that IVM will be carried out without compromise to process.

- (72.1) The right to use IVM methods on lands, sites and facilities to achieve stated management objectives shall be established.
- (72.2) The right to control and maintain access or otherwise discourage unauthorized use should be established where necessary.

Communications and stakeholder Engagement (73)

- Added internal stakeholders to the mix

ANSI A300 IVM STANDARD CHANGES

Management and Planning Objectives (74)

- A key addition in the new document is the inclusion of a Management plan concept to formalize/codify the process to ensure that key IVM program elements are included.
- This is the beginning of building the IVM Implementation plan.
- Macro view – look at the overall biological, ecological and cultural resources; economic factors; and applicable laws and regulations.
- The plans should be dynamic and periodically reviewed and revised and include overarching goals, objectives, processes and procedures.
- Consideration should be given to long-term requirements.
- Plans should include an annual maintenance component down to the managed unit level.

ANSI A300 IVM STANDARD CHANGES

Objectives shall be specified and may include, but are not limited to, one or more of the following (moved here from 70.2):

- Comply with regulations;
- Control noxious weeds and invasive species;
- Enhance public and worker safety;
- Ensure lines of site or desired views;
- Improve aesthetics;
- Maintain utility service reliability;
- Manage pollinator and wildlife habitat;
- Provide access to sites;
- Reduce maintenance costs;
- Reduce risk of wildfire; and,
- Restore ecological and/or environmental benefits.

ANSI A300 IVM STANDARD CHANGES

Determine Tolerance Levels (75) – expands upon current document and introduces **tolerance levels** (when action shall occur) and **plant pressure** (a measure of risk).

- Important components in the development of maintenance plans – when to act.
- (75.2) Tolerance levels and action thresholds should be based on levels of incompatible plant pressure and characteristics such as:
 - Species;
 - growth rates;
 - density;
 - current height;
 - location; and,
 - condition.
- (75.3) If conditions reach the action threshold, IVM methods should be implemented. If conditions reach the tolerance level, IVM methods shall be implemented.

ANSI A300 IVM STANDARD CHANGES

IVM Treatment Methods (76) – control options to help build-out your management and maintenance plans. Reorders the section and provides additional clarification on various elements

- Part of the site evaluation process.
- (76.1) A variety of methods should be considered for each site and more than one method may be implemented.
- (76.2) Methods to consider should include selective or non-selective controls:
 - Biological;
 - Chemical;
 - Cultural;
 - Prescribed Fire; (added)
 - Physical (new header)
 - Manual; and,
 - Mechanical.

ANSI A300 IVM STANDARD CHANGES

IVM Methods (cont.)

- Introduces a new concept – (76.6.2) Appropriate **chemical** methods should be used to transition plant community to sustainable, compatible species by **facilitating biological controls**. (chemically facilitated biological controls).
- Prescribed Fire – as noted previously, with the caveat of: (76.8) – Prescribed fire should be considered where appropriate; and (76.8.1)- Prescribed Fires shall not be used in situations where unintended ignition or other inherent hazards exist.
- Differentiates between manual and mechanical methods.
 - Manual methods (hand operated tools) for selective removal of incompatible species.
 - Mechanical methods (equipment mounted tools or devices) for non-selective removal.

ANSI A300 IVM STANDARD CHANGES

Adaptive Management, Quality Control and Assurance (79)

- Expanded on the guidance from the current document.
- Advocates for more comprehensive post-treatment follow-up and adjustments, and systematic program evaluations.
- Advocates for detailed work records based on management units (more comprehensive work documentation).

ANSI A300 IVM STANDARD CHANGES

- The revised Standard will open the door for appropriate IVM practices to be implemented for any type of land use where vegetation can be managed/manipulated to improve site conditions.
- The revised Standard following the ROW Stewardship Principles outline will facilitate certification of IVM programs, or at the very least, enable practitioners to be able to better gauge the effectiveness of how their programs are set-up, administered and implemented.

ANSI A300 IVM STANDARD CHANGES

Questions??