

STEPPING UP: Planning for the Challenges of Invasive Alien Species in Nova Scotia

Report on the
1st ISANS Workshop
December 3-4, 2008
at Acadia University

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Report # 1

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Explanatory Note

The *STEPPING UP* workshop was organized and hosted by the Nova Scotia Invasive Species Working Group (NSISWG). After the workshop, and prior to the printing of this report, the group elected to change its name to the Invasive Species Alliance of Nova Scotia (ISANS). To be as current as possible, all references to the group in this report are using the new name of ISANS.

Acknowledgements

The Invasive Species Alliance of Nova Scotia (ISANS) acknowledges the support of the following funders: the Invasive Alien Species Partnership Program (IASPP), a Government of Canada Initiative; the Natural Sciences and Engineering Research Council of Canada (NSERC), Atlantic Regional Opportunities Fund; the Acadia Centre for Estuarine Research (ACER), Acadia University; Harriet Irving Botanical Gardens, Acadia University; and the Nova Scotia Departments of Natural Resources, Transportation and Infrastructure Renewal, and Agriculture. Promotional items were generously donated by the Just Us! Coffee Roasters Co-op, Canadian Food Inspection Agency, Project UFO, and the Invasive Plant Council of British Columbia.

Speakers gave freely of their time and expertise, and most also participated in the 2-day event – thank you: Dr. Graham Daborn, Acadia University; Dr. Tom Herman, Acadia University; the Honourable David Morse, MLA Kings South, Minister, Nova Scotia Department of Natural Resources; Gail Wallin, Invasive Plant Council of British Columbia; Julie Sveinson Pelc, Invasive Species Council of Manitoba; Ruth Newell, E.C. Smith Herbarium, Acadia University; Mark Richardson, Environment Canada; Bruno Gallant, Canadian Food Inspection Agency; Dr. Andrea Locke, Department of Fisheries and Oceans; Dr. Sherman Boates, Nova Scotia Department of Natural Resources; Joshua McNeely, Maritime Aboriginal Peoples Council, IKANAWTIKET Initiative; Shalan Joudry, L'sitkuk Environment, Bear River First Nation; Sean Blaney, Atlantic Canada Conservation Data Centre; Dr. Alexandra Curtis, Acadia University; Donna Crossland, Kejimikujik National Park and National Historic Site of Canada; Dr. Cathy Conrad, Saint Mary's University; Dr. Martha Jones, Cape Breton University; Andrew Fedora, Federation of Nova Scotia Woodland Owners; and Gretchen Fitzgerald, Sierra Club of Canada, Atlantic Canada Chapter.

The *STEPPING UP* workshop was organized by the following working group members: Andy Sharpe, Clean Annapolis River Project; Dr. Anna Redden, Acadia Centre for Estuarine Research, Acadia University; Dr. Bob Pett, Nova Scotia Department of Transportation and Infrastructure Renewal; Claire Wilson O'Driscoll, Canadian Food Inspection Agency; Joe Calder, Nova Scotia Department of Agriculture; Joshua McNeely, Maritime Aboriginal Peoples Council, IKANAWTIKET Initiative; Marika Godwin, Invasive Species Alliance of Nova Scotia; and Melanie Priesnitz, Harriet Irving Botanical Gardens, Acadia University.

Also, thanks to the Acadia Centre for Social & Business Entrepreneurship (ACSBE) for going above and beyond in their role as workshop facilitators, in accommodating last-minute changes to the breakout sessions, and in helping with workshop follow-up.

Invasive species illustrations (common reed, emerald ash borer, and green crab) used to identify breakout groups and shown on the *STEPPING UP* program were provided by Kelly Rustad.

Overview

On December 3-4, 2008, the Invasive Species Alliance of Nova Scotia (ISANS) hosted a workshop at the K.C. Irving Environmental Science Centre, Acadia University, Wolfville, Nova Scotia. The workshop was called “*STEPPING UP: Planning for the Challenges of Invasive Alien Species in Nova Scotia*”, and its primary purpose was to inform, engage, and coordinate stakeholders in addressing the issues of invasive alien species (IAS) in Nova Scotia. It was the first all-species IAS workshop to bring people together from across the province, and was attended by approximately 50 participants. Most participants were from Nova Scotia, but several other provinces were also represented (New Brunswick, Prince Edward Island, Ontario, Manitoba, and British Columbia).

The workshop featured 19 speakers, including the Provincial Minister of Natural Resources, the President of Acadia University, and the Executive Directors of two other provincial IAS councils. These and a variety of other speakers addressed the key themes in four plenary sessions: (1) IAS Working Groups and Councils – Canadian Experiences, (2) Role of Governments (Federal, Provincial and Aboriginal Peoples), (3) Research in Nova Scotia, and (4) Nova Scotia Perspectives. The workshop had a planning focus, and three breakout sessions were interspersed with the plenary sessions to engage participants and stimulate discussion. The main objective of the breakout sessions was to gauge the level of support for the establishment of a formal IAS coordinating body for Nova Scotia. ISANS employed professional facilitators to run the sessions, which were designed to address specific questions. These included discussion of current IAS activities, establishment of an IAS coordinating body, and goal-setting. To solicit additional input on IAS issues in Nova Scotia, ISANS created a short electronic survey for completion by participants, and other stakeholders who were unable to attend the workshop.

At the end of the two-day event, it was clear that participants were in favour of formalizing the current ISANS into a coordinating body for IAS work in Nova Scotia. The general consensus was that, initially, this body should operate as an “enabling” group, facilitating networking and the coordination of existing IAS activities in the province, and raising public awareness. In the future, it may evolve into more of a “doing/action” group, taking on roles in the management of particular IAS. Survey results also indicated strong support for the formation of an IAS coordinating body, and identified existing barriers to effectively addressing IAS in Nova Scotia.

This report is a brief summary of the presentations, the outcomes of the facilitated breakout sessions, and the survey results.

Format

Both days of the *STEPPING UP* workshop combined informative plenary sessions broken up by facilitated breakout sessions. Each half-day began with 3-4 formal presentations on a particular theme, followed by a breakout session or group discussion with a related objective. Breakout sessions were aimed at learning what types of IAS work/research are ongoing or planned; identifying the needs of groups doing

the work; determining how we can better collaborate; discussing the need for a more formal IAS coordinating body; and setting goals, objectives and activities. To make the most effective use of limited time allocated for each breakout session, they were jointly planned in advance (by working group members and workshop facilitators) to address specific questions.

Opening remarks by Dr. Tom Herman and the Honourable David Morse, on the topics of globalization and lessons learned, set the tone for two days of engaging discussion on how we might best collectively address IAS in Nova Scotia.

Day 1 – Wednesday, December 3, 2008

Morning Theme: IAS Working Groups & Councils – Canadian Experiences

Why are we here? Introduction to the Invasive Species Alliance of Nova Scotia (ISANS) – Marika Godwin, Coordinator, ISANS

ISANS has been operating as an ad-hoc group of volunteers from various groups/agencies since September 2007. Because the group lacks an identity, and has a limited budget, many people are unaware of the group's existence and purpose. To provide some context, Marika Godwin gave a brief presentation on the origin, membership, activities, and future plans of the group.

Stepping stones to a council: Lessons learned – Gail Wallin, Executive Director, Invasive Plant Council of British Columbia (IPCBC)

IPCBC is the oldest IAS council in Canada. Gail Wallin shared some of the lessons learned in the establishment and operation of IPCBC. A recurring phrase in the establishment of formal IAS groups is "don't re-invent the wheel", and IPCBC encourages other provincial groups to borrow and apply elements from their experience. In addition, IPCBC is leading the initiative to create a Canadian network of IAS groups across provinces and territories.

The successes and challenges of a newly formed invasive species council – Julie Sveinson Pelc, Coordinator, Invasive Species Council of Manitoba (ISCM)

Julie Sveinson Pelc shared some of the successes and challenges of establishing an all-species non-profit coordinated leadership body. Prior to the formation of ISCM, Manitoba had several stakeholder groups working on invasive plant projects. They conducted a review of other Canadian IAS council structures before deciding to expand their focus to all IAS. Though ISCM has implemented a number of successful projects, the council still needs to finalize their strategic plan and terms of reference.

Breakout Session 1: Building a Network – Introductions and Current IAS Roles and Activities

This session involved all workshop participants identifying their respective IAS work/research and interests, and their motivation for attending the *STEPPING UP* workshop. It provided an opportunity for networking, finding commonalities, and identifying gaps in current IAS work/research in Nova Scotia.

Despite the efforts of ISANS to include as many IAS stakeholders as possible in the workshop, several important groups/interests were identified as absent. Those “missing” interests were industry (including agriculture, forestry, and aquaculture), youth, municipalities, watershed groups, other non-government organizations/ groups, resource-user groups (e.g. angling associations), community groups, coastal community groups, and some federal and provincial government departments.

Afternoon Theme: Role of Governments (Federal, Provincial, and First Nations)

Federal roles & responsibilities - Joint talk – Mark Richardson, Environment Canada (EC), Bruno Gallant, Canadian Food Inspection Agency (CFIA), and Dr. Andrea Locke, Department of Fisheries and Oceans (DFO)

Three speakers gave a joint talk on the roles and responsibilities of their respective agencies. Mark Richardson (EC) provided a brief overview of Canada’s national invasive species strategy¹, and highlighted the role of EC in administering the Invasive Alien Species Partnership Program (IASPP). Bruno Gallant (CFIA) detailed the role of CFIA in implementing the national strategy as it relates to plants and plant pests, including developing and implementing a new program for invasive alien plants. CFIA provides support to invasive species councils across the country. Dr. Andrea Locke (DFO) described the priority action areas for DFO under federal IAS budget, including regulatory framework, risk assessment, early detection, and research and information management. Current research and monitoring activities in Atlantic Canada marine waters are focused mostly on tunicates and green crab.

Provincial responsibilities & activities – Dr. Sherman Boates, Nova Scotia Department of Natural Resources (DNR), Wildlife Division

Dr. Sherman Boates outlined the role of numerous provincial government agencies with respect to IAS, including the Departments of Environment, Fisheries and Aquaculture, Agriculture, Transportation and Infrastructure Renewal, Tourism, Culture and Heritage, and DNR. DNR responsibilities include impacts and control of forest pests, impacts of IAS on natural systems and species at risk, and coordination of provincial involvement in national and international efforts (primarily for terrestrial species). Specific problematic IAS in Nova Scotia include the European fire ant, yellow floating heart, autumn olive, and brown spruce longhorn beetle. Dr. Boates emphasized the importance of using lessons learned from the species-at-risk experience in Nova Scotia, and organizing efforts on at least two levels: the national/bioregional level and the local/population level.

¹ An Invasive Alien Species Strategy for Canada, 2004

Role of Aboriginal Peoples in environmental decision-making – Joshua McNeely, Maritime Aboriginal People’s Council (MAPC), IKANAWTIKET Initiative

Joshua McNeely, Regional Facilitator for IKANAWTIKET, the Environmental Respect Organization of MAPC, spoke of the importance of indigenous knowledge and practices in understanding and addressing IAS in Nova Scotia. The requirement to involve Aboriginal Peoples in environmental decision-making is legal and practical, as evidenced by international acknowledgement that indigenous knowledge and practices are vital to sustainable development and maintaining biodiversity. IAS in Nova Scotia, or the management of IAS, will almost certainly impact Aboriginal or treaty rights. There are roadblocks to involving Aboriginal Peoples in decision-making about IAS, but there are also opportunities and existing pathways toward engagement, partnerships, and relationships.

Breakout Session 2: Forming an IAS Coordinating Body

This session was organized around specific questions. Synopses of answers generated by the breakout groups through personal reflection and group discussion are summarized below.

Question: Are you interested in, and committed to, advancing the coordination of IAS work in Nova Scotia?

In general, participants were interested in advancing the coordination of IAS efforts in Nova Scotia. At the time of the breakout session, the only people who expressed their level of commitment to this advancement were the current working group members, plus one other participant. During the workshop wrap-up, several other individuals “stepped-up” and expressed their commitment to being involved in the advancement.

Question: If there were a more coordinated approach to IAS in Nova Scotia, what would be the potential benefits to you, your organization, and the greater cause?

The following are personal/organizational benefits listed by workshop participants:

- Increased knowledge/understanding (including what’s happening out-of-province)
- Increased scope of activities related to this issue
- Provision of networking opportunities
- Increased stakeholder involvement
- Increased organizational efficiency (including helping staff achieve IAS mandates)
- Having organizational voices and priorities heard
- Demonstration of the usefulness of expertise and data within organizations
- Potential to educate senior managers about the importance of IAS
- Potential to increase access to funding
- Increased interaction with government and other stakeholders, leading to upholding of treaty agreements
- Satisfaction of a sense of process-based curiosity and development of a model for potential application to other situations

The following quotes express some personal benefits of a coordinated approach to IAS in Nova Scotia, as cited by workshop participants:

- “My children will benefit from a sustainable, bio-diverse NS.”
- “My children will benefit because I was a role model in helping to make this happen.”
- “I will have peace of mind being part of the solution rather than the problem.”
- “Knowing that I am not the only one worried about this issue.”

Benefits to the greater cause were identified by workshop participants as:

- Future sustainability of the environment
- Benefits to the environment and ecological integrity
- Bringing together diverse perspectives
- Legitimizing the issue of IAS to everyone (federal, provincial, municipal governments, Aboriginal Peoples, political leaders, corporate leaders, community leaders, youth, general public)
- Increased collaboration
- Strengthening of funding applications (including increased in-kind support)
- Identification of additional champions and volunteers
- Heightened understanding and appreciation of value systems

Capturing the Intent, Spirit, and Culture of a Coordinated IAS Group

(component of Breakout Session 2)

Question: What 3 words or phrases would you most want people to use when describing the group?

WORDS: proactive, collaborative, synergistic, effective, inclusive, diverse, active, informative, adaptive, respectful, consulted, coordinated, pragmatic, strategic, comprehensive, open-minded, balanced.

PHRASES: evidence-based decision making, meaningful connection with the people who make decisions (including government, etc), working together.

Question: What role should members should play in the group?

There was considerable discussion around defining the word membership (i.e. what is a member?). It is clear that member roles may vary depending on group development, and that group objectives may need to be established prior to defining membership. However, it was generally agreed that members should make meaningful contributions to the group, be active in the group, have realistic expectations of other members, have access to multiple levels for input and participation, and help inform the development of a strategic approach to addressing IAS in Nova Scotia.

Question: What role should non-member stakeholders play in the group?

In general, participants felt that membership in a formal IAS coordinating body should be as open and inclusive as possible and that there should be no such thing as a “non-member stakeholder” (i.e. any interested person or party should be a member). The following comments highlight support for broad membership.

- “Non-members? Everyone should be members!”
- “Non members? All network partners need to know where they fit, and where they are most effective.”
- “Why would there be such a thing?”

Question: What should the mandate of this group be first and foremost directed by?

There was overwhelming support from workshop participants for the group to be first and foremost directed by science/scientific principles. Some other recommendations for group guidance included a framework of strategic goals and objectives, a consistent process of priority identification, a success matrix (evaluation), and a native biodiversity mandate. In addition, direction provided by the group’s membership, including feedback and identification of values, was identified as important.

Question: If the group were to have committees, what should those committees be?

There were numerous recommendations for committee types, with several references to the committees of the Invasive Plant Council of British Columbia (IPCBC). The IPCBC committees are:

- Communications & Awareness Committee
- Finance & Fund Development Committee
- Regulation, Compliance & Enforcement Committee
- Technical & Operational Support Committee
- Research & Development Committee

Other suggestions for committee types included the following:

- Project-based committees
- Sector-based committees (e.g. agriculture, forestry, aquaculture, etc)
- Species-based committees (e.g. terrestrial, aquatic, etc)
- Media communications committee

Some participants felt that the group may require a process to determine the committee types. This may include identifying opportunities to link existing initiatives. It was also acknowledged that committees are likely to be coordinated by an overarching steering committee/group.

Question: If other groups/interests were represented at the workshop, what would they likely want a formal IAS coordinating body to focus on?

In the first breakout session, workshop participants identified groups/interests that they felt were not represented at the event. Participants felt that “missing” interest groups would want a formal IAS group to focus on prevention, early detection, assessment (risk, species), education, active work projects, mitigation and control (management), rapid response, and public concerns.

Question: How should the group communicate internally and externally?

Reference was often made to a communications plan, which would guide the group’s internal and external communications. Specific recommendations for internal communication mechanisms included frequent and regular face-to-face, teleconference, and/or web portal/email contact. Suggestions for external communication instruments were public consultation, internet, annual general meetings (AGM), newsletter, mass media, newspaper column, advertising, mixed media, and use of existing infrastructure and outreach initiatives. Integrating grassroots communications into a communications strategy was identified as potentially important (particularly if the group wants to inform policy). Emphasis was placed on the need for communication at the regional, national, and bioregional levels.

Breakout Session 2 (con’t): Forming an IAS Coordinating Body

Question: What are the key success factors for the existing ISANS to become more formal/coordinated?

The question of funding was raised repeatedly throughout the workshop, including whether or not the group can be sustained with little or no funding. In general, the requirement for at least one paid employee was seen as key to the implementation of successful initiatives. In addition to sustainable funding, key success factors identified were communication, stakeholder input, clear expectations of members, clear goals and objectives, commitment and dedication, active member participation, excellent leadership, and community-level activity and interest.

Question: How do you envision the work of the group getting done?

There was not a lot of discussion around this question, but workshop participants were generally in favour of a steering committee (or some type of directing group) with co-chairs, and a number of working committees. This group structure had been previously discussed by members of ISANS on several occasions, and subsequently raised at the workshop discussion sessions.

Question: What barriers might prevent the progression of IAS coordination in Nova Scotia?

The following are potential barriers identified by workshop participants:

- Money, insecure funding, lack of resources, current economy
- Lack of time and lack of supervisor support
- General lack of IAS knowledge
- Lack of parallel vision and priorities
- Competing priorities
- Inadequate communication
- Taking on too large a mandate and being bogged down
- Other burning issues
- Lack of committed people
- Lack of organizational buy-in/support
- Complexity of integrating multiple levels of government organizations
- Poor leadership

Question: What are some of the best practices in the development of IAS coordination?

The following are best practices identified by workshop participants:

- Transparency
- Communications
- Shadowing of other provincial models
- Use of existing best/better management practices (BMP)
- Involving stakeholders

Summary of Day 1

A consultation between workshop facilitators Chris Pellham, Joel Stoddart and Lisa Lowthers (all of ACSBE), and workshop moderator Dr. Graham Daborn, pulled together the outcomes of the first two breakout discussion sessions. In general, by the end of the first day of the *STEPPING UP* workshop, participants were in support of the creation of an IAS coordinating body that would be inclusive, focused, engaged in meaningful work, and have strong leadership.

Key elements to the success of this body would be a wide membership acting as ambassadors, effective communication and processes to evaluate and prioritize actions, and the establishment of a core leadership group, supported by the membership. Key barriers to the creation of this body were identified as a lack of vision, funding, member commitment, and time. To make the best use of limited resources it was felt that the group should identify, assess, and adopt (where appropriate) established organizational models from elsewhere, and best practices demonstrated elsewhere, while recognizing specific Nova Scotia needs and conditions. All objectives and activities must align with federal and provincial policies.

STEPPING UP participants thought a formal IAS coordinating body for Nova Scotia should be described using the following terms:
collaborative, synergistic, proactive, strategic, transparent, and evidence-based.

Day 2 – Thursday, 4 December 2008

Morning Theme: Research in Nova Scotia

Invasive plants of natural habitats in Nova Scotia – Sean Blaney, Botanist and Assistant Director, Atlantic Canada Conservation Data Centre (ACCDC)

Sean Blaney explained that as a component of understanding the status of all species, the ACCDC maintains provincial lists of wild species, including exotics. This presentation examined patterns in the diversity and abundance of exotic species in Nova Scotia and the Maritimes and focused on a small selection of the most problematic and potential future invasive plants of natural habitats, including some lesser known species. Though Nova Scotia has a relatively limited invasive plant problem, several established species present a broad threat (*Frangula alnus* (*Rhamnus frangula*), *Phragmites australis* ssp. *australis*, *Celastrus orbiculatus*), while others threaten particular sensitive natural habitats.

Developing an integrated management strategy: Considerations for aquatic invasive alien species – Dr. Alexandra Curtis, Adjunct Professor, Department of Biology, Acadia University (NOTE: Dr. Curtis' current position is Sustainable Fisheries Scientist, Marine Issues Committee, Ecology Action Centre)

Dr. Alexandra Curtis reviewed the vectors for aquatic IAS, the tools available for addressing each point of opportunity for action from prevention to control, and the challenges inherent to addressing marine and freshwater IAS. Through the use of examples, Dr. Curtis emphasized the importance of applying the precautionary principle to IAS, and making prevention and monitoring activities key priorities.

Monitoring invasive plants at Kejimikujik National Park and National Historic Site – Donna Crossland, Park Warden, Kejimikujik National Park

The introduction and presence of IAS have been identified as a significant stressor to ecological integrity (EI) at Kejimikujik National Park and National Historic Site (Keji). Donna Crossland described how Keji is using invasive exotic plant species as a measure of EI in forest ecosystems. Invasive plant species monitoring is one of a suite of ecological measures that has been adopted in Keji and other Atlantic National Parks to assist with the assessment of EI. Monitoring data is used in the State of the Parks reporting that provides Canadians with a clear and concise rating of current conditions and stressors in National Parks. A species list for monitoring was developed based on a 2004 inventory, and monitoring

activities provide early detection of increases in the numbers of occurrences of high priority invasive species. In the summer of 2008, Keji began to aggressively eliminate glossy buckthorn (*Rhamnus frangula*).

Breakout Session 3: Vision for the Future – Setting Goals, Objectives and Activities

This session was a little less structured around specific questions, but encouraged participants to give some thought and discussion to the following session objectives:

- Establish the foundation of what will later become a vision statement.
- Establish the foundation of what will later become a mission statement.
- Specify what can be done in the next 1-2 years to begin advancing the vision and mission.

Each of the three breakout groups went through several exercises in order to come up with a potential vision, mission, and list of priorities. The thoughts and ideas put forward by participants were pulled together by the breakout group facilitators, and presented in the final group discussion. Synopses of answers generated through personal reflection and group discussion are summarized below.

Possible foundations of a vision statement included:

- “All Nova Scotians are educated and engaged in a unified effort directed toward the prevention, identification, monitoring, and management of IAS”
- “A Nova Scotia that is not threatened economically, ecologically, recreationally, or culturally by IAS”
- “Complete ecological integrity; a province free of IAS... priceless!”
- “Nova Scotia is known as a place where newly introduced exotic species are quickly recognized, their implications quickly assessed, and, where necessary, appropriate actions are initiated to protect natural ecosystems, processes, and resources”
- “Full integration of environment, economy, and society; maximum collaboration”

Possible foundations of a mission statement included:

- “A group of champions working together to prevent, identify, monitor, and manage the negative impacts of IAS”
- “To maintain, prevent, sustain, protect and preserve by coordinating, communicating, empowering, engaging and collaborating in IAS management in Nova Scotia’s ecosystems”
- “We share information, facilitate consensus, enable, educate, monitor, lead, advise, and train all IAS stakeholders”

Priority Actions

The following are priorities identified for a formal IAS coordinating group:

- 1 – Establish an interim group to complete and consult on a strategic plan, including group structure (Terms of Reference)
- 2 – Seek staff and project funding (year 1 and long term)

- 3 – Secure coordinator and administrative support
- 4 – Outreach to all potentially interested (target) organizations/groups
- 5 – Develop a consistent, peer-reviewed, scientifically defensible priority list of IAS currently present in Nova Scotia, and of IAS that may pose future threats
- 6 – Create a communications plan
- 7 – Conduct a gap analysis

Question: What should an IAS group aim to accomplish in the next 6 months-1 year, and in the next 1-3 years? Categories in which to list the outcomes included marketing/awareness; funding, financial management and planning; programs and services; governance and leadership; administration; and staffing and mobilization of people.

STEPPING UP participants found the categories provided in this question confusing, and in general, did not use them. In addition, for the most part, they did not differentiate between first year activities, and longer term activities. Most activities listed are obviously intended to be start-up type activities that would typically occur or be initiated in the short term. These included: plan the next meeting, continue development of a contact list, contact key people, conduct a gap analysis, secure funding, develop a platform (website), compile resources, create a literature archive, research existing IAS programming, share best practices, examine risk analysis tools, develop a species watch list, and develop a species database.

Some activities related specifically to group development and governance included: determine the cost of a paid coordinator-type position (including travel) and website development, determine location of leadership (NOTE: this is most likely to be where any project funding is allocated), develop terms of reference, create a steering committee, identify potential funding sources, study and borrow from existing models, redefine the group (name, logo), and develop communications systems.

Question: To arrive at the vision, what services and programs would the group provide, who would they be provided to, and within what geographic boundaries (i.e. what, who, and where)?

No clear list of services and programs was derived in the breakout sessions. Priorities and activities identified in other questions provide some insight into the type of services and programs that could be provided. To prevent “re-inventing the wheel”, the group should draw on existing IAS programming where possible. It is understood that a formal IAS coordinating body will operate throughout Nova Scotia, and will continue regional and national networking that is currently underway. It is acknowledged that bio-regional initiatives are an important future consideration.

Question: What should an IAS group not try to accomplish (i.e. what is “too big”)?

Possibly due to a shortage of time in the breakout session, this question was not addressed. Based on the priorities identified for a formal IAS coordinating group however, it is clear that support is initially for

formative and establishment activities. Once Nova Scotia has an operational IAS coordinating body, the feasibility of specific activities and projects can be evaluated by group members.

Afternoon Theme: Nova Scotia Perspectives

Role of community groups & volunteer monitoring – Dr. Cathy Conrad, Department of Geography, Saint Mary’s University (SMU), and Coordinator, Community-Based Environmental Monitoring Network (CBEMN)

Community-based environmental organizations as well as individual “citizen scientists” have an important role to play in the early identification and detection of IAS. Dr. Cathy Conrad described the activities of the CBEMN, housed within SMU’s Department of Geography. Using a case study of the invasive aquatic plant yellow floating heart (*Nyphoides peltata*), Dr. Conrad illustrated the significance of community-based monitoring, and how these groups and individuals can work towards the mitigation of the spread of both aquatic and terrestrial IAS.

Project UFO investigates coastal space: The final frontier – Dr. Martha Jones, Associate Professor, Department of Biology, Cape Breton University

Dr. Martha Jones described the goals and activities of Project UFO (Unidentified Foreign Organisms), and recent research related to an invasive swim bladder parasite of American eels. Project UFO investigates the status of IAS on Cape Breton Island, including such intriguing and notorious creatures as the European green crab, the lacy crust bryozoan, sea squirts (tunicates), Japanese skeleton shrimp, and spinycheek crayfish. The project helps environmental stakeholders prevent the introduction and spread of IAS through their factual and fun website (with reporting capability), and two volunteer monitoring programs.

IAS and small private woodlot owners – Andrew Fedora, Executive Director, Federation of Nova Scotia Woodland Owners (FNSWO)

There are a staggering 30,000 (estimate) small private woodlot owners in Nova Scotia who collectively own 49% (1.78 million hectares) of the province’s forested land. Andrew Fedora focused on the role of small private woodlot owners in monitoring and managing IAS. By illustrating examples of IAS that have impacted Nova Scotia woodlots (beech bark disease, Dutch elm disease, and brown spruce longhorn beetle), Andrew highlighted the capacity of woodlot owners to be integral partners in mitigating the impacts of IAS.

Unwanted hitchhikers: A non-governmental organization response to invasive species – Gretchen Fitzgerald, Director, Sierra Club of Canada, Atlantic Canada Chapter

In a unique perspective on the commonalities between bioinvasions and non-governmental groups, Gretchen Fitzgerald described the work of a group of volunteers who initiated measures to stop marine

invasions from occurring in the Atlantic region. Based on this experience, recommendations for future actions to address the issue in the Atlantic region included education, monitoring, and fitting bioinvasions into the broader context of climate change.

STEPPING UP – Workshop Synthesis

At the end of the second and final day of the *STEPPING UP* workshop, a group discussion was led by workshop moderator Dr. Graham Daborn and facilitator Lisa Lowthers. Almost all participants were present for this wrap-up session, indicating a high level of engagement amongst those who attended.

The general consensus was for a formal ISANS to coordinate IAS work in the province. The group agreed that current priorities should be working on group governance and structure, and developing terms of reference, with an agreement on structure to be in place by April 2009. Following through on the “don’t re-invent the wheel” theme, the group agreed that existing models should be researched and applied where possible (while also acknowledging that Nova Scotia has specific needs).

Participants identified the need to “get the science together”, to unite efforts of different groups where possible, to avoid duplication, and to team up for programming and grant-writing initiatives.

A number of unresolved questions and issues were identified during this discussion, mostly around whether there was a requirement to develop a new group, or incorporate provincial IAS coordination into an existing group. There was also some debate as to the location of the group (represented by any paid staff). Specific questions raised are below.

- Could this proposed group fit into an existing group (as opposed to forming another group)?
- Another day, another group?
- Where should the proposed group be housed (is the current location, Acadia, the best fit)?
- Is location really important at this point? The location of the group’s coordinator does not necessarily reflect the “seat” of the group.
- Could this proposed group be established in partnership with other groups/provinces/countries?
- What kind of association will exist between government, non-government organizations, industry, community groups, etc? What is the relationship between these stakeholders? These relationships may inform group structure.

If ISANS is successful in its submission to the IASPP for a second year of funding, the group will continue to be housed at the Acadia Centre for Estuarine Research (ACER), Acadia University for that term. Acadia is currently the fiscal agent and home for ISANS, and the principal applicant on the submission. All remaining unanswered questions will be addressed by the group after it has developed the Terms of Reference, detailing group structure and function.

Survey Responses

Initially, the electronic survey responses were intended to direct the workshop’s facilitated planning sessions, and enable stakeholders who were unable to attend the workshop to provide their input on IAS in Nova Scotia. Due to low survey completion numbers leading up to the workshop, information provided was not used in planning the breakout sessions. Input was used to support the workshop outcomes, and add to a database of IAS contacts in Nova Scotia.

In addition to attending the workshop, 19 participants also completed the survey. Of the survey respondents, 18, or 48.6% of the total, did not participate in the workshop. Many of the survey questions mirrored issues addressed in the workshop breakout sessions, including identification of barriers preventing individuals and organizations from effectively addressing IAS, and identification of priorities for a formal IAS coordinating body in Nova Scotia.

100% of respondents identified “Lack of coordination in NS” and “Lack of staff/volunteers” as barriers to effectively address IAS.

100% of respondents identified “Inter-agency coordination”, “General lack of public awareness”, and “Absence of formal networks” as current gaps in Nova Scotia limiting the ability of individuals and organizations to carry out IAS work.

Specific priorities identified by survey respondents for a formal IAS coordinating body were:

- Coordination of the following: monitoring (including community-based monitoring, CBM), existing IAS activities, outreach education, stakeholders (including government agencies), prevention, detection (and reporting), control, monitoring, and the provincial approach to IAS
- Species identification
- Stakeholder identification
- Prevention
- Monitoring
- Mapping
- Networking
- Funding (commitment from provincial government?)
- Public outreach, education, awareness
- Prioritization of species (risk assessment, ranking)
- Management (including eradication)
- Resource sharing
- Communication, information exchange
- Providing advice to the provincial government on legislation, regulation, policy
- Lobbying government for practical prevention policies
- Priority-setting
- Inter-agency coordination

- Clarification of responsibilities
- National coordination
- Defining research priorities

One question in the survey gave respondents the opportunity to list the names of the top 3 IAS species currently being addressed by themselves or their organizations. Species identified and the number of times each was listed are detailed below. More than half of survey respondents focus their work on terrestrial species.

Latin Name	Common Name	Number of Responses
Marine Animals		
<i>Anguillicoloides crassus</i>	swimbladder nematode in American eel (<i>Anguilla rostrata</i>)	1
<i>Botryllus schlosseri</i>	golden star tunicate	1
<i>Botrylloides violaceus</i>	violet tunicate	1
<i>Caprella mutica</i>	Japanese skeleton shrimp	1
<i>Carcinus maenas</i>	green crab	7
<i>Ciona intestinalis</i>	vase tunicate, sea squirt	3
<i>Didemnum sp.</i>		2
<i>Eriocheir sinensis</i>	Chinese mitten crab	1
<i>Hemigrapsus sanguineus</i>	Asian shore crab	1
<i>Styela clava</i>	club tunicate, stalked sea squirt	2
Marine Plants		
<i>Codium fragile</i>	dead man's fingers	1
Freshwater Animals		
<i>Micropterus dolomieu</i>	smallmouth bass	1
<i>Orconectes limosus</i>	spiny cheek crayfish	1
Freshwater Plants		
<i>Nymphaeodes peltata</i>	yellow floating heart	2
Terrestrial Plants		
<i>Alliaria petiolata</i>	garlic mustard	3
<i>Asclepias syriaca</i>	common milkweed	1
<i>Cirsium arvense</i>	Canada thistle, creeping thistle	1
<i>Cyperus esculentus</i>	yellow nutsedge	1
<i>Echium plantagineum</i>	Patterson's curse	1
<i>Eriochloa villosa</i>	woolly cup grass	1
<i>Galium mollugo</i>	smooth bedstraw, false baby's breath	3
<i>Lythrum salicaria</i>	purple loosestrife	4
<i>Phragmites australis</i>	common reed	1
<i>Polygonum cuspidatum</i>	Japanese knotweed	4
<i>Polygonum sachalinense</i>	giant knotweed	2
<i>Rhamnus frangula</i>	glossy buckthorn	5
<i>Rosa multiflora</i>	multiflora rose	1
<i>Senecio jacobaeae</i>	tansy ragwort, common ragwort, stinking willie	1
<i>Solanum physalifolium</i>	hairy nightshade	1
<i>Tussilago farfara</i>	coltsfoot	1
Insects		
<i>Adelges piceae</i>	balsam woolly adelgid	2
<i>Agrilus planipennis</i>	emerald ash borer	3

<i>Anoplophora glabripennis</i>	Asian long-horned beetle	2
<i>Globodera sp.</i>	potato cyst nematode	1
<i>Lilioceris lili</i>	red lily leaf beetle	1
<i>Lymantria dispar</i>	gypsy moth	4
<i>Myrmica rubra</i>	European fire ant	1
<i>Tetropium fuscum</i>	brown spruce longhorn beetle	3
Pathogens		
<i>Erwinia amylovora</i>	fireblight in fruit trees and cane berries	1
<i>Ophiostoma ulmi</i> ; <i>O. novo-ulmi</i>	Dutch elm disease	2

An area addressed by the survey that was not given much time at the workshop was potential funding sources for a formal IAS coordinating body. While most respondents identified the provincial and federal governments as natural funders for this type of group (with emphasis on a role for the provincial government), other suggestions included the following: membership fees, private donations (individuals, corporations, other interested/affected organizations), fundraising initiatives, and industry sponsorship.

Next Steps – Agreed Subsequent Action Plan

To start functioning as a coordinating body in April 2009, ISANS will work to develop a structure and establish a mission for the group in early 2009. Work on group development commenced at a brainstorming session with the Executive Director of the IPCBC, prior to the workshop in December. Numerous models exist within Canada and the interim ISANS will draw as much as possible on these models, so as to not "re-invent the wheel". The current interim ISANS includes all of its original members, plus five new volunteer participants. Members of the interim ISANS are:

- Dr. Alexandra Curtis (Ecology Action Centre, formerly Acadia University)
- Amanda Lavers (Mersey Tobetic Research Institute)
- Andy Sharpe (Clean Annapolis River Project)
- Dr. Anna Redden (Acadia University)
- Dr. Bob Pett (NS Department of Transportation and Infrastructure Renewal)
- Bruno Gallant (Canadian Food Inspection Agency)
- Claire Wilson O'Driscoll (Canadian Food Inspection Agency)
- Dawn Sephton (Department of Fisheries and Oceans)
- Joe Calder (NS Department of Agriculture)
- Joshua McNeely (Maritime Aboriginal Peoples Council – IKANAWTIKET initiative)
- Marika Godwin (ISANS Coordinator)
- Mark Elderkin (NS Department of Natural Resources)
- Dr. Martha Jones (Cape Breton University)
- Melanie Priesnitz (Harriet Irving Botanical Gardens, Acadia University)
- Ron Neville (Canadian Food Inspection Agency)

ACTION: The interim ISANS will meet by teleconference in January 2009 to discuss workshop outcomes and group development. Between January and April 2009, the interim group will develop a draft Terms of Reference document, which it will circulate to all workshop participants and other stakeholders for input.

The existing group had been working on the development of a funding proposal for submission to the IASPP on 19 December 2008. The proposal detailed the group's plans for formalization, including development of Terms of Reference, group identity (including name, logo, and website), five year workplan, and continued Atlantic and national networking. Workshop participants were unanimously in favour of incorporating the workshop outcomes, and finalizing and submitting the funding proposal.

ACTION: ISANS will prepare and submit a funding application to the IASPP on 19 December 2008. The group will request \$50,000 for a one year project, much of which will be allocated to human resources expenditures associated with project staff. NOTE: at the time of submission, the group was still known as the NSISWG.

ISANS feels that the establishment of an IAS coordinating body is critical to enabling Nova Scotia to better address the threats of IAS through increased coordination, communication, and collaboration. As groups across the country continue to take initiative within their provinces, councils/coordinating groups are increasingly communicating with one another. This increases the capacity of the whole country to address IAS issues, and supports the federal government in its efforts of deliver on the goals of the national IAS strategy.

Appendix A – Workshop Participants

Name	Affiliation
Alain Belliveau	Mersey Tobeatic Research Institute
Alexander Shalin	Nova Scotia Department of Agriculture
Alexandra Curtis	Ecology Action Centre, Marine Issues Committee
Amanda Lavers	Mersey Tobeatic Research Institute
Andrea Locke	Department of Fisheries and Oceans, Gulf Fisheries Centre
Andrew Fedora	Federation of Nova Scotia Woodland Owners
Andrew Jamieson	Agriculture and Agri-Food Canada, Fruit Breeding
Andy Sharpe	Clean Annapolis River Project
Anna Redden	Acadia University, Department of Biology, Acadia Centre for Estuarine Research
Art Lynds	Nova Scotia Department of Natural Resources, Parks and Recreation
Benedikte Vercaemer	Department of Fisheries and Oceans, Ecosystem Research Division
Beth Hoar	City of Charlottetown, Parks and Recreation
Bob Guscott	Department of Natural Resources, Forest Protection
Bob Pett	Nova Scotia Department of Transportation and Infrastructure Renewal
Bruno Gallant	Canadian Food Inspection Agency
Cameron Deacoff	Halifax Regional Municipality, Sustainable Environment Management Office
Cathy Conrad	Saint Mary's University, Department of Geography, Community-Based Environmental Monitoring Network
Claire Wilson O'Driscoll	Canadian Food Inspection Agency
Cyndy MacCormac	City of Charlottetown, Parks and Recreation
Dawn Sephton	Department of Fisheries and Oceans, Ecosystem Research Division
Donald Burns	Nova Scotia Department of Environment
Donna Crossland	Parks Canada, Kejimikujik National Park and National Historic Site
Gail Wallin	Invasive Plant Council of British Columbia
George Alliston	
Graham Daborn	Acadia University, Department of Biology, Acadia Centre for Estuarine Research
Gretchen Fitzgerald	Sierra Club of Canada - Atlantic Canada Chapter
Jackie Waddell	Island Nature Trust
Jason Leblanc	Nova Scotia Department of Fisheries & Aquaculture, Inland Fisheries
Jeffrey Ogden	Nova Scotia Department of Natural Resources, Integrated Pest Management
Jennifer Carey	Canadian Food Inspection Agency
Jim Jotcham	Marbicon Inc.
Jim Wolford	
Joe Calder	Nova Scotia Department of Agriculture
Joshua McNeely	Maritime Aboriginal Peoples Council, IKANAWTIKET Initiative
Julie Pelc	Invasive Species Council of Manitoba
Kara Baisley	Miramichi River Environmental Assessment Committee
Katie Nickerson	Canadian Food Inspection Agency
Lucie Lavoie	New Brunswick Department of Natural Resources, Fish and Wildlife
Marika Godwin	Invasive Species Alliance of Nova Scotia
Mark E Richardson	Environment Canada
Mark Elderkin	Nova Scotia Department of Natural Resources, Wildlife Division
Martha Jones	Cape Breton University, Department of Biology/Project UFO
Melanie Priesnitz	Harriet Irving Botanical Gardens, Acadia University
Merwyn Longmire	L'Sitkuk Environment, Bear River First Nation
Nicole Oliver	Clean Annapolis River Project
Reg Newell	Nova Scotia Department of Natural Resources, Wildlife Division

Ruth Newell	E.C. Smith Herbarium, Acadia University
Sean Blaney	Atlantic Canada Conservation Data Centre
Shalan Joudry	L'Sitkuk Environment, Bear River First Nation
Sherman Boates	Nova Scotia Department of Natural Resources, Wildlife Division
Wayne Williams	ACAP (Atlantic Coastal Action Program) Cape Breton

Appendix B –Workshop Program



STEPPING UP:
Planning for the Challenges of Invasive Alien Species in Nova Scotia




Hosted by the Nova Scotia Invasive Species Working Group
3 & 4 December 2008
K.C. Irving Environmental Science Centre
Acadia University, Wolfville, NS

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Canadian Food Inspection Agency
Just Us! Coffee Roasters Co-op
Project UFO

~ THANK YOU ~

Day 1—Wednesday, 3 December 2008	Day 2—Thursday, 4 December 2008
Auditorium, Lower Level, K.C. Irving Environmental Science Centre, Acadia	Auditorium, Lower Level, K.C. Irving Environmental Science Centre, Acadia
<p>8:00 Registration & Display Set-up</p> <p>8:45 Introductions, Workshop Flow & Housekeeping Items: Dr. Graham Daborn, Department of Biology, Acadia University</p> <p>9:00 Welcome Address, and Importance of the Research-Community Connection: Dr. Tom Herman, Acting President, Acadia University</p> <p>9:15 Welcome Address: Honorable David Morse, Minister, Nova Scotia Department of Natural Resources</p> <p style="background-color: #e6f2ff; text-align: center;">AM THEME: IAS Working Groups & Councils—Canadian Experiences</p> <p>9:30 Why are we here? Introduction to the Nova Scotia Invasive Species Working Group (NSISWG): Marika Godwin, Coordinator, NSISWG</p> <p>9:40 Stepping Stones to a Council – Lessons Learned: Gail Wallin, Executive Director, Invasive Plant Council of British Columbia (IPCBC)</p> <p>10:10 The Successes and Challenges of a Newly Formed Invasive Species Council: Julie Pelc, Coordinator, Invasive Species Council of Manitoba (ISCM)</p> <p>10:30 COFFEE BREAK</p> <p>11:00 BREAK-OUT SESSION 1: Building a Network – Introductions and Current IAS Roles and Activities: Break-out Groups</p> <p>12:00 LUNCH Optional Tour of E.C. Smith Herbarium: Ruth Newell, Curator</p> <p style="background-color: #e6f2ff; text-align: center;">PM THEME: Role of Governments (Federal, Provincial, and First Nations)</p> <p>1:00 Federal Roles & Responsibilities—Joint Talk: Mark Richardson (Environment Canada), Bruno Gallant (Canadian Food Inspection Agency), Dr. Andrea Locke (Department of Fisheries and Oceans)</p> <p>1:50 Provincial Responsibilities & Activities: Dr. Sherman Boates, Nova Scotia Department of Natural Resources, Wildlife Division</p> <p>2:10 Role of Aboriginal Peoples in Environmental Decision Making—Joint Talk: Joshua McNeely (Maritime Aboriginal Peoples Council, IKANAWTIKET Initiative), Shalan Joudry (Bear River First Nation)</p> <p>2:30 COFFEE BREAK</p> <p>2:45 BREAK-OUT SESSION 2: Forming an IAS Coordinating Body – Structure, Membership, Funding: Break-out Groups</p> <p>4:30-5:00 Wind Down – Traditional Story Telling: Shalan Joudry</p>	<p>8:45 Report-back from DAY 1 – Synthesis of break-out group discussions: Dr. Graham Daborn</p> <p style="background-color: #e6f2ff; text-align: center;">AM THEME: Research in Nova Scotia</p> <p>9:00 Invasive Plants of Native Habitats in NS: Sean Blaney, Botanist and Assistant Director, Atlantic Canada Conservation Data Centre</p> <p>9:20 Developing an integrated management strategy: considerations for aquatic invasive alien species: Dr. Alexandra Curtis, Department of Biology, Acadia University</p> <p>9:40 Monitoring Invasive Plants at Kejimikujik National Park and National Historic Site : Donna Crossland, Warden, Kejimikujik National Park</p> <p>10:00 COFFEE BREAK</p> <p>10:15 BREAK-OUT SESSION 3: Vision for the Future—Setting Goals, Objectives, and Activities: Break-out Groups</p> <p>12:00 LUNCH Plant Specimen Collection & Pressing Demo in the E.C. Smith Herbarium : Ruth Newell, Curator</p> <p style="background-color: #e6f2ff; text-align: center;">PM THEME: Nova Scotia Perspectives</p> <p>1:00 Role of Community Groups & Volunteer Monitoring: Dr. Cathy Conrad, Department of Geography, Saint Mary’s University, and Coordinator, Community-Based Environmental Monitoring Network (CBEMN)</p> <p>1:20 Project UFO Investigates Coastal Space: The Final Frontier: Dr. Martha Jones, Department of Biology, Cape Breton University</p> <p>1:40 IAS and Small Private Woodlot Owners: Andrew Fedora, Executive Director, Federation of Nova Scotia Woodland Owners (FNSWO)</p> <p>2:00 Unwanted Hitchhikers - A Non-Governmental Organizations Response to Invasive Species: Gretchen Fitzgerald, Director, Sierra Club of Canada, Atlantic Canada Chapter</p> <p>2:20 COFFEE BREAK</p> <p>2:40 GROUP DISCUSSION: Stepping Up – Workshop Synthesis & Next Steps: Led by Dr. Graham Daborn</p>