



AQUATIC INVASIVE SPECIES IN COMMERCE

**MODEL REGULATORY
LANGUAGE TO
ADDRESS PRIORITY
GAPS**

FEBRUARY 2024


Sea Grant
LAW CENTER

THE PROBLEM

The United States and Canada have a goal to reduce the risk of harmful plant and animal introductions to North America because of the economic, environmental, and social impacts caused by non-native species that become established and invasive. Species, such as rusty crayfish, zebra mussels, Northern Snakehead, and hydrilla displace native plants and animals, permanently altering native habitats, and negatively affecting biodiversity. Whereas both countries seek to minimize harmful introductions of aquatic invasive species (AIS), both also support responsible trade practices that improve the flow of goods and services across the globe.

The globalization of commerce has introduced significant complexity to the commercial trade pathway. Species are bought and sold for many different reasons, including research, education, public display, aquaculture, and private ownership. There is no general, national, or international (i.e., North American) policy consensus regarding species of concern or how to regulate these commercial pathways.

Additionally, the e-commerce share of retail sales has been steadily growing during the past decade. There is increasing concern that the e-commerce sector will grow at a rate that exceeds the ability of regulatory agencies to address associated risks of introduction and spread of AIS. There is also concern that lack of incentives, lack of information and education about risks associated with certain species, inadequate labeling and reporting, shipping loopholes, and other factors could significantly accelerate the risk of AIS introductions and spread throughout North America.



© pmphonto from Getty Images via Canva.com

MODEL FRAMEWORK

Given the diversity in U.S. state and Canadian provincial approaches to invasive species management, it is unlikely that all 50 states and 10 provinces would adopt a set of standard definitions and regulatory provisions related to AIS in commerce. However, developing and implementing common approaches within and across jurisdictions promotes policy consensus around the problem they are seeking to address.

Developing a common language regarding the classification of species and key actions in the commercial trade pathway will improve interdiction efforts. States and provinces currently use a variety of terms to classify species – invasive species, species of concern, prohibited, restricted, regulated, allowed, among others. The meaning of classifications for those wishing to engage in the sale or purchase of animals and plants is often unclear. Further, only a handful of jurisdictions have labeling, record-keeping, or licensing requirements.

The definitions set forth in this model framework are composite adaptations of definitions and categories used by several jurisdictions. The model definitions also draw upon a list of key terms commonly used in the aquatic plant and animals trade and associated definitions compiled by participants in the work groups formed as part of the [Mitigating Risks of Aquatic Invasive Species in Commerce Summit](#) held in July 2023.

In addition, participants of the Summit identified four priority gaps that could potentially be addressed in a state- or provincial-level model regulation:

- Accessibility of state and provincial AIS lists;
- Labeling;
- Record keeping, reporting, sharing; and
- Licensing/registration.

The model language provided in this report may be drawn upon by states and provinces seeking to strengthen elements of their AIS regulatory programs. This regulatory framework, if adopted by jurisdictions, would increase consistency across states and provinces, reduce confusion among regulators and industry, and contribute to minimizing AIS in commerce.

SPECIES REGULATORY CLASSIFICATIONS

MODEL DEFINITIONS FOR STATES AND PROVINCES

Aquatic Invasive Species

An aquatic species that is not native to [State/Province], including their seeds, eggs, spores, larvae, or other biological material capable of propagation, and whose presence within [State/Province] may cause economic or environmental harm.

Prohibited Species

An aquatic invasive species that may not be imported, possessed, sold, purchased, exchanged, gifted, or transported in this [State/Province], as established by [e.g., legislation, agency rule].

Regulated Species

An aquatic invasive species that may not be imported, possessed, sold, purchased, exchanged, gifted, or transported in this [State/Province], except under a permit issued by [agency].

Authorized Species

An aquatic invasive species that has been approved by [agency] for import, possession, sale, purchase, exchange, gift, or transport in this [State/Province] for certain designated uses.



© Jeffry Surianto from Prexels via Canva.com

Unregulated Species

An aquatic invasive species that has been designated by [agency] as not subject to regulation under the aquatic invasive species rules.

Unlisted Species

An aquatic invasive species that has not been designated by [agency] as a prohibited, regulated, authorized, or unregulated species.

Explanatory Note: The model framework for the regulatory classification of species is designed to clarify the various ways in which AIS may be designated by a jurisdiction. The categories of “prohibited”, “regulated”, “authorized”, or “unregulated” require affirmative action by the jurisdiction following a species status review. Depending on the outcome of that review, the jurisdiction may decide to prohibit trade in that species, regulate its trade through permits or licenses, authorize its trade, or exempt it from regulation. The “authorized” and “unregulated” categories are similar in that trade in those species would be allowed, but the mechanism is slightly different. For “authorized” species, the agency is affirmatively stating that trade is allowed, whereas “unregulated species” are deemed exempt from AIS rules. Both categories are included in the model to reflect the different regulatory approaches that state and provinces might take to allow the trade in a particular species.

The fifth category – “unlisted” – is a catch-all category that encompasses any AIS not yet classified by a jurisdiction. This category is designed to highlight the reality that agency capacity to conduct species status reviews is limited, and there are often scientifically identified AIS that have not formally been designated as such by a regulatory agency.



© Gwengoat from Getty Images Signature via Canva.com

MODEL DEFINITIONS FOR ACTION VERBS

Exchange

To trade or barter a species for other property, goods, or services.

Gift

To transfer a species from one person or entity to another person or entity without compensation.

Import

To move, transport, or receive a species from a place outside the territorial limits of the [State/Province] to a place inside the territorial limits of the [State/Province].

Possess

To own, maintain control over, restrain, hold, grow, raise, or keep a species.

Purchase

The act or activity of buying a species.

Sale

Transfer of ownership of a species from one person to another in exchange for an amount of money, other negotiable instrument, or other property of value expressed in monetary terms

Transport

To convey a species by parcel post, express, freight, baggage, or shipment by common carrier of any description or by automobile, motorcycle, or other vehicle or any other means of transportation.

Explanatory Note: The recommended species classification definitions in the previous section contain several action verbs to enhance clarity and understanding of regulated activities. Species may be traded among sellers, buyers, family, and friends in a variety of ways. These seven terms are the ones most often referred to in state and provincial laws restricting the trade in species. These model definitions work together with the species regulatory classifications to clearly identify what actions are subject to regulation.

MODEL DEFINITIONS FOR KEY TERMS

Bill of Lading

A document of title evidencing the receipt of goods for shipment issued by a person engaged in the business of directly or indirectly transporting or forwarding goods.

Invoice

A bill, written document or electronic transmission, provided by a seller requesting payment for goods received

Receipt

A written or electronic document acknowledging that goods have been received.

Online Sale

Buying, selling, or dealing an item in this [State/Province] over the Internet using electronic means

Electronic Commerce

Engaging in commercial or retail transactions predominantly over the Internet or a computer network, using the Internet as a platform for transacting business, or facilitating the use of the Internet by other persons for business transactions, and may be further defined by [agency rule].

Explanatory Note: There are several other key terms used in discussions of the commercial trade pathway that should also be defined depending on the scope of the state's AIS regulations. Commercial transactions may be documented in a variety of ways by buyers and sellers in the United States and Canada. These definitions highlight just a few of the key terms that may be found in state and provincial law.

Although the terms "electronic commerce" and "online sale" are often used interchangeably, they are not the same. Electronic commerce does involve the buying and selling of goods online, but is also meant to encompass all aspects of administering a business online, such as supply chain management, marketing, inventory, and customer service. An online sale is a narrower concept that refers to a single transaction between a buyer and a seller that occurs via the internet.

ACCESSIBILITY OF STATE/PROVINCIAL AQUATIC PLANT AND ANIMALS LISTS

A significant barrier to industry and consumer compliance with state and provincial AIS laws is the lack of easily accessible prohibited or allowed aquatic plant and animal lists. Access to comprehensive and current lists is critical to all actors in the commerce supply chain, from manufacturers and producers to sellers and buyers, because the lists provide information about which species are prohibited or allowed in each state and province.

In 2023, the National Sea Grant Law Center conducted research to determine the public accessibility of state AIS lists as part of the [Mitigating Risks of Aquatic Invasive Species in Commerce project](#). This research revealed the following challenges:

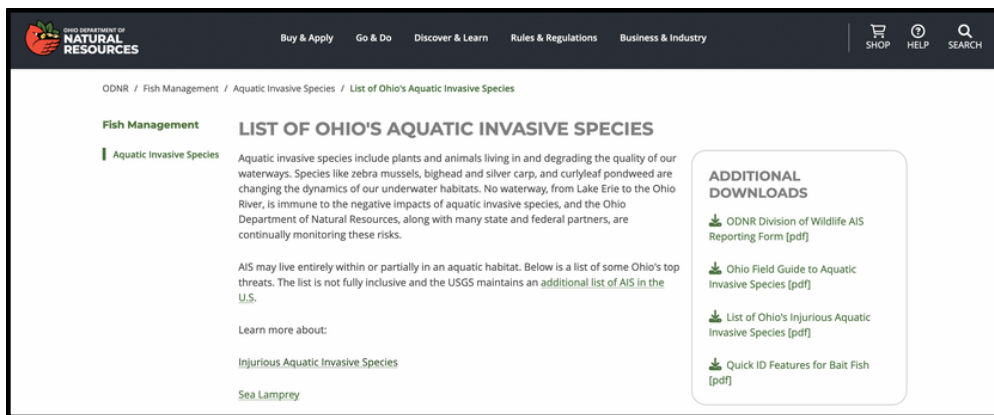
- It is difficult to locate many state prohibited or allowable aquatic plant and animal species lists online.
- Little information exists publicly about how state lists are monitored, updated, or enforced.
- Terminology varies significantly from state to state, and states describe species and groupings of species in a variety of ways (e.g., prohibited wildlife, allowed wildlife, exotic species, nuisance species, noxious weeds).
- Some states lack lists for specific categories of species. For example, some states may publish a prohibited list of animals, but do not have a similar list for plants; or some states only publish a list of species prohibited in aquaculture. Frequently, multiple agencies within a state are responsible for their respective lists, making it difficult to navigate.

To improve the accessibility of state and provincial prohibited and allowed aquatic plant and animal lists, agencies should maintain and publish a copy of these lists on their respective agency websites, even if the lists are set forth in state regulations, as state online administrative codes are often difficult for those unfamiliar with the regulatory process to navigate and search. The legal directive to agencies to publish their lists could be contained in legislation or regulation depending on a state's preference.

Model Language

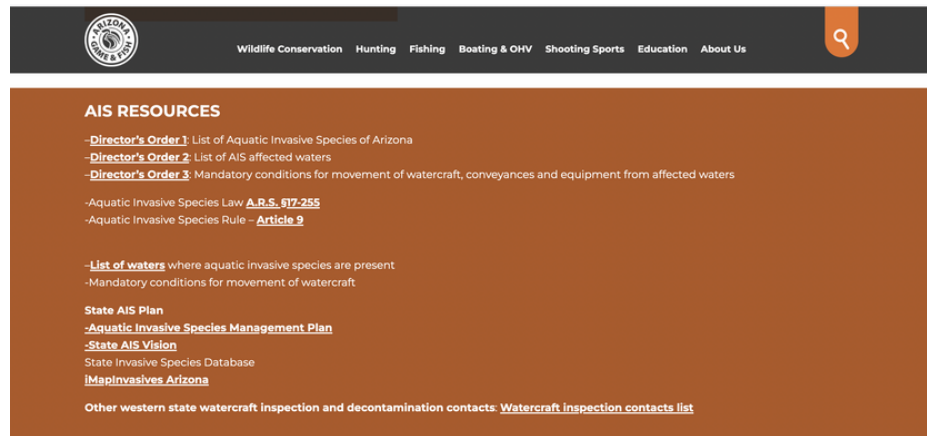
The [agency/department] shall publish on the [department/agency] website a list of the designated aquatic invasive species in the state as set forth in [legal source].

Explanatory Note: Most AIS lists are found in agency regulations. However, some jurisdictions identify invasive species in legislation, and some authorize agencies to maintain their own lists. This model language seeks to increase the accessibility of these existing lists by directing the relevant agency to also publish it on their website.



The screenshot shows a webpage from the Ohio Department of Natural Resources. The page title is "LIST OF OHIO'S AQUATIC INVASIVE SPECIES". It features a navigation menu at the top with options like "Buy & Apply", "Go & Do", "Discover & Learn", "Rules & Regulations", and "Business & Industry". The main content area includes a "Fish Management" section with a sub-section for "Aquatic Invasive Species". The text explains that aquatic invasive species include plants and animals that degrade water quality and lists some top threats like zebra mussels and silver carp. It also provides a link to "Learn more about: Injurious Aquatic Invasive Species" and "Sea Lamprey". A sidebar titled "ADDITIONAL DOWNLOADS" lists several PDF documents, including the "ODNR Division of Wildlife AIS Reporting Form", "Ohio Field Guide to Aquatic Invasive Species", "List of Ohio's Injurious Aquatic Invasive Species", and "Quick ID Features for Bait Fish".

[Ohio Department of Resources AIS website](#)



The screenshot shows a webpage from the Arizona Fish and Game Department. The page title is "AIS RESOURCES". It features a navigation menu at the top with options like "Wildlife Conservation", "Hunting", "Fishing", "Boating & OHV", "Shooting Sports", "Education", and "About Us". The main content area lists various resources related to Aquatic Invasive Species (AIS), including "Director's Order 1", "Director's Order 2", and "Director's Order 3". It also lists "Aquatic Invasive Species Law A.R.S. 617-255" and "Aquatic Invasive Species Rule - Article 9". Other resources include "List of waters where aquatic invasive species are present", "Mandatory conditions for movement of watercraft", "State AIS Plan", "Aquatic Invasive Species Management Plan", "State AIS Vision", "State Invasive Species Database", and "iMapInvasives Arizona". A link is provided for "Other western state watercraft inspection and decontamination contacts: Watercraft inspection contacts list".

[Arizona Fish and Game Department AIS Website](#)

LABELING DOMESTIC SHIPMENTS

Proper labeling of shipments is critical to a well-managed supply chain regardless of the content of those shipments. Labels are used to identify and track products, provide information about the product, and ensure compliance with regulatory requirements. A major challenge to mitigating the risks of AIS in commerce is the lack of clear and consistent labeling requirements for shipments of live aquatic plants and animals. Although there are federal labeling requirements for imports into the United States, there are few requirements on the state level for domestic shipments.

A few states impose labeling requirements on aquatic product shipments or shipments in regulated industries, such as aquaculture. Examples include:

- In Florida, it is unlawful for any person to “import, export, transport, ship or deliver in interstate or intrastate commerce ... any live wildlife unless each container or package bears, in a conspicuous place on the outside, a tag with both the name and address of the shipper and consignee and the exact contents of the package. The exact content of the package shall include an accurate and legible list by species scientific name, common name and number of each species... .” (Fla. Admin. Code Ann. r. 68A-6.014).
- In Oregon, a person shipping live fish or eggs “must provide to the carrier or have affixed to the shipping container a Fish Transport Permit or a record showing: (a) Name and address of person shipping fish or eggs into this state or of holder of Fish Transport Permit or Fish Propagation License; (b) Name and address of consignee; and (c) Number of each species of fish or eggs in the shipment. (Or. Admin. R. 635-007-0610).
- In Texas, “each container of aquatic products shipped for commercial purposes must have a label attached to the outside listing the following information correctly stated and legibly written: (1) the aquatic product transportation invoice number of the shipment of which the container is a part; and (2) the kind and weight of aquatic product. No person may ship finfish in individual packages that contain more than one species of aquatic life.” (Tex. Parks & Wild. Code Ann. § 47.0182).

Labeling requirements are not limited to packages shipped or transported by common carriers. Proper labeling at physical retail stores is critical to enabling consumers to make informed choices regarding purchases.

- New York, for example, regulates the sale of live birds and imposes requirements for specific language on store displays. (6 N.Y. Comp. Codes R. & Regs 174.4). "Pet stores and other retail or wholesale establishments dealing in birds ... must prominently display a sign visible to the public on the premises where such birds are offered for sale. ... The sign shall contain the following: Notice to Customers: Only captive bred birds may be sold in New York State. With the exception of certain common species, all birds offered for sale must be marked with a band. A violation should be reported to the New York State Department of Environmental Conservation at: 1-844-332-3267 or central.dispatch@dec.ny.gov."
- In Oregon, "When any nonnative wildlife species is offered for sale, trade or barter, the person making the offer shall display (until the transaction is completed) both the species' common name(s) and scientific taxonomic name (genus, species and subspecies (if appropriate)), as listed in [state regulations]. The common name(s) and scientific name shall be posted at or on the cage, tank, or pen where the wildlife are being held or displayed." (Or. Admin. R. 635-056-0080).

Shipments of live animals and plants can be mislabeled, increasing the management challenges related to AIS in commerce. Shipments may be intentionally mislabeled to avoid import, tax, or other regulatory requirements, or accidentally due to species mis-identification. Requirements to include the proper scientific name on external labels, bills of lading, and receipts can increase transparency and assist enforcement efforts. A Delaware law related to sale of nursery stock, for example, states that "Plants, plant materials or nursery stock shall not be labeled or advertised with false or misleading information. This includes, but is not limited to, common name, scientific name, variety, place of origin and growth habit." (Del. Code Ann. tit. 3, § 1308).

Model Language

I. Labeling of Shipments of Live Aquatic Animals and Plants

A. No person may import, export, transport, ship, or deliver in interstate or intrastate commerce any container or package containing any live animal or plant unless each container or package bears, in a conspicuous place on the outside, a label which includes the following, all written in the English language: (1) the name and address of the shipper; (2) the name and address of the recipient or intended recipient; (3) an accurate and legible list of the exact contents of the container or package by species common name, current accepted scientific name per the [Integrated Taxonomic Information System or other official source], and number of each species included in the entire shipment.

B. Shipments of live animals and plants shall not be labeled with false or misleading information.

II. Signage at Retail Stores

A. Any person offering live animals or plants for sale at a physical location shall conspicuously display on the cage, tank, pen, or container where the species is being held both the species' common name(s) and current accepted scientific taxonomic name (genus, species, and subspecies (if appropriate)) per the [Integrated Taxonomic Information System or other official source] and all written in the English language.

B. Any person offering live animals or plants for sale at a physical location must prominently display a sign visible to the public on the premises where such species are offered for sale that contains the following: Notice to Customers: With limited exceptions, the sale of aquatic invasive species is prohibited in this state. A list of aquatic invasive species is available on the [department's] website at [link.]

Model Language

III. E-commerce Requirements

A. Online advertisements of live animals or plants must not contain any false or misleading information. This includes, but is not limited to, the spelling of species common or scientific name, species description, place of origin, or photographs.

B. Any person offering live animals or plants for sale through e-commerce must include in the online advertisement both the species' common name(s) and scientific taxonomic name (genus, species, and subspecies (if appropriate)).



© exipress from Getty Images Signature via Canva.com

COMMERCIAL TRANSACTION RECORDKEEPING

Anyone in business must keep accurate transaction records. A robust record-keeping system is critical to business operations, whether it is monitoring financial health, tracking inventory, or documenting customer transactions. Invoices, receipts, bills of lading, and other records provide the foundation essential for financial management, tax compliance, and risk mitigation. States use record-keeping requirements to ensure businesses selling live animals and plants document transactions and maintain records that can be reviewed and inspected to ensure regulatory compliance.

States require record-keeping and record retention in many different business contexts. A few examples related to aquatic species include:

- In California, holders of an aquaculture permit authorized to sell restricted species must include with such sales “a sales invoice, showing the name and address of the permittee, the permittee's restricted species permit number, date of sale, the common and scientific name of the species, and the weight, volume, or count of each species sold. The restricted species and all applicable documents shall be immediately made available to the department upon request.” (14 Cal. Admin. Code § 671.7).
- In New Jersey, aquatic organisms produced in aquaculture must be transported with a bill of sale or bill of lading. (N.J. Admin. Code § 2:89-4.1(a)). This bill of sale or lading “shall contain the name and address of the shipper and the receiver, and the identity of the aquatic organisms by species, total weight or number.” (N.J. Admin. Code § 2:89-4.2(a)).
- Individuals licensed to conduct aquaculture in Michigan are required to “keep and maintain records of production, purchases, or imports in order to establish proof of ownership. A person transporting aquaculture species shall produce documentation that contains the origin of shipment, registration or permit copies or documentation, documentation demonstrating shipping destination, and any other proof that may be required” (Mich. Comp. Laws Ann. § 286.876)

-
- In Wisconsin, licensed wholesale fish dealers must “keep legible, written records in the English language of all fish purchased, sold, possessed, or obtained... The record shall include the name, address, and fish dealer license number of the purchaser; the name, address, and wholesale fish dealer or commercial fishing license number of the person from whom the fish were purchased or obtained; the date of the transaction; the kinds of fish, the pounds or kilograms of each kind and the description of the fish purchased or obtained; and the signature of the person completing the record. If the record relates to a retail sale by the wholesale fish dealer, the record shall include only the date of the transaction and the kind, weight, and condition of the fish sold.” Such records must be kept for 5 years. (Wis. Stat. Ann. § 29.503.)

Record-keeping requirements may also be imposed on the buyer of certain items. For instance, in Montana, a buyer of “wildcrafted plant material” (i.e., plant material gathered from the wild for food or medicine) must “keep records of purchases or acquisitions of wildcrafted plant material for a period of 3 years from the date of purchase or acquisition.” (Mont. Code Ann. § 76-10-105). The records must include, among other things, the date of purchase or acquisition, the common or scientific name of the plant, the name, address, telephone number, and signature of the person from whom the wildcrafted plant material was obtained; and the license plate number of the vehicle that was used to deliver the wildcrafted plant material to the buyer.



© 1195798 from pixabay via Canva.com

Model Language

I. Recordkeeping Requirements of Sellers

A. Any person possessing, acquiring, importing, exporting, selling, shipping, or engaged in the interstate or intrastate commerce of live aquatic animals or plants must keep legible, written or electronic records in the English language of all species imported, exported, sold, shipped, or transported. The record shall include the (1) name, address, and telephone number of the seller, (2) name, address, and telephone number of the purchaser, (3) the date of the transaction, (4) description of the species purchased, including both the common name and current accepted scientific taxonomic name (genus, species, and subspecies (if appropriate) per the [Integrated Taxonomic Information System or other official source], and (5) number of species sold.

B. Any person selling live aquatic animals or plants must provide a written or electronic invoice or receipt to the purchaser written in the English language that includes (1) the name, address, and telephone number of the seller, (2) the name, address, and telephone number of the buyer, (3) the date of the transaction, and (4) description of the species purchased, including both the common name and current accepted scientific taxonomic name (genus, species, and subspecies (if appropriate) per the [Integrated Taxonomic Information System or other official source], and (5) number of species sold.

C. Copies of the written and electronic records required above must be maintained for a minimum of 5 years.

D. Any person selling live aquatic animals and plants shall produce such written and electronic records upon demand of a law enforcement officer or designated official at any reasonable hour.

II. Recordkeeping Requirements of Buyers

Any person purchasing live aquatic animals or plants for the wholesale or retail trade must maintain a copy of the invoice or receipt issued by the seller for five years and shall produce such documentation upon demand of a law enforcement officer or designated official at any reasonable hour.

BUSINESS LICENSING

Business licensing is a tool states may use to hold businesses accountable for their activities and ensure their operations do not endanger public health or the environment. Business licenses vary from state to state depending on the organizational structure and scope of business operations. At a minimum, most states require the registration of business names. Corporations and nonprofit organizations conducting business in a state are usually required to register with the Secretary of State's office or a business agency.

This general business licensing is separate from any regulatory license or permits that may be required for certain activities. Not all businesses are subject to specific regulatory requirements. Although every state requires aquaculture operations to obtain permits or licenses, few states require aquarium stores, pet shops, or individuals selling live plants or animals for non-food use to obtain a license. States agencies responsible for mitigating AIS risk, therefore, often lack jurisdiction over these businesses to require reporting or inspect records.

Regulatory licensing is one method available to jurisdictions to gain a greater understanding of and increase enforcement related to the commerce pathway. A registration or licensing requirement for any person selling live aquatic animals or plants would help the state or province determine the scope of the industry in their jurisdiction and provide a mechanism to identify the number and location of such businesses. In addition, registration or licensing would create a directory of business contacts that could be used to communicate important information to owners about species sightings or regulatory provisions. Registration or licensing requirements also provide additional enforcement mechanisms that states or provinces can use to prosecute bad actors.

Licensing requirements do not have to be burdensome for business owners. The fees imposed for licensing or registration for live animals and plant sales could be minimal (e.g., \$25 or \$50 per year) and collected as part of other business licensing requirements. However, some fee should be charged to demonstrate the importance and credibility of the program and help offset the administrative cost of implementation.

Regulatory authority over the sale of live aquatic animals and plants varies across and within states and provinces. Multiple agencies may have jurisdiction to license businesses engaged in commercial trade. Jurisdictions considering a business permit or license should, as a first step, engage in a review of agency authorities to determine the most appropriate agency to implement the program.

Model Language

I. Registration/License Required to Sell Live Animals or Plants

A. No person may sell, offer to sell, or possess with intent to sell live aquatic animals or plants in this [state/province] without registering their business with/obtaining a license from the [department/agency.]

B. Each registration/license shall be valid for a period of one (1) year. Each registration/license must be renewed on or before December 31 of each calendar year.

C. A fee of \$[X, e.g. \$50] shall be assessed for the initial registration/license and a fee of \$[X, e.g. \$25] assessed for the registration/license renewal.

D. Businesses registered/licensed under this section must submit copies of records, invoices, and receipts related to the sale of live aquatic animals or plants to [department/agency] upon request.

E. Any changes in information reported to the [department/agency] related to the registration/license should be reported to [department/agency] within 30 days.

F. Each instance of failure to register/obtain a license, renew, or report as required by this section is a separate violation punishable pursuant to [state/provincial code].

G. The [department/agency] may revoke the registration of a business that it determines is engaged in the unlawful sale of aquatic invasive species.

H. The [department/agency] must maintain a list of registered/licensed businesses in the [state/province] containing all the information reported in the initial registration/license and subsequent renewals.



©Irina Iriser from Pexels via Canva.com



The research in this report was made possible with funding from the U.S. Department of Interior under award number F22AP03009-00.

Project Partners

