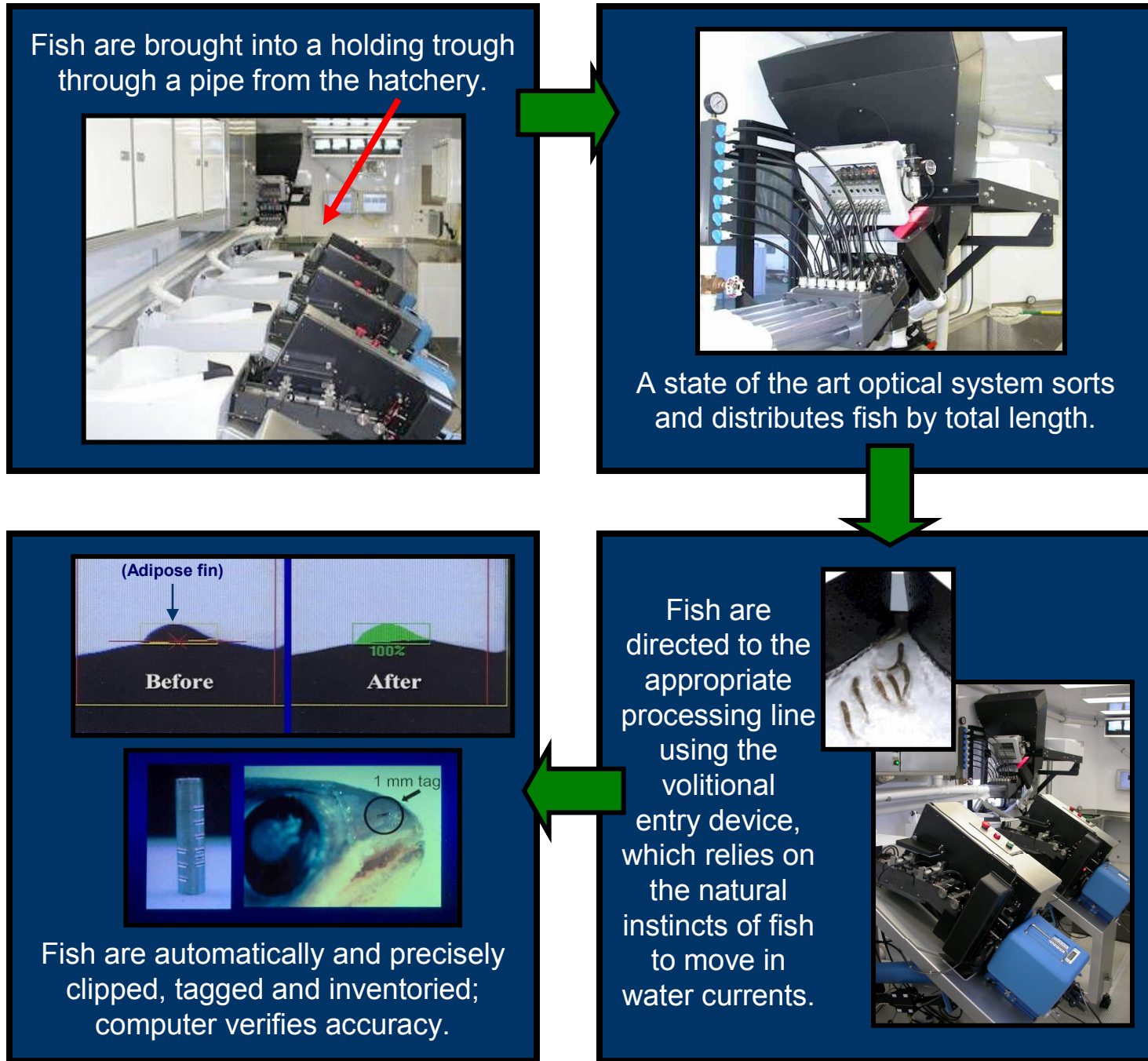


# How Does the AutoFish System Work?



# Great Lakes Fishery Mass Marking Initiative

*Improving Great Lakes fishery management for the 21<sup>st</sup> century*

The fisheries of the Great Lakes are valued at more than \$4 billion annually and represent an enormous social, economic, and cultural asset to the region. Fishery managers and policy makers make every effort to rely upon sound, scientific information as the foundation for their management decisions.

Fish captured in the region's fisheries may have been stocked as part of a hatchery program or they may result from wild reproduction. However, not all stocked fish are marked (either with a fin clip, a tag, or both) and, thus, fishery managers and the public cannot easily distinguish between wild and stocked fish.

Approximately 32 million trout and salmon are stocked in the Great Lakes Basin each year. The Mass Marking Initiative will make it possible to mark all hatchery reared salmon and trout. The ability to distinguish wild fish from hatchery produced fish will provide resource managers with information about:

- The abundance of wild produced fish;
- The success of fish stocking, specific stocking methods, and rehabilitation efforts;
- Age, growth, survival and movement of stocked fish;
- Stakeholder preferences and angler harvest behavior; and
- Mechanisms for optimizing agency stocking programs.



## *Every fish has a story...*

With the Mass Marking Initiative, fisheries biologists will be able to tell:

- ⇒ immediately if a fish was wild or produced in the hatchery;
- ⇒ Where and when a fish was stocked; and
- ⇒ By which agency a fish was stocked.



### Questions?

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# How Will Mass Marking Improve Great Lakes Fisheries?

Eight Great Lakes states, two tribal authorities, the Province of Ontario and two federal governments all play a role in protecting, improving, and managing the Great Lakes fishery. While this provides enormous resources and expertise, it also requires agencies to work together in a collaborative approach.



## The Problem:

Because marking requires money, time, and personnel, the agencies vary in their commitment and ability to mark fish.



## The Solution:

Fortunately, the Great Lakes agencies have agreed to a solution: mass marking with the AutoFish System. Implementation of the Mass Marking Initiative will allow for:

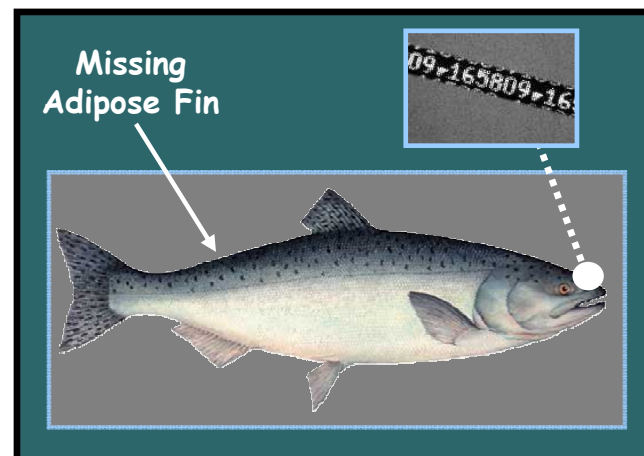
- The coordinated collection of fishery information;
- Agencies to gain substantial information about the survival, growth, and movement of fish;
- Agencies to estimate the extent of natural reproduction of various fish stocks; and
- Anglers to better participate in the management process.

# What is the End Result?

## A Clipped and Tagged Fish

Using the AutoFish System, all hatchery trout and salmon will be identified through a process that:

- Doesn't require human contact;
- Results in low mortality (<0.1%);
- Provides reliable adipose fin clipping (>99%); and
- Supports excellent tag retention rates (>98%).



# What is the AutoFish System?

The AutoFish System is revolutionary technology that allows fishery managers to clip the adipose fin and insert a coded wire tag into every trout or salmon stocked into the Great Lakes quickly, safely, and efficiently. The system, developed by Northwest Marine Technology, is contained in a trailer that can be moved from hatchery to hatchery.

The AutoFish System:

- Clips the fish's adipose fin;
- Can simultaneously insert a coded-wire-tag into the fish;
- Is highly precise;
- Is economical and fast to operate; and
- Allows entire hatchery stocks to be clipped, inventoried, and tagged in a matter of days.



# A New Approach

Gone are the days when each fish reared in a hatchery had to be anesthetized and individually clipped and tagged. In the Pacific Northwest, where the AutoFish System has been used for close to a decade, fishery management has been revolutionized with well over 100 million fish processed by the AutoFish System.

## The Old Way...

- ✓ <25,000 fish are processed in 8 hrs
- ✓ Intense human handling
- ✓ Fish anesthetized
- ✓ Fish are out of water for part of the process
- ✓ Individual hatchery-dependent marking and reporting



## With AutoFish...

- ✓ >60,000 fish are processed in 8 hrs
- ✓ No human handling
- ✓ No anesthetic
- ✓ Fish are in water during the entire the process
- ✓ Uniform marking and reporting, basin-wide

