CLAIMS

1. A fish handling unit, comprising:

a frame having a gantry;

an inspection system configured to inspect a plurality of live fish;

a conveyor assembly configured to transport the live fish to the inspection system;

at least one robotic cell depending from the gantry and extending toward the conveyor assembly, the robotic cell having a controller configured to control operation thereof, the controller being in communication with the inspection system; and

an end effector operably engaged with the robotic cell, the end effector being configured to interact with the live fish moving along the conveyor assembly, based on information determined by the inspection system and received by the controller, wherein the end effector has a gripper assembly configured to lift the live fish from the conveyor assembly and further has an injection assembly configured to inject the live fish with a treatment substance.

2. The fish handling unit according to Claim 1, wherein the robotic cell is configured to facilitate translational motion and rotational motion to the end effector.

3. The fish handling unit according to Claim 2, wherein the end effector comprises a movable section operably engaged with the robotic cell for translational motion, and the end effector having a wrist section rotatable with respect to the movable section and operably engaged with the robotic cell for rotational motion.

4. The fish handling unit according to Claim 1, wherein the gripper assembly has a plurality of engagement members cooperating to lift the live fish from the conveyor assembly.

5. The fish handling unit according to Claim 4, wherein the engagement members are a pair of opposing gripper blades.

6. The fish handling unit according to Claim 4, wherein the engagement members are individually and independently controlled by respective gripper actuators.

7. The fish handling unit according to Claim 1, wherein the end effector further comprises a pusher individually controllable, with respect to the injection assembly, to apply compression to the live fish during an injection event.

8. A method of processing live fish, the method comprising:

sedating a plurality of live fish;

conveying the live fish to the inspection system;

inspecting the live fish with the inspection system to determine information about each live fish;

communicating the information about the inspected fish to a robotic cell having an end effector operably engaged therewith and configured to interact with the live fish while conveyed;

lifting the live fish with the end effector; and

injecting at least one treatment substance into the live fish with the end effector.

9. The method according to Claim 8, wherein the live fish are processed by the end effector regardless of orientation of the live fish as conveyed.

10. The method according to Claim 8, further comprising the step of transporting the live fish to a predetermined location.

11. The method according to Claim 8, further comprising the step of withdrawing a sample from the live fish.

12. The method according to Claim 8, wherein processing the live fish with the end effector comprises orienting the live fish and injecting a treatment substance.