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, wherein the gripper assembly has a plurality of engagement members cooperating to lift the live fish from the conveyor assembly.

2. A 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. A 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. A fish handling unit according to Claim 1, wherein the engagement members are a pair of opposing gripper blades.

5. A fish handling unit according to Claim 1, wherein the engagement members are individually and independently controlled by respective gripper actuators.

6. A 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.