

# Bonytail Chub HACCP Plan

(Hazard Analysis and Critical Control Point)

1. Product Description
2. Flow Diagram
3. Potential Hazards
4. Hazard Analysis Worksheet
5. HACCP Plan Form

## 1. Product Description

|  |  |
|--|--|
| <b>Firm Name:</b>                          | Willow Beach National Fish Hatchery        |
| <b>Firm Address:</b>                       | HC 37 PO Box 17<br>Willow Beach, AZ, 86445 |
| <b>Species of fish:</b>                    | Bonytail chub                              |
| <b>Cultured, wild harvested, or both:</b>  | Cultured                                   |
| <b>Harvest method:</b>                     | Crowding, netting, and or seining          |
| <b>Method of distribution and storage:</b> | Raceway reared, distributed by truck       |
| <b>Intended use and consumer:</b>          | Restoration and recovery, no consumer      |
|  |  |

## 2. Flow Diagram

|                |  |
|----------------|--|
| <b>Step 1</b>  | Adults are spawned at Dexter NFH&TC in May and larvae are then brought to Willow Beach NFH |
| <b>Step 2</b>  | Lar vae are reared in aquaria for approximately 2 months                                   |
| <b>Step 3</b>  | Fry are moved to indoor re-use raceways and reared for approximately 3 months              |
| <b>Step 4</b>  | Fingerlings are moved to outdoor re-use raceways   |
| <b>Step 5</b>  | Fish are fed daily and raceways are cleaned periodically                                   |
| <b>Step 6</b>  | Fish are monitored for growth monthly  |
| <b>Step 7</b>  | Fish are split as needed   |
| <b>Step 8</b>  | Chub are harvested to indoor raceways  |
| <b>Step 9</b>  | Fish are held in indoor raceways for 48 hours  |
| <b>Step 10</b> | Fish are loaded into distribution tanks  |
| <b>Step 11</b> | Fish are stocked into public waters or transported to other facilities                     |
|                |  |

## 3. Potential Hazards

List aquatic species here that are found in hatchery water supply or local waters that could potentially hitchhike to receiving waters and cause ecological harm. These are called *Aquatic Nuisance Species (ANS)*.

- a. **ANS Fish:** Includes common carp, striped bass, and red shiner
- b. **ANS Other Vertebrates:** none
- c. **ANS Invertebrates:** Includes snails
- d. **ANS Plants:** Includes algae (*Spyrogyra*)

## 4. Hazard Analysis Worksheet

| (1)<br>Harvest or<br>Aquaculture Step   | (2)<br>Identify potential<br>ANS hazards<br>introduced or<br>controlled at this<br>step (1) | (3)<br>Are any<br>potential ANS<br>hazards<br>significant?<br>(Yes/No) | (4)<br>Justify your decisions for<br>column 3.                | (5)<br>What preventive<br>measures can be applied<br>to prevent the significant<br>hazards? | (6)<br>Is this step<br>a critical<br>control<br>point?<br>(Yes/No) |
|---|---|--|---|---|--|
| 1) Adults are spawned at Dexter NFH&TC in May and larvae are then brought to Willow Beach NFH | Fish  | No   | Well water is used to hatch eggs and cultures are homogeneous | n/a   | No   |
|   | Other Vertebrates   | No   | A   | n/a   | No   |
|   | Invertebrate  | No   | A   | n/a   | No   |
|   | Plant   | No   | A   | n/a   | No   |
| 2) Larvae are reared in aquaria for approximately 2 months                                    | Fish  | No   | Water passes through UV                                       | n/a   | No   |
|   | Other Vertebrates   | No   | sterilizer prior to use                                       | n/a   | No   |
|   | Invertebrate  | No   | A   | n/a   | No   |
|   | Plant   | No   | A   | n/a   | No   |
| 3) Fry are moved to indoor re-use raceways and reared for approximately 3 months              | Fish  | No   | Water passes through UV                                       | n/a   | No   |
|   | Other Vertebrates   | No   | sterilizer prior to use                                       | n/a   | No   |
|   | Invertebrate  | Yes  | ANS could be present  | Tanks cleaned daily to remove ANS   | No   |
|   | Plant   | No   | A   | n/a   | No   |
| 4) Fingerlings are moved to outdoor re-use raceways   | Fish  | yes  | ANS could be present  | Thoroughly clean and dry raceways before fingerlings are introduced                         | No   |
|   | Other Vertebrates   | No   | Not present in our water supply                               | n/a   | No   |
|   | Invertebrate  | Yes  | ANS could be present  | Thoroughly clean and dry raceways before fingerlings are introduced                         | No   |
|   | Plant   | yes  | A   | A   | No   |
| 5) Fish are fed daily and raceways are cleaned periodically                                   | Fish  | No   | No ANS can be introduced at                                   | n/a   | No   |
|   | Other Vertebrates   | No   | this step   | n/a   | No   |
|   | Invertebrate  | No   | A   | n/a   | No   |
|   | Plant   | No   | A   | n/a   | No   |
| 6) Fish are monitored for growth monthly  | Fish  | No   | No ANS can be   | n/a   | No   |
|   | Other Vertebrates   | No   | introduced at this step                                       | n/a   | No   |
|   | Invertebrate  | No   | A   | n/a   | No   |
|   | Plant   | No   | A   | n/a   | No   |
| 7) Fish are split as needed   | Fish  | Yes  | ANS could be present  | No preventative measures  | No   |
|   | Other Vertebrates   | No   | at this step  | can be applied at this step   | No   |
|   | Invertebrate  | Yes  | A   | A   | No   |
|   | Plant   | Yes  | A   | A   | No   |
| 8) Chub are harvested to indoor raceways  | Fish  | Yes  | ANS could be present  | Use proper size mesh seine to grade out smaller ANS   | Yes  |
|   | Other Vertebrates   | No   | Not present in our water supply                               | n/a   | No   |
|   | Invertebrate  | Yes  | A   | Visually pick out larger  | Yes  |

| (1)<br>Harvest or<br>Aquaculture Step   | (2)<br>Identify potential<br>ANS hazards<br>introduced or<br>controlled at this<br>step (1) | (3)<br>Are any<br>potential ANS<br>hazards<br>significant?<br>(Yes/No) | (4)<br>Justify your decisions for<br>column 3. | (5)<br>What preventive<br>measures can be applied<br>to prevent the significant<br>hazards? | (6)<br>Is this step<br>a critical<br>control<br>point?<br>(Yes/No) |
|---|---|--|--|---|--|
|   |   |  |  | ANS   |  |
|   | Plant   | Yes  | A  | A   | Yes  |
| 9) Fish are held in<br>indoor raceways<br>for 48 Hours                              | Fish  | Yes  | ANS could have gotten by<br>previous step      | Hand pick to remove   | Yes  |
|   | Other Vertebrates   | No   | Not present in our water<br>supply             | n/a   | No   |
|   | Invertebrate  | Yes  | ANS could have gotten by<br>previous step      | Proper flow will push non-<br>mobile ANS to rear screen                                     | Yes  |
|   | Plant   | Yes  | A  | and can easily be picked<br>out   | Yes  |
| 10) Fish are<br>loaded into<br>distribution tanks                                   | Fish  | No   | Well water is used for<br>filling              | n/a   | No   |
|   | Other Vertebrates   | No   | tanks and previous<br>screenings               | n/a   | No   |
|   | Invertebrate  | No   | have removed any                               | n/a   | No   |
|   | Plant   | No   | potential hazards                              | n/a   | No   |
| 11) Fish are stocked<br>into public waters or<br>transported to other<br>facilities | Fish  | No   | No ANS can be                                  | n/a   | No   |
|   | Other Vertebrates   | No   | introduced or is present                       | n/a   | No   |
|   | Invertebrate  | No   | at this step                                   | n/a   | No   |
|   | Plant   | No   | A  | n/a   | No   |

## 5. HACCP Plan Form

| (1)<br>Critical Control Point (CCP)              | (2)<br>Significant Hazard(s)    | (3)<br>Control Measures   | Monitoring   |   |  |                    | (8)<br>Corrective Actions(s)  | (9)<br>Records                                  | (10)<br>Verification  |
|--|---------------------------------|---|--|---|--|--------------------|---|---|---|
|  |                                 |   | (4)<br>What  | (5)<br>How  | (6)<br>Frequency   | (7)<br>Who         |   |   |   |
| 8) Chub are harvested to indoor raceways         | Fish, invertebrates, and plants | Use largest mesh size net and seine that is practical. Remove any ANS seen during harvest                             | Ensure that nets and seine allow escape of small ANS, and hand-pick larger ANS | Equipment preparation and visual alertness during harvest | Before, during, and after harvest  | Hatchery employees | Sort with larger net and seine if existing one is inadequate                              | Records of ANS to be kept in hatchery log book. | Hatchery Manager to review records and ensure that measures are taken |
| 9) Fish are held in indoor raceways for 48 Hours | Fish, invertebrates, and plants | Hold fish in high flow raceway. Siphon and net out plant fragments and non-target fish species. Conduct a visual sort | Ensure that non-target species are removed from raceway prior to loading.      | Visual inspection   | When fish first placed in raceway, while creatures are disoriented. Again after 24 hours when flow has pushed non-mobiles to screen. | Hatchery employees | Hold longer, repeat process. Grade fish if necessary and will not induce too much stress. | Hatchery log and trip record.                   | Hatchery Manager to review records and ensure that measures are taken |
|  |                                 |   |  |   |  |                    |   |   |   |

|  |   |
|--|---|
| Firm Name: Willow Beach National Fish Hatchery           | Species of Fish: Bonytail chub  |
| Firm Address: HC 37 PO Box 17<br>Willow Beach, AZ, 86445 | Method of Storage and Distribution: Indoor and outdoor raceways, and distribution truck |
| Signature:   | Intended Use and Consumer: Restoration and recovery                                     |
| Date:  |   |