

REVISED DRAFT

**DAMAGE ASSESSMENT AND RESTORATION PLAN AND
ENVIRONMENTAL ASSESSMENT FOR THE POINT
COMFORT/LAVACA BAY NPL SITE RECREATIONAL FISHING
SERVICE LOSSES**

PREPARED BY

**TEXAS GENERAL LAND OFFICE
TEXAS PARKS AND WILDLIFE DEPARTMENT
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
AND
THE U.S. FISH & WILDLIFE SERVICE,
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1. Introduction

This document describes revisions to the Draft Damage Assessment and Restoration Plan and Environmental Assessment (Draft DARP/EA) addressing recreational fishing services affected by releases of hazardous substances from the Alcoa Point Comfort/Lavaca Bay NPL Site ('Lavaca Bay Site' or 'Site'), which was released for public review and comment on September 28, 1999. The natural resource trustee agencies involved in the development of the Draft DARP/EA and this revision thereto are the Texas Natural Resource Conservation Commission, the Texas General Land Office, the Texas Parks and Wildlife Department, the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce, and the U.S. Fish and Wildlife Service on behalf of the U.S. Department of the Interior (collectively, 'the Trustees').

The Draft DARP/EA was released on September 28, 1999 to inform members of the public and to seek public input on the Trustees' assessment of recreational fishing service losses attributable to this Site and on the restoration actions that the Trustees proposed for use to compensate for those losses. The Trustees received a number of comments on the draft plan during the public review period. All comments received related to the preferred restoration alternatives identified and proposed in the draft plan. None of the comments submitted raised any issues regarding the assessment methodology for estimating the recreational services losses and restoration benefits outlined in the draft plan.

After considering the comments received, the Trustees are adopting and finalizing the assessment of recreational fishing service losses described in the Draft DARP/EA and, further, are finalizing the selection of the restoration actions identified therein as compensation for the pier/shore-mode recreational fishing losses (i.e., pier projects at the Six Mile and Point Comfort sites). Based on the comments received, however, the Trustees find it necessary to revise the Draft DARP/EA as it relates to the preferred restoration actions to compensate for the boat-mode recreational fishing service losses. This document summarizes the public comments received, describes the revised, preferred restoration alternatives to fully compensate for the recreational fishing losses and explains the reason for the change to the Draft DARP/EA based on the public comments. The Trustees are seeking public review and comment on the revised preferred restoration alternatives outlined herein.¹

2. Public Comments on the Draft DARP/EA

In the Draft DARP/EA released on September 28, 1999, the Trustees identified a boat ramp project at the Port Lavaca Bayfront and fishing pier projects at Point Comfort and Six-Mile Parks as the preferred restoration alternatives to compensate for the boat-mode and pier/shore-mode fishing losses, respectively. The Trustees sought public

¹ Following public review and comment on this document, the Trustees will issue a Final DARP/EA that will describe the finalized damage assessment and restoration plan in its entirety.

review and comment on the Draft DARP/EA, including the choice of these proposed restoration actions.

The Trustees received a number of comments on the draft plan, all related to the restoration projects proposed therein. The public comments received have been included in the Administrative Record,² as reflected in the index of administrative record documents at Appendix A. Of the comments received, most were focused on the boat ramp project proposed for the Port Lavaca Bayfront location and/or the lack of a pier project at that location. Other comments received addressed or expressed support for the pier projects proposed at Point Comfort and Six Mile Parks.

The comments supporting a pier project at the Port Lavaca Bayfront location, in summary form, were:

- *Consider a lighted T-head fishing pier at the end of the Bayfront peninsula. This project will have a positive impact on the Bayfront and provide “the greatest benefit, and benefit the greatest number of citizens damaged by the contamination in Lavaca Bay.” With a pier, there are multiple benefits – to anglers, birders, observers watching sailboats, sailboards and other vessel traffic. A fishing pier will also have “a tremendous impact on increased tourism to the city.”*
- *Place a fishing pier at the Bayfront peninsula, which would “provide a means for everyone, even those who do not own boats, to enjoy fishing, bird watching and just walking and taking in the view of the bay.” A pier should be located at the Bayfront in order to benefit the greatest number of people and to benefit the people who live nearest to where the damage occurred.*
- *A pier at the Bayfront would make fishing available to a number of senior citizens and young people who might otherwise not have access.*
- *The residents of Port Lavaca would be better served by: construction of a fishing pier with a minimum span of 300 linear feet and eight feet wide with handrails and both floor and area lighting, from the tip of the Bayfront peninsula (which is leased from the Texas General Land Office). The project should also include construction of a paved access road and a lighted parking area with a minimum of twenty spaces.*

The first two comments above were received from a number of commenters (as a form letter). Other commenters opposed the boat ramp project in conjunction with their support for the pier project at Port Lavaca Bayfront or simply provided unfavorable comments regarding a boat ramp at that location:

² The location and availability of the Administrative Record is described in the Draft DARP/EA at section 2.4.2.

- *A boat ramp at the Bayfront is not needed. Port Lavaca already has two boat ramps and there are other boat ramps outside the City. In addition, the boat ramp at the Bayfront would interfere with the Bayfront Master Plan. The boat ramp would cause congestion and traffic problems in the narrow entrance to the Bayfront Park. A fishing pier would benefit a much wider segment of the population including young people under age 17 and senior citizens over the age of 65. A fishing pier would also provide benefits to tourists, who, without a pier, would not have a chance to be close to the water. A pier could be incorporated into the City's Master Plan, which includes a walkway from the present Formosa Walkway all the way to the Bayfront peninsula. "Give the city of Port Lavaca something that people could really use every day of the year and something that would be of use and benefit to the greatest number of our citizens."*
- *There is no need for another boat ramp in the City. There are already three launch locations in the City of Port Lavaca. A fishing pier at the Bayfront would provide opportunities for a wider number of people to enjoy fishing, bird watching, and views of the Bay.*
- *A fishing pier will draw and serve more anglers who have suffered and will suffer recreational fishing losses. The construction of a fishing pier at the Bayfront peninsula would provide access to the shallow waters adjacent to the Bayfront and serve the casual angler who motors or walks to fishing areas. A boat ramp at the Bayfront is not appropriate restoration. A boat ramp only serves those "fortunate enough to own a boat" and they are already served by two existing boat ramps in Port Lavaca. Also, "siting the additional (or enhanced) boat ramp parking area north of the Marina would conflict with the Bayfront Master Plan location of an open play area and picnic area."*
- *The boat ramp constructed on the north side of the Bayfront peninsula - where the water is shallow - was never intended for large motor craft or large sailboats.*

Two commenters supported one or more of the projects as proposed in the Draft DARP/EA:

- *Clean up, dredge out and make parking available for the launch area that is at the Bayfront peninsula at the end of Main Street. If there is any money left, build what fishing piers can be built.*
- *The restoration plan proposal for recreational fishing was well planned and the manner for choosing the type of project was more than fair to all parties involved. The pier proposal at Six Mile Park is consistent with long term plans for the area. The area is used by many wade fishermen. There are plans to support youth fishing tournaments and the pier will be a great asset. There have been "favorable comments regarding the plans to build a pier in Point Comfort and a boat ramp in Port Lavaca. Our existing boat ramps are in need of repair."*

3. Selected Restoration Alternatives for Pier/Shore-Mode Fishing Losses

The public comments received by the Trustees included comments supporting the proposed fishing pier projects at the Six-Mile and Point Comfort sites, identified in the Draft DARP/EA. There were no comments opposing these two restoration projects or information that would indicate the projects were not feasible, not likely to achieve restoration objectives or were otherwise an inappropriate choice to compensate for the pier/shore-mode recreational fishing losses. Accordingly, the Trustees are finalizing their selection of these restoration alternatives. The selection of these alternatives will be reflected in the Final DARP/EA.

The Six-Mile project will occur at Six-Mile Park on Park Road. A lighted pier will be constructed off the promenade; it will span 300 linear feet and will be 8 feet wide. The pier will be located so as to minimize interference with boat ramp traffic while maximizing access to better fishing spots. The initial design for the pier includes handrails and lighting, both flood and area lighting.

A fishing pier will also be constructed at Point Comfort Park. A lighted pier will be built off the peninsula west of the existing boat ramp. The plan for the pier at Point Comfort mimics the specifications of the pier at Six-Mile. Again, the pier will be designed to maximize access to better fishing spots and minimize interference with the boat ramp. In addition to the pier, the project will include construction of a parking area for ten vehicles and a walkway from the parking area to the pier.³ Further planning and engineering details of these projects will be developed and will be used to support implementation by Alcoa with Trustee oversight.⁴

4. Revised Restoration Plan for Boat-Mode Fishing Losses

The public comments on the Draft DARP/EA – received either as written comments (summarized herein) or as oral comments⁵ made at a public meeting on September 28, 1999 – raised substantial issues or concerns regarding the Port Lavaca

³ As envisioned in the Draft DARP/EA, the proposed project for Point Comfort included construction of a parking area for twenty vehicles and an access road. It is now planned that the project at Point Comfort will provide access to the pier via a walkway and ten parking spaces. These features are expected to meet demand at the pier, even during periods of high use. The project as currently envisioned does not differ significantly in function from that proposed in the Draft DARP. Thus, the project has been approved by the Trustees without further review and comment.

⁴ If the Trustees were to implement the projects, a full restoration costs determination by the Trustees would be necessary.

⁵ The oral comments were all addressed in the written comments and, thus, were not summarized here separately.

Bayfront boat ramp project proposed to compensate for the boat-mode fishing losses, including:

- The need for an additional boat ramp in the Port Lavaca area given the several existing ramps in that area.
- The limited utility of such a facility to the broader population or community in this area.
- Potential conflict with the Bayfront Master Plan, the community's development plan for this area.
- Increased congestion, traffic and possibly safety problems at the entrance of the Bayfront Park due to increased boater traffic.
- The ability of a ramp to accommodate larger vessels given the depth of the waters near that location.

Port Lavaca City officials were among those commenting against a boat ramp at the Port Lavaca Bayfront. In follow-up conversations with City officials, the Trustees were advised that no site at the Port Lavaca Bayfront location was acceptable for placement of a boat ramp. As a result of the public comments and information received, the Trustees have determined that a boat ramp project at the Port Lavaca Bayfront cannot be implemented, due in part to lack of community acceptance.

Because the boat ramp at Port Lavaca Bayfront cannot be implemented, the Trustees have had to consider alternative restoration projects as a basis for compensating the boat-mode recreational fishing losses. Boat-mode restoration projects at four other locations were originally included and evaluated in the Draft DARP/EA. These project alternatives were at Lighthouse Beach, Six-Mile Park, Magnolia Beach, and Port O'Connor. The project alternative at Port O'Connor involved expanding a parking area at the existing public boat ramp. The existing parking area is known to be inadequate during periods of heavy use. However, since release of the Draft DARP/EA, the Trustees have found there is no available property that could be used to expand the parking area. Without property to support the expansion, this project alternative is also not implementable. Thus, the potential alternative boat-mode projects/locations available for consideration are limited to Lighthouse Beach, Six-Mile Park, and Magnolia Beach. Each of these projects involves improvements or enhancements to existing ramp facilities.

The Draft DARP/EA identified the needed improvements at Lighthouse Beach, Six Mile Park, and Magnolia Beach boat ramps (see the next section for details). According to the Trustees' assessment analyses, however, implementing all of these boat ramp improvement projects does not provide enough benefit to fully offset the boat-mode fishing losses. However, neither the Trustees nor the public have identified any other

feasible project alternatives in the area that would provide additional boat-mode fishing benefits to offset losses. Therefore, to provide as much benefit as possible to the boat-mode anglers, the Trustees are proposing to implement the projects at Lighthouse Beach, Six Mile Park, and Magnolia Beach.

To address the boat-mode restoration shortfall, the Trustees are proposing to construct a fishing pier at the Port Lavaca Bayfront location. The pier at the Bayfront location is considered the next best project alternative in the Draft DARP/EA due to its central location relative to the population distribution in the three county area in the vicinity of the Site. It also has substantial public support, as evidenced by the public comments received on the Draft DARP/EA. The Trustees' assessment analyses establish that the boat ramp improvements at the three sites together with the pier projects at the Port Lavaca Bayfront, and Six Mile and Point Comfort Parks are sufficient to offset the losses to the angling population as a whole.⁶

4.1 Preferred Restoration Alternatives (Revised)

At Six-Mile Park, improvements are proposed for the auxiliary boat ramp. The project includes replacing the existing auxiliary ramp with a one-lane ramp, 15 feet wide and 75 feet long. Next to the ramp, a 50-foot timber dock would be constructed to be used for taking boats to and from trailers. A 25-foot wide by 200-foot long by 4-foot deep channel would be dredged to provide access to Lavaca Bay and the bulkhead/shoreline at the ramp would be stabilized.

Needed improvements at the Lighthouse Beach boat ramp are related to maintaining the channel that serves the existing boat ramp. In discussion with the Port Lavaca City Council, the Trustees learned that the City is unable to dredge the channel because the City's dredge disposal facility is at capacity. The City's confined disposal facility will be cleaned out and the facility's decant structure repaired as one part of the project at Lighthouse Beach. This action will enable future dredging of the channel by the City. In areas of the channel, shoals have formed, including around the bulkhead, that limit access to the Lighthouse Beach ramp. The project at Lighthouse Beach will include removal of these shoals. Finally, to help boat-mode anglers get in and out of their boats, a 100-foot timber dock would be constructed adjacent to the boat ramp.

The project proposed at Magnolia Beach involves actions to reduce siltation at the existing boat ramp. In the Draft DARP/EA, potential parking area improvements were identified; however, since release of the Draft DARP/EA, the Trustees have learned that

⁶ Appendix B summarizes the Trustees' analyses showing how the total benefit from the three piers and the three boat ramp improvements compensates the public for total fishing losses. Although Alcoa agrees that this mix of projects provides sufficient compensation, Alcoa does not endorse the specific methodology or results described in Appendix B.

the greater need is for sediment control at the boat ramp.⁷ Therefore, the project proposed at this location is to widen the existing jetty east of the boat ramp and to extend the jetty by 60 feet. The improved structure will reduce sedimentation of the boat ramp. In addition, jetty construction will be designed to accommodate a back-hoe, which will facilitate equipment access and sediment removal in the future. Dredging in this manner is much less expensive than the cost of hydraulic dredging at this site.

A pier is proposed for construction at the Bayfront peninsula in Port Lavaca. The pier would be 350 linear feet and 8 feet wide.⁸ The pier would be constructed to avoid interference with boat traffic. The initial conceptual design for the pier includes handrails and lighting, both flood and area lighting.

The projects are expected to exist and serve the recreational anglers for 30 years. The Trustees will increase the likelihood of achieving 30-year project lifespans through design and construction plans, as appropriate.

The Trustees' project evaluations indicate that the boat and pier projects outlined above will meet the restoration objectives specified in the Draft DARP/EA, namely that the projects provide sufficient benefit to offset the losses. According to the Trustees' analyses, the quantified project benefits to recreational fishing exceed the quantified recreational fishing losses.

Several other factors provide additional assurance that the public will be fully compensated for the recreational fishing losses. First, in the assessment of recreational fishing losses, losses are quantified through 2010, the year by which the closure is expected to be removed. In fact, nearly half of the closure area was recently reopened for the taking of finfish and crabs. Second, the structures to be put in place at Magnolia Beach would help keep that boat ramp accessible to boat mode anglers in the future and, therefore, provide boat-mode fishing benefits. The particular project features at Magnolia Beach, however, are not readily incorporated into the model and as such have been assigned no benefit in the model-based analyses. Finally, as indicated in the public comments, the proposed pier at the Bayfront will provide fishing opportunities for some members of the public who do not currently fish. The fishing benefits associated with these new anglers cannot be quantified in the model. For these reasons, the Trustees expect the restoration projects to fully compensate the public.

⁷ Information obtained from Calhoun Commissioner Leroy Belk, who oversees maintenance of the Magnolia Beach boat ramp.

⁸ The proposed pier at the Bayfront would be slightly longer than the piers at Point Comfort and Six-Mile so that anglers from the Bayfront pier can access a deeper part of the Bay. Deeper waters are typically better fishing locations.

5. Summary and Conclusions

In the Draft DARP/EA for the recreational fishing service losses, the Trustees identified two fishing piers – one each at Six-Mile Park and Point Comfort – as the preferred restoration alternatives to compensate for the pier/shore-mode recreational fishing losses. The public comments received by the Trustees supported these proposed restoration projects. Therefore, the Trustees are finalizing their selection of the pier projects at these locations.

In the Draft DARP/EA, the Trustees proposed a boat ramp at the Port Lavaca Bayfront to compensate for boat-mode fishing losses identified in the assessment. Based on information and comments submitted by the public in response to this proposal, the Trustees have determined this restoration alternative cannot be implemented, primarily due to lack of community acceptance. The Trustees have therefore considered the alternative restoration projects available to compensate for the boat-mode losses. To address these losses, the Trustees are now proposing to implement boat ramp improvement projects at Lighthouse Beach, Six-Mile Park, and Magnolia Beach and an additional pier project at the Port Lavaca Bayfront. This suite of new boat ramp improvements and additional fishing pier, along with the pier projects at Six-Mile Park and Point Comfort, are sufficient to fully compensate for all recreational fishing losses.

The Trustees are seeking public review and comment on the proposed boat ramp improvements at Lighthouse Beach, Six-Mile Park, and Magnolia Beach and on the proposed fishing pier at the Port Lavaca Bayfront. The deadline for submitting written comments on the projects will be specified in one or more public notices issued by the Trustees to announce this document's availability for public review and comment. Comments on this Revised Draft DARP/EA should be submitted in writing to:

Tony Penn
NOAA, Damage Assessment Center
N/ORR33, SSMC4, Rm. 10218
1305 East West Highway
Silver Spring MD 20910
e-mail: tony.penn@noaa.gov

A summary of comments received on the revised restoration projects identified herein and the Trustees' responses thereto will be included in a Final DARP/EA.

Appendix A – Administrative Record Documents

Classification #, Classification Name

1. ADMINISTRATIVE RECORD INDEX
 - 1 Filing Structure for Lavaca Bay. (11/12/99), 3
Document ID 1674
2. TRUSTEE/RESPONSIBLE PARTY AGREEMENTS
 - 2.01 Funding Agreements
 - 1 Funding Agreement 2/16/96
Document ID 1657
 - 2 Funding Agreement (DOI/ALCOA) 2/16/96
Document ID 1655
 - 2.02 Memorandum of Agreement (MOA)
 - 1 Memorandum of Agreement 1/14/97
Document ID 1658
 - 2.02.1 Attachments to MOA
 - 1 MOA Attachment 97-01 9/3/97
Document ID 1654
 - 2 MOA Attachment 98-01 3/9/98
Document ID 1669
 - 3 MOA Attachment 99-01 9/9/99
Document ID 1677
 - 2.02.1.1 Annual Funding Actions
 - 1 Stephanie W. Fluke, to Ron Weddell, 4/25/97, Letter on Funds Request -- 1997
Document ID 1653
 - 2 Stephanie W. Fluke, to Ron Weddell, 1/12/98, Letter on Funds Request -- 1998
Document ID 1652
 - 3 Stephanie W. Fluke, to Ron Weddell, 1/19/98, Letter on Funds Request --1998
Document ID 1651
 - 4 Stephanie W. Fluke, to Ron Weddell, 1/21/99, Letter on Funds Request -- 1999
Document ID 1670
3. INJURY ASSESSMENT PHASE
 - 3.01 Injury Matrices
 - 3.02 Benthos (Soft Bottom)
 - 3.03 Birds
 - 3.04 Fish/Shellfish
 - 3.05 Groundwater/Water Column
 - 3.06 Marsh
 - 3.07 Oyster Reef
 - 3.08 Terrestrial Habitats (including High Marsh)
 - 3.09 Lost Recreational Use

Classification #, Classification Name

- 3.09.1 **Technical Reports**
 - 1 Recreational Fishing Assessment Technical Memorandum. Trustees and Alcoa, (11/30/99), 230
Document ID 1664
- 3.09.2 **Technical Comments**
 - 1 Tony Penn, to Bill Desvousges, 2/8/99, Memorandum on Follow-up Dissussion of Peer Reviewer Comments
Document ID 1659
 - 2 Doug MacNair, Janet Lutz, to Ron Gouguet, Tony Penn, David Chapman, Don Pitts, Ron Weddell, Kirk Gribben, 2/22/99, Letter on Technical Memorandum
Document ID 1663
- 3.09.3 **Peer Review**
 - 1 Adamowicz Peer Review Comments. Vic Adamowicz, (Department of Rural Economy, University of Alberta)(12/29/98), 18
Document ID 1662
 - 2 Parsons Peer Review. George R. Parsons, (9/2/99), 9
Document ID 1661
 - 3 V. Kerry Smith, to David J. Chapman, Douglas MacNair, 12/30/98, Letter on Smith Peer Review Comments
Document ID 1660
- 4. **ASSESSMENT/RESTORATION PLAN DEVELOPMENT - Lost Recreational Use**
- 4.01 **Public participation - Restoration Scoping**
 - 1 Port Lavaca Bayfront Masterplan. BRW, Inc., G & W Engineering, Gignac & Associates, (1/1/96), 61
Document ID 1656
- 4.01.1 **Notices**
 - 1 Public Meeting Announcement -- 17 February 1998. Alcoa and Trustees, (2/1/98), 3
Document ID 1650
 - 2 Public Meeting Announcement -- 5 November 1998. Alcoa and Trustees, (11/1/98),
Document ID 1641
- 4.01.2 **Meetings**
 - 1 Public Meeting Summary -- 17 February 1998. Ronald Weddell, (3/1/98), 13
Document ID 1649
 - 2 Public Meeting Summary -- 5 November 1998. Kristy Mathews, (11/9/98), 2
Document ID 1640

Classification #, Classification Name

4.01.3 Public Comments

- 1 Public Feed Backforms. The Public, (2/17/99), 34
Document ID 1648
- 2 C. Elaine Giessel, to Peter Sheridan, 2/18/98, Letter on Public Comment
Document ID 1646
- 3 Thomas J. Blazek, to Dr. Pete Sheridan, 2/19/98, Letter on Public Comment
Document ID 1642
- 4 Gary Cunningham, to Dr. Pete Sheridan, 2/23/98, Letter on Public Comment
Document ID 1644
- 5 Jack P. Traylor, to Peter Sheridan, 2/24/98, Letter on Public Comment
Document ID 1643
- 6 Leroy Belk, to Dr. Pete Sheridan, 3/1/98, Letter on Public Comment
Document ID 1647
- 7 J.C. Melcher, Jr., to Dr. Pete Sheridan, 3/1/98, Letter on Public Comment
Document ID 1645
- 8 Leroy Belk, to Dr. Pete Sheridan, 5/11/98, Letter on Public Comment
Document ID 1667
- 9 Thomas J. Blazek, to Dr. Peter F. Sheridan, 9/21/98, Letter on Public Comment
Document ID 1665
- 10 Patricia H. Suter, to Dr. Peter Sheridan, 10/19/98, Letter on Public Comment
Document ID 1666
- 11 Ted Dodson, to Dr. Pete F. Sheridan, 11/8/98, Letter on Public Comment
Document ID 1639
- 12 Linda Reese, to Dr. Sheridan, 11/30/98, Letter on Public Comment
Document ID 1638
- 13 Thomas Blazek, to Dr. Peter F. Sheridan, 12/18/98, Letter on Public Comment
Document ID 1637

4.02 Draft Assessment/Restoration Plan

- 1 Draft Damage Assessment and Restoration Plan. Trustees, (9/28/99), 59
Document ID 1679

4.02.1 Notice of Availability

- 1 Trustees, 'Newspaper Announcements', 9/20/99
Document ID 1682
- 2 Federal Register Notice 9/28/99
Document ID 1680
- 3 State Register Notice. Texas Natural Resource Conservation Commission,) (10/1/99), 1
Document ID 1681

Classification #, Classification Name

4.02.2

Public Comments

- 1 Don McCarn, 10/12/99, Public Comment
Document ID 1687
- 2 Elizabeth Rodriguez, 10/14/99, Public Comment
Document ID 1702
- 3 Richard Barton, 10/14/99, Public Comment
Document ID 1688
- 4 Ken Lester, Jr., 10/14/99, Public Comment
Document ID 1689
- 5 Claughton Johnson, 10/14/99, Public Comment
Document ID 1690
- 6 Ralph Wall, 10/14/99, Public Comment
Document ID 1691
- 7 David Harg (sic), 10/14/99, Public Comment
Document ID 1692
- 8 Tamara Hoelch (sic), 10/14/99, Public Comment
Document ID 1693
- 9 Caren Ghiselin (sic), 10/14/99, Public Comment
Document ID 1694
- 10 David Ouley (sic), 10/14/99, Public Comment
Document ID 1695
- 11 Karl A Marno (sic), 10/14/99, Public Comment
Document ID 1696
- 12 Fo H L (sic), 10/14/99, Public Comment
Document ID 1697
- 13 Steven Jaschke, 10/14/99, Public Comment
Document ID 1698
- 14 Darron J Gann (sic), 10/14/99, Public Comment
Document ID 1699
- 15 Glenis King (sic), 10/14/99, Public Comment
Document ID 1701
- 16 Debbie Fisher, 10/14/99, Public Comment
Document ID 1703
- 17 Osan A Lu (sic), 10/14/99, Public Comment
Document ID 1704
- 18 Mary Johnson (sic), 10/14/99, Public Comment
Document ID 1705
- 19 Barbara Gibson, 10/14/99, Public Comment
Document ID 1706
- 20 Dennis Reddy (sic), 10/14/99, Public Comment
Document ID 1707
- 21 Faith Garza, 10/14/99, Public Comment
Document ID 1708

Classification #, Classification Name

- 22 Russell Cain, 10/14/99, Public Comment
Document ID 1709
- 23 Lawrence J Matyu (sic), 10/14/99, Public Comment
Document ID 1700
- 24 Tommy Hargrove, 10/15/99, Public Comment
Document ID 1710
- 25 Thomas A Innes, 10/18/99, Public Comment
Document ID 1712
- 26 Thomas Blazek, 10/18/99, Public Comment
Document ID 1713
- 27 Tiney Browning, 10/18/99, Public Comment
Document ID 1714
- 28 Michael Balajka, 10/19/99, Public Comment
Document ID 1715
- 29 Lorraine Fabrygel, 10/19/99, Public Comment
Document ID 1711
- 4.03 Final Assessment/Restoration Plan
- 4.03.1 Notice of Availability
- 4.04 NEPA Compliance Documents
- 4.05 Coastal Zone Consistency Determination
 - 1 NOAA, to Richard Seiler, 9/24/99, Letter on Coastal Zone Consistency
Document ID 1678
- 5. ASSESSMENT/RESTORATION PLAN DEVELOPMENT - Ecological Injuries/Service Losses
- 6. ASSESSMENT/RESTORATION PLAN DEVELOPMENT - Resource Injuries/Service Losses Residual to Final ROD

Appendix B – Quantification of Fishing Losses and Benefits

As indicated in Section 4 of this document, the Trustees are selecting improvements to existing boat ramps located at Six-Mile Park, Lighthouse Beach, and Magnolia Beach as well as a fishing pier project at the Port Lavaca Bayfront to offset part of the boat-mode losses. The pier at the Bayfront together with the piers at Point Comfort and Six Mile Parks and all of the boat ramp improvements are sufficient to fully offset the total recreational fishing losses. How the pier/shore-mode and boat-mode losses and benefits are combined to determine total losses and benefits is described in this section.

Typically, a random utility model (the type of model applied for this assessment) determines the change in value of a recreational trip for a change in an environmental condition at a recreation site. If a site's environment is degraded, the model estimates the lost value per recreation trip resulting from the degradation. Likewise, for an environmental improvement at a recreation site, the model determines the added value per trip resulting from the improvement. Because the values are defined in a common metric, i.e., dollars, it is possible to add lost values for different degraded environments and to compare these lost values with values gained from environmental improvements.

To calculate the change in value per recreation trip, the change in consumer surplus⁹ per trip is divided by the cost coefficient in the random utility model. The cost coefficient estimates the effect of trip travel costs on the value of the individual's trip. Dividing the change in consumer surplus by the cost coefficient converts a utility measure into a dollar measure of value.

In the random utility models for this assessment, the Trustees did not include a cost variable and could not calculate the dollar value of losses due to the consumption ban and the dollar value of benefits due to different restoration actions. Instead, the Trustees developed two separate models – one for pier/shore-mode fishing and one for boat-mode fishing – and used the models to determine pier/shore mode restoration to offset pier/shore mode losses and to determine boat-mode restoration to offset boat-mode losses. The models were not initially developed to evaluate pier/shore mode restoration as compensation for boat-mode losses and vice versa.¹⁰

The Trustees employed a variation of the standard random utility model that calculates dollar values of losses and benefits to be able to compare fishing losses and benefits across fishing modes. The Trustees approximated the dollar values of the pier/shore and boat-mode losses and benefits. To approximate the dollar value of

⁹ Consumer surplus is the measure on an individual's value of a good, in this case a recreation trip, above and beyond any payments that are necessary to obtain the good. In a random utility model, consumer surplus is estimated in terms of utility, which is a measure of value.

¹⁰ Chapter 4 of the Draft DARP/EA describes the development of the random utility models and the quantification of recreational fishing losses due to the closure and the recreational fishing benefits (consumer surplus) as a result of restoration.

changes (either due to the consumption ban or restoration actions), the Trustees divided the change in consumer surplus by the coefficient on the distance variable. The distance variable, which was included in both models, acts as a proxy for trip cost since distance to a fishing site is directly correlated to fishing trip cost. Using the coefficient on the distance variable in place of the cost coefficient then, the Trustees calculated value indices for the pier/shore and boat-mode fishing losses and benefits. These indices could then be used to compare the relative value of fishing across different fishing modes.

To assess whether or not the combination of restoration projects is sufficient to compensate for all of the losses, the Trustees added boat-mode losses to pier/shore-mode losses and then compared those to the sum of the boat and pier/shore-mode benefits. The boat-mode losses add 75 percent to the pier/shore-mode losses. The boat-mode benefits add 18 percent to the pier/shore-mode benefits.

Figure 1 shows the difference between the annual baseline (without consumption ban) pier/shore utility index and the utility index without the consumption ban, adjusted for the addition of the boat-mode losses. The losses begin with the imposition of the consumption ban, which was 1988. Losses occur until 2010, by which time the consumption ban is expected to be removed. The utility losses that occur annually are discounted – at three percent, where 1999 is the base year – to account for differences in when the losses occur.¹¹ The sum of the discounted utility losses from 1988 – 2010 is a measure of the total recreational fishing losses.

Figure 2 shows the difference between the annual pier/shore utility index with the restoration actions (no closure in effect) and the utility index at baseline, adjusted for the addition of the boat-mode benefits. The benefits start once the restoration actions are in place – planned for 2000 – and they are expected for thirty years (the expected lifetimes of the restoration projects). As with the annual fishing losses, the fishing benefits are discounted annually at a three percent rate. The sum of the discounted utility benefits from 2000 – 2029 indicates the total recreational fishing benefits.

Given that the total discounted utility benefits from the pier/shore and boat-mode projects exceed the total discounted utility losses across both modes, the Trustees have determined that the projects described in this Revised Draft DARP/EA are sufficient to fully compensate the public for all the recreational fishing losses resulting from the release of contaminants at the Alcoa Point Comfort/Lavaca Bay NPL Site.

¹¹ See the Draft DARP/EA for more information on discounting.

Figure 1. Estimate of Total Recreational Fishing Losses

Parameters	
Utility Index at Baseline - Utility Index with Closure (includes pier/shore and boat-mode losses)	0.5087
Closure Implemented	1988
Duration of Closure in Years (through 10 years after remedy in 2000)	23
Discount Rate	3%
Base Year	1999

Boat and Pier/Shore Losses		
Year	Raw Utility Loss	Discounted Utility Loss
1987	0	0.0000
1988	0.5087	0.7042
1989	0.5087	0.6837
1990	0.5087	0.6637
1991	0.5087	0.6444
1992	0.5087	0.6256
1993	0.5087	0.6074
1994	0.5087	0.5897
1995	0.5087	0.5725
1996	0.5087	0.5559
1997	0.5087	0.5397
1998	0.5087	0.5240
1999	0.5087	0.5087
2000	0.5087	0.4939
2001	0.5087	0.4795
2002	0.5087	0.4655
2003	0.5087	0.4520
2004	0.5087	0.4388
2005	0.5087	0.4260
2006	0.5087	0.4136
2007	0.5087	0.4016
2008	0.5087	0.3899
2009	0.5087	0.3785
2010	0.5087	0.3675
2011	0	0.0000
2012	0	0.0000
2013	0	0.0000
2014	0	0.0000
2015	0	0.0000
2016	0	0.0000
2017	0	0.0000
2018	0	0.0000
Sum of Discounted Utility Losses		11.9263

Figure 2. Estimate of Total Recreational Fishing Benefits

Parameters	
Utility Index with Restoration - Utility Index at Baseline (includes pier/shore and boat-mode benefits)	0.6774
Restoration Implemented	2000
Lifespan of project	30
Discount Rate	3%
Base Year	1999

Boat and Pier/Shore Benefits		
Year	Raw Utility Benefit	Discounted Utility Benefit
1999	0	0.0000
2000	0.6774	0.6577
2001	0.6774	0.6385
2002	0.6774	0.6199
2003	0.6774	0.6019
2004	0.6774	0.5843
2005	0.6774	0.5673
2006	0.6774	0.5508
2007	0.6774	0.5347
2008	0.6774	0.5192
2009	0.6774	0.5040
2010	0.6774	0.4894
2011	0.6774	0.4751
2012	0.6774	0.4613
2013	0.6774	0.4478
2014	0.6774	0.4348
2015	0.6774	0.4221
2016	0.6774	0.4098
2017	0.6774	0.3979
2018	0.6774	0.3863
2019	0.6774	0.3751
2020	0.6774	0.3641
2021	0.6774	0.3535
2022	0.6774	0.3432
2023	0.6774	0.3332
2024	0.6774	0.3235
2025	0.6774	0.3141
2026	0.6774	0.3050
2027	0.6774	0.2961
2028	0.6774	0.2875
2029	0.6774	0.2791
2030	0	0.0000
Sum of Discounted Utility Gains		13.2773