HISTORICAL EVALUATION OF THE TUGBOAT *CHALLENGER* (JUN-01257), JUNEAU, ALASKA

Northern Land Use Research Alaska, LLC

November 2015

Page Intentionally Left Blank

HISTORICAL EVALUATION OF THE TUGBOAT *CHALLENGER* (JUN-01257), JUNEAU, ALASKA

Report prepared for:
South East Alaska Lighterage
22745 Glacier Highway
Juneau, Alaska 99801

Report prepared by:

Jason S. Rogers, PhD

Northern Land Use Research Alaska, LLC

1225 East International Airport Road, Suite 220
Anchorage, Alaska 99518-1410

November 2015

Page Intentionally Left Blank

RESTRICTED DATA NOTICE

The locations of cultural resources given in this report are provided to facilitate environmental and salvage planning efforts only. Under the provisions of the Archaeological Resources Protection Act and the National Historic Preservation Act, site location information is restricted in distribution; disclosure of such information may be exempt from requests under Federal and State freedom of information laws. This report is not a public document. It is intended for release to the U.S. Coast Guard (USCG), South East Alaska Lighterage (SEAL), the Alaska State Historic Preservation Office (SHPO), and other appropriate consulting parties.

TABLE OF CONTENTS

LIST OF FIGURES

1.0 General Purpose and Description of Project

Northern Land Use Research Alaska, LLC (NLURA) was contracted by South East Alaska Lighterage (SEAL) to complete a National Register of Historic Places (NRHP) eligibility evaluation for a sunken vessel on behalf of the United States Coast Guard (USCG) Sector Juneau. The vessel evaluated here is the *Challenger*, a converted TP-class tugboat that sank at her moorings in Gastineau Channel, Juneau, Alaska, on September 12, 2015 (Figure 1). The need for evaluation is based on the USCG's plan to raise and destroy the vessel.

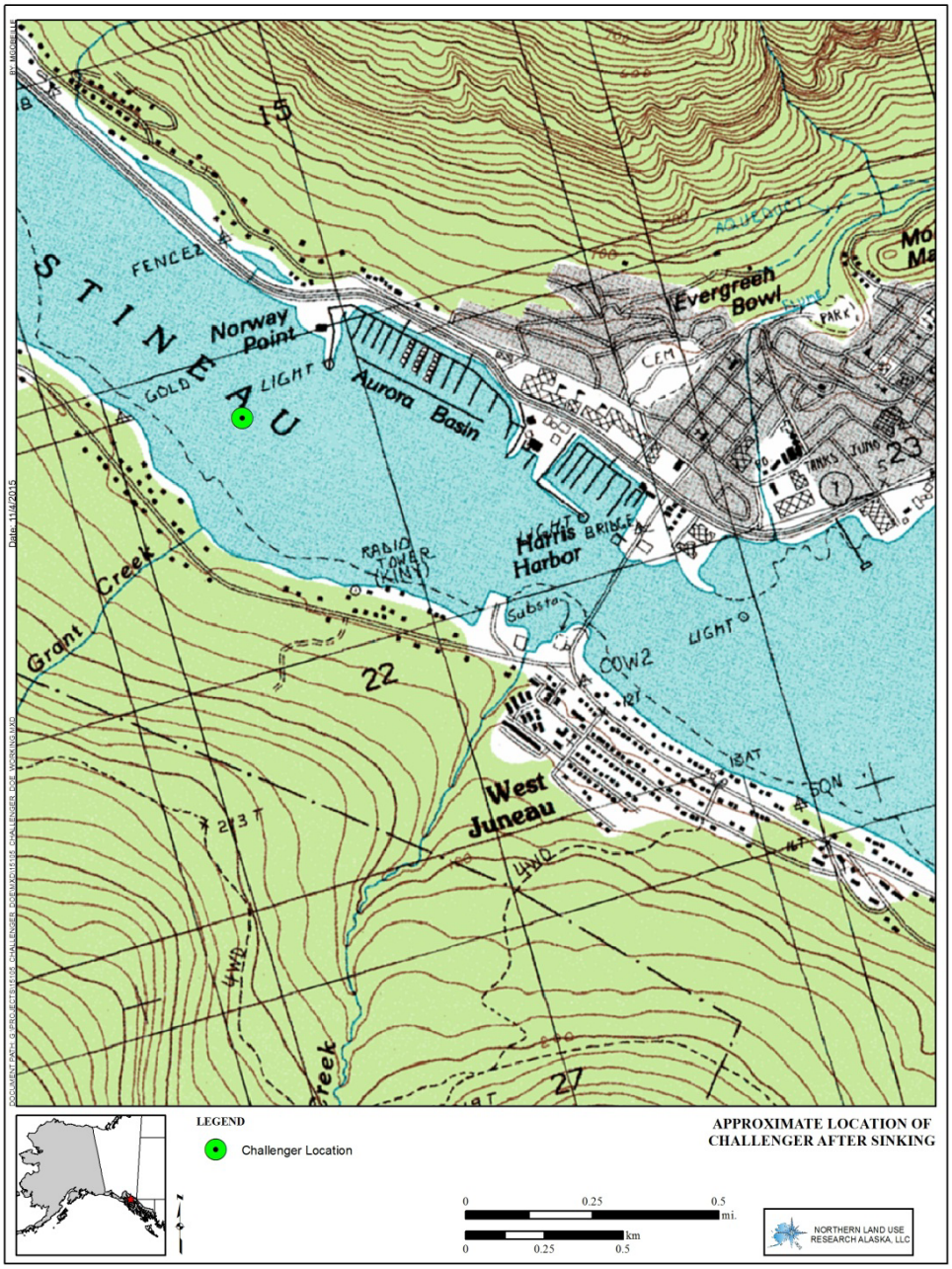

Figure 1. Approximate location of *Challenger*'s sinking.

2.0 METHODS

2.1 Background Research

NLURA conducted documentary and background research to determine the history of the tugboat *Challenger* (ex-TP 126) for purposes of evaluation. Vessel particulars were obtained from the USCG's vessel registration database, while records of the *Challenger*'s sinking were retrieved from NOAA's Office of Response and Restoration (NOAA 2015). Archival work in collections held by the Puget Sound Maritime Historical Society, the Vancouver Maritime Museum, and the Tacoma Public Library provided background information. Documents and historical photographs relating to TP-class vessels in general and to the *Challenger* in particular were consulted to enable an evaluation of the vessel's integrity. As the *Challenger* currently lies on the bottom of Gastineau Channel, a physical assessment of the vessel was not feasible.

NLURA also examined documentation of other vessels and eligibility evaluations, both for vessels that largely retain integrity and were recommended as eligible (Aaron and Baker 2011), and those without significance or lacking integrity, and thus recommended as not eligible (Kaehler and Thompson 2008; Rogers 2014).

2.2 NRHP Evaluation Criteria

The National Historic Preservation Act requires federal agencies to consider the impacts of their undertakings on properties included in or eligible for the NRHP. Regulations for listing a property in the NRHP were developed by the Department of the Interior and are found in 36 *Code of Federal Regulations* (CFR) Part 60. In order to be eligible for the NRHP, a property must meet certain criteria (36 CFR Part 60.4), and must be classified as a district, site, building, structure, or object. For the purposes of the national register, waterborne vessels (ships and boats) are classified as structures. Properties eligible for listing are generally over 50 years of age and meet one or more of the following criteria (described in *National Register Bulletin 15: How to Apply National Register Criteria for Evaluation* [Andrus 2002]):

- Criterion A: association with an event(s) that made a significant contribution to the broad pattern of history
- Criterion B: association with a historically significant person
- Criterion C: embodiment of the distinctive characteristics of a period, construction technique, or type; representing the work of a master; possessing high artistic value; or representing a significant and distinguishable entity whose components may lack individual distinction
- Criterion D: having yielded or having the potential to yield information significant to prehistory or history

The NRHP defines a vessel as any craft built to navigate a waterway (oceans, lakes, rivers, canals), regardless of type of construction. Guidelines set forth in *National Register Bulletin 20: Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places* (Delgado 1992) categorize historic vessels into five basic types:

1. Floating historic vessels: Large vessels (usually greater than 40 feet in length or weighing over 20 tons) that are maintained in and on the water, including artificial mooring basins.
2. Dry-berthed historic vessels: Vessels that are preserved out of the water and are located in a dry-dock or setting close to or part of a waterfront.
3. Small craft: Floating or displayed vessels generally less than 40 feet in length and 20 tons in weight.
4. Hulks: Substantially intact vessels that are not afloat, such as abandoned or laid up craft that are on a mudflat, beach, or other shoreline.
5. Shipwrecks: A submerged or buried vessel that has foundered, stranded, or wrecked. This includes vessels that exist as intact or scattered components on or in the seabed, lakebed, river bed, mud flats, beaches, or other shorelines, excepting hulks.

To qualify for the NRHP, a historic vessel must have significance as one of the vessel types listed above, meet one or more of the NRHP criteria (A, B, C, and D), and retain integrity of location, design, setting, materials, workmanship, feeling, and association. *National Register Bulletin 20* further specifies six steps in the evaluation of historic vessels:

1. Identification of the specific type of vessel and her individual characteristics based on a physical inspection of the vessel and a documentation of her history.
2. Identification of the historic context(s) associated with the vessel based on a documentation of her history.
3. Determination that the characteristics of the vessel make her either the best, or, a good representative of her type.
4. Evaluation of the significance of the vessel based on the National Register criteria.
5. Evaluation of the vessel's integrity and a listing of features that the vessel should retain to continue to possess integrity.

Evaluation of a vessel's special characteristics that might qualify her for listing even though she might be less than 50 years old or some aspect of her present condition generally would not qualify her for listing. To be considered for eligibility, a vessel less than 50 years old must have exceptional significance and importance.

3.0 VESSEL HISTORY

The *Challenger* was built for the United States Army (U.S. Army) in 1944 by Wilmington Boat Works, Inc. (WILBO) in Wilmington, California, as U.S. Army TP 126 (TP stands for "Tug/Passenger"). The U.S. Army's World War II (WWII) fleet included 43 of these small wooden-hulled diesel-powered harbor tugs. WILBO built six of these; others were constructed in Stockton and Newport Beach, California, and at two shipyards in Tacoma, Washington. All were built to a standardized design with 12 inch (in.) x 14 in. deck beams on 18 in. centers and 12 in. x 14 in. frames. All the hull planks were through bolted, and the hull treated with coal oil and sheathed in ironwood. Almost all the U.S. Army TP-class vessels were sold into commercial use after WWII, with nearly a dozen going to British Columbia (Colton 2014; Henderson and MacFarlane 2015).

As built, US. Army TP 126 was 96 feet (ft.) in length, with a listed breadth of 24.8 ft. and depth of 8.5 ft. She had a listed gross tonnage of 134, and a net tonnage of 107. The nearly vertical stem, rounded pilothouse, and extended deckhouse are typical for harbor tugs of this period. While no photos of TP 126 dating to this time could be located, an identical vessel of the same class (TP 224, built by Petrich Shipyards in Tacoma, Washington) is shown in Figures 2 – 3 below.

Figure 2. A TP-class harbor tug (TP 224), as delivered from the shipyard in 1943 (photograph – Tacoma Public Library).

Figure 3. TP 224 at the dock, 1943. Note open working deck and tow handling equipment (photograph – Tacoma Public Library).

TP 126 was delivered to the U.S. Army Transport Service in late 1944, but with the conclusion of WWII the U.S. Army's need for these vessels was greatly reduced. U.S. Army TP 126 was decommissioned in 1945, and sold to Island Tug and Barge Company of Vancouver, Canada. She was renamed *Island Challenger*, with home port in Victoria, B.C. (Figures 4 – 5). She operated throughout Puget Sound, B.C., and southeast Alaska, pulling log rafts and barges, providing ships' assists, and aiding in salvage operations (Henderson and MacFarlane 2015; Miles n.d.).

Figure 4. *Island Challenger* in original configuration, date unknown (prior to 1962) (photograph – Vancouver Maritime Museum).

Figure 5. *Island Challenger* pulling a tow, date unknown (prior to 1962) (photograph – Vancouver Maritime Museum).

In 1962, *Island Challenger* underwent significant modifications in connection with the replacement of her main engine. The original equipment was a 450 horsepower (hp) six-cylinder Fairbanks-Morse diesel engine, which was replaced with a 1065 hp Caterpillar D398. The new engine necessitated replacement of the exhaust stack and considerable modification of the upper superstructure. About half of the upper cabin structure (everything aft of the stack) was removed, including the aft mast and boom. The two lifeboats (port and starboard on either side of the stack) were replaced with a single lifeboat or skiff, situated immediately aft of the new exhaust stack housing (Figure 6).

Figure 6. *Island Challenger* after engine replacement, note new exhaust stack and modified upper cabin (photograph – Vancouver Maritime Museum).

In 1971, Island Tug and Barge merged with the Vancouver Tug Boat Company, and the resulting company was named 'Seaspan'. Following the merger, *Island Challenger* was renamed *Seaspan Challenger* (Figure 7). In 1983 Seaspan retired the vessel, and she was sold to a private owner (Figure 8). From 1985, the vessel (now named simply *Challenger*) was moored on Lake Union in Seattle, Washington, and used as a "B&B – Bunk and Breakfast", offering accommodation for guests and tourists.

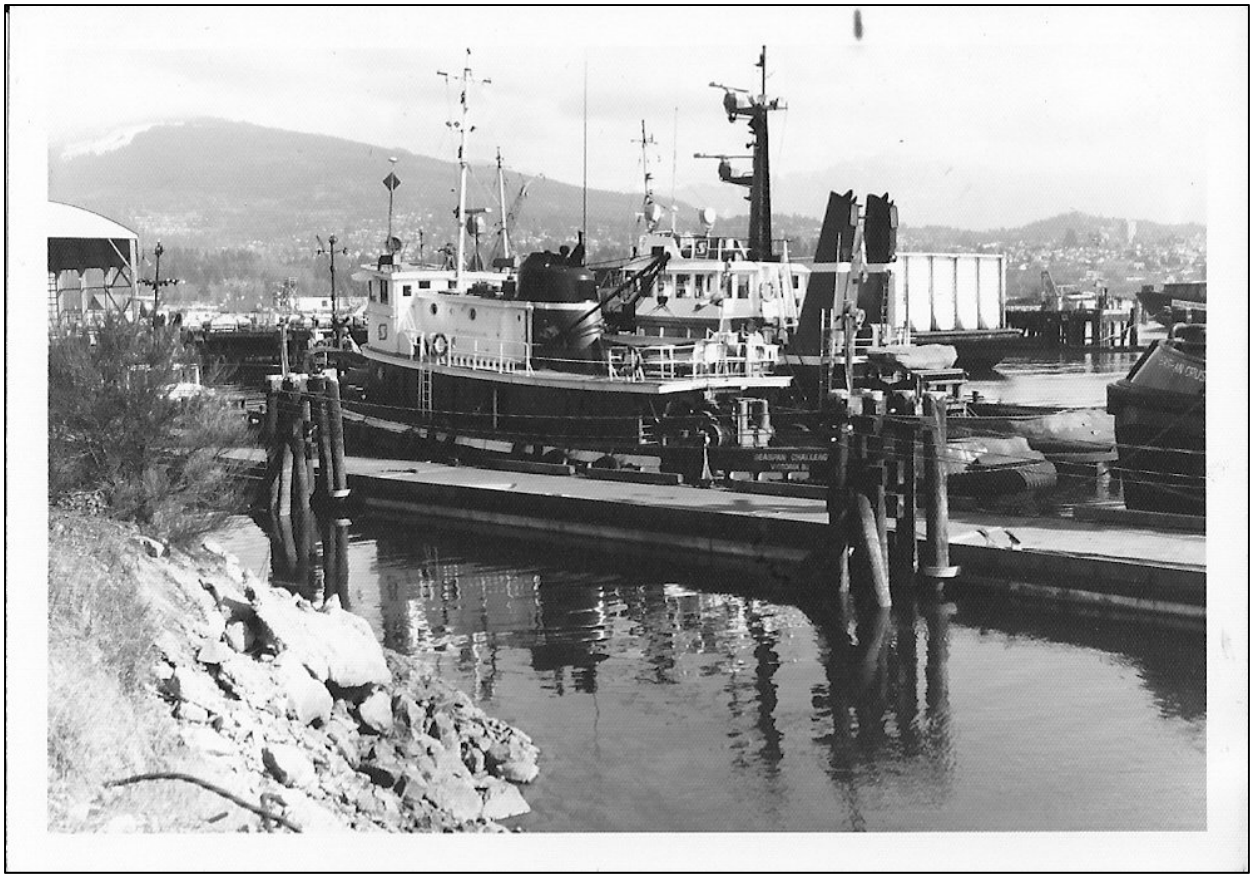

Figure 7. *Seaspan Challenger*, date unknown (prior to 1983) (photograph – Vancouver Maritime Museum).

During her time as a B&B, extensive renovation took place and new structure was added. The cabin area on the main deck was extended aft nearly to the stern, completely covering the former open stern deck working area. New cabin structure was added on the pilothouse level as well, making a two-story structure all way to the vessel's stern (Figure 9). These modifications, including new staterooms and showers, provided additional facilities and space for guest accommodations.

Figure 8. *Challenger* as a private vessel, before extensive modifications (photograph – Tugboat Challenger n.d.).

Figure 9 *Challenger* as a "Bunk & Breakfast" on Lake Union, Seattle, after 1985. Note extensive modification of deckhouse and upper cabin structure (photograph – Tugboat Challenger n.d.).

Sometime around 2002, the *Challenger* was sold and brought to Juneau, Alaska, where she was used as a live-aboard (Figure 10). Further renovation occurred, and a wooden framework was erected over the port and starboard deckways, and the remaining stern deck (Figure 11). The framework was presumably intended to be covered in canvas or plastic sheeting, providing a weather-proof work area, under which to continue renovation to the decaying pilothouse and cabin structures.

On September 12, 2015, the *Challenger* sank at her moorings in Gastineau Channel, approximately 1.3 km north of the Juneau-Douglas Bridge (NOAA 2015). As part of this evaluation effort, the wreck was assigned Alaska Heritage Resource Survey (AHRS) inventory number JUN-01257.

Figure 10. *Challenger* docked in Juneau, Alaska (photograph – Tugboat Challenger n.d.).

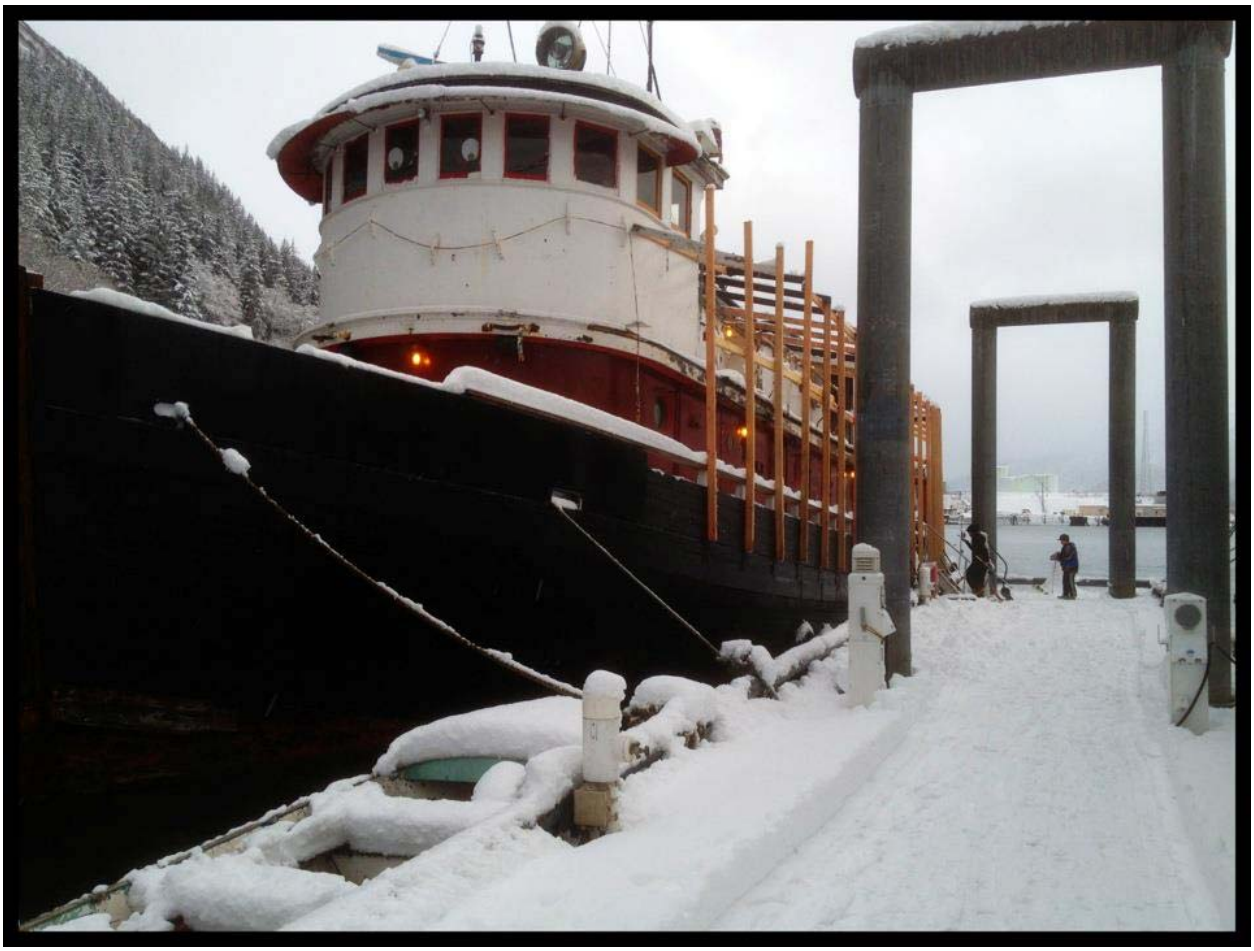

Figure 11. *Challenger* at the dock in Juneau. Note framework erected to cover portside walkway (photograph – Tugboat Challenger n.d.).

4.0 EVALUATION

Under NRHP guidelines (Delgado 1992), *Challenger* (JUN-01257, ex-TP 126) qualifies as a shipwreck ("A submerged or buried vessel that has foundered, stranded, or wrecked. This includes vessels that exist as intact or scattered components on or in the seabed, lakebed, river bed, mud flats, beaches, or other shorelines, excepting hulks"). *Challenger* was built in 1944 and thus exceeds 50 years of age, and may be evaluated for eligibility to the NRHP.

4.1 Vessel Type and Specifications

Wooden hull harbor tug/utility boat, length 96 feet, breadth 24.8 feet, depth 8.5 feet, 134 gross/107 net tons, built 1944, USCG Official No. 681344.
Fuel capacity: 8500 gallons.
Water capacity: 3500 gallons.
Lubrication Oil capacity: 1000 gallons.
Main engine (original): Fairbanks-Morse 35F14/6, 450 hp @ 300 rpm.
Main engine (after 1962): Caterpillar D398, 750 hp @ 1225 rpm.
Auxiliary engine: Gardner 4LW, 75 hp @ 1500 rpm
Speed: 10 kts.
Range: 7000 miles.

A detailed description of *Challenger*'s noteworthy features and modifications is provided in Section 3 above.

4.2 Historic Context

Tugs and towboats are an indispensable part of the maritime transportation system. Without them, shipping on a modern scale and intensity would be impossible. The development of tug and towboats in the 19th century revolutionized commercial shipping. Use of larger freight ships became feasible, as well as coastal and river movement of massive bulk cargos (Lang and Spectre 1980).

Economic development in Puget Sound and the Pacific Northwest has long been associated with maritime resources and transportation. Early tug and towboating in the region was closely tied to the lumber industry, as big square-riggers, schooners, and other sailing vessels needed assistance to bring them through the Sound to and from lumber mills. Tied to the economic cycles of these natural resources, the towboat business in Puget Sound and British Columbia went through phases of growth, depression, and mergers. Steam power was gradually supplanted by diesel, for economic reasons (per horsepower, diesel engines weigh less than steam engines, cost less to operate, and require smaller crews). By WWII, diesel tugs were the norm (Lang and Spectre 1980). Wartime production and postwar sales of surplus military vessels helped to modernize the fleets of regional tug companies. The influx of surplus tugs boosted the towing industry, and with it the forestry, fishing, and general marine transportation industries (Fowler and Freeman 2009).

TP 126 was decommissioned almost immediately after delivery, and nothing is known of her wartime employment. At least 11 TP-class tugboats (including TP 126) were acquired by Vancouver-based companies or individuals after WWII (Henderson and MacFarlane 2015). For nearly 40 years the *Challenger* (ex-TP 126) was used as a workboat, performing a variety of marine support duties in addition to pulling tows. Technological developments and the need for ever more powerful workboats meant that by the 1980s, however, the WWII-era vessels were obsolete. The most applicable historical context for *Challenger* is therefore post-war maritime transport in Puget Sound and coastal British Columbia.

4.3 Distinctive Characteristics of Tugboats

Tugboats and towboats are vessels that provide propulsive power to as an auxiliary motive force for a combination of uses in waterborne transportation systems. Tugs are commonly used to assist other larger, less maneuverable vessels in docking and escorting to and from the open sea through crowded or hazardous inland waters; to provide detachable propulsive power for non-propelled vessels; to push massive integrated river tows; and to pull large ocean tows (Brady 1967). Although their hulls are usually overbuilt by conventional standards, they are designed for general maneuverability. Tugboats are equipped with a range of specialized equipment used for tow handling such as tow hooks and winches, bitts, roller chocks, and capstans. They may also be equipped with fire-fighting apparatus. The hull and gunwales are protected with an array of fenders, bumpers, and rub-rails. Tug and towboats have a general need for a clear open aft deck to provide adequate working space for tow handling.

Harbor tugs are used not only for assistance with handling, docking, and berthing larger vessels, but are often employed in other harbor work such as marine construction and small salvage jobs. They are multi-purpose vessels, often made available to perform an extensive range of miscellaneous duties at a moment's notice.

Older harbor tugs, including TP-class vessels, are distinctive in their proportionally long deckhouse that covers approximately two-thirds of the main deck. The long deckhouse was required to provide topside crew living space (cabins below decks were difficult to ventilate). The house is rounded forward for streamlining and square at the stern for a larger deck working area. A pilothouse, rounded forward for greater visibility, is situated atop the forward end of the deckhouse. The exhaust stack is located amidships on the centerline, often directly above the engine machinery space (Brady 1967). In their original configuration, the TP-class tugboats had lifeboats set in davits on both the port and starboard sides of the vessel, and a small cabin space extending from the pilothouse to aft of the stack. There was a small mast atop the pilothouse, and a larger mast and boom assembly set atop the aft end of the main deckhouse. Two large ventilation pipes were set against the forward side of the pilothouse.

To possess integrity, a TP-class harbor tug should retain features associated with the functional design and work-related necessities of the vessel. These features include the characteristic open stern working deck, tow-handling machinery, mast and boom, and pilot- and deckhouse arrangement.

4.4 NRHP Evaluation: Significance, Integrity, and Eligibility Recommendation

Significance:

Challenger (aka. U.S. Army TP 126, Island Challenger, Seaspan Challenger) was built in 1944, is older than 50 years of age, and therefore meets the general age requirement for consideration for listing in the NRHP.

Challenger was constructed as a harbor tug and utility vessel for the U.S. Army during WWII; however nothing is known of her brief wartime military service (1944-1945) making her association with a nationally significant event somewhat vague. *Challenger* spent her entire working life in Puget Sound and coastal B.C. While *Challenger* was connected with the development of the region's maritime economy, she is not specifically associated with major events that contribute to broad patterns of history at the national, state or local level, and is therefore not eligible for the NRHP under Criterion A.

Challenger is not known to have an association with a historically significant person, and is therefore not eligible for the NRHP under Criterion B.

Challenger does not embody the distinctive characteristics of a period, construction technique, or type; does not represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction, and is therefore not eligible for the NRHP under Criterion C.

Challenger has not yielded and does not have the potential to yield information significant to prehistory or history and is therefore not eligible for the NRHP under Criterion D.

Integrity:

The NRHP recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association (Delgado 1992). The seven aspects of integrity relating to *Challenger* are considered below.

Location: The NRHP consideration of "integrity of location" should be construed to mean that a vessel is located in a port or other location with which the vessel historically had some association, such as a port of construction or a port of call. *Challenger* was built in California and spent almost all of her working life on the waters of B.C. and Puget Sound. Although she may have made occasional runs to southeast Alaska, the vessel has no historical connection with Juneau or Gastineau Channel, and Juneau is not known to be a historical port of call for the vessel. *Challenger* therefore retains only minimal integrity of location.

Design: Like all structures, vessels change over time due to use, modification, and repair. Changes and modifications to a vessel, in the form of renewal and replacement, do not necessarily impact integrity, if the composition and workmanship retain the historic character of the vessel. *Challenger* has been considerably altered over the years, without regard to the historic character of the vessel. The most significant modifications are those of the deckhouse and upper superstructure. As built, the vessel's upper cabin wrapped around the exhaust stack,

and extended slightly aft of midships. When the engine was replaced in 1962, the upper cabin was truncated at the new exhaust stack. The aft mast and boom were also removed at this time. The extensive renovations that were carried out to make *Challenger* suitable for guest accommodation as a "Bunk & Breakfast" further altered the vessel's character. Most significantly, the entire open stern working deck – one of the most distinctive features of a tugboat – was entirely covered over with cabin space, and specialized equipment associated with tow handling (tow hooks and winches, bitts, capstans, etc.) was removed. These modifications significantly altered the vessel's design and historic character. *Challenger* therefore does not retain integrity of design.

Setting: Integrity of setting usually means that the vessel is maintained in the water, or associated with the water by means of a waterfront location. *Challenger*, having sunk in Gastineau Channel and undergone significant disintegration, lacks integrity of setting.

Materials: Integrity of materials means that the physical elements that were combined in the vessel's historic design and construction have been maintained. *Challenger* has been significantly impacted by alteration of the hull and associated fittings (see Integrity of Design above), and therefore does not retain integrity of materials.

Workmanship: Integrity of workmanship is maintained when materials are renewed in-kind. *Challenger* has undergone extensive renovation and modification. While some of these alterations may be construed as in-kind renewal, significant portions of the vessel's structure were removed, and new structure added. *Challenger* therefore does not retain integrity of workmanship.

Feeling: Integrity of feeling means that a vessel evokes an aesthetic or historical sense of the past. Before sinking, *Challenger* did evoke a sense of the past, and at that time the vessel retained some integrity of feeling. In her present condition (and likely post-salvage condition), however, *Challenger* does not retain integrity of feeling.

Association: A period or accurate waterfront setting for a historic vessel is desirable and adds to the integrity of association for the vessel. At the bottom of Gastineau Channel *Challenger* does not retain integrity of association.

Eligibility Recommendation:

Challenger (JUN-01257, ex-TP 126) is not eligible for the NRHP under any of the significance criteria. Additionally, the vessel does not retain integrity of location, design, setting, materials, workmanship, feeling, or association, and is no longer the best or even a good representation of her vessel type[1]. *Challenger* is therefore recommended as not eligible for listing in the NRHP.

[1] There are at least three other TP-class vessels still afloat, in substantially original configuration: *Adak* (ex-TP 100, Sitka, AK); *Breeze* (ex-TP 231, Victoria, BC); and *Island Champion* (ex-TP 133, Everett, WA).

5.0 SUMMARY

USCG is proposing removal and salvage of shipwreck *Challenger* (JUN-01257) from the floor of Gastineau Channel, Juneau, Alaska. From a Section 106 perspective, the primary purpose of this document is to assess whether the destruction of *Challenger* will have an impact on significant historic resources. The Section 106 process includes identifying historic properties that qualify for listing in the National Register of Historic Places (NRHP).

5.1 Management Recommendations

NLURA reconstructed *Challenger*'s history from available primary and secondary documents. As a result of this research, NLURA has evaluated the potential significance of the shipwreck using the NRHP criteria for significance at the national, state and local levels. NLURA suggests that for most of its existence (1944-2015), *Challenger* performed routine functions as a working vessel before being "retired" and refurbished into a B&B and live-aboard. NLURA proposes that *Challenger* (JUN-01257) is not eligible for the NRHP because it does not meet the threshold of NRHP significance.

Based on the results of our background research and field observations, NLURA believes that there are no significant cultural resources proposed for this project. NLURA recommends to USCG that they submit this report and its findings to the SHPO, and ask the SHPO for a finding of "No Historic Properties Affected" for the project as described.

5.2 Limitations

This project was carried out, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of SEAL and the USCG for specific application to the referenced project. It should be noted that NLURA relied upon project information and/or verbal accounts provided by the organizations indicated in the report. NLURA can only relay this information and cannot be responsible for its accuracy or completeness. This report is not meant to represent a legal opinion.

Any questions regarding our work and this report, the presentation of the information, and the interpretation of the data are welcome and should be referred to NLURA Senior Project Archaeologist Jason Rogers, PhD.

6.0 REFERENCES CITED

Aaron, Jayne, and Steven Chris Baker
2011 Historic Context and Evaluation of Ranger Boats in Alaska, Chugach and Tongass National Forests. Report submitted to U.S. Forest Service, Alaska Region.

Andrus, Patrick W.
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin No. 15. U.S. Department of the Interior, National Park Service, Washington, D.C.

Brady, Edward M.
1967 *Tugs, Towboats and Towing*. Cornell Maritime Press, Centreville, MD.

Colton, Tim
2014 *Wilmington Boat Works, Wilmington CA.* Shipbuilding History: Construction records of U.S. and Canadian shipbuilders and boatbuilders. Website. http://www.shipbuildinghistory.com/history/shipyards/6yachtsmall/wilmington.htm, accessed October 27, 2015.

Delgado, James P.
1992 Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places. National Register Bulletin No. 20. U.S. Department of the Interior, National Park Service, Interagency Resources Division, Washington, D.C.

Fowler, Chuck and Mark Freeman
2009 *Tugboats on Puget Sound*. Arcadia Publishing, Charleston, S.C.

Henderson, John and John MacFarlane
2015 Military Vessels Converted to Tugs and Yachts in British Columbia Waters. Webpage. www.nauticapedia.ca, accessed October 27, 2015.

Kaehler, Gretchen and Gail Thompson
2008 Historical Evaluation of the Tugboat Enchantress (45SK369), Anacortes, Washington. Historical Research Associates, Inc., Seattle.

Lang, Steven and Peter H. Spectre
1980 *On the Hawser: A Tugboat Album*. Down East Books, Camden, ME.

Miles, Timothy
n.d. 96' 1944 TP Class Tugboat being Refurbished in Juneau, Alaska. Webpage. http://www.diy-wood-boat.com/96-1944-tp-class-tugboat-being-refurbished-in-juneau-alaska.html, accessed October 27, 2015.

National Oceanographic and Atmospheric Administration (NOAA)
2015 Tug Challenger. Incident News 2.1.1. Webpage. http://incidentnews.noaa.gov/incident/9188, accessed October 27, 2015.

Rogers, Jason S.
2014 Historical Evaluation of Two Shipwrecks at Eareckson Air Station, Shemya Island, Alaska. Northern Land Use Research Alaska, LLC, Anchorage.

Tugboat Challenger
n.d. Tugboat Challenger. Facebook Profile Page. https://www.facebook.com/tugboat.challenger, accessed October 27, 2015.