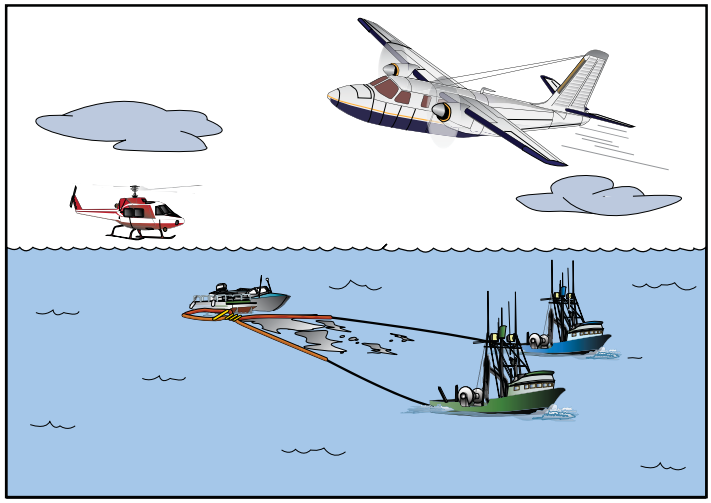
NEARSHORE FREE-OIL RECOVERY

OBJECTIVE & STRATEGY

The objective of the Free-Oil Recovery tactic is to contain and recover spilled oil in the Nearshore environment. The Nearshore Free-Oil Recovery tactic utilizes Best Available Technology to contain and recover oil in the nearshore environment. This tactic was added to the STAR manual as part of the 2013 revision to incorporate the Nearshore Response Strategy (NORS). This tactic incorporates enhanced recovery devices and coated/fuzzy disc skimmer technology (with capabilities similar to Current Buster™ and Crucial™ skimmers) which was not widely available when the STAR manual was first developed (2006).



This tactic may be used to contain and recover floating oil, similar to the Open Water Recovery Tactic. Nearshore free-oil recovery may also support the Geographic Response Strategies to protect sensitive areas and shoreline.

The general strategy is to:

1. Identify the trajectory and location of the spilled oil by performing aerial surveillance and trajectory analysis.
2. Select a deployment configuration that best supports the operating environment and available resources.
3. Mobilize to a location downstream and upwind of the slick and deploy nearshore free-oil recovery strike forces.
4. With assistance from aerial observation aircraft, encounter the oil and concentrate it in enhanced recovery systems or other BAT/enhanced boom configurations.
5. Recover the oil utilizing the best available technology.
6. Store the recovered fluid in a primary storage device, until it can be transferred to secondary storage.

Nearshore Free-Oil Recovery

TACTIC DESCRIPTION

Like other free-oil recovery systems, nearshore free-oil recovery systems are comprised of vessels with oil boom for containment and concentration, skimming systems for recovery, and primary storage devices for temporary storage. Enhanced recovery systems allow for greater speed of advance for the boom system and concentrate oil to a deeper depth for more efficient collection (Figure NFO-1). This configuration can improve system efficiency and reduce the costs of operation; however, they may limit the maneuverability of the recovery system.

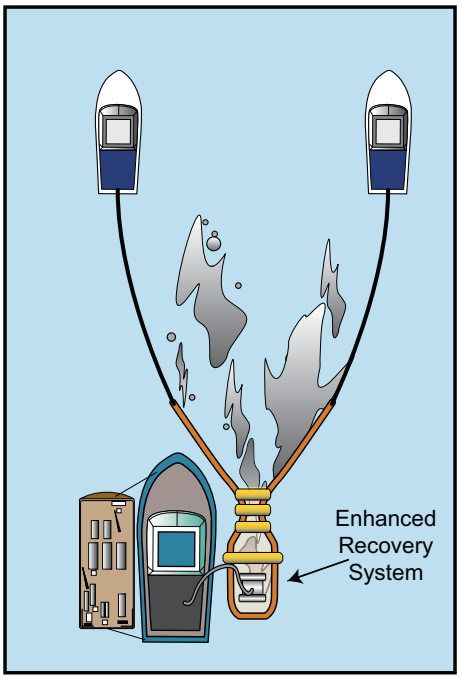


Figure NFO-1. Nearshore Free-oil Recovery using an enhanced recovery system.

Coated and Fuzzy disc skimmers (Figure NFO-2) represent the current best available technology in oil skimming. These types of skimmers are highly efficient at recovering oil without collecting water. This increased recovery efficiency means that less water is being collected and increases overall recovery rate. Increased recovery efficiencies and recovery rates can significantly decrease the amount of free water that must be stored, treated, and disposed of as well as decreasing the need to decant (when authorized). Additional benefits include a potential decrease in the overall amount of time spent conducting on-water oil recovery operations (depending on encounter rate).

Operating Environments

Nearshore free-oil recovery is most commonly configured for the Protected Water operating environment, but it is possible to configure for the Open Water and Calm Water environments depending on the circumstances.

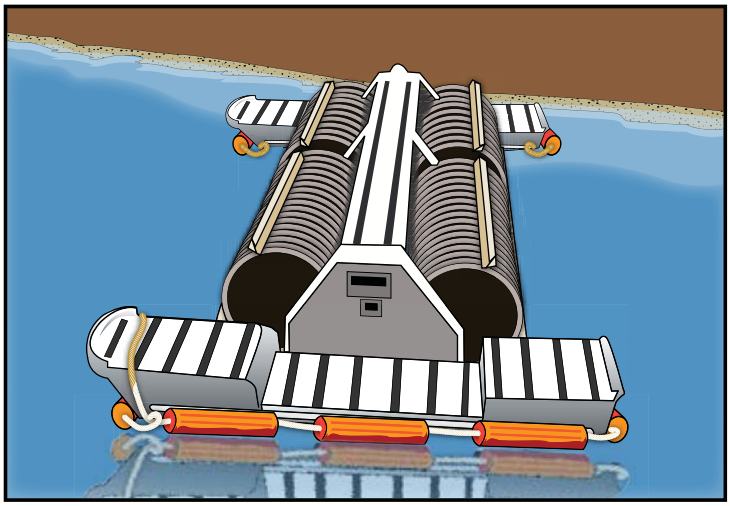


Figure NFO-2. Coated disc skimmer system.

OPEN WATER

Free-oil recovery system components (vessels, boom, and skimmers) for open water operations should be able to deploy and operate in seas up to 6 feet and in winds up to 30 knots. Vessels deploying, towing, and tending the boom should be able to safely transit

seas which exceed the boom's operating limitation. Open water free-oil recovery systems are usually based on large vessels with high volume skimmers and large primary storage devices, such as barges. In many cases, the components of these systems are dedicated to oil spill response. Open water systems are usually deep draft, operating at depths of greater that 6 feet.

PROTECTED WATER

Vessels, boom and skimmers for protected water free-oil recovery systems should be able to deploy and operate in seas up to 3 feet and in winds up to 25 knots. Vessels deploying, towing, and tending the boom should be able to safely transit seas which exceed the boom's operating limitation. Protected water free-oil recovery systems are often based on vessels of opportunity, such as fishing vessels, fitted with portable skimmers and primary storage devices. Protected water systems may be deep draft or shallow draft, depending on the water body.

CALM WATER

Calm water free-oil recovery systems are composed of vessels, boom and skimmers that should be able to deploy and operate in seas of 1 foot and in winds up to 15 knots. Vessels deploying, towing, and tending the boom should be able to safely transit seas which exceed the boom's operating limitation. Calm water free-oil recovery systems are usually based on small fishing vessels, work boats or skiffs fitted with portable skimmers and primary storage devices. Calm water free-oil recovery systems typically work in depths as shallow as 3 feet.

Deployment Configurations

Deployment configurations to accomplish this tactic are similar to those outlined in the FO tactic and based on criteria established to employ a Nearshore Response Group (NRG) in remote environments as outlined in Part VI: Nearshore Operations Response Strategy.

DEPLOYMENT CONSIDERATIONS AND LIMITATIONS

SAFETY

- Daily weather evaluation is required, and should include distance to closest NRG Staging Area, or safe harbor/potential place of refuge, transit times and exposure of vessels.
- Vessel masters should have experience in the appropriate operating environment and tactic. Local knowledge is preferred.
- Vessels setting and tending the boom should be able to safely transit seas that exceed the boom's operating limitation.
- If possible, vessels in transit to/from an operating or staging area should transit in pairs or larger groups.
- A communication schedule should be established and followed,

between vessels in transit and the NRG Supervisor, Operations Section or Radio Dispatcher.

- Vessels, including skiffs, must have a minimum of two crew aboard.
- PPE is required of all personnel. See the incident Site Safety Plan for PPE and PFD requirements.
- A communications schedule should be established and followed, between the aerial observation aircraft and the incident Air Operations Branch/Tactical Group/Support Group.

DEPLOYMENT

- A Nearshore Strike Team typically has resources to deploy four skimmers utilizing this tactic, but site conditions may influence deployment configuration options.
- Supported by a minimum of one aircraft to provide oil spill tracking and observation.
- Combinations of free-oil recovery and shoreline protection tactics are often used together.
- Combinations of configurations may optimize recovery. For instance a gated boom can be used to concentrate oil if the encounter rate of the enhanced oil recovery device is too low.
- Procedures and permits for decanting recovered water should be considered. Decanting permit applications can be found at: http://dec.alaska.gov/spar/perp/permits/index.htm
- Open water systems typically operate two 12-hour shifts per day. Other systems typically operate one 12-hour shift per day during daylight hours.
- Logistics for recovered oil transport to secondary storage must be considered.
- If wildlife or historic properties are encountered, see Wildlife Checklist or Historic Properties Checklist.

REFERENCES TO OTHER TACTICS

Other tactics associated with the Nearshore Free-oil Recovery Tactic include:

- PI • Nearshore Operations Planning and Implementation
- LB • Nearshore Response Group Logistics Base
- NFO • On-Water Free-Oil Recovery
- AO • Aerial Observation supporting Nearshore Operations
- MR • Marine Recovery
- DV • Diversion Boom
- MST • Marine Based Storage and Transfer of Oily Liquids
- TA • Towing Alongside

EQUIPMENT AND PERSONNEL RESOURCES

Commonly used resources for this tactic are similar to those of the FO tactic, see figure NFO-3 below. This tactic has been developed for use by NRG free-oil recovery strike team as outlined in Part VI: Nearshore Operations Response Strategy. Configuration type and quantity for strike teams required will be determined by operating environment, spilled oil type and volume, area of coverage, and resource availability. Resource sets may need to be refined as site-specific requirements dictate.

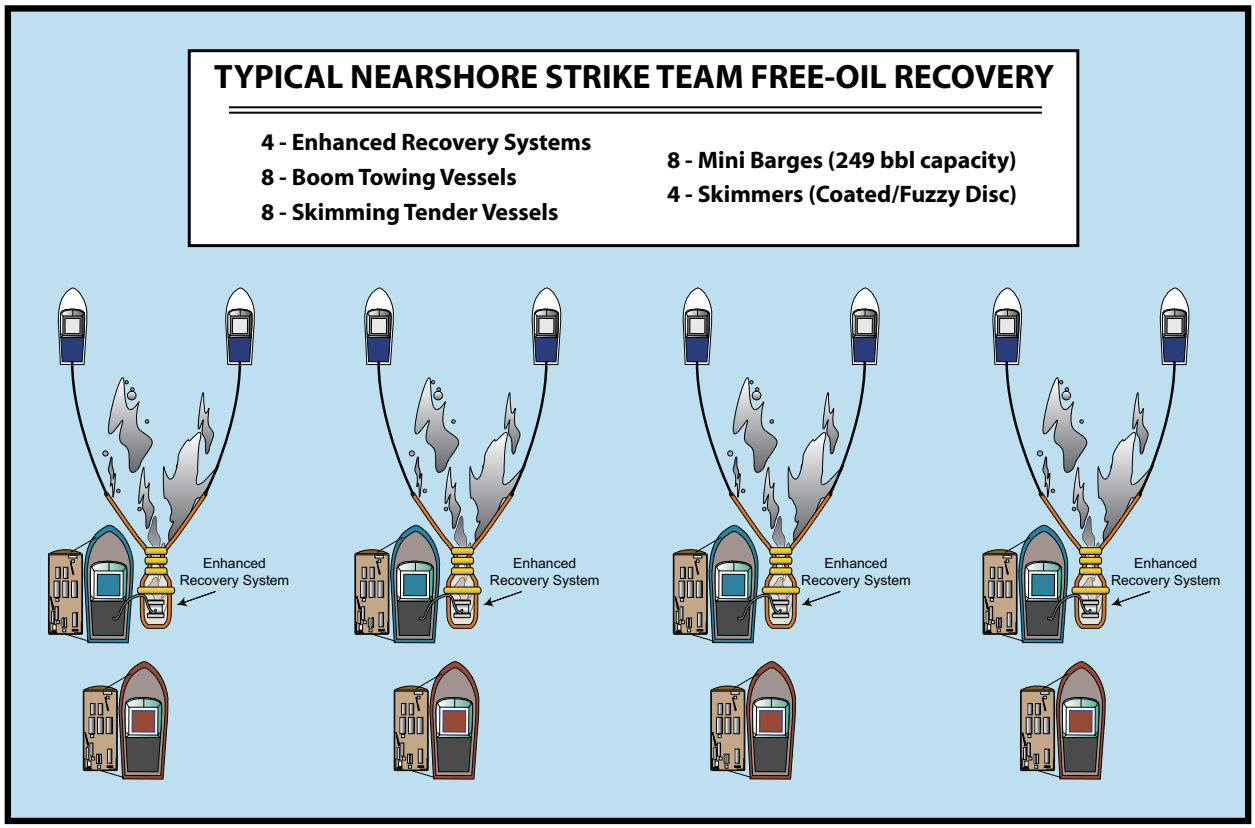


Figure NFO-3. Typical Nearshore Strike Team - Free-oil Recovery.

Nearshore Free-Oil Recovery

Typical Equipment	Function	Quantity	Notes
Enhanced recovery device	Concentrate oil	4	Current-Buster TM or equivalent
Coated/fuzzy disc skimmer (or other appropriate recovery device)	Remove concentrated oil	4	Type and capacity of skimmer depends on oil type, oil weathering state, and operating environment. Typically a Crucial 13 Disk Skimmer
Primary storage device	Store recovered fluid	4 ea.	249 mini-barge or equivalent
Decanting system	Removing recovered water	Optional	Permit is required to decant
Typical Vessel	**Function**	**Quantity**	**Notes**
Boom Towing Vessel	Vessel to tow enhanced recovery device or U-boom	8	
Skimming	Platform for skimming and handling primary storage device	4	
Primary storage device tending vessel	Vessel to transport primary storage device to secondary storage,	4	
Typical Personnel	**Function**	**Quantity**	**Notes**
Field Team Leader	Supervises operations	1	May be one of vessel crew or may be a Task Force Leader assigned to multiple strike teams.
Vessel Crew	Operates vessels and response equipment. Two crew aboard each vessel, except the skimming vessel which requires 3.	36	